

The

SHORT WAVE

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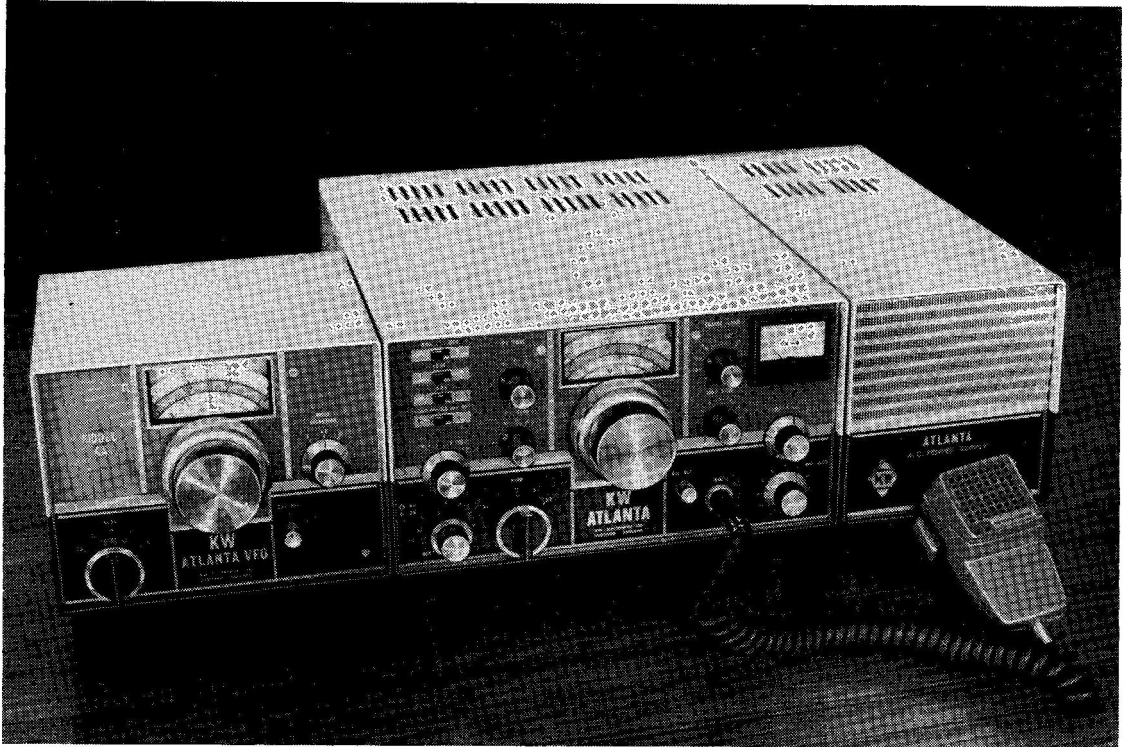
NUMBER 5



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THE KW ATLANTA

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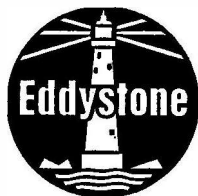


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Atlas

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By Mosley of England



This new Vertical Antennae covers 4 Bands, 10, 15, 20 and 40 metres. Designed and manufactured 100% by Mosley of England. Can be used at ground level or mounted above ground, comes complete with radial wire and the new ME-5 type insulators. Power rated to 1 kW. A.M. and C.W. 2 kW. SSB. Height approximately 20ft.

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- PSI** Mains Power supply suitable for CN1 and CN3, 150v. at 15mA and 6.3v. at 1A.
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- TU2** Antenna tuning unit for the Rx. 1.5-30MHz with pi-network, system switch, etc. Completely encased.
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Your specified freq. fundamental 2-9MHz, 0-005% **28/-**
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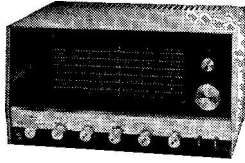
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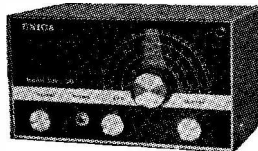
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LAFAYETTE HA.800 SOLID STATE AMATEUR COMMUNICATION RECEIVER SIX BANDS 3.5-4, 7-7.3, 14-14.35, 21-45, 28-29.7, 50-54 Mc/s.



Dual conversion on all bands. 2 x 455 Kc/s. mechanical filters. Product detector. Variable B.F.O. 100 Kc/s. crystal calibrator. "S" meter. Huge slide rule dial. Operation 230v. AC or 12v. DC. Size 15" x 9 1/2" x 8 1/2". Complete with instruction manual, £57/10/- Carr. paid (100 Kc/s. Crystal 39/6 extra).

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



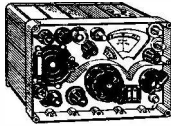
UNR-30. 4 BAND COMMUNICATION RECEIVER

Covering 550 Kc/s.-30 Mc/s. incorporates variable BFO for CW/SSB reception. Built-in speaker and phone jack. Metal cabinet. Operation 220/240v. A.C., supplied brand new, guaranteed with instructions. £13/13/- Carr. 7/6.



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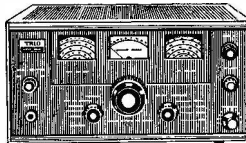
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11 valve high grade communication receiver suitable for tropical use. 1-20 Mc/s. on 4 bands. AM/CW/FM operation. Incorporates precision vernier drive, B.F.O. Aerial trimmer, internal speaker and 12v. D.C. internal power supply. Supplied in excellent condition, fully tested and checked. £15. Carr. 20/-.

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 valves plus 7 diode circuit. 4/8 ohm output and phone jack. SSB-CW. ANL. Variable BFO. S meter. Sep. bandspread dial. IF frequency 455 Kc/s. audio output 1.5w. Variable RF and AF gain controls 115/250v. A.C. Size: 7" x 15" x 10" with instruction manual, £42. Carr. paid.



TRIO COMMUNICATION TYPE HEADPHONES. Normally £5/19/6, our price £3/15/- if purchased with receiver.

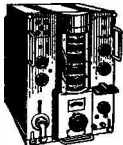
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Mains operated 1.5-30 Mc/s., £7/10/- P. and P. 4/-

AR88 MAINS TRANSFORMERS

Brand new, boxed, 59/6. P.P. 5/-

ADMIRALTY B.40 RECEIVERS

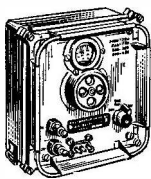


High quality 10 valve receiver manufactured by Murphy. Five bands 650 Kc/s.-30 Mc/s. 1/500 Kc/s. incorporates 12 R.F. and 3 I.F. stages, bandpass filter, noise limiter, crystal controlled B.F.O. calibrator, I.F. output, etc. Built-in speaker, output for phones. Operation 150/230 volt A.C. Size 19 1/2" x 13 1/2" x 16 1/2". Weight 114 lbs. Offered in good working condition, £22/10/-, Carr. 30/- With circuit diagram. Also available B41 L.F. version of above. 15 Kc/s.-700 Kc/s., £17/10/- Carr. 30/-

DUMMY LOAD RESISTORS

Carbon 30Ω 35w., 5/6. P.P. 1/6.

CRYSTAL CALIBRATOR No. 10

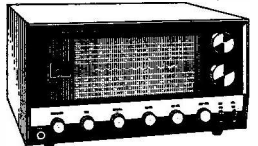


Small portable crystal controlled wavemeter. Size 7 x 7 1/2 x 4 1/2 in. Frequency range 50 Kc/s.-10 Mc/s. (up to 30 Mc/s. on harmonics). Calibrated dial. Power requirements 300v. DC. 15mA and 12v. DC 0.3A. Excellent condition, 89/6. Carr. 7/6.

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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, S Meter. 24" Band-spread. 230v. A.C./12v. D.C. Neg. earth operation. RF gain control. Size: 15" x 9 1/2" x 8 1/2". Wt. 18 lbs. Exceptional value, £45. Carr. 10/-.

TRIO JR-500SE AMATEUR RECEIVER

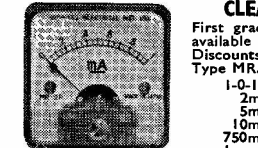


7 separate ranges between 3.5 and 29.7 Mc/s. 7 valves, 2 transistors and 5 diodes plus 8 crystals: output 8 and 500 ohm and 5000 ohm phone jack. Crystal controlled oscillator. Variable BFO VFO. AVC. ANL. S meter. SSB-CW Stand-by switch. special double gear dial drive socket for connection to a transmitter.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



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Latest release by ministry BRAND NEW in original cases. 110-250v. A.C. operation. Frequency in 6 Bands. 535 Kc/s.-32 Mc/s. continuous output impedance 2.5-600 ohms. Incorporating crystal filter, noise limiter, variable BFO, variable selectivity, etc. Price: £65. Carr. £2.



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1 amp	27/6	10v DC	27/6	500v AC	27/6
50.0-500μA	37/6	500μA	40/-	5 amp	27/6
100μA	37/6	500.0-500μA	20mA	27/6	100v DC
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Crystal controlled 1.2-19 Mc/s. Mains or 12v. D.C. operation. Complete with calibration charts. Excellent condition, £12/10/- Carr. 30/-

TEIS TRANSISTORISED GRID DIP METERS

Six ranges. 440 Kc/s.-280 Mc/s. Operates on 9v. battery. Full instructions. £12/10/- P.P. 3/6.

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Impedance 52 ohms. Also operates as field strength indicator, complete with telescopic aerial, 69/6 each. P.P. 3/6. PL259 plugs to suit 7/6 each.

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CR.45 Kit from ...	10	10	0
PR.30 Preselector ...	5	19	6
PR.30X (Built in P.S.U.)	7	19	6
RQ.10 Q Multiplier	7	5	0
RQ.10X (Built in P.S.U.)	8	17	6
CC.40 Control Unit ...	6	15	0
AT.5 Transmitter ...	16	19	6
1.28 Receiver ...	15	16	0
12/MS Mobile P.S.U.	11	10	0
12/RC Control Unit ...	2	10	0
AT5 Mains P.S.U.	8	10	0
Mini Clipper Kit ...	2	15	0

AMATEUR ELECTRONICS G3FIK

TRIO COMMUNICATIONS EQUIPMENT. We are now in a position to offer full demonstration facilities on all items in the TRIO range for the caller and as previously stated it is our policy to provide the prospective purchaser with a completely unhurried opportunity to actually try each piece of TRIO equipment "on the air" without any obligation whatsoever to purchase. Whilst on the subject of TRIO equipment it would seem a good opportunity to mention the TS-510 TRANSCIEVER which although now widely used is still perhaps not fully appreciated by the uninitiated. Our object in raising this is prompted by the remarks that are sometimes passed at Rallies and Club meetings to the effect that the TS-510 is presumably a Mark II version of the TS-500. This of course could not be further from the truth as the TS-510 has very little in common indeed with its predecessor and represents a truly complete re-design, with the resultant incorporation of many features which the TS-500 did not have. To the man who is contemplating the purchase of a transceiver there is, without doubt, no better buy on the U.K. market at the time of going to press and it would be well worth a glance at the excellent brochure on the TS-510, which we would be pleased to forward by return of post. Remember, this equipment carries a 12 months' guarantee backed by a first-class after sales service.

Below is our current list of used equipment which is priced to include carriage, except where stated.

RACAL RA153A. TWIN CHANNEL RECEIVER. This is an extremely rare receiver based upon the famous RA17 but incorporating two channels for diversity reception. The same features of read-out, stability, sensitivity and selectivity are employed and the same frequency coverage as the RA17 is provided. Four IF's are used, 40 Mc/s, 2-3 Mc/s., 1.6 Mc/s. and 100 Kc/s. and this particular unit has been fitted with a product detector for SSB reception. This set is not everyone's cup of tea due to its size being of 19" rack panel styling as with the RA17 but having a front panel depth of 15½" and also a separate power supply unit which is not original. However, for the man who is looking for typical Racal performance this is certainly worth considering at	£ 120 0 0	HEATHKIT RA-1 RECEIVER. Complete with homebrew Q Multiplier unit	£ 25 0 0
HEATHKIT SB301E AMATEUR BAND RECEIVER. In excellent condition electrically and physically	£ 105 0 0	HEATHKIT RG-1 RECEIVER. Mint condition	£ 35 0 0
KW 2000 TRANSCIEVER AND A.C. P.S.U.. Excellent condition	£ 135 0 0	MINIMITTER HAMBAND CONVERTER (1.6 Mc/s. IF) Used condition	£ 5 0 0
KW 2000A TRANSCIEVER AND A.C. P.S.U. As above	£ 175 0 0	GELOSO G209 AND G212 RECEIVER AND TRANSMITTER COMBINATION	£ 50 0 0
KW VESPA MARK I WITH A.C. P.S.U. First class all round	£ 80 0 0	HALLICRAFTERS SX122 RECEIVER. Complete with xtal calibrator. Absolutely mint and originally sold by us at £160	£ 115 0 0
LABGEAR LG50 TRANSMITTER	£ 25 0 0	EDDYSTONE EB35 TRANSISTORISED RECEIVER. Indistinguishable from new	£ 46 0 0
EDDYSTONE 840A RECEIVER. Good condition	£ 24 0 0	VENNER DIGITAL TIMER TSA 6614. Complete with manual and in excellent condition	£ 25 0 0
TRIO 9R59 RECEIVER. The model with Q Multiplier incorporated. Very good condition indeed	£ 29 0 0	BC221 FREQUENCY METERS. An excellent selection in stock from	£ 22 10 0
KW VANGUARD TRANSMITTER. Well above average condition	£ 37 10 0	AR88D AND AR88LF RECEIVERS. We have a very good range of these details as per our June advertisement.	
HEATHKIT GR-64 RECEIVER. Absolutely mint	£ 25 0 0	MARCONI TF144G SIGNAL GENERATORS	£ 25 0 0
T.W. TOP-BAND COMMUNICATOR. Complete with excellent homebrew mains P.S.U.	£ 40 0 0	G-WHIP MOBILE WHIPS. Available ex-stock, full details by return post.	
		MEDCO FILTERS. All Low Pass and the High Pass model available from stock.	

For the caller, we have quite a lot of ex-government equipment which is not on display and which is going at silly prices to make space so if of interest be sure to ask at the counter.

Full credit facilities on ALL sales.

S.A.E. with enquiries please.

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Peter Seymour Ltd.

SWAN DE-LUXE CYGNET

Model 270

SPECIFICATIONS :

Power Input : 260 watts P.E.P. in SSB voice mode, and 180 watts in CW mode.

Frequency Range : 3.5-4.0 mc, 7.0-7.3 mc, 14.0-14.35 mc, 21.0-21.45 mc, 28.0-29.7 mc.

C.F. Networks : Crystal Lattice Filter. Same as used in the Swan 500C. 2.7 kc band width at 6 dB down. 4.6 kc wide at 60 dB down. Ultimate rejection exceeds 100 dB.

Grid block CW keying with off-set transmit frequency. Solid state VFO circuit temperature and voltage stabilized.

Receiver sensitivity better than ½ microvolt at 50 ohms for signal-plus-noise to noise ratio of 10 dB. 100 kc Crystal Calibrator and dial-set control.

S-meter for receiver, P.A. Cathode meter for transmitter tuning.

Improved AGC and ALC circuit. Separate R.F. and A.F. gain controls.

Sideband selector.

Voltage input : 200/240 volts 50 cycles, 12-14 volts DC.

Dimensions : 5½in. high, 13in. wide, 11in. deep.

Net weight : 24 lb. £285.

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830/7	£309 0 0

and all accessories—phones, speakers, etc.

KW EQUIPMENT

KW ATLANTA with p.s.u.	£250 0 0
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KW 201 RECEIVER	£111 0 0
KW 1000 LINEAR	£135 0 0

and all ancillary equipment—E.Z. match, SWR meter, etc.

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TS-510

VFO-5D

TRIO's TS-510 has opened countless SSB vistas through its creative design that enables it to operate at constant maximum power with top durability. This transceiver uses a high frequency crystal filter and covers all ham bands from 3.5-29.7 MHz. Because the TS-510's frequency coverage has been compressed to 25 KHz for one complete dial rotation, tuning in on SSB signals is easy. By using TRIO's PS-510 (Power supply and speaker) and VFO-5D (Variable frequency oscillator) optimum results may be obtained. The PS-510 operates on an AC power supply through a 6-1/2" speaker. The VFO-5D has a double-gear dial covering 25 KHz per rotation.

TS-510 SSB TRANSCEIVER

- Receive and Transmit Frequencies: 3.5 MHz-29.7 MHz
- Receive Sensitivity: 0.5 μ V, S/N ratio of 10 dB at 2.5 MHz-21 MHz
1.5 μ V, S/N ratio of 10 dB at 28 MHz
- DIMENSIONS: 13"(W), 7"(H), 13-5/8"(D).

VFO-5D VARIABLE FREQUENCY OSCILLATOR

- Frequency Range: 3.5 MHz-29.7 MHz
- Oscillator Method: VFO unit-clapp Osc. Circuit
Xtal Osc. Unit-Pierce C-B Circuit
- DIMENSIONS: 7-7/8"(W), 8-21/32"(H), 7-9/16"(D)

PS-510 POWER SUPPLY AND SPEAKER

- Designed as an A. C. power supply unit exclusively for the SSB transceiver TS-510
- 6-1/2" communication speaker is incorporated
- DIMENSIONS: 8"(W), 7-1/8"(H), 14-5/8"(D)

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041-771-0364

About time I mentioned second-hand stuff for a change, so cast an optic over, or take a perfunctory butcher's at the stuff listed below. Before I forget—although we'll be at the R.S.G.B. Exhibish 19th-22nd August, we'll be CLOSED THE REST OF THE MONTH. I will be huddled under an umbrella in the teeth of a howling gale on some rain-sodden beach. "Cor," the locals will say, and they ALWAYS say it, "worst August we've ever had—you should have been here last month." Ah well, bash on. So when you 'phone up at 11.30 p.m. wanting something right away, it's a case of Harry Toughers Ole Boy, 'cos I'll be away and we're CLOSED AUGUST except for aforesaid EXHIBISH. Heigh nonny no, get flogging, Lowe.

NEW

Sommerkamp and Inoue, of course, and the new FE-600, which for a 200W p.e.p. 5 band transceiver ain't bad value at £165, complete ready to go. Chances are I'll be sold out, though. Lots of other goodies that I usually advertise, however, and in the second-hand line:—

Receivers

Trio JR-500, £45	FR-100B, £85
Lafayette HA-350, £55	RG1, £25
Hallcrafters SX-111 and matching speaker, £60	SP-600, £85
Eddystone EA-12, £110	H.R.O. p.s.u., 5 coils, £18
KW-77—late model with blue front panel, £70	H.R.O. p.s.u. B.S. coils, £20
BC-639A-100-155 MHz. Requires p.s.u., but very clean and respectable-looking, £12	Lafayette HA-600, £40
Hallcrafters SP44 panadaptor (455 kHz), £25	Eddystone 840C, £30
	Eddystone 888A, £60
	AR88 cabinets by Philpotts, new, £5

Transmitters

FL-200B, £95	DX40U and VFIU, £20
FL-1000 linear, £70	SBI0U, £20
Hammarlund HXL. One linear, £100	DX100 and SBI0U,

Transceivers

Drake TR3, £200	Paros, £100
KW-2000B, £220 (never used)	KW-2000 and A.C. and D.C. p.s.u.s, £140
KW-2000A, £170, (choice of 3)	Swan 350, £170
KW-2000 and A.C. p.s.u., £120	Hallcrafters Tornado, £135

In addition, we usually have the odd bit of test gear and station sundries—send me a large s.a.e. and I'll tell you all about it, including the new FE-600. Got gear to flog? Test gear? If it's nice, we'll either buy it or flog it for you on commission.

Want H.P.? No problem.

Finally, may I remind you—see you at the R.S.G.B. Exhibish 19th-22nd August, but we're CLOSED the rest of AUGUST. Yeah, I know—three times I've repeated myself, but even so I'll bet you ten to one that several hundred chaps, "Always read your ads, Bill, first thing I turn to." will be playing merry hell with me when they get no reply to their 'phone calls.

73 de Bill

P.S. Don't forget our Motorway service for new and second-hand gear, even if you only want to look at it.

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SEQUENCE RELAY. 375 ohm coil. 4" x 2½" x 1", 1 pole C/O. 2 make, 1 break, 15/-, post 2/6.

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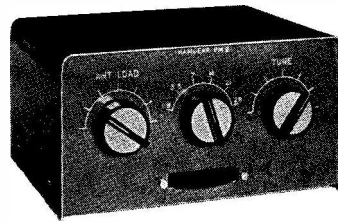
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Trio JR 500	£55
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Hallcrafters SX 43	£35
Trio VFO	£20
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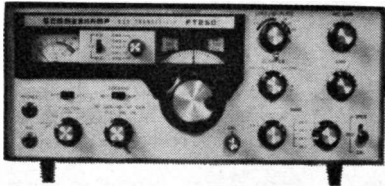
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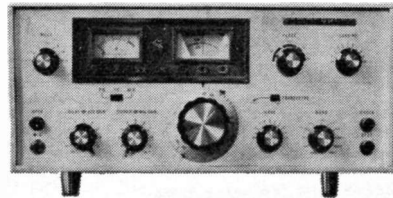
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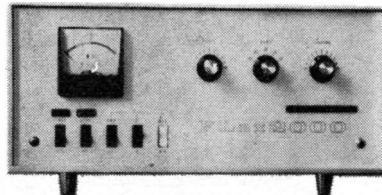
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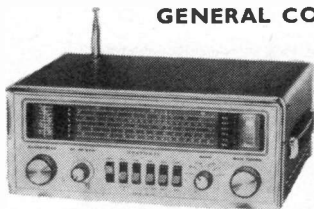
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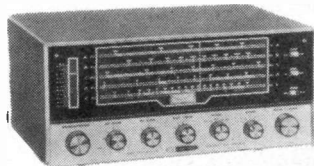
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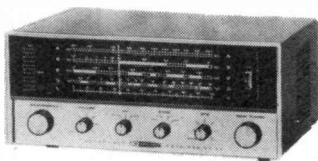
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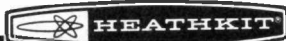
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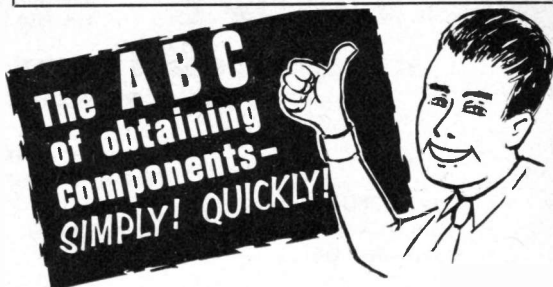
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SHORT WAVE MAGAZINE

(GB3SWM)

Vol. XXVIII

JULY, 1970

No. 321

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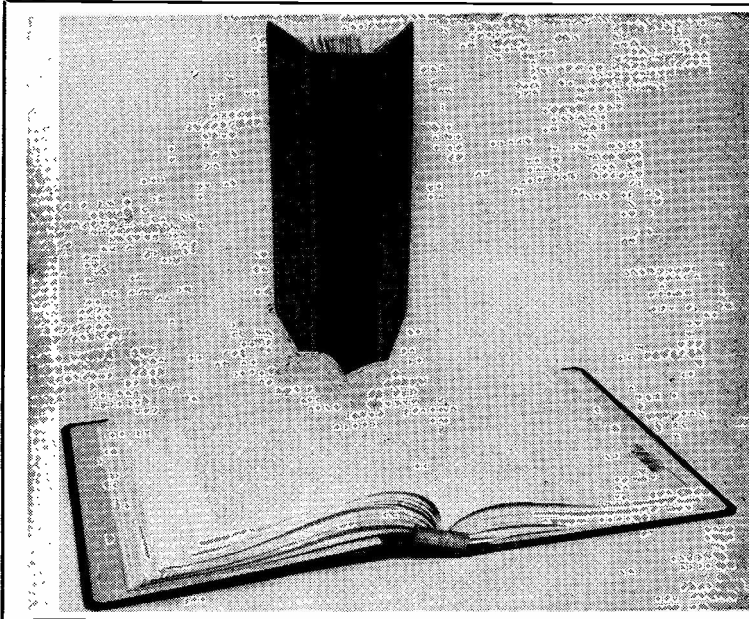
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The SHORT-WAVE Magazine

EDITORIAL

Cards *The subject of QSL'ing in the SWL context has been touched upon often enough over the years — but there are always some things that need saying again, and again.*

The lure of DX makes heavy demands upon its devotees — and not least is that of obtaining firm confirmation of what is entered in the log. To most operators (transmitting and SWL) seriously interested in DX, the QSL card is an essential factor in the scheme of things, crowning results with the proof of ability.

From the point of view of the transmitting operator putting in a good deal of time working the DX bands, things have become very difficult. Cards are often just as important and interesting to him as they are to the SWL, but with quite a different emphasis. He sends, and hopes to receive, QSL's to confirm contacts. And with the volume of traffic on the amateur bands today, this is about as far as he can cope. SWL reports are of little interest to him unless he wants them for a coverage survey (which, incidentally, few transmitters appear to attempt these days), or they tell him something that he could not otherwise know. For instance: That he is being heard in an unexpected direction at an unusual time; or that his CQ was answered by some exotic DX station, unheard; or, that in comparison with other stations in his neighbourhood, he was stronger, or weaker; or that, though he called, and called, and called without result he was being heard by an SWL able to give a detailed report.

The operator behind a call DX for his country of origin is not only burdened with the task of QSL'ing the stations he has worked, but is also (if a regular phone station) flooded with SWL report cards — many of which originate in the U.K. even where G operators are concerned!

In such a case, there can these days be no obligation to QSL, even if an s.a.e., a stamp or an IRC is enclosed. The point is that no AT-station operator can be expected to QSL all and sundry merely for the asking, because time for him is just as important a factor as postage. But the good amateur will always respond to an SWL report which is of real use to him, even if no return postage has been offered. And a good SWL only sends a report where he thinks it is wanted, or could be useful.

*Austin Forster,
G6FO.*

CLEAN CW KEYING

IMPORTANCE OF GOOD SHAPE FACTOR

I. E. HILL (G6HL)

EVERY Amateur Radio handbook carries a chapter on transmitter keying and identifies methods of key click elimination, yet a remarkable number of active CW operators either do not fully understand the problem, are incapable of applying the cure, are regardless of the havoc they cause in congested bands, don't listen to their own signals, just can't read, or perhaps are guilty of the whole flaming lot! There are also the chaps who can't produce a stable DC CW signal and then even try to modulate it, but that is another story.

Particularly to near neighbours (and in the HF bands they can be hundreds of miles away) badly keyed blurb signals are a curse and add to frequency congestion. The annoying thing is that it is all so unnecessary and so easily avoided. This story has been told before but no apology is offered if by repetition a few offenders can be persuaded to put their houses in order.

Years ago, when living in Africa, the writer had a near neighbour who used a 250-watt self-excited oscillator with a T250 valve which he keyed by making and breaking the grid return to earth. A wide-gap relay was used because there was RF on the leads and the contacts sparked freely, causing an appalling noise in local receivers. After lengthy discussion he eventually accepted the suggestion that cathode keying would be better and would automatically put a negative potential on the grid when the key was opened, thus to ensure rapid cut-off and minimum sparking. But that was as far as he

would go, the transmitter keyed on and off and he was making lots of contacts so he saw no real need to do more. Perhaps unfortunately, he had no goggle box gazers to get annoyed and demand action. Forty years later we still seem to have a similar situation and attitude in many quarters.

Keyed Waveforms

It is convenient to start with the simple cathode-keyed amplifier, consider the shape of the signal obtained by keying and note its effect in a receiver. Using a neutralised tetrode, the conventional circuit will be as in Fig. 1, with key connected as shown; the resultant waveform should be as in Fig. 2 but is more likely to look like Fig. 3. The abrupt change from no input to maximum will be resisted by circuit constants and a clean start is unlikely. Typically, one can often see on a 'scope a very short break in transmission immediately following the start. If you don't believe it, feed RF to the Y-plates of an oscilloscope *via* a pick up wire and tuned circuit—Fig. 4. Run the oscilloscope time base slowly; if it is synchronised to the speed of an auto-keyer the waveform can be held stationary for examination.

The Receiver

The effect on the receiver is twofold. The unclean start of the signal of Fig. 3 will give a scratchy noisy effect and the abrupt start and stop will generate transients heard as loud clicks which persist on either side of the carrier frequency, sometimes spreading 100 or more kHz. Even the apparently clean signal of Fig. 2 will generate transients and loud clicks in the Rx. These clicks do nothing to improve readability of the signal—in fact, they have the opposite effect and spreading off the frequency in use causes annoying interference to many others. They can and should be avoided.

Curing Key Clicks

The cure is to slow up the rate of signal rise-and-fall to produce a keyed waveform as in Fig. 5. At hand keying speeds the time taken during build up and decay is a small proportion of the total time of even a dot; the intelligibility of the signal is therefore not impaired. This *can* begin to become a problem with high speed auto-keying and a compromise is necessary, but not in amateur CW working.

Cathode keying is the simplest effective method of keying but it has disadvantages. To minimise generation of parasitic RF input and output circuits must avoid long leads. The cathode is common to both and should therefore be grounded to RF as directly as possible. If the cathode is keyed this grounding must be by use of a by-pass capacitor which should be rated for full plate voltage of the keyed valve and have sturdy short connections from capacitor plates to cathode and earth. Minimum value $0.1 \mu\text{F}$, preferably $0.5 \mu\text{F}$.

With cathode keying the rise and decay time can be slowed down by use of an LF choke and fairly large capacitor. Choke values between 1 and 5 Hy. and capacitor 0.5 to $2.0 \mu\text{F}$ are best found by trial and error. At "break" the capacitor will charge, and then at the next "make" discharge with a spark at the key. This can be minimised by insertion of up to 100 ohms resistance in series with the capacitor. The RF chokes and

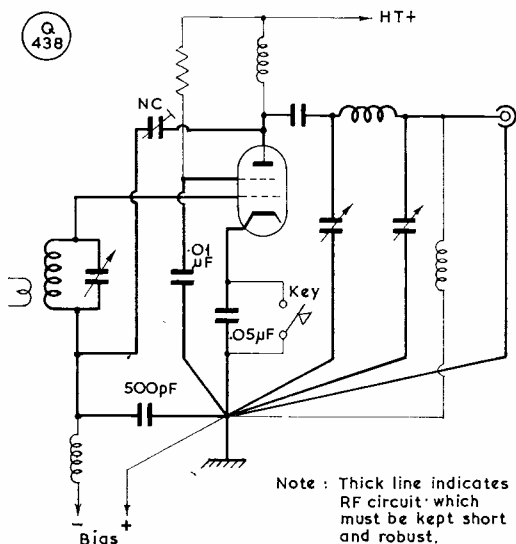


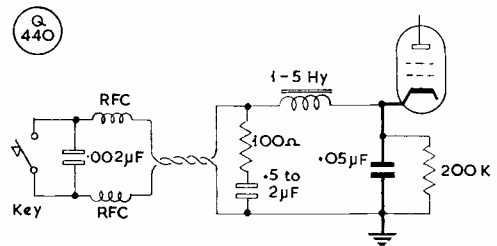
Fig.1 Cathode keyed amplifier.

001 μ F capacitor at the key position in Fig. 6 do not affect the transmitted signal and serve only to prevent the remaining small spark at the key from affecting other receivers in the immediate vicinity.

The combination of choke and capacity can be adjusted to give a satisfactory shape to the keyed waveform but adjustments are interlocked and valid for only one value of keyed current and circuit conditions.

Valve Keyer

If cathode keying is preferred the better way is to use a valve keyer, as in Fig. 7. In this case no LF chokes are required, the time constant of rise and fall being deter-



Thick line indicates RF circuit which must be kept short
 Fig. 6. Click eliminator for cathode keying

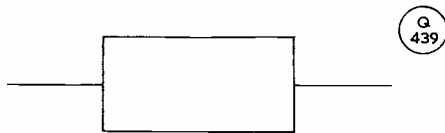


Fig. 2 Keyed signal envelope for Fig. 1 as it should be.

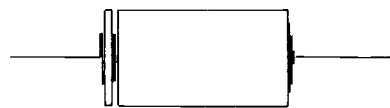


Fig. 3 Keyed signal envelope for Fig. 1 as it probably is.

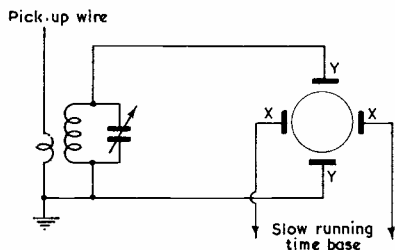


Fig. 4 Using oscilloscope to check keyed signal.



(a) Keyed signal envelope correctly shaped.



(b) Probable actual signal envelope obtained using click eliminator.

Fig. 5 Corrected keyed signal envelopes which will avoid key clicks in receiver.

mined by the R/C values in the grid circuit of the keyer valve and these values can readily be made variable. The key is required to handle negligible current, it is not necessary to use a relay and the keyer can easily be adapted for use with an electronic keying system. The one disadvantage is that there will be an appreciable voltage drop across the keyer valve. This is acceptable in the early stages of a transmitter but becomes more of a problem as one nears the final amplifier and power levels rise.

Blocked Grid Keying

There are various other alternatives which avoid the power loss of a valve keyer but retain convenient adjustment of rise and fall. The one preferred by the writer is blocked grid keying of a driver stage, shown in Fig. 8, p.272. Here sufficient negative bias is applied to the grid of the keyed valve to give complete cut-off when the key is up. When the key is down the negative bias is reduced to the proper working value. Rise and fall constants can be varied by adjustment of R and C values.

With this system and any other involving variation of bias do not overdo the amount of bias needed for cut-off. For example, in the valve keyer and blocked grid cases if -200v. is the required cut-off value, use -220v., but no more. With much higher bias values it becomes more difficult to adjust R and C and enhanced ratings are required for them.

So far we have considered the shaping of a keyed signal at the keyed stage. It is generally preferable to

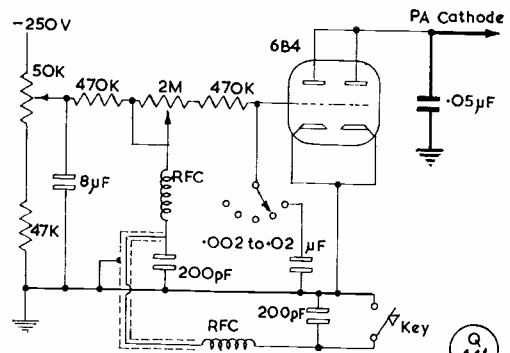


Fig. 7 Valve keyer

Q 441

instance. The two DC inputs are usually called "S" and "C" (for "set" and "clear") and potentials applied to these inputs will over-ride any of the J, K or clock inputs, and will hold the flip-flop in one particular state until it is removed. These inputs can be used to put a number of flip-flops into a particular state prior to commencing a count. They are normally held positive and made zero to operate the flip-flop.

Since the flip-flop has two stable states which can be determined simply by the application of a small pulse, it is sometimes called a "memory" as it will retain indefinitely the state into which it has been put. By this means it is possible to initiate manually a function in the programmer; the flip-flop would remember that initiation and action could be taken on it at the correct time.

The two outputs are usually called "Q" and " \bar{Q} ," Q being positive when the C input is made zero instead of being held positive, while \bar{Q} is made positive if S is made zero.

The proper symbol for the flip-flop is shown in Fig. 15 (see p.221, June) where "T" is the clock input.

Dividers

Since one flip-flop can be used as a *divide-by-two*, it follows that if two are connected in series then a *divide-by-four* can be produced. Similarly, three in series will divide by 8, etc., and this can be achieved by connecting the Q output of one to the T input of the next — see Fig. 16.

Two flip-flops in series will have four outputs (Q and \bar{Q} from each) two of which will be positive and the other two zero at any given time. To make use of these four discrete states of the divide-by-four these outputs must be "decoded" from binary into decimal code, i.e., one output positive for each state while the others

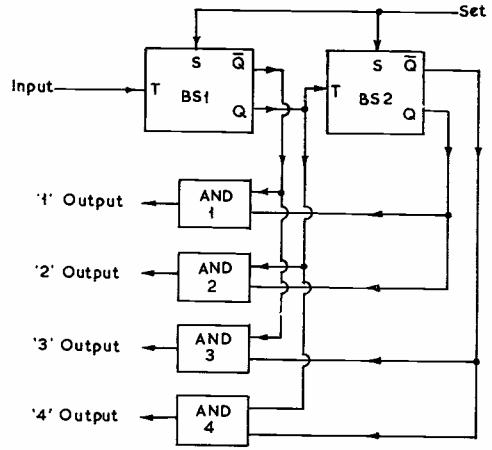


Fig. 18

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Fig. 18. Two flip-flops dividing by four with AND-gate decoders.

remain at zero. This is achieved by using four AND gates connected as shown in Fig. 18, BS1 and 2 being the divide-by-four with AND gates 1-4 forming the decoder.

The flip-flops are set into their initial state by the application of a pulse to the S input; then, AND1 will have its output positive. The first pulse applied to T will move the flip-flops into their second state, AND2 having the positive output. Similarly, the second and third pulses will produce positive outputs from AND3

[cont'd. p. 275

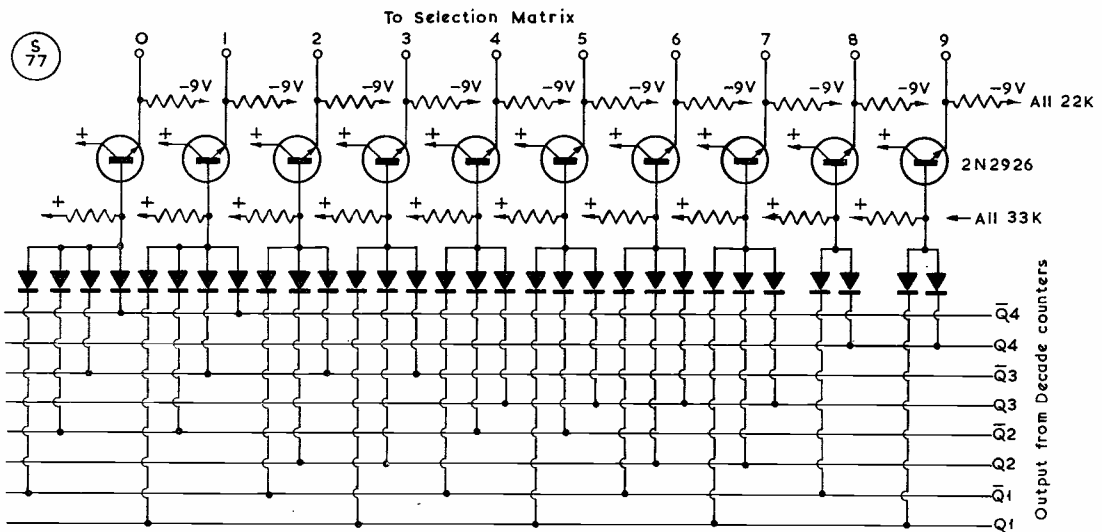


Fig. 19

Fig. 19. Decade decoders with emitter followers.

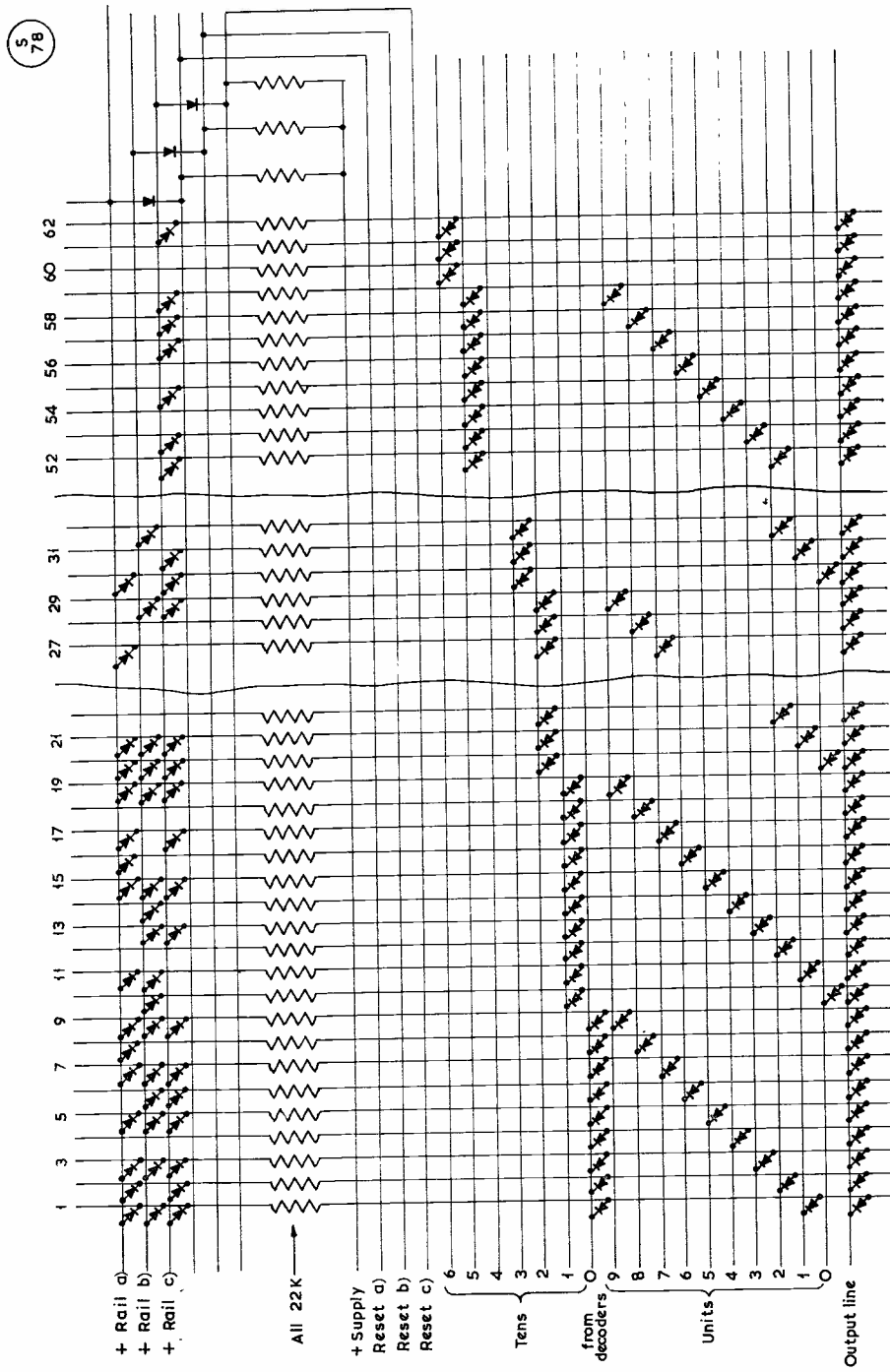


Fig. 20. Selection matrix configuration—see text.

Fig. 20

and AND4. A fourth pulse into T or another pulse into S will restore the initial state.

Decode Dividers

If four flip-flops are connected in series and an input pulse applied to the first clock input it will be found that one output pulse is produced for every 16 (2^4) input pulses. But 16 is not a very useful number and it would be more convenient if the number of input pulses could be reduced to 10, which is more familiar. It is possible to do this by the inclusion of *feed-back paths* in any of 7 or 8 different ways and one of the simplest is shown in Fig. 17, p.272.

The operation of the flip-flop determines that one input must be positive while the other is zero, and here there are 4 flip-flops, hence 4 positive outputs and 4 zeros. The scanner requires that every number making up the count of ten is to be made available and that all ten outputs are at zero potential except the required number, which must be positive. For this reason the outputs of all the flip-flops must be fed into a "decoder" which will convert the 4 positive and 4 zeros into nine zeros and one positive output. The decoder (Fig. 19) consists of ten AND gates and ten emitter followers, one for each output line, and the inputs are connected to the appropriate flip-flop outputs.

One of these divider plus decoder combinations will give 10 outputs (0-9 inclusive) which would provide only a very small amount of information when used in the scanner, so two are used in series. The second one

operates at a tenth of the speed of the first and therefore the first can be called a "units counter" and the second a "tens counter." Both together will select 0-99 when the decoder outputs are fed into an AND gate system, such as that shown in Fig. 5, A being connected to 1 on the units decoder, B to 0 on the tens decoder, C to 2 on the units, D to 0 on the tens, etc., until at the tenth gate S is connected to 0 on the units and T to 1 on the tens. By continuing this process all 100 outputs can be individually selected, and hence up to 100 "dots" can be reconstructed into a complete call-sign or other message. Because of the work it does this part of the generator is referred to as a *selection matrix*.—see Fig. 20. It has inputs consisting of 10 units-lines and 10 tens-lines from the decoders, a number of positive rails depending on how many pieces of information are required to be sent, one signal output and a number of reset lines which when connected to the programmer tell it when a particular piece of information has been covered.

These circuits—or some of them—form the basic elements of the generators and the next part of this article will describe how they can be used to produce complex CQ calls which include band identifications for nine bands, meteor scatter calls with provision for easily changing the call-sign of the station to be called, and a beacon station call-sign generator which sends its own call every minute.

(To be continued)

QRQ CERTIFICATES—R.N.A.R.S.

We understand that by April this year more than 580 certificates had been issued for correctly copying Morse from G3BZU (on schedule first Tuesday each month, 3520 kHz \pm , from 1955 BST) mainly for the basic 20 w.p.m. speed. These QRQ runs also come out at 25, 30, 35 and 40 w.p.m., for each of which a sticker goes with the certificate—and there are not many issued for the latter speeds. Send in your copy, with 1s. in stamps for the basic award and 4d. for a sticker, to: QRQ Manager, Hq. Station G3BZU, R.N. Amateur Radio Society, H.M.S. *Mercury*, Leydene, Petersfield, Hants. The G3BZU boys are certainly providing a useful and interesting public service in the Amateur Radio context, and the probability is that there are far more people trying hard to write it down than ever send in a certificate claim.

J-O-T-A—ANNUAL SCOUT EVENT

The next Jamboree-on-The-Air, the 13th in this series of international events by which Scout groups all over the world are linked by Amateur Radio, will take place over the week-end October 17-18. It is now the tradition that J-O-T-A is well supported by U.K. radio amateurs and Clubs able to offer world-wide working on the amateur bands. So that all likely to be interested will know what is going on, we shall be glad to include any amateur station or Club organisation arranging to entertain local Scouts in a listing to appear in the October issue of SHORT WAVE MAGAZINE. Details asked for are:

Call-sign/QTH of station, bands to be worked and name of Scout group involved. To ensure appearance in the October issue (publishing on September 25) information should be received by or before *August 28*, addressed: "J-O-T-A," c/o Editor, SHORT WAVE MAGAZINE, BUCKINGHAM—and please ensure that this is a notification *separate* from any other correspondence.

SMALL ADVERTISING NOTE

Recently, in casual conversation, a reader mentioned that his Small Adv., in the June issue, produced "an astonishing result." He said he could have sold some of the items offered fifty times over—telephone calls started coming in and callers arrived within a few hours of the appearance of the June issue. In the end, he disposed of the lot and even sold to callers various items he had not thought worth advertising—it was all, he said, "almost embarrassing." Of course, he was offering some attractive items, and not junk. And there is, in our estimation, some pretty interesting gear on offer in this month's Reader Small Advertising—see pp.315-320.

AMATEUR RADIO EXHIBITION

During the period of this event—known variously as the "International Radio Engineering & Communications Exhibition" and "the RSGB Show"—our arrangements will be the same as last year. Our London office is near enough to the Horticultural Society's Hall to make it convenient for visitors to the exhibition to come in to see us as well. Some further details next month. Dates are August 19-22.

QSY DOWN WITH A CRYSTAL

INTERESTING PRACTICAL IDEA

G. P. ANDERSON (G2QY)

WAY back in the Middle Ages (in, say, the 1930's!) it was the practice of amateurs on the HF bands to use crystal control for their transmitters—in fact, one had to submit a frequency calibration certificate to the GPO before a licence could even be issued.

In the writer's case, after much monitoring as a SWL, a crystal was ordered for "7025 kc/s" (kc/s—this was in the old days!) and in due course the certificate was submitted, the licence arrived and we were on the air. In those days new licensees were limited to an input of just ten watts (despite this, one could achieve WAC and WBE without enormous difficulty). For a time all was well at G2QY—but when a Midlands station also selected 7025 kc/s, and monopolised it on Sunday mornings with considerably more power than G2QY could use, it was obvious that something had to be done.

Rubbing down the crystal would, of course, have had the effect of putting the signal further up the band; this

was *not* wanted, as in those days of fixed-frequency transmissions one "searched the bands" for replies to "Test" calls (we weren't allowed to use CQ), and the tendency was to search from the edge inwards. But how to *decrease* the frequency of a quartz crystal?

The late H.A.M. Clark, G6OT, came up with the suggestion that it might be worth trying to increase the mass of the crystal by doping it, for example with Indian Ink. Anyway, it was an idea.

Taking his courage in both hands (crystals were not cheap in those days), the writer applied Indian ink carefully with a small paint brush, with frequent progress checks, until the crystal was on 7001 kHz and still perking satisfactorily.

It was used on that frequency and its multiples as far up as 56 MHz (five metres) for many years, both pre- and post-war, and proved very useful for rapid switch to the edge of the band with no risk of going outside.

In recent years this little rock had been lying in a drawer. But recently, the occasion arose to measure its frequency, and after a bath in carbon tetrachloride (and a lot of polishing of the brass plates in the holder) after 35 years it was oscillating on 7001 kHz.

So the method, which the writer has never seen in print, appears to be a means of producing a stable frequency change downwards in quartz crystals.

NARROW-BAND FREQUENCY MODULATION

TRANSMITTING AND RESOLVING
FM—PRACTICAL CIRCUITRY FOR

VHF

J. H. G. ALLSOP (G3OGX)

This article is based on material which first appeared in the April issue of "Mobile News," published by the Amateur Radio Mobile Society.

—Editor.

FOR some years, the writer has been interested in NBFM for phone transmission on two metres, with which good results are being obtained.

The practical advantages of this mode are:

- (1) Improved signal-to-noise ratio at most signal levels,
- (2) Absolutely no audio breakthrough on other electronic apparatus,
- (3) Very low audio power required for the modulator—typically, 10 milliwatts or less—irrespective of RF output level,
- (4) Relative insensitivity to amplitude effects, giving improved impulse rejection and virtual elimination of "audio flutter" on mobile links.

On the transmitting side, a most effective system is frequency-modulation of the crystal oscillator by the use of a variable-capacity diode. Fig. 1 shows the basic ingredients for such an arrangement, incorporated in a Collins-type CO circuit. A BA102 or similar varicap diode is used with a few volts of reverse-bias applied.

A system similar to that of Fig. 1 could probably be applied equally well to a Squier overtone CO—the top end of the varicap could be taken *via* a blocking capacitor to the "hot" end of the tuned circuit.

Only two transistors are required to produce ample modulating voltage from a crystal microphone. However, it is important that if the modulator is to be used with a /M installation some form of limiting or compression be included within the speech-amplifier—this to avoid over-deviation under conditions of varying audio drive.

Receiver Side

Too few stations are at present equipped with the correct type of receiver for NBFM—and those include many operators actually transmitting it. The result is that—while for most purposes acceptable reception is achieved merely by detuning the Rx slightly off the setting for maximum signal (slope detection)—the full potential of NBFM is not realised. They do not achieve the advantages of a better S/N ratio and AM-rejection which the correct type of Rx would give them. There is therefore a tendency for those using their receivers in the off-tune condition to argue that "NBFM does not have the punch of AM" and that "its range is inferior." With the correct type of Rx these would be found to be quite erroneous beliefs.

Probably the most popular type of detector in use for FM is the Foster-Seeley discriminator, or some

MECHANICAL DESIGN FOR QRO VHF TRANSMITTER

GUIDANCE ON LAYOUT AND CONSTRUCTION

B. A. PICKERS, B.Sc. (G3YUA)

FOLLOWING the publication in the January issue of SHORT WAVE MAGAZINE of an economical high power two-metre transmitter, the writer received a large number of requests for information concerning the construction mechanically and physical layout of the transmitter.

Since publication of the circuit of the transmitter (p.674, January), a switch has been added to enable the operator to select a grid current reading from any stage following the oscillator. This, however, is not essential, as the Tx can be tuned by adjusting the anodes of the driver stages, and observing maximum grid drive to the final amplifier. Also, with 1 kV on the anodes of the final amplifier in the CW position, it is essential not to hold the key down for more than one second. Therefore, all tuning should be done with the residual carrier tuned down.

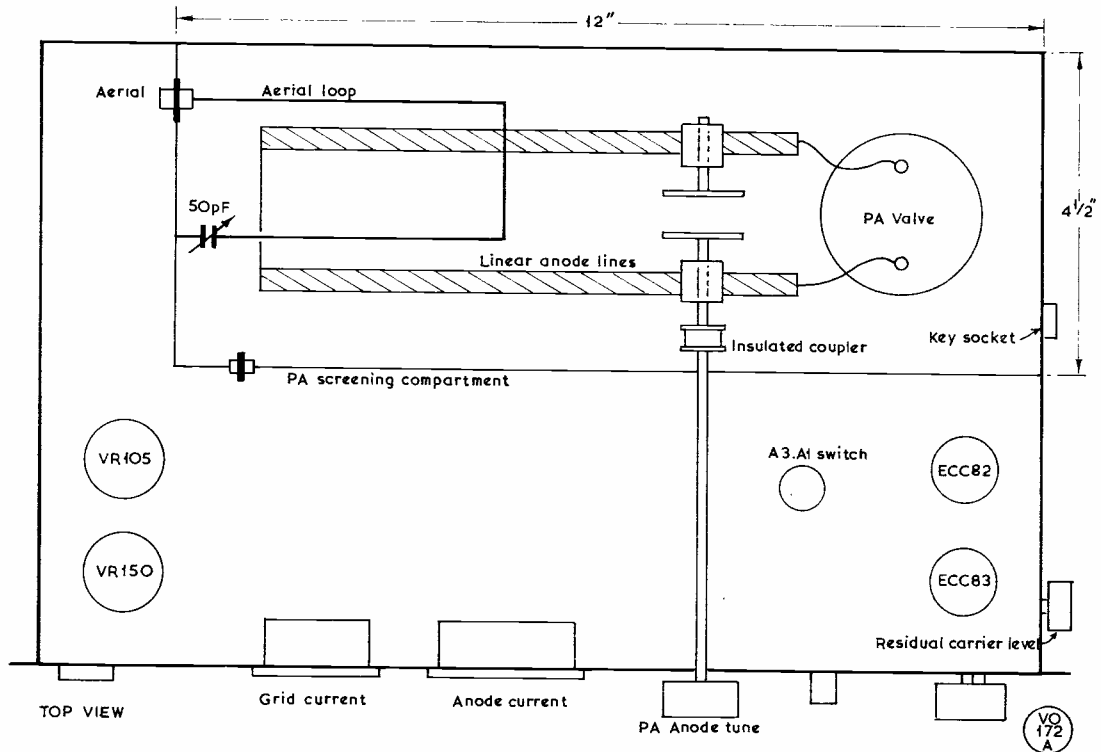
The mechanical construction of the transmitter is indicated in the accompanying drawings. It is on a

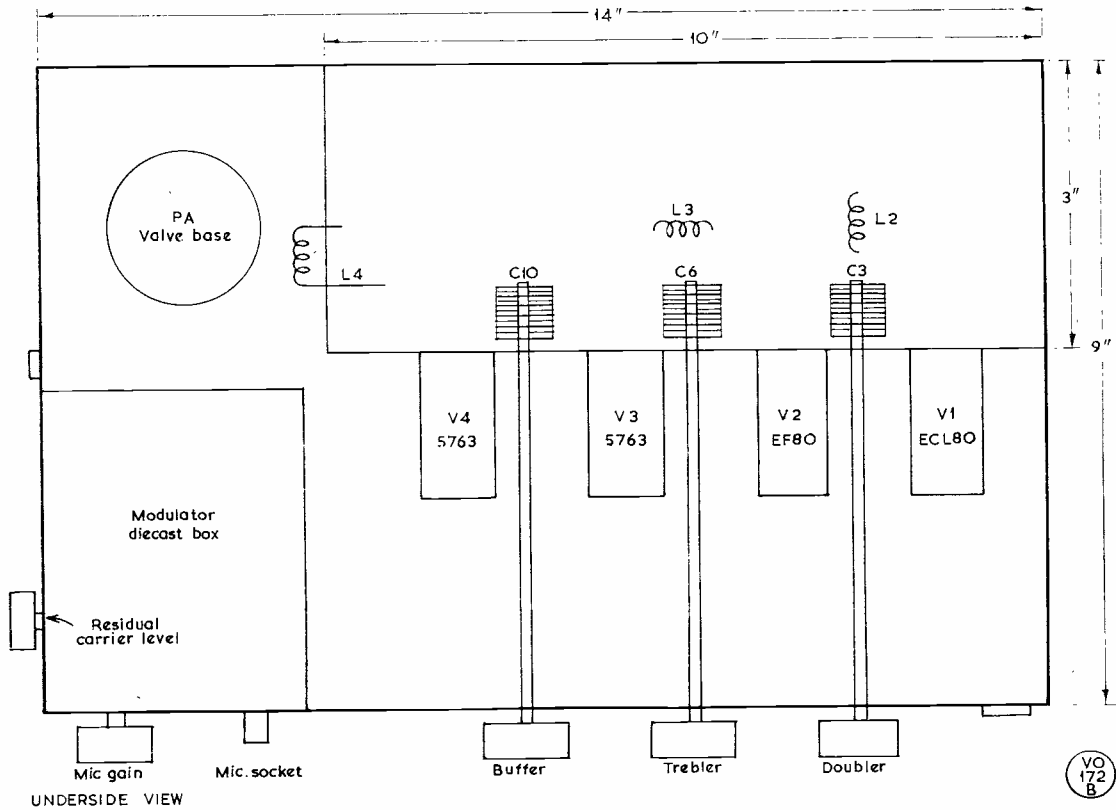
standard 16g. alloy chassis, size 14 x 9 x 2½ inches, with all corners soldered to give extra rigidity. The entire exciter chain was built in a horizontal position under the chassis on a dividing wall of 16-gauge alloy. This reduces the physical size of the layout, and at the same time affords good screening from the power amplifier.

As regards the PA, it is mounted in a screened box on the top rear of the chassis. The front panel, 16 x 7 inches, has mounted on it: From left to right, the crystal holder; grid current meter switch; the 24 MHz amplifier anode tuning; 72 MHz tripler anode tuning; 144 MHz doubler tuning; microphone socket; and the microphone gain control. The top section of the panel contains the grid drive meter, the final amplifier anode current meter, and the linear line tuning control. The residual carrier control is mounted on the side of the chassis, adjacent to the key jack socket in the screen of the power amplifier.

For convenience, the neon stabilisers for the crystal oscillator were fitted on the transmitter chassis, but there is no reason why they should not be mounted on the PSU if this is thought better. A switch on the chassis adjacent to the speech amplifier cuts it out and applies full screen voltage to the power amplifier for CW operation. It is, of course, possible to dispense with this, and to go over to the CW mode, turn down the audio gain and increase the residual carrier level to maximum.

No part of the layout could be called very critical, although adequate ventilation must be provided for the 5763's, which tend to run quite hot, even with only





heaters on! The golden rule seems to be "When in doubt, by pass it with .001 μ F!"

The entire modulator is built into an Eddystone diecast box, size $4\frac{1}{2} \times 3\frac{1}{2} \times 2$ inches, and is mounted under

the chassis in the front right-hand corner. This brings the output of the modulator right next to the screen-grid pin of the power amplifier—see circuitry January 1970 issue.

GOING BACK A BIT

When recently G3SGV (Plymouth) was clearing out his archives and looking over old papers, he unearthed an official letter, dated early 1920 and signed "Secretary, General Post Office, London, E.C.1," to the effect that "restrictions on the sale of buzzers, spark coils, telephones, etc." had been lifted. This apparently harmless prohibition had at that time, 50 years ago, a serious meaning—for the simple reason that a length of aerial attached to a buzzer (or spark coil) could be used as a "wireless transmitter"; it was only a matter of keying the buzzer. And to receive the signals all that was needed was a similar aerial with a crystal detector. This sort of basic communication set-up involved no tuning—range depended on the "urge" employed (density of spark) and the length of aerial; in other words what we would now call shock excitation. And the interesting fact is that, basically, this is exactly the principle used by Marconi in his own early work to prove that wireless communication was possible.

And in case any enthusiast should now think of

re-tracing Marconi's steps to "re-find the data," let it be said that such an experiment (besides being wholly unnecessary) would nowadays not only be highly illegal but also gross pollution of the ether.

INTERESTING FACTS

The latest issue of the Australian *Amateur Radio* in discussing the affairs of the Wireless Institute of Australia (the AX/VK national Amateur Radio organisation) remarks that of the total of 5904 Australian amateurs licensed at the relevant date, only 54% were current members of the W.I.A. For New Zealand the proportion was rather worse—only 49% of licensed ZL's are members of the N.Z.A.R.T., the ZL radio amateur body. This is not as odd as it may seem, because much the same sort of situation applies in the U.K. and also in the States—the national Amateur Radio organisations have always had as members only a section of amateurs licensed. (At the last analysis, the figure for the RSGB was about 54% but for the ARRL only 38%.)

THE MOBILE SCENE

PICTURES OF RECENT EVENTS —ADDITIONS TO THE RALLY CALENDAR

THREE more Mobile Rally events are notified here this month, and we also give further details about some of those already arranged.

Last time—see p.222, June issue—it was mentioned that an increasing proportion of /M licences are held by G8/3's, for VHF. A check with the official P. & T. Dept. return as at the end of April shows that the figure then was just about 10% of the mobile permits in issue. It is also interesting to note that, of the 15,629 U.K. licences extant at that date (A+B), more than 18% held /M licences.

The greater part of U.K. mobile working is still Top Band, though there is a significant proportion on two metres, with quite a number able to operate /M on any of the HF bands. It is they who find that much interesting DX can be achieved by going out with the car to some quiet location clear of the possibility of TVI, whence they can raise (while just sitting admiring the view) stations not only in Europe, but from W6 round to ZS and VK/ZL as well.

MOBILE RALLY CALENDAR

June 28: Thirteenth South-West of England Mobile Rally at Longleat Park—seat of the Marquis of Bath, a stately-home long open to the public, with many unique attractions (like that Lion Park!). Entrance is off the A.362, Frome-Warminster, and

you pay to go in. Talk-in will be given by G3TAD/P, 1920 kHz; G3JMY/P, 70.425 mHz; and G6YB/P, 144.25 mHz, opening on the air at 10.0 a.m. clock. There will be the usual tented trade show, a big raffle and a display by the 37th Wessex/Welch Signal Regt. Ample car parking and picnic space, in a lovely setting unique in the South-West. For many years now this Rally has attracted a large attendance; all they need for another very successful occasion is the Wx.—J. Thorn, G3PQE, Jessamine House, Chapel Allerton, Axbridge, Somerset.

July 5: Cornish Radio Amateur Club Mobile Rally at the County Secondary School, St. Ives. Plenty of under-cover accommodation if wet; all the usual family attractions; refreshments available on site; and talk-in, opening at 10.0 a.m. clock, on 1873 kHz, 70.38 mHz and 144.19 mHz.—M. C. Locke, G3NKE, Hillside, Kehelland, Camborne, Cornwall.

July 5: A.R.M.S. Rally at Alconbury **cancelled**. *New venue and arrangements to be notified later.*

July 5: The annual South Shields & District Amateur Radio Club Rally will be held at Bents Park Recreation Ground, Coast Road, South Shields, with talk-in on 1980 kHz and 145.8 mHz, opening at 11.0 a.m. As in previous years this event will feature trade stands, competitions and prize draws; refreshments will be on sale. This is the South Shields Club's eleventh annual occasion and once again they look forward to welcoming visitors old and new, from far and near.—D. Forster, G3KZZ, 41 Marlborough Street, South Shields, Co. Durham.

July 12: Worcester & District Amateur Radio Club Mobile Rally at Hill County Secondary School, Upton-on-Severn, Worcs. Competitions, sports and games also raffles and trade stalls, with light refreshments available.—A. Ryan, G3VJN, Ahayweh,



Prize-draw time at the Northern Amateur Radio Mobile Society Rally in Leeds on May 17. They had a very large attendance—about 1,000 visitors altogether—in glorious weather. More than 300 contacts /M were made by the talk-in stations on Top Band, 4 metres and two metres. There were about 15 trade stands of Amateur Radio interest. G3MGI, organiser of the event, is seen here making the draw.

Jim Fish, G4MH (centre), of the Amateur Radio Shop, Huddersfield, presiding at his stand on the occasion of the Northern Mobile Rally, Leeds. He had a fine range of attractive items on view. Assistants were SWL Ian Berry and G3XGJ.



- Bridge Street, Lower Moor, Pershore, Worcs.
- July 19:** Mobile Rally at Haldon Moor, NGR. 920807, Dawlish-Mamhead road. (This is a change from the location given here last month.) Talk-in by G3TXG/A on Top Band. Essentially a get-together, organised by the Exeter Amateur Radio Society, for members of their own and neighbouring Clubs, also amateurs on holiday in the district. No refreshments available at the site, so bring your own picnic.—G. Wheatcroft, G3HMY, 27 Lower Wear Road, Countess Wear, Exeter, EX2-7BQ, Devon.
- July 19:** Rally to be organised by the Scarborough Amateur Radio Society, at Burmston Road Barracks.
- July 26:** Saltash & District Amateur Radio Club's Rally, at Saltash School, Weardle Hill, Saltash, with talk-in stations on 160m. and two metres, signing

GB3SAL. Enquiries to: J. A. Ennis, G3XWA, 19 Coombe Road, Saltash, PL12-4ER, Cornwall.

- July 26:** Wessex Amateur Radio Group Mobile Picnic at Stoney Cross Airfield, New Forest. Talk-in on Top Band and two metres.—G. A. Moore, G8BBN, 15 Stanfield Road, Bournemouth, Hants.
- July 26:** White Rose Rally, organised by the Pudsey & District Radio Club, at Allerton High School, King Lane, Leeds 17 (same venue at last year) opening at 12 noon. There will be trade stands, a bring-and-buy stall, refreshments at reasonable prices and adequate car parking facilities. Talk-in by G3XEP/A on 160m. and G3YED/A for two metres. Any further details from G3WIX, *QTHR*.
- August 16:** The well-known Rally event at Derby, the



Assisting "Miss Tullpland" to draw the prizes at the Spalding & District Amateur Radio Society Mobile Rally on May 3 were, left to right: G3XBS, G4OO and G3VPR.

Jack Tweedy, G3ZY, and Anne had a useful trade stand at the Northern Mobile Rally on May 17. The bins of bits 'n pieces are always an attraction on these occasions.



13th in their series, organised by the Derby & District Amateur Radio Society, at Rykneld Schools, Derby. (Details later.)

August 16: Torbay Amateur Radio Society Mobile Rally, at Newton Abbot Rugby Club ground, on the main Newton Abbot-Exeter road. Details: L. Webber, G3GDW, 43 Lime Tree Walk, Newton Abbot, South Devon.

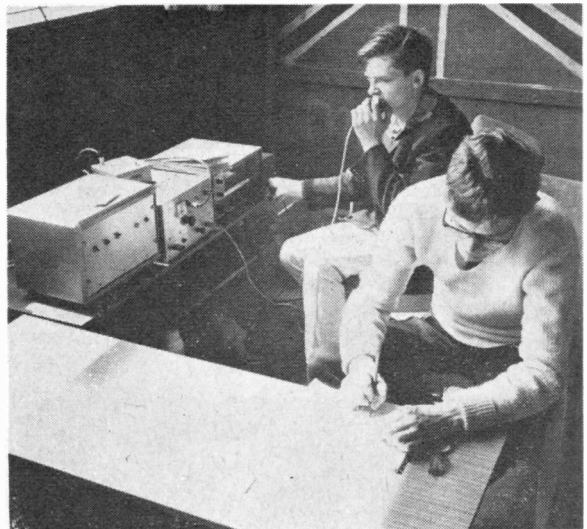
August 23: Bromsgrove & District Amateur Radio Club Mobile Picnic at Hartlebury Castle, now the Worcestershire County Museum. Talk-in on Top Band and two metres, signing, G3VGG/A.—J. Dufrane, 44 Hazelton Road, Marlbrook, Bromsgrove, Worcs.

August 23: Swindon & District Amateur Radio Club Mobile Rally at Wroughton, near Swindon, Wilts. (details later).

August 23: Plymouth Radio Club Mobile Gathering at the Scenic Car Park, Harrowbeer, Yelverton, near Plymouth (details later).

August 30: Preston Amateur Radio Society Rally at Preston, Lancs. (details later).

September 20: Peterborough Mobile Rally (details later).



The two-metre talk-in station for the Northern Amateur Radio Society rally in Leeds on May 17 signed G8BZY/A and was operated by the brothers Mott (G8BZY and SWL).



“ . . . Always envy you mobile chaps, bowling along in the fresh air . . . ”

RADIO AMATEUR CAMPANOLOGISTS

J. Housden, G8CEV, *QTHR*, saw that piece on p.747 of *SHORT WAVE MAGAZINE* for February last and, being a keen bell-ringer himself, asks if there are any radio amateur campanologists in and around Nottingham who would be interested in making up a team to try a full peal of Grandsire Doubles—which would take about three hours to ring.



SHORT WAVE LISTENER FEATURE

THE STATION INSTALLATION HUMAN FACTOR—TECHNICAL DISCUSSIONS INTERESTING POINTS FROM A LARGE MAIL THOSE RUSSIAN PREFIXES—REVISED RULES FOR HPX NEW LADDER FOR BEGINNERS IN SWL

By *Justin Cooper*

IN looking at an SWL station, there are three distinct areas of interest, namely the aerial/earth system, the receiver proper plus its various ancillary items, and the operator himself. Communication as such is hardly the interest—after all is said and done the telephone is available for that, with no TVI; rather is the interest basically one of the craftsman applying his skill to working with his apparatus. As a hobbyist he can produce superb results with equipment that would be laughed to scorn in the professional field. As an active SWL, the interest is in hearing the DX, and the poorer the receiver or aerial, the more skilled the operator has to be to achieve a good result.

However, it is well to look at the ideals on the “machine” side of the interface. Basically, the best possible aerial/earth system to get the signals and the best possible receiver having as much of its gain as possible concentrated in the circuitry lying between the output of the selectivity stages and the speaker or headphones. But—and here is the big “but”—the best is never practicable *all* the way along the line. Thus, in a given location one may have to trade off a beam aerial against good neighbour relations, or a better receiver against the XYL's new furnishings. As a result, the technique of operating the station will become of prime importance, the skill of the OM doing much to offset the disadvantage, whatever it may be, under which the rig is being driven. The fascinating part of it all then comes into play: Trying to achieve an improvement in the ability to hear DX without sacrificing anything in another direction. For instance, J.C. has a 2-ele beam on Ten aimed in a certain direction, but nobody knows it is there but himself! Another chap has a Top Band DX aerial quite capable of giving him WAC without overstepping the confines of a thirty-foot square garden. Things *can* be achieved, by application of sound common-sense and the basic engineering knowledge which should be in any radio amateur's mind, coupled with a bit of logical thinking.

Technical Problems

K. Taylor (Sunderland) wonders about the calculation of inductance and its realisation in practice—he is thinking in terms of building an ATU. Well, now, at resonance the inductive and capacitive reactances are

equal and of opposite sign. Knowing the Q required, and the impedances involved, one can determine the L/C ratio and apply Nagaoka. Agreed—but we are looking for a loaded Q of about 4, which makes Nagaoka's formula a little dicey, and in any case there will almost certainly be tappings on the final arrangement to make mincemeat of the original assumptions, when they are adjusted! Probably an easier way is to start with some simplifying assumptions, and a GDO; guess at a capacity of $1\frac{1}{4}$ pF per metre of wavelength as about right—that is, 60 pF for 40 metres. Wind up a coil, hang it across the tuning capacitor, set the GDO to 7 MHz, and twiddle the capacitor till the GDO shows a dip. See if the degree of mesh looks about right, bearing in mind the maximum value and the shape of the vanes. If not, and the capacitor seems to be too far out of mesh, subtract a few turns. Or *vice versa*, of course. When it looks reasonable, add a link coupling at the earthy end of the coil, and tap the aerial on. Plug the receiver in, set to Forty, and swing the ATU capacitor for a peak in noise; if the aerial is wildly out of resonance, you may find it won't play, but a little fiddling will soon put you in the right alley. After some adjustment and pruning you should get back to a point where the tuning C is about right, and the ATU peaks the signals to a maximum. In fact, if you have a very sensitive GDO, you may even be able to find a dip with the aerial connected, and if it is a long wire, you can bet your boots that the effect of the aerial will be to throw out the resonance, and the GDO will be able to tell you just where it is resonant so you can prune or add turns to bring it back. Unless you are trying to make a coil for a production-run job, this cut-and-try process is by far and away quicker and quite as accurate. However, if you insist on doing sums—and it does help in arriving at the first base—working with the formulae will soon familiarise you with how the right coil should look.

An entirely different problem is thrown at us by *P. Neale (West Bromwich)* who has £25 to spend on a receiver, which will have to serve him for a long time; Peter is clearly thinking that his tastes, which so far have been satisfied by his 0-V-0 receiver, will expand a little and he wants to keep within his limits. Though it is not for J.C. to try to advise readers as to how or where to spend their money—what is “best” for one may be

quite unsuitable for another—the advice in such cases always is: Look through our Small Advertising for something like a second-hand HRO, SX-28, CR-100 or S.640 (and there are others) and then try to get it demonstrated by the owner. Members of the local Club can also be of great assistance in matters of this sort.

* * *

Yet another topic arises in the letter from *N. Mundy (Hucclecote)* who wants to know what he can do to improve the earthing system. If you have an aerial which needs the earth as a fundamental part of its operation, then the more you do the better, although clearly there is a point where the returns are not enough to justify the effort. The ideal to aim at is a sheet of metal, quarter-wave radius at the lowest frequency of operation, with the aerial over the centre. The BC stations use 120 radials as a standard minimum—but for amateur purposes it is enough to say “do all you can to reduce the resistance not only of the actual ground connection, but to improve the conductivity of the ground for the maximum area under the aerial and outwards that you can reach.” This can also mean the connecting together electrically (“bonding”) of all buried metal water-piping and such large pieces of galvanised material (like old tin baths and such) as can be sunk into the ground to a reasonable depth. The station earth connection itself should be made by a heavy lead, such as the standard “earthing wire” now used in electrical installations, to one point to which *all* these connections are brought. And in dry weather keep the main earthing area moist.

Satellite reception is mentioned by *A. Smith (Leicester)* who has been listening to that Chinese wonder on 20-009 MHz. For reception of these beasts, one needs to know the frequency and to have a converter (or receiver coverage) in the satellite band—around 131 MHz in the VHF range. For useful observations this should be backed up by a directional aerial system which can be steered in the desired manner, and some accurate frequency-measuring gear to enable the information telemetered back to be recorded. At the low frequency the converter can be a standard crystal-controlled type, but on the VHF channels a first-class standard converter may be needed and a gainy aerial system. Other useful items are a reliable recorder which is immune to speed variations both in the short and the long-term, and suitable remote-control gear for the aerial in both azimuth and elevation, not to mention an accurate time and frequency standard. Quite an array of apparatus to do the job properly.

Rest of The Clip

It seems to divide itself naturally into three categories—Table entries only, “repeat business” (another satisfied customer!) and the first-timers. Let us look at the latter first, since we seem to have a bumper bundle this time round.

Tony Judge (Bishops Stortford) has a BC-348 to a random-length wire—somewhere around fifty feet of it—which works very well on the favourite band, which is Twenty. Although school work means that most of his listening time has to be at weekends, Tony does his best to get on for the Slow Morse sessions on Top Band, and is already up to around 10 w.p.m. As G3KFE is also a

member of the Bishops Stortford group to which Tony belongs, this rather suggests SWL Judge might be able to brush up G3KFE with *his* Morse!

B. Cushing (Shenley) is addicted to Eighty, on which band he has 115 countries booked in, although he does put his CR-100 on other channels at times, as his first list shows.

Starting last November, *F. Swain (Bodmin)* has run up a total of 375—his three “queries” were all duds—with the aid of KW-201 and Eddystone 840C receivers coupled to a folded dipole, to give himself a good send-off in the HPX Table.

Oddly enough, 375 is also the starting point for the entry of *I. McCabe (St. Annes-on-Sea)* who does not mention his Rx but contents himself with remarking that it belongs to his brother, who is also a keen SWL.

Yet another first timer is *M. Rivers (Whyteleafe)* who has nothing much to say for himself; however, his list makes it very clear that his main interest lies on 14 MHz, the other bands being all but ignored.

R. Banister hails from *Chorley*, Lancs, where he uses a Lafayette KT-320 receiver to a “half-wave on Eighty” end-fed wire. Although he only started his interest in SWL a year ago, he is already up to R.A.E. standard and will be sitting, anxiously, awaiting results by the time this appears.

Clearly *R. Pepper (Bradford)* is a member of the well-known Northern Heights Club, as he mentioned that he bought his present receiver for 30s. at one of their junk sales. Having now exhausted its possibilities, Robert is eagerly awaiting the next junk-sale for a better one!

I. Brown (Newtownabbey) is one of our rare GI correspondents. Irwin is right on a railway line, which results in a small level of electrical noise, but he finds it far from impossible to cope with on his Trio 9R-59, which he couples to a whip aerial or to an end-fed wire.

Either an eight-foot whip or the TV aerial it has to be for *G. Stuart (Edinburgh)*, as he lives in a block of flats. Nonetheless, Gordon seems to be doing quite nicely; and he has taken the good step of joining his local Lothians Club, which he has never regretted.

An interesting first letter has the signature *D. Rodgers (Bolton)* on it. Dennis started out by the accidental hearing of a local G3 on Top Band while he was tuning over the beacons around 300 kHz. From this, one thing led to another, and the present set-up includes a Hammarlund SP-600JX, an Eddystone 770R for VHF, a BC-221, an ATU, a Heathkit 'scope, and various aerials; these include a Joystick, a random-length wire, a vertical for Twenty, and a beam for Two, the latter being rotated by the “Armstrong”—or handraulic” method. Altogether, a very nice set-up!

H. Alford (Burnham-on-Sea) is an old-timer, who has been an SWL since the early 1930's, always on homebrew gear. However, after all these years, SWL Alford decided to make a change and lashed out on an Eddystone EA-12, with which 181 countries have been logged in the last year. Incidentally, he is one of that rare (and disappearing) breed of amateur-band listener who never sends out a QSL card, and has no intention or interest in getting his own Tx ticket.

A receiver which is popular with the SWL's in the U.S.—or rather, was, as it is not now in production—is

being given in full in the latest printing of our New Prefix List, which only costs 2s.—and at the price we virtually give it away!

Still with the New Boys—it certainly *is* a big crop this month!—we now turn to *P. Oliver* of *Mansfield*, who “apologises in advance for a low starting score”—for the very good reason that so much of his time has, perforce, to be spent at the examination grindstone. However, he seems to have had a nose-round on all bands from 1.8 to 21 MHz, to judge by his list.

G. W. Raven (*Lewisham, S.E.13*) has a Heath GR-64 plus Joystick with which to gather his prefixes. Geoff is puzzled by the scathing references to all the ZA pirates, in this piece and CDXN, and wants to know whys and wherefores. The reason is the oft-repeated refusal of the ZA authorities to consider any amateur operation in Albania, either by their own people or by DX-peditions mounted from outside. The twist to the tale is that there is always the off-chance that the ZA you hear *might* be genuine, and so anyone who pops up using a ZA signature (from anywhere) will find takers amongst those who realise that there *has* been operation from Albania in years long passed and that QSL's *have* been accepted by ARRL for DXCC purposes, even though the present official attitude is so violently negative.

After many years away from amateur radio listening *D. J. Love* (*Wigston, Leics.*) was recalled to it by memories of TRF receiver construction and the chance sight of a recent copy of SHORT WAVE MAGAZINE. This led to a B.40 receiver and a 60ft. wire, which seems to be perking quite nicely, to judge by Don's starting HPX entry at 279.

Next, *N. Hydes* (*Darwen*)—the second in this clip from there this month—who found an interesting one in WS2JRA; this was a special-event station run by the Jersey (N.J.) Radio Association. It fooled quite a few people into thinking the U.S. authorities had opened up another sequence of callsigns.

Last letter in the pile of first entires comes from *S. Head* (*Birmingham, 29*) who has his SWL being in a shed at the bottom of the garden after being hoofed out of the house to make more room. Not surprising, when you realise the main receiver is an R.107, which is not exactly small in size. For aerial there is a Vee-shaped wire, about 70 feet long, but only 9 feet high.

And The Others

We now have left a miscellaneous pile of letters, with comments, queries, and what-have you, all mixed up together. Let's have a dip and see what is of interest.

J. Haig (*Hitchin*) was shattered one lunch-time to tune around Top Band and hear a signal calling itself “Radio Free Caroline,” with the voice of a child of 15 or 16 playing pop records. Although John logged the signal as RS-58, your J.C. has a shrewd suspicion it was the image of a signal on medium-wave, or a second harmonic.

D. J. Browning (*Bishops Stortford*) seems to have been putting his time to good use, particularly the morning periods, with a correspondingly large bag of VK's, plus VR6TC, W7 and JA. Part of the rise in his HPX total Douglas generously attributes to the use of his father's receiver, an SX-130. Of his queries, O13 has been mentioned before, but the KJ8 is not so good; in fact, it is

either a misreading or a phoney. (Now, we wait to hear from someone who has just had a KJ8 card!).

Since we last heard from him, *R. Mortimer* (*Abingdon*) has managed a pass in the December R.A.E., which left him the Spring to concentrate on A-Levels, with learning Morse his only relaxation.

J. H. Wrench (*Kidderminster*) has had a query about a mysterious “W1ZT/VT,” on CW—which resolved itself as W1ZT calling CQ in one of the contests and naming his state as the suffix. Now, SWL Wrench has another one on offer in K4JWM/FLA, which comes into the same classification. Vermont for the first and Florida for the second. It is always as well to remember that there is an abbreviation for each and every U.S. state which could be used on CW, and for postal addresses. So—both calls are quite good, but neither of them is worth any more in the HPX Table than W1 or K4. (However, since SWL Wrench listed three “duds” which were all OK, he comes out of the deal one up).

Weather-merchant *J. P. Scragg* (*Stockport*) finds that he cannot get away from Wx in Amateur Radio either—he has logged such interesting calls as K5YHT /AM, who turned out to be a U.S. Met. flight, also various /MM's on the Ocean Weather ships.

The earlier dawn has been wakening *G. Dover* (*Nottingham*), so Geoff has been switching the rig on to the bands and finding lots of AX and ZM prefixes, on Twenty in particular. This is a good point, of course; if a score seems to be static a change of listening hours is indicated as the proper medicine.

If there is room for it, another one is a change of aerial directivity, as *A. Vest* found from *Durham* when he turned his dipole through a right-angle—the result was an enormous crop of S9 JA's!

Oh, dear! *N. P. Taylor* (*North Wembley*) is justifiably annoyed with your J.C., who dropped him out of the HPX Ladder by mistake. Sorry—but we can't always be right; just look at the detail entailed!

All sorts of things seem to be going on for *J. Brackenridge* (*Maybole, Ayr*). Apart from the A-Level work, taking priority, next on the list of things to be done is the erection of a long-wire—this because a coil of garden tying-wire has come to hand. Jim is in one of the few “pockets of high activity” in Scotland, with, apart from himself, another SWL and four licensed chaps within a three-mile radius. Sounds like enough to form a Club?

Although it is also examination time for *D. Smith* (*Nuneaton*) he manages to slip off the hook now and again to visit either G8BEO or G3YTW—but only at the expense of listening time. The exam. pass is the key to career prospects, while social nattering or SWL activities are not. Wise the man who realises this.

Last time round your conductor had to admit to a certain element of surprise at the absence of the familiar handwriting of *H. M. Graham* (*Harefield*), but all is now explained—absent-mindedness, coupled with a short deadline. “ZA1AB” inspires some hope for H.M.G. as the address given was in Tirana (“Radio Dept. of the Electrical Engineering School”) and certainly this “ZA1AB” was heard by many people—but your J.C. has yet to hear of anyone with a QSL card to show for it. Alas, he must be regarded as Ungood till there is clear evidence to the contrary. (Even a printed QSL

card is suspect in this context—see earlier—and the Tirana post mark could be obtained in all sorts of ways!

Those Russian Prefixes

One that caused confusion was the UK prefix now being used by the Russians for their Club calls. The following should clarify the position as it is understood at the time of writing: UK1 is RSFSR *Europe*; UK2A-C-I-L-O-S-W are all *White Russia*; UK2B and UK2P, *Lithuania*; UK2F, RSFSR *Europe*; UK2G and UK2Q, *Latvia*; UK2R and UK2T, *Estonia*; UK3 and UK4, RSFSR *Europe*; UK5, *Ukraine*, (except UK5Ø, which is *Moldavia*); UK6A-E-H-I-J-L-P-U-W-X-Y, RSFSR *Europe*; UK6C-D-K, *Azerbaijan*; UK6F-O-V, *Georgia*; UK6G, *Armenia*; UK7, *Kazakh*; UK8A-C-D-F-G-I-L-O-T-U-Z, *Uzbek*; UK8H, *Turkoman*; UK8J and UK8R, *Tadzhik*; UK8M and UK8N, *Kirghiz*; and all UK9 and UKØ in RSFSR *Asia*. So there is the grouping and, one hopes, an end to all the confusion, which must be as annoying to the Russian operators as it is to amateur-band operators and listeners particularly if they have to explain it all whenever they come on for a QSO! And don't write in asking us where these places are—consult a gazetteer in your local public library, or our *DX Zone Map*!

About three years ago we had an HPX entry from *D. White (East Looe)*. However, "things got in the way," and it is only now that David has been able to put in his latest offering, which takes him up to 406.

Norman and David Henbrey (Northiam) have been writing to this piece for a very long time, although rarely a long letter from either. This time, David and J.C. seem to have got ourselves into a right mix-up over the Table entry; but since J.C. is giving more than David claims, we'll just let it stand at 639 till a recount can be made! However, it does give us the chance to make a point, in the way a Table entry is offered. It is most important to give a last starting figure for any supplementary lists. The reason is simple enough: If the figure you quote fails to tally with the one on our card, then either you have a list that has gone astray or, you have made an arithmetical error. Either way, the slip is flagged up and so can be investigated.

For many people R.A.E. rather "took the stage" last month, instead of just listening around. *C. Price (Bolton)* is one of these, and to him, not to mention all the others who took the Test this time, go all best wishes.

R. Smith (Basingstoke) seems to be splitting his time between revising for A-Level and preparatory design work on a new, all semi-conductorised receiver, which will contain about 50 transistors and, by the sound of things, bear a resemblance to the Racal RA-17 concept. It is a pleasant change to hear of someone doing some building these days.

E. Parker (Hove) has been missing from these pages for a couple of years, but now returns to the scene, having changed his Rx to a B.40, fitted with a pre-amplifier and an S-meter in the meantime. More QRM, a few more prefixes, and a lot more downright bad manners about sums up Ernie's impressions of the bands after his lay-off.

On to *S. Foster (Lincoln)* who will be going to the U.S. on July 21 for three weeks of visiting and convention-

SWL • • • • •

continued

attending—all connected with Amateur Radio! He puts in a bumper 40 new prefixes which should put him quite unassailably out of harm's way at the top of the Table, at least till he gets back; Stewart had 38 of his 40 new ones drawn from the ranks of the "specials." HU was one such from El Salvador; and there were, of course, the ZV, ZW, ZX, ZY, and ZZ's, all disguised PY's; XQ3ZN, who turned out to be CE3ZN; TC2SC was a contest version of TA2SC; WS2 we have already mentioned; WF3 also hailed from U.S.A. As if that were not enough, 4UIITU was said to be signing 4U7 for some special occasion; and there are rumours of a 3X1SJ who was supposed to be QRV from Guinea Republic, 7G1-land.

Still with prefixes, *M. Fisher (Bradford)* claims UK4LAA/100, celebrating Lenin's Centenary, as a separate prefix. Sorry—it's a suffix, although the UK4LAA call is quite genuine in itself. (If we let them, there could be no end to these HPX-claim variations!)

Next comes a question to which we cannot be sure of the answer. *R. Woods (Slough)* asks about the use of the /MA suffix by G Maritime Mobiles. It is believed that this applies to a licensed /MM station when his ship is tied up dockside—perhaps some user of one of these calls would care to elucidate? (Remember, this is quite different from the /AM suffix, which means "aircraft mobile.")

Although *A. W. Nielson (Glasgow)* still has his old receiver fault, and has not yet spliced an end back on to his aerial, he manages to demonstrate how it should be done; Arthur has bumped his HPX total up by no less than 67 this time!

M. Bass (Nottingham) would like to hear from any readers who may have modified a Trio 9R-59DE in any way, particularly towards stabilising the local oscillator above 15 MHz. Write to him direct at 43 Prospect Road, Carlton, Nottingham NG4-1LX, and give him the details. Incidentally, Malcolm is making fine progress with Morse—he is up to the 15 w.p.m. mark.

Someone else with a problem is *T. Hague (Meopham)*, who has a TCS-12 as the basis of his station and wants to borrow or buy a copy of the manual for it. Anyone who can help please write to Tim at 13 Denesway, Hook Green, Meopham, Kent.

A new callsign now conceals *M. Stokes of Wakefield*, who has become G8DMG; he is busy getting the "shop" set up, preparing the garden-shed for its role as the G8DMG shack. However, by now the first call should have gone out—congratulations!

S. Cooper (Aberdeen) wants to know why neither he nor his friends seem to be able to hear anything DX'y on Top Band, the best of his hearings being a GW. This, simply, is the disadvantage under which pretty well all the northerly GM's labour. They are sitting on the older rock-formations, and to put out anything of a decent signal they have to take great pains with their earthing systems, to an extent which would be almost

The SWL station run by G. McBurney (5 Welney Road, Manchester, M16-OEN), who is 20 years old and studying electronics at the Bolton Institute of Technology. Additional gear, not in view here, includes a Trio 9R-5DE, Codar Q-Multiplier, preselector and ATU. The aerial is 63ft., and "bent end-fed."



unthinkable down here in the south of England. That briefly, is the answer!

The HPX Tables

In response to a growing demand, it has been decided to make some changes in the HPX Ladder conditions. First, to give our "new boys"—meaning those who have only recently become infected by the virus—a more reasonable chance, the main Table will have a *revised starting date of January 1, 1970*—so go over your log for the last seven months or so.

At the same time, we are instituting an All-Time Post-War Ladder for the old timers, who must have a qualifying score of 500 prefixes logged before they can even get into it. This will, of course, be for the real experts, whose logs will include many prefixes no longer in use, such as some of those for the African territories and others affected by political changes in various parts of the world during the last 25 years or so. This A-T/P-W Ladder will, for the moment and until we start getting their latest claims, be made up by extracting 500+ scores from the existing files.

Last appearance of the HPX Table as you see it here this month will be with "SWL" in the September issue. The first of the revised versions will appear in November.

Summing it up: The main HPX Ladder in November will be similar to the present one in every respect, except that its starting date will be w.e.f. last January 1. The other Ladder, "the experts' listing," will become all-time post-war with a starter of 500 (we will produce the first showing from the existing HPX Table). And no individual can appear in both. Anybody who has 500 logged since January 1 '70 will have to go into the All-Time!

The only other variation in the Rules—if you can call it that—is that henceforth all claims will have to be strictly in accordance with (a) Our latest *Prefix List*, and (b) The HPX Rules as laid down on p.156 of the May issue of *SHORT WAVE MAGAZINE*.

New prefixes, or prefix-variations, arising from time

to time and which are acceptable as claims outside the current Prefix Listing will be notified in this column. Until they are so notified, they will not be admitted for the HPX Tables (even if reported in the "general chat"). Accepted new prefixes or prefix variations will appear here as "Amendment Notes for Prefix List"—see p.7 of current *Prefix List*. After that, they may be claimed.

HPX entries in the context of the foregoing are asked for as soon as possible, and please make it quite clear for which HPX Table you are claiming—either the A-T/P-W, or the "January 1970." Claims for either should be listed separately, with name/QTH on each sheet.

We have also to add that no correspondence affecting SWL matters can be entered into with individuals, even if an s.a.e. is enclosed. The rule is that all letters from readers are dealt with through the feature. If it were not so, there would be no time to produce "SWL!"

Sign-Off

And that about knocks out the space allocation for this time, due mainly to the record number of SWL letters—each one of which has been read with interest and (we hope and believe) all scores have been taken in. Deadline for next time (September issue) is **July 20**—which gives you nice time to get it all sorted out—and the address simply: "SWL," *SHORT WAVE MAGAZINE*, BUCKINGHAM. Keep the DX ball rolling!

OUR BOOK DEPARTMENT

Over the years, we have always done a large business in books of interest in the radio amateur context. Those titles you see advertised in each issue have been chosen as being the most useful of their kind; are held in stock; prices quoted are post free, in secure packing—and we aim to despatch on day of order. Publications Dept., Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.

COMMUNICATION and DX NEWS

E. P. Essery, G3KFE

SUMMER arrived, with a bump. Not only with hot weather—the longest spell of it your conductor remembers in years—but also by way of the transition from winter-time to summer-time conditions. Oddly enough, while the hot spell has lasted quite a while, it is only at the time of writing that static has become really bad on Top Band, although the weather-men are not yet predicting a serious break in the weather.

But we can't win—when the weather finally breaks and the static dies down a bit the weeds in the garden will also decide to grow twice as fast!

Ten Metres

A letter from 9J2KP (Lusaka) indicates just what 90 watts p.e.p. can do on the bands when the call is a bit DX'ish. Since moving to Zambia early in the year there has been first the business of getting acclimatised; secondly, a staff shortage resulting in excess hours worked; and thirdly the need to erect aerials and things before operation could be commenced. However, in only a few weeks' effective activity, and not much time spent on the bands, some 80 countries have been worked. U.K. contacts seem to have been mainly during the afternoon and on Ten, for which band there is a Cubical Quad atop the pole, although as yet no rotator is available. The change from winter to summer conditions struck Alan as being much more noticeable than it used to be back here, with virtually a complete wipe-out of the bands since the latter end of May.

G3XDY (Wombourne) missed the deadline for last time with his letter, probably due to the pressure of examinations which also gave him shortened time on the air. However, Ten yielded SSB contacts with CR6's, CR7IK, EP2's, HS3ACP, HS5ABD, JA's, KG6AQY, KR6HR, MP4BBA, OD5BZ, RJ8's, RL7GAW, VP2LX, VU2OLK, ZE3JO, ZS's, 4Z4HF, 5Z4LS,

9H1BA, 9J2EJ and 9J2PB during a period of one week centred on April 11.

Looking at the CW end of things, G2DC (Ringwood) found the first part of May quite reasonable, particularly during the morning period from 0900 to 1200z to the South and East. Jack landed four new ones for 10 metres in FB8XX, XW8BP, UA1KAE and VR4EE, not to mention KR8BU, MP4BBA, MP4BHL, LUIDAB, UD6BW, UJ8AB, UM8MAB, VS6AA, VS6AF, ZS1CTC, ZS1LA, 7Q7CZ (who is *ex*-G8CU of many years ago), 7Q7JG, and 9J3ITU.

Although he had a listen round on Ten and heard ZS, LU, PY, and lots of UA's, G3YMH (Staines) only plucked up the courage to put out one CQ call. For his pains, he managed to raise OH1SS, at least to prove the RF was getting out!

What between work pressures and other commitments, G3NOF (Yeovil) has had little time to spare. However, Don noted that conditions were a wee bit odd and monitored Ten as much as he could. This resulted in contacts on SSB with VO1BT at 2119, K4ELK at 2140 and W5FLB at 2208, all on May 11, and with normal beam headings. The following day W2GHK/4 was raised at 1730. On May 20 SU1MA was heard at 1716 and YB1BM worked at 1734, short path. In more general terms, AX6HD, CR6GO, CX, EA6BJ, ET3DS, FG7XL, K4's, LU, MP4BBA, PY's, VO1, VP2AN, VQ9RK, VU2BEO, W5's, ZS's, 4X4's, 7Q7CZ, 9H1CD and 9J5ITU were all booked in.

Although he has not been heard of for a couple of months, G3DO (Four Oaks) has not been wasting his time; quite the reverse, indeed, with FH0VP, CE0AE, 5T5BG, MP4MBC and GC3UML all new countries for the band.

General Chat

ZS5AX (Durban) has been around a long time, and recently worked G6HL again—the previous QSO

was from VQ5NTB 39 years ago. Arthur wonders whether this constitutes a record—but it is thought there are quite a few cases of contacts being repeated after forty or more years. Though there are probably fewer amateurs who can claim to be still active as DX' chasers on the bands at the age of 86, which is the score of ZS5AX.

Talking of ZS, a letter from G3LZQ (Brough) indicates that he will soon be signing /ZS6, and staying in that part of the world for about a year. During the time he is there John is planning to operate from A2C, although the details are not yet finalised. A Swan Cygnet is going in the luggage, along with an Elan beam and an 18AVQ vertical; and if this were not enough, arrangements are being made to "borrow" a couple of opportunely-placed 150-foot towers between which to string an aerial. Top Band has not been catered for as yet, although a general-coverage receiver is also going in the baggage, and listening tests will be carried out—if it looks hopeful, then a transmitter will be built for the band. QSL's will be *via* G3JXE (*QTHR*).

If you worked a "GC8NO" recently, you worked a pirate; the real one reluctantly gave up his call ten years ago, but has recently found himself deluged in cards for contacts made in mid-May at un-earthly hours when he was sound asleep.

From G3YDX (Newquay) comes news that he has found a cure for his TVI when using his KW-2000A on CW. It seems that in his case most of the trouble was met simply by connecting a 1000 pF capacitor across the key leads at the octal socket. The same capacitor applied at the key terminals themselves is completely ineffective! On a different tack, Ron wants to know why there is not more support for the WAB CW net around 3565 kHz at 1800z on Saturdays. If it's the speed of sending, don't worry; there are some QRQ merchants in the net,

but they will always slow down if needed to help a newcomer into the net.

Next, a reminder that if you hear GB3FRE between June 19 and June 28, it will be the Fermanagh Festival station. So if you can, give a call for a pretty rare county. A good indication of the abilities of the operators is given by the fact that last year they were on for five days and managed to knock up 96 countries in that time.

In a letter aimed at Justin Cooper, SWL Brady of Birmingham brings up a point which could well be ventilated in this column, namely the gabbling of call signs. As he says, it is possible that the two stations in the QSO may be very local, but for the chap a bit further afield it can be very frustrating. It can also be very frustrating to a transmitting amateur too—as, for instance, when a call is mis-copied and a DX station is called that is just not there. Putting it in a nutshell, we are talking of the intelligent and courteous use of our bands for giving the most pleasure to the greatest number, which means good and reasonable practice in all operating tactics.

Plymouth Club announce that there has been an amendment to the published rules of the Mayflower '70 Certificate. Log extracts should be sent to G3SPI, 345 Crownhill Road, Plymouth PL5-2LL. Between March 1970 and November 1971 you have to have a QSO with GB2USA, or any three club members, or any three stations resident in the city of Plymouth. Applications should be accompanied by two shillings or two IRC's.

Contests

First some results of the 1969 CQ WW Phone Contest. In the single-operator all-band category the winner was 9Y4AA, who rolled up 4,318,925 points to lead KV4FZ by the proverbial short head. 21 MHz saw G3HCT in second place with a score of 832,016, as compared with G3NLY's third place on 7 MHz with 62,880. G3IGW was also third, this time on 3.5 MHz, scoring 21,775, and GM3YCB amassed 1,080 points for his second placing on Top Band. For the multi-operator single-transmitter winner's place ON4UN made 5,117,716, while the multi-operator multi-trans-

mitter section winner, PJØDX totalled no less than 17,613,400 points to give him a lead of almost five million points over the second placer, 4M1A. Contratulations to all.

The 1970 BARTG RTTY Contest comes up next, the results list showing that IJG was winner, by a clear margin from ON4CK, with G3MWI the highest G at fifth place. Those who wonder whether RTTY is a reasonable exercise on our crowded HF bands could well note that of the 53 entrants five made WAC during the contest, and even the fortieth place-man could show five continents in his log. The awkward one during the Contest was in fact South America, and it was the tail-end of the event when YV5CIP put in an appearance to remedy the shortage. Another one who surprised the few who noted his presence was ZD9BN.

On the calendar in the next few weeks are several Contests; the first one is the Romanian, from 1801z on August 1 till 2400z August 2. Send RS(T) plus serial number starting from 001 serially. Receive the same plus a two-letter code which indicates which county the YO station is in. A fully completed contact rates two points, but a minor error in logging the exchange may only rate one point. The multiplier is one for each YO county on each band in each mode, CW, AM, and SSB—giving a maximum multiplier of 600 for forty counties on five bands in three modes. Final score: QSO points times multiplier. Make up a separate log for each band, showing a multiplier where one is claimed, and the points claimed also for the QSO, either one or two as the case may be. With the logs send a summary sheet giving your name and address,

SIX-BAND DX TABLE

(All-Time Post War)

Station	Countries	28 MHz	21 MHz	14 MHz	7 MHz	3.5 MHz	1.8 MHz
G2DC	338	176	310	329	167	116	20
W6AM	349	148	159	349	143	118	7
G3IGW	211	128	153	168	131	105	47
G3KMA	254	194	186	189	130	55	11
G3DO	338	210	246	331	90	83	9
G3PQF	162	105	47	100	86	65	13
G3XBY	167	110	124	147	74	57	8
63LZQ	265	140	156	215	72	38	8
G3WTV	192	124	118	152	70	72	—
9HIBL	180	111	110	137	64	54	8
G3RJB	171	76	59	156	60	37	8
G3VPS	143	49	46	122	60	38	14
G3XAP	100	44	46	46	60	30	13
G3WPO	104	35	24	66	49	31	24
G3YDX	131	69	76	47	47	38	8
G4RS	175	81	112	124	46	41	13
G3NOF	319	197	223	307	38	60	4
G3VLX	51	7	12	20	7	27	19

Note: Placings this month are based on the "7 MHz" column. Claims must be made at least every three months to retain a place.

claimed score, and details of the rig and aerials, plus a signed declaration, to be postmarked before September 1 addressed to the Romanian Amateur Radio Federation, P.O. Box 1395, Bucuresti 5, Romania. Incidentally, although this contest is unusual in allowing all three modes of transmission in one contest period, it does *not* allow cross-mode or cross-band contacts.

DARC's *WAE Contest* has the CW leg from 0001z Saturday August 8 till 2359 on Sunday 9th, while the Phone end is at the same times for the weekend September 12-13. Rules are exactly the same as last year, with the one exception of the deletion of the multi-operator, multi-transmitter category this time.

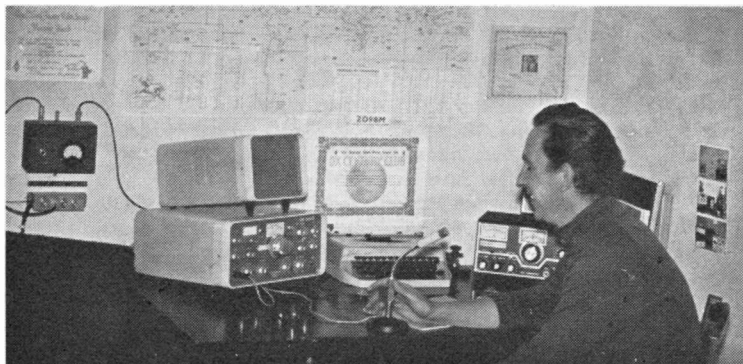
From 1000z August 22 till 1600z August 23 is the time-span allotted to the All-Asian DX Contest, CW only, all bands Top to Ten. Swap RST plus two figures giving your age (YL's send 00). For the Non-Asian countries, the multiplier is the total number of *Asian prefixes* on each band. For a multi-band entry the band score times the multiplier is computed for each band, and the totals added to give the final score. Logs show times in GMT, a column in which to note each prefix as a multiplier when it crops up and the exchange; use a separate log for each band, and add a summary sheet and declaration before mailing the whole caboodle to JARL Contest Committee, Central Post Office, Box 377, Tokyo, Japan, to be received by November 30. If you want a copy of the results, send an IRC with your entry as well.

The LF Bands

W6AM mentions several contacts on *Forty* CW, including VP9BK, TG9CD, HC1CS, OX3ZY, ZS1JX, and WB6QNV (Alex, his grandson —no doubt the latter contact was quite a thrill). As for *Eighty*, one notes SSB contacts with KS6DH, CO2FA and YVOAI, the first two just out of our part for the band and the latter just inside, as well as CW with CR6EI.

Eighty CW attracted G3YMH, in the course of his TVI-killing experiments; in proving himself clear of the bug he worked F, DM, GM and OK.

For the first time in about ten years, GM3JDR (Wick) went into



An interesting and popular DX station is ZD9BM, Roy Folgate (ex-G3KDY), on the remote and exotic Island of Tristan da Cunha, in the South Atlantic, where he is postmaster and superintendent of telegraphs —and so was able to issue himself with the appropriate call sign. It is also his function to operate the local BC service on 3290 kHz and to maintain a scheduled watch on the 500 kHz shipping frequency. The amateur-band gear consists of a KW-2000B and Mosley TA-33Sr., with a Swan 350 transceiver as stand-by, the latter also being used to work commercial radio-telephone traffic with Capetown. As well as the HF bands, ZD9BM also tries 40-80-160m.—difficult in that area, to say the least. All his cards are handled via GB2SM, the well-known Science Museum station operated by G3JUL, on a regular sked. Mail into Tristan can only be expected about three times a year.

serious action on *Forty*, and put up a half-wave dipole at around 30 feet to work 5Z4LW, CR6GO, K2TQC, IS1BDO, CN8DW, ZM3GQ, LU8DKA, 6W8DW, PY7DF and UA3ID/M, all CW; SSB was not so successful, only TF5TP and EI0AO being noted.

G3XBY tried both bands during his week on the air, and both CW and SSB. *Eighty* CW drew a blank, but SSB gave CT2AT, DL4RM/LX, OA8V and OI3QA; *Forty* CW turned up JX5CI and W's, while SSB produced HK3BQA, IR0AMU, LX1BW, TG9GF, VP9GE, W's, XE1LLS and YV1BI.

G3ZAY (Petts Wood) spent most of his time on the HF bands, but did take the odd peep into the dark corners of *Eighty*, from whence his Sideband extracted 3V8AL, TA2E and EP2DX.

Unusually, G2DC (Ringwood) has nothing whatever to say of 3.5 MHz, while his comments on *Forty* imply that apart from a lone QSO with ZM3IS the best DX to be had was W's. Similarly, between gardening and holidays G2HKU (Sheppey) had a lean time of it, and his only contact of interest was with the GB3HRH set-up, which was putting out a cracking signal from Blandford during the Royal visit to the Signals Hq. there.

The 40-metre ground-plane at G3XAP (Stowmarket) is back in action again, despite the calls on his time of final examinations;

the score for the band rises to 60, with UR2ZN, UF6OAA, OE1XRA and CR6GO. Others worked include lots of W's, PY's, LU's and VE.

Top Band

Although his standing in the tables has gone up markedly during the past few weeks, GM3YOR (Kirkcaldy) has in fact been pretty inactive, due to examinations. The rise in the Tables can be accounted for mainly by the activities of GM3SVK /P and GM3LQI/P, plus the receipt of another batch of cards from the Bureau.

G3ZCC (Chingford) sends in a score for the Table, made with the aid of a home-brew rig using an 807 modulated by a pair of 6V6's, and adds a tail-piece to the effect that he hoped to work G3KFE soon. And by the time the letter arrived he had achieved his ambition —and a good signal it was, too, heard from this end.

A very brief note from G3VLX (Sidcup) just gives the Table score and adds "No activity —decorating!" Enough said, Deryck; we all sympathise!

Someone else is suffering too: G3VPS (Hailsham) has moved from his lovely great garden to a place where he has the area of a postage-stamp for his skywires. So far, it has been a matter of dipoles in the loft, and loading up the 14 MHz one against earth to work the locals on Top Band; but at least he now has

the rig alongside the bed instead of at the bottom of the garden, so that a few early-morning sessions are in prospect.

G3YPM (Swanage) has exams. to trouble him, and so has been off the band for much of the month. However, Roger did find time to work GM3UU (Aberdeen), GW3PEA (Monmouth), GM3CAN (Stirling) and GM3OGJ/A (West Lothian), to bring himself up to 75 in the ladder.

G2NJ (Peterborough) only mentions one QSO this month, with GM3DRB/M when the latter was at Pitlochry, Perthshire. Quite some haul for a mobile, which is partly explained by the fact that GM3DRB/M was using CW.

A new entry to the tables comes in from G3ZDY (Fareham) who puts out a thumping great signal to Bishops Stortford with his AM rig. David, incidentally started as a customer of Justin Cooper in "SWL," and also reported to VHF Bands, before turning to this piece—a keen type, obviously!

Once again G3XBY has made his Top Band transverter work, and has put in a little time on the band. CW yielded OL5ALY, G's and GW's, while SSB gave GM3SVK/P twice—Berwick and Selkirk—also G and GW contacts. However, a move of QTH is in prospect, and promises to be very good from the point of view of earthing, at least—and, after all, it is the earth that makes the difference, at least where vertical or Marconi-type aerials are concerned.

No less than nine of his missing counties fell into the G3YMH bag: GM3SVK/P in Peebles and Selkirk; GM3NUU, Stirling; G3UUT/A for Westmorland; GM3XPQ on Shetland; and both GW3LKK/P and GW3SVK/P on Anglesey. For Cardigan there was GW3DRV; Renfrewshire GM3WAH/P; and West Lothian by courtesy of GM3OGJ/P. Ron reckons that so far this year band conditions, as far as GDX is concerned, have been much better than last year, with thumping great OK/OL signals coming in right up to mid-June—

although as your conductor writes this, Top Band noises are S9 plus as the hot spell starts to break.

GB3FI on Flatholm put out a fine signal to G2HKU on SSB, as they did indeed to your conductor and many others—see pp.303-304 this issue. Ted also raised GM3ONS/A in Perth with the same mode, turning to CW to work GM3PFQ, EI9J, and EI0AO on Bere Is.

Top Band operation is somewhat restricted at this time of the year, laments GI3WSS (Holywood), as darkness does not fall till nearly 2300 and dawn comes at 0400; and as if that were not enough there are also the matters of the daily work and the garden to be attended to. Nonetheless, Cyril managed to fill in his three missing Channel Is, by way of GC3GS (Jersey), GC3YPV/A on Sark, and GC3YGP/A on Alderney, as well as following Fred's Tour of Scotland.

The recent *Magazine Daylight Tests* on Top Band seem to have stimulated some random day-time DX-chasing on the band. G3ZAG (London, N.W.9) is quite pleased with himself at having raised G3LQU in St. Austell, Cornwall, and G3CED (Broadstairs) intends to "keep up with this lark for the foreseeable future." His contacts from G3VFA cover various GM3SVK halts, other GM's, OK/OL's, GW's, GC3HFE (Guernsey) one lunch-time and one very long QSO with G3WGG/M from Ramsgate till the latter was in the region of Pevensey, near Eastbourne.

DX-Peditinary Matters

That seasoned old campaigner, Gus Browning, is on the move again, and at the time of writing should have been at Geysir Bank or Juan de Nova, although there was a possibility of him showing up from 5R8 if transport proved to be a difficulty. QSL's for any of his operations should go *via* W2MZV. Incidentally, Gus says his normal operating routine will be on the following lines: Twenty CW, 1100; Twenty SSB, 1200; back to CW at 1300; SSB again 1400; around 1800

"FIRST-YEAR-OF-OPERATION" LADDER

Top Band Only

Callsign	Date Licensed	Counties	Countries
<i>Phone and CW</i>			
G3YMH	3/6/69	89	16
GM3YOR	30/7/69	76	10
G3YPM	20/8/69	75	15
G3ZDY	21/2/70	73	10
G3YXM	1/12/69	72	14
G3YPT	20/8/69	63	14
GM3ZDH	24/3/70	23	5
G3ZCC	12/3/70	20	3
<i>CW Only</i>			
GM3YOR	30/7/69	75	10
G3YMH	3/6/69	69	16
G3YPT	20/8/69	58	14
G3ZCC	12/3/70	19	3
GM3ZDH	24/3/70	17	5
G3YXM	1/12/69	14	3

A first entry to this table must contain a statement of the date of first licensing, or of commencing operations, if later.

sees him on Ten CW; 1830 Ten SSB, then at 1930 it is down to the CW end of Fifteen for thirty minutes, so that SSB can start at 2000; back to the CW end at 2130 till 2200, then a return to Twenty CW. At 2300, down he goes to Forty till 2330, when he turns his attention to 3.5 MHz till midnight; back to 7 MHz CW for a half-hour; at 0030 14 MHz CW till 0100, when he goes to 3.5 MHz CW. At 0130 he is back on Twenty CW for 90 minutes, until 0300 when he turns his attention to the SSB end of the same band again. That stint being finished, Gus then calls it a day. Some day at that!

G3UOL (Coventry) makes a welcome re-appearance, to let us know he will be doing some /P CW operation on *Twenty* during his five weeks tour of Europe. Bill has G3ICZ, G3UOL/LX, ON8IT and F0JA already granted, and has hopes of a CT1 call materialising as well. He is QRP on 14047 kHz with a 5763, and would appreciate the odd contact—but your conductor suspects that with the C31 call at least, trade may be uncomfortably brisk.

From G3ACQ we have news of the revised dates for the VE3BWY expedition. July 15-18 is Dominica; 20-23rd St. Lucia; 25-28th to St. Vincent; the last two days of the month in Trinidad; the first two of August Tobago, and ending on August 3 in Barbados. Operating frequencies will be, for CW: 3525, 7005, 14025, 21025, and 28025 kHz. SSB operation will be on 3795,

Reporting the HF Bands

7095, 14195, 21245 and 28600 kHz. On all bands the aerial will be the 18-AVQ.

Now to the more domestic type of expedition, aimed in the main for the LF-band wallahs. GM3FSV (*QTHR*) says he is going to be in Orkney during August 3-10, using all bands but stressing 160 and 40m. for the benefit of the WAB types and county-hunters. Anyone wishing for a sked should drop Otto a line direct, giving a couple of alternate dates if possible.

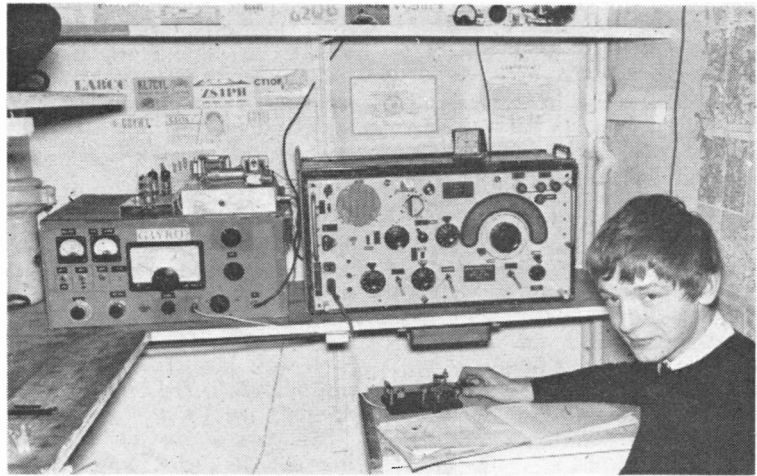
GM3YRK (Glasgow) and GM3SSB are off on a trip starting August 1 and between then and August 6, they will travel through Stirling, Perth, Angus, Kincardine, Aberdeen, Banff, Moray, Nairn, Inverness and Argyll. They will be using 7060-7080 SSB and 1830-1840 kHz CW, plus the odd session on 1875 kHz SSB when they are /P. No decision as yet on which counties will see the overnight stops, as they are still open to suggestions—letters direct, please. After the return on August 6, they set off again on the 7th, heading for London via Birmingham and the motorway, with /M operations again on *Forty*, but also on *Eighty*. The idea is to attend the Woburn Rally on August 9, then on to Kent, to visit a certain well-known establishment in Dartford, round the South Coast mobiling and operating /P at night, with the return to base down for either August 15 or 16th. All contacts, either with the mobile or from the /P operations will be QSL'ed via the Bureau, or, on receipt of an s.a.e., direct.

Short notice for this one; G3YJI (Walton-on-Thames) is going to Guernsey, and hopes to be operating from there over July 2-9, looking for *Top Band* contacts in the late evening.

On a slightly different tack, if anyone is looking for a nice DX'ey spot to retire to, *CQ PA* of May 29 has a list of 66 countries in the Summer 1969 *Call-Book* which have fewer than ten transmitting amateurs. And there are some nice spots in the list, at that.

Fifteen Metres

It is most frustrating to listen to all the DX on this band and not be able to get at it due to TVI, says G3NOF, a sentiment with which all of us would agree. That is bad enough, but the World Cup has



Station of Peter Wilby, G3YRU, Home Lea House, Wood Lane, Rothwell, near Leeds, who came on the air last September after having had three years as an SWL. The gear now in use consists of a much-modified R.107 receiver and a home-built 50-watt Tx for 10-80m., the aeriels being dipoles for 20 and 40m. and a 150ft. wire for the other bands. More than 60 countries have been worked, DXCC being the present objective. Peter is aged 17 and still at school—he hopes to go to Manchester University next October.

made matters even worse as Don could not use the band after normal viewing hours, as he has been wont to do on occasion. There have been some good openings at odd times; on May 23, KJ6CF and several KH6's were heard from 0700 to 0900 with the beam headed North; Similarly on May 26, when the opening was from 0900 till 1300. JA's were in on the same day from 0900 till 1830, and on the following morning there were KH6's, KL7's and KJ6CF again. Morning VK's have been few and far between, but the odd one has been heard around 2300. SSB contacts were made with FØRT/FC/P, JA's, HS3ACP, KH6DQ, KH6GQI, K6UNT/KL7, KJ6CF, KL7HBK and KS6DH.

Another strictly SSB merchant is G3ZMI (Maltby), who at the time of his letter had scratched up 101 countries in his first two months of operations using commercial gear to a "5RV" aerial. Fifteen showed him the way to CR6FA, ZS6AMP, VS6AM, 6W8AL, CR6KV (with whom he ragchewed for 90 minutes), 9Q5LB, EP2SW, 8QAYL, W6MSM, VP9MI, LX1BB, 7Z3AB, 9Y4CR, CE7DW, TI2FCD, 9H1BT and TJ1AU.

A definite preference for CW is becoming evident at G3YDX (Newquay), which is being emphasised by the fact that he is clear of TVI in that mode. Thus, Ron used his

key to open a door to HS3ACP, HS5ABD, JA7GZN (who was called and worked on five watts) KL7CYL, KR6AY, TJ1QQ, UM8AP, VP9GD, VU2OLK, VS6's, 5T5BG, 5U7AW, 9M2FK, 9Y4VU and ZM1AAT/K.

The score at G3DO rises steadily, and during the period we are reviewing his heart was gladdened by three new countries for *Fifteen*, in the shape of FHØVP, CEØAE, and 5T5BG.

Not so with G2DC, who reckons that after its good showing through the Spring it really fell off towards the beginning of June, particularly during the afternoon, when nothing but JA's and hash could be heard. Contacts were made with KR8AE, KH6AIO, UK8AAA, UJ8AB, UM8AI, VS6AA, VS6AF, XW8BP, ZS4AP, 7Z3AB, lots of JA, VK, ZL and W's.

Since the beginning of the year G3ZAY has racked up 127 countries, his main activities being concentrated on 14 and 21 MHz. The latter band yielded SSB contacts with AX9XI, CR6, CR7's, CE's, CN8's, EL2CC, EP2YL, FØRT/FC, FL8MB, FM7AA, HR1WSG, HC2KF, HS1ABU, HS3ACP, HS5ABD, JA's, KV4DC, MP4B's, MP4M, MP4T, OA4CCS, PY's, VU2OLK, WA5KAK/KG6, VP9's, VP5's, YV's, ZS's, ZP5DV, ZE6JS, 5Z4MO, 5H3ML, 7Z3AB, 8P6BC, 9M2BO, 9M2KC, 9V1ME, 9J2PV,

VS6AA and VS6DO—although even at that Martin failed to connect with quite a few, among them Gus on his stop at FHØVP.

GM3JDR is back in business, and, as usual, manages to put in a hefty list on both CW and SSB. The former showed up 6W8AL, ZM1AAT/K, TJ1AW, VS6BL, KR6AY, ZE1CR, UL7YR, JA3XPO, PA6AA, PZ1AH, CX4CR, HS5ABD, assorted JA, PY, and LU, MP4BIA, 9J2PV, VR2FO, and HL9WF. When the wrist became tired, the mike was put into service, to raise HR3AC, HS1ACW, CT2AK, VS6AM, JH3, lots of JA's, HI8DJA, UAØSU, UK9CAM, UWØIQ, YBØBD, VQ8CZ, KS6CY, KA2EN, KL7BHK, FØRT/FC, KH6KAG, 4S7AB, KH6BB, KH6COB, KR6MH, ZE1BP, CE3FI, EP2BQ, OA4LA, PZ6ITU, PZ1ITU, VEØNED, HL9UZ, 6W8AL, TU2BB, KG6AAY, PZ2ITU, PZ9ITU, PZ5RK, 5H3MB, 7Z3AB, YV1PZ, LU6MV, KJ6CF, ITØARI, KR6JK, 9J2PV, VU2OLK, XW8DZ and VO1DE/VE8.

Most people by now will be aware that ET3USA, 9E3USA, and 9F3USA are all one and the same station; but it is possibly not so well known that there is no local rainfall where they are and every drop of water has to be carted up daily.

G3YMH made his first foray on 15-metre CW simply to show a visiting SWL how the machinery worked. Loading up the Top Band wire to 150 watts was a bit tricky, but then a CQ yielded three JA's on the run, after which an impressed SWL went home and Ron shifted smartly back to Top band lest he be upsetting the TV's!

SSB only, at least on this band, from G3XBY, who offers CR4BC, CR6JS, CN8DW, HS5ABD, JA's, KL7GSG, PJ9GR, SVØWI, UD6BD, VK9GN, VE5US, 4Z4's, 4U1ITU and 9Q5GJ.

As already remarked, G3VPS is back at the experimental stage after his move with dipoles in the loft; bent at the ends though they be, the 21 MHz one seems to be perking quite satisfactorily, as suggested by reports from UL7, W, 9H1, 9J2 and 9V1.

Twenty

It could well be summed up as a distillation of all the hopes and the snags of DX-chasing on any band, and the one to which the faithful return eventually, no matter which other allocation they try out.

Although he is frequently listening as early as 0630, G3NOF often gets the feeling that he is in too late for the best of the opening. Daytime conditions have seemed pretty poor, and yet in the middle of it all S9 AP's, HS's, VU's, YA's and 5Z4's have popped up, while around 2300 the band has opened up well to the Caribbean and Central/South America. Contacts were made with AP2KS, AX's, HS3ACP, HS4ADF, VU2BEO, W7's, YA1EXZ, 5H3ML, 5Z4GK, 5Z4MO and 7Z3AB.

G3ZMI is really going on 20m., and already has collected *twenty* AX's towards the Cook Award, plus W, JA, JX4GN, PZ1AV, PZ2ITU, 4X4MS, 6Y5EM, VP2GLE, 8P6's, HV3SJ, CN8AG, CE3ZN, ZD7SD, OX3CJ, JW7WM, ZP5GJ, LU, OA, YV, 8R1J, CN8's, 9Y4VV, VP2AP, TI2JCC, 4U1ITU, TF2's, 9M2JW, ZB2BL, VP8LR, YA1EXZ, UR2CW, KH6HI/WA2(!)

and 3V8AL.

G2DC found the band reasonably good around the clock, although rather crowded out with strong Europeans during the afternoon. The early-morning period from 0600 to 0900z produces a goodly crop of VK/ZL with sometimes a sprinkling of W6 and W7 all workable, also the Pacific area, with the reservation that these latter are usually more interested in working W's than G's. Nothing new came his way during the month, says Jack, although he had contacts with KR8AE, KH6AIO, UK8AAA, UM8AI, VS6AA, XW8BP, ZS4AP, 7Z3AB, lots of JA, AX1-7, ZL1-4 and all W call areas.

Sideband only from G3ZAY, who used it to work CE's, LU's, PY's, JY1, VP2AN, VP2VI, VP7NA, VP7FA, VQ8CR, 8P6BC, 9Y4KR and KP4YD.

By the time this is written, G3YMH will have finished his examination stint for another year, and he then proposes to have an all-night session on the air, in an endeavour to work a few new ones. To keep his hand in, a few late-evening sittings dished him up CW contacts with YT, YO, UL7HD, UY5, UK9HAA, W's and VE's.

A mixed bag for G3XBY gave CW with OX3ZO, PJ2FM, TA1WR, and VP7NA; SSB did the rest, among which were C31CT, CR4BC, HK4AXW, HU2CEN (who proved to be YS2CEN in disguise) IRØIJ, IS1LL, KH6SP, KP4ES, KS6DH, KV4FZ, OG1VR, TC2SC, TF2WKF, TF3BB, VE's, ZE1CY, ZM4BO, 4Z4HF and 9Y4VV.

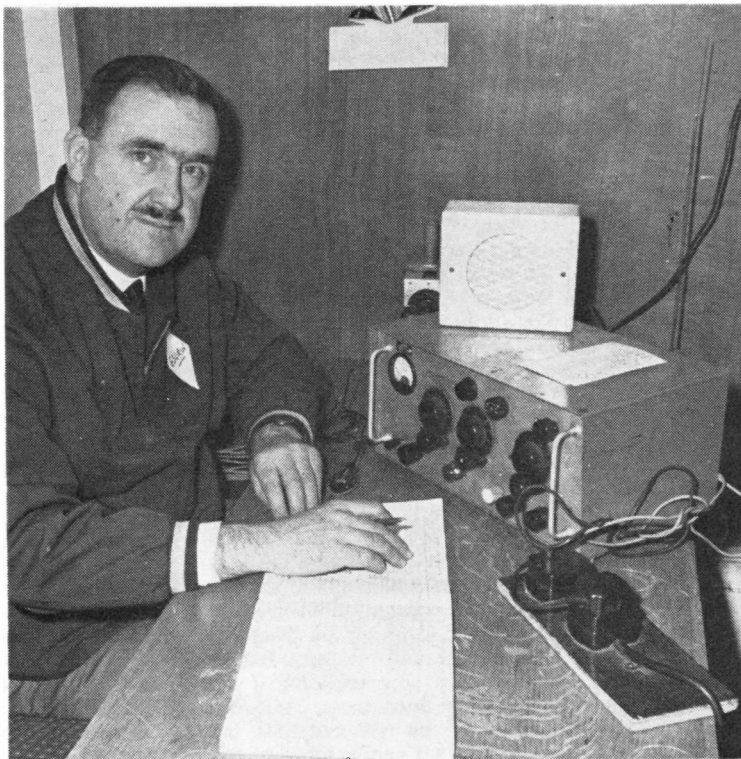
G2HKU had his usual early-morning session on the band, which netted him FØRT/FC/P, VK3BCR, W6PJX, WB6YUE, AX3ALL, ZL3JQ and ZL3SE. These were all SSB, but CW produced LU4ECO, VE2ADZ, WAØPTV (Iowa) and PY7AWD/Ø, the latter being a new country for Ted. Incidentally, as a tailpiece to his letter, G2HKU claims he can tell it is summer by the /M visitors to the Island, among whom he numbers the BBC with their microwave link, and the GPO with a TV Detector van!

After a start on 40 and 80m. GM3ZHG (Glasgow) wandered up to Twenty, where he was surprised to hear quite a number of EU's on AM; as he only has CW and AM, he decided to have a little stab,

**TOP BAND COUNTIES
LADDER**

Station	Confirmed	Worked
<i>Phone and CW</i>		
G2NJ	98	98
G2HKU	98	98
G3WPO	94	96
G13WSS	94	96
G3VLX	95	98
G3XTJ	86	94
G8HX	85	89
G3XDY	79	95
G3KFE	52	78
G3LXD	44	68
<i>Phone CW</i>		
G2NJ	98	98
G3VGB	91	97
G3WPO	90	91
G3PQF	88	98
G3XTJ	68	84
G3XDY	53	86
G13WSS	51	73

(Failure to report for three months entails removal from the Table. Claims may be made at any time. Six months of "Nil" reports will also result in deletion.)



Neat Top Band transceiver operated by G3URW (Heaton Moor, Ches.) as talk-in station on the occasion of the Northern Radio Convention at Belle Vue, Manchester, on April 26.

and was quite surprised, not to say pleased, when he raised a couple of UK's, a brace of 3Z types, CT1KHT and EA3JK to open his account for the band. We are always interested to hear of the doings of those new on the air.

Conclusion

There we are again for another month. Thanks for all the interesting mail, and long may it continue. For next time, the deadline is Monday, July 13—and here also

are closing dates for the next few months, which will help those who correspond by airmail: August 10, September 7 and October 12—addressed as ever, CDXN, SHORT WAVE MAGAZINE, BUCKINGHAM. 73 de G3KFE.

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VHF BANDS

A. H. DORMER, G3DAH

PROPAGATION conditions on two metres have been generally above average since mid-May with the advent of the better weather. Several slow-moving, high pressure systems have crossed the centre of the country, giving good DX along the North/South path, although contacts over 100 miles or so have been subject to very heavy QSB. This has taken the form of both long, slow fades as well as several instances of "puffer train" flutter.

May 16, in particular, was unusually good for working to the East, with DL, PA and ON all good two-metre signals in the early evening. The French beacon, F3THF on 144-007 MHz, has been heard regularly, but activity from the South has been low, the exceptions being the appearance of F9NL in the Pyrenees working G on several occasions during the first week of June, and the report from G3PRX, Rainham, Kent, of EA4DA on CW at 2130 BST on June 2. The Cornish beacon has been fairly consistent at above-average strength, although very few signals have been easy copy from the West or South West. One might have expected more QSO's with EI and GI during the period of the EI2AX trip, particularly in view of the publicity. Admittedly, the expedition had the advantage of some pretty elevated sites, but they made it with hundreds of G stations all over the country from some sites well inland, and signals from the East of Eire and Northern Ireland should have been copyable if the activity had been there. G15ALP was audible on CW and SSB, but no other EI/GI were at anything like good strength. GD2HDZ was a steady signal towards the end of May, and the first week of June brought some very good DX into the South, from Lancashire and Cheshire in particular. Other

outstanding signals came from GW8ACG/P in Flint, and G3NWU/A in Durham, who were heard knocking off the DX at a good rate.

Conditions on 70 cm. have not shown the same lifts as on Two, although propagation has been good from time to time, as evidenced by reception reports of the Sutton Coldfield beacon in the South, and the middling-to-good signals from GW8AWS/P.

Four-metre propagation came up out of the dumps with some good Sporadic-E around May 25, the Gibraltar beacon, and ZB2BO, being at "5 & 9" for long periods in the afternoon. Otherwise, that band has been pretty undistinguished.

Contests

Conditions during the 70 cm contest of May 30-31 were very variable. Best results seem to have been achieved by the Midlands stations—at least they appeared to be passing higher scores than those in the South, although one doesn't know, of course, whether most of the contacts were with locals, and the final score low. The period was characterised by longish spells of poor propagation interspersed with sudden lifts. Two good examples of this were provided by the Welsh portables, GW8BVP/P and GW8AII/P, who were going between



Attendance group at the EI/VHF Convention, Birr, Co. Offaly, on May 24. For this first such event in Eire, reported as having been most successful, they had a total of about sixty, including friends and visitors from outside Eire. The convention was organised by EI7AF/GI3UIG and the EI boys hope to lay on a similar event next year.

S7 and zero while working stations to the East of them. The weather was generally overcast during the contest, although the pressure in the Midlands and the South was high at around the 1030 mB mark. One gets the impression that activity was lower than last year, and seventy to eighty QSO's was probably pretty good going, with best DX rarely above 250 miles; for example, the G8DIZ/P contact with GD.

It was good to hear quite a number of very new call signs on during the event, and to note that their operating was generally of a high standard. Some of them do not quite seem to have grasped the fact that if one uses anything more than, say, fourteen elements on 70 cm., a great deal of beam swinging is going to be required to bring in the contacts. These beams, with their very sharp horizontal patterns, will certainly compensate to some extent for low power and poor converters, but must be used intelligently for the best results. The built-in QSB resulting from movement of the elements in high winds is another factor to take into account—the heading really must be spot-on.

Dates for the diary are: July 4-5 for the 144 MHz Open; July 26 for the 432 MHz Open; and August 10 for the two-metre SSB event.

The B.A.R.T.G. VHF RTTY contest has been put back to October 24-25. Rules for this will be published in due course.

The Scottish Scene

The G8AMG/M trip to GM seems to have gone off to the mutual satisfaction of all concerned. Mike was welcomed to Scotland by GM3OXX, who runs a vest-pocket transceiver with 150 milliwatts, and who was operating 1,750ft. up in the Lammermuirs; after crossing the border, he proceeded to lay down a potent signal in the Edinburgh area, and at times beyond it, notably in Rannoch, where a visual as well as a radio contact was made with Bill Jervis, GM8APX, a refugee from the Home Counties, who has taken up a teaching appointment there. The VFO-controlled 40w. of mobile is certainly paying off! Mike wishes to thank, through this Column, those many GM's he met for their generous hospitality.

The Angus and Edinburgh VHF

Groups got together at the Waverley Hotel, Perth, on May 29, and from reports by GM6XI and GM8BZX, this meeting seems to have been an unqualified success. Some 23 call signs were recorded among those present, and these included GM6XI, GM6NX and GM6RI who had apparently started key-thumping some thirty-five years ago and had not met since. A notable absentee appears to have been old man Scottish Radio himself, GM6SR, who, it is to be hoped, continues to bear his years with customary vigour.

Other VHF meetings are being held in the Fife and Lothians areas, and are generally well attended. These occur monthly, on an "around the houses" basis, and have done much to stimulate local interest. The driving force behind this idea is Tom Holbert, GM3DJX, and further details may be obtained from him.

There is a growing interest in

mobile operation in the Edinburgh area, with GM4NC, GM8DQV, GM6XI and GM3TSZ all very active in this sphere. The latter is moving house shortly to take up a major communications post at Manchester Airport. Operation on 70 cm. is also on the up-and-up, with GM8BCB, GM8BJF, GM8CWH, GM8BKE and GM3BCD all active. It is hoped to establish a link with GM8TLA when he visits that excellent UHF/VHF site on Cairn o' Mount in Angus during the month of August. As already noted GM3OXX has been operating from the Lammermuir Hills, presumably from Meikle Mor or Soutra Hill, and this puts him well within two-metre range of Northern England; under favourable propagation conditions, he should be heard well down into the Midlands. He has already established contact with stations some eighty miles to the North, which is good going in anyone's language, with the low power that

THREE BAND ANNUAL VHF TABLE

January to December, 1970

Station	FOUR METRES		TWO METRES		70 CENTIMETRES		TOTAL pts.
	Counties	Countries	Counties	Countries	Counties	Countries	
G3OHH	32	4	42	4	14	2	98
G3DAH	18	2	54	11	10	1	96
G2JF	—	—	44	9	23	4	80
G8ATS	—	—	41	6	25	4	76
EI6AS	7	5	48	9	—	—	69
G8APZ	—	—	39	5	20	2	66
G3COJ	—	—	31	7	21	3	62
G2AXI	14	2	34	7	3	1	61
GD2HDZ	—	—	36	4	14	3	57
G1SALP	6	3	34	7	—	—	50
G3EKP	14	4	18	5	4	3	48
G3IAR	14	1	26	5	—	—	46
G8BKR	—	—	23	4	7	2	36
G8BHD	—	—	27	4	—	—	31
G8BWW	—	—	23	5	—	—	28
G3ZIG	—	—	19	5	—	—	24
G8AUN	—	—	19	3	—	—	22

The Three Band Annual Tables show total claims to date from the year commencing January 1970. Readers are reminded that claims should be sent as here-to-fore to: SHORT WAVE MAGAZINE, BUCKINGHAM. Summaries by bands will be published at regular intervals.

he is running. He hopes to be QRV from 2,600ft. up in Selkirkshire shortly, and local comment has it that they won't be surprised if a W comes back to him!

Finally, what a good signal GM3FYB has been putting into the South from Dunfermline during the lift in conditions at the start of June. County chasers looking for Fifeshire should keep an ear open at the top end of the band for him. GM8CJY/P and GM8BDX have also been logged in Herne Bay recently.

DX-Peditions

The EI2AX/P expedition to Eire went off with the efficiency which one associates with any of the trips made by G3BA and G3BHT. From the reception point of view, it is obviously impossible to comment on success or failure over the whole country, but from the South, conditions were most favourable for Dublin, Carlow, Wexford and Wicklow. Leix was just there, Waterford extremely difficult, and Kilkenny only a little better. Signals in the early evenings were not as good as they were must before close-down at 11.0 p.m. and the early morning sessions were best of all—which bears out what has been emphasised in "VHF Bands" for many a year. It was interesting to observe a direct relationship between the propagation during the 80m. "admin. sessions" with G6CW and the subsequent two-metre transmissions. If conditions were poor on Eighty, they were poor on Two also, and *vice versa*. The time division allowed between SSB, AM and CW appeared to be about right. It looked at first as if the SSB session was going to be too short because of the pile-up on, instead of *near*, the EI2AX frequency, but this sorted itself out eventually, particularly after the gentleman with the prolonged whistle test *exactly* on QRG decided he had had enough, a decision which other operators had reached some ten minutes earlier! Sked-keeping appeared to be good, although one or two attempts on AM to pass a mass of, under these circumstances, irrelevant detail, held up proceedings unjustifiably.

All in all, another very successful foray, and many thanks go to Tom and Brian for their efforts to give

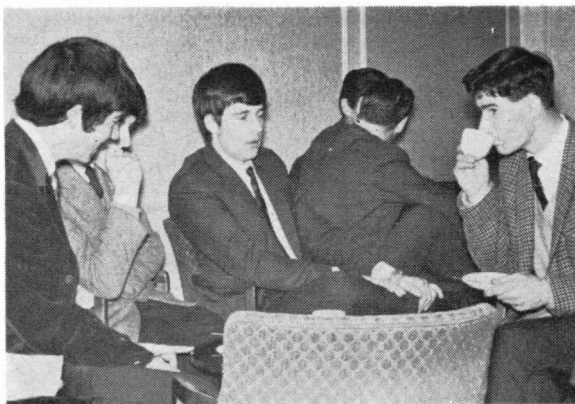
so many new counties to so many. Please note that EI counties are acceptable for the Three-Band Annual Tables.

A party consisting of G8AWS, GW8AAP, G3ATZ and G8AYW propose to operate from Lowthcr Hill, Lanarkshire, during the 70 cm. contest on July 26. The call will be GM8AWS/P (Arthur does get around, doesn't he?) Having gone all that way, the chaps deemed it a good idea to include two metres in their operations. Accordingly,

they will be on that band on July 25 signing GM3ATZ/P from the same site. Depending upon the weather, it is possible that they will move a bit to the West, and so offer the county of Dumfries in addition.

Just a reminder to all who plan expeditions to GM—Vic Stewart, GM3OWU, *QTHR*, will be pleased to co-ordinate such trips in the South of the country, and so should be contacted in plenty of time to check availability of sites, etc.

G2DRT will be trying two metres



At the Perth GM/VHF get-together on May 29, some 23 GM's were present from East and Central Scotland. The meeting was organised by GM3TRI and GM8CZF. Above, a group in earnest discussion. Below, GM3FYB (left), well-known for his DX work on the VHF bands, talks it over with GM3ENJ and GM3CIG.

as EI2VCL from Fenit, Co. Kerry, during the period August 22-September 5. G3TKF and G8CJZ will also be in EI during the last week of August and the first in September. They will be /P and /M on two metres and four metres from Southern and Western counties. Skeds may be arranged by s.a.e. to G8CJZ, *QTHR*.

G8BEJ and G8AXZ, both members of the Farnborough & District Radio Society, will be operating from the West Country during July 4-10. The Club call-sign, G8DIZ/P will be used, and counties to be visited are Dorset, Devon, Cornwall, Somerset and Brecon. Operation will be on two metres only, and skeds may be arranged by s.a.e. to G8AXZ, *QTHR*, for times between 1900 and 0001 BST. They will be operating NBFM, mainly on 144.2 MHz with 100 watts and a ten-element Yagi, so should put out a reasonable signal over quite an area. The frequency may be changed slightly to clear any QRM—they are VFO controlled.

Another DX-pedition, for some at any rate, will be to RADLEC 70, the activity camp for Scout radio enthusiasts over the weekend October 2-4 at Phasels Wood Scout Camp. This event is open to all members of the movement, whether licensed or not. A varied programme has been arranged to include amateur TV, VHF and HF bands stations using the call GB3REC, lectures on tape recording and satellite reception, an SWL listening contest, and a D/F hunt (on foot). This is the second venture of this type, and has the potential of being as successful as the previous one. Further details may be obtained from G8CBU, *QTHR*.

G3WKV, G8BPM, G8BXC, G8CIX and others will be QRV on AM in France, Switzerland and Liechtenstein during the period August 1-15. Two-metre frequencies will be 144.24, 144.65 and 144.94 MHz. The only call-sign at present allotted is F0UV. Others will be notified in due course.

G3VKI/G8COA will be signing GM3VKI/P during a tour of Scotland, July 26-August 2, with two-metre gear—they hope for some G contacts as well as GM.



At the EI/VHF Convention on May 24, left to right: G3BA, EI7AF and G3BHT. The two visiting G's were the guest speakers at the meeting and, of course, comprised the highly successful EI2AX/P expedition, working through Elre at the time.

Irish VHF Convention

G3BA took time off while recovering from the strenuous EI2AX/P trip to send in this report:

The Convention, which took place on May 24, was organised by Bob Williams, EI7AF, and Paul Quest, EI5BH, at the County Arms Hotel, Birr, which is in the mid-West of Ireland in Co. Offaly. Some 55 EI and GI VHF'ers attended this first-ever event, and many had travelled long distances to get there. The Convention opened at noon and visitors spent their time greeting old friends and making the tour of the trade stands which had been set up by local radio retailers, selling good components and modules for the D.I.Y. amateur. The ladies managed to extract money for the raffle from all those who went, and the prizes were of a high standard for such an unsubsidised event.

After lunch, the lecture session started with Brian Meaden, G3BHT, giving an entertaining dissertation on the organisation, background and practical set-up of the various

expeditions, which he has organised with G3BA and others, to EI, GM and the Continent. The second lecture was given by Tom Douglas, G3BA, who spoke on aspects of transmitter design and construction, as well as operating methods which ought to be considered for VHF working in the '70's, stress being laid on adequate filtering, the use of NBFM and translator techniques for multi-mode facilities.

The Convention ended with a high tea, raffle draw and a convivial session in the Hotel lounge and bar. Several visiting amateurs made spontaneous speeches complimenting the organisers on their efforts, the undoubted success of this first VHF Convention to be held in EI, and comments were passed about the relaxed friendliness of all those who attended the function.

Equipment

From the *K.W. Electronics* stable comes good news for VHF workers. Development of a solid-state two-metre transceiver is due to start

later this year. This will be based on the model displayed at various shows during 1968, and among other improvements, it will have a better VFO read-out. It is indeed gratifying to see a leading British manufacturer of HF equipment turning his attention to the VHF field.

Several enquiries have been received about the Magnetic Devices antenna change-over relay Type 951 mentioned in this Column last month. This relay is good up to 450 MHz, and can be supplied with 12, 24 or 48 volt coils as standard. Delivery is about six weeks from date of order. The characteristic impedance is 50 ohms, cross talk 39 dB, and VSWR approximately 1.11 to 1. It is designed for use with UR-43 cables, and size and cost have been reduced by elimination of the coax plugs and sockets from the body and the use of soldering points and clamps which give outlets in any of three directions. The price for singles has been increased to 47s. 5d. but quantities are available for around 35s., which might interest Clubs making bulk purchases.

Meteor Scatter

June 4-8 is nearly always a good period for M/S work, even though no major repetitive showers are forecast for that period. Johnny Stace, G3CCH or Scunthorpe, Lincs., made it with OK1VMS in Prague on June 5, to give the latter his first meteor-scatter QSO. Contact was established between 0500 and 0700z and signals were peaking at S7. The longest burst heard was of 30 seconds' duration, and contained both calls four times. On June 6,

Johnny repeated his success, reported last month, by a second QSO with TF3EA. Many long bursts at good signal strengths were reported between 1130 and 1300z. Tests with LZ1BW on June 6 and 7 did not produce any QSO, probably because this must be reaching the range limit for contacts of this type with the antennae and the powers available. It is known that GI5ALP in Londonderry was also on during this period, alas, without success. The next major meteor shower is the *Perseids*, and these should peak over August 11-12. In past years, this shower has been very productive of good contacts. Those who may wish to have a stab at this sort of DX work are referred to the article in *SHORT WAVE MAGAZINE* for June 1968, which explains the mechanism in some detail.

VFHCC Awards

The only Award this month goes to Ray Aldous, G8CBU, Luton, Bedfordshire, for his work on two metres. He was first introduced to Amateur Radio by Bill Green, G3QG in 1947, but did not start to work for his ticket until after 1966, having been encouraged to do so following the participation of his Scout Troop in the Jamboree-on-the-Air. He took a course at Luton Technical College and passed the R.A.E. in May 1968, obtaining his call of G8CBU in October 1968. At the moment, he only operates two metres, but hopes to be on 70 cm. shortly. The transmitter runs a QV03-10 in the PA, modulated by a pair of 6BW6's in push-pull. For reception he uses a BF180 pre-amp and a G5UM "Quick-

starter" into an R.1475. The beam is an 8-ele Yagi at 25ft. and the QTH is at 350ft. a.s.l.—which is not as good as it may sound, since it is masked by higher ground in many directions. As a Scout Leader, Ray encourages his boys to take an interest in radio, and members of his Troop are often in the shack with him while he is operating. He gratefully acknowledges the help and encouragement he has received from the members of his local group, G8DDC, the Dunstable Downs Club.

News Items

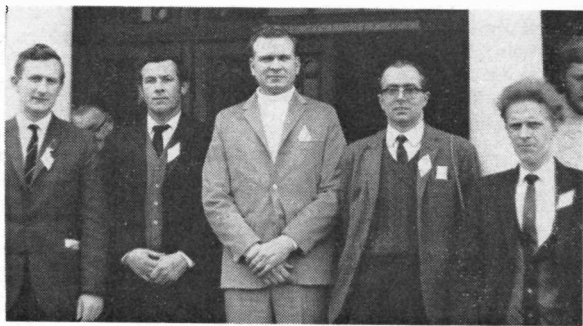
From GW: The University College of North Wales Amateur Radio Society, based in Bangor, lay claim to a "First" on two metres, between GW and LA. It must be confessed that this came as something of a surprise to your scribe, who felt certain that it had been done by that auroral wizard of the key, GW2HIY, Eric Davies in Anglesey, but failing other contestants for the honour, we have: GW3UCB/A — LA1MB—1513 GMT—March 8, 1970. The UCB Club is very contest-minded, and they make a point of entering for all the two-metre and four-metre events. Results so far have been reasonable, without being outstanding, due mainly to site difficulties, but they keep pressing on. After all, they deserve a win, as they are one of the few GW/P stations one hears during contests who are actually based in Wales! If you want to make a sked with them, contact John Wilson, G3UUT, *QTHR*, or at U.C.N.W., who is their hon. secretary.

* * *

From EI: By the time this piece appears, EI2A should be up on 70 cm. from County Meath, and EI4AL (Athlone) will be on SSB on two metres with one kV on the anodes of a QV06-40A.

* * *

From 9HI: Peter Lennard, G3VPS, comes up with some news from Malta. It seems that 9H1BL cannot get permission to transmit on four metres, but is very keen to arrange crossband skeds (10-80m.) as he does listen on the higher frequency. He is to be heard regularly on the HF bands, but a line to him at 11



Perhaps a unique picture. The EI/GI contingent visiting the recent London VHF Convention were, left to right: G13KYP, EI5BY, GI5ALP, EI7AF and EI4AL.

Ascot Flats, St. Peter Street, Paola, Malta, GC, should enable a suitable arrangement to be made. He receives Continental broadcasts and TV transmissions quite regularly, and has observed a correlation between propagation on around 45 MHz and 28 MHz. On three occasions recently he has been receiving TV on the higher frequency, and ten-metre QSO's with amateurs in the same areas have resulted. It won't always work the other way round, of course. BBC TV has also been received and recorded.

From GD: GD2HDZ, Laxey, I.o.M., also found the 70 cm. contest hard going—21 contacts in sixteen hours of operating. He is moving QTH shortly, probably in late July or early August, but will still be in Laxey. This does mean, of course, that he will be QRT for a time.

From F: It is no use calling F1APQ, who puts in such a good two-metre signal from Cap Blanc-Nez near Calais, above 145.7 MHz, as his receiver does not tune beyond that frequency. Both he and F1AOY are now QRV on 70 cm.

From G: G2JF will be QRT, possibly for some months, while he moves all the gear from his present site into a new house, which is still in Hastingleigh, and over the 600ft. a.s.l. mark. He is taking his opportunity to modify and up-date the gear for both 70 cm. and two metres, and will also be QRV on four metres again, after a longish absence from that band.

G3PMX, now operates, on 70 cm. only, from the new QTH in Gt. Waltham, Essex. He hopes to be back on two metres before long. The new shack in the garden is virtually complete and the Strumec tower is up, not without some breath-taking moments, it appears. The thud as it dropped the last foot or so into the hole prepared for it caused a shock-wave which was felt in the house 200 feet away! G3LKK is now QSY from Wigan to Leeds, and is putting out a nice signal with a 4CX250 in the PA.

G3UGF is communications officer on the Royal Research Ship *Discovery*, and hopes to be up on Two and Four, as well as the HF bands, shortly. He will be visiting Rockall and the Weather Ship



After 35 years, together for the first time at the GM/VHF meeting at Perth on May 29—left to right, GM6NX, GM6RI and GM6XI. It is not true that when this was taken they were debating whose turn it was for the refill!

Juliet next month, and it is possible that he will be QRV from there. A bit difficult from a distance point of view on VHF, but at least it will be an all-sea path! G8BEJ now has phase modulation and a 4CX250 PA on two metres, and is putting out an excellent signal from Camberley, Surrey. G3LEA in Goole, Yorks., is building for two-metre SSB and video on 70 cm. The QTH is shielded to the North, but OK in other directions. He has been assured that amateurs in the South do beam North, and tune the top end of the band when conditions warrant it! G8BZE of Peterborough is now G3YYW, and runs either an SCR-522 or a QV06-40A on two metres. One hears often enough of TVI and the like, but G3WBK and G3WBO (in Oxfordshire and Sussex respectively), seem to have broken new ground by having a recent QSO played out through a £1,200 electronic organ in Surrey. Just what stop was used by the performer to put a stop to this unwanted reception is not stated!

Geoff. Barnes, G3AOS, Hale Barns, Cheshire, has now got his one hundred counties worked on two metres from a contact with the EI2AX expedition recently. This raises an interesting thought. How many operators can equal, or better, this? Why not drop a line to this

Column giving your total and stating how long it has taken to get it? There would probably be little point in elaborating on the gear used, antenna, etc., since these may well have changed considerably over the years, but the QTH and height a.s.l. may not have, and a record of the achievement must encourage activity, and do more than merely arouse envy in the breasts of lesser mortals!

Another report of reception of the EI2AX boys comes from Bryan Pickers, G3YUA, in Markfield, Leicestershire. Signals there were at worst RS 56, on both phone and CW, and the Wrotham beacon just a few dB above noise. He was using the series-gate modulated rig described in a recent issue of *SHORT WAVE MAGAZINE*, and now reckons that he could work EI at almost any time—if there is anyone there to work! G8ABA also raised EI2AX, but this time while he was mobile on Irish Hill. Very appropriate. From the home QTH in Coalville, Leicestershire, G8ABA now runs a linear 4CX250B and is very good copy.

G3OHH, Mow Cop, Staffs, has proved that a four-element Yagi can produce better results than an eleven-element job! All you have to do is to put it on the top of a hill, 50 yards away from the house, as

opposed to using the larger antenna below the summit, and *hey presto*, EI2AX/P five-by-nine instead of five-and-five, or zero/zero when they were in Waterford and beaming South! He found the 70 cm. contest fascinating, in that minor lifts were occurring at intervals to revive the flagging interest, but reports sadly that five watts is just not enough to work to 150 km. under the generally prevailing conditions. The tedium was momentarily relieved by the effort of trying to get over his call-sign and report on CW to a group of G8/3's, portable in Surrey. It took 30 minutes to achieve it, but they got there in the end! (And the moral must be that it is always advisable to take a CW man along with you during a contest.) Roger also made it with ZB2BO at 5 & 9 each way during the four metre Sporadic-E openings to the South on May 25, after having latched on to the ZB2VHF beacon. This could be a good season for Spor-E, if long range forecasts are to be believed.

G3IAR operates on four and two metres from Wrotham in Kent. As might be expected, he gets a fair amount of trouble with cross-modulation from the transmitters up there when using a transistor converter, but finds that a Nuvistor eliminates it. (This should revive an old argument!) And he is moving steadily up the Table.

G8DAV is now QRV on two metres from Basildon, Essex, but is having bother with the local authorities over permission to erect an outdoor antenna. (He uses an indoor dipole at the present time.) He will be QRV on 70 cm. shortly with a rig which, under test conditions, produces 19 watts out for 25 watts in, which seems pretty useful. GW8ACG/P will be operating on 145.13 MHz from three miles South-West of Flint at 1,000ft. a.s.l. every Thursday evening from now until September. He is a whale of a signal in Herne Bay! G3COJ, High Wycombe, Bucks, is now QRV

again on 70 cm. after building a new converter for that band. He found conditions to be moderate rather than good during the recent 70 cm. contest, as did so many of us, but made it with GW8AII/P in Monmouth and GC2FZC for two new counties at good range.

The next meeting of the South Bucks. VHF Club takes place at 8 p.m. on July 7 at Bassetbury Manor. On this occasion no specific speaker has been invited, there will just be a general cag with "On the air" as the subject for discussion. Hon. sec. is R. Idiens, 77 Amersham Road, High Wycombe, Bucks.

STOP PRESS

A major opening occurred over Friday and Saturday June 12-13. This came exactly one year to the day after a similar set of good conditions in June 1969. Propagation was best to the North and North-West, with OZ and DL particularly strong. One interesting contact was with OZ3TQ, *ex*-G3TPL. The DLØPR beacon on Two was 5 & 7 for hours on end. SM stations were heard on SSB, but few of them. GM was good, notably GM3EOJ and GM3TLA/P in Kincardine, with GM8AZS/P in Moray coming through well on the Saturday night. OK1JBL/P, on SSB, and LX1DB were heard very weakly in the early hours on Sunday morning, and GC2FZC and GC8BMO were both good around 0930 BST on that day. The highlight was OY2BS on SSB, who worked some 100 PA and DL stations on Thursday night, but was not audible at all in England, although both GM3EOJ and

GM8AGU contacted him. This looks like ducting and an all-sea path combination. EDX on 70 cm. was also good, and the Sutton Coldfield beacon was up to 5 & 8 at times.

Four metres came into its own with some spectacular Sporadic-E early on Saturday morning. TF3EA logged three G stations, and TF3VHF was heard on the South Coast by G3JHM *inter alia*. ZB2VHF and ZB2BO were also heard/worked in the U.K. Conditions were back to just "good" by Sunday midday, although GM3TLA/P at Cairn o' Mount was worked at 1030 BST with a good signal and F3THF, the French beacon, was still strong. To give some indication of the spread, eight countries on Two and five countries on 70 cm. were worked at G3DAH during the two days. Congratulations to G8AUE in Derby and G8ARM in Greenwich who made it on 23 cm. on June 12.

A new series of *ARTOB* launchings has been arranged. These balloons will be released on Sunday mornings from Hanover and Munich. Frequencies are shown in the Table below. For last minute information, check DUHC on 7045 MHz at 0945-1000 BST on Sundays. He gives the latest news in German and English.

Deadline

Deadline for the next issue is **July 11**. The address for claims, news and comment is: "VHF Bands," SHORT WAVE MAGAZINE, BUCKINGHAM. Cheers for now and *73 de G3DAH*.

		144 MHz	432 MHz	1296 MHz
UP QRG	...	144.08 — 144.12	432.0 — 432.2	1296 — 1296.3
DOWN QRG	...	145.92 — 145.88	145.3 — 145.5	145.06 — 145.36

ARTOB Beacon Frequency: 145.732 MHz, alternatives 145.755 and 145.950 MHz.

MARCONI COMMEMORATION STATION GB3FI

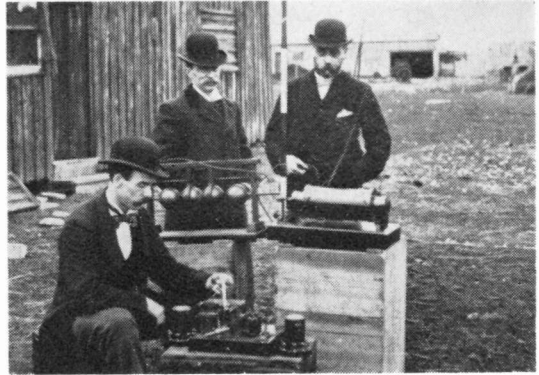
FLATHOLME ISLAND, BRISTOL
CHANNEL,
MAY 17-18

D. H. ADAMS (GW3VBP)

THE practice of establishing special stations to commemorate events of local interest is growing. These stations are great fun to put on, and they provide very useful publicity for the Amateur Radio club concerned. At the Barry College of Further Education Radio Society we consider ourselves most fortunate that we are able to commemorate an event which is of greater world interest than purely of local consequence. And we also commemorate the world's most famous radio amateur.

In May 1897, Marconi, at the age of 23 and flushed with the success of his recent radio tests at London and Salisbury Plain, arrived at Lavernock Point, near Barry, to conduct a further series of tests across water. The British Post Office rendered him every assistance as they saw the possibility of replacing expensive submarine cables by radio links should his experiments look like being successful. On May 11, 1897, signals were exchanged between Lavernock Point and Flatholme Island in the Bristol Channel—a distance of 3½ miles. A week later on May 18 contact was made between Lavernock Point and Breaun Down in Somerset, extending the range to about 8 miles.

Marconi had already taken out the world's first



An original print, by courtesy of The Marconi Company, showing Post Office technicians Partridge, Price and Hailes working on Marconi's original apparatus set up at Lavernock Point, on the Glamorganshire Coast near Barry, South Wales, in May 1897. It was from here that the very first 'cross-water' wireless communication was established, with Flatholme Island, a few miles out in the Bristol Channel.

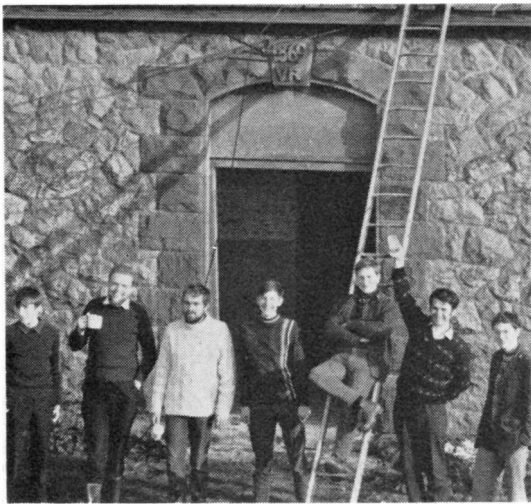
patent for "a method of telegraphy without wires" but he was still a radio amateur without any professional or commercial interests whatsoever. George Kemp, a Post Office engineer, assisted him throughout the tests, and Kemp kept a diary of these events. He recorded that "Professor Slaby, representing the Kaiser, was the only scientist present at this great experiment." Later Professor Slaby said of these tests, "It was for me an ineffaceable recollection . . . I have seen something new. He (Marconi) was using methods the entire meaning of which no-one before him had realised."

Within a matter of days after the end of these successful tests, Marconi formed his company. The British Post Office could not assist him any longer, although George Kemp was permitted to remain with him for future work. These were therefore the last tests conducted by Marconi as a radio amateur. Little wonder that we at Barry are so enthusiastic about commemorating such an event!

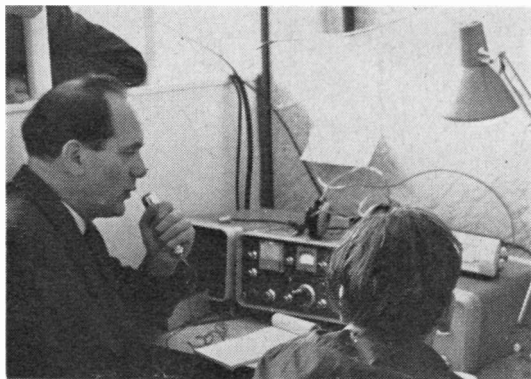
Club Planning

There was no difficulty at all in recruiting a volunteer force of radio amateurs for Flatholme Island. The Sully & District Short Wave Club had been invited to join us, and after drawing names from a hat, the lucky eight sailed from Penarth to Flatholme on the noon tide on Saturday, May 16. The party consisted of GW3PPF (in charge), GW3TKH, GW3WBU, GW3YVQ, GWB8QN and SWL's Maggs, Denny and Crowley. By 5 p.m. three stations had been installed and successfully tested. The stations comprised two KW-2000B, HW-17A, TA-33Jr., 160-metre and 80 metre dipoles 103ft. high at the centre, and a 6-over-6 Yagi for two metres.

Meanwhile, back on the mainland the remainder of the Club were preparing to greet radio amateurs from other local Clubs at a social gathering at the Lavernock Point Holiday Estate. The Club station GW3VKL/A—consisting of a KW-2000A, HW-17A, TA-33Jr., a 2-metre halo and a long wire had already



GB3FI was accommodated in this building on Flatholme Is.—actually an abandoned barracks which was there when Marconi visited the Island more than 70 years ago. The group, left to right, reads: GW3YVQ, GW3PPF, GW3TKH, SWL Crowley, GW3WBU (on the ladder used for aerial erection), GWB8QN and SWL Denny.

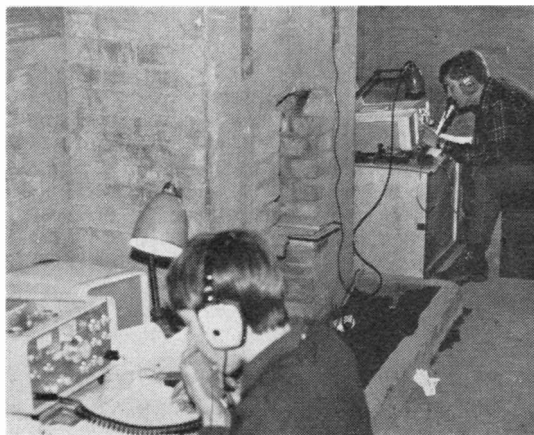


Amateur station GW3VKL/A was established in a chalet at the Lavernock Point Holiday Estate. It was used mainly to attract attention for GB3FI, out on Flatholme.

been installed in a nearby chalet.

Both GB3FI and GW3VKL/A became officially operational at midnight. We worked continuously throughout the night. The role of GW3VKL/A was to provide publicity for GB3FI! 800 contacts were made from Flatholme Island which remained on the air until noon Monday May 18. Including the score from GW3VKL/A the total crept to just under 1,000 QSO's.

The equipment for all stations was supplied by the Club and its members. We wish also to thank the Cornish Radio Amateur Club for supporting us with their special station GB3MSA from Poldhu, and to the Bologna section of Associazione Radiotecnica Italiana for operating IØFGM from Sasso Marconi. Thanks are also accorded Trinity House for allowing us to operate from Flatholme Island, and to the staff of the lighthouse for the consideration shown to our party. Finally, but not least, grateful thanks to the Lavernock Point Holiday Estate in allowing us facilities for operating and celebrating. They went out of their way to assist us, and have



GB3FI on Flatholme, in the derelict building that had once been a barracks. GW3YVQ on the HF-band rig and, far right, GW3WBU operating on Top Band—for which he had the luxury of a 160m. dipole hung up at 103ft.

already agreed to the same exercise from the site in future years. The location is ideal, and touring caravans and tents can be accommodated. Therefore, perhaps next year the 50 visitors from across the Severn Bridge who came to see us on the Sunday afternoon will be joined by others from further afield.

Editorial Note: After the Bristol Channel tests, Marconi's next "DX" experiments over sea-paths were carried out in November 1898, between the Needles Hotel, Alum Bay, I.o.W., and a tug operating in the Poole Bay area, with a second land station near Poole itself. Ranges up to 18 miles were easily achieved, "under any conditions of weather." Subsequently, in November 1899, the Marconi station at The Needles worked the liner *St. Paul* at a distance of 66 miles—this made headline news all over the world. The actual wavelength involved was never accurately determined, because the principle of tuning was not then understood, nor developed till some years later. The Marconi experimental station near Poole remained in existence till about 1926. (Source: "My Father, Marconi," by Degna Marconi, first daughter of G. Marconi.)

R.A.E. INSTRUCTION COURSES

With the August-September issues we shall, as in previous years, start listing those centres of instruction at which an R.A.E. course—"Subject No. 55, Radio Amateurs' Examination, City & Guilds of London Institute—is offered. Details for publication should be sent in as early as possible. Most courses start about mid-September, and hence should be in the September issue of SHORT WAVE MAGAZINE at the latest—and that means we need the information at least by the end of July. Pages 428-429 of our September 1969 issue show the details required and how they should be set out. Address to: "R.A.E. Course," c/o Editor, SHORT WAVE MAGAZINE, BUCKINGHAM—and please be sure to keep it as a separate item under this heading, *not* mixed in with a Club report, or whatever.



"... don't think much of their furniture ..."

SPECIAL-ACTIVITY STATIONS

It is going to be a busy period for the "specially on the air stations," arrangements to date being as listed here. In most cases, a special QSL card is produced for the occasion and the main object—since these stations are operated as a public attraction—is to make contacts good enough for speaker reproduction.

In practice, it is often found that site conditions are such that there is a high level of local noise-interference, making it more or less essential (if a casual visitor is to follow what is going on) to go for stations putting in a strong signal. The visiting public is not much impressed by a bunch of chaps huddled round the gear with headphones on—hence the necessity for having it all on speaker.

And it has been found from experience that all the operation need not be on phone only—people are interested in hearing CW working (it looks, and sounds, rather clever!) especially if there is someone on hand to do a little interpreting. It is also a good idea to have a large map—or some sort of "blackboard listing"—showing the location of stations being worked. In other words, the effectiveness of the whole operation can be much enhanced by giving a little thought to its presentation.

- GB3GWC, June 26-July 6:** In connection with the George Watson's College centenary celebrations—the College is a well-known Scottish public school. Operation will be on all bands Two to Eighty. It is particularly hoped that exiled Watsonians holding amateur licences will take the chance to contact their old School.—T. Simpson, GM3BCD, George Watson's College, Colinton Road, Edinburgh, 10.
- GB3HRR, July 1-4:** To be set up by Henley Grammar School Radio Club in connection with Henley Royal Regatta, as an exhibition station open to the public, operated by G3YKY and G3YNW.—C. Booker, Leeuwkop, Whitehouse Road, Woodcote, Reading, Berks.
- G2DQI/A-G3MIN/A, July 4:** On the air for the exhibition station to be run for the Worthing Schools Radio Society, at the High School for Boys, on the occasion of the annual fete. Operation will be 10-80m. AM, 15m. SSB and two-metre AM. Skeds will be welcome, especially with amateurs still at school. A special QSL card will confirm contacts.—Worthing Schools Radio Society, c/o C. Garcia, L6X, High School for Boys, Bolsover Road, Worthing, Sussex.
- GW6OI/P, July 4:** At Llanfair Caerinon terminal station, Welshpool-Llanfair private railway, for the Stourbridge Club visit, 12.0-6.0 p.m., operating mainly on 80m.—Sheila Cliff, G8BYE, 49 Manor Lane, Halesowen, Worcs.
- GB3FBH, July 4:** To be operated by the Bristol Amateur Radio Club in conjunction with the Bristol University "Festival of Barton Hill" celebrations. All bands 10 to 80m. will be worked, with a special QSL card to confirm contacts.—P. A. Whitchurch, G3SWH, 21 Dickensons Grove, Congressbury, Bristol, BS19-5HQ.
- G3NUA/A-G3ZEM/A, July 6-7, 9:** Hartlepool Grammar School activity on 20-80-160m., evenings only, to

commemorate the centenary of the 1870 Education Act.—J. Hogg, G3NUA, The Grammar School, Brinkburn, Hartlepool, Co. Durham.

- G3SFG, July 9-11:** Southgate Radio Club at the Finchley Carnival, Victoria Park, London, N.3, with main activity on two metres and Top Band. Visitors will be welcome.—A. Edwards, G3MBL, 244 Ballards Lane, North Finchley, London, N.12.
- GB3TDS, July 11-12:** Station operated by members of Barking Radio Club for the Dagenham Town Show, running Top Band (AM), SSB on 10-80m. and AM on 2m./4m. Skeds welcome, and all contacts will be QSL'd (cards to G3XBF, *QTHR*, or *via* bureaux).—Chairman, B.R.C., 43 Waterloo Road, Barking-side, Ilford, Essex.
- GB3FON, July 11-26:** Arranged by the Amateur Radio Club of Nottingham in collaboration with the organisers of the Festival of Nottingham, Wollaton Park, the station will operate SSB on the following spot frequencies: 1920, 3760, 7060, 14260, 21360 and 28660 kHz, ± 5 kHz. It will have antennae supported by a 60ft. lattice tower, so should be easily located by visitors. A special commemorative QSL card is being printed.—Hon. secretary, Amateur Radio Club of Nottingham, Woodthorpe House, Mansfield Road, Nottingham.
- GB2LS, July 16-18:** Put on by Liverpool & District Amateur Radio Society in conjunction with the annual Liverpool Show, running all bands HF and VHF.—P. Storey, G3YBH, 29 Chalfont Road, Allerton, Liverpool, 18. (*Tel. Garston 7114*.)
- GB3RSH, August 29-31:** Operated by the Radio Society of Harrow at the annual Harrow Show, Pinner Park, Headstone Manor Recreation Grounds, operating all bands Top to 70 cm. simultaneously. There will also be an RTTY station and an A/TV exhibit. Talk-in for visitors on 2-4-160m.—R. H. Medcraft, G3JVM, 134 Dulverton Road, Ruislip Manor, Ruislip, Middlesex, HA4-9AG.
- GB3WRA, September 5:** Operating from the 24th annual Wycombe Show, on The Rye, High Wycombe, on all bands 10-160m., AM/CW/SSB. Visitors will be very welcome.—A. C. Butcher, G3FSN, 70 Hughenden Avenue, High Wycombe, Bucks.
- Entries intended for this space should be set out in the form shown here, together with the name/callsign and address of the responsible operator (or the contact-man for the station's correspondence) and sent to: Editor, SHORT WAVE MAGAZINE, BUCKINGHAM.

PROTECTING THE TV/Rx

If your own TV receiver is a multi-band colour job, or otherwise one of the more modern types using a fully transistorised front end, it is advisable to have the aerial plug(s) out when transmitting. This is because quite considerable RF voltages can be built up on a TV aerial in the near neighbourhood (within a few feet) of a transmitting antenna, especially when using CW/SSB on the HF bands at full power. The effect is, of course, that of shock-excitation—and transistors will not stand a lot of this sort of thing.

THE MONTH WITH THE CLUBS

By "Club Secretary"

(Deadline for August issue: July 10)

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

ONCE again the time comes round for holidays, a time dreaded by some amateurs in popular resorts! If anyone is thinking in terms of making contact with the locals, the proper way to do it is to write or telephone beforehand, particularly in the case of a personal, as distinct from a Club, visit. It helps, often, to do so when looking in at the Club meeting, too—this way, the lads know you are coming, and if the Hq. is a little difficult to find they will usually arrange to meet the newcomer somewhere and bring him to the meeting, or to lead the way if coming by car. And, apart from any question of the convenience of the visitor, it is no more than courteous to make sure a visit is welcome, and the proposed time convenient.

Wales and The West

The number of reporters from this part of the world seems to be on the increase of late; which is all to the good.

Reading have first strike this time; their meetings are held at the Victory public house, in Tilehurst Precinct. Unfortunately, we do not have details of the July programme, for which we have to refer you to the hon. sec., address as in the Panel, opposite.

Similarly, our information of Hereford doings stops short at the end of June. However, it is understood the Club run weekly sessions, on Fridays, at the Civil Defence Hq., Gaol Street, Hereford. If past history is anything to go by, there will be various interesting activities laid on.

Yet a third one on which we have no details for July is Plymouth, who have an AGM to get through, this matter having been thrown back a month as a result of the unavoidable absence of several members, and the consequent reshuffling of dates. For the latest information, contact G3SPI, as Panel.

Anyone in the Bristol area who wishes to get in touch with the locals would be well advised to make a bee-line for their stand at the Festival of Barton Hill, which is being held on Saturday, July 4. There is also a business meeting down for the 28th, at which the winners of the competition to design a Club emblem will be announced. For the rest, the Bristol chaps seem to be putting the emphasis on the social side of things during the summer with visits to, and from, other groups over a wide radius.

Of the two meetings fixed for the North Devon crowd, the one on July 8 is down for "a visit." Gather at Hq. at 7.00 p.m.—earlier by thirty minutes than

normal. The other session is on July 22, when the lads will be getting together for a good old ragchew at Crinnis, High Wall, Sticklepath, Barnstaple.

The main meeting for Cornish crew is on July 2, at the SWEB Clubroom, Pool, Camborne; G3UCQ gives the "potted" talk, on NFD, and G3ADB has the main one, his subject being early transmitting equipment. In addition, their Mobile Rally on July 5, this year's event being at St. Ives County Secondary School.

At Saltash, they have a talk on /M working on July 3; briefing and preparation for the Rally, July 17; and the Rally itself—see "The Mobile Scene," this issue—on Sunday, July 26, the fifth in the series organised by this enterprising, even if distant, group. The Club's own meetings are at Toc-H, Burraton, 7.30 p.m.

For Torbay, next meeting is July 25, when the speaker will be Arthur Edwards, G6XJ, on "Experiences in Radio"—and he has had a great many over the years. Arrangements for the Mobile Rally on August 16 will also be explained and discussed.

Specialists Groups

This tag covers those organisations whose membership is spread over the whole country, and indeed in some cases beyond it.

Top of the pile is the Royal Navy *Newsletter*, covering a membership which is basically R.N., but also allows for chaps serving in overseas navies and certain other categories. A fine active group it is, with a Hq. station, G3BZU, from which emanate those very useful QRQ runs, providing one of the best ways of getting up the Morse beyond the basic test "twelves."

Apart from all the useful aspects of the RAIBC organisation, one of the highlights of the month for your scribe is the newsletter, *Radial*, which is always good for a chuckle. The May issue is full of 'em, what between the front page article, the piece by G3RFH, and the tailpiece by Tom Lester.

The main item of news in the issue of the A.R.M.S. *Mobile News* in front of us is the cancellation of the Alconbury Rally, with the (very sound) reasoning behind that decision. In addition there is a Rally calendar, a detailed write-up of the proposals for the Anglian Rally and various other items of interest to the mobileers.

On to BATC, where the big event of the year falls in July—their Amateur TV Convention, which is at Churchill College, Cambridge over the weekend July 25-26.

London Area, South and South-East England

As usual, this is one of the deeper heaps. At the top is **Harrow**, who have five dates set aside in July. Practical work is the theme on three of them—10th, 17th, and 31st. July 24 is provisionally booked for Eric Mollart and Martin Hawkins, G3WMM, to talk about Direction-Finding. Leaving the first till last, we have July 3, for G3OLM to talk on Aerials.

Maidenhead, like quite a few other groups, have decided to run no formal programme in July, as the membership tends to be away on holiday. However, the first Monday and the third Tuesday will still see the Hq. (Victory Hall, Cox Green) open. In addition, on Saturday, July 27, the lads will be showing the Cox Green locals what it is all about at the fête. G3WKX will appear mainly on Two and would appreciate plenty of QSO's.

Verulam will have much to do in July, and they are sharply off the mark with a VHF evening at Salisbury Hall, at which there will also be an inquest into NFD. There will be entries for the Two-Metre contest and High-Power Field Day, followed on July 15 by the main meeting, at St. Albans' Town Hall, when G2MI is to be the speaker. July 19 is set apart for the second Verulam D/F Hunt, and the month will be rounded off by an

entry in the 432 MHz contest.

At **Guildford** there are two meetings, both at the Stoke Park Hq. On July 10 there is a Junk Sale, which should be enough to "pack 'em in," while on July 24, G2BBX takes as his theme "Arranging a Worldwide Broadcast."

Although July 2 is the last formal date before the **Brighton Technical College** closes for the summer, one would imagine that the lads will in many cases find informal ways and means of getting together during the break—but, for all the details, a visit on the date indicated or a call to hon. sec., G3SKI, is needed—see Panel, below.

A change in the officers at the **Surrey** group is reflected into the Address Panel; but it also implies that the lads have just gone through the Annual General Meeting, and that the new committee are still hard at the work of hammering out the programme for the next year. However, we can tell you that the Hq. is still at the Swan and Sugarloaf, 1 Brighton Road, South Croydon.

On to **Southgate**, where G3RWL and his aides are responsible for putting out a very nice *Newsletter*. From it, we gather that July 9 is the set date for this month, when Mike Dormer, G3DAH, of our "VHF Bands," will talk on Two Metres. Venue these days is at the Civil Defence Hq. on Bowes Road, which is opposite Arnos Grove Tube Station.

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Names and Addresses of Club Secretaries reporting in this issue :

ACTON, BRENTFORD & CHISWICK: W. G. Dyer, G3GEH, 188 Gunnersbury Avenue, Acton, London, W.3.
 A.R.M.S.: N. A. S. Fitch, G3FPK, 40 Eskdale Gardens, Purley, Surrey, CR2-1EZ.
 BISHOPS STORTFORD: A. Stanley, G3WUR, 43 Havers Lane, Bishops Stortford (57251), Herts.
 BRIGHTON (Technical College): R. A. Bravery, G3SKI, 7 Copse Hill, Brighton (506418), BN1-5GA.
 BRISTOL: E. J. Davies, G3SXY, 72 North View, Bristol (33284), BS6-7PZ.
 B.A.T.C.: I. Lever, G8CPJ, 65 Dynes Road, Kemsing, Sevenoaks, Kent (Otford 2945).
 CORNISH: J. Farrar, G3UCQ, Elm Cottage, Ventonleague, Hayle, Cornwall.
 COVENTRY: C. Jaynes, 20 Belgrave Road, Wyken, Coventry, CV2-5AY.
 CRAY VALLEY: D. MacLennan, G3KGM, 52 Pinewood Avenue, Sidcup, Kent (01-300 0767).
 DORKING: R. Greenwood, G3LBA, 8 Deacon Close, Downside, Cobham (2628), Surrey.
 ECHELDFORD: R. Hewes, G3TDR, 24 Brightside Avenue, Laleham-on-Thames, Middlesex. (Staines 56513).
 EDGWARE: E. H. Godfrey, G3GC, 15 Oxenpark Avenue, Preston Road, Wembley, Middx.
 FARNBOROUGH: A. L. Streeton, G8BVM, 10 Sinhurst Road, Camberley (22867), Surrey.
 GREENFORD: F. Reid, G3VMD, 34 Carlton Avenue, Harlington, Middlesex. (01-848 0235).
 GUILDFORD: R. L. F. Ramsay, G3ARM, Rock Hill, Sidney Road, Guildford (62325), Surrey.
 HARROW: R. H. Medcraft, G3JVM, 134 Dulverton Road, Ruislip Manor, Ruislip, Middx. HA4-9AG.
 HEREFORD: S. Jesson, 181 Kings Acre Road, Hereford (3237).
 HULL: Mrs. M. E. Longson, 4 Chester Road, Wold Road, Hull, HU5-5QE.
 KINGSTON: N. Dudman, Dunham Lodge, 88 Sandy Lane, Teddington, Middx.
 LINCOLN: G. O'Connor, 61 Steep Hill, Lincoln (24113).
 MAIDENHEAD: E. C. Palmer, G3FVC, 37 Headington Road, Maidenhead (20107), Berks.
 MID-LANARKSHIRE: G. Hunter, GM3ULP, The Bungalow, Broomside Braes, Camp Road, Motherwell (62335).
 MIDLAND: H. L. Bate, G8AMD, 88 Darnick Road, Sutton Coldfield, Warks.
 NORTH DEVON: H. G. Hughes, G4CG, Crinnis, Hill Wall, Sticklepath, Barnstaple, Devon.

NORTH KENT: A. Watt, G3WZJ, 67 Glenhurst Avenue, Bexley. (Crayford 22564.)
 NORTH LEEDS: P. B. Furminger, G3MZF, 3 Ruthven View, Leeds, LS8-3RQ.
 NOTTINGHAM: M. R. Harris, G3VUI, 20 Durham Crescent, Bulwell, Nottingham, NG6-9AH.
 PLYMOUTH: L. D. Dawe, G3SPI, 345 Crownhill Road, Plymouth, PL5-2LL.
 PUDSEY: K. Wells, GWIX, 25 Ashwell Road, Heaton, Bradford, 9.
 R.A.I.B.C.: Mrs. F. Woolley, G3LWY, 331 Wigan Lane, Wigan, Lancs.
 READING: P. J. Bendall, G3NBU, 89 Hexham Road, Reading.
 ROYAL NAVY: R/S A. Walker, H.M.S. Mercury, Leydene, Petersfield, Hants.
 RUGBY: J. L. Wood, G3YQC, 73 Hillmorton Road, Rugby, Warks.
 SALTASH: J. A. Ennis, G3XWA, 19 Coombe Road, Saltash, PL12-4ER, Cornwall.
 SHEFFIELD: G. Easton, G3JMV, 46 High Storrs Crescent, Sheffield (64370), S11-7JY.
 SILVERTHORN: R. Locke, 9 Forest Road, Woodford Green, Essex.
 SOUTHGATE: A. Hydes, G3XSV, 6 Glenbrook North, Enfield. (01-363 7847).
 SOUTH MANCHESTER: D. Holland, G3WFT, 7 Alcester Road, Sale, Cheshire, M33-3GW.
 STOKE-ON-TRENT: E. W. Fair, 10 Wilfred Place, Hartshill, Stoke-on-Trent, Staffs, ST4-7LL.
 STOURBRIDGE: Mrs. S. Clift, G8BYE, Manorways, 49 Manor Lane, Halesowen, Worcs.
 STRATFORD-ON-AVON: I. Cobbold, G3RPJ, 5 Avenue Road, Stratford-on-Avon.
 SURREY: S. A. Morley, G3FWR, 22 Old Farleigh Road, Selsdon, South Croydon, CR2-8PB. (01-657 3258.)
 TORBAY: Mrs. G. L. Western, G3NQD, 110 Truro Avenue, Hela, Torquay, South Devon.
 UNIVERSITY OF ESSEX: R. A. Gape, G8DQX, Flat 3, Room 9, Tawney Tower, University of Essex, Colchester.
 VERULAM: W. C. Dennis, G3NCK, 129 Colney Heath Lane, St. Albans, Herts.
 WIRRAL (DX Association): J. A. Share, G3OKA, Trelawney, 21 Curlender Close, Bidston, Birkenhead, L41-7BN.
 WORCESTER: A. Ryan, G3VJN, Ahayweh, Bridge Street, Lower Moor, Pershore, Worcs.
 WORLD DX CLUB: D. Colling, 57B Fulham Park Gardens, London, S.W.6.

July at **Kingston** involves a decision on VHF; not just an academic affair, since it tends towards the formation of a Club net, with everyone using standard gear. However, G3GVU will deal in detail with the building and design requirements for converters. July 8 for this one, and the venue, which is not mentioned this time, can be obtained from the hon. sec.—see Panel.

It is nice to hear that the **University of Essex** group is once again showing signs of life, and indeed we are told that an extensive programme of lectures and demonstrations is being set up for the autumn and winter, although by the time this reaches print the holiday period will have set in.

The **Edgware** lads have a monthly booking at St. George's Hall, 51 Flower Lane, Mill Hill, on the second and fourth Monday. Thus, on July 13, there is an informal, when the club station will be put on the air, and July 27 is devoted to a talk on Patents by G3SJE—a little out of the normal run for a radio club, but, one would imagine, of great interest nonetheless.

Echelford would seem to have an interesting session in prospect for July 13, as G3NCN is going to discuss practical SSB, and probably display some gear. John was ever a humourist, and he knows his engineering onions as well, so this should be a first-rate evening. It is followed up on July 30 by G3TDR, who will be talking about the applications of the Varicap in Receiver Tuning.

Bishops Stortford next; there is a tape lecture being booked for the July meeting at the British Legion club at the top of Windhill, to which all members welcome visitors, whether licensed or SWL. However, if making a first visit in July, take care as you enter the town, as the new by-pass road has reversed the direction of things in the centre.

Fingers crossed for good weather, the lads at **Acton Brentford and Chiswick** are definitely setting out on July 21 on a Mobile Exercise. Start is from Hq., 66 High Road, Chiswick, at 7.30 p.m.

The Congregational Church Hall, Eltham, London, S.E.9, the home of the **Cray Valley** chaps, will be booked on July 2 for G6LX to take the meeting round the subject of "Aerials, Simple but Effective." The other session, on July 16, is, as usual, an informal.

Next-door neighbours of Cray Valley are **North Kent**, who use the Congregational Church Hall, Chapel Road, Bexley, as their venue. July 9 may be a natter evening, but it is quite likely that it will be the second part of the Junk Sale! As for July 23, this is the formal meeting of the club, and is to be devoted to a Brains Trust.

Farnborough members get together on the second and fourth Tuesday in every month at the Railway Enthusiasts' Club, 310 Farnborough Road, Farnborough. A new secretary appears in the address panel, and at the time of writing it looks as though the final details of the programme have yet to be settled.

The **Dorking** crowd have their place at the Wheat-sheaf, and will be there on July 14 for an informal evening. However, on July 28, they are hoping for fine weather, as they are going to have a Mobile VHF Evening, with wives and girl-friends invited, at the "Plough" in Coldharbour.

The **Silverthorn** chaps are busy with their plans for

putting on a station for the annual local event, "Chingford Day," using the Club calls G3SRA and G8CSA. They also have the arrangements in hand for their usual four-day camp over August Bank Holiday time, when they go under canvas near High Beech, Essex—this is always huge fun! Club meetings are weekly on Fridays at 7.30 p.m., at Friday Hill House, Simmons Lane, Chingford, E.4.

The **Greenford** (Middlesex) Amateur Radio Society has its meetings at the Community Centre, Oldfield Lane (Room 1 at 8.0 p.m.) where new members will be welcome on July 10 and 24th. Details from G3VMD, see Panel. They send us No. 2 of the *Newsletter*, showing that this is a very active group, covering a variety of interests in Amateur Radio—and the SWL's are not neglected, either.

The North and Scotland

A nice touch appears in the letter from the Radio Club of **Nottingham**, whose hon. sec.—see Panel—signs himself Hon. *Slave*! Clearly, the lads have been working him hard, which is not surprising when one realises just now much effort is going into the organising of the festival station at Wollaton Park, which will be the only Club activity between June 11 and July 26.

Pudsey also have been busy; here the main task is setting up things for their White Rose Rally on July 26 at Allerton High School in King Lane, Leeds. Their Hq. is at Bramley Liberal Club, Hough Lane, Leeds 13.

Our sole entry for Scotland at the time of writing is from **Mid-Lanarkshire**, where the hon. secretary says that although nothing special has been arranged for July 17, they hope to have everyone showing up—a hint that there might be something special? Could be, since the lads have a "recess" in August, the new session starting on September 18. The meeting-place is at the YMCA, Brandon Street, Motherwell.

Weekly meetings for the **Lincoln** group are at No. 2 Guardroom, Sobraon Barracks, Burton Road, which must bring up a bit of nostalgia among the older members; however, in practical terms July offers a Junk Sale on the 7th, a Treasure Hunt on the 21st, and "open nights" on 14/28th, with visitors welcome to any and all the meetings.

It is the fourth Tuesday which you ring on the calendar if you belong to the **Sheffield** Club, and the place you head for is the Crossed Scythes Hotel, Totley; this gives the date as July 28. Looking forward a little, to August 23, there is the Annual Picnic, which is sited on the Riber Castle Wild Life Reserve near Matlock, about a mile out of town on the B.6014 to Tansley.

At **North Leeds** they are running weekly sessions, all informal, with no set syllabus; the intention is to bring the number of members up to about 20, which is felt, reading between the lines, to be about the limit for their present.

During the summer, the **Wirral DX** Association is dropping its previous routine of meeting in members' homes, in favour of summertime informals, with wives and girl-friends, over a pint of bitter in the Red Cat at Greasby; these are arranged for the last Thursday in each month. Looking forward to September, they have G2AMV "on the hook."

No let-up offered for the **Hull** chaps in July, with

meetings down for July 3, 10, 17, 24 and 31. Taking them in that order we find: An SWL Night; a session on the air from the Club; G3PQY interpreting waveforms; G3RDM conducting a trip "Round Dirty Joints"; and a Construction Night.

Strange though it may seem, these are also the dates offered by the South Manchester crowd. July 3 sees a veritable galaxy of talent—G3HZM, G3WFT and G8BOT—clarifying the techniques of Direction-Finding. An Activity Night follows on July 10, and on the 17th there is G3SMT talking about Aerials. On July 24, the lads move out of Hq. for the evening and have a fling at the Exhibition station at Manchester Flower Show, Platt Fields. Finally on July 31, G3HZM has "More on Aerials" to offer. Hq. is at the Conservative Association Divisional Office, 449 Palatine Road, Northenden.

July 3/5 sees the World DX Club holding its annual conference of members, when GB2WDX will be in operation. Although mainly BC-listeners, there is an amateur transmitting element, under the guidance of G5AO. The venue for this conference is the Adelphi Hotel, Micklegate, York.

The Midlands

As ever, our biggest problem with this area is to define it!

Coventry seems to be a safe bet geographically for a start; the routine here is weekly sessions, with two "Nights on the Air" slotted in on July 17 and 31. July 3 is a car rally with a radio bias, while on July 10, member Chris Plummer reports on his trip to GI-land. This leaves July 24, which is down as an Open Evening, for those members who are not on holiday. Look for them in the City of Coventry Scout Hq., 121 St. Nicholas Street, Radford.

Not far away is Rugby, where the Hq. is at 10 Drury Lane. Since there has just been an AGM, we have no firm information on the doings each Tuesday evening, although it is understood that various activities are in the planning stage.

A couple of trips out are on the slate for the Stour-bridge chaps: July 4, when they have a run up the Welshpool and Llanfair Railway, with a station operating on the air; and July 11, for a look round the big BBC transmitting station at Woofferton. The latter is unfortunately limited to twelve members only. Details from G8BYE—see Panel, p.307.

The Stratford-on-Avon Newsletter notes with much regret that their hon. sec., G3XFV, has had a change in his work which has taken him up to Durham; however, the AGM was down for June 26, when a new incumbent will have been elected. Thus, for July 10 and July 24, all we know is that the lads will be getting together at Halls Croft, but at the time of writing nothing is finalised as far as the programme is concerned, albeit this situation will have been sorted out before the date.

Over to Worcester now, from whence our copy of the Newsletter is a little out of date, unfortunately, giving as it does a detailed resumé of what went on up till the end of May. However, it is interesting to note that the editorial has some wise and thoughtful words on the subject of the growth of their Mobile Rally, which had developed out of all recognition over the years. For

NOTICE TO HON. SECRETARIES

Closing dates for "Month with The Clubs" for the next few months are, Fridays: July 10, August 7, September 4 and October 9. The only address for all reports for this feature is: "Club Secretary," Short Wave Magazine, Buckingham. To get your notice into print, please make sure we have it by the deadline. We cannot write in late reports.



GMSAPX (Rannock) sent this picture of two boys of his school, SWL's Chalcraft and Hall, testing a Honda generator for fuel consumption — it gave a cost-figure of 6 np per kWh on a one-kilowatt load.

the more up-to-date information on this crowd, and their Hq. at Perdiswell Park, contact the hon. secretary, at the address shown in the Panel.

Stoke-on-Trent write to let us know that they are to be found every Thursday evening at their Hq., 2A Racecourse Road, Oakhill. For the record this is at the rear of the Cottage Inn. The idea is to run half-hour "lectorettes" from 1930 to 2000 clock to help the newcomers to the hobby, alternating with Morse for those aiming for an "A" licence. In addition to this a number of lectures and visits of radio interest have been organised, the details of which may be obtained from the hon. secretary, address as in the Panel.

Conclusion

There you have it for another month; the deadline for next time is July 10, address "Club Secretary," SHORT WAVE MAGAZINE, BUCKINGHAM. Your letters or news-sheets should contain the August dates, details of the programme, and the venue. If there is a change of secretary to be noted, please help us to avoid any mistakes by ringing the new information in red, or by adding a covering note. Thanks, good hunting and BCNU.

To become a D/S costs only 45s.—or for first-class posting, 48s.



THE OTHER MAN'S STATION

G3WRO

THE photograph shows the station owned and operated by Keith Haynes, 10 Fullers Close, Collier Row, Romford, Essex, whose interest in Amateur Radio was first aroused in 1965 whilst still at school. However, due to studies during this final year at school, it was not possible to pursue the hobby too far and so it was decided to brush it aside until these studies had been completed. It was towards the latter part of 1965 that a real start was made and the Eagle RX-60N receiver (shown in the photograph) was purchased and a long-wire strung out. Needless to say, this was put to good use listening to the locals on Top Band and also of course chasing the DX on the HF bands.

In May 1966 it was decided to take a stab at the R.A.E., but this was obviously rather premature, as the result was sadly a failure. However, this did not dampen enthusiasm, and more extensive studying was done in order to secure a pass the next time. This was in fact a year later in May 1967, and a pass-mark was obtained. The result was through during early August, and the Morse test was immediately applied for and taken three days later; fortunately, the first go at this secured a pass and the licence was finally issued on August 17, 1967. The transmitter decided upon was a Codar A.T.5, as shown in the photograph, and it still performs excellently.

During the months that followed, many acquaintances were made with local amateurs and this was made even more pleasant by joining the Havering and District Amateur Radio Club. In April 1968 a further step was taken, that of going mobile. The gear used for this is the A.T.5 transmitter with a T.28 receiver and G3FIF mobile whip. During a touring holiday of Wales in the summer of 1968, many friends were made from the car, signing GW3WRO/M. Later, a holiday with a motor-cruiser on the Norfolk Broads, again signing G3WRO/M, was the subject of a short article in the December 1969 issue of SHORT WAVE MAGAZINE.

The latest acquisition at G3WRO is a Trio 9R-59DE receiver which, as can be imagined, adds much to the performance of the station. Prospects for the future are HF-wise, and an outdoor shack is planned to be erected this summer. It might also be mentioned that music is a great interest and a teaching diploma is hoped for before long and so certainly a QSO with anyone who shares this interest is most warmly welcomed.

For the information of any SWL's who may be interested, there is a slow Morse transmission from G3WRO on Friday evenings at 1900 BST on 1,915 kHz approximately. Reports on the efficiency of these transmissions are always welcomed.

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.

- G3XZH**, S. Hemsworth, 12 North Promenade, Withernsea, Yorkshire, E.R.
- GM3ZFU**, S. Rutherford, 7 Johnshill, Lochwinnoch, Renfrewshire.
- G3ZGC**, R. T. Jolliffe, 6 Highfield Road, Newbury, Berkshire.
- G3ZGJ**, M. S. Wigg, 12 Heathlands Avenue, Ferndown, Dorset BH22 8RP. (Tel. Northborne 4297.)
- GW3ZHF**, R. G. Elward, 14 Hospital Road, Aberavon, Port Talbot, Glam.
- GM3ZHG**, J. A. Judge, 2 Rockall Drive, Simshill, Glasgow, S.4. (Tel. 041-637 0681.)
- G3ZHI**, I. Abel, 9 Grove Terrace, Maltby, Rotherham, Yorkshire.
- GW3ZHQ**, D. M. Rosser, 10 Soberton Avenue, Heath, Cardiff, Glam. (Tel. Cardiff 25906.)
- G3ZHS**, R. J. Ray, 37 Doxey Fields, Stafford, Staffs.
- G3ZHT**, B. H. Lundeau, 16 Darras Road, Ponteland, Newcastle-upon-Tyne. (Tel. Ponteland 3001.)
- G3ZHV**, R. S. Bowler, 6 Hastings Road, Hillside, Southport, Lancs.
- G3ZHY**, M. R. Irving, 22 Wheatley Way, Chalfont St. Peter, Gerrards Cross, Bucks.
- G13ZIA**, J. F. MacMahon (*ex-G18AWF*), 18 Drumclay Road, Enniskillen, Co. Fermanagh. (Tel. Enniskillen 2188.)
- G3ZIG**, R. Reed, 2 Attleborough Road, Little Ellingham, Attleborough, Norfolk.
- G3ZIO**, C. H. Harvey, 112 Beulah Road, Thornton Heath, Surrey CR4 8LF.
- GC3ZIP**, M. E. Fretter (*ex-GC8DAK*), Les Varends Cottage, Catel, Guernsey, C.I.
- G3ZIS**, North Leeds Radio Club, c/o P. B. Furminger, 3 Ruthven View, Leeds, Yorkshire LS8 3RQ.
- G3ZJJ**, M. J. Peet, 18 Sandfield, West Lavington, Devizes, Wilts.
- G6AFL/T**, M. J. Marsden (*G8BQH*), 27 Vine Road, Stoke Poges, Slough, Bucks. (Tel. Fulmer 3193.)
- G8DEN**, R. J. Foulger, 31 Woodsley Avenue, Cleethorpes, Lincs.
- G8DJA**, L. Rowland, 29 Patricia Avenue, Bidston, Birkenhead, Cheshire.
- G8DJR**, C. E. Brench, 211 Stoke Road, Slough, Bucks.
- G8DLH/A**, A. J. Hall, 156 Shaftesbury Avenue, Cheriton, Folkestone, Kent.
- G8DOR**, A. D. Barrett, 85 Mayfield Drive, Caversham, Reading, Berks. RG4 OJR. (Tel. Reading 77025.)
- G8DPN**, B. W. Dunhill, 16 Fernliegh Close, Blackpool, Lancs. FY2 OHS.
- G8DQJ**, A. G. Negus, 17 Courtenay Gardens, Upminster, Essex RM14 1DH. (Tel. Upminster 24059.)
- G8DQX**, R. A. Gape, 38 Quorn Gardens, Leigh-on-Sea, Essex SS9 2TB.
- GW8DRY**, E. C. Jones, The Birches, Geuffordd, Guilsfield, Welshpool, Montgomeryshire.
- G8DSO**, C. S. Warwick, 521 City Road, Edgbaston, Birmingham, 17.
- G8DSU**, R. J. Gill, 38 Woodfield Road, Braintree, Essex.

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- E14BK**, T. Deegan, 90 Finian Park, Tullyvarraga, Shannon Airport, Co. Clare.
- G2ACD**, A. C. Dunn, 408 Scalby Road, Newby, Scarborough, Yorkshire.
- G2FQD**, A. L. Rogers, 12 Woodridings Court, Crescent Road, Bounds Green, London, N.22.
- G3EJV**, R. Hargreaves, 64 Waterloo Road, Clitheroe, Lancs.
- G3JBR**, D. R. Tipper, 10 Lowdale Avenue, Scarborough, Yorkshire.
- G3KOO**, B. Parker, 5 Barry Grove, Higher Heysham, Morecambe, Lancs.
- G3MZF**, P. B. Furminger, 3 Ruthven View, Leeds, Yorkshire LS8 3RQ.
- G3NOR**, R. P. D. Ryder, Butlers, Broomfield, Essex.
- G3OIJ**, D. R. Blewett, 92 Thorntree Drive, Whitley Bay, Northumberland.
- GW3OQK**, A. D. Fairgrieve, 17 Cae Talcen, Penprysg, Pencoed, Bridgend, Glam.
- G3ORK**, R. A. Talbot, 52 Duke Street, Formby, Liverpool, Lancs. L37 4DL. (Tel. Formby 74263).
- G3RMG**, L. Taylor, 64 Roseland Park, Camborne, Cornwall.
- G3SAA**, J. N. Helsby, 139 Keene Way, Galleywood, Chelmsford, Essex.
- G3TDJ**, A. J. Cawthorne, 7 Glamorgan Road, Coombe Glen, Cheltenham, Glos. GL51 5JF.
- G3TTC**, K. M. Orchard, Devonshire House, Gold Street, Stalbridge, Dorset.
- G3UHN**, P. A. Neale, 205 Mount Pleasant Lane, Bricket Wood, Herts.
- G3UJR**, J. Rhind, 567 Felixstowe Road, Ipswich, Suffolk IP3 8TE.
- G3UUH**, M. E. Rentell, Int. Corps, HQ Int. & Sy. Gp., Germany, B.F.P.O. 40.
- GW3VEZ**, M. Hughes, Cefn Dinas, Minffordd, Bangor, Caerns. (Tel. Bangor 2893.)
- G3WW**, R. Thurlow, North House, 2 Church Street, Wimlington, March, Cambs. (Tel. 035-45 255.)
- G3XYV**, I. G. Cooper, 5 Clive Terrace, Alnwick, Northumberland.
- G3YOY**, H. D. L. Clark, 18 Marsland Road, Olton, Solihull, Warks. (Tel. 021-786 0485.)
- G3YQC**, J. L. Wood, 73 Hillmorton Road, Rugby, Warks.
- G5KW**, K. E. S. Ellis, Portway Nurseries, Arnolds Lane, Sutton-at-Hove, Dartford, Kent.
- G5ND**, H. G. Newland, 23 George Avenue, Marton, Blackpool, Lancs.
- GM8BOM**, E. Somerville, 2 Hillcrest Place, Kilwinning, Ayrshire.
- G8CDW**, E. H. Double, 89 Linden Gardens, Enfield, Middlesex.
- G8CEA**, R. E. P. Spencer, 3 Caterham Close, Pirbright, Woking, Surrey.
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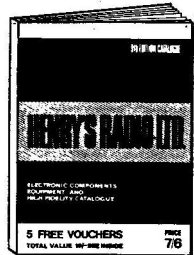
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AUGUST Issue: Appears July 31. Single-copy orders, 4s. (4s. 3d. "first-class" mail) to reach us by Wednesday, July 29, for posting on July 30.—**Circulation Dept., Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.**

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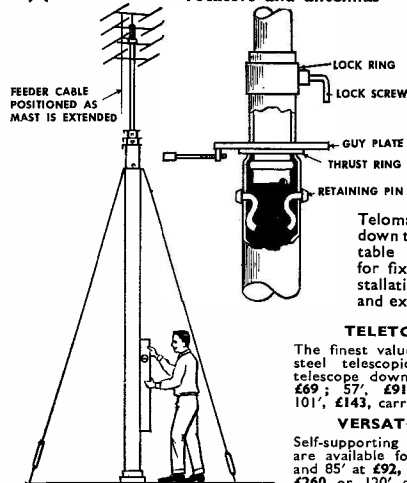
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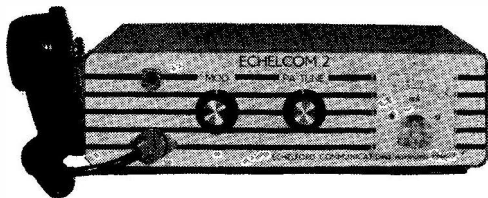
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WANTED: Heathkit SB-101 Transceiver, or SB-401 transmitter.—Jackson, 57 Peterborough Road, Castor, Peterborough, PE5-7AX.

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SELLING: Cossor Type 1049 Oscilloscope, in excellent condition, £17.—Edwards, 52 Llangyfelach Street, Swansea, Glam., 8A1-2BQ, South Wales.

WANTED: Hallicrafters SX-24 receiver case and S-meter; would consider cheap non-working Rx. Also wanted, the circuitry and manual for the SX-24.—Haseldine, G3XSU, 31 Ellesmere Road, West Bridgford, Nottingham NG2-7DE.

SALE: Panda PR-120V Tx; 120 watts AM, 140 watts CW, with mains filter and manual, price £30 or near offer.—Box No. 4912, Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.

MANUALS: For B.40 and RA-17 receivers, 35s. And 100 or so others; s.a.e. for lists.—Brooks, 5 Farrant House, Winstanley Road, London, S.W.11.

REQUIRED: Specimen of the Eddystone Kilodyne-4 or other pre-1939 Eddystone receiver.—Litherland, G8CFB, 11 Birch Grove, Chippenham, Wiltshire.

FOR SALE. PCR3 receiver, £5 10s. Two radio-microphones, £5 10s. each. Two transistor transmitters, 70 mHz or 144 MHz, on PC board, only require xtals, 50s. each.—Box No. 4914, Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.

EXCHANGE: Pye 2021 CC/TV camera, with pedestal and Taylor-Hobson F1.4 2in. lens, needs slight attention, FOR A.T.5 or Top-2/7 Tx, or W-H-Y? —Ayling, G3YUH, 4 Park Lane, Margate, Kent.

OFFERING: Synthetic guy-line, ¼in. dia. polypropylene, 2d. per foot. First-grade ¼in. dia. terylene, non-stretch, high Govt. specification, 4d. per foot (any length), post free. Nylon thimbles, 10d. each; immediate despatch, or 5d. stamped envelope for samples. Flat-twin feeder, 75-ohm, 6d. per yard, any length, post 2s.—Warrick, G3VCJ, Rigging Locker, 50A Queens Road, Buckhurst Hill, Essex.

SALE: Lafayette HA-350 receiver, covering 10 to 160 metres, with two useful modifications: Switchable AM/SSB mechanical filters, VFO peak control; price, with handbook, for a good Rx, £45; delivery can be arranged. Also a Joystick and tuner, 80s.—Handy, 105 Humber Avenue, Coventry (22201), Warwickshire.

FOR SALE: Pair of Cossor Type 104E2 HF-mobile radio telephone and telegraph transmitter/receivers, two channel, coverage 1.92, 8-15 mHz, complete with control units, microphones, Morse keys and all connecting cable-work, price for the pair £30 or near offer.—Townsend, 37 Alexandra Road, Sible Hedingham, Nr. Halstead, Essex.

WANTED: Bandsread dial for the AR77E Rx. and a dial for the Minimitter Mercury Tx. Also 300 and 75-ohm twin feeder, and a pre-selector—Codar, Hamgear or similar. — Vincent, G3YKY, Melody House, Gilloft's Corner, Henley-on-Thames, Oxon. (Tel.: Henley-on-Thames 2000, after 5 p.m.)

EXCHANGE: A Hallicrafters SX-28 Rx for an Eddystone S.640 or S.740, etc.—or sell for £14, buyer to collect.—Nunn, Thartslock View, Lower Basildon, Reading, Berks.

SALE: R.C.A. AR88LF Rx, £35. R.1475 receiver, tunes 2.0 to 20 MHz, £5; PSU for the R.1475, 60s. ART-13 Tx, coverage 2.0 to 18 MHz, £12 10s. W.S.12 transmitter, 1.2 to 17.5 MHz, 40w. output, for 230v. mains, £9. All gear complete with valves.—Ring Jay, 021-454 8305 (Birmingham).

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SELLING: Student SWL offers Eddystone S.750 communications receiver, double conversion, coverage 480 kHz to 32 MHz, variable selectivity, separate RF, IF and AF gain controls, variable BFO, complete and unmodified, in grey cabinet, immaculate condition and performance. — Ring Shams, 01-556 0312 (London).

SAVE Over £7! Trio 9R-59D Rx with speaker going for a mere £35, or offer; hardly used and in perfect condition. (Owner wants to get a motor bike!) Details for s.a.e. — Wolfe, 10 Mansfield Crescent, Clarkston, Glasgow, Scotland. (Tel: 041-638 4574.)

SALE: BCC-69 Mk. III, with microphone and handbook, slight mods. only to Rx front end, £5 or near offer.—Smith, G3JKS, QTHR, or ring Stainforth (Yorkshire) 786.

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

FOR SALE: National HRO-5T, with nine coil packs and PSU, £20. Bandsread coil pack, HRO, for 14 MHz, 50s. Minimitter Top 2-7 Tx, with control box and PSU, £12 10s. Marconi calibrator, 10/100/1,000 kHz, £5. W.1191 wavemeter, mains conversion, with charts, £10. All items open to offer and carriage paid.—Barker, 171 Birchover Way, Derby (56196).

OFFERING: E.M.I. blank recording discs: Twelve of 12-in. green label, eleven of 10-in. yellow label, list price £23 8s., the lot for £12 10s. E.M.I. Emidicta dictating machine, with microphone, remote control and one dozen tape discs, in good condition, £12. Gramplan SR2 disc-cutting machine, 78 r.p.m., cutter needs a regrind, to clear at £7 10s. EXCHANGE and cash adjustment either way for good record player or communications receiver. (London area.)—Box No. 4916, Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.

SELLING: Heathkit SB-301E amateur-band receiver, absolutely new condition, a gift at £120. Would prefer buyer to inspect prior to purchase. Reason for selling, going QRT.—Totten, G3HJT, 29 Unwin Avenue, Bedfont, Middlesex. (Tel: 01-890 6487.)

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ULTIMATUM By the XYL! I must have a neat and tidy Eddystone EC-10 Mk. II, HA-800 or similar Rx. Four to offer in Exchange, all for one: CR-300/1 with PSU; R. 1132 VHF Rx; CR-45 with all coils; and (though it breaks my heart!), an HRO-5T with nine GC coils, bandspread coil pack to 80m., Heathkit QPM-1, PSU and speaker. All this lot in excellent condition.—MacDougall, 7 Belton Road, Leicester, LE3-2DG.

FOR SALE: Eddystone EC-10 receiver, £35. LM-14 Frequency Meter, £25. Command Top Band Tx, with built in modulator, £10. All in excellent mechanical and electrical condition.—Timmins, G3PUA, QTHR.

WANTED: For cash, high-grade general coverage receiver, such as Collins 51-J, R.C.A. AR.8516L, National HRO-500, or similar. (North-East).—Box No. 4917, Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.

SALE: Murphy Stereogram, 1969 model (cost £84), selling for £50. Buyer to collect.—Box No. 4921, Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.

FOR SALE: Hallicrafters S-120 receiver, in excellent condition, together with auto-transformer (worth £5), at £10 inclusive.—Ring Williamson, 01-508 7862.

WANTED: Sphinx Tx, and information about the W.1631 wavemeter. For SALE: Onan generator, rated 3 kW, in first-class working order, ideal Field Day work, etc., offers? Geloso VFO with making of 10-80m. Tx, £6. New valves: 4/U19, 15s. each; 3/TZ-40, 20s. each.—Rawlinson, G8BJR, QTHR.

WANTED: For Invalid Short-Wave Listener, an Eddystone S.750, 680X, 888A or similar receiver. Reasonable price paid for a model in good condition, could collect North-East area.—Box No. 4918, Short Wave Magazine, 55 Victoria Street, London, S.W.1.

FOR SALE: Collins 75S-1, £160. Collins 32S-1, £175.—Yates, G3LB, Ripon (3033), Yorkshire.

SELLING: R.C.A. AR88D, in excellent condition, £32, or EXCHANGE for a Tape Recorder.—Kermode, 56 Brantwood Road, Bradford (45611), Yorkshire.

OFFERING: Star SR-165 general coverage receiver, tuning 500 kHz to 30 MHz, cost £50 new, offers please?—Railton, 4 Northsea Drive, Hove, Sussex. (Tel: Brighton 735694.)

SALE: Heathkit DX-100U Tx, very good condition, £45; SB-10U SSB Adapter, perfect, £25; both checked by Daystrom, Ltd., first-class performance and with manuals. Hammarlund HC-10, 60 kHz IF section of HQ-170/180 Rx, with slot filter, passband tuning, three-speed AGC, noise limiter/squelch control, tunable BFO, sideband switching, AM/SSB detectors, variable selectivity, self-powered, 390 to 500 kHz IF input from main Rx, style identical with HQ-170/180, as new and perfect, very good with an AR88, with manual, £35 (cost £72). Codar PR-30, new and boxed, 90s. Clipfil audio clipper-filter, first class, as new with manual, £5. A.M. (ex-RAF) Type 10A/8559 artificial aerial, tunable 136 kHz to 15 MHz, 70s. AVO Test Bridge (C/R), bought new and little used, in service case, £6.—Boys, G3WVI, Crowthorne Farm, Crowthorne (2589), Berks.

LABORATORY Equipment For Sale: GR-604B Signal Generator, 9.5 kHz to 30 MHz, £45; GR-804B ditto covering 8.0 to 330 MHz, £50; BC-221M, less PSU, £20; Wayne-Kerr wideband attenuator, 60 dB x 0.5 dB, £10; Cossor Type 1035 Mk. I Scope, £15; two Post Office boxes, 20s. each; Pye Scale-lamp Galvo., £8; Plessey 12-in. speaker in enclosure, 60s.; Sullivan 500 pF variable standard condenser, 20s.; GR 50-400 MHz butterfly wavemeter, £5. Also following home-built gear, in copper-lined mahogany cabinets, absolutely fabulous GR quality: High-gain wideband IF amplifier, 35 MHz, VF and AF outputs, metered, £15; two 110-420 MHz test oscillators, built-in PSU, £25 each; one ditto covering 300-500 MHz, £15; National HRO Rx, incorporating EF54-EF50-EC52 front end, plus coil packs, £20; two-metre converter, PSU, £10; two-metre 10-watt Tx, PSU, £15; one-watt AF amplifier, 60s.; decade box, 10K, 20s.; AF oscillator, 3 Hz to 100 kHz, in crackle cabinet, £20; valve voltmeter, 1.5 to 150v., 500 MHz, £7; GDO, 500 kHz to 150 MHz, £5; bolometer bridge and RF leads, £10; crystal modulator for RF oscillators, 60s.; rejection filter, 60-220 MHz, 20s. Also numerous components and valves (832, 24G, QQVO4-7, TT-15, B7G/B9A types). Well worth a visit!—Page, Medmenham Mill, Nr. Marlow, Bucks. Tel: Hambleden 224, or Thame (Oxon.) 2571, office hours.

FOR SALE: Eddystone EC-10 Rx in mint condition, hardly used, complete with mains PSU, headphones to match, and manual — any reasonable offer considered.—Wilson, Woodlands Bungalow, Dog Kennel Hill, Kiveton Park Station, Nr. Sheffield, Yorkshire. S31-8NG. (Or ring Kiveton 771173 after July 4.)

WANTED: (a) Heathkit mobile PSU for HW-32A; (b) Panda aerial tuning unit; (c) ex-Naval low-pass filter commonly known as "Type 12", will bear reference such as AP.56152. Good prices paid for items in FB condition; please say what you want.—Box No. 4920, Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.

SALE: National "Velvet Vernier" dials, boxed, Type ACN 60s., Type N, 20s. Western Electric 705A valve, 10s.; 2/RCA 6CW4 with bases, 10s. each; 2/836, 5s. each; 4/RCA 866A, 5s. each; 4D22 with base, boxed, 40s.; 4/Sylvania 811, boxed, 10s. each. Xtal bar, 100 kHz, 10s. DK60-G2C Dow-Key relay, used, 220v. AC actuation, 50s. DK60-G2C, 115v. actuation, used, 50s. Also 3/DK60, new and boxed, 220v. AC, 65s. each. Turner "211" microphone, requires new insert, 60s. Jap vernier dials, 2½-in. dia., two, new in boxes, 8s. 6d. each. Two G.E. Pyranol 10 mF condensers, 2 kV working, 10s. each. Jefferson (U.S.) auto-transformer, 115/230v., rated 1.5 kVA, 65s. Two 813 bases, 7s. 6d. each. Also instruction books for Hallicrafters SX-28A, 17s. 6d., and Collins 32V-2, 25s. All carriage extra. (Scotland.)—Box No. 4919, Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.

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21 Mhz: W1 S7; W2 S7; W4 S7; K8 S5; W9 S5; LZ S6;
28 Mhz: YO S7; SV S7; PY S6;
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