NOW THE NEW SPACEMARK

SLOW SCAN TV MONITOR SSM-I

Plug it into your receiver phones jack and watch SSTV pictures on the Monitor screen from DX stations all over the world.

If desired, SSTV pictures can also be recorded on an ordinary tape recorder for viewing again on your Monitor.

- All solid state except 5” CR tube with 7 IC’s, 17 transistors.
- Tuning indicator.
- Conforms to international SSTV standards.
- 4 switched inputs.
- Two tone pvc coated cabinet, 13” w. x 7” h. x 13” d. Weight: 17 lbs.

SSM-I MONITOR—£143 (includes V.A.T. and U.K. carr.)

... Why pay double for an imported Monitor?

ALSO AVAILABLE IN KIT FORM. COMPLETE KIT SSM-IK (less case), £82. SET OF PCB’s only with full data, £7.50. Special transformer and some other parts available. Kits come with instructions, circuits, layouts, parts lists, SSTV TAPES and CASSETTES with sync, pulses and patterns for setting up Monitors, £1-80. COMING: SSTV Camera and Fast Scan Sampler.

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NO QUIBLING!

IF THE PARTRIDGE WORLD RECORD V.F.A. SYSTEM DOES NOT SIGNIFICANTLY IMPROVE THE EFFICIENCY OF YOUR SHORT WAVE TRANSMITTING OR RECEIVING STATION—WHATEVER THE LOCATION—PARTRIDGE WILL REFUND THE PURCHASE PRICE (on return of resalable goods).

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RECEIVING (and for required for low power transmitting—300w. P.E.P. input) IS £27.16.

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BOX 4 PARTRIDGE ELECTRONIC LTD.

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evenings and weekends

SOLID-STATE RTTY CONVERTER-KEYER SRD-I

- COPIES 850/400/170 HZ SHIFTS
- BUILT-IN SINGLE AND DOUBLE CURRENT PSU
- F.S. KEYER FOR TX (AND OPTIONAL AFSK)

Complete and ready-to-go for send-receive RTTY with TX, RX and teleprinter.

- Advanced circuitry, 6 ICs, 35 semi-conductors.
- Input matches receiver outputs 3-8 or 500-600 ohms.
- 3-pole Butterworth input bandpass filter.
- Switched 850/400/170 Hz Amateur/Commercial shifts.
- 2-pole low-pass filter.
- Tuning meter.
- Monitor scope outputs.
- Mark Hold and Normal/Reverse shift switch.
- Built-in loop PSU—Instant switch-selection of single- or double-current printers.
- Narrowshift CW identification.
- F.S. Keyer output for TX.
- Socket and circuitry already fitted for optional plug-in AFSKeyer module, 850/170 Hz.

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(Tel. 061-928 8458)
Professional performance with beam and KW equipment

Continuous coverage across 10-15-20-40 metres

The Hy-Gain LP-1007 and LP-1017 were originally designed as commercial systems for use on marine HF SSB circuits, Embassy and commercial systems. These high performance antennas give the amateur radio operator, performance not offered by conventional amateur band antennas.

Frequency coverage is continuous across the frequencies of 13 to 30 MHz for the LP-1007 and 6-2 through 30 MHz for the LP-1017. The antennas may be operated in or out of the amateur bands with consistent results. Both systems are constructed of lightweight aluminium members, with high impact cyclac insulators for long, trouble-free life.

Either system may be rotated with the Hy-Gain Model R-350I Rotator, Towers, obstruction lights and other accessories are also available.

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TO THE NEW READER OR NEWCOMER TO THE HOBBY, MAY WE POINT OUT THE FOLLOWING ADVANTAGES IN DEALING WITH AMATEUR ELECTRONICS:

★ THE FINEST AMATEUR RETAIL PREMISES IN THE COUNTRY
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★ FIRST-CLASS DEMONSTRATION FACILITIES
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SOMMERKAMP FT-250/FP250 TRANSCIEVER. Excellent £162.50
LINEAR AMPLIFIERS. Several just arrived in excellent condition. Full details on request.

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HAMMARLUND HQ170...
TRIO 9R 59DS
SWAN 500C plus A.G. p.s.u.
HEATHKIT DX 60 plus VFO
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EDDYSTONE ECIO

MUSTANG Mk 2
3 Element Beam
2 Element Beam
Dipole (Vertical, Horizontal)
CONVERSION KIT for TA-33 Jr to MUSTANG
3 Element Beam
2 Element Beam
Dipole
Triband 3 Element Beam. Fits 1½ mast

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HEATHKIT GR 64

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---

**PRICE LIST JULY 1974**

Prices include VAT and carriage, but are subject to change without notice

### YAESP MUSEN

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR400SD</td>
<td>£231.00</td>
</tr>
<tr>
<td>FL400</td>
<td>£212.30</td>
</tr>
<tr>
<td>SP400</td>
<td>£14.30</td>
</tr>
<tr>
<td>FT401</td>
<td>£341.00</td>
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<tr>
<td>FY401</td>
<td>£52.80</td>
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<tr>
<td>SP401</td>
<td>£14.30</td>
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<tr>
<td>FT101B</td>
<td>£363.00</td>
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<tr>
<td>FV101B</td>
<td>£52.80</td>
</tr>
<tr>
<td>SP101B</td>
<td>£14.30</td>
</tr>
<tr>
<td>*FT7SB</td>
<td>£160.00</td>
</tr>
<tr>
<td>*FP7SB</td>
<td>£35.00</td>
</tr>
</tbody>
</table>

* NEW MODELS—come along for a demonstration.

### GALAXY

Galaxy R1530 general coverage receiver. 10 kHz to 30 MHz in 60 bands. Solid state... £693.00

### KARL BRAUN

SE600Dig. 144 MHz AM/FM/SSB/CW transceiver with digital readout... £780.00

### NIHON DENGYO

Liner 2... £145.20

### WEIR ELECTRONICS

Weir Mosfet 2m converter... £15.00

### F.D.K.

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
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<tbody>
<tr>
<td>Multi 2000</td>
<td>£297.00</td>
</tr>
<tr>
<td>Multi 7</td>
<td>£110.00</td>
</tr>
<tr>
<td>Multi 8</td>
<td>£143.00</td>
</tr>
<tr>
<td>Multi VFO</td>
<td>£88.00</td>
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</table>

### INOUE

Inoue IC210 fully tunable 144 MHz FM transceiver with 600 kHz repeater shift... £286.00

### FILTERS

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.E.I. QC1246AZ 9.0 MHz C.W. filter</td>
<td>£15.40</td>
</tr>
<tr>
<td>S.E.I. FT101 A.M. filter</td>
<td>£19.80</td>
</tr>
<tr>
<td>S.E.I. FT101 C.W. filter</td>
<td>£17.60</td>
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### VALVES

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>6AH6, 6BZ6, 6CB6A, 6CL6, 6U8A, 6EW6, 6EH7, 6BM8, 12BY7A</td>
<td>£66p each</td>
</tr>
<tr>
<td>6DK6</td>
<td>£1.32</td>
</tr>
<tr>
<td>6JM6A</td>
<td>£1.65</td>
</tr>
</tbody>
</table>

### SLO-SCAN

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venus SS2 Monitor</td>
<td>£249.00</td>
</tr>
<tr>
<td>Venus CI Camera</td>
<td>£275.00</td>
</tr>
<tr>
<td><strong>2m “J” Beams 50 ohms</strong></td>
<td><strong>8m Double-fed Yagi with 2½in. booms</strong></td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>5Y/2M 5 element folded dipole Yagi with 2½in. boom</td>
<td><strong>D5/2M</strong> Double 5 slot-fed Yagi with 1½in. booms</td>
</tr>
<tr>
<td>8Y/2M 8 element folded dipole Yagi with 2½in. boom</td>
<td><strong>D8/2M</strong> Double 8 slot-fed Yagi with 2½in. booms</td>
</tr>
<tr>
<td>10Y/2M 10 element folded dipole long Yagi with 1½in. boom and 45-degree braces</td>
<td><strong>SVMK/2M</strong> Mounting kit for vertical polarisation for 2 slot-fed Yagis</td>
</tr>
<tr>
<td><strong>PBM14/2M</strong> 14 element parabeam with 1½in. boom and 45-degree braces</td>
<td><strong>XD/2M</strong> Crossed pair of centre-fed dipoles complete with harness and stub mast</td>
</tr>
<tr>
<td>5XY/2M Crossed 5 element Yagi with 1½in. boom</td>
<td><strong>UGP/2M</strong> Unipole and ground plane</td>
</tr>
<tr>
<td>8XY/2M Crossed 8 element Yagi with 1½in. boom</td>
<td><strong>PMN2/2M</strong> 2-way phasing harness for two 2M aerials</td>
</tr>
<tr>
<td>10XY/2M Crossed 10 element Yagi with 1½in. boom</td>
<td><strong>PMN4/2M</strong> 4-way phasing harness for four 2M aerials</td>
</tr>
<tr>
<td><strong>PMN/2C</strong> 2-way phasing harness for circular polarisation</td>
<td><strong>70 cm “J” Beams</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>2m MOBILE WHIPS</strong></th>
<th><strong>VERTICALS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>J Beam 5/8 vertical swivel mount</td>
<td>DIAMOND DP-KB103 80 and 40m</td>
</tr>
<tr>
<td></td>
<td><strong>£27-50</strong></td>
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<tr>
<td></td>
<td>HY-GAIN 18AVT/WB 80, 40, 20, 15 and 10m</td>
</tr>
<tr>
<td></td>
<td><strong>£46-75</strong></td>
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<tr>
<td></td>
<td>DIAMOND DP-KB104 20, 15 and 10m</td>
</tr>
<tr>
<td></td>
<td><strong>£22-00</strong></td>
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<tr>
<td></td>
<td>ASAHI Echo 8G 40, 20, 15 and 10M</td>
</tr>
<tr>
<td></td>
<td><strong>£22-00</strong></td>
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<tr>
<td></td>
<td>DIAMOND DP-KB105 80, 40, 20, 15 and 10m</td>
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<tr>
<td></td>
<td><strong>£44-00</strong></td>
</tr>
</tbody>
</table>

| **CARRIAGE BY SECURICOR IS INCLUDED IN THE ABOVE PRICES.** |

<table>
<thead>
<tr>
<th><strong>H.F. BEAMS</strong></th>
<th><strong>ANTENNAS ACCESSORIES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The popular HY-GAIN TH3 jnr., including Securicor carriage</td>
<td>Coaxial cable UR43 50 ohms 16p/m</td>
</tr>
<tr>
<td></td>
<td><strong>£4-40</strong></td>
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<tr>
<td></td>
<td>Baluns BUS 50 ohms 1:1</td>
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<tr>
<td></td>
<td><strong>£4-40</strong></td>
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<tr>
<td></td>
<td>Rotators AR40 (5 core cable)</td>
</tr>
<tr>
<td></td>
<td><strong>£3-00</strong></td>
</tr>
<tr>
<td></td>
<td>SWR meter Hansen</td>
</tr>
<tr>
<td></td>
<td><strong>£3-00</strong></td>
</tr>
<tr>
<td></td>
<td>Rotator cable 5 core (AR40) 20p/m</td>
</tr>
<tr>
<td></td>
<td><strong>£7-70</strong></td>
</tr>
<tr>
<td></td>
<td>SWR meter Diamond SR435 designed for VHF/UHF</td>
</tr>
<tr>
<td></td>
<td><strong>£18-70</strong></td>
</tr>
<tr>
<td></td>
<td>Dummy load/wattmeter designed for VHF/UHF</td>
</tr>
<tr>
<td></td>
<td><strong>£44-00</strong></td>
</tr>
<tr>
<td></td>
<td>Through line wattmeter designed for VHF/UHF</td>
</tr>
<tr>
<td></td>
<td><strong>£55-00</strong></td>
</tr>
<tr>
<td></td>
<td>PL259 plugs 40p: matching SO239 sockets 40p:</td>
</tr>
<tr>
<td></td>
<td><strong>£55-00</strong></td>
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</table>

<table>
<thead>
<tr>
<th><strong>STATION ACCESSORIES</strong></th>
<th><strong>POSTAGE IS INCLUDED IN THE ABOVE PRICES.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy quality morse keys</td>
<td>Headsets, low impedance, padded</td>
</tr>
<tr>
<td><strong>£9-90</strong></td>
<td><strong>£3-30</strong></td>
</tr>
<tr>
<td>Katsumi keyers EK105D</td>
<td>Microphones—Yaesu YD844 table mike</td>
</tr>
<tr>
<td><strong>£15-40</strong></td>
<td><strong>£16-22</strong></td>
</tr>
<tr>
<td>Katsumi keyers EK108A (AC)</td>
<td>Microphones Yaesu YD846 hand mike</td>
</tr>
<tr>
<td><strong>£33-00</strong></td>
<td><strong>£6-32</strong></td>
</tr>
<tr>
<td>C.W. practice oscillators</td>
<td></td>
</tr>
<tr>
<td><strong>£2-75</strong></td>
<td></td>
</tr>
<tr>
<td>Katsumi keyers EK108D (DC)</td>
<td></td>
</tr>
<tr>
<td><strong>£29-70</strong></td>
<td></td>
</tr>
</tbody>
</table>

**PLEASE NOTE THAT ALL THE ABOVE PRICES INCLUDE CARRIAGE BY 24-HOUR SECURICOR EXCEPT THOSE MARKED WITH A * WHICH ARE MAILED POST PAID. NEEDLESS TO SAY WE KNOCK OFF THE COST OF CARRIAGE TO CALLERS.**
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UPDATED SPECIFICATION
The overwhelming response to the introduction of our
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28-30MHz converter using a zener-stabilised 116MHz
crystal oscillator, giving a typical read-out error of
better than 1kHz. The converter is now available in
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output facility.

MMCI44/28  
Price £16.72 inc. VAT
MMCI44/28 LO (with 116MHz output)  
Price £17.93 inc. VAT

SPECIFICATION
Noise figure : 2-8dB max.  
Gain : 27dB typ.  
Image rejection : 65dB typ.  
Crystal oscillator : 116MHz (zenered)  
Frequency error at 144MHz : 3kHz max.  
Power supply : 35mA at 12 volts.  
116MHz o/p power : 5mW min. (LO o/p version)

COMPLETE CONVERTER CAPABILITY
We can supply converters in the range 50-1,600MHz.
Please enquire if you have any specific requirements.

144MHz DOUBLE CONVERSION MOSFET
CONVERTER
I.F.s available ex-stock : 2-4, 4-6MHz. Price inc. VAT
£16.72. This unit was developed to meet the heavy
demand for a converter suitable for use with receivers
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uses two dual-gate mosfet mixers, both fed from the
output of a 70 or 71MHz crystal oscillator. Selectivity
is obtained at the first IF in the 74MHz range, thereby
overcoming the usual problems associated with low-
I.F. single conversion converters.

144MHz CONVERTER
We have extended our popular range of single conver-
sion converters to include the following I.F.s :
9-11, 12-14, 14-16, 18-20, 24-26, 27-29, 28-30MHz
Price £16.72 inc. VAT

70MHz CONVERTER
Price £16.72 inc. VAT

136MHz SATELLITE BAND CONVERTER
I.F.s available : 28-30MHz and others.  
Price £16.72 inc. VAT

144MHz 5 WATT AM TRANSMITTER
5 watts input, six channel crystal controlled.
See May SWM advert for full details.
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Waters & Stanton Electronics

NO GARDEN IS TOO SMALL!

* Element length
* Turning radius
* 10-15-20
* 1.5 kW rating
* No traps to burn out

Minature

Band, 2 Element BEAM Antenna

£15.75 inc. VAT plus £1.50 carr.

By MINI-PRODUCTS INC. USA

DON'T DELAY SEND S.A.E. FOR DETAILS TODAY

MFR SUPER SSB/CW FILTER

We are sole agents for this fabulous little filter that sharpens up the selectivity of any receiver. It simply plugs into the receiver headphone socket and has three positions of selectivity down to 80kHz with an extremely steep skirt and no ringing. In its widest position it enhances SSB and the way it brings the weakest of signals out of the heavy QRM

MFJ 25/50/100 kHz xtal calibrator module. £8.50 + VAT.

Please send SAE for full details.

There is also an interesting range of audio amplifiers, kits and xtal calibrators in the MFJ range. SAE for full details.

MFJ 25/50/100 kHz xtal calibrator module. £8.50 + VAT.

MFJ CW FILTER AND MINI-BEAM STOCKISTS

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ROTATORS—BRAND NEW COE AR30, £37.50; AR40, £32.50

COMPACT 80/40 DIPOLE, £9.90. (p.p. 45p).

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HP2A TVI filters

50 ohms coax...

300 ohm feeder

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G-WHIPS—EX-STOCK.

SOLID STATE AND MICROWAVE MODULES—EX-STOCK.

SHURE MICS.

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ADVERTISERS’ INDEX

Amateur Electronics (G3FIK) ... 226, 278
The Amateur Radio Shop (G4MH) ... 272
Ashley Dukes (Honda) ... 279
B. Bamber Electronics back cover, 279
J. Birkett ... 236
British National Radio School 275
CIL Ltd. ... inside back cover
Derwent Radio ... 277
Eley Electronics ... 273
G3HSC (Rhythm Morse Courses) ... 273
G3LLL Holdings ... 272
G.W.M. Radio ... 236
Hamgear Electronics ... 275
Heath (Gloucester) Ltd. ... 235
D. P. Hobbs Ltd. ... 274
Home Radio (Comp.) Ltd. inside back cover
HY-Q Antennas Ltd. ... 237
K.W. Communications Ltd. 225
Lowe Electronics 228, 229, 237
S. May (Leicester) Ltd. ... 273
Metropolitan Police ... 279
Microwave Modules ... 230
Minwise ... 276
Mosley Electronics ... 227
North West Electrics ... 276
Partridge Electronics Ltd. inside front cover
Radio Shack Ltd. ... 237, 240
R.T. & I. Electronics Ltd. 227
Semicon Indexes ... 279
J. Sharratt ... 272
Small Advertisements ... 273-277
Solid State Modules ... 238
Southern Surplus Merchants 279
Spacemark ... inside front cover
S.S.B. Products ... 236
Stephens-James ... 234
S.W.M. Publications 273, 278, 280
Telecommunications International Agency Ltd. ... 271
Telford Communications ... 274
T.M.P. (Electronic Supplies) 274
Waters & Stanton Electronics 231
J. & A. Tweedy Ltd. ... 272
Reg Ward & Co. Ltd. ... 236
Western Electronics ... 232, 233
W. H. Westlake inside back cover
Chas. H. Young Ltd. ... 231

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(GB3SWM)

Vol. XXXII JULY, 1974 No. 369

CONTENTS

Editorial ... ... ... ... ... ... ... ... ... ... ... ... ... ... 241
Communication and DX News, by E. P. Essery, G3KFE ... ... ... ... 242
The Mobile Scene ... ... ... ... ... ... ... ... ... ... ... ... ... ... ... 247
Rejuvenating the AR88 Receiver, by J. R. G. Beavon, Ph.D., A.R.L.C., G3PPR ... ... ... ... 249
Cubical Quad for Two Metres, by A. Leaver, G8HGR ... ... ... ... ... 252
Low-Voltage PSU, by J. S. Cushing, G3KHC ... ... ... ... ... ... 255
Specially on The Air ... ... ... ... ... ... ... ... ... ... ... 257
VHF Bands, by A. H. Dormer, G3DAH ... ... ... ... ... ... 258
"SWL"—Listener Feature ... ... ... ... ... ... ... ... ... ... ... ... ... 262
The Month with The Clubs—From Reports ... ... ... ... ... 267
New QTH's ... ... ... ... ... ... ... ... ... ... ... ... ... ... ... ... ... ... ... 270

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

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POSSIBLE DELAY
Just as this issue was going to press, another dispute had developed in the printing industry. As it was likely to affect the machining and binding of many periodicals, the possibility is that your copy will not have reached you by the due date. Please don't blame us—as always, we had cleared this issue with the printers on time.

R.A.E. COURSES
With the August-September issues, we shall be starting our usual listing of centres, up-and-down the country, at which courses of instruction are offered for the Radio Amateurs’ Examination (Subject No. 765 in the City & Guilds of London Institute syllabus). Those responsible for the conduct or arrangement of courses should let us have the relevant information as soon as possible to ensure appearance in the lists.

AMATEUR LICENCE FIGURES
The latest Ministry return puts the total of amateur licences in issue in the U.K. at 19,565 of which 4,575 are in the Class-B category. Mobiles, Class A-B together, total 4,444 and there are also 264 current A/TV permits. A most surprising figure is the total of 28,752 licences for radio model control—these are cheap, on-demand and for a five-year term.

OLD TIMERS’ ASSOCIATION DINNER
This took place on May 17, with 71 members and guests present, under the presidency of Kenneth Alford, G2DX. Membership of RAOTA is open to those who have held a U.K. full transmitting licence for 25 years at the time of application. The hon. secretary is Miss May Gadsden, 79 New River Crescent, London, N13 5RQ.

It is perhaps of some slight historical interest to add that the RAOTA was initiated, as the British Old Timers’ Club, by Austin Forsyth, G6FO, in 1948, with the late Howard Thomas, G6QB, as hon. secretary. The first dinner-meeting was held on May 20, 1949, at the Horse Shoe Hotel, London, there being 78 members present. Chairman on that occasion was the late Gerald Marcus, G2NM, and the event was reported, with pictures, in the June 1949 issue of Short Wave Magazine. Thus, the RAOTA itself achieved 25 years’ existence at the recent dinner.

THEFT—MEAN AND DANGEROUS
The R.N.L.I. lifeboat station at Borth, near Aberystwyth, was broken into recently and the boat’s radio equipment stolen. It consisted of a “Westminster” F.15FM, No. 7603, set up for frequencies in the range 156.0-156.7 MHz; a portable transceiver, Derritron “Seafone,” Type 625 No. 044, for spot frequencies in the same range; and an Elnic battery charger. If you should encounter any of this equipment, please let your local Police know immediately.

YOU CAN HELP US
If when sending in an entry (new callsign or change of address) for the “New QTH” page, you state clearly whether or not you are a direct subscriber—this can save having to check on the subscriber card index, involving hours of office time. Similarly, when renewing a subscription, make it clear that it is a renewal and, if possible give the expiry month. Existing direct subscribers can also be of considerable assistance if they send in their latest wrapper (in which the Magazine is received) when querying our subscription department, stating also whether they are in the first or second class post category.

Without such basic information as readers themselves can give us when writing in, much unnecessary office work-time is generated.
COMMUNICATION and DX NEWS

E. P. Essery, G3KFE

AS this comes to be written, Murphy's Law has just operated again; it is just after closing-time for NFD, and close of play at the local ground for one-day county cricket—the only county stuff this season—and, at this precise moment, the thunder and the lightning (and the static), and the rain, have cleared up for effectively the first time for three days. Dear old Murphy—he can always be relied upon!

And, since we are talking about static crashes, let us make our start at Top Band.

160 Metres

Although much of the local activity has moved from this area, with consequent reduction in the GDX working, there is still much happening in terms of real, inter-continental, DX.

W1BB starts the ball rolling with his Top Band Bulletin. Conditions, he reckons have been, by and large, a wee bit down as compared with the previous season, which is not to say that the DX isn't there—it most certainly is. A new country to appear on the bands 7-28 MHz, GW4BLE (Newport, Gwent) has now set off in earnest after his 100 on Eighty; perhaps that is the reason for the dearth of reports, either on CW contacts or Sideband DX.

G2NJ (Peterborough) worked GI5DX while the GI was running a 19 Set from a twelve-volt battery in otherwise blackout conditions. Nick also mentions G3CEL as doing good work on the QRP side, with 1-8 watts, a contact on 3575 kHz which has in the end to QSY because of QRM from a couple of G Phone stations.

Still on the QRP tack, G2HKU is still on his lantern battery rig, at one watt; he worked CW to DJ2FR, DJ0FF, DK9KC, DL8KO, GI2DZG, HA5KKN, ON4QO, ON4TA, and PA0PBL.

Having got the 100 countries up on the bands 7-28 MHz, GW4BLE (Newport, Gwent) has now set off in earnest after his 100 on Eighty; to that end the 18-AVT/WB has been taken down and replaced by an inverted-Vee with the apex at fifty feet, which has brought the European stuff up considerably in strength and still seems to be acceptable at DX. So far reports have been exchanged with KP4AN, C11EU, FP8DH, PY2PUS, PY5CAW, VE1's, W's and VP8NP (who by the bye is ex-G3ZKH).

DX Points

G3YRR (Grimsby) notices the number of DX operators who fail to QSL even though IRC's are sent; Charles has several of his better DX contacts unconfirmed, among them Korea and the Solomon Is. The latest was an HZ who gave a German station as his QSL manager, and of course the card came back marked "Not Known." Charles, like so many more of us, finds it hard to understand the motives of these characters.

W4WFL/1 continues to keep us in the picture. This month he sent over a news release from the Northern Californian DX Foundation, regarding the Kingman Reef expedition, which should, if all goes well, be all but over by the time this comes to be read. However, it is of interest that, as part of the expedition, they were to run a propagation experiment using a Heath HW-7 QRP rig. The operator was first of all to announce the start of the test on full power SSB; then to key the HW-7 into a vertical aerial and ask for listeners to note the signal level, a letter or letters keyed slowly to give positive identification. Then, with the signal attenuated, and the test repeated, using a different code letter and again the listener asked to note the strength of the signal. The order of attenuation will be changed in each of the series of tests, making the level the vital thing to note. If you copied the signal but only partly due to QRM, QRN, or whatever, report it anyway, making the nature of the problem known. Tapes of the reception could be of interest, but every report must bear the date and time (GMT) of the reception. A special QSL card will be sent to all listeners who send in reports to W6WX, Box 717, Oakland, Cal.
J. Oaten, G3VGU, runs this station at 31 Carlton Road, Grays, Essex. He has a Trio TS-510 into a TA-32Jr. for the HF bands, with 20m. CW the favourite mode. Slow-scan TV is also an interest, using Robot equipment, and he sent us some good pictures to prove it.

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California 94604, U.S.A. The tests, hopefully, were to be repeated on all the bands of operation, and even if you heard the announcement but not the test signal, that report would be of value. There was no tinpot experiment, as the name of Prof. O. G. Villard, W6QYT, as the scientific adviser to the Foundation makes very clear.

It is understood the Kingman expedition will also collect coral and marine-life specimens for the Radiation Lab. at University of California.

On a different front, a nice collection of DX QSL cards landed on the mat with some other mail one day; they were 8P6DR, ZF1WL, VP2AGA, and G3RWL—all the same chap, Richard Limebear, who your conductor recalls some years ago as an SWL member of the Southgate Club, back around 1957.

G3DCS (Ipswich) has been off the air on account of his latest toy, a Digital 200S rig, with 11 valves and fifty odd transistors, not to mention 30 IC's. This beauty was almost new but has a drifty VFO. After weeks of experimentation—painting the screening-boxes matt black to improve cooling, and trying temperature-coefficient compensation, the cause turned out to be nothing more complex than the tuning slug in the VFO coil—when this was changed to a VHF (purple colour-coded) slug-type the drift disappeared and went the opposite way, so more weeks were spent gradually removing all the mods until the original circuit was regained, when the VFO was near-perfect! Murphy's Law again; but a useful point to recall by those who use ferrite slugs in VFO coils. Another fault was a noise blanker that didn’t, until it was discovered that although the circuit was correct, the noise blanker operation was critically dependent on antenna tuning!

G3WW (Wimblington) raises a point that has always interested your scribe when he says that to prepare for reception of SS/TV, one should tune the SSB voice signal for best fidelity—why do most, if not all, SSB operators tune SSB voice signals to an unnaturally high pitched sound from the speaker when operating?

ARRL Bulletin 482 announces that after May 31, 1974, QSO's with Tibet will count as China, and contacts with Zanzibar, as Tanzania. Whatever one thinks of the political implications there can be no doubt that this change at least reflects the practicalities of the situation.

A new block allocation of calls granted by the ITU people gives C4A-C4Z to the Republic of Cyprus.

Forty Metres

A dearth of reports on this band—we had thought people were beginning to give it the attention it deserved in the DX context; the DX is almost always there if one is prepared to scratch for it a bit. G2HKU raised UJ8JJJ on SSB, and on the key made his mark with K4TQ and U8AE.

G3ORP (Maidstone) reports in a 137ft. Zepp aerial on all bands; the device enabled him to get in touch with W2FST/2 and W2JDC, and in both cases to get a considerably better report in than he felt able to give.

Some time since we heard from G3MZE (Stevanage), who is another of the QRP brigade, using around three watts to an indoor aerial, and finding a lot of fun in trying to devise the best skywire possible under these conditions. One odd one on Forty was to raise an LX on three watts after years of missing them with forty watts!

However, at this point it would probably be no bad idea to give an indication of the stuff that can be worked on the band, with the relevant times, which might stir up some interest among the many who regard Forty either as a place to avoid or at best a dump for inter-G ragchews. On CW: CR7JO, at 2125; FG7AN, 2345; HClCW, 0045; HIB8RFM, 0100; HK0BBX, 0015; HPI9AC, 0158; OX3CT, 0203; PJ2VD, 2353; TI2LA, 0028; TR8PB, 2302; UH8DU, 2245; UJ8AE, 0010; VP2KF, 2210; V5SMC, 2221; ZD7PS, 2346; ZP5AL, 0515;
G3YRR took the point about the verb to gongoozle last time, and decided to do a bit of gongoozling on his own account, reckoning to see a panorama starting with VK’s and ZL’s, progressing through W’s to PY and LU via all sorts of exotic DX. However, in the event, his gongoozle saw a lot of lumps of dead band, three VE8’s, a couple of LU’s, CR5, CR6 and CR7 and some run-of-the mill stuff, not to mention a lunatic pile-up on a ZD7 from which Charles abstained before losing his dignity.

Nice to hear again from G3DCS (Ipswich) who as mentioned elsewhere has Had Problems. However, between times, to keep his keying hand in, tried his arts on VP9GO, FP8AA and a shoal of W’s, with success.

G3WW (Wimblington) continues with his slow-scan activity, on Twenty and Eighty in particular, and is at the moment trying /M slow-scan. Incidentally, the FT-101 has a special anti-shock mount for it in the Saab 99, securing the rig to the vertical metal portion of the back seat—that is, in what a normal car would be the boot. Since the rear seats fold down, estate wagon-wise, to give a large luggage space, the result when this is done is that the FT-101 pops up in an operating position, and can be hidden away at a moment’s notice should the need arise. As Richard says, he is not the only SS/TV mobile; there are some in the States, such as W9WED, but the latter has to wait until he gets to home or office to know the feeling!

Now G2HKU, who used both CW and SSB, as usual. On CW, there was a contact with YA4RRC, while SSB came up with G3BID /M/HBO, OJ6OM, VA6DMJ, W6FXZ, VA7G, VK7AB and 9H1DP. Although he mentions the odd contact on 14 MHz, most of G3ORP’s time was spent on 21 MHz.

Only the HF bands were worked, says G4CXM (Paignton), and he goes on to comment on the remarkable amount of true short-skip about of late, which enable him to peg quite a few near-EU stations, and have a three-way including himself, Yorkshire and Jersey.

Twenty CW accounted for PY5CMS, VE7BZC, VK2EO, ZS6KT, IS0FPI, UM8FI; SSB held its own in the log with OK3ZI, JA3GZN, FL8BH, UL7JAM, VE8BA, HV3SJ, OJ0MA, KH6IAZ, Z66DN, ZD7SS, ZD8KO, VK6KK, 8R1J, 6W8TU, CN8CC and ZP5AY.

Band conditions have been very much in-and-out, says G2BJY (Walsall), who reckons to operate between, say, 0530 and 0830z, and never after 2030. His CW made contact with A4XFD, GW3ZME on Long Mountain, Powys (a Club expedition, this one) KB3ITU, KR4ITU, KL7GKZ, UA9ABU, UA9DF, UA9XAT, UK9XAN, UA9DFK, UH8BO, UH8BF, UH8IR, UL7PA, VK7CH, WA7NHA, lots of the commoner UA9 obliants, also W1, W4, W6 and W9. During the same period, there accumulated a list of heard-but-not-worked stuff, as FO8EG, HP1AH, JA’s, KH6DV, K7ACB, KL7HSV, UA0SAU, UM8FI, VE6CCU (who was S8 while working a local at 8 w.p.m.), VE7HN, ZL4AC, 6W8FU and 3B8DO. We know the feeling!

Now G2HKU, who used both CW and SSB, as usual. On CW, there was a contact with YA4RRC, while SSB came up with G3BID /M/HBO, OJ6OM, WA6DMJ, W6FXZ, WA7VG, VK6MK and 9H1DP.

Although he mentions the odd contact on 14 MHz, most of G3ORP’s time was spent on 21 MHz. However, Twenty yielded SSB with VK5QG, VS9MB and ZL4BX. Peter reckons to use “SSB on the easy bands, CW on the sticky ones!”

G3MZE has an indoor bent dipole and his HW-7—not, one would have thought, a very promising combination—but it worked UF6FK, 9H1DP and, a couple of hours later, K1SWG and WA35ZV within minutes of each other, solid contacts when both the W’s were saying conditions on the band were...
poor. Perhaps there would be more fun in Amateur Radio if all licencees, world-wide, were restricted to five watts CW or a maximum of 50 watts p.e.p., figures which if applied would put CW and SSB on level pegging— theoretically, anyway.

A couple of days during the month saw GW4BLE take refuge on Twenty from his fans on the other bands; and in so doing he signalled to HR6SWA (Swan Is.), CE2NM, T12MEF, FY7AQ, numerous Americans and a collection of the W special-prefix and “ITU” stations.

The 21 MHz Band

Some people swear by it, others swear at it; it all depends on your point of view. For many people this band is the world’s worst when it comes to TVI, in Channel 1 TV areas. Your scribe has to admit it was a tough nut to crack, but the one local TV still using Ch. 1 was tamed by using two ferrite-ring braid-breakers and two high-pass filters in the TV aerial lead-in. This, with an original signal from the TV aerial so weak that it is on the edge of breaking line sync., allows the KW-2000B to be used to a 14-AVQ aerial, through a low-pass filter and a quarter-wave stub, and over-driven at that, without a ripple of response on the TV set. It has to be admitted, though, that it hasn’t much to spare, as the addition of the linear (grounded-grid) upset the apple-cart still, as too much second-harmonic energy is put up the spout for the low-pass filter to cope with alone; so a second low-pass filter is on the stocks. The annoying part about it is that G3KFE owns another low-pass filter, a surplus Admiralty type, which he lent to someone and can’t for the life of him recall who! Perhaps this note may resurrect it.

However, back to our muttons. G3DCS’s CW tangled with KO2ITU, KX3ITU and various more mundane W’s.

G2HKU was a bit surprised to find 21 MHz “giving” at 1.0 a.m. in the morning, but masked his incredulity and made CW contacts with KD1ITU, KX3ITU, KH6EO, VE2WA, VE3BZH and WA9SYV. The last-mentioned contact lasted for over 30 minutes quite solidly, and ended with R5 signals; checking over the band when the QSO finished, and there wasn’t another signal to be heard. Interesting little bit of propagation oddity, that.

Another indoor-dipole merchant is G4CXM, who has one on 21 MHz. With it, SSB contacts were made to JA’s, all over the USSR, and Europe, including GC3JGS, GM3CF5, GH4BXM, 7P8AZ, SU7AZ, SU7BB, ZD8KO, KV4AD, HV3SJ, OJ0MA and A51PN. That GC, incidentally was definitely a skip signal, as GC cannot be heard on ground-wave from Paignton.

Fifteen for G3ORP was quite an interesting exercise; SSB all, to CE3YY, SV0WKK, LU9DM, LU6EM, ZP5AY, WB80FE, VO1EV, W4PRN, WA8COB, SV1CB and LU1NH, mostly raised during evening TV viewing hours. Peter, on the TVI question—you may remember that some time ago he had real problems, which provoked your conductor into print on the subject in this piece—finds he now has no TV’s with aerials troubling him, as a new 40 kW UHF TV station has set up shop about three miles away and he couldn’t compete with that even with a snap-recovery diode in the aerial!! Otherwise there is one stereo record-player, and one Redifusion piped TV, when 14 MHz SSB is used; but the parties concerned are being very helpful and the problem should cause little real difficulty.

The last three to make the 100 countries up on 21 MHz were duly knocked off by GW4BLE, in the shape of SV, 3A2 and 3D6. However, Stephen reckons that the bare 100 is hardly enough when one has sights set on 5BDXCC, as it is a certainty that someone will fail to come across with the QSL card; this being so, thoughts are being turned to a monobander for Fifteen to help in wiping up a few more countries.

After a pretty sordid month, G3YRR reports in a last-moment second letter, conditions changed abruptly, and 21 MHz started to play. CX6AM was worked, with VP8KF in the shack, just leaving to return to G3VPW. Also in the net were 5T5DY, LU3DJD, PY1DBU, PY2HT and CR6EQ, not to mention...
at various times an assortment of W's, W6, W7, VE8 and VE7.

Ten Metres

All the fun of the fair, and twice as much uncertainty. There is always the possibility of a VHF-style opening on Ten, as much after dark as in daylight; occasionally, in daylight hours, a full-blown ionospheric opening may occur, usually North-South in direction, but occasionally East-West. However, it is your scribe's firm opinion that many of these are effectively lost by lack of the odd CQ call than at various times an assortment of W's, W6, W7, VE8 and VE7.

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Around the middle of the month seems to have been the best time for Ten, with Europeans at S9 plus, and the odd bit of DX from the South thrown in for good measure, says GW4BLE. Out of the Europeans a new country for the band was notched up in LX1RF in Luxembourg.

Look Forward

We have already mentioned the Kingman Reef affair which will likely be over by the time this reaches you. On the subject of other expeditions to Kingman, there are conflicting stories; one usually reliable source says the other groups who were planning Kingman have dropped out to leave the field to the Northern Californian DX Foundation trip already mentioned. Another, equally reliable, suggests possible activity there in July and again in September. Personally, your conductor rather favours the theory that says "wait and see" because he finds it a bit difficult to credit some of the information being fed to him.

Mount Athos operation is hinted at around the end of the month and the early part of July, by OH2BH, but there have already been some hang-ups, causing the dates to slide out, so if he doesn't pop up dead on time, stick around—OH2BH usually contrives to serve up the promised fare somehow.

Late-June, early July is pointed out as being the likely time for some activity from Desroches by the VQ9 lad's. No more details available at the time of writing, unfortunately.

Looking a bit further on and into August, the Nauru expedition signing C21DX, activated by JA1OCA plans to operate from late August and into September; there will be two stations with linear, beams and dipoles, covering all bands 160 to 10. Anyone wishing to fix up any special skeds can write to Isao Nune, JA1OCA, Central P.O. Box 1409, Toyko, Japan. Last year this group made 2000 contacts on six bands and this year they are aiming to do better!

The Agalega situation is clarifying; Jacky will, it is now understood, be there for another year, and VQ9R has sent him a new relay to replace the one he popped, plus a TA-33Jr beam, which should help things along a bit.

On a more negative note, the last station in 9U5-land was 9U5CR, who has now returned home. One wonders when we will see any more activity from Burundi.

Activity from BV2A has to date been CW only, on a frequency of 14025 kHz. It is understood the authorities in Taiwan have now issued a permit for SSB operation at the 100 watt p.e.p. level on a frequency of 14218 kHz; activity may well have commenced by the time you get round to reading this. QSL's will be handled by INDEXA.

There seem to have been some 9Q5 stations about over the past few weeks. As will be recalled, the 9Q5's were all closed down some time back, so clearly these new calls are, strictly speaking, "Fred Phoney's"; however, they seem to be in no fear of action by the authorities there, and indeed indicate that the licence situation may be rectified within weeks. One hopes so, indeed.

QRT

That seems to wrap up the DX and communications news for another month. Next time we will be back for a deadline of July 9, addressed as ever to "CDXN," SHORT WAVE MAGAZINE, BUCKINGHAM, MK18-1RQ. 73 es GL.
For the Northern Mobile Rally at Keighley, Yorkshire, the reception point was manned by members of the Otley Radio Society. This was again a very successful Rally event.

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**THE MOBILE SCENE**

*NOTES AND PICTURES*

With some more Rally dates to be listed, we can also add that the number of U.K. mobiles licensed is 4,444, as at the latest Ministry count. Of these 3,164 are A-licenses and the remainder Class-B (VHF), showing an increase of 56 mobiles, in both categories, in the month.

Though in this list we have eight Rallies taking place on four Sundays, the geographical separation is such that there should be no serious clash as regards attendance.

Note that the Peterborough Rally has now been changed to September 29, not as given on p.192 of the June issue.

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**RALLY CALENDAR**

July 7: West of England Mobile Rally at Longleat, the stately home of the Marquis of Bath, near Warminster, Wilts., as in previous years. Apart from the menagerie, it is a magnificent place to see.

—Details from Brian Croker, G3ULJ, QTHR.

July 14: Anglian Mobile Rally at Stanway School, Winstree Road, Colchester, with talk-in on two metres, trade stands, bring-and-buy stall, and general entertainments.—Information from: J. L. Spurgeon, G8GIC, QTHR.

July 14: Annual Rally event organised by the South Shields & District Amateur Radio Club, at Redwell School, Prince Edward Road, South Shields, on the A.1300, with talk-in on 1980 kHz by G3DDI/J and 145.8 MHz by G8BOF/J. Trade stands, prize draw and competitions, light refreshments available on site. This is the longest-established Rally in the North-East, and the contact-man is still Derek Forster, G3KZZ, QTHR.

July 21: Southdown Society Mobile meeting at the Polegate (Sussex) Steam Engine Rally, signing GB2SS on the HF bands and with VHF talk-in by GB3SS.—Details: B. Houghton, G4BCO, QTHR.

July 21: Cornish Radio Amateur Club Rally at Cornwall Technical College, Pool, nr. Redruth, on the A.30. Usual Rally arrangements, with refreshments available and talk-in on Top Band and two metres.—M. C. Locke, G3NKE, QTHR.

August 11: Claimed to be the “No. 1 amateur rally event,” the 17th in the long series of Derby Rallies will, as usual, be at Rykneld Schools, Bedford Street, just off the Derby outer ring road. Open at noon, with free admission and ample parking, there will be numerous trade stands (no further trade space now available, and waiting list for possible cancellations), static displays, a brass band contest, tombola and the famous monster sale, with something for everyone. Refreshments on site and talk-in on 160m. (G3ERD) and two metres (G3DDI/J) — T. Darn, G3VGY, QTHR. (Tel.: Ripley 2972).

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August 11: Torbay Amateur Radio Society annual Mobile Rally at Newton Abbot Rugby Club ground, with talk-in by G3NJA/A on 1862 kHz and G8IUI on 145.0 MHz. There will be displays by Arroy Signals, also trade stands, refreshments and bar from noon.—Details from L. H. Webber, G3GDW, QTHR.

August 18: Preston Amateur Radio Society Mobile Rally at Deepdene County School, St. Stephen’s Road, Preston, 11.0 a.m. till 5.0 p.m., with talk-in on 2/160m. Trade stands, bring-and-buy stall, and refreshments.—G. W. Earnshaw, G3ZXC, QTHR.

August 18: Bromsgrove Mobile Picnic, Avoncroft Museum, Bromsgrove—J. Dufrane, 44 Hazelton Road, Bromsgrove, Worcestershire.

September 22: Harlow & District Amateur Radio Society annual Rally at Harlow.—Information from B. G. Capper, G4DBC, 36 Woodhill, Harlow (0279-38453), Essex. (Details later).

September 29: Peterborough Mobile Rally, as last year. (Details later.)

(over)

"... . Now we come to the prize for the visitor having travelled the greatest distance . . . ."
One of the talk-in stations for the Northern Mobile Rally—this being on two metres and operated by G8AWN/A.

Crowd view during the raffle draw at the Northern Mobile Rally.

For this month's Reader Small Advertisements, see pp. 273-276
REJUVENATING THE AR88 RECEIVER

SOME WORTH-WHILE MEASURES

J. R. G. BEAVON, Ph.D., A.R.I.C. (G3PPR)

Probably one of the most popular and successful of "surplus" receivers, the AR88 and its variations is an American design and was manufactured by the Radio Corporation of America. Large numbers were supplied to the U.K. for ground-station operation under the war-time Lend-Lease agreements—which, while it dates the design, does not in any way diminish its merits as a receiver. Oddly enough, very few AR88's appeared as surplus in the States as they were mainly sold off in this country after the War. Even today, a really good AR88D, "with manual and in original packing," is worth around £60. On the other hand, there must be 100's of AR88's still in use which could well do with the treatment suggested in this article.—Editor.

The very popular AR88 receiver, manufactured by R.C.A., is now growing old, and many of those around must be in none-too-good a condition. The writer's, after 8 years' storage, had grown mildew on the wiring and the rubber insulation on the block paper capacitors was powdery and disintegrating. It was decided to rebuild the set, for despite its disadvantages of great weight and size, it is still a very good receiver, and a few pounds spent on new components will transform an indifferent receiver into a startlingly good one. It did in this case, anyway!

But the work needs courage! You can't change your mind halfway through; it'll take three weeks or so of fairly intensive effort after which you'll not want to see the inside of an AR88 again. No actual modifications to the receiver were attempted at this stage, so this article simply gives a few tips on rebuilding the Rx as-is. The AR88 manual is helpful, but is not absolutely necessary.

(A) Initial Preparation: Get the Rx free of all external leads, remove the valves and the covers to the RF unit and the tuning gang, and take off the knobs with the Allen key which you should find inside the set. Undo the jack socket, remove the S-meter leads (if fitted) and then detach the front panel. A box spanner or a socket set is useful for this. Remove the dials, noting which way round they go and which one is in front, and the flywheel and flywheel mounting bracket.

The RF unit should now be taken out. Cut all the wires to it, and undo the three screws on the underside at the front and the eight around the sides on the top. The unit will now lift out from underneath, and can be set aside until needed.

Don't leave any of these dangling without a note of where they should go; you'll have forgotten next time, and if you haven't a manual, trouble lurks.

(B) Power Wiring: Slit all the cable lacing and remove it; cut also all leads to the resistor board located on the chassis drop near the AF output transformer, and remove both it and the 3 x 0.25 µF capacitor mounted close by. Replace the power wiring systematically on the "old wire out, new wire in" basis, running all leads in the same positions as the original. The temptation to shorten or simplify is best resisted; one must presume that R.C.A. knew what they were doing! Also put in new heater wiring throughout the AF and IF stages, and renew the leads to the jack socket, the speaker output terminals, and the relay terminals. The writer discarded the leads to the "diversity" terminals, and didn't bother to rewire the voltage selector, though that was pure laziness! The connections to the octal socket on the rear chassis drop were scrapped, too (are you going to use an AR88 as a /P receiver?), and this can now be used to feed power to an amateur-band converter—there is plenty of power available for this, or for a preselector.

The Rx should now have new wiring on T1, 12, X11, X13, X14, L49 and L50 (reading the manual nomenclature). One or two "old" wires, which feed HT into the rest of the set, will be left intruding into this fresh new territory. Don't leave any of these dangling without a note of where they should go; you'll have forgotten next time, and if you haven't a manual, trouble lurks.

(C) IF strip: The writer worked backwards from the 1st AF stage, X10, replacing all components and wiring on the same basis as the power supply. The resistor board was replaced by a printed-circuit board since the original was extremely decrepit; the board and its connections are shown in Fig. 1. The components were mounted on the copper side of the board, rather than through the board, as is usual. The 5-watt resistors should be mounted well away from the board and from any other wiring, since they can get rather warm.

As rewiring progresses, the block paper decoupling capacitors should be removed and discarded; the new components can be mounted near to the pins they decouple, and polystyrene capacitors were adopted because...
they are small. There shouldn't be any problems here; accessibility is good and wiring is straightforward. Again, replacement leads should be made in the same positions as the originals. The screened leads to the variable potentiometers must be replaced with similar wiring and when refitting these it is useful to leave the original pots, in situ almost till the last minute to ensure that you get the connections the right way round. If you have a manual, beware of R.C.A.'s curious nomenclature! For example, 10K resistors, are labelled "10M" in the circuit. Megohm resistors are labelled "xMEG." All variable potentiometers were replaced by moulded-track types, since some of them carry DC and are more resistant to noise development under these conditions. The NL and AFG pots are 66K in the original; these were replaced with 100K in the rebuild. Be very careful when unsoldering connections to the IF transformers that the lugs don't just break off, and don't get them sizzling hot. It was found useful to clean off the filthy ceramic valveholders with a wad of cotton wool dipped in meths. and held with a pair of forceps.

At this stage, all of the wiring on the main chassis should be new; you'll be surprised at the apparently wide-open spaces there are, chiefly because of the elimination of those huge decoupling capacitors.

(D) RF Stages: The nasty bit! Undo the 22 (1) nuts and the 12 screws holding the baseplates in position. Undo the eight nuts which hold the sides on to the RF amplifier screens, and remove the sides. Disconnect the wavechange switch, and extract the 12 screws which hold three sides of the oscillator box in position and remove this.

The coil in front of the oscillator socket (X3) has to be taken out (L52). Make a note of the connections to this coil, unsolder it and remove it. Replace all the components on X3, and be very careful not to touch the ceramic pillar-type trimmers with the iron; the metal is lead alloy, and if they get hot they'll disappear, fast! In many cases the mica capacitors are non-standard values, and have to be made up from standard values in parallel; these are given in the Table. Wire the heater of X3 to that of X4 (pins 7), and bring a 10 cm. lead from X3 pin 7 out of the RF unit. Also bring a 15 cm. lead, from pin 4 of X3 the same way, so that they will go parallel; these are given in the Table. Wire the heater of X2 to that of X1, and bring this out via a 20 cm. wire, to pass through the semi-circular hole in the rear part of the RF unit side. (When rewiring X4, mind the plastic former of L29 with the iron). When renewing R10, bring a 20 cm. wire out through the side from the point where R10 is soldered to the wavechange switch. Bring a 20 cm. wire from pin 3 of X4 out between the oscillator and RF sections screens.

When X2 and X4 are done, replace and rewire the coil and capacitor. To deal with X1, L15/16 is removed. Other components around the wavechange switch are replaced as you go. When the wiring is all complete, check for loose bits of solder, etc., and then re-assemble.

## Table of Values

| C1, C11, C33, C47, C51, C52, C54, C63, C93 | C95, C102 = 0.1µF paper or poly |
| C12, C34 | C99, C112, C113 = 0.25 µF paper or mixed |
| C17 = 470pF poly | C105 = 500 pF mica |
| C57 = 220pF, mica | C103 = 10pF, mica |
| C7 = 18pF, mica | R1, R6, R19, R49 = 33,000 ohms |
| C8 = 33pF, mica | R2, R33 = 2.2 megohms |
| C9, C10 = 25pF, mica | R3, R10, R12, R16, R22, R26 |
| C12 = 56pF, mica | R31, R34 = 1.000 ohms |
| C13, C26, C29, C42, C65, C67, C69 = 82pF, mica | R3, R37 = 56,000 ohms |
| C15, C25 = 15pF (10+5), mica | R4 = 65,000 ohms |
| C17 = 625pF (500+25), mica | R5, R37 = 2.700 ohms |
| C18 = 13pF (10+3), mica | R7, R17 = 10 ohms |
| C20 = 1550pF (1500+50), mica | R8, R18 = 5,600 ohms |
| C119, C21, C23, C28 = 3000pF (2700+300), mica | R9, R14, R41 = 100,000 ohms |
| C24, C111, C116 = 2700pF mica | R11, R10 = 560 ohms |
| C30 = 190pF (3000+3000), mica | R20, R39 = 100 ohms |
| C31 = 75pF, mica | R23, R27, R50, R57, R58 = 650,000 ohms |
| C36, C58 = 180pF, mica | R25 = 180 ohms |
| C44, C46 = 91pF (10+82), mica | R30 = 2,700 ohms |
| C48, C109, C110, C103, C106, C107 = 0.05µF paper or poly, C53 = 68pF (3+3), mica | R32 = 390 ohms |
| C56 = 100µF (100+200), mica | R40 = 270,000 ohms |
| C57 = 220pF, mica | R42 = 390,000 ohms |
| C58 = 75pF, mica | R43 = 100 ohms, 5 watts |
| C44, C46 = 91pF (10+82), mica | R44 = 150 ohms, 5 watts |
| C119, C21, C23, C28 = 3000pF (2700+300), mica | R45 = 15 ohms |
| C24, C111, C116 = 2700pF mica | R53 = 330,000 ohms |
| C30 = 190pF (3000+3000), mica | R54 = 2700 ohms |
| C31 = 75pF, mica | R55 = 6,800 ohms |
| C36, C58 = 180pF, mica | R56 = 5 ohms 5 watts |
| C44, C46 = 91pF (10+82), mica | R46, R48 = 100k log, moulded track (RF gain and NL) |
| C56 = 100µF (100+200), mica | R51 = 2 megohm log, moulded track (AF gain) |
| C61, C120 = 15pF (10+5), mica | R52 = 1 megohm log, moulded track (tone) |
| C74, C79, C84, C92, C93 | |

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**Fig. 3.** Receiver viewed from underneath
Alignment
Alignment data for the AR88D. For Band 1, use a dummy aerial of 200 pF; for the other bands, one of 200 ohms. Adjust the coils or capacitors for maximum output across the speaker voice coil with RF and AF gain set at maximum, NL/AVC at position 4 (AVC), and the selectivity switch at posn. 2.

<table>
<thead>
<tr>
<th>Dial Position, kHz</th>
<th>General Frequency, kHz</th>
<th>Antenna trimmer</th>
<th>Adjust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Band 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Extreme low end</td>
<td>535</td>
<td></td>
<td>L51</td>
</tr>
<tr>
<td>2 Extreme high end</td>
<td>1600</td>
<td></td>
<td>C16</td>
</tr>
<tr>
<td>3 Repeat 1 and 2</td>
<td>1500</td>
<td>Max. output</td>
<td>Untouched</td>
</tr>
<tr>
<td>4 1500</td>
<td>1500</td>
<td>L37, C59</td>
<td>L2, L14, L24</td>
</tr>
<tr>
<td>5 600</td>
<td>600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Repeat 4 and 5</td>
<td>1700</td>
<td>Max. output</td>
<td>Untouched</td>
</tr>
<tr>
<td>Band 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Extreme low end</td>
<td>1570</td>
<td></td>
<td>L52</td>
</tr>
<tr>
<td>8 Extreme high end</td>
<td>4550</td>
<td></td>
<td>C19</td>
</tr>
<tr>
<td>9 Repeat 7 and 8</td>
<td>4300</td>
<td>Max. output</td>
<td>Untouched</td>
</tr>
<tr>
<td>10 1700</td>
<td>1700</td>
<td>L38, C60</td>
<td>L4, L16, L26</td>
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<tr>
<td>11 Repeat 10 and 11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Band 3</td>
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<td></td>
<td></td>
</tr>
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<td>14 Extreme high end</td>
<td>12150</td>
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<td>C22</td>
</tr>
<tr>
<td>15 Repeat 13 and 14</td>
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<td>Max. output</td>
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</tr>
<tr>
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<td>11500</td>
<td>L39, C62</td>
<td>L6, L18, L28</td>
</tr>
<tr>
<td>17 4600</td>
<td>4600</td>
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<td></td>
</tr>
<tr>
<td>18 Repeat 16 and 17</td>
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<td>Max. output</td>
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</tr>
<tr>
<td>Band 4</td>
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<td>19 Extreme low end</td>
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<td>16600</td>
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<td>C25</td>
</tr>
<tr>
<td>21 Repeat 19 and 20</td>
<td></td>
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<td>Untouched</td>
</tr>
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<td>22 16100</td>
<td>16100</td>
<td>L41, C64</td>
<td>L8, L19, L29</td>
</tr>
<tr>
<td>23 12100</td>
<td>12100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 Repeat 22 and 23</td>
<td></td>
<td>Max. output</td>
<td>Untouched</td>
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<tr>
<td>Band 5</td>
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<td></td>
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</tr>
<tr>
<td>25 Extreme low end</td>
<td>16100</td>
<td></td>
<td>L55</td>
</tr>
<tr>
<td>26 Extreme high end</td>
<td>22700</td>
<td></td>
<td>C27</td>
</tr>
<tr>
<td>27 Repeat 25 and 26</td>
<td></td>
<td>Max. output</td>
<td>Untouched</td>
</tr>
<tr>
<td>28 22500</td>
<td>22500</td>
<td>L45, C68</td>
<td>L10, L20, L30</td>
</tr>
<tr>
<td>29 16400</td>
<td>16400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 Repeat 28 and 29</td>
<td></td>
<td>Max. output</td>
<td>Untouched</td>
</tr>
<tr>
<td>Band 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31 Extreme low end</td>
<td>22000</td>
<td></td>
<td>L56</td>
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<tr>
<td>32 Extreme high end</td>
<td>32000</td>
<td></td>
<td>C32</td>
</tr>
<tr>
<td>33 Repeat 31 and 32</td>
<td></td>
<td>Max. output</td>
<td>Untouched</td>
</tr>
<tr>
<td>34 31500</td>
<td>31500</td>
<td>L46, C68</td>
<td>L12, L21, L31</td>
</tr>
<tr>
<td>35 22500</td>
<td>22500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 Repeat 34 and 35</td>
<td></td>
<td>Max. output</td>
<td>Untouched</td>
</tr>
</tbody>
</table>

To keep in touch with the world of Amateur Radio, read "Short Wave Magazine" regularly — Independent, Unsubsidised and now in its 32nd volume.
CUBICAL QUAD FOR TWO METRES

FIVE-ELEMENT DESIGN—HIGH GAIN—
DETAILS AND MEASUREMENTS

A. LEAVER (G8HGR)

FOR some time various types of aerial had been thought about for use on the two-metre amateur band. The choice is very wide, but the final objective was to put up an aerial with as many points in its favour as possible. Among these was ease of construction.

As far as could be seen the only VHF aerials that could be purchased were Yagi's or Omni's, but as the intention was to construct an aerial it appeared that the Quad did merit consideration, as being easier to build than a Yagi of equal gain. As the effective gain at VHF is an important consideration and from theoretical calculation it is easily shown that a five-element Quad has more gain than a five-over-five Yagi, this was in its favour.

As gain is important, then equally so the angle of radiated power relative to ground must be as important. For if a high angle of radiation results then the gain achieved will be wasted. Also is the consideration that if skip occurs then why not retain power by using a low angle of radiation by keeping low—simple mathematics will show that the main lobe power of the aerial will strike the troposphere at a much greater distance and at higher e.r.p., hence fewer reflections at low angle radiation put many more at high angles, plus a loss of effective bower. Yagi's by very careful design and long boom-lengths can be made low angle, but even if perfect it will not match a Cubical Quad—which by virtue of design is a low-angle aerial.

When SWR is considered on a VHF aerial it should remain within reasonable limits over the entire two-metre band. With Yagi aerials this is difficult, as it means very careful design or slightly decreasing performance in order to obtain a flat response. On the other hand, omnidirectional aerials are quite good but lack gain.

The Quad however is a low-Q aerial and so the SWR will not go worse than 1:5 : 1 or so at band edge. This is very useful, as many stations now use a VFO and do not wish to lose reasonable matching due to standing waves on the feeder.

Most transmitters work at their best with a 75-ohm load. A Quad is a natural choice because this is its input impedance without using baluns. VHF aerial considerations differ on one point in particular, that is the beam width. Many operators say it is not important as a narrow beam-width can lose contacts, while others say a narrow beam-width is an advantage. Operators who do not require a narrow beam-width are those who live in areas of very low VHF activity. On the other hand, if you are in an area of even moderate activity then a narrow beam-width is of importance if the virtue of a good aerial is not to be made useless by heavy QRM from nearby stations. Also, to achieve high gain in the main lobe the beam width has to be reasonably narrow. Yagi aerials of very long boom lengths are less than 20° between half-power points. The Quad is less than this and when sidelobes are considered the Quad need have only two minor side lobes while giving a front-to-back ratio of 25 dB. This is important as a narrow beam-width is useless if the aerial will accept signals from the back.

Polarisation

One of the outstanding features of the Quad on VHF compared with a Yagi is the acceptance of various angles of polarisation. It has often upset many a /M that his new, neat vertical aerial that looks so well on his car gets very bad reports from fixed stations using horizontally-polarised Yagi's. This is simply because the Yagi will badly degrade any signal out of its own plane of polarisation, and the better the Yagi the worse it goes.
You may now be saying to yourself, well, I don’t operate mobile or vertically polarised stations—maybe not, but you may in a sense, without being aware of it forget, as many VHF operators do, that over long signal paths, reflected paths and skip paths, the angle of the transmitted plane of polarisation relative to the horizon may change considerably from horizontal to vertical, slant and even circular. This is when the QSB really starts, when the signal is continuously changing polarisation plane. If the aerial will not accept any polarisation plane other than its normal, then it is time for a rethink on VHF aerials. (QSB can be caused by other factors as well as polarisation changes, e.g., Doppler shift path changes, etc., but as these are complex and would take a separate article to evaluate, the point remains that a major cause of QSB is polarisation change). The Yagi, as previously mentioned, will not accept signals off its normal plane, but if the Yagi is stacked as a diversity aerial, e.g., one vertical, one horizontal, then it will accept either polarisation plane.

Practice
Some work has been carried out commercially based on the foregoing considerations and excellent results have been obtained. This does merit much further investigation, as tests show greatly improved signals over long paths.

Another aerial that is foremost in this field is the helix. The helix will accept vertical, slant, horizontal and circular polarization. The disadvantages are that in the case of circular polarization the helix has to be in the same polarization plane as the signal being received, e.g., if the Tx is left-hand plane the Rx has to be left-hand, or the signal is badly degraded. Also, as many VHF operators use Yagi aerials, transmitting circular would be useless; the Yagi won’t accept this without loss, but as it is circular the loss would not be as great as vertical signals, though at least 3 dB. The main disadvantage is that the helix is a difficult aerial to construct for VHF.

This leaves the Cubical Quad. As already said, this aerial will accept all forms of polarization (though with some loss if not horizontal) but nowhere near as high as the Yagi. This has been very noticeable on long-distance contacts using the fire-element Quad, as a considerable reduction of QSB when the station at the other end reports heavy QSB using, of course, a Yagi. Also, mobiles are far easier copy at much further distances. This is irrespective of the form of polarization on the mobile.

The only point that remains within the scope of this article is the size and if it is affected by nearby objects. Taking size first, as far as size-for-gain goes the Quad is the smallest aerial known. Finally, the presence of nearby objects do not appear to affect the SWR of the Quad. It is the ideal VHF aerial to try as a loft-space beam.
The Cubical Quad holds great possibilities on VHF, yet it is rarely used, mainly because it cannot be purchased (as far as known), also because of lack of knowledge or poor designs—but it is an aerial that is regarded as one of the finest aerials on the HF bands. On Two, a 5-ele. Quad will out-perform a five-over-five Yagi.

At first, a four-element Cubical Quad was tried. This did very well, so an eight-element array was tried. This did exceptionally well, but due to high winds and poor construction the weather made short work of it. In the end, a five-element design was decided upon—it will stand high winds or bad weather and gives a very good performance on two metres. Many stations worked have shown great interest in the construction of the 5-ele. Quad described here.

Construction

With reference to Fig. 1 all the elements are ¼ inch dia. aluminium solid bar. The reflector is of 84.2 inch, the radiator 81 inches and the three directors each 76.8 inches. The respective bars are then formed into squares, for 21-05-inch reflector, 20-25-inch radiator and 19-2-inch for the three directors. The ends of the reflector and the directors are fastened together using a 30 amp. electrical type sleeve connector, which has a ¼-inch clearance hole, or by flattening the ends of the bar and drilling for a screw. (The first method is preferable as it is more secure in wind). The radiator element ends are trimmed as to leave a ½-inch gap, and the ends of the bar flattened and drilled for fixing. A standard dipole connector is then fitted and it will be found that the radiator bar ends fit exactly to the screw holes in the connector. (It may be found that the only connector available is the dipole type with entries for ½-inch bar, but by using a fibre-glass filler, or Araldite, these can be filled in). The dipole connector must be of the outdoor enclosed type, e.g., as stripped off an old TV aerial.

The boom is made of 1:25 square cedar wood 68-inch long. The reason for a wood boom is that it is in no way effects the aerial. If a metal boom were to be used it would form a parasitic element and become an effective part of the aerial, so affecting the gain and the polar diagram.

The boom is drilled 1¼ in. from one end with an ½-inch drill (see Fig. 1B) and at 16.2-inch centres for all elements. Next, cut five half-inch dia. Tufnol or wood dowel at 21-05 ins., 20.25 ins. and three at 19-2 inches. These dowels are then pushed through the respective half inch holes in the boom. Just before they are central the feeding point which is approximately 3-inch out of centre and that’s it.

When all tubes are fitted, the respective elements are then put into the slots, ensuring that they are central, and secured with 4 BA brass screws. This was found to be the best form of fixing the elements and has proved to be very secure.

Matching

Many mistakes have been made by forgetting that if the Quad is fed direct with coaxial cable, then you are presenting an unbalanced feeder into an highly balanced load. This would be disaster. Not only would the outer braid of the coax carry high levels of RF due to "overspill" of the VHF wave, but the polar diagram would look similar to a spider, and the front-to-back ratio would be very poor, if it happened at all.

The Quad is a 75-ohm impedance load to the Tax and it must be fed either with 75-ohm balanced feeder or with coaxial cable and a one-to-one balun. The Quad described here is fed with 75-ohm coax and the balun used is a coaxial sleeve, or "bazooka." This is easily constructed (see Fig. 2). The feeder coax is made off as normal, and from the end of the outer braid measure 20-25 inches back along the coax, cut away a further ¼-in. of the outer insulation, taking care not to damage the outer braid. A piece of outer braid about 25 ins. long is stripped off an old piece of coax (preferably larger) and this is pushed over the feeder and soldered to the outer braid of the coax at the point bared off. The other end of the sleeve braid nearest the aerial is trimmed off so as not to connect to the feeder outer braid. The whole balun is then insulated with p.v.c. tape. If preferred, a sleeve can be made using aluminium foil, but it cannot be easily soldered—however, wrapping this round tightly with thin wire to the feeder braid will do, with a slight smear of grease on the connection to prevent oxidation. This is then taped up with p.v.c. strip, again ensuring that the foil does not touch the outer braid of the coax near the aerial.

Setting Up

Now all that is needed is to set the input impedance to match the Tx at 75 ohms. With an SWR bridge as near the aerial as possible (as measuring the transmission line is not required) the reflector only is adjusted by bending it away from the radiator until no better SWR can be achieved. Easier still is to use a VHF impedance bridge and set the reflector so that the input is 75 ohms—and that’s it. If, however, you do not possess either set the reflector to approximately 3-inch out of centre away from the radiator and it should not be far off 75 ohm (see Fig. 1 and picture).

Performance

Measurement of the performance of the five-element Quad was taken with the aid of G4ACB. A linear field strength meter, SWR bridge, VHF impedance bridge, and a mosfet converter, IF 4-6 MHz into a GEC BRT-400K Rx were the tools. The results were: The gain of the five-element Quad is 12.5 dB relative to a dipole. A front-to-back ratio of 25 dB, SWR of 1:15 : 1 mid-band; high end 1:52 : 1, low end 1:52 : 1; a beam width of 18.5° between half-power points, two very minor side
lobes (one each side) and a very low angle of radiation—so low, in fact, that with the aerial mounted at 35 feet off the ground it was necessary to stand on 6ft. steps at 125 yards away to measure the main lobe power.

**Conclusion**

From the foregoing it can reasonably be claimed that the quarter-wave five-element Cubical Quad is a very efficient aerial on two metres and holds even greater possibilities if it could be stacked two or four bay. The addition of extra elements is feasible and as mentioned earlier an eight-element array has been tried—however, it was found that after the fifth element the others have some effect on the input impedance, though this can be overcome by progressively bending the sixth, seventh and eighth elements away from the radiator, similar to the reflector. This has been tried and does work. The gain will go as high as 16 to 18 dB but stacking is probably the better choice.

**LOW-VOLTAGE PSU**

**FOR TRANSISTOR APPLICATIONS**

J. S. CUSHING (G3KHC)

At the present time when solid-state devices are coming more and more into use, some form of low voltage power supply becomes a necessity in any amateur workshop.

The power supply described here is mains-powered and is a very simple type, offering the prospect of quick and easy construction. Standard components are used so no problems need arise shopping round for specialised bits and pieces, in fact a well filled junk-box might supply all necessary items.

Although this PSU is of a simple nature it will be found adequate for many applications. Output voltage can be set anywhere between 0.5 and 15 volts, the output may be shorted with impunity, and regulation is good enough for circuits likely to be powered from this unit. One possible drawback is that no more than about 100 mA may be drawn, but circuitry taking greater current tends to require higher voltage so the drawback is more apparent than real.

Two basic types of regulator circuit are used in power supplies of the type under consideration, and some general information about each type may be helpful. One is the shunt regulator, the other the series regulator. Basic circuitry for the series regulator is given in Fig. 1 where it will at once be noted current taken by the load must pass through the transistor (Tr.). This means an overload or short places Tr at risk so series regulators are commonly provided with moderately complex protective circuits. The only other practical point needing mention is that the voltage applied to the transistor base in the shunt regulator approximates to the output voltage.

In Fig. 2 basic circuitry for the shunt regulator is shown. Here it will be seen current taken by the load has to pass through resistor Rs and under short-circuit conditions Rs becomes rather warm, at the same time voltage across the output falls to a low value so the transistor runs no risk. Under normal operating conditions power is dissipated partly in Rs and partly in the load with Tr handling very little power.

As with the series regulator, voltage applied to the transistor base in the shunt regulator approximates to the output voltage.

Full circuitry of the supply is given in Fig. 3 and does not seem to warrant any detailed analysis.

A transformer (T1), bridge rectifier (D1-to-D4), and capacitor (C1) provide DC, the remainder of the circuit being the regulator. From C1 current passes to the output via R2 (corresponding to Rs of Fig. 2) and current also passes through R1, RV1. The base of the shunt transistor (Tr1) is joined to VR1 slider, hence RV1 determines the output voltage.
Resistors R1 and RV1, incidentally, form a bleed circuit and discharge all capacitors fairly quickly at switch-off.

Capacitors C2, C3 provide additional smoothing. C2 is placed across VR1 so very little ripple is present in the voltage applied to Tr1 base, while C3 provides smoothing at the output. The points marked X, Y indicate where to connect a built-in current meter (if one if fitted); this is covered later.

As a rule power supplies are not critical as to layout so the constructor may use any convenient method, but as mains voltages are involved a metal case is recommended.

Points to Watch

The main points to keep in mind are as follows:

Resistor R2 can become warm, or even hot, so should be mounted clear of other components, while RV1 which runs slightly warm will in the long run be more reliable if a good quality component of two watts rating is used. Transistor Tr1 becomes only just warm to the finger tip so a heat sink is not needed.

One final point about construction is to note that a bus-bar is used as a negative line, allowing both output terminals to be isolated from the case.

In the case of a simple circuit there is obviously scope for minor variations, but those without some experience are advised to experiment with care. Amongst small changes which may be tried are reduction of the value of capacitors (not the voltage) and diodes of higher ratings could be used.

Alternatives to the OC26 transistor are almost any other "power" transistor, not forgetting an OC26 is a p-n-p type.

Testing the finished job is simple enough. A multimeter set to a range greater than 15 volts f.s.d. is connected to the output and RV1 rotated. Readings from about 0.5 to 15 volts should be seen on the meter. The multimeter is next set to a DC current range greater than 100 mA. When the supply is switched on a current of about 100 mA will be indicated. A multimeter set to DC current has little resistance so the reading shown is the current which flows under short circuit conditions, and as resistor R2 is then dissipating about 3 watts it quickly becomes warm, or hot, to the finger tip! If a second meter is to hand the output voltage will be found to be about 0.25 or 0.5.

Enough current is available to run a broadcast transistor receiver. If this is done and modulation hum occurs, it can be largely eliminated by connecting a capacitor across primary or secondary of T1. Values between 0.01 and 0.001 µF may be tried, some experiment probably being needed.
Other Points

Two refinements are worth considering. Resistor R2 in Fig. 3 limits short circuit or overload current to about 100 mA, but if this resistor is made greater in value current will be limited at a lower figure. Fig. 4 shows an easy way of doing this by using a 2-pole 3-way switch. The switch can select one of three resistors, R2, R2A or R2B and current will limit at about 100, 50 or 25 mA respectively. Obviously more resistors could be used if S1 has more positions. The limiting current for other values of resistor is easily measured by connecting a milliammeter across the output. For S1 a good quality wave-change switch will do, but the habit should be cultivated of altering S1 when power is off; this type of switch is not intended to switch more than a few milliamps.

Metering is worth installing as an aid to convenient use. Figs. 5 and 6 show a voltmeter and a current meter. Use of two meters need not be too costly for only moderate accuracy is needed, small inexpensive imported meters being suggested. The voltmeter circuit of Fig. 5 uses a 0-1 mA meter with S1 bringing R1 or R2 into use. With R1 in circuit f.s.d. is 10 volts which fits a standard meter scale well, but R2 is available and reads to 20 volts.

Precision resistors are hardly necessary. A couple of resistors of correct value may well be to hand; if they have been lying about for some time they will have aged, tending to be more stable. Otherwise 2% or perhaps 5% tolerance resistors should be satisfactory.

Circuitry for a current meter with two ranges, 10 or 100 mA f.s.d. can be seen in Fig. 6. Switch S1 brings either of two shunt resistors into circuit across a 0-1 mA meter. These shunt resistors have a value calculated on the assumption the meter has an internal resistance of 100 ohms, this being a representative value.

In practice the precise value of a shunt resistor is of little importance, for the shunts will probably have to be home-made, the value being found by trial and error. Shunts are conveniently made from ordinary enamelled copper wire, 38 or 40g. being suitable for the 10 mA shunt and 30g. for the 100 mA one.

The prototype PSU has been in fairly regular use now for some two years, with no trouble developing during this time, so it would seem to be reliable as well as very useful.

SPECIALY ON THE AIR

The Home Office Broadcasting Dept., Waterloo Bridge House, Waterloo Road, London, S.E.1 always will issue "for duration only" licences under the GB-prefix for stations to be "Specially on The Air" for this or that event locally—such as exhibitions, gala occasions, anniversary celebrations and the like, where an amateur-band station is to be put on and the public will be present.

Such a permit is issued in the name of a licensed AT-station operator, to be responsible for its conduct, log-keeping, etc.

So far as we are concerned, for a notice in this space we need date, call-sign to be used, the occasion for it, the band/modes to be worked and the address for the QSL procedure. You would hardly believe it, but for this month we have had requests for publicity where (a) the date of operation has not been given, (b) there is no indication as to how the QSL'ing is to be dealt with, and (c) no clue as to why it, but for this month we have had requests for publicity where (a) the date of operation has not been given, (b) there is no indication as to how the QSL'ing is to be dealt with, and (c) no clue as to why it will be done. For all interested in GB-activity cards.

GB3FEG, July 11-13: Operated by the Southgate Radio Club for the Finchley Carnival at Victoria Park, N.3, running 2m/4m/160m, and 10-80m.—A. E. Edwards, G3MBL, QTHR.

GB2DTS, July 13-14: For the Dagenham Town Show, put on by the Barking Radio & Electronics Society, on the HF and VHF air, Saturday 2:00-10 p.m., Sunday 2:30-8:00 p.m. All contacts will be QSL'd.—J. Wiles, Westbury Recreation Centre, Ripple Road, Barking, Essex.

GB4LRC, till July 14: For the Lowestoft & District Amateur Radio Club, on the occasion of its 25th anniversary, running all bands 2-160m., AM/CW/SSB, with a special commemorative QSL card.—K. Dawson, G3XSX, QTHR.

GB4OCS, July 20: At the Ounsdale School Fête, Wolverhampton, operating two-metre AM and SSB on 80m., with a distinctive QSL.—D. Taylor, G3ZYT, QTHR.

GB4LSR, July 20-21: In conjunction with the Letchworth Steam Rally, at Letchworth Murraves, near Wimborne Dorset, with SSB on 10-80m., four metres (70-26 MHz) and two metres (144-48 MHz FM). Talk-in on these frequencies for /M's in the area.—P. R. Ciotti, G3XBZ, QTHR.

G3CTR, July 21: At the Cheshere Home, Le Court, Basingstoke Annual Fête, running 3770 kHz SSB and 144 MHz FM, with DX working on 14/21 MHz bands.—P. Sterry, G3CBU, Ashley, Orchard Road, Basingstoke, Hants.

GB3NBS, July 26-28: For the Northampton Borough Show, Abington Park, working 10-160m. SSB and two-metre AM/FM/SSB.—S. J. Purser, GB4HZ, QTHR.

GB3PK, July 27-August 3: For the Scout/Guide Camp at Chatsworth Park, Derbyshire, operating on 10-80m. This is expected to be a big Scout occasion, with many overseas visitors. Very special card for all contacts.—D. F. Reynolds, G4BPW, QTHR.

GB2BRC, August 3: For the Bromsgrove Gala Day, on 80m. and the HF bands.—J. Dufranc, G3VOG, QTHR.
DX-Peditions

The Southend Group are organising an expedition to GM for June 30-July 13. They plan one morning and one evening session in a different county daily. Details as follows. On 2m, 144-20 MHz, SSB 0700-0830 BST and 1900-2330 BST with FM 2100-2130 BST. On 70 cm: 432-22 MHz, SSB 0730-0800 and 2000-2100 BST with an FM session 2130-2200 BST. They will have 300 watts of SSB and 100 watts of FM on 2m. and 10 watts SSB and FM on 70 cm. Antennas—14-ele. on 2m. and 46-ele. on 432 MHz. Calligns—GM5FUF/P and GMBGXK/P, and skeds can be arranged, if there is time, by s.c.e. to G8FU/P or G8KX/P, QTHR. Location for the following day will be announced during the evening session.

The Lichfield A.R.S. also are mounting an expedition. Dates are August 24-31 and counties visited will be in Midland Northern Scotland. They will run high power SSB only on 144-17 MHz and will be on each evening after 2000z onwards. Calligns are GMM8FQ/P and GMBJNAS/P. Wonder if anyone can talk them into CW also? Organiser is Roger Smethers, G3NLY, QTHR.

Before it disappears from the claims Tables at the end of this year, the March & District A.R.S. will activate Huntingdon on August 17. They will have SSB on 144-20 MHz (hope they will QSY from the calling channel for long contacts) during 1700-2200z on the Saturday and they will be on during the QRP contest hours on the Sunday. Callign is G3PMH/P and skeds can be arranged via G8BFX/P, QTHR. They will QSO at 70 cm on request.

Members of the University College of North Wales A.R.S. (GW3UCB as if you didn't know) are also planning to visit Scotland in late September and they will have 10 kW e.r.p. on 70 cm. (four, 46-ele. Multibeams) and a mast head pre-amplifier with a noise temperature of better than 200°K. Wow! More details later.

If last year's pattern is anything to go by, these expeditions represent just a few of the many which will be going to GM during the summer season and it might not be out of place here to remind organisers that they should not fail to contact the locals in the early planning stages. First, it is only good manners to do so, and secondly, they can help a great deal with choice sites and the availability thereof. This done, you can be sure of a warm welcome. GM6OXI, QTHR, has offered to co-ordinate matters in the South, and will put you in touch with the appropriate chap in the North. One last point. When four metre expeditions to remote counties are, can we not have a few more using the other VHF/UHF bands? G3VPS has demonstrated quite recently (in GD) how popular and useful a four-metre trip with comparatively simple gear can be, and the GM8AGU/GM3JFG Scottish venture was much sought after on 70 cm., a further indication of the growing interest in that band. And what about 23 cm? VHF/NFD can produce quite a crop of signals from portable sites, so how about giving it a try at other times? We shall always be pleased to give advance publicity to properly organised efforts of this nature. For GM.

It was with pleasure that a report was received from Peter Lennard, on 4 metres as G3JVP/P, May 13-16. He had a total of 40 QSOs during the two hours of operating time each evening, 13 different counties were worked and all except 12 of his contacts were with stations South of the Midlands, with the best DX as G3DAH—27 different stations were worked and all but ten of the contacts were on CW. These results were achieved without prior publicity, and it would undeniably have been better had there been time for advanced warning of the trip. The site, north of Castletown, was at 950ft. a.s.l. and the equipment was his standard '640A Tx and 4-ele. Yagi. Conditions, he says, were nothing special, but he noted a considerable amount of EU broadcast QRM which was strong enough to disrupt contacts at times. (See last month's "VHF Bands" for details of his trip to Cumbria, Angus, Kincardine and Aberdeen, July 6-17). Nice going, Peter!

GM8AGU and GM3JFG enjoyed a considerable success during their recent portable expedition to Scotland. On very few evenings were they inaudible on the South Coast on 2m., and their 70 cm. contacts with, for example, G3JVL in Hayling Island, were outstanding. It was unfortunate that they had to cut the trip a bit short due to the fuel shortage up there and Wx conditions, but even by judiciously picking out the claims that are coming in for the Annual Tables, they seem to have given vast numbers of operators their first contacts with GM.

Four Metres

Recent criticism (not in this piece!) of four-metre operators for "apathy, outdated technical equipment and operational procedures" have provoked some lively reactions on the band. Listening to comments and reading through the published, and a certain amount of un published, correspondence it seems that too much emphasis is given to Group activity and too little on the individual. If, as has been suggested, Groups use four metres on VHF/NFD merely to boost their score, knowing that they cannot hope to come in the first twenty without it, all well and good. But NFD comes, like Christmas, just once a year and it would seem a more reliable measure of Groups do take part in contests other than NFD, but they are in a minority. Single operator activity, hampered though it be by the menace of TVI in many areas, and perhaps frustrated by the lack of EU/DX, is far from moribund and the increasing number of SSB stations to be heard on the band an indication that, technically, users are keeping up to date.

The situation could be improved by the introduction of activity periods as on the other VHF bands (and the best time for these is undoubtedly Sunday mornings) more 4m. expeditions by individuals or Groups, the timing of contests to avoid, as far as possible, operation during TV hours and, finally, more technical, constructional articles.

Twenty-Three

Four more entries for the 23 cm. All Time Table this month, and promises of more to come. Just to recap, as the title states, claims are for all-time contacts by direct routes, i.e., excluding EME, M/S and satellites, and it would be appreciated if your first claim could list the countries and counties worked and give details of the equipment in use so that highlights may be picked out for special mention. As with the Three-Band Annual VHF Tables, claims should be based on the old county organisation for England and Wales until the end of this year, when we shall bring the new names and boundaries into force. The situation regarding the new scheme for Scotland is still under discussion and we shall discuss this aspect in due course.

G3COJ (High Wycombe, Bucks.) is having beam problems at the present time and as a temporary expedient mounts and de-mounts eight half-waves in phase, with a plane reflector, each time he comes on the band. The Tx runs a TDI-I00UA (2C39) as a doubler from 648 MHz and produces about 8 watts of RF. The Rx is a modified "KANX" with a BF300/91 in the front end. Counties worked are G and F.

A bit isolated up in Dewsbury, G8EOP runs a 2C39A tripler at 30 watts DC input to a corner reflector at 3001. The FM is the Microwave Module from an 888A or FT-200. Skeds welcomed, QTHR. G3JVL (Hayling Island) turns in a respectable 14 + 2 claim (G + F). He runs 40 watts output from a 5533 (2C39) into four, 27-ele. Yagis to his own design (drop him a line if you want him to make one up for you) and the converter has an NEC-28CO87 in the front end with the very respectable noise figure of 4 dB. As a check on band conditions, it may be helpful to note that he has the following skeds: With G3OBD on 1296-18 MHz; daily at 2230 BST followed by G3DAH at 2245, same ORG: with G6XM at 2200 clock on 1296-6 MHz; and with G3KAC at 2000 BST via QSY from 432.

**TWENTY-THREE CENTIMETRES**

**ALL-TIME TABLE**

<table>
<thead>
<tr>
<th>Station</th>
<th>Counties</th>
<th>Countries</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>G8ARM</td>
<td>20</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>G3JVL</td>
<td>14</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>G3EHM</td>
<td>14</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>G3COJ</td>
<td>14</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>G4ALN</td>
<td>10</td>
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<td>13</td>
</tr>
<tr>
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<td>1</td>
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</tr>
<tr>
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<td>1</td>
<td>9</td>
</tr>
<tr>
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<td>5</td>
</tr>
<tr>
<td>G8EOP</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
26 MHz to 1296.8 MHz. On Monday evenings at 2030 he and G4BEL give it a whirl on 432-15/1296-43 MHz, and on an ad hoc basis, he and G3BNL contact on 432-3 MHz and QSY to 23 cm. when conditions look promising. Mike had 14 QSO's during the recent contest to net 1270 points! Best DX was with G4BEL at 183 km.

In Herne Bay, Kent, G3DAH runs 10 watts RF output to a 34-ele. Yagi (to the G8AZM design) at 50ft. and uses the Microwave Modules triplet and converter. His only claim to fame is that you won’t get a contact on 23 cm. any further to the South-East of the country. Want a sked?

The Southampton Group claim to be the first to run 23 cm. SSB portable equipment for both 2m. and 70 cm. simultaneously. This news sheet is crammed with information on current and future Oscar problems, and includes useful hints on transmission and counter.

In the April issue of “Short Wave Magazine” G3DAH described the construction of a Sideband Transceiver for Four Metres. This was extensively checked and tested before the article was published. Here, he is verifying the stability of the driver stage, using a frequency standard and counter.

VHFCC Awards

We are pleased to congratulate G4AGE, Ray Evans of Bolsover, Derbyshire, on his achievement in successfully claiming awards for both 2m. and 70 cm. simultaneously. Certificates Nos. 220 and 17 respectively have been despatched. He uses simple gear, 5 watts of SSB into an 18-ele. Paraboom on 70 cm. and 25 watts of SSB into a 10-ele. beam on 2m. The main Rx is an FT-101 with BRT-400 stand-by. One must conclude that the 550ft. a.s.l. site has helped a bit! Ray now has SSB on 4m. also (G3DAH design less the ‘640A PA) and the signal from Derbyshire, a rare county on 70 MHz in view of the local TV frequency and TVI problems, will be welcomed by many.

G4AEZ (Enfield, Middlesex) gains Award No. 221 for two metres. Early contacts were made with a modified Pye “Cambridge,” home-built converter and the Trio JR-50SSE with a halo antenna, but this set-up has been superseded by a transverter with a QQV06-40A PA, a reconstructed converter and the Yaesu FT-101B. Add to this an 11-ele. Yagi on a Strutmech tower and a very satisfactory medium power station must result.

Oscar VI and VII

Latest information is that the launch date for the Oscar VII satellite has been put back to October due to problems encountered with the ITOS launch vehicle. An amusing, if that is the right word, piece of bureaucracy has come to light in connection with an application by AMSAT for permission to carry a 2304 MHz beacon aboard Oscar VII. The FCC have given authority for the beacon to be carried provided that provision is made to ensure that it is never switched on. Ah, well!

Oscar VI continues to function, exceeding its planned life by some 50%, but a further reduction in operating schedules has had to be made. Only ascending orbits may be used for traffic and this means that, in this country, we can only use late afternoon and evening passes on Monday, Thursday and Saturday, yielding less than one hour operating time per week.

We should like to draw attention again to the excellent service offered by G3WPO and G3IOR in their publication Oscar News. The FCC have given authority for the beacon to be carried provided that provision is made to ensure that it is never switched on. Ah, well!

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GB3SX is radiating a potent signal on 70-685 MHz, some 14 kHz below the published frequency. Keying cycle is of one-minute duration and consists of a long dash followed by the callsign in A1. There is a bit of a chirp on the keying. GB3SU continues to function on 70-695 MHz from the temporary site in Sheffield, although one gets the impression that the signal strength is a bit low.

An amusing letter signed "One of the many Cornish Piskies" contradicts the official statement that GB3TC is off the air, and says that it is still paralysing the local front-ends on 144-127 MHz. Good news, but what have "The Little People" done with the other 3 kHz, since the published frequency is 144-130 MHz? GB3VHF is still off the air, reportedly awaiting a xtal for 144-15 MHz. After all this time it would be nice to have it back on 144.5 MHz, at least pro tern.

Contests

Results: The 432 MHz Open contest in March was won by G4BEL with a comfortable points lead over G3JQA/P. As stated in the April issue of SHORT WAVE MAGAZINE, conditions were generally poor for the 70 cm. Cumulative contests, and this was borne out by the small number of entries for the event and the comparatively short haul "Beef DX" contacts. However, G3NHE added to his laurels by scoring 285 points from 71 QSO's to take the leading place, and was followed by GBCXH with 211 points from 39 contacts.

Reports: Activity for the 23 cm. Open on May 25, followed by the 432 MHz Open on May 26, was low. This could well be due to the unwillingness of operators to go through all the nuisance of finding out some previously elevated site with a load of equipment for what, due to an error in the Rules (nothing to do with us!) turned out to be a three-hour contest on 70 cm. Conditions were tolerable without being outstanding.

Propagation was a little above average for the 4m. event on June 2, as witness the 460 km. contact between G3XUS/P near Brighton and G3VP (Kendal, Westmorland). GD2HDZ put in a welcome appearance on SSB as did G3JYP/P in Co. Durham. There appeared to be only two Welsh ports available, GW4ABR/P at Hay-on-Wye and GW3WRA/P near Brecon, the latter being a particularly strong signal in the South East for much of the time. A couple of good scores heard near the end were those of G3XUS/P with 075 and G3JYP/P with 052. Activity was lower than might have been expected due to the last-minute change of date which caused many people napping.

Microwave Contest, June 15-16: The high pressure system moving slowly across the British Isles brought good propagation conditions for this event. Seventyseven, on which most contacts for other bands were made, was producing excellent DX from PA, ON, DL and several EU contacts were made on 23 cm.

On this band ONSFF (running a kW), PA0SBB and PA0VW were particularly strong signals. Although conditions held up for the Sunday, there were very few signals on the UHF/SHF bands and the whole event seemed largely to have disintegrated by mid-day. As an example of activity, G1DAH

<table>
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<tr>
<th>Station</th>
<th>FOUR METRES Counties</th>
<th>TWO METRES Counties</th>
<th>70 CENTIMETRES Counties</th>
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Notes: 1. Claims should be on the basis of the old county boundaries until January 1, 1975.
2. The Table shows claims to date from January 1, 1974 and will close on December 31, 1974.
worked eight counties and three countries on 23 centimetres. Forthcoming Events: July 21, 432 MHz Open. July 28, 70 MHz Open. The 6th BARTG (RTTY) contest has been arranged for Sunday, September 22. Bands are 144 MHz and 432 MHz and logs should go to GM1R, QTHR. Further information, rules, etc. from G8CDW, QTHR.

News Items

Four Metres

G3HCRZ is now up on 4m. SS from Laxey, I.o.M. G3HCS (Saltash) and G3HJD on the Lizard were both QRV on SS during the Juno contest. G3M2BE (Inverurie, Aberdeen) has just worked GM4AOR in Midlothian for his second contact on 4m. in two years, the first being with G3MAGU in Ellon. How's that for perseverance? It's rough going in there that hills! Alex now has a 3-dB. at 30ft. on this band, fixed at present on G3HCRZ, which he hears regularly at strengths varying between S1 and S4. He is engaged at the moment in getting his lattice tower up to 60ft., and this should improve matters at his in search for G stations.

Two Metres

GW8EHR has developed a new omni-directional antenna for mobile work. He calls it a Quadra-Horizontal-Cycloidal Radiator, which is a bit of a mouthful, but it has a very symmetrical radiation pattern, and has more gain than a pair of crossed dipoles. He has worked into EI with it and got an S8 report. He promises more details later.

Portable operation from Cardigan is taking place every Monday - Thursday evening under the call GW8BBXQ. The site is 1,000ft. a.s.l. and SSB is available around 144,2 MHz and thereabouts, but many operators have cottoned on to the fact that the Continental stations are congregating round 144-35 MHz to avoid interference with the input channels of repeaters which have not yet been moved to their new frequency allocations, and are putting in some rewarding hours on that frequency. Incidentally, have you noticed how often EU operators will go to CW on the sideband channels if conditions are difficult? This is quite an accepted practice although AM/FM mixed with SSB is not.

G8GGR in Newbury, Berks, has been working round the compass quite well with simple equipment having raised a Shrewsbury, Devon, Montgomery, Durham, Eire and the GM8AGU/GM3JFG expedition towards the end of May. He is convinced, as is your scribe, that the early morning produce some of the best propagation conditions on this band. On the subject of working DX, and it was particularly noticeable that the GM8AGU contacts, calling mainly on channel with a pile of other chaps doing the same thing is not productive of the best results. If you have ever been on the receiving end of a pile-up, you will know that selecting a call from the QR is not the easiest of matters, whereas a transmission just off the channel will often get the contact.

G8AE (Grimby) has a mean about the difficulty of working DX from the East Coast. He claims that on several occasions recently stations inland and to the North have been heard working Continentals which are quite audible to him. This seems strange, since from Herne Bay the temperature inversion along the coast line has produced, on many occasions, better signals from North of the Border than are reports from more elevated sites inland at comparable range. Even without this effect, he should be better placed than many of us when the OZ/SM path is open. There is a private net in the Grimby/Hull area these days with some 20 operators using SS and plenty more on AM/FM.

GM4CPX is trying to stimulate early morning activity from Roxburghshire. He is on during 0715-0745 BST most mornings and beam South on 144-215 MHz, with SSB. What with the Cheviots to the South and the Lammermuirs to the North, and some fairly rough country to the West, it is quite a challenge to work him.

G3OJF, Amersham, is trying out a new antenna system. He has crossed 10-20 beams with separate feeds brought into the shack and suitable phasing arrangements give him horizontal or vertical and RH or LH polarisation.

Seventy Cm.

Quite a surprise to hear from GC2FZC (Guerney) that he is having trouble making 70 cm. contacts, even during contests. He was active for the whole of the recent 432 MHz event and only heard two stations and made nary a single QSO. Now, Walter is an old hand at the game, and you can reckon that his gear is up to scratch and that he knows what he is doing from the operating angle, so how about having a gander in that direction during the next 70 cm. event and helping him to keep Guernsey on the VHF/UHF map — and get yourself a goodly number of points into the bargain? He copies GB3SC regularly at up to RST599 at times.

An interesting comment from GC8AAZ in Jersey during a recent QSO. He has now observed auroral effects on 70 cm. on no fewer than four occasions to date. Doubly surprising in view of the latitude of the Channel Islands and the frequency involved.

G5DF (Reading) reckons the GM8AGU/P trip to be the best ever. He worked them in five counties on 70 cm. G5SHV is QRV on 70 cm. from Notts if you are looking for that county.

General

G8CDV of Nunetown is now G4BBS. He must be of the very few who have had listener reports from CT1 and C31. G8D0T is now G4DEZ. G8H1H was licensed almost to the day 25 years after his illustrious father G8FDW. He is plugging away at the CW and hoping for the G4FDW callsign! Two successive QSO's produced an odd coincidence the other day: The first was with G3NRT (ex-G8AKH) followed by his father-in-law, G4WDA (ex-GW8CTP), Operating from GD recently, GM30XX set up three new records on 3 cm. — G5GD, GW/GD and GM/GD. He would like publicly to thank the GD boys for their help and hospitality.

Deadline

Deadline for the next issue is July 5. Please send your news, views, comments and claims to: "VHF Bands," Short Wave Magazine, BUCKINGHAM, MR18 ERIQ. Cheers for now and v73 de G3DAH.
GETTING GOING — BUILDING IT YOURSELF — IMAGE INTERFERENCE — THOSE “ITU” CALLSIGNS — LATEST LADDER POSITIONS

DESPITE the widespread use of SSB telephony on the bands, there are still many SWL’s who “find” Amateur Radio through listening on the bands. J. Hesman (Birmingham) came to it when TV was not on due to the power problems at the turn of the year. His transistor Rx had the usual BC bands, but also a short-wave band, and this was explored to relieve boredom; Top Band and Eighty were stumbled on, AM only, but soon the knack was picked up of using another transistor radio as a front-end BFO to obtain SSB reception—and the bug had bitten! Now there is a JR-500 in the shack, and prefixes are being actively collected, with thoughts being turned to R.A.E.

The point John brings out so clearly is that, while it is nice to have shiny equipment, it is possible to collect one’s prefixes with nothing more than a brace of transistor portables, or a one-valve (or transistor or FET) receiver of home brew, and to get a lot of fun out of it. Indeed it is still on the cards to build up a station to work DX for under a tenner if one goes about it with care—and that amount covers receiver, transmitter, aerial, and frequency-measurement device! Of course this implies the need for home-construction to some degree, enough courage to use a soldering-iron, and a junk-box, for which some buying at Club junk-sales and some swapping among members of the Club will produce most of the bits. This in turn presupposes membership of a Club, even if one does not attend every meeting. And, good people, isn’t this just what Amateur Radio is about, in addition to just working the stuff? This writer would rather be QRT than miss his Club meeting, and as for the station, he designs and constructs all the items he can’t for any reason buy.

The New Ones

There are quite a few this time, apart from John Hesman already mentioned. M. Peir (Liverpool) is 13 years old and has a UEF-204 transistor portable as his receiver, it being tacked to fifty feet of wire as an aerial. Malcolm says he envies all these chaps with their AR88D’s and whatever! True—but the skill obtained in winking the DX out with, relatively speaking, basic equipment, will stand him in good stead when the advance is made to more sophisticated gear.

A. Buckman hails from Jamaica, New York, and has been a reader for three years. Al uses a Drake R4C with an American B. & W. “Vacationer” aerial mounted on the window-frame, with which his first list totals 510 prefixes—no mean total for a starter!

D. Yeoman (Peterborough) wrote originally to G3KFE, who passed it on as being more appropriate to this piece. Dave mentions that the Peterborough Club has a SWL contest in the form of countries-heard in the current year, a ladder being published in their Newsletter each quarter. For himself, Dave’s score is 177 countries this year from a half-size “5RV” aerial and a Trio JR-310.

From Lutton, S. H. Bandy sends in a list of 208 prefixes heard. He has an end-fed wire of 130 feet and a loft loop for Twenty, both fed into the receiver by way of an ATU and RF attenuator. He says his interest was sparked off by G8CBU, G3YUI and G3WXS at last year’s Jamboree-on-the-Air event, and already their influence has been such that there are hopes of R.A.E., either in the winter or next May, depending on progress.

It had to happen sometime—an entry for HPX read-out from a computer! Bob Swan (London, SE19) has clearly got his computer tamed, as it reads out all the essential details for each entry. Rig is an R.107, fed from a Codar preselector, and 132 feet of wire wrapped round a frame indoors. Bob wants to know how to count the /MM lads who quote the Region in which they are located. Answer is just disregard the Region, and log him, for HPX purposes, as so-and-so/MM.

Miss P. Goddard (Cranleigh) has an FR-50B receiver running from the old 405-line TV aerial, and listens mainly on Twenty and Eighty, although a recent excursion on 21 MHz resulted in a VQ9 right out of the blue.

Some of these Liverpool types are very keen—P. Rooney (Liverpool L4-7TE) reckons to spend 30 to 40 hours weekly at the receiver! Wish J. C. has that sort of time for the bands! Philip tripped over all the odd prefixes that were out and about during the CW WW Contest, plus CF2UN. This last is mentioned by many people, most of whom have queried it. He is quite OK, QSL via VE2UN, and was some sort of “special-activity” affair.

Not really a new chum is A. Roberts (Kidderminster) as he used to make an entry years ago; but since learning the code Tony has found a renewed interest and so his list goes to swell the band of CW-Only entries in HPX.

Commercial stations in the amateur bands annoy S. McHugh (Pontefract) particularly during the afternoon on Twenty. Not knowing the IF’s involved it is not possible to be sure whether these are in fact in the band, or are spurious responses of some sort, such as images, which appear in the band whenever they are strong enough to overcome the level of image-rejection inherent in the receiver. A quick way to tell with a “single-signal” receiver is to switch in the BFO and tune the band, say, from LF to HF—all signals having carriers in the band will change pitch as you go through them,
low to high, but an image will appear to be changing pitch in the opposite direction, in this case high to low. The method can only be used with a receiver having such selectivity that the beat note from a carrier on the unwanted sideband is so low as to be all but inaudible—a condition satisfied in most SSB receivers and others having a crystal filter.

The list from A. C. Gullis (Ogbourne St. George) raised quite an interesting phenomenon this time, as A. C. G. starts his entry at the bottom of the 1974 Table while his brother sits right at the top of the 1974 listings! One suspects this will cause some amusement in the Gullis menage!

Being a member of the Torbay Club has obviously been of help to K. Salter (Newton Abbot), as his R1155 runs off a home-brew PSU in which the guiding hand of G3LHJ is clearly visible, both in the bits and the wiring. Kevin’s method of lightning protection is very simple—just open the shack window and the aerial flies out!

More From Letters

First, the chaps with technical queries of one sort and another. B. Russell (Runcorn) has a 5RV-type aerial, and wonders whether, since the ends are sloped down from the feedpoint at 45° to enable the complete aerial to be got into a shorter garden than the one hundred-plus feed of garden otherwise required, the aerial should still be called a “5RV,” or renamed as a Vee-beam. The quick answer is that no shape of 5RV-stype aerial could ever be a Vee-beam, as this latter comprises two horizontal legs of wire several wavelengths long, connected through open-wire feeders at the corner of the Vee, and having the angle between the legs so chosen that radiation is reinforced in the direction of the “arrowhead” and the reverse way, to the relative exclusion of radiation at right-angles to the arrowhead. From this aerial is derived the rhombic. No, R.R’s device should if anything be described as an inverted-Vee form, 5RV-style aerial, and the sloping legs of the aerial are probably not having a significant effect much above 21 and 28 MHz, certainly not on Eighty or Forty.

His absence is explained by B. Cushing (Hove) in the simple terms that his receiver worked much better when he rectified a bad aerial connection to the AR88, thus renewing his interest! Yes, it is surprising how often a bout of “bad conditions” is due to not much more than a bad connection somewhere, or the receiver going out of alignment gradually with increasing age. This is often not realised, which tends to increase the feeling that the trouble must be conditions! There is no cure saving regular preventive maintenance.

Prefix Points

Almost everyone has a few “ITU” stations in their loggings this time. It was all done to coincide with ITU Week, and there were all but 100 stations signing in this manner, mainly W’s, but some South Americans; and 4U6ITU was presumably 4U1ITU from Geneva in disguise.

Then of course there were the odd prefixes which surfaced, as usual in the CQ WW WPX contest, mainly South American stations, signing things like PS for PY, YY for Yv stations, and so on. Perhaps the most interesting series of odd callsigns of late have been the Russian ones coming up with a “30” in the middle of the call. This one commemorates the thirtieth anniversary of the day they finally hooched Hitler out of their country, in 1944. The exercise was called Pobieda-30. The Central Radio Club station U30A started the ball rolling, with U30R next from Tyumen, the geographical centre of the U.S.S.R., where they were 200 km distant from the nearest town of any size. May 9 saw the opening-up of UB30SE from Sevastopol, followed in turn by various stations with a suffix to denote the city from which they operated, each one starting on the date the city in question was liberated. Thus the exercise will be going on well into July, each town-station being on for 24 hours only to give them some rarity value and keep the thing in proportion. No doubt about it that since CQ Magazine first thought up the idea of working prefixes and our own SWL’s started to listen for them, the world has taken to the game with a vengeance!

Rest of The Mail

It becomes evident, even this early in compiling the piece, that space is running out; so in this section we will not mention those who have simply sent in a Ladder entry.

J. H. Sparkes (Trowbridge) remarks on the number of “specials” of one sort and another in his log of callsigns, which have bumped up his totals quite remarkably.

B. F. Hughes (Worcester), and one or two others also, have raised a point by offering entries for the 1974 table as well as their normal All-Time Post-War entries. This has caused us to think about the whole question again. The ruling we have come up with is that, as was originally intended, at 500-up you are transferred to the All-Time regardess, and you are no longer eligible to have a score in the 1974 table. The reasoning is that the Annual listing was originally invented for the benefit of the newcomers who are competing amongst themselves and gaining experience; once they have 500 prefixes “under their belt” it is felt that they can then compete on
regarded as “vintage” now. Incidentally SWL McNeill's coils can be in skilled hands—this receiver must be a fine demonstration of how good a TRF with plug-in being modified or worked on. This old wartime receiver need thinking about.

amateur stations although manned by amateurs. It would seem to your conductor that GB2RS is a perfectly normal callsign but with extended privileges, unlike, say, the beacons or repeater stations, or the

perfectly normal callsign but with extended privileges, and the suffix ITU to complete the callsign. Of course, this is pretty well within the normal rules—after all is said and done, there are almost as many stations having K as W in the prefix operating from the States, as a look through the Call Book will confirm—W1AAA could well be in the same street as K1AAA, and of the same licence class. Maurice heard several openings on Ten, mainly North-South of course, and found items of interest on Ten, Fifteen and Twenty to add to his loggings.

The trees of Harefield which support the aerials of M. Cornwall have been getting a bit of a pasting, he having hung up with their help dipoles for the HF bands, to add to his LF aerials, and another one for Two, with Seventyceems projected, and four metres covered by means of TV set modified chassis which works quite well.

A. E. Glass (Plymouth) is at the top of the CW table in HPX, and is the first CW entrant to get over the 1000 mark since J.C. took on this feature. Bert mentions May 7 as being a superb opening on Ten with VK, South Americans and Europe all audible together.

Roars of approval from the shack of N. Askew (Coventry) indicates to the neighbours that after five weeks away from the receiver he had switched on and was gathering in a goodly crop of assorted “ITU” and South American contest prefixes—how does his wife explain these noises to the neighbours, one wonders?

Nice question of propriety is raised by R. C. Woolley (Ashbourne) when he enquires whether GB2RS is an acceptable amateur prefix to add to his total in the absence of any other GB2 stations. Why not, indeed? It would seem to your conductor that GB2RS is a perfectly normal callsign but with extended privileges, unlike, say, the beacons or repeater stations, or the U.S. MARS stations, which last are quite definitely not amateur stations although manned by amateurs. The beacon and repeater stations are a separate case which need thinking about.

A. W. McNellis (Newbury) has an R.1082 receiver, a TRF device, as back-up to his R.1155 when the latter is being modified or worked on. This old wartime receiver is a fine demonstration of how good a TRF with plug-in coils can be in skilled hands—this receiver must be regarded as "vintage" now. Incidentally SWL McNeill's list is all CW.

Two letters came in from M. Peters (Newbury), the first one having missed the 'bus last time out. He has an AR77E receiver, and for aerials there are thirty feet of wire up in the loft, with or without 23ft. out of the shack window and down the garden, and an indoor two-metre beam for 144 MHz worked into a valved converter tuning 19.5-21.5 MHz on the AR77E. Morse is up to "twelves" already, and at the time of writing R.A.E. was being worked for seriously.

Two letters also came from M. Quintin (Wotton-under-Edge), he having been a little quick off the mark first time—all the odd prefixes noted this time came in handy as they took Mike over the magic 1000 prefixes score; oddly enough, the thousandth prefix logged was in fact a G4 operating mobile less than four miles away! That's often how it is!

R. Carter (Blackburn) was saddened to hear of the death of his, and our, old friend, Rev. A. W. Shepherd, G3NGF of WAMRAC fame, at the age of 59. He was a sincere and devoted man. It is believed G3VAP will be taking over the WAMRAC reins although we have no firm news to date. Ben goes up to 1129 in the lists this time.

For M. Cuckoo (Herne Bay) the activity was almost all in contests, accounting for four new zones, nine new countries and forty-six new prefixes, to bring the total almost to 800.

Having said what he would do about Amateur Radio when he retired, L. A. S. Poole (Winchmore Hill) is in process of eating his words, and through no fault of his own, it is clear. However, all the snags having been coped with, even if R.A.E. was not taken this time, and by the time this comes to be read, he should be safely under-Edge), he having been a little quick off the mark time he retired, L. A. S. Poole (Winchmore Hill) is in clear. However, all the snags having been coped with, even if R.A.E. was not taken this time, and through no fault of his own, it is clear.

That's often how it is!

ANNUAL HPX LADDER
(Starting date January 1, 1974)

<table>
<thead>
<tr>
<th>SWL</th>
<th>PREFIXES</th>
</tr>
</thead>
<tbody>
<tr>
<td>G. F. Gullis (Ogbourne St. George)</td>
<td>491</td>
</tr>
<tr>
<td>P. Rooney (Liverpool, L4-7TE)</td>
<td>454</td>
</tr>
<tr>
<td>M. Eccles (Lancaster)</td>
<td>426</td>
</tr>
<tr>
<td>J. Bell (Hampstead)</td>
<td>392</td>
</tr>
<tr>
<td>M. F. Parry (Shrewsbury)</td>
<td>391</td>
</tr>
<tr>
<td>M. Rodrigs (Harwood)</td>
<td>353</td>
</tr>
<tr>
<td>R. Swan (London, S.E.19)</td>
<td>338</td>
</tr>
<tr>
<td>M. L. Peters (Newbury)</td>
<td>305</td>
</tr>
<tr>
<td>S. Lawrence (Market Harborough)</td>
<td>300</td>
</tr>
<tr>
<td>B. F. Hughes (Worcester)</td>
<td>290</td>
</tr>
<tr>
<td>R. C. Woolley (Ashbourne)</td>
<td>289</td>
</tr>
</tbody>
</table>

Starting score 200, in accordance with HPX Rules. All Prefixes on this list to be heard in 1974. When a score of 500 is reached, transfer to the All-Time will follow.
period 1963-1967 and then gave it all up until the beginning of 1974. He now runs a Yaesu FR-50B, a Hamgear Preselector, and a Joystick in the corner of the room.

M. F. Parry (Shrewsbury) claims 391 prefixes but has omitted to send in any list with his claim, for checking purposes. Of his queries, all are OK. CF3 we have dealt with elsewhere, 9F3 is another variant for Ethiopia, and the rest are contest prefixes with the exception of “LO8” which, with regret, we have to regard as either an outright phoney or a misreading. For the moment, we have put SWL Parry’s claim in the Table, but we must see the list for next time.

M. Eccles hails from Lancaster, and enters a tally of 426 prefixes; he says he has in fact got enough to go straight on to the All-Time Post-War Table, but as yet time has prevented him adding the extra list. His query on 6F8J is easily answered—this one was XEIJ operating in a contest.

In answer to P. Baker (Pontypool, Mon.) A7XA is indeed in Qatar, and the QSL’s go to DJ9ZB. P.B. has been an SWL since 1966, and in that time has got through about thirty log-books, of which the last fifteen have been all DX! He started with a Lafayette HE-30, which gave up the ghost a couple of years ago and was replaced by a KW-202, coupled through an ATU to 85 feet of wire. His location sounds to be a good one, 1200 feet above sea level with a clear take-off in all directions.

E. Parker (Hove) found time to book in the odd one or two prefixes; he has doubts about “PIIROS,” but this could likely be OK, as some Dutch stations with connections with the Services are given calls in the PI series.

A little problem arises in dealing with the list from Mrs. J. B. Jane (Looe) in that her last entry claimed 604—at least, that’s what our card-index says—but her total this time gives the previous score as 574. So—we’re blowed if we know to which starting number we have to add Mrs. Jane’s current claim of 69 more prefixes.

However, OM P. C. Jane (E. Looe) continues to forge ahead with 89 new ones to add to his collection, from which claim we have to dock one for a definitely odd “VLIIP.”

H. A. Londesborough (Swanland, Yorks.) has been turning up new prefixes on Two, using as collector an old 405-line TV aerial. Results were so promising that a four-element Quad for the band is now being put together, but SWL Londesborough bails the lack of CW on Two; a complaint with which we cannot but agree. On a different line of thought, he wonders about VEONEA, which he knows to be on H.M.C.S. Yukon, but which does not sign /MM. A look at the Call Book suggests that most of the VE0 stations are on ships, and possibly the VE0 callsign absolves them from the need to sign /MM.

On to J. Bell (Hampstead) who notes how, after listening for years for a particular country, hearing it is immediately followed by hearing lots more of the same—sort of “breaking the barrier” effect which many of us have noticed and which is yet another manifestation of Murphy’s Law. However, John seems to have slipped up with one of his loggings—his “US5” must be a misreading for “UK5” which prefix covers the Klub stations in UBS-land.

R. Shilvock has now moved from Lye to Kingswinford where he has a 66-foot dipole, an FR-DX500 receiver and a KW E-Zee match between them, with an eight-element Yagi at thirty feet for 144 MHz reception.

Next we come to the Old Maestro himself—S. Foster (Lincoln) who finds that gardening and such-like chores inescapable from married life have rather reduced his listening time—nonetheless, Stew bumped up his score from 1345 to 1377. He has an 18AVQ aerial now, cut for 3-8 MHz which is certainly helping along with the Eighty-metre DX.

Another 1000-plus correspondent is J. Fitzgerald (Gr. Missenden) who also found a sizeable number of the odd prefixes to be garnered; John’s Morse classes have had to be abandoned, so more time is being spent in compensation at the CW ends of the bands. However, John reckons that the price of building or buying a rig is the great deterrent to regular CW operating, which sounds a bit odd to your old conductor—J. C. would reckon that, using the existing receiver as a basis for the station, it should be possible to fix up about 25 watts of DX-worthy CW on one band to choice
callsign allocation batches began to
United Arab Emirates, as shown in
report and to explain his long
gear to call for help!
next heres how we get back on the
car back on the
time otherwise wasted when the bands are not producing
interest, of PHX listings
include only recent claims. Rules for PHX—see p.43,
M. J. Quinton
L. A. S. Poole
H. Alford
A. Gullis; now
Car stopped, helped
She feels tolerably happy about
At this time of year the letter
21 MHz, at a height of
we come to brother G. F. Gullis (Ogbourne St.
car, in a ditch in a country lane. While Norman
pirate.
add to the 9R-59 receiver, will give something much
not all that elegant an object for the
we used a bit higher, but it's
to find himself, and his
earlier issue, before the callsign allocation batches
to mention A. Gullis; now
C. Henderson (Beckenham)
A. West (Horne Hill)
E. Henbrey (Norlicham)
N. Ackworth (Convent)
R. H. McVey
J. V. White (Wotton-under-Edge)
T. Robinson (Bury St. Edmunds)
J. Gravel! (Burry Port)
E. Parker (Hove)
B. Thomas (Pontefract)

SWL
PREFIXES
PHONE ONLY

W. Bingham
(Carrickfergus) 1521
R. Shilvock (Kingswinford) 1412
T. Rootsey (Ilford) 1405
S. Foster (Lincoln) 1377
J. Kyesor (Fervale) 1268
J. Fitzgerald
(Gt. Missenden) 1194
A. W. Nelson (Glasgow) 1139
R. Carter (Blackburn) 1129
L. A. S. Poole
(London N.21) 1090
H. Alford
(Burnham-on-Sea) 1049
M. J. Ollington
(Wotton-under-Edge) 1035
R. Hughes (Worcester) 1003
J. H. Sparks (Trowbridge) 948
G. W. Raven
(London, S.E.13) 921
P. C. Jane (L. E. O. Loe) 895
C. Henderson (Beckenham) 871
A. West (Horne Hill) 870
E. Henbrey (Norlicham) 857
N. Ackworth (Convent) 855
R. H. McVey
(Weston-super-Mare) 838
A. R. Hollands (Malvern) 818
H. M. Graham (Harefield) 808
M. Cuckoo (Herne Bay) 798
W. B. Taunton (Meopham) 796
E. W. Robinson
(Bury St. Edmunds) 784
J. Gravel! (Burry Port) 775
E. Parker (Hove) 771
B. Thomas (Pontefract) 758

SWL
PREFIXES
PHONE ONLY

H. Londesborough
(Whitland) 1079
C. K. Verswater
(Weetwood) 1076
S. Eldridge (Crawley) 964
L. Thomas (Castleford) 964
K. A. Whitley (Castleford) 964
P. Barker (Sunderland) 950
Mrs. J. B. Jane (East Looe) 943
B. Cushing (Hove) 932
L. Craven (Alvchurch) 950
C. L. Lee (Ilford) 900
J. R. Cowan (Rochford) 910
G. Lucas (Kentonway) 855
M. Kitchener (Hitchin) 833
D. Sharrad (Birmingham) 830
R. Smye (Shrewsbury) 826
M. Smith (Matamata) 812
A. Buckman
(Jamaica, N.Y., U.S.A.) 810
A. Glass (Plymouth) 1001
T. Rootsey (Ilford) 723
G. Proud (Letterton) 693
W. B. Taunton (Meopham) 656
C. Henderson (Beckenham) 617
H. A. Londesborough
(Whitland) 553
G. Richards (Wrexham) 319
A. F. Roberts
(Kiddington) 301
A. W. McDonald (Newbury) 299
W. Hutchinson 276
S. Sharrad (Birmingham) 263
S. J. Proud (Letterton) 201

Starting score, 500 for Phone, 200 for CW. Listings
include only recent claims. Rules for PHX—see p.43,
March issue.

Conclusion
Which brings us to the deadline for this feature next
time out: July 26 it is, to arrive by first post, addressed,
as ever, to "SWL," SHORT WAVE MAGAZINE, BUCKING-
HAM, MK18 1RQ. Till then good hunting.

Piracy
For a seasoned old campaigner like H. Alford
(Burnham-on-Sea) to find nothing much of interest does
indeed show how flat, relative to the conditions of some
years ago, things have become. And the ears haven't
"gone off" either, as two of the four prefixes claimed this
time were ZL and VK mobiles, both heard on Twenty
on the morning of May 14.
C. L. Lee (Ilford) continues on his merry way with
his Drake receiver, and seems to have heard at all the
bands from 160 to Ten, with very different degrees of
success—14 and 3-5 MHz were best and the others more
or less nowhere, in terms of useful prefixes to add to the
score, although not lacking in interest, of course.

Publications for the SWL, obtainable from us, are:
Sun, Earth and Radio (92p); the DX Zone Map, with the
complete Prefix List (£1.20); and Guide to Amateur Radio
(90p). Prices quoted are post free, obtainable from
stock, of our Publications Dept., Short Wave Magazine,
Ltd., 55 Victoria Street, London, SW1H 0HF.
THE MONTH WITH THE CLUBS

By "Club Secretary"

(Deadline for August issue: July 4)

O N E often wonders whether the difference between the Club of large membership and the small group in a similar-sized town is not mainly a matter of local publicity. Some groups confine their publicity to writing to this piece, others don't even do that; others again take part in local events such as carnivals, Town Shows, and so on. To get a mention in the local paper is a good thing, provided you make sure the edited version makes sense; and a picture to go with the paragraph is even better. Then there is the notice board at the local public library entrance. Perhaps, too, the local electronics-trade shops would be prepared to carry a publicity poster in their windows—every little extra helps. And of course, having got your potential member to make the effort and attend, you must be sure to welcome him; get his name, let the chairman formally welcome him, and make him stand up a moment so everyone can associate a name and a face. Then make sure he is spoken to by various people for the next couple of times he attends, until it seems fairly sure he has made a niche—that way you won't lose your hard-won new man after the next couple of times he attends, until it seems fairly sure he has made a niche and a face. Then make sure he is spoken to by various people for the next couple of times he attends, until it seems fairly sure he has made a niche—that way you won't lose your hard-won new man after the first visit!

Southern Parts

U.K. FM Group are at the top of this clip; we have their Hq, as being the Scout Hall, Southall, Middx., but understand an announcement is due regarding a change of venue. This being the case it is strongly suggested you get in touch with G4AOG (as Panel) if you intend paying a visit. As for the date, it will be July 9, details to be arranged, and July 28 for a Treasure Hunt and outdoor social meet.

At Bishops Stortford they are ever ready for punishment; on July 15, at the British Legion club, Windhill they have to listen to colleague G3KFE talking about Modern Receiving Techniques. As for August 19, at the same venue, it is to be, as tradition dictates, the annual natter session.

South of the Thames now, to Sutton and Cheam where they have their Hq, at the Library, Cheam. Here they can be found on July 16, listening to G3LCH discussing the process of "Getting Going on Four" with particular reference to his own activities.

Surrey send in their Newsletter, from which we gather the Hq, to be at the Ship Inn, High Street, Croydon. However, we do not have a date for the July meeting, or any indication of the subject, at this moment, so we suggest a call to the Secretary—see Panel—should you propose attending this group.

July 11 is the date for the North Kent crowd, to hear Mr. White of Greenwich Cable Vision, giving a talk on this interesting project, illustrated with slides. Meeting dates each month are the second and fourth Thursdays, at the United Reformed Churches Hall, Bexleyheath Clock Tower.

A familiar signature reappears after a long break at the foot of the Maidenhead letter; G3FVC is back in the Secretarial post. Nowadays they get together at the Red Cross Hall, The Crescent, Maidenhead, on the first Thursday and the third Tuesday in each month; this gives July 6, for a talk on the Working and Technical Development of the Independent Broadcasting Authority, and on the 14th there is the Club Picnic. Two evenings later, on July 16, there is a Juke Sale.

For Cray Valley, it seems from the Newsletter that the date to be reserved is the first Thursday in each month, at the United Reformed Church Hall, 1 Court Road, London S.E.9. However, we do not at the moment have any news as to what entertainment is laid on.

Now to Acton Brentford & Chiswick where this group have their place at the Chiswick Trades and Social Club, 66 High Road, Chiswick, the date being July 16, when they will have a debate on the "Current Changes in the Amateur Radio World."

Although the Crystal Palace newsletter says that July 20 is to be an informal evening, it is also indicated that something may yet be fixed up; this one is at Emmanuel Church Hall, Barry Road, London, S.E.22, the kick-off being at 8.0 p.m.

For Stevenage, "home" is the canteen of Hawker Siddeley Dynamics, Guncells Wood Road, Stevenage, where they have two Thursday evening dates each month—details can be obtained from G4BGP—see Panel overleaf.

At Barking July will be specially busy, as they have the special-activity station GB2DTS running at Dagenham Town Show over the weekend July 13-14 at Central Park, Dagenham. This is in addition to their normal goings-on at Westbury Recreation Centre, Westbury School, Ripple Road.

Basingsstoke write in to report their continued activity, with Club projects of one sort and another. They also will be operating /P in connection with the Cheshire Homes, Le Court, near Liss, on July 21, when they hope to work other Cheshire Homes stations. Then looking further ahead, we see that in September they hope to have a station on the air at the Basingsstoke Show. All the details from the Hon. Secretary, as Panel.

Special activities also appear on the Southgate calendar for July, including SSB Field Day and the Finchley Carnival on the following Thursday and Friday. However, in all the excitement over these, the Newsletter compiler has completely forgotten to give the dates and venue for the normal monthly get-together—so, once again—see Panel.

A change of home for the Bedford crowd. After some years at the Dolphin in Broadway, they are now moving two doors away to the Units Services Club, where they will be assembling every Thursday evening. July 4 sees them in the new shack with G3WTP; on the
11th, there will be a talk about an el-bug, and the rest of the time will be occupied with SSB Field Day plans. July 18 is a shack night with a different emphasis to that of the RSGB Regional Representative. On Sunday, July 21 there is an outing to the Science Museum and GB2SM, while on the 25th the subject will be Microwaves. Quite an interesting programme.

The Club Newsletter carries an obituary notice for Ernest Turner, G4NT, their president, who died recently after a long illness which had confined him to a wheelchair for the last five years. From where we sit, the regular meetings would seem to be on the second Tuesday and the fourth Wednesday in every month, at the canteen of the Ernest Turner works, High Wycombe.

The Wolverton Youth club is home for the Milton Keynes lads, who will be gathered there on July 8, with minds all ready to boggle at the topic—‘Interstellar Communication.’ Then there is the Club DX-pedition, to Northumberland, July 20-27, when they will be behind the call G4AFL/P.

On Friday evenings the local amateurs and SWL’s in the Harrow area head for Harrow Sea Scouts Hut, Woodlands Road. July 5 is down for Morse Practice and a Trouble-shooters Corner; however, they now tell us they have a station planned for the SSB Field Day plans. July 18 is a shack night with 268 talk, which has yet to be finalised.

It’s quite a while since last we heard from Turner, G4NT, their president, who died recently after a long illness. From where we sit, the regular meetings would seem to be on the second Tuesday and the fourth Wednesday in every month, at the canteen of the Ernest Turner works, High Wycombe.

The Grafton term finished officially at the end of June, and they have moved into the Cambridge Centre for the rest of the summer. The Maurice Maude Lecture, ‘Interstellar Communication,’ was held on June 6, and although the Chairman, G3HFR, does not reveal the details of the programme, he does say that there will be a change of secretary and a weekly programme for July (on the 5th, 12th, 19th and 26th) meeting at Chats House, High Wycombe. Dunstable, on these Fridays at 8:00 p.m., G4BPK gives up the secretarial chores after a long period of successful service.

The Havering & District Amateur Radio Club report on their successful foray into Rutland, March 30-31, to mark the demise of that area head for Harrow Sea Scouts Hq., Woodlands Road. July 5 is down for Morse Practice and a Trouble-shooters Corner; however, they now tell us they have a station planned for the SSB Field Day plans. July 18 is a shack night with 268 talk, which has yet to be finalised.

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An interesting evening is in prospect for Verulam on July 17; they are entertaining Mr. Dickson of the Ordnance Survey, who will tell the Hall about the workings of that organisation. The Market Hall, as usual, 7:30 for 8:00. In addition, the lads have informal sessions still at Salisbury Hall, London Colney, one of which crops up on the first Wednesday in the month.

That energetic and enterprising Dunstable Down Club—now running a 23-cm. beacon signing G83DD from a good site up on the Downs, which they built and installed on their own initiative—note a change of secretary and a weekly programme for July (on the 5th, 12th, 19th and 26th) meeting at Chats House, High Wycombe. Dunstable, on these Fridays at 8:00 p.m., G4BPK gives up the secretarial chores after a long period of successful service.

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**Specials**

Grouped under this head are the clubs whose objectives make them cover the whole country, or even more.

**B.A.T.C.** is that for the amateur television addicts, whether quick or slow-scan variety. They have various useful supplies for the amateur TV station, and their *CQ-TV Magazine* is firm proof that constructional work in the amateur field is far from dead.

The latest issue of *Mobile News*, the A.R.M.S. Journal, is full of interest for the J fraternity, as regards both news-items and technicalities. The Society has been kept going now for 15 years and a great deal of work is put into it by Norman Fitch, G3FPK, the hon. secretary, and other honorary helpers.

**Midlands**

Straight away we find ourselves with a problem, as the hon. secretary at Derby says that city is in the Midlands and not to be confused with the 'black-pudding wallahs' of the North! If this be accepted the Midlands clip becomes proportionately fatter. The only way out is for more Northerners to report in! Wednesdays are their evenings, at 119 Green Lane, Derby. A Surplus Sale takes up July 3, and on July 10, G2CV will answer your licensing queries. On 17/0 there is a D/F Practice Night, starting from outside the clubroom at 19.30 sharp; July 24 sees them back inside for a Film Show, while there is a D/F Practice Night, starting from outside the clubroom evenings, at 119 Green Lane, Derby. A Surplus Sale takes up July 3, a great deal of work is put into it by Norman Fitch, G3FPK, the hon. secretary, and other honorary helpers.

**Country**

A thin clip this month, for some reason—perhaps they are all relaxing on their beaches?

Torbay give no programme details. Being content to mention that six members tried the R.A.E. this time, that another member has been granted a G8 call, and that, after years of service, G3LHV has stepped down from the chair to become vice-chairman for a spell, being succeeded by G3VTQ. Their club Hq. is in Bath Lane, 94 Belgrave Road, Torquay.

Carnish main meetings are at the SWEB Clubroom, Pool, Camborne, on the first Thursday in the month; they usually have two talks arranged. In addition there are the West Cornwall Group, based on the Guildhall, Penzance, and a VHF group. Details on all these various goings-on can be obtained by getting in touch with G3XFM—see Panel.

Over at Hereford, they look forward to having the exclusive use of their Club-room once more—at present it serves also as the traffic wardens' office! Having been beaten in an away skittles match with the Worcester Club, they propose that the next challenge should be darts. Of a membership of 50, average attendance at meetings is fifteen (perhaps because of the aforementioned traffic wardens’ occupancy?). The forthcoming events panel in the current News-letter does not list the July activities—so ask the hon. secretary, G4CNY, about what is going on.

**Sign-Off**

That completes the clip for this month. For next month send in your *August* programme details, to arrive by first post July 4, addressed as always to "Club Secretary," *SHORT WAVE MAGAZINE, BUCKINGHAM, MK18 16Q.*

The reason for the new setting style you see here is simple enough—it is to save space without impairing readability. This will enable us to get more under the "Clubs" heading and also make room for more illustration for this feature than previously we could use.—EDITOR.
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 will be 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.

GW3KLU, E. Eaton, Newstead, Northop Road, Flint (2601), Clwyd, CH6 5QC. (Re-issue).
G4CEZ, W. Kitchen, 12 Clonald Way, Pinner, Middlesex, HA5 4BU.
G4CVE, J. T. Halifax (ex-G8HSA), 1 Little Lane, Great Houghton, Northampton. (0604 61887.)
G4CYN, R. S. Bell, Gosmore Cottage, Selling, Faversham, Kent, ME13 9QW.
G4CZE, A. Mercer, 42 Malvern Crescent, Spring View, Nw. Wigan, Lancs., WN3 4QA.
G4CZN, G. H. Tomkins (ex-G8CZN), 4 Fortune Green, Alpington, Norwich, Norfolk, NOR 4DW.
G4DAH, G. Heaney, 49 Greystown Avenue, Belfast (615199), BT9 6UG.
G4DAV, D. A. Hart, Brookholme, 85 Station Road, Green Island, Carrickfergus, Co. Antrim, BT3 8UP.
G4DAW, P. A. Gibson-Daw (ex-G8GSZ), Parkside, 479 Wellingborough Road, Kettering, NN3 3HN.
G4DBD, A. M. Borland, 69 Packenham Road, Basingstoke (3446), Hants., RG21 1YB.
G4DBK, H. Shaw (ex-G8BZF), 68 Church Road, Bramshott, Liphook (0428-723168), Hants., GU30 7SN.
G4DFS, K. H. Wright, 6 Limerick Road, Chaddesden, Derby, DE2 6TP.
G4DIF, F. V. Breame, Ellacombe, 68 Church Road, Bramshott, Liphook (0428-723168), Hants., GU30 7SN.
G4DIK, C. Boulter, 20 Red Lion Street, Gosport (3296), BUCKS, HP5 1EZ.
G4FIT, T. J. Courtney, Wilton, Grove Road, Beacon Hill, Hindhead, Surrey.

CHANGE OF ADDRESS

G2CXY, W. H. J. Yeo, Ebberley House, Newport, Barnstaple (3335), Devon, EX32 9BW.
G3ASC, E. D. Power, Turnberry, 6 Llanforada Rise, Oswestry (2500), Salop, SY11 1SY.
G3CSF, J. M. Robson, Frewick Cottage, Dunbeath, Caithness, Scotland.
G3XFB, A. J. Slater, Wychwood, Park Lane, Maplehurst, Nr. Horsham, Sussex. (Lower Beeding 342.)
G3HIM, C. E. Davies, 11 Society Street, Coleraine, Co. Derry, Northern Ireland.
G3IVF, H. E. Smith, Greenacres, Kirk Langley, Derby, DE6 4NN.
G3MHV, T. G. Langdon (G3MHV/ W6), 129 South Swall Drive, Beverley Hills, California 90211.
G3OLB, T. Boucher, Tamarisk, Forest Road, Whitehill, Nr. Bordon, Hants.
G3OOZ, C. F. Simpson, 18 Birmingham Avenue, Redditch (69259), Worcs., B97 4NQ.
G3RTK, E. E. Snow, 118 The Ridgeway, Harrow, Middlesex, HA2 7QG.
G3UAO, A. L. Gilham (ex-ZC4UA/ VS9UA), 11 Kingsfield Close, Birchwood, Lincoln, LN6 0JW.
G3UNL, R. H. Lawrence, St. Michaels, 17 Hazel Close, Chandlersford, Eastleigh, Hants., SO5 1RF.
G3WFO, G. W. Stacey, 5 Oak Road, Wath-Upon-Dearne, Nr. Rotherham, Yorkshire, S63 7AR.
G3XED, C. Masters, 79 Kings Head Lane, Bishopsworth, Nr. Bristol, BS13 7DB.
G3ZIV, K. J. Nolan, West End Cottage, Woodhall, South Duffield, Selby, Yorkshire, YO8 7TG.
G4ADF, P. D. Harrison, 1 Cherry Tree Walk, Petworth, Sussex.
G4APF, M. Richards, 80 Oldtown Street, Dawlish, Devon, EX7 9AT.
G4BPC, L. Graves (ex-FP8KO), 106 Weardale Avenue, Forest Hall, Newcastle - upon - Tyne (0632-667569), Northumberland.
G4BFV, D. A. Sinclair, Hawthorn Den, Wenvorover Road, Weston Turville, Aylesbury, Bucks.
G4CMF, M. A. Deacon, 313 Forest Road, Loughborough, Leics.
G5BE, G. A. Cottrell, Kingsholme, 74 Church Lane, Gorleston-on-Sea, Great Yarmouth, Norfolk.
G5CS, J. L. Danks, 57 Queens Drive, Surbiton (390-1566), Surrey.
G8Cky, M. W. Cartwright, Sea View, 8 Adelaide Avenue, West Bromwich, Staffs., B70 0SL.

AMENDMENT

G8IMH, M. H. Fereday, 35 Manor House Park, Bilbrook, Wolverhampton, Staffs., WV8 1ES. (Correction April.)
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- KT 66: £1.75
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- TIA 68 2, 2 watts: 70p
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Details and specifications available on request.

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- **NEW STUD UHF POWER DEVICES**
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- £18.00, carriage 75p

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WANTED: AB8BD and HRO-5T, near-original condition essential; also 20m. and 80m. bandspread coils. Details and price please. (Lancs.)—Box No. 5333, Short Wave Magazine Ltd., 55 Victoria Street, London, SW1H-0IF.

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July, 1974

SALE: Drake R-4B, few hours only, immaculate condition, £250. WANTED: Bird Thruline VHF. — McGhee, 2a Park Town, Oxford. (Tel: 0865-565231).
FOR SALE: Ideal QTH, 350-ft. a.s.l., good take-off in all directions. Price to include complete station for all bands including two metres. Detached bungalow in its own ground with double-glazing, oil-fired central heating, double-garage, and rotating beam with Mustang and 240-ft. long wire. Two minutes from station. All radio equipment in mint condition. Price £20,000. — Ring Roebuck, G3VTZ, Prince's Risborough 4481 (Bucks.).
SELLING: Juliette MPR-3795 VHF/UHF portable receiver, coverage 553-1600 kHz, 30-50 MHz, 88-100 MHz, 147-174 MHz and 450-470 MHz, excellent condition, £50 or near offer. — Ring Ashworth, Calder Valley 2582.
SELLING: FT-75 transceiver, with FP-75, DC-75 and FV-50 VFO, mint, £175. G-Wips Multimobile-71 with 40m. and 80m. coils, £16. Drake R-4B, as new, £195. Stormophone two-metre FM base station, 6 channels and neat desk console with built-in mic., speaker and deviation meter, excellent condition. £45.—Barry, G3FU, 15 Fairlawn Court, London W4 3HR. (Tel: 01-694 4272).
WANTED: G.E.C. BRT-400E or Lafayette HA-600F, complete with speakers and manuals. Must be in mint condition, price to include carriage. Write, or call any evening after 4 pm.—Skilton, 160 Rochester Avenue (side door of betting shop), Rochester, Kent, ME1 2DS.
FOR SALE: Morse on cassette tape, up to 30 wpm, by ex-radio officer, £4. — Cowan, 28a York Road, Ashington, Essex SS4 3HQ.
SELLING: Neat Cossom 30-watt base Tx, operating on 2m., with txal, £17—50; ditto 4m. VHF T x R/ RX, 1936, complete, £2.50. Pair of Selsyns, £1.50; BC-342, £14; Taylor IVH, £45; Collins, modulation transformer, 90p. Crystal Rx, 1936, complete, £250. Pair of Selsyns, £50. — Call G3VTZ, Princes Risborough 4481 (Bucks.).
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WANTED: Eddystone 830/7 receiver in excellent condition. Can offer new EC-10 Mk II with cash. —Ahmed, 41 Roe Lane, Kindsbury, London, NW9 9BB. (Tel: 01-204 1829, evenings).


AU GUST Issue: To appear July 26, single copies at 34p post free will be despatched first-class mail on receipt from printers. Orders by July 24, with remittance to: Circulation Dept, Short Wave Magazine Ltd., 55 Victoria Street, London, SWIH-0HF.

WANTED: No. 53 Set transmitter, preferably working, for modification as linear amplifier. Any reasonable price considered. Written answers only, please.—Clegg, 237 Cassiobury Drive, Watford, Herts.

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