MARCH 1975
THIRTY HENCE
Vol. XXXII
No. 1

THE SHORT WAVE MAGAZINE

WORLD WIDE COMMUNICATION

FOR THE RADIO AMATEUR AND AMATEUR RADIO
Match your antenna system to the PA stage with a KW 107—observe your TX “Waveform” with a KW 108.

**KW 108 Monitorscope**
- Monitor your transmitted “Waveform” 10-160 metres.
- Can be left permanently in antenna feed.
- Two-tone generator incorporated to ensure optimum linearity for SSB.
- Displays SSB, AM and CW “Waveform.”
- A further safeguard for your PA tubes.

**KW 107 ANTENNA TUNING SYSTEM**
The KW range of aerial matching units will ensure optimum power transfer from the PA stage to the antenna system.
- Longer life for your PA tubes.
- KW 107, suitable for most transceivers and transmitters (250 watt rating).
- The KW 109 is for use with linear amplifiers.
- Antenna selection.
- RF power and SWR measurement.
- Dummy load incorporated.
- Observation of SWR with and without antenna tuner.
- Attractive “G” line case.

The antenna tuner in the above unit can be purchased separately if you already have the KW 101/103, dummy load and antenna switch. This unit is known as the KW E-Z match.

**Other KW Favourites:** KW 2000E Transceiver 10-160; KW 204 Transmitter; KW 1000 Linear Amplifier; KW 202 Receiver; KW 160 ATU; KW 103 SWR/RF Power meter; KW Dummy Load; KW Traps (the original and best); KW Trap Dipoles; KW Low Pass Filter; KW Balun; KW Antenna Switch

Stockists for Hy-Gain beams and verticals, CDR rotators, Shure microphones, etc.

KW spares are normally carried for a minimum of five years after date of manufacture of equipment.
Radio Shack Ltd  *  London's Amateur Radio Stockists
Just around the corner from West Hampstead Underground Station

£279·72p
Inc. VAT

DRAKE ★ ★ ★ SUPERIOR PERFORMANCE ★ ★ ★ LONG TERM RELIABILITY ★ ★ ★ MODEST COST ★

COMPARE QUALITY AND PRICE WITH ANY OTHER EQUIPMENT AND CONFIDENTLY BUY DRAKE
PRICES INCLUDE VAT

RECEIVERS AND ACCESSORIES
R-4C Receiver, SSB, AM, SW, RTTY  ...  £279·72
FL250 Filter for R-4C  ...  £28·62
FL500 Filter for R-4C  ...  £28·62
FL1500 Filter for R-4C  ...  £28·62
FL4000 Filter for R-4C  ...  £28·62
FL6000 Filter for R-4C  ...  £28·62
4-NB Noise Blanker for R-4C  ...  £37·26
MS-4 Matching Speaker for R-4C  ...  £12·96
AL-4 Loop Antenna for SPR-4  ...  £16·20
SPR-4 Receiver. General purpose  ...  £291·60
Amateur Bands crystal kit for SPR-4  ...  £145·53
5-NB Noise Blanker for SPR-4  ...  £37·26
SCC-4 100 kHz calibrator for SPR-4  ...  £11·34
TA-4 Transceive adaptor for SPR-4  ...  £20·52
DC Power Cord for SPR-4  ...  £2·70
DSR-2 Digital Receiver  ...  £1,441·80

The above prices include VAT at 8%.
Next-day delivery by Securicor costs £2·50 per major item.

HIRE PURCHASE A PLEASURE

WE ALSO STOCK:
- HY-GAIN ANTENNAS: J BEAM ANTENNAS:
- MOSLEY TA-31 and TA-33 JR "E": K-Whip
- PRODUCTS: CDR ROTORS: COPAL
- DIGITAL CLOCKS: SHURE MICROPHONES:
- KOKUSAI MECHANICAL FILTERS: SOLID
- STATE MODULES CONVERTERS, ETC.:
- DECCA COMMUNICATIONS EQUIPMENT:
- YAESU: PLUS THE GEAR WE IMPORT
- DIRECT FROM THE STATES—
- THE ATLAS 180 TRANSCEIVER: SWAN 700CX
- TCVR. and PSU: SWAN SS200A TRANSCEIVER:
- VENUS SSTV EQUIPMENT:
- ROBOT SSTV EQUIPMENT: TEN-TEC SOLID
- STATE EQUIPMENT: HY-GAIN ANTENNAS: CDR ROTORS: OMEGA-T ANTENNA
- NOISE BRIDGES.

WE ALSO STOCK THE T-4XC MATCHING TRANSMITTER, THE TR-4C TRANSCEIVER AND THE REST OF
THE DRAKE LINE AND ACCESSORIES
S.A.E. WITH ENQUIRIES PLEASE

Carriage extra on all items  ALL PRICES INCLUDE VAT

DRAKE — SALES — SERVICE

SECURICOR ★ B.R.S. ★ ACCESS ★ BARCLAYCARD ★ TRICITY FINANCE

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LONDON, NW6 3AY

Just around the corner from West Hampstead Underground Station

Telephone: 01-624 7174  Cables: Radio Shack, London, N.W.6
Giro Account No.: 588 7151
24 HOUR SERVICE  BARCLAY CARD OR ACCESS. Just phone in quoting your number, we despatch the same day if humanly possible by whatever means you wish including Securicor free for most Yaesu/second-hand equipment and at cost for other items if they are under 5ft long (maximum weight 45 lbs.).

WHY we think you should buy YAESU from S.M.C.

SERVICE  Free labour on all warranty claims in our comprehensively equipped workshops under the personal supervision of Chris Webster, in our opinion the best and most experienced Yaesu servicing engineer in the U.K.

SPARES  We carry a comprehensive range of spares in fact thousands of pounds worth.

DELIVERY  Is fast by Securicor for all Yaesu items over £40 and free by post for items over £5.

COLLECTION  In the unlikely event of you having a fault then we will collect free of charge any work under warranty by Securicor.

DE LUXE MOBILE/BASE STATION THE YAESU FT101B

This de-luxe wireless is the descendant of the world famous FT-101 transceiver. Except for the drive and final amplifier stage, the FT-101B features all Solid State circuitry built on reliable and serviceable “computer type” plug in modules. The 101B is contained in a compact 30lb package designed to go anywhere. All that is needed for instant “on the air” operation from 160 through to 10m. is either 12v. DC or 100-234v. AC and of course an antenna.

“LLL” RF CLIPPER (for the legal 6dB boost)

The advantages of RF clipping are too well documented to require discussion here and we are pleased to present this famous RF Clipper that can offer up to 4 times the effective transmitter output whilst improving the receiver performance by use of cascade filters. Further data on request. (Unit available for FT-101 mark I, mark II and B).

ALL YAESU ITEMS SHOWN ARE EX-STOCK IN TOTTON

The Y01000 the multi purpose monitor scope offers you the facilities of monitoring the transmitted signal, through line, 1.8 to 50 MHz on power levels from 10 to 500 watts. The IF of the receiver or transceiver can be monitored (3.18 MHz standard, 455 kHz or 9 MHz options). AF and RF trapezoidal patterns can be displayed, the unit facilitates RTTY tuning and has built in 1.5 to 1.9 kHz oscillators suitable for Post Office two tone output measurements.

SEND S.A.E. OR PHONE FOR NEW PRICE/STOCK LIST

PLEASE NOTE — THESE PRICES DO NOT INCLUDE VAT (8%)

Terms c.w.o. or just phone with credit card number or same day despatch of ex stock items.

Our HP facilities now include instant clearance for holders of a current (U.K.) callsign.

TRICITY FINANCE
The newest of the Yaesu transceiver on offer the FT201. The FT201 features 80-10m. operation and the ability to run from the mains or a 12v. supply. It is constructed using plug-in modules as made famous in the FT-101. Of special interest to those contemplating using the 201 as a prime mover for VHF use, is the use of 9 MHz as the IF frequency and that full AM operation is possible (the optional AM filter being available). For the CW enthusiasts a 600 Hz filter is available with AGC characteristics to suit the mode. Write for full specifications.

The FT75B is a higher power replacement (120W P.I.P.) of the FT75, the unit which along with the 101 has been responsible for the upsurge in HF mobile operation around the world. On bands 80 through to 10 there are 3 VXO controlled crystal channels as well as provision for external VFO operation. The FT75B is all solid state except the final and driver stages and includes an excellent noise blanker and a squelch circuit for quiet channel monitoring.

Accessories include the FV50C VFO at £35.00, the VC75 microphone compressor and VOX at £18 and the FT75B AC power supply at £35, and the BC75B at £40 illustrated right.

(The VHF man’s perfect exciter!)

A compact unit featuring full 1 kHz resolution VFO coverage across 50-54 MHz in 8 ranges, SSB (selectable) AM or CW (build your own FM modulator) 4 crystal controlled channels in each band segment, receiver offset clarifier, noise blanker, built in AC and 12v. DC power supplies, mic supplied, optional AM filter and crystal calibrator, £175.00 or £180.00. The exceedingly low level of spurious emissions and the 50 MHz output makes this unit highly suitable for use as a drive source transverting to 4, 2 or 70 cms. and/or parametrically up converting to 70 or 23.

For use on 70 cms. we are pleased to announce the Microwave Modules transverter is now available for use with a 50 MHz I.F., £62-00.

The FT224 is an advanced Solid State transceiver featuring 10 watts output with a 23 channel flexibility (including priority channel) all in one complete package. The FT224 includes a built in tone burst for repeater actuation. Automatic high VSWR protection of the final transistor and reverse power line polarity protection are included. The wireless comes complete with built-in speaker, mobile mounting brackets and dynamic microphone.

S.M.C. models come fitted with 145-00, 145-50 and 145-55 MHz as standard.

SEE OVERLEAF FOR A SELECTION OF MAST ANTENNAS AND ACCESSORIES
TO COMPLEMENT THE YAESU RANGE WE PRESENT
ALL HY GAIN PRODUCTS AND SOME NEW LINES FOR '75

RF SPEECH PROCESSOR KP12
Audio to audio, via 107 MHz, mains powered, illuminated meter, FT-101, FT2 plugs suitable all phone modes superb on FM.
(Prov.) £64
AVAILABLE EARLY MARCH

READOUT UNIT FOR FT-101, etc. DDI
Digital readout to ±100Hz for your FT-101 (B), FT401 (B) etc. 21 IC's 76 diodes provide a most worthwhile accessory.
(Provisional) £110
AVAILABLE MID MARCH

144 MHz LINEARS RFL
RF sensing, switchable drop out time SSB, AM, FM, CW, 12v. D.C. 10W drive, 701-75W out, 801 100W out, 901 150W out.
£50, £70, £90

9 MHz SSB FILTERS YF90/F/S
EX-STOCK at new low introductory price. 2.4 kHz, 6 pole, each individually supplied with ± 6 dB, 25 dB, 60dB bandwidths, ripple factor and insertion loss. With two crystals.
FROM APRIL £12.50 USB only £11.50.

CRYSTALS
NEW LOW PRICE (ALL POST PAID)

FT2FB (14 MHz Rx 18 MHz Tx)

144 (-15, -20, -30, -35, -40, -48, -50, -60, -80)
145 (-35, -40, -45, -50, -85, -90)
All £3-30 pair, £1-00 single

Simplex 145 (-35, -50, -85, -90)
All £3-30 pair, £1-60 single crystal

Duplex 145 (-100/700, -125/725, -150/750, -175/775)
All £3-50 pair, £2-00 single

MICROWAVE MODULES (All 28-30 MHz IF others to order) (P. and P. 30p)

70 MHz Converter ...
144 MHz Converter ...
129 MHz Converter ...
SHURE (P. and P. 30p)
444 -Desk Mic. ...
444T -444 with Amp ...
401B -Hand-Low Z ...
201 -Hand Hi Z

SECOND-HAND LIST TELEPHONE 04216 4930 FOR LATEST

EDDYSTONE
S870A ...
680X ...
77OR ...
EP14 ...
BC221 RC ...
£30-00
£75-00
£85-00
£75-00
£6-00

HEATHKIT
SB102 ...
OS2 ...
SW717 ...
£225-00
£30-00
£25-00

TRIO
TS520 ...
QR666 ...
NCX5 ...
£265-00
£100-00
£165-00

Telford
TCS ...
£25-00

NATIONAL
HRO (M) ...
NCX5 ...
£30-00
£165-00

INOUE
IC21 etc. ...
£135-00

KW
Viceroy ...
£60-00

Please note: These prices do not include VAT (8%).

Terms: C.W.O. or just phone with credit card number for same day despatch of ex stock items.
Our H.P. facilities now include instant clearance for holders of a current (U.K.) callsign.

Access
Barclay

Tricity
Finance
**COMMUNICATIONS LTD.**

**ANTENNAS, TOWERS, MASTS, ROTATORS, COAX**

**HAM TOWERS** (Carriage extra)
- Galvanised lattice 10ft. sections 30ft. high with climbing steps on one face. From £90-50

**TELOMASTS** (Carriage England and Wales £1-50)
- Galvanised steel telecopter 10ft. sections with or without rigging.
  - 10ft. £13-00
  - 20ft. £20-00
  - 50ft. £39-00
  - 100ft. £49-00

**HY - GAIN** (Carriage paid)
- Hy-Gain (1AVQ/WB) the great wide band self supporting vertical (for 10-80m.). Take the wide band omnidirectional performance of the famous 1AVQ increase the band width and add 40m. use extra heavy duty construction and you have the 1AVQ/WB. True 1/4 wave resonance on all bands 52 ohm feed, band edge SWR of 2:1 or better, handles 1kW (AM), ultra low angle radiation and may be roof or ground mounted. Illustrated for left.
- Hy Tower, 10-80m., self supporting tower...
  - £132-00
- 18Y 10-80m. Vertical self supporting...
  - £15-50
- 12AVQ 10-20m. Vertical self supporting...
  - £20-00
- 14AVQ 140m. Vertical self supporting...
  - £19-50
- LCQG Loading coil for AVQ, 80m...
  - £11-00
- TH6DXX 10-20m. 6 element beam...
  - £117-00

**ALIMASTS** (Carriage paid England and Wales)
- Alloy telescopic 1/2, 2 or 3m. sections 6-21m. from £11-60 for 6m. to £38-00 for 21m.

**VERSATOWERS** (Carriage paid England and Wales)
- Tiltover, telescopic, post mounted ex stock. The tilting actions allows ease of maintenance and changes of antennas. The relatively low weight eases installation problems illustrated right. From £172-25

**NEW LOW PRICE SWR/POWER METER**
- SWR10 Reflectometer 50 ohm ±5%, quoted SWR50 Power meter ± 15% calibrated for 50 and 75 line. Reflectometer — 5%.
  - SWR10 £63-00
  - SWR50 £11-20

**THE COMPLETE RANGE OF JAYBEAM**

<table>
<thead>
<tr>
<th>JAYBEAM</th>
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<td>OMNI-DIRECTIONAL</td>
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| CIRCULAR | | |
| XD/2M | Crossed dipoles | 60 ohm | £5-75 |
| 5X7/2M | 5 element crossed | 7-8dB | £6-20 |
| 8X8/2M | 6 element crossed | 10 ohm | £10-20 |
| 10XY/1M | 10 element crossed | 13 dB | £14-10 |
| 4 MASTS | | |
| 8Y/4M | 4 element | 1dB | £6-60 |
| BEARING | | |
| R2100 | Alignment bearing | | £7-60 |

**THE NEW CONTROL UNIT FOR THE CD4 AND CD4.2**

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<th>THE NEW CONTROL UNIT</th>
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<td>Control Cables 5 Core (AR30/40)</td>
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<td>Control Cable 8 Core (CD44/ CD411)</td>
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**MOSLEY TRI BAND (10-15-20m.) BEAMS** (Carriage £1-75)

| TA33 Jnr | £3 ele. | 200W | £40-50 |
| KMH | £15 | £12-00 |

**G WHIPS**
- The British Mobile HF Antennas Range (Carriage 75p)
- Triband 20m. up to £17-30
- LF40m. 100W or Multiband “71”, 10...
  - £14-30
- 15, 20 | £14-30 |

| BANTIX | Fibreglass/Stainless Steel VHF/ UHF Mobile Antennas (Carriage £75p)
| BS | Wave 144 MHz | 5-00 | BSU BSU 1 Wave 412 | £5-00 |
| BGA | Wave 222 MHz | 6-50 | MHz | £5-30 |
| | 70/10 | Wave 70 MHz | £3-00 |

**K.W. EQUIPMENT** (Carriage extra)

| KW180 | Monitoroscope | £85-00 |
| KW189 | Transmatch | £80-00 |
| KW150 | Super Match | £60-00 |

**R.F. CABLES** (Carriage up to 20m., 40p. or 50p. less for lighter cables)

| 50 ohm | 30p/m | 75 ohm | 33p/m |
| 50 ohm | UR5 | 75 ohm | UR5 | 33p/m |

| 100k | 60 ohm | 75 ohm | 10p/m |
| 100k | UR8 | 75 ohm | UR8 | 6p/m |

| 300 ohm | 10p/m | 50 ohm | £4/£4.60 |
| 300 ohm | UR4/UR6 | 50 ohm | £15p |

**THE NEW SILENT CONTROL WITH AN AR30 AND 140**

| Mustang 3 ele. 2kW PIP | £60-00 |
| Mustang 2 ele. KW AM | £48-00 |

| F15, F20, F40, F80, F160m. | £4-25 |
| Telescopic Whips for Coils | £1-10 |

**SOUTH MIDLANDS COMMUNICATIONS LTD.**

Formerly trading as South Midlands Construction Ltd. and Western Electronics (U.K.) Ltd.

OSBORNERoad, TOTTIN, SOUTHAMPTON SO44DN. Tel: TOTTIN (04216) 4930 or 2785

**A MEMBER OF THE ARRA**

Agent: Brian G3ZUL

Droitwich (09057 4510)

**CABLES**

**AERIAL SOUTHWARK**
LOWE ELECTRONICS

TRIO FOR HF

TS520
£290 (VAT exc.)
Optional remote VFO 520 and speaker SP 520 available.

TS900
Top of the line. 300W p.e.p. 0.1µV sensitivity. All modes including RTTY. Vox, max, PTT. The rig with everything.
£480 (VAT exc.)
Optional remote VFO 900 available.

QR666
New general coverage receiver. 3 way power supply. AC mains, 12v. external supply or built-in batteries. 170 kHz-30 MHz coverage. Product detector. 2 position selectivity.
£130 (VAT exc.)
Optional broadcast FM unit and marker unit available.

LOWE 2 METRE MONITOR RECEIVER REC-1420C
Here is a simple, low cost F.M. monitor receiver which monitors up to six channels and has an excellent performance/price ratio. Ideal for mobile use and when fitted with popular F.M. frequencies along with a repeater or two ensures that it is in the midst of any F.M. activity.
No necessity for a bulky and costly tunable I.F.—no fiddling around when driving—just scan the channels and if there is much F.M. activity you are sure of hearing it. Being F.M., ignition etc. suppression is not essential, and thus makes it the ideal mode for mobile. It's diminutive size (4ins. W x 2ins. H x 8ins. D) and weight (2lb) make it a snip for portable. In fact it is the one receiver that is cheap enough for everyone to carry around anywhere.
R.F. STAGE ● REQUIRES 12 to 15v. D.C. ●
6 CHANNEL CAPABILITY ● 4 I.F. STAGES
DOUBLE CONVERSION ●
EXCELLENT SQUELCH
PRICE (Less crystals) £19-95 plus VAT

CRYSTALS 145-000 Popular 145-725
145-500 calling 145-750 Repeaters
145-525 channels 145-775
145-550
£1.50 each plus VAT

ALL IN PRICE, FITTED SIX CHANNELS, £31-26 INC. VAT & POSTAGE
LOWE ELECTRONICS

TRIO FOR VHF

TS700 Specification

**FREQUENCY RANGE**
- 144-146 MHz

**MODES**
- USB, LSB, CW, AM, FM

**VFO COVERAGE**
- 144-145 and 145-146 MHz

**CRYSTAL OUTPUT**
- 10W minimum

**POWER OUTPUT**
- 50dB

**ANTENNA IMPEDANCE**
- Greater than 40dB

**SIDEBAND SUPPRESSION**
- Better than -60dB down in all modes

**DEVIAITION**
- ± 10 kHz or ± 3 kHz

**SPURIOUS RADIATION**
- Better than -60dB

**DEVIATION**
- ± 10 kHz or ± 3 kHz

**REPEATER TONE**
- 10 kHz or ± 3 kHz

**Sensitivity**
- 0.5uV / 10dB / S+N+N

**Image Rejection**
- Greater than 60dB

**IF Rejection**
- Greater than 60dB

**If Shape Factor**
- Better than 2-1 in all modes

**Af Output**
- Greater than 2W into 8 ohms

**Stability**
- Better than 200Hz in any 30 min. period after warm-up.

**Repeater Shift**
- Standard 600 kHz transmittion downshift provided

**Calibrator**
- Built-in 1 MHz calibration points

**Dial Readout**
- To better than 1 kHz all modes

**R.I.T.**
- 4 kHz shift of receiver with respect to transmit frequency

**Noise Blanker**
- Advanced circuitry noise blanking for noise free mobile or fixed operation

**A.C. Input**
- Socket provided for A.C. input from linear

**AUX Relay**
- Socket provided for switching external linear

**Power Requirements**
- 120/240v. 50/60Hz AC; 12-16v. DC negative earth

**Consumption**
- Receive 45 watts AC; 800 ma DC
- Transmit 95 watts AC; 4A DC

**Dimensions (mm)**
- 278 wide x 124 high x 320 deep

**Weight**
- 11kg 24.2 lb

**Price £300 (VAT exc.)**

TR7200G 2m Mobile Transceiver

22 Switch selected transmitting and receiving frequencies in the 2m. FM band between 144MHz and 146MHz. The 2m. FM band is covered by the TR7200G with TX and RX crystals. Illuminated channel indication.

Channels Fitted:
- 144.50 Simplex
- 145.50 Simplex
- 145.55 Simplex
- 145.175/775 Duplex
- 145.525 Simplex
- 145.175/775 Duplex
- 145.525 Simplex
- 145.175/775 Duplex

**Price £125 (VAT exc.)**

TR2200G

2m Handy Transceiver

The world's most popular 2m handy transceiver now comes complete with tuning fork controlled repeater access tone and facilities for 12 channels. With the advent of repeater operation in this country, it is now possible to work long distances with low power equipment and the sudden popularity of portable 2m equipment testifies to this fact. The TRIO TR2200G is a high performance transceiver with features not found in other rigs. Supplied with 3 channels fitted:
- 144.50 Simplex
- 145.55 Simplex
- 145.175/775 Duplex

Most other I.A.R.U. channels available.

**Price £80 (VAT exc.)**

REMEMBER IC210 STILL AVAILABLE AT £200 (VAT EXC.)

2 METRE FULLY TUNABLE PHASE LOCK VFO AC/12V. OPERATION

HEAD OFFICE

119 Cavendish Road, Matlock, Derbyshire. Tel. 2817 or 2430 (9 a.m. - 9 p.m.)
Telex 377482 (any time)

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John G3JYG, 16 Harvard Road, Ringmer, Lewes, Sussex. Tel. Ringmer 812071
Sim GM3SAN, 19 Ellismuir Road, Baillieston, Nr. Glasgow. Tel. 041-771 0364

OPEN 9.00 — 5.30 TUESDAY TO SATURDAY INCLUSIVE

73 from BILL G3UBO/VE8DP, ALAN G3MMME, JOHN G3PCY/5N2AAC, IAN G3ZJC
BELCOM LA106 2m Linear Amplifier

A reasonably priced, compact, high performance linear for 2m. SSB/FMCW operation. 10W of drive for more than 200W input gives your signal the extra kick to get it out of the noise. Built-in receive preamplifier with adjustable rf gain and using helical filters for extra selectivity and reduced intermod. from out of band signals. Built-in regulated 13v, 2.5A power supply for Liner 2 or any similar drive unit.

Frequency range: 144-146 MHz
Modes: SSB, FM, CW
Drive power: 10W
Receiver preamplifier adjustable gain up to 10 dB
Accessory supply: 13vA 2.5 regulated
Power supply: 240v 50 Hz
Dimensions (mms): 315 x 148 x 280
Weight: 12 kgs
Price: £165 plus v.a.t.

SSB 144MHz MOBILE TRANSCEIVER

Liner 2

The brilliantly conceived and designed Liner 2 has revolutionised 2m. sideband and is responsible for the enormous increase in activity. It combines the advantages of switched channels with direct frequency readout (e.g. Channel 20 is 145-20 MHz) with the ability to tune between channels with the VXO. In addition the provision of R.I.T. which enables the Rx to be tuned to a kHz or two either side of the Tx frequency is a useful feature. The VXO gives, as one would expect, crystal stability which, coupled with an extremely effective noise blanker makes mobile operation a delight without detracting from its use (with an AC p.s.u.) as a base station.

Most important is the surprisingly low level of spurious emissions which sets a new standard. This low level is achieved by very careful design and alignment and owners are most strongly urged not to attempt alignment without a laboratory spectrum analyser.

For the first time, here is a completely solid state, fully tunable 2m. SSB rig which an electronically protected PA at a reasonable price which truly performs with the utmost reliability.

Price: Including microphone and bracket, spare DC power lead, mobile mount, spare dial lamp and fuse, £145 plus VAT.
Weir 2m. Mosfet Converter, 28 MHz I.F.  

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<th>Value</th>
<th>Carriage Paid</th>
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<td>£15.20</td>
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MICROWAVE MODULES EQUIPMENT

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MICROFET EQUIPMENT

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MICROWAVE MODULES EQUIPMENT

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ROTATORS

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VALVES

For the very common valves, it pays to shop at one of the large London importers who buy in such enormous quantities that they can sell retail at a lower price than we can buy wholesale. We do, however, maintain stocks of the more unusual valves which are used in the equipment we sell, and which you may find some difficulty in obtaining.

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CRYSTALS

Popular channels for Yaesu, Inoue, FDK, Trio and many other FM transceivers.

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VERTICALS

Hy-Gain 12AVQ 20, 15 and 10m. 3 element  

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ANTENNA ACCESSORIES

Please note that the carriage paid price assumes parcel post.

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FILTERS

9.0 MHz Crystal filters complete with both carrier crystals.

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AMATEUR ELECTRONICS UK

CONTINUOUS CONTACT WITH AFTER-SALES SERVICE ON AMATEUR ELECTRONICS UK

The Ultimate Base Station Combination

FL-101 Transmitter*

* Solid State 160 thru 10 Metre Transceiver

Here is the ideal companion designed to compliment the FR-101S and offer total base station performance and versatility. The latest, solid-state techniques and circuitry are utilised throughout this advanced transmitter. The FL-101 features a new, patented, variable temperature compensated VFO to give unmatched stability with better than 1 kHz readout and zero dial backlash on all bands.

FEATURES
* 160 thru 10 Metre coverage with 2 auxiliary bands
* All mode operation: SSB, CW, AM and FSK
* 240 Watts PEP
* Reliable, plug-in circuit boards for service simplicity
* Built-in final cooling fan

This flexible transmitter operates on all modes and may be operated in conjunction with the FR-101S in split or transceive operation. An optional RF speech processor may be added for that extra "talk power" needed on today's crowded bands. Match up the FL-101 with the FR-101S and a complete line of compatible accessories, for the ultimate in base station operation and performance.

* Built-in AC supply - adjustable from 100 to 234 VAC
* Built-in, fully adjustable VOX
* Automatic break-in CW operation with sidetone
* Indicator light for internal VFO operation
* Provision for optional RF speech processor

* FULLY TRANCEIVES WITH THE FR-101

FOR THE GREATEST RANGE —

FULL DEMONSTRATION FACILITIES

A COUPLE OF STAMPS (WE'LL PROVIDE THE ENVELOPE) WILL BRING YOU DETAILS OF ANY ITEM—PLEASE STATE SPECIFIC EQUIPMENT IN WHICH YOU ARE INTERESTED

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051-263 7829
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OR OUR APPROVED STOCKISTS

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THREE MODELS AVAILABLE
FR101S STANDARD
FR101DL DE LUXE
FR101SD STANDARD WITH
DIGITAL DISPLAY

- Solid State Receiver with Total Spectrum Coverage 160 thru 2 Metre
  plus provision for Major Short Wave Broadcast Bands

THE NEW FR101
ALSO GIVES SUPERB
TRANSCEIVE OPERATION
WITH THE FT-101B

IT MUST BE YAESU MUSEN!
PART EXCHANGES WELCOMED. EXCELLENT ON-THE-SPOT CREDIT TERMS.
IF YOU WOULD LIKE THE FULL YAESU MUSEN CATALOGUE SEE OUR OTHER
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AND WOODHALL SPA (LINCS.)
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LOUGHBOROUGH
05093 5131

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RADIO SHOP, G4MH
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HUDDERSFIELD
0484 20774
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...UNLESS YOU WANT THE BEST IN MOSFET CONVERTERS!

144MHz Mosfet Converters

UPDATED SPECIFICATION

The overwhelming response to the introduction of our 144 MHz SSB receive converter has indicated the requirement for a tightly specified converter for use with modern highly accurate 28-30 MHz receivers. To this end we have now standardised the design of our 28-30 MHz converter using a zener-stabilised 116 MHz crystal oscillator, giving a typical read-out error of better than 1 kHz. The converter is now available in the two versions, with and without the local oscillator output facility.

**144 MHz DOUBLE CONVERSION MOSFET CONVERTER**

I.F. available ex-stock: 2-4, 4-6 MHz Price inc. VAT £16.42

This unit was developed to meet the heavy demand for a converter suitable for use in receivers having better performance at lower frequencies. It uses two dual-gate mosfet mixers, both fed from the output of a 74 or 71 MHz crystal oscillator. Selectivity is obtained at the first IF in the 74 MHz range, thereby overcoming the usual problems associated with low-I.F. single conversion converters.

**136 MHz SATELLITE BAND CONVERTER**

I.F.s available: 28-30 MHz and others Price £16.42 inc. VAT

**70 MHz MOSFET CONVERTER**

I.F.s available: 4-47, 14-147, 18-187, 28-287 MHz Price £16.42 inc. VAT

**432 MHz MOSFET CONVERTER**

I.F.s available ex-stock: 14-16, 18-20, 24-26, 28-30, 144-146 MHz Price £19.55 inc. VAT

**432 MHz VARACTOR TRIPLER**

Maximum input power at 144 MHz: 20 watts. Typical output power (at maximum input): 14 watts Price £16.90 inc. VAT

**144 MHz DUAL OUTPUT PREAMPLIFIER**

Gain 18 dB, N.F. 2-8 dB. Ex-stock Price £9.72 inc. VAT

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Name

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Wellington Bridge, Leeds LS12 2UF.

* This will be refunded on orders of £5 (less VAT) or more received by us before March 31st, 1975.
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RADIO EQUIPMENT
BY
YAESU MUSEN

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PRICE INCREASES ARE ON THE WAY FROM YAESU: BUY NOW!

NEW! TOP VALUE AND PERFORMANCE
YAESU—YOUR ASSURANCE OF QUALITY—introduce
THE FT-201 10-80m. AC/DC TRANSCEIVER

£290 + VAT (ex-stock)

FEATURES:
★ Built-in ac/dc psu
★ 260W p.e.p.
★ 1 kHz readout
★ Effective noise blanker
★ Break-in cw keying with sidetone
★ ±5 kHz receiver clarifier
★ Built-in wvw reception
★ All mode operation for am, cw and ssb
★ Fast/slow/AGC
★ Built-in cooling fan
★ Complete line of compatible accessories

YAESU now brings you the newest addition to its growing family of solid state transceivers, the FT201. Performance and portability are among the key features of this economical transceiver along with YAESU innovated modules to simplify servicing. The FT201 has features which you would expect to find only in units costing much more.

USED EQUIPMENT

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
<th>Condition</th>
<th>Price</th>
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<td>MN4, excellent</td>
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<td>Drake</td>
<td>R4B/T4XB, superb</td>
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<td>FDK</td>
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<td>Heath</td>
<td>SB-103, New, assembled</td>
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<td>KW77</td>
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<td>Murphy</td>
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<td>Standard</td>
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<td>TS-510, very good</td>
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<td>YAESU</td>
<td>FT-2F, fine</td>
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<tr>
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<td>Trio JR-500, good</td>
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<tr>
<td>Trio TS-510, very good</td>
<td>£105.00</td>
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<tr>
<td>YAESU, FT-2F, fine</td>
<td>£65.00</td>
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SPECIAL OFFERS!

★ BARGAIN CORNER ★

ACCESS BARCLAYCARD EXPORT A PLEASURE!
For your LINER 2 144 MHZ SSB Transceiver

Price £145 (plus VAT).
24 SECURICOR DELIVERY.
Ex-stock. Covers 144.10—144.34 for the new band plan.

Every Liner 2 is carefully aligned on our Hewlett-Packard Spectrum Analyser before despatch and you will have the satisfaction when purchasing your “Liner 2” from us of knowing that the job has been done properly by experienced staff.

THE STANDARD C146A — SETS THE STANDARD

- Tone burst built-in and can be switched-off
- Has the finest RANGE of accessories available and
  - it's twice the power!
  - it's half the weight!
  - and about one third the size (of its competitors)

STANDARD
The Standard C146A is a 5 Channel 2 watt unit fitted with adjustable toneburst for 1700 and 1750 Hz repeaters. The CSA Base Charger unit enables the C146A to be used as a main station and re-charges Ni-Cad batteries (set of 10 required).

Prices (Carriage paid, exc. VAT)

<table>
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<tr>
<th>Model</th>
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<td>CV100</td>
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<td>CV110</td>
<td>VFO for C140</td>
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<td>2m. Transceiver</td>
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<td>C146A</td>
<td>2m. Hand Transceiver, 5 channel</td>
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<td>UHF Transceiver</td>
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ACCESSORIES

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<td>2-205K remote speaker</td>
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<td>CAD external antenna coupler</td>
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<td>£23.00</td>
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<tr>
<td>CMP02 Telephone handset</td>
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<td>£23.00</td>
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</table>

CATALOGUE. We will be pleased to send you a copy of our COMMUNICATIONS EQUIPMENT catalogue (20p) or TOWERS, ANTENNAS and ROTORS catalogue (20p). No SAE required.

Western Electronics (UK) Ltd

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CABLES: WESTRONICS, SOUTHAMPTON
TELEX: 47388 WESTRONICS
Western Electronics (UK) Ltd

SOUTHAMPTON

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...of course you would! So many firms say "ex-stock" and then come up with a whole host of excuses as to why they can't supply that we decided to make you a Special Offer until March 31st. Send us your order for any one of our CDE Rotors (with money, or course!) and if we can't supply "ex-stock" then we will give you a free rotor when available. There's a challenge for you! You have nothing to lose!

NEW CDE ROTORS
(Prices carriage paid)

<table>
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<th>Model</th>
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<td>AR30</td>
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<td>AR40</td>
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<td>£60.00</td>
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<td>HAM-2</td>
<td>£90.00</td>
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SECURICOR DELIVERY £1 EXTRA

ATTENTION H.F. MOBILE OPERATORS!

Fed-up with having to disconnect resonators/whips before garaging?
Fed-up with having to go slow due to inadequate mounting?
Then here's the answer... the "HUSTLER."

Hustler and only Hustler gives you 12 years of proven performance, mechanically and electrically superior...

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CHOICE:

- BM1 Bumper mount £5.50
- MO2 Mast £7.50
- RM10 10m. Resonator £3.00
- RM15 15m. Resonator £5.55
- RM20 20m. Resonator £6.50
- RM40 40m. Resonator £7.50
- RM80 80m. Resonator £8.00
- CI2 Ball mount £2.00
- SS1 Stainless ST. Spring £5.45
- R32 Resonator Spring £2.65
- QDI Quick dis-connect £6.50

NEWTRONICS. 10-40/80m. Vertical 4BTY + RM80s in stock.

The 4BTY is a self-supporting 10-40m. Automatic band selecting vertical and covers 10-80m. with the RM80s (1KW rated) resonator. Price (Carriage paid £40. BM05 £15).

BANTEX FIBREGLASS MOBILE ANTENNAS (Carr. 75p) (Ex-Stock) + VAT

70/1, 70 MHz 4 wave £3.00 144/1, 144 MHz 4 wave £2.95

J BEAM (Carriage 75p and VAT extra)

TAS 5/84 pivoting mobile £7.00
5Y/2m. 5 ele. £4.30
5Y/2m. 8 ele. £5.60
10Y/2m. 10 ele. £11.00

BRAUN SE 600 Digital AM/FM/SSB 2m. Transceiver. Ex-stock £699.00

CASLON 222 24 hour clock £600.00 601 Day/Date Clock £613.77

ECM Deviation meter 3-500 MHz. Portable and reads deviation direct 0-15 kHz. A "must" for the serious FM operator or group £44.00

FRONTIER LA2 2m. 350w. p.e.p. Linear amplifier £49.00

VIBRATOL 2m. SSB/FM 12v. DC amplifiers. Type 701A, 75w. o/p £69.00. Type 801A, 100w. o/p £89.00

VALVES (Post and packing 30p) Minimum order £2. Most valves are of first grade Toshiba manufacture.

- 572 (Cetron) £1.20
- 5763 £1.52
- 6146 £4.50
- 6146 £4.85
- 6146 £1.05
- 6146 £5.60
- 6146 £3.50
- 6146 £3.85
- 6146 £3.60
- 6146 £3.35
- 6146 £3.30
- 6146 £3.15
- 6146 £3.10
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- 6146 £3.70
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- 6146 £3.60
- 6146 £3.55
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- 6146 £2.30
- 6146 £2.25
- 6146 £2.20
- 6146 £2.15
- 6146 £2.10
- 6146 £2.05
- 6146 £2.00
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March, 1975
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Simplicity

It can hardly be gainsaid that the art and practice of Amateur Radio is becoming ever more sophisticated and harder to understand in its detail, particularly for beginners. Relatively few radio amateurs nowadays really know what goes on in their black boxes, even though they may operate them very competently.

On the other hand, it is also true to say that there is still ample scope for the simpler approach, and in the D-I-Y sense—as the present re-emergence of the QRP interest shows. Low-power working with simple equipment is no new thing. All through the years, there has been a periodical resurgence, such as we are witnessing now, in the art and practice of QRP in the Amateur Radio context.

While transmitters are relatively easy to build, receivers are rather a different matter. One cannot do much these days (except listen to the locals) with the old “1-V-1” type of Rx, if only because of the QRM factor. But a one-watt single-valve crystal-oscillator Tx is quite capable of very satisfying results in the hands of a competent CW operator, if he provides it with a good aerial.

Furthermore, it really matters very little how the RF is actually generated—valve or transistor, simple circuit or multi-stage—and because there are still literally millions of small and highly-efficient valves available at almost give-away prices, there need be no qualms about using them. What matters is how the RF is controlled and used.

In fact, there is no reason why, in the interests of simplicity and the use of QRP, we should not look more at low-power CW transmitters, while using a more modern type of receiver to cope with today’s band conditions.

And it would be fun refinding the data!

Index

Each copy of this issue (which starts a new volume) should contain, as free loose supplements, an Index to both Vols. XXXI and XXXII, the years March-February 1973-'74 and 1974-'75. We were not able to produce an Index to Vol. XXXI this time last year because of the industrial situation and general dislocation then prevailing.

We hope that those who have enquired, or who missed the Index last year, will feel that the omission has now been rectified.

WORLD-WIDE COMMUNICATION
COMMUNICATION and DX NEWS

E. P. Essery, G3KFE

COMMUNICATION and DX NEWS

FOR very good reasons which do not concern us here, old ‘KFE has not, to his regret, had much chance to play with his wireless set, so his own personal views on the bands will not appear to distort the true picture as seen by the faithful and reported in their letters.

However, an observation is maybe worth making at this time, which is that while MUF’s are so low, minor disturbances in the system can have a marked effect on the LUF; the implication is that if CW sounds like a whisper when you listen, the aerial which gives fine results but only for about 25 minutes. However, this is counteracted by waiting for the propagation system can have a marked effect on the LUF; the implication is that if CW sounds like a whisper when you listen, the aerial which gives fine results but only for about 25 minutes.

This shindig is in Top Band, his only channel.

Looking at the Transatlantics this season, the summary seems rather like this: November 17 was a complete washout, saving that there seemed to be a path to OE-land. OH1BFH worked VO1IKE just before the test started, then conditions seemed to go downhill, only to be broken by DL1FF being heard, and through the latter, incidentally, rang up what must surely be the quickest WAC on Top Band by doing the trick in just eight hours during the ARRL Test on December 6, the stations involved being 9L1JT, HH2WF, 4X4NJ, GD4BEG, FY0BHI and KH6CHC.

Top Band is it almost axiomatic that Top Band should be at its best when the sunspots are more evident in the textbooks than on the sun, and the DX season so far seems to have run true enough to form.

At the time, the writer, W1BB found himself comparing this season against the previous one, at the same date. This year, so far he was at 46 countries up, as against the previous year’s 37 countries; he now sits at a total of 121 countries confirmed, with KV4FHZ his nearest contender at 95 countries confirmed, as far as he can tell. The latter, incidentally, rang up what must surely be the quickest WAC on Top Band by doing the trick in just eight hours during the ARRL Test on December 6, the stations involved being 9L1JT, HH2WF, 4X4NJ, GD4BEG, FY0BHI and KH6CHC.

Your scribe has always considered the ultimate in DX on 160 metres to be the “impossible” JA contact, but at least one European has achieved it, namely DL1FF. On a different tack, VO1IKE was a little shattered when he logged G3UTC and G3BFP in QSO, the time he logged the DX was mid-afternoon! At the same time DHJ was audible.

December 6, the stations involved being 9L1JT, HH2WF, 4X4NJ, GD4BEG, EI1AA, GM4DNM/A and GC3ZEM/P. Both the GC’s were Jersey.

Having looked at the wider scene through the words of W1BB’s invaluable bulletin, we turn to the more domestic aspects of Top Band.

G4BWP (Henlow) continues, and found much useful GDX during the CQ WW 160 Contest—such as GC3SVK (the Old Firm!), GD4BEG, EI1AA, GM4DNM/A and GC3ZEM/P. Both the GC’s were Jersey.

Top Band CW is not by any means a normal stamping ground for G2B2Y (Ventnor, I.O.W.), but he did try loading up his little bit of wire in the loft of his bungalow, about fifteen feet above ground. This unlikely aerial produced quite good CW well into Europe, to its owner’s surprise and pleasure.

G2B2Y (Walsall) mentions with appreciation the letter he got from G1ZEM telling about his Jersey activities with 180 feet of wire in the loft of his bungalow, about fifteen feet above ground. This unlikely aerial produced quite good CW well into Europe, to its owner’s surprise and pleasure.

For example, at 0240 to 0300 WB8APIT was like 14 MHz, twenty over nine as already indicated. Another oddity is noticed by looking over one’s logs: for instance, at 0010 and go out by 0025z, not being heard again until about 0430—very different: scene from today’s. The rate of QSO’s is quicker, largely through people giving QSO on the bands they’re listening, which helps to avoid the RTTY around 1803, 1805 and 1807 kHz.

...
Regrettable Situation

It seems we have had our last report on the activities of G5BIU; the authorities have not seen fit to renew his work permit, and so he is forced to return to U.S.A. Dave has proven not only a good amateur but a good chap in the best sense; it seems wholly unfair that such an asset as G5BIU should be forced by officialdom to return home when we quite happily let in unemployable aliens on the strength of what has become a bogus British passport. However, Dave is nothing if not a good sport and he has not complained. He passes on the word that he is now a little outstanding on the matter of QSLs, which should go to him in future at WA2TLQ/4, Route 12, Box 541, Tallahassee, Florida 32304, U.S.A. Before this enforced close down, G5BIU was up to 38 countries worked, with perhaps his best one watt QSO as the three-way between himself, W1BMS in Maine and ZE1JV in Rhodesia. Dave promises to keep in touch and will welcome skeds.

Forty

Good DX country for those few who have the courage to try it; so many people just have a cursory swing over it once and then never look again. G2BY has been looking closely at the band from his Isle of Wight hideout, and reports that, since September, he has worked 52 ZL stations plus 47 VK’s; his 14AVQ puts a fine signal over there and he is often reported as the only European audible. Bert is yet another to have to report on a high level of man-made noise—farmers with electric fences, power lines, unsuppressed domestic appliances and, above all, the hurly-burly of colour TV sets, all of which add up to a far higher noise level in an “open” QTH than ever he experienced in the old days at Ascot. As he says, the law is there to require the suppression of these devices but, as he puts it, “as long as the bodies who claim to represent Amateur Radio sit back and do not make strong representations, nothing will be done,” and in some cases Amateur Radio could be driven to extinction by the environmental pollution—but woe betide any amateur who gets a bit of TVI and is complained of, as far as possible of a noise-free site.

An interesting/MM contact was the lucky recipient of this surprise. What is happening on the bands. This report is in fact the first time the FT-75 and long-wire has been seriously tried on Forty from the ship and it has been quite an eye-opener. From the Persian Gulf towards the opening of the Mozambique Channel stations to the East came through well on 7025 kHz. CW but conditions deteriorated by 1500z as the BCI came up. Once south of the Comoros things worsened again, the 1400-1500 period was daylight there and high summer. From Comoros to South Africa only locals were worked but from ZS and on towards Liberia, the DX again pounded in. Here there were two operating times, namely 0600-0730z and 1800-1900, the former CW on 7025 and the latter SSB on 0730 kHz. Richard was never short of a DX QSO and one evening he was overwhelmed when a quick QSO on SSB from the South Atlantic resulted in a call from JA8IXM. The mornings, of course, always gave a DX contact, but the Europeans didn't show up until the ship was in the North Atlantic (from where he wrote his report) and when G3ZGC/MM ended by listing it all up the result was like a log from the late G2DC at a sunspot peak time on Twenty! An interesting/MM contact was with a K6 on a 96-foot yacht, going from quote, "Los Angeles to Los Angeles via India!"
Top Band Counties

<table>
<thead>
<tr>
<th>Callsign</th>
<th>AM</th>
<th>CW</th>
<th>SSB</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>G2BJY</td>
<td>9</td>
<td>126</td>
<td>14</td>
<td>149</td>
</tr>
<tr>
<td>GM3YOR</td>
<td>—</td>
<td>114</td>
<td>22</td>
<td>136</td>
</tr>
<tr>
<td>G4BWP</td>
<td>27</td>
<td>70</td>
<td>—</td>
<td>97</td>
</tr>
<tr>
<td>GD4BEG</td>
<td>—</td>
<td>82</td>
<td>11</td>
<td>93</td>
</tr>
<tr>
<td>G4BOH</td>
<td>9</td>
<td>40</td>
<td>6</td>
<td>65</td>
</tr>
<tr>
<td>G4AYS</td>
<td>—</td>
<td>62</td>
<td>—</td>
<td>62</td>
</tr>
<tr>
<td>G4AXY</td>
<td>46</td>
<td>16</td>
<td>—</td>
<td>62</td>
</tr>
</tbody>
</table>

Each County may be worked once in each mode. AM contacts score three points, CW two points, and SSB one point: a maximum of six points per country. AM contacts made by changing from SSB after making contact are not allowable, neither are cross-mode QSO's. New U.K. County designations apply.


However, VP2DAI writes in primarily to acknowledge that he does owe some G's cards, he having had some difficulty in getting on top of the QSL's while there; as soon as the logs come in from Dominica, VP2DAI promises to give right up.

Now a word on Piracy. The Royal Omani Amateur Radio Society write formally to advise that there have been two known cases of pirating the Omani prefix "A4XSDY" and "A4XDJ" are the offenders and no such calls exist. However, a couple of new ones have been issued recently, namely A4XVB and A4XVC, valid for six months to a couple of R.A.F. types on Masirah Island.

Calgary Amateur Radio Association write to tell us that in connection with the Centennial of Calgary, all Calgary amateurs are authorised to use the prefix CY6 for the year 1975. They are having a Convention on the first three days of August; details from Box 592 Calgary Alberta T2P 2J2. In addition there are three awards; Calgary Centennial Award, 1975; Calgary-Alberta Centennial QSO Party, April 1 1975 to May 1 1975; and a Calgary-Mobile Contest for those who intend to appear at Convention. All the detail is obtainable on these from the address given.

Royal Navy Amateur Radio Society sponsor the Hampshire Award, the Rules for which have now been revised to take into account the new county boundaries. Basically, you work stations in Hampshire at a point a go, with two points for a contact with the Hq. station G3BZU, or GB3RN if the latter call is activated within the county. U.K. stations need fifty points, the Europeans twenty and DX stations a mere fifteen for Class I. Class II revises the numbers down to 30, 15 and 10, with Class III to 20, 10 and 5 respectively. All DX stations a mere fifteen for Class I.

Easter week-end sees several of the GI groups making a rendezvous at the Hq. of the Ballymena Radio Club, the idea being to generate some GI activity for those who want that country, on all bands 1.8 to 29.7 MHz. The idea being to generate some GI activity for those who want that country, on all bands 1.8 to 29.7 MHz. The Hq. station G2GM, QTHR, and visitors will be welcome at the Ballymena premises over the weekend.

The QRP Club seems to be going from strength to strength, as is very clearly indicated in the letter from Secretary, G3RJV. Incidentally, G3RJV notes the sad business of G5BIU already mentioned, and shares our feelings on it. Anyone interested in QRP, this is the club to belong to; and we could remark that the Rev. George Dobbs, Club with a listless defeatist secretary!

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Ten Metres

Generally it seems to be a non-starter in DX terms, at least during the review period; but still this is a matter of activity more than anything, as G4DML sees it from Essex University. He tried the band during the CW WW DX Contest which happened just nicely to celebrate the dropping of the old G8GSX call in favour of the new G4DML. (Note G4DML found that band lively up just as soon as the contest started, and over the weekend racked up 89 countries, 500-plus QSO's using the FT-101 and an HQ-1 Minibeam. Among the countries worked we note VK, ZS2, A2, FY0, CR6, TJ, PJ, VU, ZL, VY, KP, VP2, LU, OA, CE0, PJ9, KG4, and VP9!

As for your conductor, he can report possibly the most non-DX QSO of them all; three feet! This marvel of technology was achieved with a pair of handy-talkies belonging to G3MWF and was a complete QSO right down to the final R—just to see whether the beast would make the TV sit up and blink; we are pleased to report no TVI!

Fifteen

A dearth of reports on this band, although it has been doing its best at times, considering the low state of the sunspot count. G2BY found that he could work South Americans around lunchtime, but in general not very lively for the rest of the day.

G3NOF agrees with this, he having heard them too; Africans up to 1400, short path VK's occasionally around 1100, but a band closure by 1700 or so. Don made contacts with CT7AF, VE0VA (Arivado Is.), VK6HE, VQ9HCS, CZ4AK, ZS1GR, ZS1IC, 3B8AX, 9G1LZ, 9J2BO and 9J2DT.

At home, nothing, but from school G4DMN had a G-whip at ten feet which produced a QSO with VP8CB. G4DMN comments that although the QSL's have started to trickle in, disaster struck when an envelope-full of them posted from home split open and arrived minus the contents. Post Office had been informed but at the time he wrote Richard was still hopefully waiting for a reply telling him where the cards have been found; a forlorn hope, indeed.

What About Twenty?

Well, at least it's still there! G3CED/G3VFA tried it out with the QRP and Joystick and managed some quite interesting QRP contacts of which quite a proportion were QRP both ways and still with fine reports all round Europe.

The lengthening of the days is beginning to show its effect on the bands, says G4BWP; he has a dipole at fifteen feet and with its catch all CW with W1, W3 and W4 during the contest. W5, W6 and W7 have been heard around 1700 but attempts to bring them to book have so far not been very successful.

G4KBV only worked a few Europeans with his QRP this time; the reason is the purchase of an FTDX-401. This hasn't yet been given a real testing-out as there is only the 14 MHz dipole, but he has had a few contacts over W and VE. For the moment, everything else is held pending a multi-band vertical hanging up—then look out, DX!

G3UZ (Goring-by-Sea) didn't report on the band this month, no doubt due to the speed gale-proofing his aerial as mentioned earlier, an activity rather needful in a windy seaside location; we inland types who only see the sea for a fortnight each year tend to forget the sea "breezes" are usually S9 plus gales in terms of what they can do to aerials!

It was all SSB from G2HKU. Ted accounted for JA2HGA, JH2DPB/P1 (Harumi Is., Tokyo Bay), ZL1VN, and 9HI1ED, when he could spare time from his AEC power machine.

In contrast with 21 MHz, G4BWP found more DX from home than school, by way of 6W5D, K4RD, HK4BTY, VP5BT, TF5TP; but the school rig only managed OH0JN and GC2FMV (Jersey) hardly real DX but new countries for Richard who now has managed sixty-odd. School work does tend to interfere with DX'ing, but half-terms will have come and gone by the time the next month's reports are due, and, if the band plays ball, G4DMN will have three evenings of real DX-chasing.

VK, ZL, JA appear around 0830, says G3NOF, East Coast W's from noon to 1800 or sometimes as late as 2000, Africans strong from evening of real DX-chasing.

The QSL Front

G2HKU offers J22HK, JA3JQ. G3NOF has his usual crop of useful ones, like 7P8AQ, to P.O. Box 1266, Maseru; VK9RH, to 592 Dakota Ave., Maseru; ZS1GR, ZS1IC, ZS5MN, ZS5PG, ZS5PV, ZS6TL, 3B8AX, 9G1LZ, 9J2BO and 9J2DT.

We are at the end of the material now; so what better place than this to remember Jack Wakeman, G4FN, of Graves, Essex, who died on the 6th day of January at the age of 70. He was an excellent operator, F.O.C. member No. 20, an ex-R.A.F. type, and very keen and active on the HF bands. G4FN will be much missed.

Signing

The deadline for next time is to arrive first post March 13, (or before preferably) addressed as always to CDXN, SHORT WAVE MAGAZINE, BUCKINGHAM, MK8 1RQ. And, as ever, 73.
MOBILE RALLY SEASON—1975

A number of Mobile Rally dates have already been notified for the coming Season. As in previous years, we shall be covering the Mobile Scene and keeping a calendar of going events.

It is perhaps of some interest to note that the very first Mobile Rally ever held in this country was at Binsey, on the river near Oxford, nearly 20 years ago, on October 9, 1955. This historic event, fully reported in the November 1955 issue of SHORT WAVE MAGAZINE, was the first Mobile Rally ever held in this country. The rally was held at Binsey, on the river near Oxford, nearly 20 years ago.

In the intervening 20 years, literally hundreds of Mobile Rallies have been held and there must now be something like 5,000 U.K. amateurs licensed /M. The bands still being worked are mainly Top Band and Two Metres, though with much more sophisticated equipment. Winners of the concours d’elegances that were a feature of Rallies held in the early /M days would not now look at the gear with which they were winning in the 1950's.

MOBILE RALLY CALENDAR

March 30: White Rose Rally at Lawnswood School, Leeds, junction A.660/A.6120, with many trade stands (some new to the Rally scene), a raffle, well-stocked canteen facilities, ample free parking and a talk-in. Local travel by Leeds Metro No. 1 service, railway station to School.—Miss C. Wade, G4CUY, 74 Cow Close Road, Leeds, LS12 5PD.

April 20: North Midlands Rally at Drayton Manor Park, near Tamworth, Staffs., on the A4091, and within 12 miles of Intersection 4, M.6, with local AA sign-posting.—A. R. Walton, G3ZKQ, QTHR.

May 4: Tulip-Time Rally at Gleed Boys School, Halmer Gardens, Spalding, Lincs. All regular attractions, talk-in on Top Band and two metres, location maps available on request.—R. Harrison, G3VPR, Spalding & District Amateur Radio Society, 38 Park Avenue, Spalding, Lincs., PE11 1QX.

May 18: Amateur Radio Mobile Society Rally at Northwick Park Hospital (Clinical Research Centre), Watford Road, Harrow, London, with acres of parking space and easy access via District Line, Northwick Park Station. Trade show organisation by W. S. Barwick, 34 Malvern Road, London, N8 0LA. (Tel.: 01-888 0636.)

May 25: Hull & District A.R.S. Rally at East Riding College of Agriculture, Bishop Burton, Beverley, Yorkshire, as in previous years.—L. D. Colley, G3AGX, 13 Ferry Road, Wawne, Nr. Hull, Humberside, HU7 5XU.

May 25: Maidstone Trade Exhibition and Mobile Rally, Y-Sportscentre, Melrose Close (off Cripps Street, A.229), Loose, Maidstone, with talk-in on 160, 80, 4 and two metres, signing GB3YSC. Trade stand enquiries to A. S. Walters, G3WXL, 4 Oak Farm Gardens, Headcorn, Ashford, Kent.

June 1st: Royal Naval Amateur Radio Society Rally at H.M.S. Mercury, near Petersfield, Hants.—Fleet/CRS M. J. Matthews, G3JFF, R.N.A.R.S., H.M.S. Mercury, East Meon, Petersfield, Hants., GU32 1HE.

June 8: Sixth Mobile Rally at Elvaston Castle Country Park, south of Derby, off the B.5010.—P. Neal, G3WFU, QTHR.

June 29: The 18th West of England Rally at Longleat House, Warminster, Wilts., probably one of the finest Rally sites in the country—further details later.—B. Croker, G3ULJ, 36 Portland Street, Staple Hill, Bristol, BS16 4PT.

July 6: Worcester & District A.R.C. Rally event at Upton-on-Severn, as in previous years.—B. Jones, G8ASO, QTHR.

July 20: Cornish Radio Amateur Club annual event, at the Technical College, Pool, Redruth, Cornwall. (Details later.)

Organisers of Mobile Rallies not listed are asked to let us have their details as early as possible, for the Calendar to be kept running till the end of the Season. Address to “Mobile Scene,” SHORT WAVE MAGAZINE, BUCKINGHAM, MK18 1RQ.

SPECIAL-EVENT STATIONS

As is usual at this time of year we will include under this heading details of Amateur Radio stations to be operated in the presence of the public, mainly under special licence “for duration only” and either in support of or in conjunction with some local public occasion.

Details, set out in the form shown below, should be sent to: “Special Activity,” SHORT WAVE MAGAZINE, BUCKINGHAM, MK18 1RQ.

GB3WRC, March 12-14: For the Wallington Rotary Club hobbies exhibition, at the Public Hall, Stafford Road, Wallington, Surrey. Station organised and operated by Sutton & Cheam Radio Society, hon. secretary A. Keech, G4BOX, 26 St. Albans Road, Cheam, Sutton, Surrey, SM1 1RN.

GB3RN, March 28-April 7: From H.M.S. Belfast, the historic cruiser now at permanent moorings in the Pool of London. Amateur Radio activity on all bands, HF and VHF. Members of the Royal Naval A.R.S., R.N. or ex-R.N., are invited to serve as operators. This could be a good “Easter week-end cruise” (at moorings, of course!) if you apply to: D. F. J. Walmsley, G3HZL, 153 Worple Road, Isleworth, London. (Tel.: 01-892 3239, evenings and week-ends.)

For this month’s Reader Small Advertisements, see pp. 52-58
AERIAL CONFIGURATION FOR TOP BAND

IDEA FOR LOADING

J. S. CUSHING (G3KHC)

The technique of loading an aerial is often used and as a rule is done to restrict the size of the aerial without too great a reduction of radiated signal. Loading can be used on any band between 160 and 10 metres, and naturally any amateur with an interest in LF-band operation—160 metres in particular—but with limited ground space will almost certainly find it worth while experimenting with loaded aerials.

These are several methods of loading LF band aerials but it is difficult to say if any way is "best" as to some extent individual situations and requirements affect overall considerations. The loading device discussed here is suggested as one method among others of improving a Top Band signal.

Essentially, the loading device consists of a coil placed in the aerial at or near the remote end of the wire. A familiar diagram is that of Fig. 1, the coil being near the remote end so that a little capacitance exists between turns in the coil and the wire on either side. This tends to give more reliable results than having the coil right at the end of the wire.

The effect of the coil is to vary the RF current distribution by increasing the electrical length of the aerial, the usual aim being to bring the maximum RF current point (the current antinode) to a position from which it will radiate to best effect. In the case of a small 160m. aerial, maximum current is best positioned somewhere along its horizontal top.

The loading device now described involves using a coil, but is constructed as a unit to which an aerial wire is connected, the following advantages being claimed:

1. Construction is easy, needing ordinary hand tools and no special skills,
2. Materials needed are easily obtained,
3. The finished job is neat, inconspicuous and forms part of the aerial mast,
4. Joined to a small inverted -L, better results are obtained on 160 metres.

In Fig. 2 the general appearance of the device is illustrated, the coil being placed between, and joined to, two lengths of metal tubing. Some capacitance must then exist between coil and tubing.

At first sight, Fig. 2 is not unlike a centre-loaded mobile whip. It is not, however, resonant on 160 metres, but a GDO did show a dip at about 14 MHz. This was with the device lying isolated on a wooden bench and the fact the coil contains approximately 20 metres of wire could have some connection with the GDO reading.

Material for construction happened to be to hand. Two lengths of ⅜ in. copper tube, left over from a plumbing job, one measuring 4ft. and the other 3ft., provided the tubing, and a couple of feet of wood dowling made a former. (Copper tubing is usually stocked by builders' merchants, and any tubing is cut very nicely with a plumber's pipe cutter, but a hacksaw is almost as good though only moderate pressure should be applied, since copper is a soft metal).

Measurements of the finished job are given in Fig. 3. It will be seen that the dowling is slipped three or four inches into each tube, with a few short wood screws holding tube and dowling together. Two half-inch or ⅜-inch panel pins are tapped into the dowel some 14 inches apart to serve as anchor points for the winding.

The winding specified was determined empirically, which is another way of saying the first winding tried was not very successful but the second (luckily) seemed about right. This is mentioned as there might be an optimum size winding; the device as shown works well, however, so no further coils have been made.

Making It

Winding the coil is the only part of the job needing some care—and a couple of hours without interruption. If possible, improvise means of mounting the dowling so it can be turned with one hand as the wires are fed on with the other. Two lengths of wire are used, both about 60 or 70ft. long and each length should be loosely wound...
on to some sort of spool. The ends of both wires are soldered to one of the panel pins and the winding commenced. Fig. 4 is in a sense misleading as the wires are, for the sake of clarity, shown spaced: the actual windings on the dowel should be as close-wound as is practicable. It is essential that both windings are put on under slight tension and the wires not transposed at any point. Difficulties should not arise so long as the job is done unhurriedly and methodically. When the second pin is reached both wires are again soldered and the coil carefully examined for obvious faults.

One of the windings must now be removed. It does not matter which is uncoiled, but this operation should also be done carefully so that a neat coil spaced one wire diameter remains. (This process should also be carried out using cord instead of wire).

The final step is carefully to apply a coat of waterproof varnish. This will help hold the turns in place and give protection against weather. The brush is best not run along the coil but round it as this reduced any risk of turns slipping. Further coats of varnish should be applied and this might just as well include the tubing and ends of the doweling. A short length of heavy wire is used to join each pin to the tubing. A big iron is helpful when soldering as the large mass of metal rapidly conducts heat away from the area of the join.

The loading device was installed, as illustrated in Fig. 5, clamped to a short mast so that the total height was about 20ft. About 60ft. of wire in the form of an inverted-L was run to the transmitter.

A neon bulb held at various points close to the loading device produced interesting results. (See Fig. 5—N1, N2 and N3). At position N1, the remote end of the aerial, the neon glowed brightly, indicating high voltage but low current. At N3 the glow was slight, indicating the opposite, and this suggests that the horizontal top would carry high or fairly high current. When the neon was held near the coil (N2) the glow varied according to the neon’s position, being least at the coil top, but becoming brighter as it was moved down the coil.

Sometimes a coil inserted in an aerial can act as a choke which prevents passage of RF. Indications given by the neon also suggest no choke effect is present.

Contacts with local stations produced S9+ reports and stations at from 50 to 100 miles usually gave S7 or S8. For a short loaded aerial this is satisfactory going by previous experience with other loaded aerials.

Time has not allowed extensive testing, so contacts at greater range have not been made. Contacts over several hundred miles have been made with similar aerials so it is felt there is more than a little chance of as-good results given suitable conditions.

Attempts were made to use the aerial system as shown in Fig. 5 on 80 and 20 metres. A few very indifferent contacts gave the impression the aerial was not very suitable for these bands, though a coil with less turns might be an answer.

### PA COOLING FOR THE FL-DX500

#### FITTING A FAN

**P. Burnett (G4BLL)**

The writer having recently acquired an FL-DX500 transmitter of Sommerkamp origin was a little disconcerted to hear the output valves (6SJ6C in this case) performing what sounded like a “tap dance” whenever full power was demanded, either on tune-up or transmit.

It was found that the noise described emanated from the glass envelopes expanding at a “fair rate” under the influence of the heat generated on full power.

Probably many readers, especially other owners of this range of transmitters, will say that this is a quite normal state of affairs and that their particular specimen has run quite happily under these conditions for many months, perhaps even years. The writer can only say in mitigation that his relatively limited experience as a G4/3 has been with a Central Electronics Tx of American origin (from “the golden years”) rated at a conservative 100 watts input and fitted with two (!) cooling fans, built like a battleship and weighing nearly as much. It was decided to provide some form of cooling for the FL-DX500.

It seemed that the cooling fan as fitted to the FT-101 would do the job admirably, especially when one considers that the output stages and input powers of both models are almost identical. The FT-101 fan is available as an extra and is designed for fitting to earlier versions of that Tx where the fan was not provided as standard.

#### Doing The Job

Fitting the fan proved to be technically a simple job, it being necessary only to fabricate an aluminium backing plate on which to mount the fan and which also served the purpose of masking off the holes in the back of the perforated metal cover of the PA compartment to give the correct air flow. The dimensions for this plate are given in Fig. 1, but it may be necessary to alter these slightly to suit individual models. At first, the fan was fitted without cutting a corresponding hole in the perforated cover—it being assumed that air could just as well be drawn through a lot of little holes as one big.
Material—20swg Aluminium

Original perforated cover

Note relative position of bends

Holes to correspond with original mounting screw holes

Fig. 1 Backing Plate

Material—20swg Aluminium

Original perforated cover

Note relative position of bends

Holes to correspond with original mounting screw holes

Fig. 1 Backing Plate

14.75 cm

1.5 cm

7.5 cm

7.5 cm

Approximate position of fan on assembly

as shown in Fig. 2.

With the fan connected as per the instructions supplied it was found that it was operating in reverse, i.e. blowing instead of extracting—it was only necessary to reverse the red and black leads and the motor then functioned correctly; check this point before wiring permanently.

The writer is prepared to admit that this modification is, perhaps, not strictly necessary, but it does at least bring some peace of mind and enables a little extra RF to be squeezed out as an added bonus.

Fig. 2 Mains Transformer

Red

Black

1 µF

250 V AC

To motor

Yellow & Green

Primary

Secondary

6.3

117

0

0

0

230

117

110

100

0

230

117

110

100

0

120

0

0

6.3

117

0

0

0

230

117

110

100

0

230

117

110

100

0

120

0

0

READING FOR THE R.A.E.

Over the years, we have been able to recommend books and general references to help the student for the R.A.E.—and, indeed, all beginners in the field of Amateur Radio.

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TRANSVERTER FOR SEVENTY CENTIMETRES
OPERATING IN THE SSB MODE

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

As is the case with other VHF bands, the use of SSB on 432 MHz is steadily growing, but few designs for simple transverters for this band have been published and, of those that have, some leave a great deal to be desired.

The design to be described is certainly simple to construct and set up and is suitable for use as a low power Tx or as a driver for a 4CX250B.

Design Criteria

The first parameter to be established was what the output power should be and, with Oscar VII in mind, 10 watts was considered to be about right. This power should also be ample to drive a high power final if required. The obvious choice of valve was the ubiquitous QQV03-20A, with the option of replacing this with a QQV06-40A if the unit was to be used without an external amplifier.

Choice of mixing frequencies was next considered. Mixing 144 MHz with 288 MHz was rejected immediately as simple arithmetic shows that there will be a large spurious in-band signal. A frequency at 14 MHz, or indeed 21 MHz, which might be readily available from the usual prime movers, implies mixing with 418 MHz or 411 MHz—this could lead to difficulties in reducing the amount of injection frequency appearing at the output. This left 28 MHz and 404 MHz, or, since it was available at the station, 70 MHz and 352 MHz. While the latter frequencies are attractive from the point of view of ease of suppression of the injection frequency at the output, it involves using two mixers if one was not to build a separate unit, and yet another oscillator which could increase spurious—so the final choice became 28/404 MHz.

The use of valves or transistors was next considered. While it is quite possible to obtain transistors which will give 10 watts RF out at these frequencies, they are rather expensive and the circuit design is also more critical. Transistor balanced mixers at 432 MHz also present a bit of a problem. They tend to produce more distortion than a properly-designed valve stage and, since the output must be low, require considerable post-mixer amplification with possible instability problems. One can, of course, use IC’s, but, there again, FET, quad-ring, double-balanced mixers (which are probably the ultimate in this application) wreck the bank balance more than somewhat! So, valves it would have to be. The QQV02-6 is suitable for use here and, although becoming more expensive and difficult to obtain on the surplus market, they are still available from advertisers in SHORT WAVE MAGAZINE.

The design of an oscillator chain at 404 MHz is not difficult and can serve for both transverter and converter (with an IF of 28 MHz). The alternative, and the arrangement adopted here, was to make use of the existing oscillator chain in a Microwave Modules converter and amplify it to drive the mixer, thus obtaining full transceive facilities. Since this equipment is designed for SSB and CW working only, it is possible to use fixed-tune circuits in the driver stages to cover 432-0 MHz to 432.5 MHz and tune the PA anode circuit only. However, tests have shown that the whole range between 432-0 MHz and 434 MHz can be covered without appreciable loss of output power.

With the above mentioned points in mind, the Block Diagram in Fig. 1 fell into place.

Circuit Details

The 404 MHz Amplifier—Fig. 2: The output at 404 MHz from the Microwave Modules converter is taken via a .001 µF capacitor and 47-ohm resistor in series from Gate 2 of the converter mixer transistor and was found to be about 7mW. It was calculated that some 400-500 mW would be needed for the balanced mixer and a three-stage amplifier was therefore built to the circuit in Fig. 2 to give the required gain.

![Block diagram of RF units](image-url)
Mixer & Buffer amplifier—Fig. 3: Several mixing circuits were tried before the choice finally fell upon push-pull injection of the 404 MHz frequency and parallel injection of the 28 MHz SSB signal. Since the author has a rooted objection to any design which does not permit the cathode of the mixer to be directly earthed, the SSB injection is to the grids of the mixer together with the oscillator frequency. Screen-grid injection proved to be a dead loss. Note that with this arrangement the 28 MHz input must be AC-coupled to avoid shorting out the mixer bias if a four-terminal pad is used between prime mover and transverter. In the present case, the low power output from an FT-101 required attenuation of 10 dB when the microphone gain control was at normal setting.

The original design used quarter-wave lines throughout, but it was found that, unless the valves were run up to the absolute limit of their design parameters, it was not possible to achieve the required 10 watts output. A half-wave line at the mixer grid improved matters, but mechanically presented certain layout problems, and the final design uses a three-quarter line here. The mixer anode and buffer amplifier grid circuits are quarter-wave lines, and the buffer amplifier anode circuit is a half-wave line. The ratio of 404 MHz to 28 MHz is kept at about 10:1 by adjustment of input loop and grid line spacing—please note not by detuning either circuit, nor by reducing the mike gain on the FT-101.

To help to ensure a clean 28 MHz input to the mixer both band-pass and low-pass filters are used between the output of the FT-101 and the input to the mixer.

The buffer amplifier is quite straightforward. The length of the anode line and the value of the tuning capacitor are chosen so that they will not resonate at 404 MHz. Accuracy here is vital. The photograph of the Driver Unit shows the layout adopted. The metering circuit is shown in Fig. 3.

Power Amplifier—Fig. 4: This shows the circuit of the fairly conventional power amplifier and the photograph indicates the layout. The drive level is adjusted by varying the spacing between the input and grid lines. To prevent surge on switch-on, the screen is earthed on "receive" via Relay 1. The QVQV03-20A is loaded by L4 and C6 and the coupling is arranged to be somewhat heavier than that which gives the maximum output of 10 watts.

Power Supply—Fig. 5: The 185v. and 380v. circuits and the relay supply are quite conventional and need no further comment. Particular care was taken to ensure a ripple and noise-free 12v. supply for the converter and amplifier. The arrangement shown was examined with an oscilloscope and found to yield less than 1 mV of either at 250 mA load current. All components are assembled on a PCB with the exception of the 2N3055

### Table of Values

**Fig. 2. 404 MHz Amplifier**

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1, R2</td>
<td>8,200 ohms</td>
</tr>
<tr>
<td>R3, R5</td>
<td>2,000 ohms</td>
</tr>
<tr>
<td>R6</td>
<td>820 ohms</td>
</tr>
<tr>
<td>R7, R9</td>
<td>820 ohms</td>
</tr>
<tr>
<td>R8, R10</td>
<td>33 ohms</td>
</tr>
<tr>
<td>R11</td>
<td>100 ohms</td>
</tr>
<tr>
<td>C1, C2,</td>
<td>10 µF disc ceramic</td>
</tr>
<tr>
<td>C13</td>
<td>0.1 µF</td>
</tr>
<tr>
<td>RFC1, RFC2</td>
<td>8 turns, 1/8in. diameter, spaced wire dia.</td>
</tr>
<tr>
<td>Tr1, Tr2</td>
<td>BFY90</td>
</tr>
<tr>
<td>Tr3</td>
<td>2N3866</td>
</tr>
<tr>
<td>L1, L2</td>
<td>1in. long, 16g., centre tapped</td>
</tr>
<tr>
<td>L3</td>
<td>1 in. long, 16g., centre tapped</td>
</tr>
<tr>
<td>C14</td>
<td>-001 µF disc ceramic</td>
</tr>
<tr>
<td>C15</td>
<td>-01 µF</td>
</tr>
<tr>
<td>All resistors are 1/2-watt</td>
<td></td>
</tr>
</tbody>
</table>

**Fig. 3. Mixer and Buffer Amplifier**

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C10, C11</td>
<td>10 µF disc ceramic</td>
</tr>
<tr>
<td>RFC1</td>
<td>10 turns, 1/8in. dia. 26g. enam., close wound</td>
</tr>
<tr>
<td>RFC2</td>
<td>8 turns, 4in. dia. 20g. enam., close wound</td>
</tr>
</tbody>
</table>

All resistors are 1/2-watt

See Fig. 7 for coil data
which is mounted on a 4 x 4 in. heat-sink constructed from 16g. aluminium sheet.

The 40v. bias line goes to another PCB which is mounted in the driver cabinet, the associated variable resistors being fitted on the front panel. Purists will want to stabilise this line also, but in practice it has not been found necessary to do so.

All DC leads are decoupled at the entry points to the driver and PA chassis, and ferrite beads are slipped over these leads.

Construction

The 404 MHz amplifier is built on a PCB measuring 2 x 4 inches and housed in a diecast box. The layout
closely follows the circuit diagram of Fig. 2. It is very important that the transistor leads be as short as possible; this will call for some swift soldering if damage to the transistors is not to result. The components are mounted on the copper-clad side of the board with clearance holes for the short, interconnecting leads through to the underside.

The chassis for the driver unit consists of a top plate measuring 12 x 3 in. and sides 4in. deep, this depth being required to accommodate the folded grid line for the mixer. The side plates of the chassis are constructed from expanded metal. Details of the coils are given in Fig. 7 and the general layout can be seen in the photograph. The spacing between coils is critical and optimum must
be found during setting-up, but as a guide, start with quarter-inch spacing and vary as required for maximum drive to the following stage. The valve holders are 2\text{in.} centre-to-centre and this measurement establishes the amount of overlap between mixer anode and amplifier grid coils. Capacitors C2 and C8 are supported on p.t.f.e. stand-offs for mechanical stability, the latter as close as possible to the grid pins of V2. Capacitors C5 and C6 are mounted close up to the anode pins of the valveholder. The position of the feed chokes associated with the anode line must be determined by tapping a lead pencil along the energised lines and finding the point at which the anode current does not vary. In the author's case, this was at about 1\text{in.} from the capacitor end of the lines. No screens were used on the valves but, if radiation from the mixer is a problem (it should not be) a circular shield of fine wire mesh may be slipped over the valve and earthed to the valveholder skirt, although this will alter the tuning slightly and reduce the output.

(To be concluded)

THE SHORT WAVE LISTENER FEATURE

by Justin Cooper

THE EARTH CONNECTION — POINTS ON ANTENNAE —
PRE-SELECTION GAIN FACTORS — GENERAL NOTES
AND NEWS — TABULAR MATTER HELD OVER

Perhaps one of the more regrettable aspects of contemporary amateur—and in particular SWL—activity is the comparative absence of the home-building of equipment in favour of purchase of commercial equipment, and, as a corollary, the lack of significant interest in the generation of good but simple aerials. Of course, most SWL's cover all the HF bands, and some even venture on to VHF, with a necessity to use multi-band systems. Usually, it ends up used as a random wire on the LF hands would make some con-

If an end-fed long-wire system is changed to, for instance, an End-Fed Zepp used for LF-band results.

Let us, therefore, look into the question a little more deeply: the comparative absence of the home-building of equipment in favour of purchase of commercial equipment, and, as a corollary, the lack of significant interest in the generation of good but simple aerials. Of course, most SWL's cover all the HF bands, and some even venture on to VHF, with a necessity to use multi-band systems. Usually, it ends up used as a random wire on the LF hands would make some con-

THE SHORT WAVE MAGAZINE, on p.428.

Hearing just touched on the matter of the aerial, Murphy's Law says that the first letter we pick up mentions aerials. M. Rivers (Whytelee) used to play HPX back in 1970, but the bug has attacked more violently than ever lately. Malcolm uses a 250-footer, end-fed, in a V-configuration due to the odd shape of the garden. In order to be successful, such bent aerials must have the bend, preferably obtuse, right-angle is necessary, and never bent into such an acute angle that it all but returns to where it started from, lest it cancel out most of its own pick-up; and anyway, too sharp a bend may lead to such a discontinuity of impedance that the bit beyond the bend is effectively disconnected from the nearer length, an effect which will probably show up at some frequency or other anyway. All this is not to say that the popular "Inverted-Vee" centre-fed is not O.K.; it most certainly is, as is the centre-fed V-aerial.

Like, no doubt, many others, G. Gallis (Ogbourne St. George) has been listening to Oscar VII but George has been after the 144 MHz-432 MHz mode, on which his luck has been out. This had also been his fate when it comes to the 28 MHz downlink channel; he reckons he needs both to raise his two-metre beam a bit, and to put up crossed dipoles for the 28 MHz signals. One would have thought that a simple dipole would have been enough to at least ring the bell occasionally if not every time. R. MacKean (Liverpool) is trying to teach himself for the R.A.E. and wonders whether there is a course near him—the nearest we know of is at Birkenhead—details appear in the October 1974 SHORT WAVE MAGAZINE, on p.428. Changing tack a little, Robert has a Trio 9R-S9DS and wonders whether any articles have appeared on the subject in the past, one seems to recall, by people...
writing in to this piece. If anyone has any useful notes maybe they would get in touch direct with him at 61 Anfield Road, Liverpool L4-0TQ.

S. Bandy (Luton) wants to know exactly why we seem to be "against the use of pre-selectors," as he describes it. He asks because he has one and finds it of considerable use. Basically, a receiver requires as much gain as will lift a minimum signal—say, 0.5 microvolt—and beyond that it is useful to give specified additional gain (say, 140 dB from the input stage to the grid of the output stage) if we assume, first, that 0.5 microvolt "sees" the signal-to-noise ratio at the input stage as 6 dB, i.e. 0.25 microvolt of noise coming down the arial—the pre-selectors apply roughly to a receiver bandwidth of 10 kHz, which would be about right. Now the main point of distortion will occur on strong signals are the stages which are required to operate in a non-linear manner, such as mixers, or where a normally linear RF or IF stage can be made to become non-linear by the presence of a strong signal. For a strongly unwanted signal to do this, it must appear on the grid of the stage in question; thus, ideally, all the gain should be in the audio side and noise in the RF mixer or IF stages. However, no receiver is ideal, and therefore enough gain must be generated in the RF and mixer stages to give an acceptable signal-to-noise ratio with the small signal we have just mentioned. Assuming this is so (and it should be with any modern receiver in reasonable alignment and with healthy valves and circuit), then any pre-selector cannot in fact improve the sensitivity of the set-up, but can only degrade it by the degree to which it itself generates noise—which any valve or transistor will do in its normal operation. However, by the mere fact that it adds gain to the receiver system at the most vulnerable point, before the mixer, it follows that it will in any case lessen the cross-modulation performance of the basic receiver, although it may give an impression of "linesiveness."

The only real justification for the use of a pre-selector is in the case of a poor receiver which cannot, unaided, get down to the sensitivity of the small signal already defined above—and even then it must be used with care and discretion, particularly on the LF bands where the aerial noise is inevitably so very much higher. If, as Stephen has, there is an RF attenuator in the shack, then one could maybe use either the attenuator or the preselector by switching them, or use the "barefoot" receiver, and then with a small, poor aerial and a quiet location on the HF bands there might be some advantage, although J.C. doubts whether measurements as against estimates would show one up.

The New Chaps

A. R. Murray (Larbert, Stirlingshire) has recently "taken up Amateur Radio," initially with a BC-348 borrowed from GM3GRX, at the beginning of 1975, with 144 knocked up in the first five days of the year. He hopes the noise level at the new place won't be as bad as the old one. However, by December 30, 1974, J. D. W. Quigley (Rhyd. pr) made up his totals for 1974, so as to make sure he got his totals in in good time, before. He put it, "this unfortunate year inflicts itself into oblivion!" He can say that again!

Still with SWL Dougherty, he raises a couple of questions as to KG4FZ and WPIE/C. The first seems to be OK, but just what the suffix on that WI call is, your conductor really doesn't know! Any offer?

C. Davies (Leeds) is attending the University there, although his hones is at Cringleford, Norwich. Listening is strictly confined to the home QTH, study being obviously more important during term-time. However, Chris tried last year for the 500, and started again at the beginning of 1975, with 144 knocked up in the first five days of the year before returning to Leeds. We shall watch his progress on the Ladder this year with interest.

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Another long-time correspondent is R. Carter (Blackburn) who reports, "I am not a DXer like my colleagues, but a SWL. A. Roberts (Shepshed) intends, having got to 455, to carry on and with his "Seventy-Four" hopes the noise level at the new place won't be as bad as the old one.

A versatile type is N. Henbrey (Northiam), who listens on all bands, with the exception of 160 and 60 meters. N. A. Phelps (Devizes), who has been for some months in the hands of the medics, and, on top of that, has suffered a deterioration of both sight and hearing, making intensive SWL activity no longer really practicable. However, we will keep SWL Alford in the Table for awhile, as he wishes to see whether things pick up a bit and make it possible for him to chase up the odd one, even though his EA-12 is becoming redundant now. Other readers may not recall it, but SWL Alford is a real dyed-in-the-wool OT SWL, whose picture appeared in the November 1972 issue of the Magazine, on p. 555, when he was in his 83rd year; his listening experience goes back to 1930, and he was still the mean constructor of equipment, as the picture of him at the rig shows.

E. Parker (Hove) has also been taken up with personal problems. His firm went bust on him and made him, at 59, redundant, and then he was involved in a "suspicious road accident." After that came a period of rest and quiet while he got back to fitness. On return to the receiver, he listen on Eighty made SWL Parker come to the conclusion that the band had slipped into the Planet of the Apes!

United Notes

C. B. Turner (Tonbridge, Kent) is attending the University there, although his home is at Cringleford, Norwich. Listening is strictly confined to the home QTH, study being obviously more important during term-time. However, Chris tried last year for the 500, and started again at the beginning of 1975, with 144 knocked up in the first five days of the year before returning to Leeds. We shall watch his progress on the Ladder this year with interest.

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A. Darragh (Cowthorpe) has been an SWL for about ten years now, with FR-500, AR8D and a Geloso converter as receivers and what he describes as a rather strange ATU"—also a 12-AVQ sitting at mast-top and fitted with seven radials of wireband. A bent dipole at forty feet does duty on Eighty. Eighteen days were enough to run up 262 prefixes for an entry in the 1975 Table.

Prefixes

M. J. Quintin (Wotton-under-Edge) comes up with a very dubious one when he claims an ELA/MM, which the operator said was a private boat that was being licensed. Unfortunately, J.C. is aware, the EL people authorise /MM stations in the EL series invariably, so in the absence of further proof, we have to write this one off till we hear otherwise.

A. Roberts (Shepshed) intends, having got to 455, to carry on and with his "Seventy-Four" hopes the noise level at the new place won't be as bad as the old one.

G3RJV writes in to point out how useful SWL reports to be the members of the G-QRP-Club. SWL membership is possible should the listener be interested in QRP working. However, anyone can send an SWL report out and be helpful to the chaps with the flea-power rig, particularly if they have some more info. Write to Rev. G. Dobbs, G3RJV, 61 Park Street, Cleethorpes, South Humberside, DN35-7NG.

His last report from the present QTH comes in from K. Kyeror (Perivale) he having exchanged contracts on the new one—and he hopes the noise level at the new place won't be as bad as the old one. A versatile type is N. Henbrey (Northiam), who listens on all...
One of the stations on the air in the Scout interest for the recent J-O-T-A was GB3JHS, operated by the Hereford Amateur Radio Society for their local Scouts. About 100 stations were worked, mainly on for J-O-T-A, and here, with the Scouts, we see JG6NY, hon. secretary of H.A.R.S., at the microphone, with G3WRQ. On right is an Old Scout of 77, who joined in 1910.

Picture courtesy Hereford Times

bands from One-Sixty to Two, and is now gathering parts to build a super-duper receiver which will cover from MW right down to Ten, but will be specifically used for LF band listening.

The problems involved in getting QSL's from the U.S. is raised by R. H. McVey (Weston-super-Mare), he having QSL'd direct with an IRC. Possibly an alternative method would be to go down to the local stamp-collectors' emporium and buy mint U.S. stamps with which to stamp-up s.a.e.'s—one feels the IRC is rather a second-best in that it puts the onus on the recipient to go to his Post Office and change the IRC for stamps. (On the other hand, if the chap is not interested in QSL'ing, nothing will persuade him).

P. Rooney (Liverpool) is now hard at work at College, this of course knocking a hole in his SWL time. However, one consolation is that the unwanted signals he mentioned last time—and on which both G. F. Gullis and J.C. commented—has proven to be the harmonics of BC stations in the 7 MHz band, so at least he now has a clue to help in resolving his problems.

Complete revision of one's check-list must be a mammoth task for anyone near the top of the Ladder, as is S. Foster (Lincoln)—but they will have been put out of their misery when they wrote, but they will have been put out of their misery before this piece comes to be read—indeed one local ladie has already sent off for his call. B. J. McCartney (Wokingham) took the December paper and reckons it was an easier one than the May 1974 R.A.E.—an opinion with which we agree. The May 1974 paper was a bit too "clever" for the average chap able to deal with the fundamentals who was not a basically exam-passing type, although the questions, once clearly discerned through the smoke-screen, seemed fair enough. Be that as it may, the McCartney time is now being fully devoted to Morse practice by means of the G3HSC course so that he can go straight for a G4J3 call rather than a G8J3. Good!

K. A. Whiteley (Castleford) has his opinions on the eighty-metre inhabitants, and in particular the tuner-up on DX on the one hand and the bad-prepared bozo on the other; however, we couldn't read his opinions 'cos they burned a hole in the paper! But we have to agree—a QSO on the DX end of Eighty SSB would be worse for your oblee any day than having a tooth pulled out!

Sad to tell, N. Askew (Coventry) has been unable to report to the SWL for a while now, as his receiver is "in store," and has been for some weeks. However, a few signals have been heard on the HF bands with a Panasonic portable radio, which at least keeps the Askew ears tuned up ready for the bumber listening session to be expected as soon as the Rx is available again.

Some folk are gluttons for punishment, and it seems H. M. Graham (Harefield) is one of them—he having bought a colour TV to add to the food mixers, electric drills and so on which generate his local noise level! Most of Maurice's listening has been on 21 MHz, a fine band when it is open. Sometimes, when the MUF is fairly low it opens to North-South paths, and when the MUF goes a bit further up then the W's and such show up. On Ten there have not been any items of interest, save for U.K. QSO's. In conclusion, an interesting prefix on 14 MHz was CG3GGO with VE3GGO at the helm, not measured by anyone else.

J. D. Porter (Baslow, Derbyshire) wants us to send him a full list of his verified prefixes so he can have a sort-out—Sorry, OM, this is just not "on" with the records kept here in their present form! On a different angle, John has been having a listen at the CW end, and hopes soon to add a CW HPX entry to the list. (With the normal volume of mail for this feature, it is just not possible to keep individual records).

M. Eccles (Lancaster) seems to have been in mortal combat with his receiver, and so has a nil return for the Table; however, peace, we understand has been restored by the rig agreeing to behave itself, so further entries can be expected.

From Brentwood, R. Elliott has put in entries for the final 1974 list and also for the 1975 tabulation, both of which look to be quite fine; let us hope Ray manages to keep up the good work. A fine crop of queries appear in the list from W. H. Smyth (Hartlepool). Apart from the characters with the "30" in the middle, whose raison d'être he has cottoned on to correctly, there is a "VU4" heard on 3690 kHz and a "TN9TRN" noted on the SSB DX channel of Eighty—both thumbs-down, sad to say. An interesting situation heard on Top Band—a couple of K8's having a local matter one night on AM, and still quite readable at about R5S and 6! This causes Bill to ask what powers are allowed to the Stateside Top Band chaps, the answer to which is that they now have the full kilowatt on all the bands when considered overall—but in different parts of the U.S. the frequencies and power limitations available vary, so no hard rule can be laid down. Anyway, power had little or nothing to do with hearing that QSO—it was largely a matter of the K station aerials, the aerial Bill has, and the propagation between the two which "did the trick."

Other Letters
We have these to acknowledge from the following: J. Aplinall, Leeds; L. Craven, Alvechurch; L. Gibson, Barrow-in-Furness; Mrs. J. B. Jane and P. C. Jane, East Looc; B. F. Hughes, Worcester; M. Kitcheiner, Hitchin; H. A. Loundesborough, Swindon; A. F. Roberts, Kidderminster; R. Stilock, Kingswiftord; B. Cushing, Hove; and M. Rodgers, Harwood.

Finale
Once more we come to the bottom of the well; for next time it will be March 20 to arrive, addressed as always to: "SWL," SHORT WAVE MAGAZINE, BUCKINGHAM, MK16-1RQ.
VHF BANDS

A. H. DORMER (G3DAH)

WELL, That Was The Week That Was!

February 2 to February 9 saw tropo-propagation at an exceptionally high level with the atmospheric pressure rising to a peak of 1034 mb and not dropping below 1030 mb until the Sunday. Best DX axis was North/South and out to Germany and the Scandinavian countries, little coming in from France or the Channel islands and, indeed, little from the West either, which must have engendered some teeth-grafting among the EI/G1 boys. Some idea of the magnitude of this opening may be gained from the following signal strengths logged by G3DAH at around 1100 on February 9: GB2BH-57, GB3PI-59, GB3BC-59, GB3DM-56, GB3ANG-53, GB3SC-59+20, GB3DD-57, GB3SJU-59+10, GB3SX-59 and GB3GW-53. GB3CTC was not heard. There were some reasons to think that nothing was copied from DL0PR on 144 MHz, in fact it has not been heard since it shifted frequency, although it was reported from many parts of the country at 59+ for several days. HB9HB was also inaudible, although several stations in the Midlands report hearing HB9AEN/P from his mountain eyrie.

Looking at the bands in greater detail, one gets the impression that Four did not enjoy the same lift as other bands. True, signal strengths were up over 100-200 mile paths, but DX beyond those ranges was not particularly evident, and was subject to much QSB in spite of the apparent stability of the high-pressure system. For example, several attempts were made to establish a contact between GM3ZBE (Aberdeen) and G3DAH and, when finally achieved, was still only at the 53/44 level although it has been made much more easily on previous occasions. Activity on this band is still low in the evenings—allegedly due to TVI, in spite of the shift of much TV to the UHF region—and did not seem much above average even on the Sunday mornings when most operators come on. The shift to SSB on this band becomes ever more marked.

Two-metre conditions can only be described as fantastic. SM and OZ were coming in very strongly in the North and East and were also audible, and indeed workable, in the South, but at much reduced levels. Several operators in the northern U.K. also worked LA fairly easily although there were not too many signals coming from there. Those that were came from the extreme south of Norway. A GM3/OK contact on CW was also being mentioned on the band, but no confirmation of this has as yet come in. There seemed to be a particularly good path between GM and ON/PA, most of it over water of course, with R59+ reports being exchanged between quite low power stations.

Alas, almost inevitably these days, there were the usual complaints about over-driven SSB transmitters causing much QRM. When will some of these anti-social types realise that bellowing into a microphone and seeing the output power indicator rise does not mean increased audibility and readability at the other end merely contains a high percentage of distortion products in addition to the normal output, to the detriment of the whole picture. Another undesirable feature under these DX conditions was the appearance on the SSB calling channel of FM stations. The presence of any carrier-borne intelligence here is to be deplored and can be far less easily tolerated than the presence of an SSB signal within the FM frequency allocation where limiters reduce the receiver response to amplitude-variable signals. Further, the ±5 kHz spread of the average FM signal these days occupies a bandwidth which could accommodate several SSB transmissions, and the presence of a carrier is irritating if nothing more. It is unfortunate that our current band plan does not specify an upper limit to the SSB allocation on two metres, and, by implication therefore, a lower limit to the "Other Modes" allocation. To use a rather fancy term which is being vastly overused these days, the two-metre band is becoming, and indeed has largely become, "polari"zed", segregating those who operate SSB and those who favour FM, and the ever-dimishing number of AM users, the schism being widened by references to DX or QSO's. The latter signal may be a good thing, depending upon individual preference, but a mix of the two modes certainly is not a good thing however looked at and how attractive the DX on the SSB channel may be.

In spite of these strictures, this opening appears to have produced better DX over a longer period than did the major opening to SSB on this band also, QSO's were fairly easy but, on this band also, much QSB in spite of the apparent stability of propagation at an exceptionally high level.

WELL, That Was The Week That Was!

Reports: As has been noted elsewhere, propagation was very good for the 70 cm. operators during the week. Outstanding signals came from the two Welsh operators, GW3UCB (Clywd) and GW8AWM (Powys), the former finishing with over 100 scoring contacts and the latter with 85. G3JQA/P in Derbyshire came up with over 68 contacts only, which was a little surprising in view of their consistently good signal, but their total included both ON and one F and their points/km score must be quite good. Incidentally, they ran an FT-101 into a Microwave Module transverter followed by a 4CX250B linear which gave them 200 watts p.e.p. to the double 46-ele beams at 40ft. Any chagrin they may have felt at not making the century was, it is understood, dispelled at "The Mermaid"! Congratulations to G2HDZ and G3NHE who are joint winners of the 432 MHz Cumulative.

There seems to be some dismay at the deletion of the 70 MHz and 70 cm. Cumulatives from the Contest Calendar. While agreeing that two sets of each in the year may have been a bit much, there is the feeling that one or the other is preferable, with the aim of encouraging activity on these under-used bands.

Propagation and activity were fair for the Four-Metre CW contest on February 19. G4AIR (Macclesfield) finished with 109 points from 17 QSO's and G3OHH (Mow Cop) with 246 points from 34 contacts.

Forthcoming Events: March 1/2, 144 MHz Open. April 5/6, 70 MHz: Open; and just to give you plenty of time, the 23 cm. Open is on April 27.

Twickenham Convention

The London VHF Convention will be held this year, as last, at the "Winning Post" at Whitton, Twickenham, and the date is May 10-11, over two days this time. Tickets from Deakes, VHF Convention, 35 Doughty Street, London, WC1N 2AE at £3-00 for the whole meeting and dinner, or £80 for the Convention only. Lecture programme includes such subjects as Oscar, Microwaves and VHF propagation. There will be the usual Trade Show and raffle.

The Oscars

OSCAR VI is now available on all descending orbits as it has been established that the restricted schedule has led to over-charging and over-heating the batteries with undesirable side-effects.

The interest in OSCAR VII seems to be waning somewhat and the similarity to OSCAR VI operation, frequency allocations apart, may be the cause of this. It is now officially stated that the sensitivity problems have been sorted out and that all is working normally on board with the exception of the 4351 MHz beacon, which continues to be on reduced power. Orbital data published last month are proving sufficiently accurate to enable us to forecast...
reference orbits for March, as follows:

<table>
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<tr>
<th>Orbit</th>
<th>Date</th>
<th>No.</th>
<th>Mode</th>
<th>Time</th>
<th>Bearing</th>
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<td>001-9</td>
<td>056-4W</td>
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</tr>
<tr>
<td>Mar. 4</td>
<td>1357</td>
<td>A</td>
<td>000-2</td>
<td>059-4W</td>
<td></td>
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</table>

The times quoted are for equator crossings in GMT and the method for calculating later orbits was fully explained last month.

The overlap in time and space of the two OSCAR satellites causes some confusion and the first reported case of reception of a station through both translators simultaneously came from OH2RK whose QSL cards to G3BHW for contacts on orbit Nos. 1827/10507 gave him RST 559 for both. It is only possible to pick up the odd QSO after a Mode-B pass by tuning the bottom end of 70 cm. Several operators new to this practice and put out a quick “CQ.”

**Twenty-Three Centimetres**

We are pleased to welcome G8ALL (Chepstow), to the Table. Walter is quite an out-and-out amateur to the Table. Walter is quite an out-and-out amateur.

**FM Mobile**

Although FM Mobile on Two is becoming ever more popular, we receive few reports of outstanding contacts. If, as seems likely, it is in the minds of devotees of this genre of amateur activity to increase interest in it, this Loom will do what it can to support the idea but needs the basis information to work on. “Black Boxes,” to use a generic but by no means derogatory term, are on the increase and FM repeaters are proliferating at a significant rate, so activities in this sphere are becoming of more than just parochial interest. We would like to hear more of strictly VHF/M working.

The U.K. FM Group (London) are organising a competition to bring together those interested in mobile working, to take place on March 15 at Brooklands Technical College, Heath Road, Weybridge, Surrey. The doors open at 1200 hrs. and tickets, at 50p for the convention only and £2.50 for the convention and evening function, can be obtained from G8EFN, QTHR. The programme includes presentations on the OSCAR satellite operations, antennas, repeaters and a “Bring 'n Buy” sale. Talk-in facilities will be available on 145.50 MHz 145-175 MHz and 433-50 MHz.

Latest information on FM repeaters is as follows:

<table>
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<tr>
<th>Station</th>
<th>Counties</th>
<th>METRES Countries</th>
<th>TWO Centimetres</th>
<th>METRES Countries</th>
<th>70 Centimetres</th>
<th>Country</th>
<th>TOTAL Points</th>
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<td>35</td>
<td>6</td>
<td>29</td>
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<td>98</td>
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<td></td>
</tr>
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<td>35</td>
<td>2</td>
<td>13</td>
<td></td>
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</tr>
</tbody>
</table>

Notes:

(a) Claims should be on the basis of the new County organisation for England and Wales and on the old basis for Scotland (at present).
(b) The Table shows claims to date from January, 1975 and will close on December 31, 1975.
(c) All claims should be sent to: “VHF Bands” SHORT WAVE MAGAZINE, BUCKINGHAM, MK18 1RQ as soon as possible after the start of a new month.
December while the midnight oil was consumed in study for the Morse test, and G8IQH made his last transmission on January 16, 1975 with a total of 401 different stations worked. The QSL return rate continues low (less than 30%) in spite of s.a.e. This sort of discourtesy never ceases to amaze your scribe. All right, so paper and printing are expensive these days, and in many cases operators have abandoned the practice of sending out a QSL for each new contact—but surely it is not too much to ask that, in reply to a request for a QSL card accompanied by an s.a.e. at least a 2p postcard be returned?

With The GM’s

The major tonic for most GM readers is the remarkable opening at the beginning of February. The East Coast stations were really having a time of it with the Continentals, and there were several good openings to the West from G8EKP, Blackpool, Lancs., now has SSB on 2m. from a Liner, and 20 watts to a 4-ele. beam on 4m. There is now much activity on 2m. from Aberystwyth, with regular skeds in operation on Sunday mornings at 1130z on 1450 MHz (presumably with a QSY from the mobile channel when contact has been established). Participants are GW3BAZ, GW3DRY, GW3PKY, GW3RFA, GW3UYH, GW8FII and GW3JKU. Callers-in are welcome as are reports on these transmissions. GW8FII advises that three of these calls belong to the University of Wales staff, and they offer a welcome to any visitors during the summer months who make a prior appointment over the air.

G8ETO, a dedicated CW operator in both amateur and professional fields, does not regard with any favour the idea of establishing 144-20 MHz as a CW-calling channel. There seems to be some apathy among amateurs in this regard since this is the only letter we have received which is the case, it should be possible to predict sunspot variations and hence the length of cycles. As most amateurs will be aware, the appearance of large sunspots and solar flares, in fact any abnormal solar activity, has a significant effect upon propagation at both HF and VHF, and with an increasing amount of sunspot count we may look forward to increased auroral and sporadic-E phenomena which, although possibly more of a nuisance than a benefit at HF, can yield some outstanding DX on 4m. and 2m. and, in extreme cases, up to 432 MHz.

News Items

G2DN reports on GBJX, the Sussex beacon on 70 MHz, which will gladden the hearts of those who run Four anywhere north of Luton. Considerable changes are to be made in the installation which should improve reception radically. The Tx output power is to be raised to 15 watts from the present 7 watts, the gear is to be re-installed in better accommodation and the antenna, at present a ground plane, is to be replaced with crossed dipoles. G8FET and G3DME are making all the arrangements.

Progress on the Chelmsford 70 cm. beacon continues satisfactorily. Whatever happened to the Durham 70 cm. beacon which was mooted some two years ago?

We have mentioned elsewhere in this piece that there is some confusion on the bands about the exact location of some stations now that the new County organisation is in operation for the Annual Tables. A good wall map, which shows both the old and the new boundaries, may be obtained quite cheaply from “Geographia” or local newsagents. Operators in Counties which have changed name are advised to announce their new locations when calling “CQ”—it will help them and us.

CORRECTION NOTES

In the article “Pre-Amplifier for the Liner-2”, the high-gain and low-gain figures in the tabulation, p.603, should be reversed—also in this Table S2 should read S3. On p.604, the last line in the first paragraph, right-hand column, should of course read “on” for receive.

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THE MONTH WITH THE CLUBS

By "Club Secretary"

(Deadline for April issue: March 6)

By the time this appears, we shall be almost out of the winter season and into the rallies and other outdoor activities. Perhaps this is the time for those who have set up programme details to start thinking. Some Clubs provide a "night out" by challenging another group to, say, a quiz, on a home-and-away basis, which can be quite fun, especially if some food can be organised. If you live in the part of the country where skittle-alleys are to be seen in the local pubs, not the teaplin variety, please, they are too noisy and unlicensed! —a challenge to another Club, or even taking sides within the Club may provide a pleasant break from routine, and at the same time give the YL's and XYL's a bit of a chance to get to know each other and to join in the fun. And you notice, we haven't even thought about the normal run of visits and Field Days and whatever, yet. Who says you can't get a programme together in a remote part of the country?

The Reports

Straight down the clip this time; so if you are on the lookout for a Club to join in your area, a quick look through the Secretaries' Panel will tell you if one has reported this time. If not, don't despair—there are at least as many who don't report this month who will show up in the lists over the next few months, and twice as many yet again who appear on our files—and if all this fails, you can always try starting a Club yourself!

Torbay are first this time, and point out that the Cheshire Home effort mentioned last month was in fact very much to do with radio; it is a Torbay project to get the Brimsham Home radio-active, and Peter Allen is being coached for RAE; the rig is already installed (a transceiver) and being used on receive, but Torbay members are in the habit of going there and operating /A to keep up the interest. The new committee has already met to consider the question of a Club Project, a two-meter station on a larger shack/workshop facility. Apparently they have recently been doing a lot of work on Marconi test equipment for communications purposes.

Meet the speaker is G3UGF, and his subject is Maritime Mobile. The scribe at Derby got himself into a bit of a twist this time with his dates, but luckily he spotted the mistake and wrote immediately to rectify it. The situation is that they are at 119 Green Lane, Derby every Wednesday evening. March 5 is a Surplus Sale, and on the 12th there is a talk on VHF Marine Waves. March 19th says the annual general meeting, followed by a Film Show on the 26th to complete the month. At Verulam there is just the one meeting in the month at this time of year; it will be on March 19, for a talk and demonstration of Marconi test equipment for communications purposes.

A newsletter which is always looked forward to by this old scribe is that from the Royal Navy A.R.S. In the current issue one notices that the group will be operational on H.M.S. Belfast from March 28 for ten days.

The Secretary of the G-QRP-Club, G3RJV, is certainly doing his best to make the thing swing—and a secretary of that mind is probably more important to the success of a Club than anything else. They issue a newsletter free with first enquiry, are planning nets and a technical information service to members, and want to have as members virtually anyone who is interested, as listener or transmitter, in QRP and the results to be obtained with simple equipment. Although they are booked for every Tuesday at Messes Community Centre, Cecil Street, Bury, the Bury & Rossendale crowd regard the last Tuesday of each month, 7.30 for 8 p.m. as "open up" for members wanting a "sharsh" running of the season; it will be on March 19, for a talk and demonstration of a complete QRP transceiver, at which there will be in attendance a representative of the Planning Department. The speaker is G3UFG, and his subject is Maritime Mobile.

Up in Sheffield the various radio amateur groups covering the University, the Polytechnic and the City are bound together in a sort of alliance which means that all three dovetail their activities. How-ever, that didn't, it seems, prevent some Worksop members locked-in after a recent meeting, no-one having told them of the exit route after hours! On Monday, March 3, G3TDZ will be talking about the business of Going Portable, in Room 3106 at Sheffield Polytechnic. March 17 at the Sheffield Hq., Sheaf House Hotel, Bramall Lane should draw the DX types, whether HF or VHF, as there will be no meeting.

There should be lots of interest for the transistor-minded types at the next Action Panel, Broomfield & Chiswick show, when they will have some radio handbooks of the 1937-1945 period to look at and compare with the next Acton, Brentford & Chiswick show, when they will have some original publications, all of which are bound together in a sort of alliance which means that all three dovetail their activities. However, that didn't, it seems, prevent some Worksop members being locked-in after a recent meeting, no-one having told them of the exit route after hours! On Monday, March 3, G3TDZ will be talking about the business of Going Portable, in Room 3106 at Sheffield Polytechnic. March 17 at the Sheffield Hq., Sheaf House Hotel, Bramall Lane should draw the DX types, whether HF or VHF, as there is a discussion about "Town Planning and the Radio Amateur" at which there will be in attendance a representative of the Planning Department.

Closing dates for this feature for the next few months will be: March 6, April 3 and May 8. These are final dates after which material cannot be taken in but will be held over for the month following.

PLEASE NOTE!
Glasgow, although there is a move in prospect. At present the routine is to meet each Friday evening, and the programme outlined in the report seems to be quite interesting. As there is quite a lapse of time between the arrival of the report and the date the piece appears in print, one would feel intending members or visitors would do well to contact GM3RHR beforehand in order to confirm the Hq. address — he is in the Panel.

Salisbury now calls itself ‘Salisbury Radio and Electronics Society’ to reflect the change in interests of its membership over the years. If you want to look them up, try any Tuesday, 8.0 p.m. onwards, at Salisbury Activity Centre, Wilton Road.

The Hq. of the Sutton & Cheam crowd is at the Library, Cheam, and they will be there next on March 18, to hear all about the G4CHV Two-Metre Transmitter.

Programme to be arranged’ is the brief message with the Midland newsletter; this refers to their date on March 18, at the Birmingham and Midland Institute, Margaret Street, Birmingham, 3, where the group had a place for years; indeed, at times your scribe finds it a little difficult to remember the address and thinks automatically of the Midland Institute being in Digbeth!

It seems that at Glenrothes there is a meeting on the first Sunday in March, with something special laid on—March 2 is down for in their clubroom at the White Horse, Peppard Road, Emmer Green. Changes in the Top Table at Reading are notified by the Secretary—but they can still be found on the first and third Tuesdays in each month, the first one being the Midland Institute being in Digbeth!

Somebody must smoke ‘Erinmore’ at Cray Valley, where the activity tables in the newsletter show the names of three YL members— not to mention some of the other members, of course! They have the first and third Thursdays booked each month, the first one being the Midland Institute being in Digbeth!

Every Friday evening seems to be the rule at Coventry where the venue is Baden-Powell House. Various activities are organised for these evenings, lectures, nights on the air, and whatever. More exact details from G3HDO, as Panel.

There was so much of interest to be crammed into the current copy of the Cheltenham RSGB newsletter this time that they had to leave

Names and addresses of Club Secretaries reporting in this issue:

ACTON, BRENTFORD & CHISWICK: W. G. Dyer, G3GEH, 158 Anerley Road, Acton, London, W3-8LJ.
A.R.M.S.: N. A. S. Fitch, G3FPP, 40 Eskdale Gardens, Purley, Surrey, CR2-1EZ.
BURY & ROSSendale: M. Howarth, G8ECC, 11 Worthington Avenue, Heywood (65911), Lancs.
CHELTENHAM (RSGB): G. D. Lively, G3KII, 131 Mandaring Way, Wymans Brook, Cheltenham (34785), Glos.
CHILTERN: F. G. Rose, GD2RT, 44 Cock Lane, High Wycombe, Bucks, (Penn 4240), Cornwall.
CORNISH: H. Webster, G3XTF, Crandale, Gillyfields, Redruth (6905), Cornwall.
COVERLEY: R. W. Arnold, G3HDO, 159 Oldfield Road, Coventry, West Midlands, CV5-8SF.
CRAY VALLEY: P. F. Vella, G3WVP, 78 Hurst Road, Sidcup, Kent.
CRYSTAL PALACE: G. M. C. Stone, G3FZL, 11 Liphook Road, Woking, Surrey.

GLENROTHES: A. Givens, GM3YOR, 41 Veronica Crescent, Kirkcaldy, Fife, KYI-2LH.

MIDLANDS, South: A. A. C. Newman, G3GCT, 19 Edgbaston Road, Birmingham, 15, West Midlands.

NOTTINGHAM: S. F. Claringburn, G8HLD, 49 Fernleigh Avenue, Westdale Lane, Nottingham, NG5-6FN.

QUENSBURY: G. C. Dobbs, G3HAL, 61 Park Street. Clitherope, South Humberside, DN35-7NG.

READING: R. Stert’ G4BTR, Watergate House, Bethesda, Upper Barnet Road, Barnet, Middlesex.

REIGATE: F. H. Mundy, G3ZXZ, 2 Comber Close, Reigate (43130), Surrey.


STEVENAGE: C. Barber, G4BGP, 473 Canterbury Way, Stevenage, Herts, SG1-4EQ.

THAMES VALLEY: W. R. Blasdell, G3ZNW, 341 Walton Road, Walton-on-Thames, Surrey.

THAMES VALLEY: W. R. Blasdell, G3ZNW, 341 Walton Road, Walton-on-Thames, Surrey, TW16-6SG.

WIRRAL: H. I. Crofts, G3DLF, 3 Barmouth Road, Wallasey, Wirral.

WIRRAL: H. I. Crofts, G3DLF, 3 Barmouth Road, Wallasey, Wirral, CH4-5BS.

WHITE ROSE: K. R. Robson, G3VTY, 34 Saint James Drive, Wakefield, West Yorks.

WEST OF SCOTLAND: K. Drinkwater, GM3RHR, 41 Southesk Road, Kirkcaldy, Fife, KYI-2LH.

YORKSHIRE: P. F. Vella, G3WVP, 78 Hurst Road, Sidcup, Kent.

YORKSHIRE: P. F. Vella, G3WVP, 78 Hurst Road, Sidcup, Kent, DA1-3AT.
We don't often hear from the Jersey Amateur Radio Society—nor that they are very much an active group “in being” as shown by this picture of their turn-out for a recent Field Day.

out the Hq. and the meeting dates! This means we have to refer you to G3KII for the latest information and the venue—again, see Panel.

On now to Maidenhead, with G3FVC suggesting if we want to know about the Club we should turn up at the AGM! Let him take care, lest we do just that! March 6 is a further report on a Vacuum Transformer and Circuit Receiver for Eighty, by G4CDL and G4CDZ, postponed from an earlier date; and on March 18 there comes this AGM. Time, 7.30 p.m.; place, British Red Cross Hall, The Crescent.

March 15 is the date for Crystal Palace, starting at 8.0 p.m. at Emmanuel Church Hall, Barry Road, London, S.E. 22; G8HAX is to present the second part of a series on Logic Circuity.

Thames Valley have had an active existence for 42 years, and for 38 of those years G8SM has been helping things along; in recognition of this, the Club have made him president. The group have their Hq. at the King George’s Hall, Esher.

Nice to see that WAMRAC is booming once again; after the lean years; this group is open to all those of the Methodist persuasion and interested in Amateur Radio, either as licensed or SWL. Details from G3AGX, the Secretary.

Changes in dates are to be watched out for at Chiltern, March 4 is down for an informal and the programme for March 26 is yet to be settled. It should be noted that the normal rhythm is restored in May. This does not mean a change of venue; they are still to be found at the Ernest Turner Works, High Wycombe.

March 4 is the Natter Night at the “Marquis of Granby,” Hookey Lane, Redhill, and March 25 the formal, in St. Mark’s Church Hall, Alma Road, for the Regiate group. At the latter meeting, G3TDR will be discussing the literature in the Amateur Radio context.

March 6 and March 20 are the dates, following the usual form, for the Stevenage chaps, the latter being the AGM. As for the venue, it is the Hawker Siddley Dynamics Staff Canteen in Gunnels Wood Road; cross the railway, heading west, up Six Hills Way, and turn right into Gunnels Wood Road; and H.S.D. is on your right.

A little bit of history now! Although they have been existent in their present form since 1947, the York group have been made aware that there was a Club in the city as far back as 1925—the newspaper report on the first meeting said that 25 members had enrolled and a “public demonstration” was to be put on to stimulate interest. What the present members want to know is, simply, are any of those original members still active on the bands. Any offers, then—either to G3WVO, at the York address in the Panel, or to your “Club Secretary.”

Over to Milton Keynes now, on the second Monday of each month at the Lovat Hall, Silver Street, Newport Pagnell. This implies March 10; and that indeed is the date for a talk on “Cable Television” by a member of Milton Keynes Development Corporation.

Usually the Wirral Newsletter has some reference to the programme details required for this column in the guise of “future events,” but no such luck this time; not to worry though, as we happen to know it is the tradition to foregather at the Sports Centre, Grange Road West, Birkenhead, on the first and third Wednesdays of each month at 1945 clock, and memory says they always find someone to provide the entertainment, by talk or films or whatever.

Much the same as usual could sum up the South Manchester situation: Mondays for the VHF types at the club shack at Gorea, Shady Lane, Manchester 23, plus the Fridays at Sale Moor Community Centre, Norris Road, Sale. For the latter, we see March 7 starts things off with a Mystery Lecture, and on the 14th there will be a Progress Report on the current project. There should be a good turn-out for Bill Lowe, G3UBO, the Bandit himself, on March 21—non-members welcome—while March 28 will allow time for a good old natter session.

Harrogate & Knaresborough report says the group plans entries with the Club call, G3HFRS, in various contests. The letter ends with the statement that they forgo the “at the usual time and place”—of which we have no record! The quick answer is to write to the address shown in the Panel.

March for Nottingham is as follows: On the 6th, they have their regular “Forum” session, followed on the 13th by a Junk Sale—an auspicious date for buyers—and a talk on a subject to be announded on March 20. Finally there is March 27 for an Activity Night. These sessions are all slated to be taken at the Hq., Sherwood Community Centre, Mansfield Road.

Neachells Cottage, Danescourt Road, Stockwell End, is home for the Wolverhampton group. They seem to be running Thursday evenings primarily for the beginners, and will continue to do so until the RAE is over, plus the usual Monday sessions. This gives us (Thursdays) March 6, for TVI and Hi-Fi interference; March 13 for Operating Techniques; 20th for Mobile Equipment and Operation; and the 27th is missed. Now to Mondays, with March 3 to G6GR to talk about electronic ignition for the car; March 10 for a Natter, night; the 17th for G3UBX to discuss simple D/F gear; the 24th a committee meeting and the 31st scrubbed as it is Easter Monday.

Not so many years ago the Hereford newsletter was complaining of the lack of activity; but there is little to complain about these days, with 55 members in the book as at December 31 last year. For them, the routine is to get together on the first and third Friday in each month; March 7 is down for a talk about local electricity supplies, and the 21st is to be announced. Hq. is at the County Control, Civil Defence Headquarters, Gaol Street, Hereford.

A talk on Aircraft and Marine Radio is down for Exeter on March 10. Club Hq. is at the ATC Hut, Collaton Hill (at the end of the Quay), and the start time is 7.45 p.m. The Secretary mentions in his letter that “New Members are wanted so visitors should be prepared to be solicited!”

At least, for another month. For next time, you will be telling us all about your April activity plans, not forgetting to mention where you meet and when, your Secretary’s name and address, plus telephone number if that is possible, all to reach us by first post Thursday, March 6, addressed to “Club Secretary,” SHORT WAVE MAGAZINE, BUCKINGHAM, MK18-1RQ. See you then.
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<td>£1.50</td>
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<td>ECC 83</td>
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<td>KT 66</td>
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<td>ECC 82</td>
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<td>TIA 78 400 MHz 9 watt output</td>
<td>£70, carriage 5p</td>
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<td>MURDOO RECTANGULAR</td>
<td>£3-67, carriage 5p</td>
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<td>24 way plugs</td>
<td>40p</td>
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<td>32 way sockets</td>
<td>50p</td>
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<tr>
<td>64 way - 3 lamps</td>
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<th>HOME RADIO (Components) LTD.</th>
<th>912966 London</th>
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<td>Dept. SW, 234-240 London Rd, Mitcham, CR43HD</td>
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CRYSTALS TYPE HC6U and 4039 £2 each. 25% discount 10 or more.

Roller coil 22 turns 2k" dia.; Cambridge dash covers/pair; 500 0 500 micro amp meter unit; 500 micro amp If" meter; 3( 24 for 144-146 MHz) for 9998 kHz.

CRYSTALS TYPE

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<th>8841</th>
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CRYSTALS TYPE HC6U

3087 3092 3098 3103 3109 3114 3120 3125 3131 3137 3142 3148 3154 3159 3163 3170 3171 3175 3192 3197 3200 3204 3208 3212 3216 3220 3224 3228 3229 |

Roller coil 22 turns 2k" dia.; Cambridge dash covers/pair; 500 0 500 micro amp meter unit; 500 micro amp If" meter; 3( 24 for 144-146 MHz) for 9998 kHz.

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COVENTRY AIRPORT

Home Radio Components still know the meaning of SERVICE.
NEW! UNIVERSAL R.F. SPEECH CLIPPER

INCREASES ‘TALK POWER’ — ELIMINATES ‘FLAT TOPPING’

Easy to install — long battery life

* Simply connect in series with your microphone lead. Needs no internal connection to your transmitter. Push-to-talk facilities are retained.
* Can give increased "punch" or "talk power", comparable to a times-ten power increase, plus improved speech characteristics.
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* Advanced circuit uses optimised combination of digital and analogue techniques for long-term reliability and stability.
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DESCRIPTION: The Datong R.F. Clipper brings the unique benefits of RF clipping to any conventional transmitter. It should not be confused with agc-type speech compressors or clippers. The Datong R.F. Clipper is a complete closed-circuit SSB transmitter and receiver. Amplitude clipping of the internally generated SSB signal (at 60 kHz) greatly increases the average-to-peak amplitude ratio of the speech input signal. This is achieved without harmonic distortion.

Price, including delivery by parcel post, only £45 plus VAT. Add 45p for delivery by registered first class mail.

Write or phone for full information, including a copy of the installation and operating instructions.

JAPANESE MICROPHONE SOCKETS

The Datong Clipper is now also available fitted with a Japanese 4 pin screw-locking type of input connector in place of the normal stereo jack. This allows, for example, FT-101 or TS-700 microphones to plug straight in. Since connection details vary, please specify the actual connections required when placing your order. Price: £47 plus VAT, or, if ordered complete with output lead fitted with matching connector (i.e. lead type RFC/JAP4pin), £48.50 plus VAT for the pair. Add 45p plus VAT for registered first-class delivery.

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REPEATERS. With the rapidly growing number of repeaters, both already operating and proposed, more and more people are changing over to FM for mobile operation. In order to get the best from this mode it is essential to have good speech tailoring and clipping in order to secure optimum readability. It is also necessary to have a well designed receiver with a high sensitivity and a good filter. An access tone is necessary and it is desirable to have this only operative on repeater channels, being automatically switched out of circuit when operating simplex. The full range of INOUE equipment, both for mobile and fixed station use, now offers all these advantages.

The IC-225 comes fitted with 80 channels and an automatic repeater facility making it usable without further expense on all the proposed UK repeaters. Channels are spaced 25 kHz apart throughout the range 144.000 to 145.975 MHz. At £195.00 + VAT this represents really good value for money.

The IC-22 has a capacity of 22 channels of which three come ready tuned, i.e. SO, S20 and S22. Crystals are available for all the repeater channels at £4.32 inc. VAT per pair. Crystals for several other channels are stocked and any frequency can be obtained on order. At £109.26 + VAT this is an excellent FM mobile transceiver.

IC-210. We can still offer these at £200.00 + VAT which is a saving of £60 on the normal price. We still think that this is the best FM base station on the market. If you are thinking of getting one act now as they will not be available for much longer at this price.

IC-201. This will be the all-mode version of the IC-210 at a price of around £295.00 + VAT. Ask for your name to be put on our mailing list for further details.

See our last month's advert for details of the other goodies we can offer from either WHITSTABLE or our agent in BARNLEY.

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We try to keep a full range of the following stock and will accept trade in goods against any item:

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QSL CARDS. 10p stamp for quality samples and price list.

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(Carriage and no cable) £8/6 0
KW 202 receiver ... £185 0
KW 107 matching unit ... £74/3 12p
KW 202 receiver ... £3/6 12p
KW lowband base Tx ... £12 0

WANTED any clean copies of "Newnes Radio and TV Servicing" from 1963 onwards. S.A.E. with details please.
FOR SALE: FT-DX400 with external VFO and speaker, £175. Hy-Gain TH-3 Mk. III beam, never unpacked, £70. TR-44 rotator, as new, £35. 30-50 kHz, coil, brand new, £15. Galvanised steel tower, 30-ft. high by 10-in. triangular-section, stripped down, £30. Trio JR-500SE Rx, £35. All in mint condition. Delivery arranged anywhere in England, free. Owner returning to VK3.—Ring 01-218 5967 office hours, or write Box No. 5392, Short Wave Magazine Ltd., 55 Victoria Street, London SW1H-OHF.

SALE: Stolle 2010 auto-rotator, with extra bearing, £20.—Ring Gregory, G3LCV, Derby 701516 (QTHR).

WANTED: VHF receiver for aircraft bands, 118-138 MHz. Must be good, Details and price please.—Ring Pesani, Wokingham 785746.

SELLING: Edystone 830/7 Rx, with plinth speaker and Hamgave PM-IIC preselector, mint condition, £340. Buyer inspects and collects. (London).—Box No. 5393, Short Wave Magazine Ltd., 55 Victoria Street, London SW1H-OHF.

FOR SALE: Dumant oscilloscope, needs a set of test leads, hence only £20. Buyer collects. WANTED: Handbook for AR88L, to buy or borrow.—Ring Saunders, Chieveley (Berks) 620, evenings.

WANTED: Trio txals for TR-2200. Tx and Rx for 145-32 and 144-48 MHz.—Rees, 1 Russell Road, Moseley, Birmingham B13 8RA.


FOR SALE: FT-DX400 with external VFO and speaker, £175. Hy-Gain TH-3 Mk. III beam, never unpacked, £70. TR-44 rotator, as new, £35. 30-50 kHz, coil, brand new, £15. Galvanised steel tower, 30-ft. high by 10-in. triangular-section, stripped down, £30. Trio JR-500SE Rx, £35. All in mint condition. Delivery arranged anywhere in England, free. Owner returning to VK3.—Ring 01-218 5967 office hours, or write Box No. 5392, Short Wave Magazine Ltd., 55 Victoria Street, London SW1H-OHF.

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WANTED: Trio txals for TR-2200. Tx and Rx for 145-32 and 144-48 MHz.—Rees, 1 Russell Road, Moseley, Birmingham B13 8RA.


FOR SALE: Tower, triangular galvanised steel construction, consisting of six 8-ft. sections, will sell with or without AR-20 rotator and two-metre Skybeam, £75 or near offer.—Lockley, G8HKM, QTHR.

SALE: Eddystone 888A, grey, very good condition, £125.—McHenry, 2 Park Town, Oxford. (Tel: 0865-56321).

FOR SALE: FL-DX400 Tx, complete with all plugs and leads, as-new condition, £150. Trio JR-599 Rx, coverage 160-2m., with all accessories, mint condition, £130. S.S.M. “Europa” transverter, complete with all accessories, mint condition, £50. Cash sale. Buyers to inspect and collect, or carriage extra.—Stuckings, G8FZH, 79 Landseer Avenue, Painters Ash, Northfleet, Kent. DA11 8NW.


WANTED: Pensioner SWL requires discarded S.640, Mohican GC-1U or similar Rx. Also rotator and BC-221. Very cheap appreciated. Postage refunded. (Yorks).—Box No. 5396, Short Wave Magazine Ltd., 55 Victoria Street, London SW1H-0HF.

WANTED: American-type straight key on ball bearings. Also Junkers straight key.—Edwards, 241 Hyde Park Road, Leeds 6.

WANTED: R.216 and PSU. Details and price please.—Ring Fawcett, 061-665 1288 (Oldham, Lancs.).

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✿ Chassis construction rendering strength and mechanical stability.

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✿ Cabinet is of perforated metal all round thus allowing an uninterrupted supply of cooling air.

✿ Hybrid solid state/valve circuitry.

✿ Receive converter uses TWO RF stages (FET'S) and a MOSFET mixer. Gain = 30dB, N.F. = 3dB. Two I.F. outputs for transceive and split frequency working.

✿ Internal master oscillator is zener regulated using a control transistor network for increased stability.

✿ Antenna change over relay built in.

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NB This transverter operates with transceivers using either 12-0V or 6-JV heater rails at NO EXTRA COST... £85.00.

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**READERS** are reminded that if they hold an official callsign, in their own interests this should always be quoted in our Small Adv. notices, particularly where Tx equipment is involved. No charge need be made for the callsign in calculating wordage—Small Advertisement Dept.

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**SELLING:** Drake R4-C with MS-4, coverage 160m., with handbook and cartons, bought January 1975, absolutely mint (cost £296), unexpected house purchase forces sale at £186, plus your KW-77, FR-50B and KW-107 etc.—Pearson, 8 Bridge Stree: East. Penshaw, Nr. Houghton, Tyne Wear.

**WANTED:** FL-2000B or SB-200/220. Details and price please.—Wilson, G3YQA, QTHR. (Tel: 0482-798763).

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**WANTED:** Sommerkamp FR-100B or KW-77 Rx. Top price paid for first-class condition. Will collect aprox. 50 miles of London.—Forest, G3GML, QTHR. (Tel: 01-462 3287 evenings or weekends).

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Fundamental crystals 50 ppm (0-60 C) or 30 ppm (ambient), 4-21 MHz in HC6/U, HC18/U, HC23/U ... ... £2.93

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Normal delivery time within 5 weeks

TX CRYSTALS (4 or 8 MHz) for 145 MHz, R5, R6, R7, S20, S21, S22 and S23. In addition 8-78250 MHz for 70-26 MHz and 8-02222 MHz for 432-2.73

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- Heathkit HW-100 with mic., AC/PSU and speaker-cabinet, fitted with CW filter, £110.—Cooke-Sanderson, G3UQZ, QTHR. Tel: 021-373 8806.

FOR SALE: Lafayette KT-320 general coverage receiver, 0-55 to 30 MHz, excellent condition and very little used.—Ring Mirrington, Brentwood 212060.

SALE: Skywood CX-203 general-coverage/ambassador band receiver, 200 kHz-30 MHz, mint condition, £25 or near offer. PM-11B preselector, £7.—Ring Krestin, 01-346 1893.

FOR SALE: Superb SB-102 with AC/PSU, brand new, professionally built, inspected by Heathkit, perfect performance and condition, £220 or near offer. Will gladly demonstrate. Genuine reason for sale. (Wills.)—Box No. 5398, Short Wave Magazine Ltd., 55 Victoria Street, London SWIII-OHF.

SALE: Yaesu FR-DX400 de luxe Rx, £160. FL-DX500, £140. Both used a few hours only. Shack clearance: Condensers, resistors, magazines, etc. Radio-compass rotator and indicator, suitable for small beam, given to purchaser of Tx and Rx. Buyers inspect and collect.—Kirkebride, G3ODT, 5 Lomeshaye Road, Nelson, Lancs.

WANTED: Q-Multiplier to cover 1.6 kHz. Or would buy essential parts to make same, i.e. Hi-Q coil or 1.6 kHz xtal. Details please.—Ring Handy, Coventry 22201.

SOLD: Yaesu DX-460 de luxe Rx, £160. FL-DX500, £140. Both used a few hours only. Shack clearance: Condensers, resistors, magazines, etc. Radio-compass rotator and indicator, suitable for small beam, given to purchaser of Tx and Rx. Buyers inspect and collect.—Kirkebride, G3ODT, 5 Lomeshaye Road, Nelson, Lancs.

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CONVERTER CRYSTALS

144/28 38-66666 MHz 144/4 70-00000 MHz 432/28 101-00000 MHz

Price £2-25

10% discount on orders of 5 or more crystals. Add 10p for post and packing on orders under £12. Crystals supplied to any specification for PMR marine or military use etc. Stacks equipment specification and working frequency when enquiring. Please send s.a.e. with all enquiries. Rapid delivery service is available, information supplied on request.

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12/14 Church Gate, City Centre, Leicester, LE1 4AJ

Telephone: 58662

FOR SALE: HRO-5 Rx with 14 coil packs and power supply, speaker, £20. Will deliver reasonable distance. WANTED: Kokusai Type MF455-15K mechanical filter.—Hattemore, G3WSH, QTHR. (Tel: Eastbourne 26630).

WANTED: Classic 50's or 60's Rx wanted, with gear driven separate dials, e.g. SX-88, SX-100, NC-183D, HQ-140T/141T etc. SX-88 preferred. Your price paid if still original, working or not (with handbook?). FOR SALE: Revox E.36 recorder, requires overhaul, hence £35.—Rowbottom, 29 Legion Street, South Milford, Leeds, LS25 5AY.

FOR SALE: FT-75 with ten extra crystals. AC and DC PSU's and VFO, £170. Avo-8 Mk. III, mint, £30.—Barry, G3UFU, 15 Fairlawn Court, London W4 5EE. (Tel: 01-994 6931).

SELLING: FL-DX400 Rx and FR-DX400 Tx; latter covers 80-100m., Rx covers all bands, £250 or near offer.—Ring Rogers, GB1JP, 0272-834776 evenings (QTHR).

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Ashley Dukes

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EXCHANGE: Trophy 8 receiver with speaker, 1940, Rogers, G8IJP 0272434776 evenings (QTHR). Copying. Any operational information from a user can be shared.

FOR SALE: Unique opportunity and investment: Carl Braun SE-600 (the “Rolls” of two-metre transceivers); please.-Tibbert, 11 Darwin Road, Mickleover, Derby (511434), Derbys.

FOR SALE: Yaesu FT-75 with xtals for 3740, 3750, 3760, 7055, 7075, 7085, 14200, 21400 and 28550 kHz, DC-75 mobile PSU, G-Whip Tribander with 80m. antenna. Will pay up to around £200. Any offers?-Ring G3TAD, coverage 80-10m., with or without 160m., please.-Grainger, 32 High Street, Brierley Hill, West Midlands. Add 8% for VAT.

OFFERING: Heath SB-200 linear; SB-620 spectrum analyser. All matching black/silver. All modes, CW/AM/FM/USB/LSB, independent Tx and Rx selector, very good condition. Would exchange for Trio 9R-59DS/E.-Ring Tinkler, G3SMR, 0536-3760, 7065, 7075, 7085, 14200, 21400 and 28550 kHz.


WANTED: Racial MA-79, or circuit for photocopying. Any operational information from a user of this unit appreciated.—Hobin, G3XXIX, QTHR.

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