STOP mistreating your rig

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.
SSB-ers:

increase talk power, cut “splatter”

Our 444 base station microphone not only gives you increased talk power, but cuts “splatter” (and QRM complaints) to an absolute minimum! It has superbly tailored response, with sharp cutoffs below 300 and above 3,000 Hz and a rising response characteristic for maximum intelligibility. The 444’s rugged, reliable Controlled Magnetic element has been proved in safety communications, and other tough professional communications applications. It delivers a clean signal to the transmitter at levels as high as crystal units! (And, unlike crystal and ceramic units, the element is totally immune to the effects of temperature and humidity.) The 444 also features an adjustable height stand that makes for comfortable “ragchewing” sessions, an optional-locking bar for push-to-talk or VOX operation, and a practically indestructible Armo-Dur® case. Write:

Shure Electronics Limited
Eccleston Road, Maidstone ME15 6AU
Telephone: Maidstone (0622) 59881
The FT401B and its accessories are shown above, and provide an uncomprising approach to the home station. The FT401B itself runs 500 watts P.I.P. but when throttled back to drive the FL2000B and coupled with the FV401 external V.F.O. provides the base station with ultimate DX appeal.

The unit nestling on the end is the FTV650, a 6m. transverter which we can provide electrically modified for 70 MHz, 100W. P.I.P., 50W CW, 40W FM/AM, £80-00.

The FT620 features 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 (£9) and crystal calibrator. 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 24 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.

The FR101 is an advanced receiver offering in the de luxe version, coverage from 1-5 MHz including all SW broadcast and HF amateur bands (23 in all) to 144 MHz. AM, FM, SSB CW are catered for, each with a separate crystal filter. Transceive operation with the FL or FT101.

The FL101 is the ideal companion to the FR101 thus forming a superb base station. Operation on 160 through 10m. using SSB, AM, CW or RSK is offered, with the added bonus of an option inbuilt RF speech processor being available at moderate cost.

STOCK / PRICE AND SECONDHAND LIST IN PRINT — SEND S.A.E.

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

Terms, cash with order, or card holders just phone in and we will despatch the same day. Immediate HP also available for credit card holders for amounts up to £150.
The FT200 is still without doubt one of the “best buys” available. Compare its features with similarly priced units. **SPECIFICATION**: 260w. p.e.p. 1/2 5S5B/CW: 75w. AM 1 kHz readout on all bands 3.5–4 28–5–29 MHz. (3 optional 10m. crystals available). Stability : 100 kHz 30 mins. after warm up. Sensitivity : 0.5μV 10dB S/N ±N. Selectivity : 2 kHz (6dB) 4 kHz (60dB). Solid state FET VFO with excellent linearity (like all Yaesu VFO’s). 25/100 kHz Calibrator. VOX/PTT. Clarifier +5 kHz. Break in CW keying.

The newest of the Yaesu transceivers 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 enthusiast a 600 Hz filter is available with AGC characteristics to suit the mode. Write for full specifications.

**YC355D**

The YC355 series counters are available in two models. The basic counts to 35 MHz and the "D" to 2000 or over. The YC355D outlines the advanced IC technics and the dual range system provides an accurate 8 digit read out using only the 5 tubes and of course minimum of cost with maximum performance. Built in AC and DC power supplies enable complete portability and double sided epoxy circuit boards ensures accurate operation for years to come.

**FT201 from £290**

The FT-101B is except for driver and PA, fully solid state using reliable and serviceable “computer type” plug in modules. All that is needed for instant “on the air” operation from 160 through 10m. is either 12v. DC or 234v. AC and, of course, an antenna.

**FL2100B £195**

The FL2100B features operation 80 through to 10m. using two rugged 572B carbon plate tubes in class “B” grounded grid circuits with individually tuned input coils for each band, and Billiar wound ferrite filament chokes.

**SEE OVERLEAF FOR SELECTION OF MASTS, TOWERS, ANTENNAS, ETC.**
CRYSTALS, FILTERS, PROCESSORS, LINEARs, READOUTs

RF SPEECH PROCESSOR KPI2
Audio to audio, via 107 MHz, mains powered illuminated meter, FT-101, FT2, plus suitable all phone modes superb on FM.

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 most worthwhile accuracy.

EX STOCK IN TOTTEN 444

144 MHz LINEARS RFL
RF sensing, switchable drop out time SSB, AM, FM and CW, input DC-10W drive, 701-75W out, 801 100W out, 901 150W out.

EX-STOCK at new low introductory price. 2 1/4 kHz, 6 pole, individually supplied with ± 6 dB, 25 dB, 60dB bandwidth, ripple factor and insertion loss. With two crystals.

MICROWAVE MODULES (all 28-30 MHz I.P., others to order) P and P 30p.

70 MHz Converter + £15-20 144 MHz Converter + £15-20 144 MHz Pre amp 2 output £9-00 432 MHz Converter £18-10

9 MHz SSB FILTERS YF90/F/S
WITH U.S.B. and L.S.B. Crystals, £12-50 U.S.B. only, £11-50

CRYSTALS NEW LOW PRICE (ALL POST PAID)

FT 2 F B (14 MHz Rx 18 MHz Tx)
<table>
<thead>
<tr>
<th>FT 2 F (52 MHz Rx 6 MHz Tx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>144 (15, 20, 30, 36, 40, 48, 50, 60, 80)</td>
</tr>
<tr>
<td>145 (05, 10, 32, 40, 44, 51, 59, 64, 90)</td>
</tr>
</tbody>
</table>
All £3-30 per, £1-80 single Simplex 145 (50, 60, 90) £525, 550, 575, 600, 625 Duplex 145 (100/700, 125/725, 150/750, 175/775) £3-50 per, £2-00 single

H.Y.-GAIN THE BIGGEST RANGE FROM THE U.S.A. (Carriage paid)

Hy-Gain IAVT/WEB the great wide band self supporting vertical (10-80m). Take the wide band, omni-directional performance of the famous IAVQ, increase the bandwidth to 80 meters and add extra heavy duty construction and you have the IAVT/WEB. True wave resonance on all bands, 52 chm feed, BAND EDGE SWR of 2: 1 or less, handles 1 kW (AM), ultra low angle radiation and may be roof or ground mounted.

HY Towier, 10-80m. Self supporting tower £172-00
18V, 10-80m, Vertical self supporting £15-20
12AVQ, 10-20m. Vertical self supporting £20-00
14AVQ, 10-40m. Vertical self supporting £29-50
LCQ2Q Loading coil for AVQ. 80m. £9-30
I8AVT/WEB 10-80m. Vertical £42-50
TH6DXX 10-20m. 6 element beam £117-00

B.M.C. TRAP DIPOLES (Carriage paid)
Trap dipole 10-40m. £16-65 Type HP (1kW pep) £18-75 Type P Portable £19-50

SECONDHAND PRICE LIST

Yaesu FT301 and FTSP1 ... £340-00
FT401 and SP401 and Y7D44 ... £275-00
FRM6Q and CW Filter ... £140-00
FM Unit FT75 ... £90-00
D7C7 ... £15-00
FP 75/5H ... £15-00
PVS6C ... £35-00
FL3100 ... £155-00
TRX ... £275-00

J8310 ... £75-00
Q666 ... £100-00
Heathkit SB210 ... £255-00
HW32 and (H.B.P.S.U.) £35-00
Eddystone 770R ... £150-00
ER14 ... £75-00
SB70A ... £30-00
National NCX5 and (p.s.u.) £160-00

HRO(M) with p.s.u. and 7 coil packs £270-00
HRQ with p.s.u. and 9 coil packs £330-00
Imouse HS52 £60-00
IC21 and VFO £135-00
Telford TC3 £155-00
Star SR400 £110-00
K.W. £110-00
Viceroy £60-00

Bendix £60-00
Ex. W.D. £85-00
RAC £150-00
RAC £15-00
RAC £22-00
RAC £30-00
RAC £20-00
V.A.T. EXTRA at 8%
COMMUNICATIONS LTD.

ANTENNAS, TOWERS, MASTS, ROTATORS, COAX, Etc.

VARSATOWERS (Carriage paid, England and Wales).


HAMTOWERS (Carriage extra).

Galvanised lattice 10ft. sections 30ft. height with climbing steps on one face. From £90-00.

ALIMASTS (Carriage paid, England and Wales).

A/Allloy Telescopic 1-5, 2, 3 metre sections from £11-60 for 6m. to £38-00 for 21m.

THE COMPLETE RANGE OF JAYBEAM (AND MORE !) (Carriage extra).

OMNI-DIRECTIONAL

HO/2M Halo head only £1-85
HM/2M Halo with mast £1-75
UGP/2M Ground plane £6-60
XD/2M Crossed dipoles £5-15
SXY/2M 5 element crossed 7-82B 50 or 75 ohm £8-20
SX3Y/2M 8 element crossed 10dB 50 or 75 ohm £10-20
10X/2M 10 element crossed 13dB 50 or 75 ohm £14-10

4 METRES

1Y/4M 4 element 7dB 50 ohm £6-90
5Y/4M 5 element Yagi 8dB 60 ohm £4-30
8Y/4M 8 element Yagi 10dB 60 ohm £8-60
10Y/4M 10 element Yagi 13dB 50 or 75 ohm £11-00

CIRCULAR

14Y/2M 4 element Long Yagi £11-00
14Y/3M 5 element Long Yagi £15-50
18Y/2M 8 element parabeam £16-10
25Y/2M 14 element parabeam £17-70
30Y/2M 18 element parabeam £16-50
36Y/2M 25 element Multibeam £16-60
50Y/2M 46 element Multibeam £19-90

60 CENTIMETRES

PB1M/42M 14 element crossed £9-40
PB1M/50M 14 element crossed £9-40
PB1M/60M 14 element crossed £9-40
PB1M/70M 14 element crossed £9-40
PB1M/80M 14 element crossed £9-40
PB1M/90M 14 element crossed £9-40
PB1M/100M 14 element crossed £9-40
PB1M/110M 14 element crossed £9-40

They are easy to install and do not require special erection equipment.

TELOMASTS (Illustrated above left). These galvanised steel telescopic guyed masts are most suitable for VHF up to medium sized beams.

They are easy to install and do not require special erection equipment.

CDE ROTATORS

EX STOCK (IN TOTTEN) FOR FAST DELIVERY

Carriage (£.R.S.) free. Securicor delivery 60p extra. All rotators supplied complete with appropriate control box and instructions.

AR30 for Stereo and small VHF beams £25-00
AR40 for Medium VHF small HF beams £39-00
CD44 Arrays up to 2.5 sq. ft. of wind area £60-00
Ham II arrays up to 7.5 sq. ft. of wind area £90-00
Control Cable 5 core for AR30/40 at 18p/m. 8 core for CD44/CD4 at 26p/m.

THE NEW SILENT CONTROL WITH AN AR30 and AR40

New Low Price SWR/POWER Meters

SWR10 Reflectometer, single meter, accuracy quoted +1% £6-30
SWR50 Calibrated for 50 and 75 ohm line, power meter amber +1% and SWR (+5%) £11-20

NEW LOW PRICE SWR/POWER METERS

SWR10 Reflectometer, single meter, accuracy quoted +1% £6-30
SWR50 Calibrated for 50 and 75 ohm line, power meter amber +1% and SWR (+5%) £11-20

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New Low Price SWR/POWER Meters

SWR10 Reflectometer, single meter, accuracy quoted +1% £6-30
SWR50 Calibrated for 50 and 75 ohm line, power meter amber +1% and SWR (+5%) £11-20

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THE NEW SILENT CONTROL WITH AN AR30 and AR40

New Low Price SWR/POWER Meters

SWR10 Reflectometer, single meter, accuracy quoted +1% £6-30
SWR50 Calibrated for 50 and 75 ohm line, power meter amber +1% and SWR (+5%) £11-20

SOUTH MIDLANDS COMMUNICATIONS LTD.

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

OSBORNE ROAD, TOTTEN, SOUTHAMPTON, SO4 4DN

Hours of Business: 9-5.30, 9-12.30 Sat.
Economical Mobile/Base Station  
FT-201

Fresh on the scene is the FT201 which is setting new standards in its price range and has aroused much interest and some very flattering reports.

**GIVE AS GOOD AS YOU GET**

**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

- ALSO AVAILABLE FROM OUR ACCREDITED STOCKISTS

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051-263 7829
OF OUR SERVICE DEPARTMENT BY
OF YAESU MUSEN UNDERWRITES
YAESU ITEM SOLD BY US

High Power Base Station
FT-401B*

What can we say about the
FT200? This has been a best-
seller from the start—small
wonder with such an ex-
ceptional specification at such
a modest price.

*Latest Model!

Low Cost Base Station FT-200

TUNE UP A YAESU TRANSCEIVER!

PART EXCHANGES WELCOMED. EXCELLENT ON-THE-SPOT CREDIT TERMS.
IF YOU WOULD LIKE THE FULL YAESU MUSEN CATALOGUE EIGHTEEN PENCE
IN STAMPS WILL BRING YOU THIS AND OUR CREDIT NOTE TO COVER
The TS520—latest in the new TRIO line of superior amateur radio equipment. Its styling and finish put all other rigs in the shade; and it is not just pretty—the front panel is a die casting giving unheard of strength and stability.

All semiconductor except for driver and PA, the TS520 is at home mobile, portable or fixed station thanks to built-in AC power supply and 12v. inverter. Blower cooled 6L46's for long life and exceptional linearity.

"TRIO exclusive. Built-in speech compression for that extra DX punch—without distortion, due to amplified ALC system.

Drop up a line for details. You'll be hearing them on the air from now on.

FEATURES
R.I.T. ★ NOISE BLANKER ★ AMPLIFIED 2 SPEED AGC ★
25 kHz CALIBRATOR ★ BLOWER COOLED PA ★ FIXED CHANNEL OPERATION ★ 4 FUNCTION METERING ★ AMPLIFIED ALC ★ BUILT IN SPEECH COMPRESSION ★ LED INDICATORS FOR FIX, VFO, RIT ★ LOW POWER TUNE UP FOR LONG PA LIFE ★ TRANSVERTER OUTPUTS (MATCHING TRANSVERTER ON THE WAY) ★ 12v. DC/240v. AC OPERATION ★ MATCHING SPEAKER AND VFO AVAILABLE ★

OBTAINABLE ONLY FROM LOWE ELECTRONICS PRICE £290 (VAT EXCL.)

This is probably the finest amateur transceiver ever made. Professional design and construction make the TS900 a joy to own and use.

As QST (July 1973) said "This device has to be the pace-setter for the 1970's".

Full coverage 80-10: superb stability and selectivity; all mode operations including RTTY (crystal controlled RTTY shift built-in); all solid state except driver and PA; DC power supply and external VFO both available.

300W pep ★ All Modes ★ Separate USB/LSB Filters ★ 500Hz cw Filter Option ★ Four Function Metering ★ Two speed AGC ★ Noise Blanker ★ 0-1 Micro Volt Sensitivity (ARRL Measurements) ★ Blower cooled pa ★ Crystal controlled rty generation ★ VOX ★ Break in cw ★ AC psu ★ DC psu ★

Write or phone for full specification and the reasons why the TS900 is the ultimate transceiver.

OBTAINABLE ONLY FROM LOWE ELECTRONICS PRICE £480 (VAT EXCL.)
TR7010

Following the worldwide success of the TS700, Trio have taken the TS700 basic design and packaged it for 2 metre SSB mobile use.

The TR7010 sets new standards in receiver sensitivity and low spurious emission on transmit. Operating CW, and SSB from 144.1-144.3 MHz, the TR7010 covers CW, SSB and beacon activity. 40 kHz channels plus VFO and RIT provide continuous coverage. 8 extra channels can be used without retuning in the range 144-145 MHz by fitting auxiliary crystals.

Single conversion using an IF of 10.7 MHz with a superb crystal filter provides outstanding selectivity. Wide range amplified AGC and newly developed FET devices in RF amplifier and mixer stages allows maximum sensitivity to be used with freedom from overload due to adjacent signals.

Single conversion transmitter with new fully balanced mixer system generates a beautifully clean signal with crisp audio quality.

The first lucky owners are on two metres right now. Listen to the signal and make up your own mind. Why not send for full details of the all new TR7010 right now.

Price £165 (VAT exc.)

TR2200G

The world’s most popular 2 metre 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 2 metre 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:

145.50 Simplex 145.55 Simplex 145.175/775 Duplex

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

Price £80 (VAT exc.)
LOWE ELECTRONICS

TRIO STATION ACCESSORIES

HAM CLOCK

Have you ever wondered why the amateurs in Hong Kong are not replying? Maybe it's because they're in bed and you forgot just how many hours time difference there is! The TRIO HC2 Ham Clock is a 24 hour battery powered (up to 1 year on a single HP2) clock which gives instant readout of the time anywhere in the world. Beautifully styled so that you won't know whether to keep it in the shack or out in the home, it is a real asset to the DX chaser. At only £11 (VAT exc.) it is incredibly good value.

LOW PASS FILTER LF30

You know how difficult it has been in recent years to obtain a good low pass filter. Now the TRIO LF30 fills this need. The specification tells its own story.

<table>
<thead>
<tr>
<th>Specification</th>
<th>LF30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Handling</td>
<td>1 kW</td>
</tr>
<tr>
<td>Cut Off Frequency</td>
<td>30 MHz</td>
</tr>
<tr>
<td>Stop Band Attenuation</td>
<td>90 dB</td>
</tr>
<tr>
<td>Insertion Loss</td>
<td>1.5 dB at 30 MHz</td>
</tr>
<tr>
<td>Impedance</td>
<td>50-100 ohms</td>
</tr>
<tr>
<td>Connectors</td>
<td>SO239/PL259</td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td>224 x 50 x 40</td>
</tr>
</tbody>
</table>

PRICE: £9 (VAT exc.)

BAND PASS FILTER BPF2

This is a specially designed band pass filter centred on 145 MHz and is intended to be used between your 2 metre equipment and the antenna. Eliminate those out of band sproggies from your transverter in one easy move.

<table>
<thead>
<tr>
<th>Specification</th>
<th>BPF2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Handling</td>
<td>50W continuous</td>
</tr>
<tr>
<td>Pass Band</td>
<td>144-146 MHz</td>
</tr>
<tr>
<td>Stop Band Attenuation</td>
<td>90 dB</td>
</tr>
<tr>
<td>Insertion Loss</td>
<td>1.5 dB</td>
</tr>
<tr>
<td>Impedance</td>
<td>50 ohms</td>
</tr>
<tr>
<td>Connectors</td>
<td>SO239/PL259</td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td>150 x 50 x 50</td>
</tr>
</tbody>
</table>

PRICE: £6 (VAT exc.)

MC50 MICROPHONE

Matching microphone for all TRIO equipment. Contemporary styling and dual function construction allows use as hand or stand microphone. Dual impedance 600Ω/30kΩ and two coiled cords give complete versatility. Built in locking PTT switch. The TRIO MC50 is an attractive addition to any station and its performance is superb.

<table>
<thead>
<tr>
<th>Specification</th>
<th>MC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polar Pattern</td>
<td>Cardioid</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>300 Hz–9 kHz</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>–76 dB at 600Ω, –56 dB at 50 kΩ</td>
</tr>
</tbody>
</table>

(which really means that it will drive any transmitter that we've tried it on)

PRICE: £18 (VAT exc.)

MC10 MICROPHONE

Superb hand microphone matching all Trio equipment. Press to talk or VOX operation. Supplied complete with coiled cord and 4-pin plug.

PRICE: £6.30 (VAT exc.)

VFO 30G

Matching VFO for TR7200G. Gives full band 144–146 MHz coverage on transmit and receive with built-in repeater shift. Centre zero tuning meter provided for accurate receiver tuning. Low frequency heterodyne type VFO for stable QSO's over long operating periods.

PRICE: £55 (VAT exc.)
LOWE ELECTRONICS

We always have a large stock of excellent fully tested and guaranteed second hand equipment. The following list is a small selection of the items available at the time of compiling the list.

RECEIVERS

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collins 5I/3</td>
<td>Simply the best</td>
<td>£200</td>
</tr>
<tr>
<td>Yaesu FR/400</td>
<td>160 - 10 + 4m. 2m.</td>
<td>£135</td>
</tr>
<tr>
<td>Trio JR599 Custom Special</td>
<td>...</td>
<td>£132</td>
</tr>
<tr>
<td>Davco DR30</td>
<td>Almost pocket size but what performance</td>
<td>£100</td>
</tr>
<tr>
<td>Sommerkamp FR/900</td>
<td>Old Soldiers never die</td>
<td>£80</td>
</tr>
<tr>
<td>Eddystone EA12</td>
<td>Finest dial drive in the business</td>
<td>£120</td>
</tr>
<tr>
<td>Trio JR310</td>
<td>Why Oh why did they stop making this 1st class Rx.</td>
<td>£70</td>
</tr>
<tr>
<td>Yaesu FR/500</td>
<td>Same goes for this one</td>
<td>£60</td>
</tr>
<tr>
<td>Trio JR500</td>
<td></td>
<td>£45</td>
</tr>
<tr>
<td>Eddystone 888A</td>
<td>See above</td>
<td>£45</td>
</tr>
<tr>
<td>Trio 9R59/DS</td>
<td>Long standing general coverage favourite</td>
<td>£40</td>
</tr>
<tr>
<td>Lafayette HA600...</td>
<td>Well, if you must</td>
<td>£40</td>
</tr>
</tbody>
</table>

TRANSCEIVERS

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yaesu FT501D</td>
<td>At this price it's worth buying as a digital readout receiver!</td>
<td>£295</td>
</tr>
<tr>
<td>KW2000B</td>
<td>If you must have 160 metres</td>
<td>£185</td>
</tr>
<tr>
<td>KW2000A</td>
<td>Older but some prefer it 'cos of the power supply</td>
<td>£165</td>
</tr>
<tr>
<td>Sommerkamp FT500</td>
<td>No linear needed with this rig. No shack heating either</td>
<td>£175</td>
</tr>
<tr>
<td>Ten-Tec Argonaut</td>
<td>O.K. so I was wrong. This rig really performs despite the domestic styling</td>
<td>£130</td>
</tr>
<tr>
<td>Ten-Tec 100W Linear</td>
<td>(yes, transistor)</td>
<td>£35</td>
</tr>
<tr>
<td>Liner 2</td>
<td>The rig that started it all</td>
<td>£110</td>
</tr>
<tr>
<td>Yaesu FT2F</td>
<td>Another example of the early model being preferred to it's successor</td>
<td>£65</td>
</tr>
<tr>
<td>Multi 2000</td>
<td>Good practice for a safe breaker</td>
<td>£170</td>
</tr>
<tr>
<td>TW Communicator 160</td>
<td>Would you believe AM?</td>
<td>£25</td>
</tr>
<tr>
<td>Trio TR2200</td>
<td>Small enough to hide in your handbag ducky</td>
<td>£55</td>
</tr>
<tr>
<td>Heath HW32</td>
<td>The incomparable single band doorstop</td>
<td>£55</td>
</tr>
<tr>
<td>National NCX-5</td>
<td>Most under-rated rig on the market. Still top quality</td>
<td>£160</td>
</tr>
</tbody>
</table>

SUNDRIES or if you prefer it ODDS AND S...DS

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europa</td>
<td>No, not the Lotus type</td>
<td>£55</td>
</tr>
<tr>
<td>Yaesu FP2</td>
<td>With Ni-cad. battery pack</td>
<td>£35</td>
</tr>
<tr>
<td>Spacemark SSM-1 Monitor</td>
<td>As new</td>
<td>£120</td>
</tr>
<tr>
<td>Russian CI-16 Double Beam Scope</td>
<td>Pity about the red trace</td>
<td>£40</td>
</tr>
</tbody>
</table>

Above prices include VAT but not carriage. Securicor will bring your new toy to your door safely and quickly but it'll cost you £2.20.

QUOTE OF THE MONTH (When the man from the GPO inspects your log)

"Where wert thou brother, those four days?
There lives no record of a reply."

Tennyson, supplied by Dick Winters of Melton Mowbray.
EUROPA B

2 METRE, 4 METRE OR 6 METRE RECEIVE AND TRANSMIT CONVERTERS TO 28-30 MHz

Now in use in over 50 different countries! Exotic calls like A2, C31, 5WI, 9HI, 5BC, 2D8, KV7, KH6, TF, YB, VP8, VE8, etc.

Many of these people never use the receive converter—they have no local VHF activity and use their Europas exclusively for OSCAR work.

The Europa can be used with any normal H.F. equipment ★. Europa B features:

- An aerial change over relay and SO239 antenna socket.
- Adequate power for OSCAR work.
- High transmit power. Up to 200W input, 50% efficiency.
- Highest receiver sensitivity available—2dB N.F.
- 28-30 MHz I.F. standard.
- Cleanest output spectrum.
- Extremely stable circuitry.
- Well established and reliable design.
- Additional crystals can be switched for extended frequency coverage.
- Size: 9in. x 4½in. front panel, 4½in. deep.

★ Low price, £88.00 complete to plug into Yaesu/Sommerkamp equipment. ex stock
★ £74.00 less valves (2 off QQVO3/10 and 1 off QQVO6/40A required).

For use with 6-3V Yaesu equipment (FL400, FT401 etc.) you feed in 12-6V AC at 2 amp. into the control socket. A suitable transformer is £3-24, or in a case to match the Europa £6-37. All from stock.

★ NEW! We now have in stock a complete AC PSU for the Europa, Type CSP 10.

This supplies all the voltages to power the Europa or Europa B. It also contains a 50 Ohm adjustable dummy load power attenuator and change over relay to reduce the 10 metre output power to a suitable level for driving the Europa.

This makes the Europa B compatible with HF equipment without transverter output sockets with NO modifications.

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Price: £38-50, ex stock.

EUROPA 70 - 70 CM TRANSMIT CONVERTER

Designed like our Europa B to provide sufficient power for Oscar working—70W input hybrid design valves for transmit—transistors for oscillator amplification.

Size: 6in. x 6in. front panel, 12in. deep. Price £43-20.

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12v. DC operation. Built in speaker. 1µV for 10 dB S/N. Output 1-5 watt 8 ohm

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Delivery from stock

Ideal for Oscar 7 Tracking

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Solid State 8 watt AM/FM Transmitter

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Delivery April

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**FT-201 Transceiver**  
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**FT-201 Transceiver**  
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**FR-1010 Receiver**  
£360.40

**FT-200 Transceiver**  
£321.20

**FL-2000 Transceiver**  
£285.20

**YC355 Frequency Counter**  
£137.00

**BECOM**

Linea 2 Transceiver  
£156.00

100 Watt 2m. Linear  
£172.00

**CODA**

PR4 Preselector  
(£25p)  
£10.00

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**Yaesu 846 Hand Microphone**  
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**Shure 444 Desk Microphone**  
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**Shure 444T Desk Microphone**  
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**Electro Voice 7295R Desk Microphone**  
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**KW 109 Matching Unit**  
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**KW 160m. Antenna Match**  
£229.41

**KW 6-2 80-10 metres**  
£12.46

**KW 1013 SWR/Power Meter**  
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**KW Balun**  
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**KW Antenna Switch**  
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**Ham H**  
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**Stolle Multimatic**  
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**6TR42**  
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**PL259 Plugs**  
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**Omega Noise Bridge TE701**  
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SSB-CW-AM
1kHz READOUT
CLARIFIER
100 kHz
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25/100 Calibrator. VOX/PTT. Clarifier ± 5 kHz. Break-in CW keying. You will pay more for a kit with less power, only
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the FDK Multi 2000
2m. SSB/FM/CW TRANSCEIVER

2m. SSB/FM and CW Synthesised 200 Ch. AC/DC. 10w o/p. (SAE for details please).

The WESTERN ELECTRONICS MULTI-2000 has the following features

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2. NARROW FM FILTERS FITTED AS STANDARD (£291.6 inc. VAT).

So no matter on what frequency a repeater comes up, the Multi 2000 will tune it because don't forget that it has VXO control; i.e., you are not limited to 10 kHz steps, the VXO allows you to tune any frequency. There is a 9-pin socket on the rear to permit switching an external linear relay. All our models are marked "DUPLEX" instead of "I" on the channel switch shown in the above picture. FREE DELIVERY BY SECURICOR.

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Features : Switchable for 52 or 75 ohm systems. Each instrument is individually calibrated. Four ranges : 0-3, 0-20, 0-200, 0-2kW, 3-200 MHz. Excellent Styling.

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Compare quality and price with any other equipment and confidently buy DRAKE.

Prices include VAT

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**RECEIVERS AND ACCESSORIES**

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-4C Receiver, SSB, AM, SW, RTTY</td>
<td>£279.72</td>
</tr>
<tr>
<td>FL250 Filter for R-4C</td>
<td>£28.62</td>
</tr>
<tr>
<td>FL500 Filter for R-4C</td>
<td>£28.62</td>
</tr>
<tr>
<td>FL1500 Filter for R-4C</td>
<td>£28.62</td>
</tr>
<tr>
<td>FL4000 Filter for R-4C</td>
<td>£28.62</td>
</tr>
<tr>
<td>FL6000 Filter for R-4C</td>
<td>£28.62</td>
</tr>
<tr>
<td>4-NB Noise Blanker for R-4C</td>
<td>£37.26</td>
</tr>
<tr>
<td>MS-4 Matching Speaker for R-4C</td>
<td>£12.96</td>
</tr>
<tr>
<td>AL-4 Loop Antenna for SPR-4</td>
<td>£16.20</td>
</tr>
<tr>
<td>SPR-4 Receiver. General purpose</td>
<td>£391.60</td>
</tr>
<tr>
<td>Amateur Bands crystal kit for SPR-4</td>
<td>£14.53</td>
</tr>
<tr>
<td>5-NB Noise Blanker for SPR-4</td>
<td>£37.26</td>
</tr>
<tr>
<td>SCC-4 100 kHz calibrator for SPR-4</td>
<td>£9.34</td>
</tr>
<tr>
<td>TA-4 Transceiver adaptor for SPR-4</td>
<td>£20.52</td>
</tr>
<tr>
<td>DC Power Cord for SPR-4</td>
<td>£2.70</td>
</tr>
<tr>
<td>DSR-2 Digital Receiver</td>
<td>£1,441.80</td>
</tr>
</tbody>
</table>

The above prices include VAT at 8%.

Next-day delivery by Securicor costs £2.50 per major item.

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EDITORIAL

Imposition

Nobody glancing over this piece will need to be told that we now have to bear a considerable increase in postage charges. It is not just the 5½p/7p rates for letter-mail, which affect everyone.

What, then, is our particular problem? In the first place, mailing of the Magazine to each direct subscriber—several thousand of them—costs another 36p a year. Multiplying that out brings the increase for direct-subscriber postage alone to a substantial four-figure total—just like that. Then there are the parcel deliveries, to numerous retail and wholesale outlets in the newsagent category, through whom most of our circulation is achieved and for which, of course, there is no cover—and it is here that the percentage increases are much steeper.

Like many other publishers, we have in effect become unpaid tax collectors, because an increase in postage/parcel rates to bring the Post Office accounts into balance does amount to “taxation,” since the postal service is a Govt. monopoly and there is no alternative method of distribution.

Naturally, we are always looking for economies in every direction but there are limits beyond which costs can be pared no further if any sort of standard is to be maintained.

One necessary measure is that, to hold some degree of balance, with immediate effect the direct-subscriber rate will have to go to £4.20 for a year of 12 issues, post paid. Of course, all existing subscriptions will continue to be honoured at the rate already paid—but new subscriptions and renewals will have to be charged at £4.20.

We much regret having to take up space to make an announcement of this sort—but we think it right that readers should understand the circumstances that compel it.

And we might as well admit, here and now, that there will shortly have to be an increase in cover price.
Perhaps the first thing this month is to refer back to the note on ZC4EJ, on p. 658, February. Just too late to catch the last CDXN, ZC4EJ himself rang up— he is G3LEJ at home— to point out that he is a very genuine station and that his QSL manager is in fact G3ZGG, not G3ZGC (who has been getting the cards) and additionally that when operating, he always puts out the call phonetically, realising that many people who work ZC4EJ do not easily speak English. This being the case, the cards that G3ZGC was getting were either due to QRM at the receiving end, or just plain bad writing; not, by any stretch of the imagination, piracy. In addition, the ZC4 Society's secretary, SB4WR, wrote to say he knew ZC4EJ to be OK, and to suggest how to deal with the problem. The upshot of it all was that we wrote to G3ZGC asking him to pass on the cards to the right quarter, and copied it to G3ZGG and G3LEJ. What it boils down to is this: If you worked ZC4EJ and haven't had your card back, if you sent it to G3ZGC (or if your writing makes a G look like a C) then be well advised to send a duplicate card, either direct or through the Bureau. Thanks to SB4WR also to ZC4EJ/G3LEJ, for letting us know the real problem as soon as they realised what was up.

Around The Bands

The sunspot count gets even lower; but still the faithful press on, although the reams of super-DX offered by about every contributor a few years back are just not to be found here. One tradition is that your conductor understands the first sunspot of the new cycle has been recorded as appearing at solar latitude +37 degrees on November 15 last year—which is not saying we have yet hit bottom, merely that we are getting near it!

Top Band

There is a dearth of reports all round this month, but we have a little to show and to talk about. G3KFE has been threatening to come back on the band with a QRP CW rig, but at this moment is a bit hampered by having just one rock on 1800 kHz dead, and the certain knowledge that somewhere around the place there are two at suitably juicy frequencies, but gone into hiding at the bottom of the junk-box. G2BJY (Walsall) sent in quite a report about 160m. For all practical purposes he has cleaned out the counties and regions saving for Gwent, Clwyd, and Cleveland on the key, and is now going the rounds on SSB, the rig being his old home-built ten-mile-T ex suitably modified. Then there will be the set to work on AM, and to that end, Geoff wants a Top Band AM contest laid on—crickey! A newcomer to the game who is quite clearly enjoying himself on Top Band is G4DDG (Derby) who has a KW-2000B and describes the result as "broke but happy!"—we know the feeling. David has been primarily paddling about on Top Band CW; not a lot of DX, he says, but plenty of nice natters. This sounds as though we have a satisfaction is that your conductor understands the first sunspot of the new cycle has been recorded as appearing at solar latitude +37 degrees on November 15 last year—which is not saying we have yet hit bottom, merely that we are getting near it!

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Top Band

There is a dearth of reports all round this month, but we have a little to show and to talk about. G3KFE has been threatening to come back on the band with a QRP CW rig, but at this moment is a bit hampered by having just one rock on 1800 kHz dead, and the certain knowledge that somewhere around the place there are two at suitably juicy frequencies, but gone into hiding at the bottom of the junk-box. G2BJY (Walsall) sent in quite a report about 160m. For all practical purposes he has cleaned out the counties and regions saving for Gwent, Clwyd, and Cleveland on the key, and is now going the rounds on SSB, the rig being his old home-built ten-mile-T ex suitably modified. Then there will be the set to work on AM, and to that end, Geoff wants a Top Band AM contest laid on—crickey! A newcomer to the game who is quite clearly enjoying himself on Top Band is G4DDG (Derby) who has a KW-2000B and describes the result as "broke but happy!"—we know the feeling. David has been primarily paddling about on Top Band CW; not a lot of DX, he says, but plenty of nice natters. This sounds as though we have a...
G3YOR (Kirkcaldy) writes to let us know he recently acquired a new rig, by way of an FT-101B which has been deployed on the bands to see what it can do. However, Top Band was not completely left out, as Drew was able to help the Glenrothes Club, GM4DMN/A, during the CW WW 1960 contest; after several years of participation the Club is quite pleased this year with its best result so far, 24 countries having been worked, in Europe DJ, EI, G, GC, GD, GI, GM, GW, HB9, OE, OH, OK, PAO, 4UI, and DX EP2BQ, KV4FZ, KV5AA, OHUMA, PJ2V, VE1CD, VE3BMV, VO1KE, WB6BY/VE1, VB6DO, YV1OB and 4X4NJ, plus 45 W's in 23 States, only the sixth and seventh call areas being missing from the log. Drew mentions early that during the summer he will be out "doing" some more counties on Top Band.

Right at the last moment three more letters landed on the mat; so they must perforce receive only brief mention. G4BOH (Bury) wrote mainly to update his score in the Ladder, but he does mention one daylight SSB QSO of interest, namely that with G3WQF of Haverhill, Suffolk, when both stations were just readable at 1030 in the morning. At about 130 miles, this is definitely a bit above the 50-mile daylight maximum which G4BOH normally reckons on.

A rather unusual reason for QRT was mentioned by G4AKY (Croydon). It appears he has a conventional end-fed plus a rather elegant vertical which last was fed from a longish distance by a piece of coaxial cable lying on the ground. After using the aerial to some success on the Top Band U.S. stations over Christmas, time did not allow operations to resume till January-end. Consternation—feeder is now in six separate pieces! No, not neighbours' dealing with TVI, but so far not much has been raised, and all of it in Europe.

The suggestion of a possible QRP net on 3550 kHz prompts G2NJ (Peterborough) to comment that he heard several well-known QRP types, including G3DNF and G3FMW, at workable strength on February 9. Nick's noontime operations have also turned up trumps, with a call after working a G2 old-timer coming from DJ1PE with five watts and a fine signal.

Now we come to G3CED/G3VFA (Broadstairs) with an extensive log of stuff worked, mainly on Eighty, using alternately his PM3A rig and the Heath HW-7, to a Joystick; one of the noticeable things is that when swapping reports with a station using, say 100 watts, there is so little difference in strength reports each way from G3CED's five watts—for example, working G4BPV in Redruth George passed out a report of RST 459 to the hundred-watter and got for his five watts a report of RST 549! The Joystick and five watts got round to a total of twelve countries on the band during the period.

Eighty

All sorts of funny things—both funny ha-ha and funny curious, come to think of it—happen in this area. There was a Fred Phoney manifestation around, getting into Europe quite well and signing "BY9MAO," which caused a bit of a commotion. Whatever likelihood there may be of legitimate action from China, and it does seem as though this is slowly beginning to thaw, one can hardly imagine a legitimate Chinese licence bearing such a callsign—it'd be sacrilege.

Nonetheless, the old maxim that LF DX tends to improve as the sunspot count falls is still, in the general sense, true. G4BKY (Dursley) has got an 18ATV up now, and his giving it a run on all bands. On Eighty the SWR's are rather high except around 3580 kHz and in that region Steve worked a few Europeans including LB3P and DJ3WG.

For G4DMN (Shrewsbury School) Eighty is, he says, the favourite band—except when the DX doesn't come back! And, as to that, he adds his country score is now 93 worked and at least twice 93 got away! From school, Richard succeeded with C310Q, EA8JP, EA8EX, BYU3J, JX2HK, TA1MB, UB5BU, W1EBC and U1BAR/W3; from home during half-term when the OM was pushed to one side of the home shack, G4DMN made it to AP2KS, 2L2BT, 4X4QG (all new countries on the band) plus FC2CD and YV5AMJ. The Morse key has also been plied for the first time since the ticket was obtained, but so far not much has been raised, and all of it in Europe.

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What a waste of a good band! Quite seriously, this old scribe feels that 7 MHz is probably the most reliable area in which to pursue the elusive DX trail, at least while the sunspot count is so low.
G4BKY found his FT-DX401 plus 18AVT worked out well, and on 7 MHz QSO's were registered with (CW) WA2BLV, K2DNU, W3BGN, W1CY, W2AXZ, W2ETM/4, WA2MPH, K4JM, WA2TR/I, WB2IVK, W3ARK and WA1SCV, not to mention hearing FY7's and VK3MR, VK3HD.

Back at school, G4DMN reckons this is the Headache Band! His best offerings were CT2BP and a UK3LAC—never mind, practice makes perfect!

The only other correspondent is G3CED/G3VFA, who cut his Joystick feeder down to thirty inches, and pumped his three watts into it to work Europeans quite happily.

Back to our muttons. G4CTR manages to get pleasure out of Twenty, his FT-101 and 132-footer having been used to exchange reports with ZL1AH, HG104UA, WTKSA, VP6NP, K6PZI, WA7ZPMI, VE75V, 7X2BK, IC8TRA and JY9MS.

Now we come to the Big Guns, by way of G3NOF (Yeovil) who found Twenty the best of a job lot of bands. Mornings to VK/ZL have been pretty punk, few of these and no Pacific stations having been heard; evenings have been fair to Africa from 1700 to 2030-ish, sometimes as late as 2345, and of course the W's were about at about twice the times. SSB contacts were made with ZE1G, ZS6SM, ZS6SS, ZS6ME, ZS6JW, ZL2AQ, ZL2AV and ZS91GC. G3NOF claimed for the mode the station was using, e.g., the AM/SSB contacts will be counted two points saving that AM/SSB contacts will be counted two points instead of the four.

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Reporting the HF Bands

is going to build up a suitable mains filter—let's hope it does the trick, although old 'KFE, from painful experience, would suggest that the rig is a little fiddly. CW is always saying that as soon as the PA gets a whiff of grid current as the ALCl takes hold, the harmonic content goes up with a bump and is strong enough against most low-pass filters to upset the applecart—here we have two LF's, plus a tuned stub, to ensure clear operation with the full whack and the ACL biting.

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HB9KC is operated by Werner Bopp, P.O.B. 83, CH-3073, Guemligen, in the Canton of Bern. He has a nice range of modern gear, QSL’s via bureaux and writes English.

This & That

Robbery is the proper name for it; as fast as the postal service deteriorates so do the postal rates rise. The current change will bring the cost of second-class postage up, first-class postage likewise, and the cost of an IRC for Overseas will now be no less than 13p! This old scribe suggests you all go down to the local Post Office and obtain the three brochures, one each for Inland, Overseas, and Forces Overseas. Once that is done, the next move is to send your QSL Bureau chappie a supply of envelopes at the new rate, or stamps to make up the value on the envelopes there. And, finally, we might comment that QSL’ing direct is going to be pretty prohibitive, so an increased proportion of traffic, like it or not, is going to be routed through the Bureaux.

Talking about Bureaux leads us on to QSL tactics. W4WFL/1 had a couple of stickers who failed to respond to QSL’s plus s.a.e.’s, repeated several times. Eventually, Morgan sat down and “home-brewed” a QSL card to each one, which required the DX station to do no more than sign his name to authenticate. When sent off both came back signed within a couple of weeks and both are valid for DXCC use.

G3RJV wrote on various points and one interesting one is that his mail leads him to believe many QRP operators have expensive QRO gear just gathering dust in the shack, although there are of course some of the chaps for whom QRP is a matter of reduced costs.

On that score one has to admit that G3CED/G3VFA, whatever his likes and dislikes in the aerial line, is a real QRP enthusiast; in his latest letter which arrived too late for detailed comment, one thing he says is that two watts is far too much to put up the feeder; what he now proposes is to go QRPPP for a period of time and see what that yields as compared with the two-watt power!

G2HLU (Reading) returns to the lists, he having at the time of his letter just finished operating in BERU during which Harold was pleased to find that 714/21 MHz were up on last year’s contest but Eighty most definitely “down.” On a different tack, G2HLU has been at work redecorating the shack, and he took advantage of the clear-out to re-think the furnishing of that holy of holies. The old Handy-Angle rack at which he used to sit—shades of R107 receivers and hundred-weight transmitter PSU’s!—has been discarded and the new G2HLU sits at a nice convenient desk-style operating position. Furthermore (this is really earth-shattering!) he has bought a micro-phone! Now his Vespa, which he has had for a couple of years or more, can be fired on SSB, and G2HLU found this strange experience of operating without a Morse key to be actually rather enjoyable.

After about forty years of key-punching that really is a change; but it does imply that the mind is still open to be convinced by logical argument that something different or new is not necessarily also bad. One only wishes that those who make a “sacred cow” of any and everything new or modern would also display a similar flexibility of mind!

If you come across G3LSQ/MM, Peter is en route to the Leeward Isles in his 24-ton yacht Lucina; he keeps a daily sked with G3FWB of Northampton at 1045z on 14275 kHz.

ON4QX (Antwerp) says he doesn’t know much about Amateur Radio, although he has 307 confirmed on Twenty and 327 on Fifteen! To brush up on theory, Bob is doing a B.I.E.T. course on R.A.E. and in this connection seeks back-copies of old papers for his collection. He also remarks that our R.A.E. is much more difficult than the qualifying exam. in Belgium! Incidentally, as many will know, Louis Th. Berge was a Radio Officer Lt. in the Royal Navy and Combined Forces during Hitler’s War. He sends his 73 to all his old buddies from Dunkirk, Walcheren and D-Day. Give him a shout—on CW, of course.

Last time we heard from G8HX (Mansfield) he was in the wars with his DX-100 in which one of the inductors caught fire. Frank is now back in normal operation, his replacement being an output choke out of a junked T.1154 Tx! But what odds if it works! On a different line, G8HX has received the Nicolau Copernicus award which to his pleasure was endorsed as the first G8 qualifier. Once more a change of tack, and referring this time to standard-frequency transmissions; as G8HX points out, in many parts of the U.K. the Russian 15 MHz signal is probably the most useful most of the time—but they also have a standard just five kHz away on 15005 so be careful you latch on to the right one before checking the wavemeter! Worth remembering, that.

Myrtie Cunningham, WA6ISY, YLRL vice-president, sends the result of the North American YL-DX YL contest in January, from which we notice that the honour of the G’s was well upheld by G8LY both on Phone and CW—Congratulations.

Finally in this section we have to hand a note to remind us of the Bermuda Contest. Phone is April 19-20, CW May 3-4. Times 0001z Saturday to 0200z Sunday. Rules are pretty well the same as in past years saving that the VP9’s will still be sending their parish in the exchange but the multiplier will not be related to parishes but to the number of VP9 stations worked on each band. We send RS(T) plus State, Province, or County. U.K. stations can work VP9, VE/VO, or W/K, while W/VE/VO operators go for G or VP9 stations only. Winners get round-trip plus one week’s accommodation at the Bermudiana Hotel to attend the Bermudian Society’s annual banquet and receive their award. For full details, in a coloured brochure cum rules-sheet, send an s.a.e. pronto to G. Beasley, G3LNS, QTHR.

Conclusion

Space has run out on us again; when we started this time there was next to nothing on the clip, ‘cos everyone left it to right on the deadlines. Please make it on time, or even if you can a wee bit early, deadline for our next, first post arrival April 8, addressed as always to: CDXN, SHORT WAVE MAGAZINE, BUCKINGHAM, MKI8 1RQ. And 73 to all.
### MOBILE RALLY SEASON—1975

With three more Rally dates notified, we now have a total of 14 for the Calendar, one of which (the White Rose at Leeds and the earliest in the Season) will be taking place just as this appears.

Organisers, and free-lance amateur picture-takers, are asked to let us have reports and photographs covering Rally events as they occur. Any photographs we can use will be paid for on appearance—but when sending in a print, please give full details on a separate sheet, not pencilled in on the back of the photograph itself except as may be necessary for identification purposes, e.g. “Photo A, Hogsnorton Rally, 23/4/75,” or whatever, the details then being given separately and referred to “Hogsnorton, Photo A.”

Also, we cannot accept negatives nor film-strip and we prefer black-white prints rather than coloured.

All such material should be addressed to: “Mobile Scene,” SHORT WAVE MAGAZINE, BUCKINGHAM, MK18 1RQ.

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### 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 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 A.4091, 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. within walking-distance of the 20-acre Springfield Gardens, with flowers and fresh vegetables for sale. All regular attractions, talk-in by G4DSP/A on 1980 kHz and G3MMS/A on 145 MHz, ample free parking, refreshments, bring-and-buy stall (no junk), raffle, prize for longest distance travelled, 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 is cancelled.

**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, Humber-side, HU7 5XU.

**May 25**: Maidstone Trade Exhibition and Mobile Rally, Y-Sportscentre, Melrose Close (off Cripple 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.)

**August 17**: Derby & District Radio Society annual event at Rykneld School, Bedford Street, Derby, as in previous years. Details later. Information from T. Darn, G3FGY, 1 Sandham Lane, Ripley (2972), Derby.

**August 24**: Torbay Amateur Radio Society Rally at Newton Abbot Rugby Club ground, as in previous years.—L. H. Webber, G3GDW, QTHR.

**September 28**: Harlow & District A.R.S. event at Netteswell School, Harlow, with bring-and-buy and Trade stands, refreshments, free admission and parking. Details: C. West-Bulford, G3JXU, hon. secretary, Harlow Amateur Radio Society, Mark Hall Barn, Harlow, Essex.

### SPECIAL-EVENT STATIONS

The forthcoming dates notified for appearance under this heading are:

**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.—D. F. J. Walmsley, G3HZL, 153 Worple Road, Isleworth, London. (Tel.: 01-892 3239, evenings and week-ends.

**G3UOK, April 26**: For the University of Keele Open Day, to celebrate their 21st anniversary, running 20-80m. and two metres. All contacts will be QSL’d. Visitors are invited to Room 117, Chancellor’s Building. The University is two miles west of Newcastle, Staffs., on the A.525 and near the A.34 and M.6. Location maps available on request.—V. J. Reynolds, G3COY, Dept. of Communications, University of Keele, Keele, Staffs., ST5 5BG. (Tel.: 0782-71 371, Ext. 128).

**GB3NRS, April 27**: Northern Radio Societies’ Association station, Bellevue, Manchester, for the annual convention of these groups. Stations G3WDH and GB3NRS will work all bands Top to two metres. Many attractions for visitors at this well-supported annual event in the North-West.—D. C. Mott, hon. secretary Otley Radio Society, 17 Newall Carr Road, Otley, West Yorkshire.
QRP ON EIGHTY

CO/PA TX RUNNING THREE WATTS—ADAPTABLE FOR TOP BAND OR FORTY—ALL-TRANSISTOR DESIGN

G. J. BENNETT, B.Sc., Ph.D. (G3DNF)

Our contributor is a well-known exponent of the art of QRP/CW working. The Tx design he discusses here is easy to build and is capable of very satisfying results for those more interested in finesse than in “blasting through” at whatever cost.—Editor.

The popularity of low-power CW on 80 metres becomes very evident by operating for only a few hours on this band. It is fairly certain that a contact with at least one QRP station will result.

Low-power operation has a fascination of its own, as every QRP enthusiast will agree. For the present purpose it is enough to say that QRP provides an interesting challenge, both in operating and in construction. The growing interest in QRP has been fostered by the availability for and acceptance of transistors in RF power applications. Energy conservation awareness is now providing an additional stimulus.

For anyone tempted to try QRP there is a bewildering choice of D-I-Y designs, some of which appear to be dauntingly complex, or may require components which are hard to obtain. The alternative is to purchase a ready-made QRP transceiver. Several models are available, though the price may seem high unless the purchaser is already convinced that QRP really works.

Building a CO/PA transmitter is probably the best way to make a start with QRP CW. Before the advent of transistors, in those far-off days when every newly-licensed “G3/3” had to put in a year of CW-only operation, a CO/PA transmitter could be found in most shacks. It is still possible to get on the air quickly in this way by using those same old valves or by going in for transistors.

The transistor transmitter described here is simple to construct and get going. It also gives enough output to make itself clearly heard.

Technical Description

A Pierce crystal oscillator (2N706) is capacity coupled to the PA (BFY52). The PA has zero standing bias and is driven into forward conduction by rectification of the drive signal at the base-emitter junction. The total lack of PA bias components looks odd at first sight but it is intentional.

Low-impedance output suitable for a link-coupled ATU is obtained by means of a toroidal transformer which delivers RF via a series-tuned LC circuit.

When receiving, the crystal oscillator can be switched on as required for channel checking or “netting.” For this purpose the oscillator runs at reduced voltage, supplied by a dropper (R4, Fig. 1).

On “transmit,” the crystal oscillator runs con-
TRANSMIT
RECEIVE
NETTING
SWITCH
OUTPUT

**Fig. 3.** Suitable method of construction, cutaway view

Continuously, but receives full voltage (via D1, Fig. 1) only when the DC supply to the PA is keyed. This method of keying is better than keying the PA alone, which does not give enough RF cut-off between characters.

**Construction**

In order to make use of the existing PSU, control circuitry and ATU, this Tx was originally constructed as a module rather than as a self-contained item of equipment. In this form it was built in an aluminium chassis box (3 x 2 x 1 inches) with key jack and power socket mounted on a small external bracket.

For the convenience of other constructors, the circuit as shown (Fig. 1) includes “netting” and changeover switches. If small enough these could also be mounted externally (Fig. 3). The addition of a suitable power supply and ATU will then complete the transmitter.

If receiver muting is also required, this can be arranged by means of a suitable relay, energised in the same way as the aerial change-over relay (Figs. 1, 5). Alternatively, the facility can be provided by having an additional pole on S1 (Fig. 1).

Most of the components can be mounted on a small piece of Veroboard (0.15 inch matrix), mounted inside the chassis box by using short lengths of 22g. tinned copper wire to complete the connections to the crystal socket and earthing points (Figs. 2, 3). Other components can be mounted as shown in Fig. 3 (L1, which is not shown, can be attached to the insides of the chassis box, in the space below VC1).

**Components**

The only component requiring comment is the toroidal output transformer, upon which depends the efficiency of the PA. Ferrite toroidal cores are often specified for coils and transformers in the design of transistor transmitters. In many instances the choice of core is critical and the selection of an equivalent will depend upon a number of factors, which include dimensions and grade of ferrite. Some grades are unsuitable for RF power applications.

In developing this transmitter, many different toroids were tried, most of which performed fairly satisfactorily. By far the best core was found to be a tubular stack of three parasitic stopper beads, type FX 1115 (Fig. 4). This also makes a very cheap and easily available core. Similar results, but with slightly lower efficiency can be obtained by using a tubular ferrite tuning slug from an *Aladdin* coil former (*N.B.* Ferrite is a hard, stony material which cannot be scraped with a knife).

**Setting-Up**

Carefully check the circuit board and connections before connecting the power supply. Next, see that the crystal oscillates when the netting switch is closed.

Adjust VC1 (Figs. 1, 3) to maximum capacity and connect a flashlamp bulb (2.5v./0.3 amp) to the output socket of the transmitter. Switch to “transmit” and check the PA function by briefly connecting a milliammeter across the key socket. Normally, a reading of

**Fig. 4.** PA output transformer (T1, Fig. 1) general arrangement

T1 is wound on a polypropylene tube 1½ inch O.D. (*e.g.* as used in plumbing). Main winding is 60 turns 24g. enameled, close wound, with several tapping points at intervals of 10 turns. Link winding 8 turns of pvc-insulated “connecting wire” overwound at the “earthy” end of the main winding.

For 160 metres, T1 can be 100 turns of 32g. wire with 10 link turns.

For 40 metres, 40 turns of 24g. and 6 link turns are required. These values are suitable for an end-fed aerial of $\frac{1}{4}$ to $\frac{3}{8}$ wavelength, *e.g.* 90 feet for the 80-metre band.

The choice of relay will be governed by availability. A suitable type is 354/12v. (*Magnetic Devices Ltd.*), which has low capacity contacts, a coil resistance of 325 ohms, and operates on 12 volts DC. There is plenty of scope for trying other types.
between 50 and 150 mA is obtained, and the lamp will probably light.

Tune VC1 for maximum output while keying a string of long dashes. Maximum output at 3.5 MHz will require a high setting of VC1 and will light the lamp to full brilliance. Avoid tuning the second harmonic, which will require a low setting of VC1 and will only dimly light the lamp.

When correctly adjusted on the dummy load, typical current readings at metering points "X" and "Y" (oscillator and PA respectively) would be about 10 and 100mA.

If the transmitter appears to be functioning correctly, connect the ATU and aerial (with the dummy load still in circuit). Key the transmitter intermittently while tuning the ATU for maximum absorption, so that the lamp is extinguished or at minimum brightness. Disconnect the lamp and continue tuning up with the aid of a sensitive absorption wavemeter or field strength indicator. Tune for maximum radiated signal, adjusting VC1 and ATU successively. With experience, this procedure can be shortened, once the optimum settings are known. As a general rule, if the aerial is tuned correctly for reception it will need little further adjustment for transmitting.

Before the final launching ceremony, it is wise to monitor the transmitted signal, to ensure freedom from chirp, parasitics, clicks, strong harmonics and TVI. This transmitter has been found to be remarkably free from such defects, but it is always worth checking the list when putting a new Tx on the air. With regard to harmonics, bear in mind that a strong harmonic detected on the station receiver is not a good guide to the amount of harmonic power radiated. The use of an absorption wavemeter or field strength indicator is better for this purpose.

Hints and Wrinkles

This little transmitter should be found easy to get going and free from snags. The following comments may be found helpful if any difficulties are encountered.

If the oscillator fails to perk, recheck the wiring. If all is in order, a change of transistor may do the trick. A crystal that is not active enough may fail to oscillate, or may oscillate weakly or start slowly. Reduced oscillator output will give low drive to the PA, which in turn will fail to light the lamp.

Should the output from the PA be less than expected, try another transistor here also. Other types which can be used include BFY50 and 51, 2N3053 and 40311, although some makes of the BFY50/51/52 series are less effective than others for RF power applications. Most transistors of these types will run at about 2 watts input in this circuit when properly loaded. Exceptionally, one can be selected which will run at 3 watts, but will also need greater care in avoiding a load mismatch during the tuning-up procedure.

The transmitter will run at about one-watt input on a 12-volt supply. For 40-metre operation, all that is needed is a crystal for that band and a suitable ATU (Fig. 5). The setting of VC1 will be lower for this band. Top Band operation can be achieved similarly, but in this case it is necessary to connect an additional capacitor (15 pF, polystyrene) in parallel with VC1).

Particular attention should be paid to the quality of all connections especially in the ATU, as a dry joint can absorb much of the RF generated by a QRP PA!

The power supply can be a bank of dry cells. If a mains power pack is used, it is preferable to stabilise the voltage. A zener diode or a more elaborate regulator can be used for this purpose.

Results

Much of the enjoyment of QRP comes from the recognition and exploitation of its possibilities. When conditions are good, opportunities occur for surprisingly good contacts to be made. However, QRM and QSB normally make it harder for the QRP signal to get through. Calling CQ tends to be a waste of time with QRP. It is usually better to search for likely contacts. When using crystal control, the best method is to lie in wait for calls occurring within 1 kHz of the frequency in use. If several crystals are used, each channel may be monitored in turn.

A glance through the CDXN columns of recent issues of SHORT WAVE MAGAZINE will give some idea of what can be done with QRP on Eighty. Results with this Tx should be similar to those reported by several stations using a couple of watts. Contacts within U.K. and Western Europe can be made quite easily.

The importance of the aerial in QRP operation must always be stressed. Experience of using low power for many years has shown that correct tuning of the aerial is the most important factor. Get it "on the nose" and you will be surprised how far a few milliwatts will go.

For this month's Reader Small Advertisements, see pp. 112-118
TRANSMITTER FOR
SEVENTY CENTIMETRES

COIL DATA, SETTING-UP
AND PSU CIRCUITRY

Part II

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

The first part of this article appeared in the
March issue, with circuitry and illustrations
up to the PA stage.—Editor.

Continuing from p.31, March, further points on
construction: The PA chassis bottom plate measures
12 x 4in. with sides 3in. deep. Holes are drilled in it
under the valve envelope and, with a top plate made
from expanded metal, give adequate ventilation, the
chassis being stood off on rubber feet.

Capacitors C3 and C4 are connected directly to the
grid pins on the valveholder and to the grid loop, which
is supported at the far end on a p.t.f.e. stand-off. Once
tuned, these capacitors are prevented from shifting by
a small dab of Denfix. Note the shield right across
the chassis on which the valve is mounted and also the
screening ring around the valve base. The correct position
for the anode feed chokes is determined in the same
manner as described for the buffer amplifier. Note also
that the moving vanes of the anode tuning capacitor are
not earthed—an insulated extension spindle is therefore
required. The capacitor itself is mounted on insulated
pillars bolted to the side of the chassis. These two chassis,
with the converter and 404 MHz amplifier, are all
accommodated in an RF-tight cabinet, the PSU being
housed separately.

Operation

With 404 MHz input from the converter, the amplifier
circuits are aligned on 404 MHz using a GDO. The
circuit constants have been chosen so that they will not
resonate at any other frequency. When correctly adjusted,
the output should be of the order of 400-500 mW and
the unit should draw 100 mA or so—150 mA with the

Table of Values

Fig. 5. Power Supply Unit

| T1  | 125-0-125 volt, 250 mA |
| T2  | 6-3 volts, 4 amps   |
| T3  | 34 volts, 1 amp     |
| T4  | 28 volts, 1 amp     |
| D1-D4 | BY1000  |
| D5-D8 | 1N4006  |
| D9-D12 | REC 63 or |
|      | 1N4006  |
| C1, C2 | 100 μF, 450v. wkg. |
| C3  | 500 μF, 50v. wkg.   |
| C4  | 10 μF, 63v. wkg.    |
| C5  | 500 μF, 64v. wkg.   |
| C6  | 50 μF, 40v. wkg.    |
| C7  | 1,250 μF, 16v. wkg. |
| R1  | 47,000 ohms, 6w. wirewound |
| R2  | 7,000 ohms, 6w. wirewound |
| R3  | 47,000 ohms, 2w. wirewound |
| R4  | 1,000 ohms, 1w.  |
| R5  | 5 ohms, 5-watt, wirewound |
| R6  | 35 ohms, 5-watt, wirewound |
| T1  | 2N3055 or 2N3233 |
| D1-D6 | Zener diode  |
| F1, F2 | 250 mA fuse  |
| PL1 | 6.3v. pilot lamp |
| V1  | VR105  |
| V2  | VR150  |

Fig. 5. Power Supply circuit

Fig. 5. PSU circuitry for the Transverter
converter. Connect the output to the mixer chassis via an SWR bridge and adjust the output circuit and the input circuits of the mixer for maximum grid current in the mixer, having temporarily disabled the bias to the stage and inserted a 5 mA meter. Ensure that the bridge indicates minimum reflected and maximum forward power. Apply screen and anode voltages to the mixer and set the mixer bias at —7v. The anode current should then be about 16 mA. Apply a small amount of 28 MHz drive until the anode current just rises. Check with the GDO that the anode circuit resonates at 432 MHz. Do not run the valve above 30 mA for any length of time—the plate dissipation is only 6w.

Resonate the grid circuit of the buffer amplifier, checking again that you are on 432 MHz and not 404 MHz, apply anode and screen voltages and adjust the bias for 25 mA standing current. Modulation will kick this up to 45 mA with about 15 volts of bias. Bias voltage may be ±1 volt or so—the important thing is the standing anode current value. The measured output under key down conditions was 24 watts.

Using the SWR bridge as before, adjust buffer amplifier tuning and loading and PA grid circuits for maximum transfer of power with minimum SWR. A meter in the QQV03-20A grid circuit will indicate this. With —25v. of bias on the PA, and a dummy load on the output, apply anode and screen voltages and set the standing anode current at 25 mA. This will rise to about 75 mA on speech peaks at resonance. Load up for maximum output and then increase the loading until the speech peaks drop by about 10%. Measured output from the prototype was just 10 watts.

Just to run through the main points again: With all circuits resonant at the correct frequencies and the right level of drive to each stage, the mixer should draw 16 mA standing current which should rise to about 18 mA, and no more, on speech peaks. The buffer amplifier standing current should be set at 25 mA and should go up to 45 mA on peaks of speech. The PA standing current should be 25 mA and should rise to about 75 mA on peaks. No grid current is drawn by any stage.

If you do not attain these figures, the most likely trouble is incorrect alignment of the mixer and buffer amplifier stages. Adjust SSB drive by varying the spacing between the input loop and grid line of the mixer. Do not do so by cutting down the audio gain control on the prime mover—you will only achieve an unbalance between carrier and sideband which will impair the quality and cause a carrier to be radiated. Do not operate the PA with screen volts applied and no anode volts and do not operate it except into a load, dummy or antenna.

It will be noted that HT is applied to all valves as soon as the PSU is switched on. On “transmit,” normal operating bias is applied to all stages. On “receive,”

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**Table of Values**

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RV1, RV2, RV3</td>
<td>100,000 ohm, linear wirewound pot.</td>
</tr>
<tr>
<td>R1, R3</td>
<td>10,000 ohms, 1/2 watt</td>
</tr>
<tr>
<td>R2, R4</td>
<td>20,000 ohm, 1 watt</td>
</tr>
<tr>
<td>C1, C2, C3</td>
<td>0.1 μF, 50V wkg.</td>
</tr>
<tr>
<td>Tr1, Tr2, Tr3</td>
<td>BCY30</td>
</tr>
<tr>
<td>R5</td>
<td>20,000 ohm, 1/2 watt</td>
</tr>
</tbody>
</table>
the relay contacts in the grid bias circuits are closed by the station Rx/Tx switch and the full negative rail voltage is applied to all grids thus cutting off the valves. To provide a netting signal if a separate receiver is used (and this is often desirable in contests) the double-pole switch in series with the relay contacts associated with the mixer and buffer stages is opened and operating bias applied to these valves only to produce a small signal in the Rx. The relay connections are shown in Fig. 6.

**Conclusion**

Two models of this transverter have been constructed by different individuals and both worked first time. It would appear, therefore, that the design is repeatable provided that all the usual precautions associated with VHF circuitry and wiring are taken.

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**DISCUSSING THE MFJ CWF-2 FILTER FOR CW OPERATION**

The MFJ Enterprises Model CWF-2BX CW Filter is one of these add-on devices intended to improve the owner's station for a particular purpose—in this case to provide an extra degree of selectivity for CW operation with a receiver designed mainly for SSB use, or with the popular SSB transceivers.

It was realised that the box is basically just an audio filter, and there were doubts as to whether it would prove worthwhile. It was arranged that we should have a production-line specimen, as supplied to customers. When it arrived it was realised at once that we had indeed got one picked at random—there was a bow in the upper surface of the case, and the black screen-printing on the front and rear faces of the chassis were both smudged! A PP3 battery was sent along with the unit. The battery is fitted into a Terry-type clip, and the printed-circuit board is glued into the case, rather than being fixed in any more conventional way; this may raise a little problem when it comes down to servicing the filter electronics.

**The Circuit**

Circuit-wise, the arrangements are for a total of four active filters in cascade, components being selected to ensure that each stage peaks on the same frequency. One of the nicer things about this method is that the effective “Q” of the filter sections can be kept down to as low as 4, which means that this audio filter is one that does not ring every time it gets a good signal bang “on the nose.” This alone differentiates the MFJ device...
The MFJ CW Filter, with necessary attachments, and (below) the circuit diagram.

from the popular FL8 filter, or the one installed in the Eddystone 888, or indeed any of those using high-Q tuned circuits to generate the filtering.

Does it work? Sure, it works just like they say it does, with a centre frequency a little below 800 Hz. That does not say anything we couldn't have guessed! So, what about the way it works "on the job"—the hardest criterion any filter could be asked to meet.

To find out, it was tested with an Eddystone 888, a Codar CR-70A, and the station main receiver, a KW-2000B fitted with the VFO-4B adaptor and Codar Q-Multiplier. Each have headphone output sockets and so the move in each case was to just plug the output from the receiver into the MFJ filter at the terminals provided, using screened lead; the ground and signal terminals are very clearly marked so no difficulty should be raised there. Then the shack headphones were plugged into the jack at the front of the MFJ filter.

Results

The only word that can be used about this filter once it is plugged in is marvellous. Of course, one needs to use selectivity so late in the receiver chain with care to avoid overload or blocking effects at the front-end of the receiver; but having said that the results are still quite marvellous. For example, one can go right into the sidebands of one of these big fat interlopers on, say, Forty, and copy a DX CW signal right through it—a signal which is all but inaudible, appearing on the KW-2000B alone just as blips of tone when the BC station stopped for breath, but perfectly R5 through the MFJ filter. Adding the Q-Multiplier to the recipe made some further improvement, although of course, when the Q-Multiplier is in circuit one has to be careful always to use the correct sideband when on CW, a question that

Table of Values

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>-01 µF</td>
<td>R4, R7,</td>
</tr>
<tr>
<td>C2, C3,</td>
<td></td>
<td>R10, R15 = 24,000 ohms</td>
</tr>
<tr>
<td>C4, C5,</td>
<td></td>
<td>R5, R8,</td>
</tr>
<tr>
<td>C6, C7,</td>
<td></td>
<td>R11, R14 = 1.8 megohm</td>
</tr>
<tr>
<td>C8, C9</td>
<td>-001 µF</td>
<td>ML1, ML2,</td>
</tr>
<tr>
<td>C10, C11</td>
<td>5 µF, elect.</td>
<td>ML3,</td>
</tr>
<tr>
<td>R1, R6,</td>
<td></td>
<td>ML4 — Micrologic</td>
</tr>
<tr>
<td>R9, R12</td>
<td>680,000 ohms</td>
<td>µA-747</td>
</tr>
<tr>
<td>R2, R3,</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Capacitors C2-C9 and resistors R1 and R4-R11 must be selected by test for same centre frequency. ML1-ML4 are Op. Amps. S1 is single-pole four-way.
does not arise if the MFJ filter is used alone.

The device comes in two forms: One, for use out-board as outlined here, and the other for building-in to the inside of the station receiver—but for this reviewer's money, keeping it in the "outboard" form has the advantage that it doesn't disappear when you come to sell the rest of the receiver!

The test was repeated with the Eddystone 888 receiver, and here the contrast between the built-in filter in the receiver and the outboard MFJ unit was very marked; the internal filter rang violently so that while it gave an apparently sharp selectivity curve, the output was all but unreadable, while under similar conditions and on the same signal, the MFJ box gave good clean easily-read copy. If anything, the Eddystone-plus MFJ combination was better than the KW-2000B on the LF bands, but once one got to 14 MHz and above, one immediately found the slight tendency of the 888 to drift between overs to be a mild embarrassment—although many old-time CW operators have coped with worse drift to recover their QSO's after each overs and thought nothing of it. In fact, so long as one is operating within a system which lets the receiver monitor the outgoing signal, then one will cope with the problem quite automatically as one "tweaks" the receiver while sending, as long as you are working single-channel.

For split-frequency working the drift of the receiver would be embarrassing.

As for the Codar, one would never expect this Rx to be used as part of a transmitting station, and so the receiver was simply tried as an SWL device with the MFJ filter in the headphone lead. Here again the little box proved to be well worth its keep, although with this sort of simple receiver, one needs to use any control with care, lest the signal you are after just disappears out of the receiver pass-band, let alone the filter's.

The shack headphones are high-impedance, of the "stethoscope" variety, and so it was felt that a test with a low-impedance pair would be a good idea. A low-impedance stereo set plugged in—these have a DC resistance about 15 ohms—and they were found to work just as well as the high-impedance phones giving, if anything, a little more output.

Don't be fooled by the appearance or the size of the CWF-2. If you ever operate CW, this is one gadget you ought to have permanently around, either the plain board plugged permanently into and inside the receiver if you prefer to take your stuff on the speaker, or as an outboard unit if you prefer copy through the headphones.

The MFJ CW Filter, of American origin, is obtainable through Waters & Stanton, Hockley, Essex, as advertised in these pages.

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**BUILDING THE VENUS SS/TV MONITOR**

**SOME PRACTICAL NOTES ON A COMMERCIAL DESIGN**

P. BURNETT (G4BLL)

SS/TV enthusiasts will have noted that the *Venus SS2 Monitor* is now available in kit form, for home construction. The writer, having been interested in SS/TV for some time, and having spent most of his free hours building and then trouble-shooting a Monitor described in the small booklet published by the B.A.T.C., decided that the time had come to invest in a Monitor with rather more sophisticated circuitry, to give improved noise immunity and weak-signal handling capability.

Accordingly the journey was made to Matlock to the premises of a well-known purveyor of the equipment and the writer became the proud owner of a box full of plastic bags containing "goodies" of all shapes and sizes. The first job on opening the box was to resist the temptation to unpack everything and get started. Instead both the operating and assembly instruction manuals were carefully studied and it was a great pleasure and relief to find that every stage of construction was described in great detail.

There are eight distinct stages of construction, in the following order:—

1. Assembly of the front panel controls to the small printed circuit board,
2. Assembly of the phono sockets to the rear panel,
3. Wiring of sub-assembly 2,
4. Cable harness wiring (a further stage of sub-assembly 2),
5. Assembly of the front panel and CRT,
6. Assembly of components to the main printed circuit board, and final assembly to form the finished unit.

For further clarification the instruction manual is supported by detailed drawings of each stage. The manufacturers obviously intend that the kit should be capable of being built by the most inexperienced of constructors.

Most of the components are packed individually, and each bag is fully identified with its contents—if some components appear to be missing, check the packaging for the next sub-stage (the writer found several resistors missing which were later found packed along with the IC's and transistors).

Both the main printed circuit board and the front panel control board are of high quality glass-fibre construction, and it is essential that components are soldered, using a low-wattage iron fitted with a "pencil" bit. This proved to be entirely adequate for all joints on the main p.c. board (with the exception of the soldering of the screw-heads where a 50 watt iron was used). As both boards are double sided, it is essential that solder is allowed to run through so that a good joint is made on both sides. Difficulty should not be experienced in soldering any components as there is plenty of room available even in the latter stages of assembly, and all or most of the component positions are actually marked on the board.

The writer did spend some time trying to locate C49 where this was not marked on the board; this could
have been avoided had the Addendum Sheet and drawings been studied a little more closely, as this “C49” is a later addition to the circuitry. There are ten modifications listed on the Addendum Sheet, most of which are of a minor nature—but be sure to study this sheet prior to commencing assembly. Because there are a number of modifications is no reflection on the quality of the instrument, since this is a quite normal and desirable state of affairs where a Company is continually progressing and updating its products.

This brings us to specific comment for each stage of construction:

Figure 1: It is possible to locate the toggle and rotary switches in the wrong positions, therefore, pay particular attention to the instructions regarding orientation.

Figure 2: A little difficulty was experienced in tightening up the rather peculiar shaped 6-32 lock-nuts. Not having a 7/32in. spin-tight or socket wrench specified by the manual, a pair of long nosed pliers had to be used. Also, it is necessary to have a Philips screwdriver of the correct size and in good condition as the nuts are rather a tight fit on the screws and require a fair amount of torque to tighten them.

Figures 3 and 4: The wire lengths quoted were found to be a little excessive. However, start with the lengths given and trim back if necessary when the wire is in position.

Figures 6 and 7: See previous comments regarding C49. The manual states that each transistor, IC and resistor should be fitted and soldered at each step. However, it is better to fit all the IC's and resistors in position, then solder only one contact of each in turn until all are soldered. This method avoid excessive heat being generated internally which could damage these delicate components. Solder both sides of the board as mentioned previously.

Handle the board carefully after assembling the mains transformer and E.H.T. unit as these are both rather heavy components which can cause damage to the printed circuits through excessive flexing if the board is handled carelessly.

Alignment Procedure

A test tape is supplied with the kit to assist in the alignment of the unit. There are some reservations with regard to the use of this but it is good enough for the initial stages of setting up.

If the instructions are followed faithfully and these few notes observed, then on switching on the unit, after the initial warm-up period, some sort of raster should be visible on the screen. Fortunately, in the writer’s case everything functioned correctly from the “off”, it being only necessary to carry out the final adjustments in the sequence described.

Some of these adjustments require comment as it should be remembered that this unit was originally designed for use in areas having a 60-cycle mains supply, and it is this one single factor which can cause a few slight problems since in the U.K. we are on 50 Hz.

When peaking the Sync. Detector Band Pass Filter Tuning use a 1,200 Hz test tone from an accurate audio oscillator and not the 1,200 Hz tone recorded on the test tape as this will not be accurate, due to the reason given above. On peaking this circuit some 4.5 volts (instead of the 3.5v. stated) was found to be present at TP6. As this part of the circuit has been subjected to modification and the monitor functions perfectly, it can only be assumed that the measurement obtained is the correct one.

Adjustment of the Free Running Horizontal Sweep frequency (R47) will be incorrect if carried out as instructed, again due to the difference in mains frequency. However, this is easily adjusted by watching for an unbroken line and “clean” picture when using the “Spacc-Mark” test tape, for example.

If the Monitor is finally set up using the circle pattern from the test tape supplied, it will be found that on receiving off the air pictures a blank border will be present on the right-hand side and bottom of the screen. Final picture positioning was accomplished, again by using the Space-Mark test tape.

There is only one feature with regard to this particular design of Monitor which, to the writer’s mind, is unacceptable—and that is that the CRT heaters remain on when the units is switched off from the front panel. This is going along with the current trends in consumer T.V. manufacture to provide “instant” picture at switch-on. The writer intends to modify this at the first opportunity so that when the knob on the front panel points to “off”, it means exactly what it says.

A desirable modification would also be to have the filter in front of the CRT screen removable to enable colour picture experiments to be carried out.

It is hoped that the would-be constructor will find these few notes of some little help, and if the same pleasure as experienced by the writer is obtained from the use of equipment well designed and built, then the effort is well rewarded.
NEWCOMERS to the FM scene on 144 MHz may be unaware of the Channel Number system which is in wide-spread use in this country and on the Continent, and is used to indicate certain simplex and repeater frequencies. Let us look at the latter first. Repeater input channels are distinguished by the prefix “R” followed by a number between 1 and 9 and are spaced at 25 kHz intervals between 145.025 MHz and 145.225 MHz. Thus, Channel R1 is 145.025 MHz, R2 is 145.050 MHz and so on. These represent the input frequencies of various repeaters. The output frequency is, in every case in this country, 0.6 MHz higher. As an example, GB3PI on R6 which means that the input frequency is 145.150 MHz and the output on 145.750 MHz. GB3LO is on R7, the input being on 145.175 MHz and the output on 145.775 MHz. GB3MH, the Malvern Hills repeater is on R7, GB3BC in the Bristol Channel area on R6 and GB3SN on R5.

Repeater output channels are given the prefix “S” followed by a number lying between 25 and 30 and are spaced at 25 kHz intervals up the band from 145.625 MHz to 145.825 MHz. They are related to the kHz intervals up the band from 145.625 MHz prefix “S” followed by a number lying the Bristol Channel area on R6 and GB3SN an example, GB3PI on R6 which means that case in this country, 0.6 MHz higher.

Represent the input frequencies of various repeaters. Thus, Channel RI is 145.025 MHz, and RI is 145.500 MHz and 145600 MHz, carry the MHz links with Channel S26 on 145.650 MHz, links with Channel S26 on 145.650 MHz, and so on. Here that 145.000 MHz bears the designation R0 but by common consent is used as an international mobile calling channel and will not be used for repeater operations.

The FM simplex channels lie between 145.000 MHz and 145.200 MHz and the prefix “S” followed by a number between 20 and 24, and are spaced at 25 kHz intervals within these limits. Thus, S20 is on 145.500 MHz, S21 on 145.525 MHz and so on. Since there is no supra-national decision on the use of these frequencies, their allocation for specific purposes varies throughout the country, but in the South a pattern seems to be emerging which puts S20 as the national mobile calling channel, and S21 to S24 as working channels, the implication being that, other than a contact established on the mobile calling channel, it should be followed by a rapid QSY to S21 to S24.

There has also been a proposal in some quarters that S21 to S24 should be linked to the geographical Zones which were adopted as part of the last Band Plan. Thus, S20 replaces 144-48 MHz as a national mobile calling channel; S21 instead of 144-40 MHz as the Zone “A” working channel; S22 replaces 144-80 MHz and becomes the Zone “B” working channel; S23 instead of 145-20 MHz and becomes the Zone “C” working channel and S24 replaces 145-60 MHz as the Zone “D” channel. However, these allocations have not by any means been universally adopted, and considerable use is made of 145.60 MHz in the North of England and in calling channel.

Finally, the following allocations have been made for repeaters “in the pipe-line” — GB3PSO, Martlesham Heath; R3; GB3NA, Barnsley, R3; GB3CS, Forth/Clyde, R6; GB3HH, Burton/R4; GB3ND, Bacton (Norfolk), R2. Other repeaters will be fitted into this pattern, the selection of channel depending mainly upon propagation and radiation pattern overlap to avoid mutual interference.

Contests

Reports: Opinions appear to be sharply divided when reporting propagation conditions for the two-tremore event at the start of March. GD2HDZ, for example, assessed them as reverting to sub-normal and found it a struggle to get his 105 contacts in spite of the attractive call sign and the “fame for the price of one” factor. Conditions in Northern G and GM were described as atrocious and several reports from the West Country suggest that, whoever else was having a ball, they were not. G13JLA, none other than our old friend G1AS, worked nine other GI stations on SS8, so activity was there, but little seems to have been heard of them beyond the NW coast of England. Unfortunately, your scribe could not get on for this event, but local reports indicate that the output channel and which only appears when the mobile calling channel, 145-50 MHz, which ought not to have been there, and even the FM mobile working channels were pretty clogged at times. As they stand at present, contest rules do not proscribe this, but do bar contest working through repeaters.

Results: 1296 MHz Cumulatives.

Several countries of the IARU Region 1 have sponsored a suggestion that 2m. beacons should be moved to around 144-90 MHz, 70 cm. beacons to the 432-90 MHz area and 23 cm. beacons to around 1296-90 MHz. Now this seems a very sensible idea since it would remove many of the present objections to having strong, static transmitters in a sub-band at present extensively used for CW and SS8 DX working. Several countries, such as SK4MPI for example, are used for quite separate soft care and would benefit far more from QRM-free channels. Everyone seems to be in favour of beacons, except when they are sited on the doorstep, and a move to comparatively quiet parts of the band would overcome this objection. This proposition with which the Columbic controversy is to be discussed at the Warsaw Region 1 IARU Conference on April 14 and, although the notice is rather short, readers’ views would be most useful if they could be sent in before April 7.

VFCC Awards

We are very pleased to welcome to the ranks of the Century Club this month GI3HXY for Belfast, doubly so in fact, because not only do we get but few claims from Northern Ireland, but also because his
Award No. 8 is for operation on Four Metres. Although licensed way back in November, 1952, "HXV" did not come on Four until mid-1961 using, at that time, an SCR 522 (take you back a bit doesn't it?) for CW/AM with a xtal-controlled calibrator and an Edystone 640 receiver with a 4-ele. beam. This set-up was used for several years and later a Nuvistor pre-amp was added to an updated converter with an E88CC in the front end. He is also an FR-50B to give him split-working facility of AM. He has modified the Liner for CW, and uses a dual-output converter feeding an FR-50B to give him split-working facilities over the whole of the band. He is also on 70 cm., running the Liner into a tripler to yield 5 watts of CW into the 46-ele. beam on 432-30 MHz, and on 4m. on Sunday mornings on fixed frequencies of 70-26 MHz and 70-32 MHz on CW.

So that's it for this month. We should particularly welcome claims for bands other than Two to stimulate activity where it is most needed.

The View from GM

Several reports are to hand commenting on the excellence of the early February openings. As here in the South, the best contacts seem to have been with the Scandinavian and N. German stations, with the DL0JR beacon on 144-140 MHz providing a splendid indication of propagation in that direction for days on end.

Scanning the latest reports, the impression is strengthened that these openings were much more useful in GM than in England, GM3VFB and GM3CQX, operating portable from Tomtain (QRA QX800) on February 9, knocked up a massive tally of SM, OZ, PA and DL SSB contacts from their 1500ft. a.s.l. site between 1130z and 1730z. Signal strengths varied between RS57 and RS59+ both ways. The gear used was a Liner with an 11-ele. Yagi. An interesting feature of this operation was the localised ducting which they observed, the target area being an arc about 950 km from the site, 25° wide and bearing from 085°E to 110°W. Two good N/S contacts were those made by GM8FFX of Aberdeen with G3AWZ in Somerset and G8IWD/P in Dorset. "FFX has already made 700+ QSO's with stations.

### THREE-BAND ANNUAL VHF TABLE

January to December, 1975

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**Notes:**

(a) Claims should be on the basis of the new County organisation given on page 97 of this issue.
(b) The Table shows claims to date from January 1, 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.
He puts in a plea for less variety in the type of aerial used at fixed ground stations, and suggests that a standard polarisation should be agreed. There is much merit in this idea. Mobiles these days tend to use vertically polarised antennas not just because they are aesthetically preferable to haloes but also because repeater antennae are vertically polarised. If we all used vertically any cross-polarisation loss would be minimised. However, most fixed stations these days are equipped with horizontally-polarised arrays which will all right for fixed station inter-operation but can cost 12 dB of loss when working many mobiles. One answer would appear to be to erect crossed Yagis and, although one must accept that one axis of polarisation can turn out to be something quite other at a remote receiving point, agree upon a standard left hand or right hand, circular polarisation. Tests have shown that there is little to choose between the results with LH or RH polarisation, provided that the same arrangement is used at both ends of the circuit, so let's stick our necks out and follow the RH path if we are going to install such arrays.

Oscars

As from March 1, permission to use depression orbits on Oscar VI has been withdrawn except for Sunday mornings.

News Items

Although no reports are to hand of any outstanding British stations during the recent series of EME tests, congratulations must go to PAOSSB and VK3AKC who completed a 23 cm. EME contact on February 23.

G3LOR raised DL and PA on 13 cm. during the early February lift. He now has his 20ft. dish working for EME exchanges. G4BYV hopes to have 23 cm. SSB available shortly using the DJ9ZR 2m. driver mixing 1152 MHz in a 2C39A. Higher up the scale, G4BKY in Dursley, Glos., is getting prepared for 3 cm. and making contacts with Astrons, an 18in. dish and polarisers ready.

G8GLS (Preston) is reported to have worked I2SR2 in Milan on SSB on February 24. G4CXP (Carnforth, Lancs) reports a 2m. lift into France on February 21/22 and another into DL and PA on February 28. G8WOLG should now be back on the 2m. air from Dyfed and looking for contacts on 144-255 MHz between 1800-1900 each night. He has 150 watts of SSB available. G4DJQ and G4DXQ are taking 2m. gear to Andorra in June. We hope that they will have better luck than previous expeditions have had.

As a 4m. operator perhaps he can be persuaded to approach the authorities to let him use that band also, to take advantage of any good conditions it may be around that time! It is reported that PA0GVV is trying to get his permission for the use of that band for SSB/CW.

Deadline

Deadline for the May issue is April 7, so please let us have your letters by then. Particularly, please send in your comments on the beacon proposals to reach us in good time. The address remains:—"VHF Bands," SHORT WAVE MAGAZINE, BUCKINGHAM, M18 1RQ. Cheers for now and vy 73 de G3DAH.
## COUNTIES OF THE BRITISH ISLES

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For Amateur Radio purposes, the following also score as separate counties and may be claimed as such:

- Alderney
- Guernsey
- Herm
- Outer Hebrides
- Jersey
- Jethou
- Lundy Is.
- Outer Hebrides
- Sark
- Scilly Is.

The two Channel Islands groups—Jersey (GC) and Alderney, Guernsey, Herm, Jethou and Sark together (all GC) also score as separate countries, since Jersey and the Bailiwick of Guernsey (which includes Alderney, Herm, Jethou and Sark) are in fact separate administrations, though all Channel Is. take the same prefix.

Similarly, the Isle of Man (GD) can be claimed as both county and country.

The Scottish counties (GM) will be workable as listed till December 31 this year, though the new county groupings in Scotland—"administrative areas"—came into force this April.
ONCE in a while, one comes across something of wider-than-
typical point in a Club newsletter, justifying some comment in this
space. This month we have two such items in the Chiltern offering.
Perhaps most of general interest is their way of finding-out what
people in the group want, and what sort of people they are in terms of
other hobbies and activities, by way of a thirty-question handout
sent with the newsletter. Even if only a few members are bothered
to answer it, the committee will have an enormous bulk of information
from which, hopefully, they can improve an already
successful outfit.

The second point is that the Chiltern newsletter is quite prepared
to accept and print controversial letters on subjects of national
Amateur Radio interest. One such, in the current Carrier, concerns
the off-hand way they are received at some Club meetings. In most
cases, they have accepted an invitation involving a long journey, often
to comment on complaints reaching us from visiting lecturers about
the easy copy the thing made at high speeds but didn't like the
monitor's clicky output!

It brought people round it like flies round
a jam-pot—even the boss came out of his office and commented on
the easy copy the thing made at high speeds but didn't like the
monitor's clicky output!

On a more serious subject: For some time, we have been intending
to comment on complaints reaching us from visiting lecturers about
the off-hand way they are received at some Club meetings. In most
cases, they have accepted an invitation involving a long journey, often
in the dark—all to find on arrival that there is nobody to meet them.

The Specialists

The first one to appear in this group is the G-QRP Club, which,
with its name implies, caters for the many amateurs who have an interest
in operating with low power rigs. The current Newsletter carries
modification data on the HW-7, aerial tuner details and a very good
article on Aerials, also reprints of various items of interest.

B.A.R.T.G. handles the interests involved with the teleprinter or
teletypewriter used on the amateur bands, by way of technical articles,
details of the contests run in the RTTY mode, advertisements of
special interest to them and so on. Details from G3OZF, as Panel.

The MONTH WITH THE CLUBS

(The deadline for May issue: April 3)

W’est Country

Quite a fat clip from this part of the world, with Yeovil in pole
position. They can be found every Thursday evening at the Youth
Centre, 31 The Park. On April 24 there will be a tape-lecture by
G3IOR on DX Working, Aerials and Propagation.

Hereford assemble themselves into a coherent entity on the first
and third Friday of each month, the venue for this process being the
Civil Defence Hq., Goal Street. We are without details of the April
goings-on, the Newsletter we have to hand not carrying the details that
tell forward. However, they seem, on the evidence of their past
activities, to be a pretty good group.

Now Newquay, who allot alternate Wednesdays to be at Treviglas
School; on April 2 they will be told how to set up a Colour Television,
and on the 16th the talk will deal on the useful art of Printed-Circuit
Photo-Copying—they should put this one on Tape and offer it to
other Clubs! April 30 rounds off the month with a talk on Model
Control by Radio.

Still in Cornwall, just, we have Saltash making a welcome return to
the lists after quite a long silence. G4UZ will be talking to on AGM,
and on April 17 they have a visit to the Planetarium at Plymouth
Polytechnic, starting sharp at 7.45. The normal date would then
be April 18, but this one is given the miss. The Hq. address is
Burraton Toe-H Hall, Warraton Road, Saltash.

April 26 is the big date for Torbay as being the AGM to which all
members are asked to attend. Looking on a bit to May 31, G2WS
will be coming (all the way from Weston-super-Mare, incidentally) to
talk about Plotting Oscar. For more details on the group, try G3UQ,
as Panel.

It seems quite a while since last we heard from the North Devon
chaps, but they are still going strongly, and have just had their fifth
AGM. A slight change in the arrangements is noted in that the second
Wednesday in each month is at G4CG, "Grinnell," High Wall,
Sticklepam, Barnstable, while the fourth-Wednesday session is at
G2FKO, 38 Clovelly Road, Bideford; in both cases the start is timetted
for 7.30.

It is AGM time for April 3 for Carnish, at the SWEB Clubroom,
Pool, Camborne, and they hope it will be followed for the rest of
the evening by a talk on Integrated Circuits by G4CLF, of Penzance.

Midlands Area

Inter-club activity is featured at South Birmingham by way of the
first leg of a Quiz contest between them and the Bromsgrove chaps—
April 2, at Hampstead House, Fairfax Road, West Heath, starting at
8 p.m.

At Worcester even their usually-optimistic newsletter compiler
has to admit the group is doing well—and if the reports on activities
covered in his other pages are taken into account there seems to be
lots of interesting things going on. On April 7 they have provisionally
allocated time for a talk on D/F, and on the 19th they have their
Construction Contest. Normal meetings are held at the Old Pheasant
Inn, New Street, Worcester.

At Derby, normal Club meetings are on Wednesdays at 119 Green
Lane, in Room 4. April 2 features a Surplus Sale; the 9th a talk by
G8AMD on Repeaters; a Film Show is booked for the 16th; and on
the 23rd there is the first D/F Practice. Finally on April 30, they will
be having a "Technical Topics" discussion. In addition, the Club
room is open on Monday evenings for an "Activity Night" when
there are various things being done to the Hq. itself for the benefit of
all, and maybe shortly a Club project if enough interest is shown.

Incidentally, the Derby chaps seems also to be doing the lion’s
share of the work at Nottingham too, for April! April 10 is a Forum
evening, and April 24 is the AGM and presentation of trophies. The
Interference talk on April 3 is by Derby’s G2CVV and the Films
Show on the 17th is by their G3FHY—we can only hope Nottingham
return the compliment! The Nottingham Hq. is at Sherwood Com-
munity Centre, Mansfield Road.

In addition, the Club

West Country

of the I.Q.R.C. will be held over for the month following.

The Specialists

The Specialists

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Please note!

Closing dates for this feature for the next few months will be:
April 3, May 8 and June 5. These are

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main activity comes on. On Easter Monday they are having an outing to Tatton Park near Knutsford, followed by a film show on April 9, and a Surplus Sale on the 16th. Converters for Seventy cem is the topic for the 23rd, and at the other end of the spectrum Top Band transverters appear against April 30.

Spalding have a fine Newsletter thanks to the work of G4QQ; and the Secretary writes in as well to tell us that they are booked in at the Ship Albion on April 4 for a Constructional Contest, while May 2 sees them at their other HQ at the Teachers Centre, Knight Street, Pinchbeck, eliminating, hopefully, Murphy's Law from their Telltale Rally two days later.

On April 15 is Club Night for Solihull Manor House, High Street, for a Junk Sale; and on the very next evening a coach leaves the Civic Car Park at 7.30, headed for the "Glover's Needle" at Warndon, Worcestershire, where they have a buffet meal laid on, with nine-pin skittles against the wives and girl friends.

The Cheltenham (RSGB) Newsletter nearly always has some useful snippets in it, and this time the list of time and copper wire gauges against fuse ratings for various currents between 3 and 100 amperes—ideal for hanging up over the house fuses! The chaps will be at the Royal Hotel, Clarence Street, Cheltenham on the first Tuesday in each month.

Sale Moor Community Centre, Norris Road, Sale is home to the South Manchester formation every Friday; in addition the VHF is the topic for the 23rd, and at the other end of the spectrum Top Band transverters appear against April 30. Here they have bookings on the first and third Wednesdays for a mainly social evening, and the second and fourth Tuesdays for more practical activities, these last being made possible to the building of an extension to the premises.

One is saddened to hear that G3MDW, the long-serving secretary of Northern Heights, has been out of the circuit since last April, due to personal disabilities—but he is back again stirring the gang into life at the Peat Pitts Inn, Ogden. April 2 is the AGM, with a second and fourth Tuesdays for more practical activities, these last being made possible to the building of an extension to the premises.

Strange that there should be so few regular reports from this part of the world, when we know there are so many groups—perhaps the local cannibals eat their scribes! Whatever the reason, we could use more reports from both Northern England and all of Scotland and the Isles.

Our first one almost falls in the Midland group, Bury & Rossendale, where the lads assemble at the Mosses Community Centre, Cecil Street, Bury, on the second Tuesday in each month. At the time of the report nothing had been fixed up in the way of a lecture, but there was a strong hint that something of interest was, as it were, in the pipeline to fill the gap. No doubt G8ECM would be delighted to pass on the latest information—see Panel for his address.

There was a Wigan club just after Hitler's War, but it subsequently foundered; now, however, it has been brought back to life, thanks in part at least to an HQ at Poolstock Cricket Club, in Keates Avenue. Here they have bookings on the first and third Wednesdays for a mainly social evening, and the second and fourth Tuesdays for more practical activities, these last being made possible to the building of an extension to the premises.

Names and addresses of Club Secretaries reporting in this issue:

ACTON, BRENTFORD & CHISWICK: W. G. Dyer, G3GEH, 188 Gunnersbury Avenue, Acton, London W3-5LZ.

BARKING: J. R. Wiles, G3JEQ—address wanted.


BEDFORD: S. Felts, G3FMG, 6 White Lodge Close, Kempston, Beds. (Bedford 852414).

BISHOPS STORTFORD: C. Harlow, G3BTK, Thorn Cottage, Old Head Lane, Hensham, Elsenham, Bishops Stortford, Herts.

BURY & ROSSENDALE: M. Howarth, G8ECM, 11 Worthington Avenue, Heywood (65911), Lancs.


CHILTERN: F. S. G. Rose, G2DRT, 84 Cock Lane, High Wycombe, Bucks. (Penn 4240.)

CORNISH: H. Webster, G3XTF, Crandale, Gillyfields, Redruth (0905), Cornwall.

CRAWLEY: F. Vella, G3WPV, 78 Hurst Road, Sidcup.


DERBY: F. C. Ward, G3CVV, 5 Uplands Avenue, Heywood (65911), Lancs.

EICHELFIELD: A. Wenham, G3ZXA, 28 Pinewood Avenue, Hailsham, Sussex, BN27-1JT.

ENFIELD: G. Claringburn, G8HLD, 49 Fernleigh Avenue, Westcombe Park, Enfield, Middx. (01-902 2570.)


HARROW: C. J. Hoare, G4BUU, 115 Asket Drive, Seacroft, Leeds LS14-1XH.

HARTLEPOOL: G. W. Muller, G3ZQA, 142 Garmouth Road, Hartlepool (32190), Durham.

HUMBERSIDE: A. Robins, G3MDW, Candy Loose, Maidstone (43976), Kent.

KENT: E. C. Palmer, G3FVC, 37 Headington Road, Maidenhead, Berks. (43130).


LEEDS: A. Byers, G4CUF, 2 Beechwood Avenue, Ashbrooke, Sunderland, Co. Durham (542 236). (01-432 2342.)

LONDON: E. J. Golding, G8GDD, 3 Park Street, Cleethorpes, North Humberside. (01-438 2342.)

MAIDSTONE: M. Young, G3YHY, 93 Leaford Crescent, Watford, Herts. (01-529 2282).

MAIDENHEAD: E. C. Palmer, G3FVC, 37 Headington Road, Maidenhead, Berks. (01-432 2342.)

NEWQUAY: B. Yates, G3UQJ, Top Flat, 23 Waverley Road, Newton Abbot (3027), Devon.

NOTTINGHAM: S. F. Claringburn, G8HLD, 49 Fernleigh Avenue, Westcombe Park, Nottingham NG3-6FN. (01-699 6940).

NORTH DEVON: H. G. Hughes, G4CG, Crinnis, High Wall, Sticklepath, Barnstaple, Devon.

NORTH KENT: R. Wells, G4ARQ, 12 Bullbank Road, Belvedere, Kent.

NORTHUMBERLAND: Rev. G. C. Dobbs, G3RJV, 61 Park Street, Cleethorpes, North Humberside, DN35-7NG.

REigate: F. H. Mundy, 2 Conifer Close, Reigate (43130), Surrey.

SALTASH: I. Forse, G4DHA, Penlan, St. Stephens, Saltash (3219), Cornwall.

SILVERTHORN: C. J. Hoare, G4AJA, 22 Old Mead Lane, Henham, Elsenham, Bishops Stortford, Herts. (Bedford 852414.)

SOUTH BIRMINGHAM: R. J. Thompson, G3GZB, 23 Fox Hill, Selly Oak, B29-4AG. (01-472 0333.)

SOUTHDOWN: A. Seaborn, G3ZQB, 6 Hareheating Gardens, Hailsham, Sussex, BN27-1JT.

SOUTHBGATE: B. Oughton, G4AEZ, 48 Morley Hill, Enfield, Middx. (01-366 7106.)

SPALDING: R. Harrison, G3VFR, 38 Park Avenue, Spalding, Lincs. (01-657 3258.)

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

SURREY: S. A. Morley, G3FWR, 22 Old Farleigh Road, Solihull, South Croydon (01-637 3258).

SUTTON & CHEAM: G. Shiel, G4BOX, 26 St. Albans Road, Cheam, Sutton, Surrey.

THAMES VALLEY: R. J. Blasdell, G3ZQN, 2220 High Walls, Wallasey, Cheshire. (01-637 3258.)

TOWNSHIP: A. Wood, G3YEJ, 170 Kestrel Avenue, Yardley, Birmingham, B25-8QX.

WORCESTER: B. A. Jones, G8ASO, 12 Woodside Road, South Birmingham, B25-8QX.

WIGAN: A. Byers, G4CUF, 2 Beechwood Avenue, Ashbrooke, Sunderland, Co. Durham (542 236). (01-432 2342.)

WIGAN: K. R. Cass, G3WV, 4 Heworth Village, York.

WAKEFIELD: S. F. Claringburn, G8HLD, 49 Fernleigh Avenue, Westcombe Park, Wakefield, WF2-9PR.

WIGAN: A. Byers, G4CUF, 2 Beechwood Avenue, Ashbrooke, Sunderland, Co. Durham (542 236). (01-432 2342.)

WIRRAL: H. I. Crofts, G3DLF, 3 Barnmouth Way, Wallasey, Cheshire. (01-637 3258.)

WOLVERHAMPTON: M. Howarth, G8FGR, 12 Woodside Road, Lichfield, Staffordshire (254 256). W3S-2EG.

YEVEL: D. L. McLean, G3NFO, 9 Cedar Grove, Yeovil.

YORK: K. R. Cass, G3WV, 4 Heworth Village, York.
there is a social evening with wives and girl-friends. It should be mentioned that G3MDW conducts all his activities from a wheel-chair.

Wakefield have a regular booking at the Youth Centre, Ings Road. For April, the dates are April 15 when they have an AGM, and April 29—this latter has the intriguing title of "See How They Run" and the exact details are a closely-guarded secret of G3WWF, the only clue being that it will be, at least loosely, connected in some way with radio! Be there to find out!

Hull also have a connection with Ings, in the address of their secretary, G8GDD—see Panel. One wonders to what it refers, as Hull and Wakefield are by no means near neighbours. However, to business. The Hull group Hq. is at 592 Hessle Road, and here they have, on April 4, a talk by G8IED on Easy Test Equipment. G3PQY takes over for the 11th, to talk about the "Elements of Condensers"—no doubt these are for turning steam into water! Back to G8IED on April 18 for a talk on Electro-plating, and on April 25 the activity known as VLF (Very Low Frequency communication) will be explained by G3WWD.

Up at York the lads have been doing quite a bit in the way of extra-mural activities, the latest being a trip to the theatre to see G2DQS, Brian Rix, perform. For the current detail we have to refer you to G3WVO, see Panel, albeit the letterhead tells us that the venue is at the British Legion Club, 61 Micklegate.

The main item for April at the Star Club in Leeds is on April 16, and is a Junk Sale, but they forgo every Wednesday evening at the Star new Instal, Bramley Street West, Bramley, Leeds 3.

By the time this comes to be read the West of Scotland group will have ceased to be able to use their normal Hq. This being the case, before any attempt is made to go to any of their meetings, a contact should be made either with Graham Bleakley on Cumber-

A crew who rarely if ever miss our 'bus as far as publicity goes are Verulam, who entertain G4CLF of Plessey on April 16, at the Market

British Red Cross Hall, The Crescent, is where the Maidenhead group get together. On April 3 they have a panel on Operating Procedures and on the 15th G3DOJ will be talking about Simple Receivers and Converters.

At Acton, Brentford and Chiswick they have G3CCD discussing the first part of a Digital Frequency Meter he has designed. This is on April 15 at 66 High Road, Chiswick.

We have a surprise by the Crystal Palace Newsletter this month— for the first time your conductor can remember Secretary G3FZL says that the detail for April 19 is "to be announced." Nonetheless, we know the date, and the venue is, as always, Emmanuel Church

Barry Road, London S.E.22.

Bishops Stortford will be getting together as usual on April 21, at the British Legion in Windhill, but the detail is not yet available.

To Southgate where our current issue of the Newsletter is pretty well behind with the news!(-) giving as it does the January and February dates. Not to worry though, as it also says that there is a regular routine, namely to assemble at the Scout Hut in Wilson Street, Winchmore Hill Green. Any more details which may be wanted can be obtained by contacting G4AEZ, as Panel.

Bedford's secretary has been away from home for a while and so got a bit out of routine; but he didn't forget, which is the main thing, so we can say that it is a weekly get-together, each Thursday evening in the United Services Club, on The Broadway.

For Silverthorn, the current Newsletter is on a historical kick at the moment thanks to material from G2HR—how many of you readers could draw a Flewelling circuit or even say what it was used for? This old scribe could! They get together on a weekly basis at Friday Hill House, Simmons Lane, Chingford, the shack being inside the tower, with the two-metre aerial and rotator on top. For those evenings are the ones to keep clear in your diary, and G4AJA (as Panel) should be contacted for the very latest gen.

There are plenty of things going on at Barking: on Mondays to Thursdays in each week the Hq. is open, at Westbury Recreation Centre, Westbury School, Ripple Road. Mondays for construction, Tuesdays for Morse tuition, Wednesdays for the Club station, and the meeting proper on Thursdays. This suggests a nicely-balanced programme.

April 22 is the AGM date for Sutton & Cheam, the venue being the Library, Cheam; in addition we hear they are thinking of running an informal session during April, which is something that G4BOX, see Panel, can no doubt explain if you contact him.

North Kent folk please note: The group has changed Hq. and is now to be found at St. Mary's Institute, 2 North Cray Road, Bexley, right opposite St. Mary's Church on the bend of the road; it is a converted house with the front door right on to the pavement. Get into Bexley village, bear left in the village and almost immediately right again into the public car park. The Hq. is a couple of hundred yards away, past the garage and the Old Mill restaurant. The change of Hq. has not made any changes needful in the routine, which is still to be together on the second and fourth Thursdays of the month.

Reigate have their AGM on April 29 at St. Mark's Church Hall, Alma Road. This is preceded on April 1 by the informal at the "Marquis of Granby," Hooley Lane, Redhill, and the annual dinner and dance on the 11th. Further details on any of these can be obtained by getting in touch with the Secretary—see Panel.

This is the ambitious title of the group based in the Hampron Court area, the venue being the small room at King George V Hall, Portsmouth Road, Esher, and the date the first Wednesday in every month; April's subject is Printed Circuits, by G3JJP.

For Chiltern we see the dates are to be April 1 for the Informal, and April 23, for which a programme was arranged at the time they wrote. The main item for April is the first part of a Digital Frequency Meter he has designed. This is on

April 3 and 17 are the dates for Stevenage, at the Hawkere Sideley Dynamics Works, nothing being said about a programme which this old scribe knows is in the makings. But there is an intention to run a trip to the Drayton Manor Rally "for a lot of goodies," as their schedule has it.

You can't go much further south than Southdown without swimming. They having their Hq. at the Victoria Hotel, Latimer Road, Eastbourne, on the first Monday in each month—for April G8CVV and G8CFZ will tackle the question of Aerials and Propagation. A look forward to May shows them to be running the Annual Junk Show.

Surrey look to have the third Tuesday as their regular date at the "Ship Inn," High Street, Croydon, and April turns out to be the most important of the year, namely the AGM. Don't miss it!

"Still booming" says Maidstone YMCA's secretary, G4BNI, his beginners' class now having been augmented by a couple of YL's; and the meeting turnouts are up, too. For the April 4 meeting, the subject is SS/TV, starting at 8.30 p.m. On the 11th there is the usual Beginners' evening under G3XUN, and on the 18th a discussion on the Club Mobile Rally takes up all evening; and on the 25th, G3XUN and his beginners have the limelight again. Venue is Maidstone "Y" Sports Centre, Melrose Close.

Weekly is also the situation at Harrow, in the Sea Cadets Hq., Woodlands Road, Harrow. G3HB will be talking about Awards on April 4, and April 25 is down for G2UV to discuss "The Sounds of the Year," which should be of considerable interest; the other two evenings, April 11 and 25, are both Practicals.

After "dropping off" a bit recently, the latest Echelford Newsletter is right back in form, with a bit of technical stuff, a bit of controversy, and a lot of pages-play, page 1 in particular. Right at the top of page 1 is the look for the details—second Monday and last Thursday in each month, the Hq. being at St. Martins Court, Kingston Crescent, Ashford, Kent. Report热带ics please note: The group has changed Hq. and is now to be found at St. Mary's Institute, 2 North Cray Road, Bexley, right opposite St. Mary's Church on the bend of the road; it is a converted house with the front door right on to the pavement. Get into Bexley village, bear left in the village and almost immediately right again into the public car park. The Hq. is a couple of hundred yards away, past the garage and the Old Mill restaurant. The change of Hq. has not made any changes needful in the routine, which is still to be together on the second and fourth Thursdays of the month.

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For this month's Reader Small Advertisements, see pp. 112-118

NEW QTH's

This space is for the publication of addresses of holders of new callsigns, or changes of address, in EI, G, GC, GD, GI, GM and GW of stations not already listed. All addresses published here will appear in the U.K. section of the American "CALL BOOK" in preparation. Please write clearly and address on a separate slip to QTH the American "CALL BOOK" in preparation.

For this month's Reader Small Advertisements, see pp. 112-118
Are you interested in buying top performance VHF or UHF equipment? Then look no further!...

144 MHz Mosfet Converters

We offer the only professionally specified converter for use with modern highly accurate 28-30 MHz receivers. 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.

MMC 144/28 Price £16.42 inc. VAT
MMC144/28 LO (with 116 MHz output) Price £17.60 inc. VAT

**SPECIFICATION**

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<th>Noise figure : 2-8 dB max.</th>
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<td>Frequency error at 144 MHz : 3 kHz max.</td>
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<td>116 MHz o/p power : 5mW min (LO o/p version)</td>
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We have extended our popular range of single conversion converters to include the following I.F.s : 9-11, 12-14, 14-16, 18-20, 24-26, 27-7-29-7, 28-30 MHz.

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This unit was developed to meet the heavy demand for a converter suitable for use with receivers having better performance at lower frequencies. It uses two dual-gate mosfet mixers, both fed from the output of a 70 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.

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144 MHz Preamp (2 outputs) ... £9-72
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- 2m. pre amp  ... £7.36 (25p)
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- 70cm. pre amp. ... £7.97 (25p)

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- Reducers
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106 THE SHORT WAVE MAGAZINE April, 1975
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THE SHORT WAVE MAGAZINE

Volume XXXIII

Radio Component Suppliers

25 THE STRAIT . LINCOLN . LN2 1JF
Telephone: 20767

VHF-UHF FET's type BF 256A 800 MHz at 25p each. 5 for £1.10.
BB121A TUNING VARACTORS. 15p each.
DUAL GATE MOS FET's type 40061 at 50p, 40063 at 50p, 40673
10p, PIEM BT (40673) at 80p.
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PLASTIC NPn-NPN MIXED TRANSISTORS. 85% good.
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Tuners at 10p.
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BY 103 1300 PI1 1 Amp SILICON DIODES at 15p each.
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SUB-MINIATURE CERAMIC TRIMMERS. 4-7 to 20p at
3 for 10p.
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WIRE ENDED 1000uf 30v.w. CONDENSERS at £3 each.
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BF271
LARGE PACKET OF MICA WASHERS. For semi -conductors
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UHF STRIP LINE 2 GHz TRANSISTORS like BFR90 at £3.
SANYO 15 Watt AUDIO MODULE with data at £3.
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All at 5p each.
SUB-MINIATURE ROTARY SWITCHES. Small spindle,
2 pole, 5-way, 2-bank at 22p ; 1 pole 6-way at 15p.
1000pf 500v.w. TUBULAR CERAMICS, 15p. doz.
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All at 15p each. 3 for 35p.
365pf 3 Gang TUNING CAPACITORS. Size : 22 x 8 x 13
at 66p.
1 Watt AUDIO I.C. type TAA 611B with data at 65p each.
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2N 706A, BSY 95A, BC 213L, BC 214L, Lockfit types BC 147,
BC 148, BC 149, BF 195, BF 196, BF 197. All at 6 for 50p.
50 ASSORTED MULLARD CAPACITORS. Consisting of
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See August Rad. Comm. for a review of this equipment

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**SENTINEL X DUAL GATE MOSFET 2 METRE CONVERTER**

A de luxe version of our Sentinel converter, containing a mains power supply or external battery operation. It has front panel R.F. gain control. Technical data is the same as the Sentinel. Size: 5" x 11/2" front panel, 4" deep. Stock IF's: 2-4 MHz, 4-6 MHz, 28-30 MHz. Price: £21-00. Ex stock.

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Ex stock

The kit is supplied with printed circuit board drilled and all coils mounted to make it in as simple to fit the complete unit is 1/16" thick. All components, metalwork, nuts and bolts etc. are supplied. Performance is the same as our Sentinel converters. Price £11-00. If it doesn't work, send it back with £2 and we will fix it for you.

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COLLINS RF/IF AMPLIFIER UNIT all permeability tuned, 2-25 MHz. 2X2 RF stages 5749's, first and second mixers 5750's, 5749 first tuned IF 2-75 MHz, IF output 250 kHz. First and second TX mixers 5750's, tuner and multiplier 5654's, drivers 2 S666's. 4 tuned circuits at signal frequency. Power required, 250 volts HT, 24 volt heaters. With circuit. Size : 6 x 7 x 8

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IC-210

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IC-210 STILL AVAILABLE AT THE AMAZING LOW PRICE OF £200.00 + VAT

We are still able to offer the IC-210 at this bargain price although this situation is not likely to last much longer. If you are thinking of taking advantage of this offer we would advise you to act quickly or you may be too late. The 210 is fully VFO on both transmit and receive and is stable as a rock because it uses a special phase-locking technique whereby the 11 MHz superbly built VFO is not multiplied. In addition 3 spot crystal frequencies can be used (145 MHz is already fitted). The Duplex facility automatically drops the Tx frequency by 600 kHz and introduces a tone-burst thus making the rig usable through all proposed UK repeaters. Operation is from built-in mains PSU or 12v. neg. earth. A built-in 50 kHz crystal calibrator and centre-zero meter makes netting easy and accurate.

IC-225

This superb 80 channel FM mobile transceiver is becoming extremely popular. It uses a phase locking technique giving 80 channels at 25 kHz spacing all packed in a case 58 mm. x 156 mm. x 247 mm. Other “in-between” channels can be obtained by use of another crystal (e.g. 144-48). The same Duplex facility as that used in the 210 is fitted and a tone burst is automatically inserted when switched to “Repeater.” Thus the IC-225 can be used on all proposed UK repeaters without having to buy further crystals. The price is £195 + VAT.

IC-22. The IC-22 is the ideal low-priced mobile rig for the man who prefers to increase the number of channels he has available by buying extra crystals when he can afford them. It comes fitted with an automatic tone burst which operates only on selected channels, i.e. those fitted with repeater crystals, without having to turn any switches or press buttons at the right time while driving at 70 m.p.h. When operating on simplex channels the tone burst is automatically switched out. It has a total capacity of 22 channels and comes fitted with SO, S20 and S22 included in the purchase price of £109.26 + VAT. At the time of going to press we have crystals in stock for all the UK repeater channels at £4.00 per pair + VAT. The receiver sensitivity is excellent (0.4uV for 20 dB quieting) and the audio quality and clipping ideal for both repeater and simplex working. We check all our transceivers before dispatch and set up the deviation correctly. You won’t be making a mistake by getting a 22 if you can’t afford a 225—ask anyone who has one.

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Wanted: Eddystone 770R receiver in good condition. - Ring Western Electronics, Southampton 27464.

Amidon Europe: All toroid cores and ferrite beads in stock, sizes 0.25 to 2.0 in., mix two/six and others. Send one IRC for price list. - E. Ruchmann, c/o DJ7PO, Im Heldenrecht 9, 76-07 Offenburg, West Germany. No minimum on orders, we deliver all over Europe, and you can write in English, French or German.

Moset Front-End Converser: Input 118-150 MHz, output at 10.7 MHz. Send £9.85 (includes VAT and post/packing) to: Reedhampton, Ltd., 182-184 Addington Road, Selsdon, Surrey, CR2 8LB.

JR-310 Owners: Top Band conversion kits, £6.99. Xts for 29.5 to 30.1 MHz, £3.30. Mechanical filters, CW or SSB, £16.00. Suitable headphones, £5.50. All post and VAT paid. - G3LLL, Holdings, 39-41 Mincing Lane, Blackburn, Lanes., BB2 2AF. (Tel: 595959/6).

Microphone Bargains: VAT and post paid. Shure 444, £13.99; Shure 201, £4.99. Aco inserts, two for £1.75. FR-101 and FT-101, get them at Holdings, the RF Clipper people. G3LLL, Holdings, 39-41 Mincing Lane, Blackburn, Lanes., BB2 2AF. (Tel: 595959/6).

Hand-Portable FM Two-Metre Equipment: A limited quantity of G.E. equipments will be available within the next 3-4 months. To gauge your interest, please send s.a.e. for details. Price will be in the region of £35. - J. D. Harris, G3LWIV, c/o R.S.L. Components, 52 Silver Street, Stansted, Essex.


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May Issue: Due to appear April 25. Single copies at 40p post free will be sent by first-class mail for orders received by Wednesday, April 23, subject to supplies being available. - Circulation Dept., Short Wave Magazine Ltd., 55 Victoria Street, London, SW1H 0EH.

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For Sale: Swan 500CX with power supply and external CW/SSB audio filter control unit, excellent condition, £250 the lot. Also brand new Nombrex 42 signal generator, £15. — Ring Goodbody, 01-592 7800. Selling: Property of the late G4TZ: Drake R4-B, £150; 50-ft. lattice mast with guys and TR-44 rotator and control unit, £45 or near offer; Type TT/L-2 RTTY terminal unit as shown on p. 5-15 of “Teleprinter Handbook”, £50; Creed 54 teleprinter with perforator, £20; or ditto without perforator, £15. 60-plus-80 PSU, £5; Teletype TD-14 tape sender, £8; Type 85R printing perforator, £8; K.W. dummy load, 75-ohm, £3; DX-100U transmitter stripped for RTTY, £25; ATE FS keyer FSK-2, £9; Fye PTC-331 two-metre base station Tx, £12-50; Withers converter, RTTY, £25; ATE FS keyer FSK-2, £9; Pye PTC-331 load, 75-ohm, £3; DX-100U transmitter stripped for RTTY terminal unit as shown on p. 5-13 of “Tele-7800. 42 signal generator, £15.—Ring Goodbody, 01-592 7800. Condition, £250 the lot. Also brand new Nombrex external CW/SSB audio filter control unit, excellent condition, £4.—Ring Harper, Hatfield 71310 (evenings).


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For sale: Eddystone 770 R VHF receiver, working order but requires re-alignment, otherwise excellent condition, with spare valves and manual, £35. Buyer collects. —Sayers, G8YKE, 13 Hodgeberon, Ironbridge, Telford, Salop.

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May Issue: To appear April 25, single copies at 40p post free will be despatched first class mail on receipt from printers. Orders by April 23, with remittance to: Circulation Dept., Short Wave Magazine Ltd., 55 Victoria Street, London, SW11-0HF.

Going QRT: For Sale: KW-2000E with AC/PSU and Shure 201 mic., K.W. low pass filter, KW-103 SWR/Powermeter, all in very good condition (transceiver recently serviced by K.W.), £225 or near offer. “Electronic Developments” Magnum-Two 2m. transverter, brand new, not used, £75; will sell with the transceiver plus all leads etc. for transverter connections for £290, or near offer. 18AV/1W antenna, little used, £28. Liner-2 PSU, unused in original box, £13. Creed 7B teleprinter with stacks of paper, £5; Heathkit “Cantenna” kW. dummy load, £5. Brand new 8/8-ele 2m. antenna, £10, 6-ele 2m. antenna, £2-50. Pye C.A.T. general coverage receiver Type PM-128, 50 kHz-31 MHz in 8 ranges, with PSU, leads, speaker and handbook, all in very good condition, £75. Home-built 2m. pre-amplifier, £1. “G8ARV” 400 mW exciter Tx, £2. Lead-acid accumulator, 12v. (ideal Pye Vanguard or Cambridge PSU), £2. AM-25T handbook, 50p. Two-metre 5-ele cubical quad antenna, brand new, £8. 320 PA valve, new, £1-50. Muirhead valve — Maintained Tuning Fork, Type D68-A (ex-R.A.E. Farnborough), £3. Free receiving station log book to any SWL who comes and collects it.—Phipps, G4DIC, 47 Dean Road West, Hinckley, Leics. (Tel: Hinckley 36811 weekends; Northampton 30857 evenings, Mon.-Fri.; Northampton 31595 daytime, Mon.-Fri., and Sat. mornings.)

Sell or Exchange: Yaesu FT-200 with power supply and microphone, little used and as new, £190. Or Exchange for “Seavoice” marine VHF transceiver.—Davies, Torre Hill Cottage, Ivybridge, Devon.

Sale: Trio TL-911 linear, three hours use since new last September, £125.—Robinson, G2KF, QTHR. (Tel: 072-681 2337).

For Sale: FT-101B with FV-101 VFO, as new, with extras, £550.—Holland, G3GHS, 01-399 6293. (Surrey).

Setting: Eddystone EC-10 Mk.II general coverage receiver, with Type 924 AC/PSU, in excellent condition, £70.—McRobie, Burley Cottage, Upper Ashe, Overton, Hants. (Tel: 025-674 421).

Selling: Viceroy Mk.IV transmitter, beautiful condition, £80. Dow-key coax relay, unused. Offers please?—Wyatt, G3BRW, 17 Harbour View Road, Northampton 31595 daytime, Mon.-Fri.; Northampton 30857 evenings, Mon.-Fri., and Sat. mornings.)

For Sale: Microwave Modules two-metre converter, IF 2-4 MHz, six months old, hardly used, £10.—Ring Dallaway, Abingdon 29079.

Read This: Wanted VHF receiver, 50-150 MHz minimum coverage, e.g., old S.27 or similar. Will collect reasonable distance. Also wanted, references and handbooks on antennas.—Ring Payne, G3KCR, Crowborough 61782 evenings.

Sale: 9R-59DS Rx, boxed, in original condition and barely used, with manual, OA-2 and speaker, £40 plus carriage.—Derrick, 22 Spring Gardens, Rayleigh (762605), Essex.

Selling: PCR Rx with internal PSU and BFO, £12-50. Buyer collects or carriage extra. Auto-transmitter, 100w., 0-200-215, 230, 245v. input, 0-10, 25, 115v. output, £2-50 inc. carriage UK.—Ring Hattersley, G3PNJ, Chesterfield 6040 after 6 p.m.
**Volume XXXIII**

**THE SHORT WAVE MAGAZINE**

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**Offering**: Collins KWM-2 with Walters rejection-tuning; also 312B-5 console; late round-emblem series.—Caw, G4ALV, QTHR. (Tel: 01-460 3852).

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**For Sale**: Eddystone EC-10 Mk.1, with battery and mains PSU, excellent condition, £47.—House, 10 Leach Close, Kenilworth (54556 after 6 p.m.), Warks.

**Sale**: FT-2FB 2-metre transceiver, eight months old and little used, nine channels fitted, J-Beam ½ whip, £110.—Powell, G8BPK, QTHR. (Tel: Aylesbury 630600).

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