

DECEMBER
1975

35 PENCE

Vol. XXXIII
No. 10

THE
**SHORT
WAVE**
MAGAZINE

**WORLD WIDE
COMMUNICATION**

FOR THE RADIO AMATEUR AND AMATEUR RADIO

TRIO

All band receiver QR666

Listen to the world on LW, MW and all
short wave bands from 160m. to 10m.



The QR-666 meets all requirements set for modern all-band all-mode receivers, and its outstanding performance will convince every serious radio amateur or SWL. Its special features: advanced solid-state circuitry, outstanding input sensitivity and selectivity, multiple receiving modes, simple operation controls, high reliability, modern design and an attractive price.

Modern Solid-state Circuitry—guarantees instant operation without warmup time and optimum stability. A total of 20 transistors and 24 diodes is employed, including FET's in the front end, mixer and buffer circuits which account for the excellent input sensitivity, cross modulation and spurious response and for distortion-free, crisp and clean reception of even the weakest signals. It doesn't matter whether you listen to an expedition transmitter station in the antarctic, an amateur radio station in South America or to Radio Luxemburg, reception is always perfect and a real pleasure.

Worldwide Reception—The QR-666 features a total of six receiving ranges: LW from 170 to 410 kHz, MW (BC) from 525 to 1250 kHz, four continuous shortwave ranges from 160m. to 10m. (1.25 to 30 MHz) covering all important radio amateur bands and commercial shortwave bands from 75m. to 11m. A special bandspread dial scale facilitates precision tuning of radio amateur stations in 500 kHz band sections. An optional FM Tuner QR-6FM covering the standard FM broadcast band from 88 to 108 MHz can be installed any time with minimum wiring work.

For serious broadcast band users, the QR666 can be supplied with the bandspread dial calibrated for all the international shortwave broadcast bands.

Exceptional Receiving Quality—The multiple-tuned front end with FET complement guarantees an input sensitivity of $1 \mu\text{V}$ on the 80m. band in AM, SSB and CW mode, $3 \mu\text{V}$ in the MW and LW range and $5 \mu\text{V}$ in the FM range. Careful selection of interstage coupling and ceramic filters in the IF stage account for the QR-666's excellent selectivity and image ratio.

All-mode Reception—The continuously adjustable BFO allows reception of SSB and CW stations. Now you can listen into the conversations between radio amateurs from all over the globe—maybe this will stimulate your interest in the fascinating world of shortwave radio and sooner or later you'll become a radio amateur yourself. Commercial shortwave stations usually operate in the AM transmission mode. The QR-666 takes advantage of that and features a special AM noise limiter which eliminates undesirable interference and assures perfect reception of commercial shortwave stations from all over the world. The broadband LW range not only covers Droitwich Radio on 200 kHz, but also ships at sea, shorebound naval stations, beacons, etc.

Full Range of Extras—Large, easy-to-read drum-type dial scales for coarse and bandspread tuning; illuminated S-meter; pushbutton switches for mode and range selection (AM, ANML, SSB/CW, FM and FM/AFC with automatic frequency control); factory-wired adaptor for fast and easy installation of the optional FM Tuning Attachment QR-6FM; RF and AF gain controls; provisions for installation of the optional 500 kHz crystal marker generator QR-6MK for fast and accurate dial calibration; built-in speaker and output jack for extra speaker or earphones; automatic switching from line to battery operation and vice versa with dial light dimmer; choice of line operation with 110/240v. AC, 50-60 Hz or battery operation either from external 12v. DC battery or eight built-in 1, 5 volt "D" cells.

If you are a keen SWL or a radio amateur newcomer—the QR-666 is exactly the right all-band all-mode receiver for you.

Sole Importers: LOWE ELECTRONICS
Cavendish Road, Matlock, Derbyshire
Tel.: Matlock 2817 or 2430

QR666 £130 (VAT exc.)



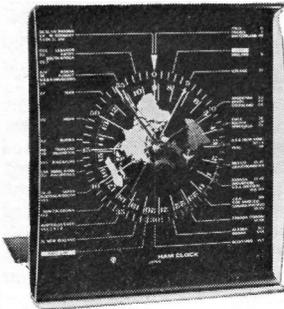
TRIO

LOWE ELECTRONICS



TRIO FOR IDEAL CHRISTMAS GIFTS

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.

POWER HANDLING	1 kW
CUT OFF FREQUENCY	30 MHz
STOP BAND ATTENUATION	90 dB
INSERTION LOSS	1.5 dB at 30 MHz
IMPEDANCE	50-100 ohms
CONNECTORS	SO239/PL259
DIMENSIONS (mm)	224 x 50 x 40

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.

POWER HANDLING	50W continuous
PASS BAND	144-146 MHz
STOP BAND ATTENUATION	90 dB
INSERTION LOSS	1.5 dB
IMPEDANCE	50 ohms
CONNECTORS	SO239/PL259
DIMENSIONS (mm)	150 x 50 x 50

PRICE: £8 (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/50kΩ 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.

POLAR PATTERN	Cardioid
FREQUENCY RESPONSE	300 Hz-9 kHz
SENSITIVITY	-76dB at 600Ω -56 dB at 50 kΩ

(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.)

THANK YOU FOR YOUR CUSTOM DURING 1975. WE AT LOWE ELECTRONICS HOPE THAT YOU MAY HAVE A HAPPY CHRISTMAS AND A PROSPEROUS NEW YEAR.

HEAD OFFICE 119 Cavendish Road, Matlock, Derbyshire. Tel. 2817 or 2430 9 a.m. to 9 p.m.
BRANCH OFFICES 39 Pound Street, Carshalton, Surrey. Tel. 01-669 6822
 Soho House, 362-4 Soho Road, Handsworth, Birmingham. Tel. 021-554 0708
AGENTS Alan GW3YSA, 35 Pen-Y-Waun, Efail Isaf, Nr. Pontypridd. Tel. Newton Llantwit 3809
 John G3JYG, 16 Harvard Road, Ringmer, Lewes, Sussex. Tel. Ringmer 812071
 Sim GM3SAN, 19 Ellismuir Road, Baillieston, Nr. Glasgow. Tel. 041-771 0364

OPENING HOURS: 9-5.30 TUESDAY TO SATURDAY INCLUSIVE

73 from BILL G3UBO/VE8DP, ALAN G3MME, JOHN G3PCY/5N2AAC, IAN G3ZYC

RUTLAND COMMUNICATION FACTORS LIMITED

uniden 2020



We are proud to introduce the very newest in all band, all mode transceivers—the UNIDEN Model 2020. This is an all new rig with a refreshing new approach to amateur radio activity. Fully self contained for operation on AC mains or 12v. DC mobile the 2020 uses the very latest design techniques to give superlative performance. Plug-in modules for reliability, optimum circuit isolation and easy servicing.

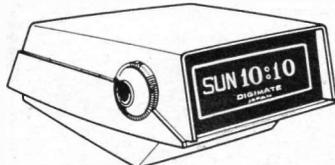
- * **FULLY SELF CONTAINED** The 2020 has built-in AC/DC power supplies, CW filter, noise blander, marker oscillator and PA blower.
- * **NEW DIAL READOUT** An original combination of digital and analogue displays giving direct readout without counter noise problems.
- * **RUGGED PA** Uses a pair of 6146B tubes with stabilised screen supply and amplified ALC system.
- * **SUPERB CROSS MODULATION AND IMAGE REJECTION** Receiver is pre-mixed single conversion using a phase locked loop oscillator circuit. It has excellent signal handling characteristics and uses three filters for USB, LSB and CW.
- * **INDEPENDENT RF CIRCUITS** Transmitter and receiver RF circuits are electrically separate providing no-compromise performance.
- * **DUAL RIT CONTROL** Giving two tuning rates for quick scanning or very precise fine tuning—a UNIDEN exclusive feature.
- * **PRICE** Model 2020 £430 (VAT exc.). Matching VFO £82 (VAT exc.).

OTHER PRODUCTS

As well as the exciting new UNIDEN range of equipment, we offer the complete NIHON DENGYO line of SSB and FM, amateur and marine transceivers and receivers; HALLICRAFTERS products; TONO linears; valves; crystals, filters; station accessories; Hy-Gain antennas; RAK antennas; plugs, sockets and cable; in fact everything that a radio amateur may require.

2 RUTLAND STREET, MATLOCK, DERBYS.

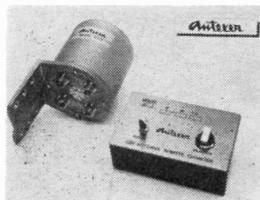
 * We take this opportunity of wishing you
 * **CHRISTMAS GREETINGS** from
 * and make a few suggestions for Christmas gifts
 * *****



CASLON CLOCKS (Post/VAT paid)
 222 24 hour digital
 601 24 hour day-date digital

DIGIMATE 102 BATTERY CLOCK
 £9.72 (nc. VAT)

This operates for about 6 months on one battery (provided). Ideal Christmas present for the shack or XYL. Available in red, blue, orange, ivory and brown; list your choice in order of preference.



ANTEXER AC-3 HF-VHF switch £45.63 inc. VAT
 ANTEXER AC-3DX HF-UHF switch £53.75 inc. VAT

NEW! AC-3 Remotely operated Antenna Switch
 No extra cables required! The AC-3 enables one of 3 antennas to be remotely selected using a single co-axial feeder. No multi-core cable is required. Handles 500w, pep up to 150 MHz. Connectors: UHF. Without doubt this is the best 3-way remotely operated switch we have ever seen.

WE ARE PLEASED TO ANNOUNCE THAT

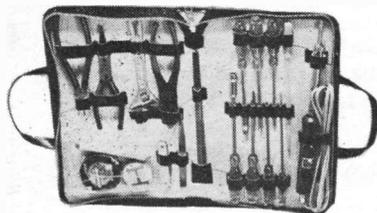
DRAKE EQUIPMENT

IS NOW AVAILABLE FROM US CARRYING OUR EXTENSIVE AFTER-SALES SERVICE

R4C Receiver	£380.00	AC4 AC psu for T4XC	£80.00	SSR1 Receiver	£225.00
T4XC transmitter	£395.00	M54 Speaker for R4B	£18.75	TR4C Transceiver	£410.00

HOZAN TOOLS

A superb range of high quality tools for home and industry. All prices inc. VAT, postage. Orders under £2 add 50p small order surcharge



S10 ELECTRO TOOL SET

D52 Screw-Holding Screw Driver, Small type	37p	K88 Hand nibbling tool	£3.74
DS3-00 Screw-Holding Screw Driver, Phillips type	39p	K130 Sheet metal bending machine	£17.10
D53-0 Screw-Holding Screw Driver, Phillips type	44p	P71 Wire crimping and stripping tool	£4.32
D75 Screw Driver Set, built-in testing lamp	£1.73	S4 Electro tool kit	£11.99
H3 C.R. Puller	£1.08	S5 Electro tool kit	£17.87
H9 De-Soldering Tool	£1.30	S6 Electro tool kit	£14.09
H72 Heat Sink	33p	S7 Shoulder tool kit	£22.73
H74 Nest of Solder Aids 3pcs.	£1.30	S10 Electro tool kit	£19.82
K81 Chassis punch set, 16, 18, 21, 25 and 30mm. in case	£6.48	S22 Electrician carrying tool set	£23.33
		S25 Electrician carrying tool set	£17.60
		S56 Electrician carrying tool set	£43.74

WESTERN FOR TEST EQUIPMENT

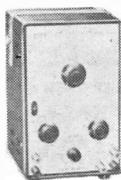
SEE LAST MONTHS ADVT. FOR FULLER DETAILS

VALVE VOLTMETER, TE-65



*With new 6" full-view meter
 *Compare it to any peak-to-peak V.T.V.M. made by any other manufacturer at any price.
Specification: DC V: 0.1-5-15-50-150-500-1500v. (using HV Probe, up to 3kV). AC V: 0.1-5-15-50-150-500-1500v. RMS. 0.1-4-4.14-40-140-400-1400-4000P-P. Resistance: Rx 10-100-1K-10K-100K-1M-10M (0.2Ω-1000MΩ). Decibel: -10dB to +65dB. Power source: 105-125, 220-240v. AC, 50/60 Hz. Tube Complement: 12AU7, 6AL5.

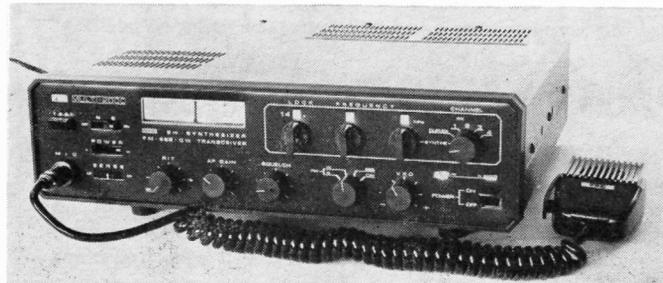
RF SIGNAL GENERATOR, TE-20D



*Factory calibrated and tested
 *Dual output RF terminals
 *Separate Variable Audio Output
Specification: Freq. range: 120 kHz-500 MHz (7 bands). Freq. accuracy: ±2%. Audio output: to 8 volts. Internal modulation: 400Hz approx. Tube: 12BH7A, 6AR5. Power source: 105-125v, 220-240v. AC, 50/60 Hz. 12 watts. Employs a Xtal socket and can be used as below: (a) Self-calibration. (b) Marker generator.

TEST EQUIPMENT PRICES
 (including P. & P. and VAT)

SE-250B Injector	£3.24
SE-250A Tracer	£16.96
SE-360 Tracer/Injector	£19.17
SE-6850 Generator	£46.44
TE-15 G.D.O.	£27.00
TE-20D R.F. Generator	£27.00
TE-22D A.F. Generator	£35.64
TE-40 AC Millivoltmeter	£37.80
TE-65 V.T.V.M.	£37.80
TE-68 Insul. Tester	£48.60
TO-3 Oscilloscope	£91.80



THE FDK MULTI-2000

2m. SSB/FM, CW 200 Ch. SYNTHESISED AC/DC TRANSCEIVER

- * Full cover 144-6 MHz.
- * VXO gives full coverage between 10 kHz spacing.
- * Rapid change of frequency and mode is possible.
- * RIT (Receiver Incremental Tuning) allows receiver to be tuned without moving the transmit frequency.
- * 600 kHz Repeater shift works on all frequencies.
- * Tone access built-in.
- * Fitted narrow FM Filter.

SUPERB VALUE AT £362.50 inc. carriage (Securicor) and VAT

CHRISTMAS HOLIDAYS — CLOSED DECEMBER 24th-28th INCLUSIVE

Western Electronics (UK) Ltd

Agents: IAN PARTRIDGE, G3PRR, CHESHAM, BUCKS. (02405) 4143
 ALAN CAMERON, G130GJ, ALLOA (02592) 4653

Hours of business: 9.15 - 5.00, 9 - 12.30 (Saturdays)

1-3 WEST PARK RD., SOUTHAMPTON

TELEPHONE: SOUTHAMPTON 27464

CABLES: WESTRONICS, SOUTHAMPTON

TELEX: 47388 WESTRONICS



How to avoid getting yet another bottle of after shave for Christmas.

1 Send for the latest Heathkit catalogue. It'll cost you 10p for postage, but if it only saves your bathroom shelf from collapsing under the weight of after shave, it'll be worth every penny.

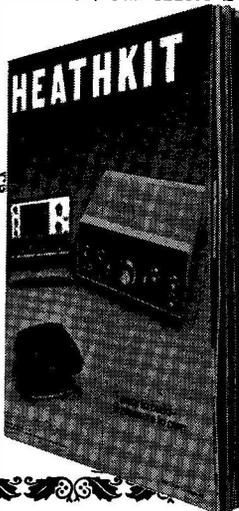
2 Flick through the catalogue and decide what you'd like for Christmas. This could take a little while as there's a vast range to choose from.

3 Put a ring round any item that takes your fancy. You could also try adding a subtle comment such as: 'This is just what I've always wanted.'

4 Leave the catalogue open in a fairly inconspicuous position like your wife's favourite armchair. Try not to notice her raised eyebrows as she reads it. And cross your fingers.

Of course this method is not absolutely guaranteed to work, in which case, all we can suggest is you send yourself a Heathkit for Christmas.

But, with the Heathkit Monthly Budget Plan, even that's no problem.



Heath (Gloucester) Ltd., Dept. SW-125,
Bristol Road, Gloucester, GL2 6EE.
Telephone: (0452) 29451.

To: Heath (Gloucester) Limited, Dept. SW-125, Gloucester, GL2 6EE.
Please send me a Heathkit catalogue.
I enclose 10p for postage.

HEATH
Schlumberger

Name _____

Address _____

Postcode _____

Monthly Budget Plan
available.

AMATEUR ELECTRONICS UK

ALL THE BEST FROM AMATEUR ELECTRONICS
FOR XMAS AND THE NEW YEAR

Season's greetings and sincere thanks to our many
customers—old and new

★ **MAIN YAESU MUSEN AGENTS** ★



FT-221 2m.



FT-101E HF

Nothing surpasses Yaesu Musen

AS EVIDENCED BY THEIR TWO LATEST TRANSCEIVER MODELS SHOWN HERE—AND WE AT AMATEUR ELECTRONICS HAVE BEEN INSTRUMENTAL IN KEEPING YAESU PRICES DOWN.

GENERAL STOCK LIST — ANTENNAS, ACCESSORIES, ETC.

COPAL CLOCKS

222	...	...	...	£5-75
227	...	...	...	£7-00
601	...	...	...	£12-25
401	...	...	...	£8-75

MICROPHONES

Shure 201 Hand PTT	...	...	...	£6-88
Shure 444 Desk PTT	...	...	...	£16-88
TTC Hand PTT	...	...	...	£5-00
TTC Desk PTT dual imp.	...	...	...	£12-50
Foster M-50 PTT	...	...	...	£7-50

ANTENNAS

Hy-Gain 12 AVQ Vert.	...	...	...	£31-88
Hy-Gain 14 AVQ Vert.	...	...	...	£45-00
Hy-Gain 18 AVT/WB	...	...	...	£65-00
Hy-Gain TH3 Mk3	...	...	...	£123-75
Hy-Gain TH3 Jnr.	...	...	...	£92-50
Hy-Gain LC80Q Lds. Coil	...	...	...	£14-38
Hy-Gain BN86 Balun	...	...	...	£11-88
Swan TB-4HA	...	...	...	£162-50

ROTATORS

AR30	...	...	...	£31-25
AR40	...	...	...	£37-50
CD44	...	...	...	£75-00
HAM-2	...	...	...	£112-50
2010 Stolle	...	...	...	£40-50
2030 Stolle	...	...	...	£45-94
Rotator cable	yd.	...	...	3p
(Belden 8 core for Ham M and TR44)	...	...	...	37p
C5/20 20m. 5 core for Stoll	...	...	...	£4-38

C5/50 50m. 5 core for Stoll	...	...	...	£10-94
C5/100 100m. 5 core for Stoll	...	...	...	£20-00
RZ100 Rotor bearing	...	...	...	£9-98

SOLID STATE MODULES

2m. Converter	...	...	...	£18-75
70 CM Converter	...	...	...	£18-75
PA3 Dual Mosfet Pre-amp	...	...	...	£6-88
2m. FET Pre-amp	...	...	...	£8-50
Europa 5SB Transverter with valves	...	...	...	£101-88
less valves	...	...	...	£85-63

TSURODOME

TC-530F Frequency Counter	...	...	...	£226-80
10Hz-470 MHz	...	...	...	£226-80

KW ELECTRONICS

KW-107 Matching Unit	...	...	...	£85-00
KW-109 High Power Unit	...	...	...	£97-50
KW-108 Monitor scope	...	...	...	£91-80
KWE-Z Match	...	...	...	£23-76
KW 802 Speaker Unit	...	...	...	£15-00
KW Antenna switch	...	...	...	£7-50
KW Balun	...	...	...	£3-75
KW 160 ATU	...	...	...	£19-44
KW Std. Trap Dipole	...	...	...	£32-50
KW 103 Power/SWR meter	...	...	...	£17-28

MISCELLANEOUS

PL259 Coaxial plugs	...	...	...	40p
50 ohm Heavy Duty coax	...	yd.	...	40p
75 ohm Heavy Duty coax	...	yd.	...	30p
75 ohm Low-loss (UHF)	...	yd.	...	20p

Chassis mounting sockets for PL 259 plugs	...	...	...	45p
6146B Westinghouse—the best manufacturer of this type	...	...	...	£4-25
4CX250B	...	...	...	£10-00
AJAX scientific calculator	...	...	...	£19-00
Signal injector C3003	£2-25
Mullard 1974/5 Data book	40p

MEDCO FILTERS

75 ohm Belling	£7-50
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WIGHTRAPS (VAT incl.)

Standard pairs	£4-81
High Power	£6-87

SWR/POWER METERS

Single meter SWR Bridge SVR-10	£6-48
Twin meter SWR Bridge SWR-50	...	...	...	£11-02
Reace Single Meter (vertical)	...	...	...	£5-40
SE-405 Large scale single meter	...	...	...	£7-56
Osker SWR-200	...	...	...	£22-68
Osker SWR-200B	...	...	...	£23-76

MICROWAVE MODULES

2m. Converter Please state required IF	...	...	...	£20-00
4m. Converter (28-30 MHz IF)	...	...	...	£20-00
70cm. Converter (28-30 MHz IF)	...	...	...	£22-50
70cm. Converter (144-146 IF)	...	...	...	£22-50

ELECTRONIC DEVELOPMENTS

Magnum 2m. Transverter	...	...	...	£110-00
Magnum 4m. Transverter	...	...	...	£110-00

All prices include VAT — Carriage/Post extra

**508-514 ALUM ROCK ROAD
BIRMINGHAM 8** **021-327 1497
6313**



**HERE'S SOME OTHER INTERESTING ITEMS—
ALL DELIVERED FREE BY SECURICOR!**



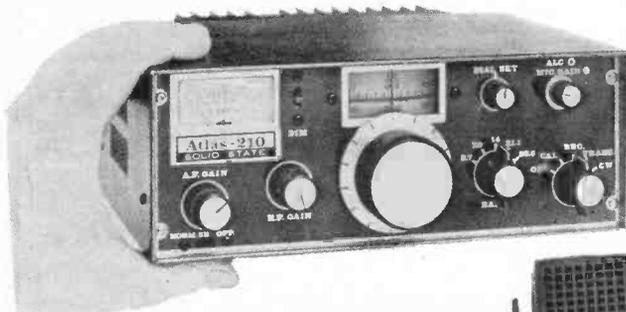
▲ **SS 200A**

America's ultimate in Ham equipment. Fully Solid State yet 300 watts of power with infinite VSWR protection. Broadband circuits eliminates Tx tuning!



▲

**THE FANTASTIC 700CX
TRANSCEIVER**



◀ **NEW MODELS**

**The Sensational ATLAS-210X
ATLAS-215X**

Enhances your signal AND your station with the

**PLANET 808
Speech Processor** ▶

not just a featureless box but first-class engineering and styling makes this unit an attractive and valuable addition to your station.

£35.00 POST PAID



A COUPLE OF STAMPS (WE'LL PROVIDE THE ENVELOPE) WILL BRING YOU OUR LATEST USED EQUIPMENT LIST OR INDIVIDUAL INFORMATION ON SPECIFIC ITEMS—25 PENCE BRINGS THE LATEST GLOSSY SWAN OR YAESU CATALOGUE (FULLY REFUNDABLE AGAINST EVENTUAL PURCHASE)

NEW BRANCH! WE ARE PLEASED TO ANNOUNCE THAT OUR NEW BRANCH★ AMATEUR ELECTRONICS UK-COASTAL★ 316-318 NORTHDOWN ROAD, CLIFTONVILLE, KENT, IS NOW FULLY OPERATIONAL UNDER THE DIRECTION OF KEN McINNES G3FTE AND WILL CATER FOR LOCAL CUSTOMERS AND VISITORS TO THIS PART OF THE ENGLISH COAST.

TELEPHONE: THANET (0843) 22060

AGENTS: SCOTTISH—RON TURNER GM8HXQ WISHAW 72172
WALES AND WEST—ROSS CLARE GW3NWS CAERLEON 42232

YOU CAN COUNT ON US!

50MHz DIGITAL FREQUENCY METER MMD050

Now that we are established in our new factory we hope to expand our range of products for the amateur radio market. The latest design is a result of several months' work and incorporates M.O.S. L.S.I. devices of a very advanced technology. By virtue of this technology we have been able to manufacture a 50 MHz frequency counter in the same small die-cast box as used for our popular range of converters. This counter has a six digit display using 0.25" red L.E.D.'s and thus gives read out to 100 Hz. There is provision for adjusting the internal oscillator and, in practice, the overall accuracy of measurement is of the order of 200 Hz at 500 MHz. The unit is designed to operate from a nominal 12 volt DC supply with a current drain of 250 mA. The power is fed through a 5 pin locking DIN connector and provision is made for programming the position of the decimal point either by internal strapping in the plug or by external switching. This facility is required so that correct positioning of the decimal point is achieved when the counter is used with our 500 MHz prescaler, type MMD500P.

SPECIFICATION

Sensitivity	...	...	...	...	...	...	...	10uW typical
Readout Accuracy	...	...	...	...	...	...	...	100 Hz
Overall Accuracy	...	...	...	...	...	...	...	Better than 500 Hz at 50 MHz
Power Required	...	...	...	...	...	...	...	11-15 volts DC at 250mA approx.
Dimensions	...	...	...	...	...	...	...	111mm. x 60mm. x 27mm.
Connectors	...	...	...	...	...	...	...	50 ohm BNC and 5 DIN 270° DIN
PRICE	...	...	...	...	...	...	...	£66.00 including VAT

500 MHz DIVIDE BY TEN PRESCALER MMD500P

This prescaler uses the very latest design of E.C.L. integrated circuit and has output buffering to provide a 5 volt output swing.

The unit is thus suitable for use with most types of counter in addition to our MMD050. The prescaler is designed to work with input frequencies in the range 50-500 MHz and has an input sensitivity of typically 100 uW.

SPECIFICATION

Input Frequency	...	...	...	...	...	...	...	50-500 MHz
Sensitivity	...	...	...	...	...	...	...	100uW typical
Output Voltage	...	...	...	...	...	...	...	5v. logic
Power Required	...	...	...	...	...	...	...	11-15v. DC at 100 mA approx.
Dimensions	...	...	...	...	...	...	...	111mm. x 60mm. x 27mm.
Connectors	...	...	...	...	...	...	...	50 ohm BNC
PRICE	...	...	...	...	...	...	...	£27.00 including VAT

MICROWAVE MODULES LIMITED

BROOKFIELD DRIVE, AINTREE, LIVERPOOL

L9 7AN

TEL.: 051-523 4011

STEPHENS-JAMES LTD. G3LRB G3MCN G3TYE

47 WARRINGTON ROAD, LEIGH, LANCs. WN7 3EA

TEL: 052-35 76790

We are situated on the A754. Turn at the Greyhound Motel on the A580 (East Lancs. Road). Easy access to the M6-M61, M62-M63-M56. Thanks to all our old customers who have followed us to our new premises. Nice to see so many new customers from far and wide who have found it so easy to call in. No parking problems. Shop hours: 9.30 to 5.30, Mondays to Saturdays. Full demonstration facilities in the "Shack" away from normal business activities.

ELECTRONIC DEVELOPMENTS

We are pleased to announce that we have now incorporated ELECTRONIC DEVELOPMENTS into our organisation. We shall now be sole manufacturers of the very popular range of 2 and 4 metre Transverters, Linear amplifiers for 2 metres and 70 cms. All items from stock.
2 and 4 metre Transverters, £110-00 2m. Linear Amp £104-00 70 cms. Linear £45-62 Overseas Trade Enquiries Welcome

S and J Ltd. Equipment

In August we introduced the first of our own products. The SWL Antenna Tuning Unit. This sold so well we ran out of stock in two weeks. All reports have been first class results. With its 50 switched and tunable positions, two antenna inputs for single wire or co-ax all in a small neat cabinet this is a winner. We know that hundreds of listeners using odd lengths of wire, etc., were not getting the best results from their receivers that we produced this in demand to many clients.

SWL Tuner Mk. 1 Price £14-25, including postage.

The second item we introduced was the VHF Absorption Wavemeter Mk. 1. Frequency coverage 65-230 MHz. This also ran into problems of demand outstripping supply but now we can deliver from stock at £16-00 including postage.
These are just two of the many items we shall be introducing onto the market in the next few months. We hope to keep prices as stable as possible, whilst imported goods are climbing.

YAESU

FT101E transceiver	... £493-00
FT101EE transceiver	... £468-75
FT221 transceiver	... £398-12
FT200 transceiver	... £326-00
FT401 transceiver	... £412-50
FR101s receiver	... £337-50
FR101sd receiver	... £431-50
FR101d receiver	... £437-00
FR101dd receiver	... £531-00
FL101 transmitter	... £343-00
SP101 speaker	... £18-75
YO-100 monitor scope	... £131-00
YP-150 wattmeter	... £55-00

DRAKE

R4C receiver	... £380-00
T4X transmitter	... £395-00

TR4C transceiver	... £410-00
AC-4 AC power unit	... £80-00
SSR-1 receiver	... £225-00
MS4 speaker	... £18-75
TV-1000 low pass filter	... £15-00

DECCA COMMUNICATIONS

KW204 transmitter	... £312-50
KW107 tuning unit	... £85-00
KW109 tuning unit	... £97-50
KW104 VSWR/meter	... £20-00
KW Antenna switch	... £7-50

BELCOM

Liner 2 transceiver	... £181-25
LA106 linear amplifier	... £206-50
RI1EE PSU for liner	... £31-25
Liner 430 transceiver	... £

OMEGA

TE-701 antenna noise bridge	£22-50
TE-702 antenna noise bridge	£30-00

SWR METERS

Rease/hansen type single meter	... £6-60
AEC 10 single meter	... £6-20
AEC 50 twin meter	... £11-00
Oskerbloc (silver)	... £22-68
Oskerbloc (black)	... £23-76

HY-GAIN ANTENNA RANGE

12AVQ 10-15-20m. vertical	£31-88
14AVT/WB 10-15-20-40m. vertical	... £45-00
18AVT/WB 10-15-20-40-80m. vertical	... £65-00

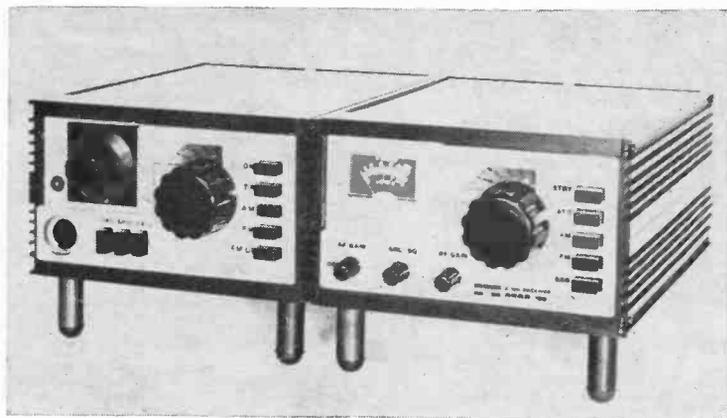
LC80Q coil...	... £14-38
BN86 balun	... £11-88
TH3MK3 tribander beam	£124-88

CDR ROTATORS

AR22	... £34-38
AR30	... £31-25
AR40	... £37-50
CD44	... £75-00
HAM-2	... £112-50

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PL259 plugs	... 45p
SO239 sockets	... 40p
Reducers	... 15p
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2 BAND SOLID STATE RECEIVER

144-146 MHz
28-30 MHz AM-FM-SSB
12v. DC £108

ATAL 222 TRANSMITTER
144-146 MHz AM-FM-CW
SOLID STATE 8 WATTS
Complete with microphone £140

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ARAC ARI0 receiver 28-30 MHz	... £40-00
AA1 audio amplifier	£4-84
AD4 FM discriminator	£5-36
AT222 transmitter	£60-00
AL8 linear amplifier	£28-00

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SECONDHAND EQUIPMENT

FR500 SDX receiver	... £180-00
FTDX 401 transceiver	£310-00
Telford TC9 transmitter	... £70-00
Telford TC7 tuner and converter	£40-00
Yaesu FT101B transceiver	... £350-00
National NCX5 transceiver	... £180-00
Eddystone EB35 receiver	£65-00
Heathkit Mohican receiver	... £35-00

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UNIDEN 2020 TRANSCIVER ... £537

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210 PSU for Argonaut only ...	£21.25	Multimobile 71 10/15/20 ...	£19.66	18AVT/WB	10-80m. trapped vertical ...	£65.00
261 De luxe PSU for Argonaut or 405 ...	£83.75	additional coils ...	£5.64	18V	10-80m. vertical ...	£22.50
262 De luxe PSU for Triton 2 ...	£100.00	telescopic whip for above coils ...	£1.53	12RMQ	Roof mounting kit 12AVQ ...	£13.75
AC-5 Antenna Tuner ...	£79.50	Base metal sgl. hole fixing ...	£2.24	14RMQ	Roof mounting kit 14AVQ ...	£16.25
KR-50 Electronic Squeeze Keyer ...	£85.00	Base thread adaptor Amer./lg-whip ...	£0.55	LC90Q	80m. loading coil for 14AVQ ...	£14.38
KR-5 Single Paddle Keyer ...	£30.75	Extendarod 40, booster for MM71 ...	£7.90			
KR-1A Paddle assembly only ...	£20.00					
		CDR ROTATORS		TH6DXX	6 element beam 10/15/20 ...	£148.75
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CO-3 ...	£11.25	AR-30 ...	£31.25	TH3JR	3 element beam 10/15/20 ...	£92.50
CO-4 ...	£12.75	AR-40 ...	£37.50	TH2MK3	2 element beam 10/15/20 ...	£86.25
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		HAM-2 ...	£112.50		10 and 15m. beam ...	£95.00
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Model COH 600 ohms ...	£21.25	2000E Transceiver with PSU ...	£427.50	153BA	2 element 15m. beam ...	£55.00
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Mobile mounting bracket de luxe plug-in ...	£30.00	108 Monitorscope ...	£106.25	415	Bumper mount ...	£6.25
Mobile mounting kit non plug-in ...	£5.80	DC power supply for 2000A/B/E ...	£95.00			
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DC cable ...	£10.00	E-Z Match 10-80m. A.T.U. ...	£15.00	LA-2	in-line lightning arrestor ...	£3.75
ATLAS 210X ...	£425.00	Dummy Load 52 or 75 ohms ...	£15.00	BN86	Ferrite balun ...	£11.88
ATLAS 215X ...	£425.00	Balun 1:1 dual impedance 52/75 ohms ...	£3.75	TE 7-01	Antenna Noise Bridge ...	£22.50
		Antenna switch 3-way ...	£7.50	TE 7-02	Antenna Noise Bridge ...	£30.00
		Pair of traps and t-piece ...	£8.75	PL259	Connectors ...	£0.50
		10-80m. trap dipole standard model 20m. feeder ...	£32.50	PL258	Adaptors ...	£1.00
		10-80m. trap dipole and balun ...	£36.25	SO239	Amphenol sockets ...	£0.50
MICROWAVE MODULES PRODUCTS		SHURE MICROPHONES		JAYBEAM	ANTENNAS	
MMC144 2m. conv. I.F. 2, 4, 28 MHz ...	£18.90	201 Ceramic ...	£8.75	4Y/4M	4 ele. 4m. dipole yagi ...	£11.63
MMC144/28 LO 116 MHz output ...	£19.90	202 Noise-cancelling Ceramic ...	£9.50	5Y/2M	5 ele. 2m. dipole yagi ...	£6.13
144 MHz dual output pre-amp ...	£11.30	401A Controlled magnetic Desk Model ...	£10.00	8Y/2M	8 ele. 2m. dipole yagi ...	£8.00
70 MHz conv. 28-28-7 ...	£18.90	444 Ceramic ...	£1.25	10Y/2M	10 ele. 2m. dipole yagi ...	£15.75
70 MHz conv. 28-28-7 with L.O. ...	£19.90	2755K Desk Model with preamp. ...	£23.75	10X/2M	10 ele. crossed yagi ...	£20.19
MMC432/28 ...	£29.90			PBM14/2M	14 ele. parabean ...	£24.00
MMV 432 ...	£21.90			D8/2M	5 over 5 ...	£11.25
MMV 1296 ...	£31.30			D8/2M	8 over 8 ...	£15.00
SWAN				SVMK/2M	mounting kit for 2 yagis ...	£3.13
700CX 5 band 700w. TCVR. and PSU ...	£595.00	CARINGELLA		XD/2M	pair crossed dipoles ...	£8.25
VOX ...	£32.50	ACA-1 Audio compressor ...	£50.00	UCP/2M	unipole and ground plane mobile halo with mast ...	£5.94
SS200A 5 band 300w. solid state TCVR ...	£725.00	ACA-1 Audio compressor kit ...	£35.00	HM/2M	portable mast ...	£8.00
		STR-1 Standard time receiver kit (above prices only whilst existing stocks last)	£62.50	SPM	70 cms. 46 ele. multibeam ...	£17.38
YAesu MUSEN EQUIPMENT		SOLID STATE MODULES		HUSTLER	MOBILE ANTENNAS	
FT-101E Transceiver ...	£498.75	EUROPA B 10-2m. SSB Transverter ...	£109.37	MO-1/2	Foldover mast ...	£10.87
FV-101 Remote V.F.O. ...	£65.00	CPS-10 A.C. power supply for europa B ...	£50.00	BN-1	Bumper mt. st. steel ...	£7.31
FT-401B Transceiver ...	£412.50	Sentinel 2m. converters, I.F. 2-4, 4-6, 28-30 ...	£18.75	C-32	Ball mount ...	£2.87
FV-101B Remote V.F.O. ...	£65.00	Sentinel X (de luxe version) ...	£24.37	C-29	St. steel spring ...	£4.50
FT-200B Transceiver ...	£318.75	Sentinel low noise FET 2m. pre-amp. ...	£8.52	RM-10	10m. resonator ...	£7.31
FT-201 Transceiver ...	£400.00	PA-3 dual gate Mosfet pre-amp. ...	£6.87	RM-15	15m. resonator ...	£8.00
FT-221 Transceiver ...	£398.12	sm70 70 cm. converter ...	£18.75	RM-20	20m. resonator ...	£8.68
FR-101D Receiver ...	£437.50			RM-40	40m. resonator ...	£10.31
FR-101D Digital Receiver ...	£531.25	ROBOT SSTV EQUIPMENT		UH-80	80m. resonator ...	£11.56
FL-101 Transmitter ...	£343.75	80A Camera ...	£287.50	UH-10	1/2 wave 2m. whip ...	£7.50
FL-2100B Linear ...	£293.75	70B Monitor built-in fast and slow scan ...	£368.75	SF-2	2m. 5/8 whip ...	£8.75
SP-101B Speaker console ...	£18.75	Kit to convert 70A monitor to 70B ...	£81.25	DCL	Discone 80-500 MHz ...	£16.25
YC-355D Digital freq. meter ...	£145.80	Model E macro lens ...	£49.50	CG-144	2m. colinear with mount ...	£18.75
YO-100 Monitorscope ...	£113.40	(above prices only whilst existing stocks last)		CGT-144	80m. high-power resonator ...	£31.25
YD-844 Desk microphone ...	£20.00			RM-80S	10-40m. vertical ...	£57.50
YD-846 Hand microphone ...	£8.75	VENUS SSTV EQUIPMENT		PACKAGE	DEAL RM80S AND 48TV ...	£70.00
YC-601 Digital readout unit ...	£112.50	SS-2 Monitor ...	£250.00	S105	Quick disconnect top section of above ...	£5.00
XF-30C CW filter for FT-101 ...	£22.50	F-1 Camera ...	£312.50	GJ-144A	2m. fixed station colinear ...	£43.75
YP-150 Dummy load/watt meter ...	£55.00	S-1 Sgl. frame cassette ...	£2.50			
	£13.75	T-G Grey scale tape ...	£3.75			
		T-C Checkerboard tape ...	£3.75			
		P-1 Polaroid adaptor ...	£21.25			
		V-1 Viewing hood ...	£8.75			
		(above prices only whilst stocks last)	£2.20			
				BARLOW-WADLEY		
				XCR-30	gen. cov. Receiver ...	£160.00
				TR-801	FM tuner kit ...	£25.00
				N6502	Philips Mains PSU ...	£9.50

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2-CQ	Q-multiplier/speaker for 2-C	£40-00
R-4C	Receiver SSB, AM, SW, RTTY	£380-00
FL250	Filter for R-4C (.250 kHz)	£38-75
FL500	Filter for R-4C (.500 kHz)	... ..	£38-75
FL1500	Filter for R-4C (1.5 kHz)	... ..	£38-75
FL4000	Filter for R-4C (4.0 kHz)	... ..	£38-75
FL6000	Filter for R-4C (6.0 kHz)	... ..	£38-75
4-NB	Noise Blanker for R-4C	... ..	£51-25
MS-4	Matching Speaker for R-4C	... ..	£18-75
SPR-4	Receiver—General Purpose	... ..	£412-50
AL-4	Loop Antenna for SPR-4	... ..	£18-75
5-NB	Noise Blanker for SPR-4	... ..	£50-50
SCC-4	100 kHz Calibrator for SPR-4	... ..	£15-50
TA-4	Transceiver adaptor for SPR-4 T-4XC	... ..	£28-00
	DC Power Cord for SPR-4	... ..	£4-50
	Amateur Bands Crystal Kit for SPR-4	... ..	£20-00
	Time and freq. Crystal Kit for SPR-4	... ..	£17-50
	MARS Crystal Kit for SPR-4	... ..	£17-50
	Teletype Commercial Kit for SPR-4	... ..	£15-00
	Aeronautical Crystal Kit for SPR-4	... ..	£26-25
	Marine Crystal Kit for SPR-4	... ..	£39-50
	Tropical Bands Crystal Kit for SPR-4	... ..	£11-75
RY-4	Teletype adaptor for SPR-4	... ..	£10-50
DSR-2	Digital Receiver	... ..	£1,950-00
SSR-1	Receiver—General Coverage	... ..	£225-00

TRANSCIVER and ACCESSORIES

TR-4C	SSB Transceiver	... ..	£410-00
34-PNB	Plug-in Noise Blanker for TR-4C	... ..	£50-50
AC-4	115/240v. PSU for TR-4C, T-4XC	... ..	£80-00
DC-4	12v. PSU for TR-4C, T-4XC, R-4C	... ..	£92-50
MMK-3	Mobile mounting kit for TR-4C	... ..	£5-00
RV-4C	Remote V.F.O. for TR-4C	... ..	£80-00
FF-1	Crystal Control for TR-4C	... ..	£34-50

TRANSMITTER and ACCESSORIES

T-4XC	SSB Transmitter (see AC-4 above)	... ..	£395-00
L-4B	Linear Amplifier (inc. Power Supply)	... ..	£550-00
MN-4	Antenna Match Network	... ..	£75-00
MN-2000	Antenna Match Network—2000 watts	... ..	£160-00
W-4	RF Wattmeter 2-30 MHz	... ..	£47-00
WV-4	RF Wattmeter 20-200 MHz	... ..	£55-75
C-4	Station Control Console	... ..	£272-50

ADDITIONAL ACCESSORIES

TV42LP	Low Pass Filter 100w.	... ..	£12-50
TV1000LP	Low Pass Filter 1000w.	... ..	£15-00
RP-500	Receiver protector	... ..	£54-50
7072	Hand microphone	... ..	£13-25
7075	Desk microphone	... ..	£26-25
	Accessory crystals for R-4C, T-4XC, SPR-4	... ..	£4-50
	Fixed Frequency Crystals	£6-00
	Spare Operating Manuals	£2-50
	Spare DSR-2 Operating Manual	£10-00

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FR101(SD)
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Also FR101S — FR101SD —
FR101DD

with FL101 TRANSMITTER

The FR101 in the de luxe
version offers

Coverage from 1.5 kHz including
all SW broadcast and H.F. amateur
bands. (23 in all) to 144 MHz AM,
FM, SSB, CW are catered for, each
with separate crystal filter. Transceiver
operation with the FL-101 or FT101.
Digital versions, and the matching
FL2100B linear amplifier of 1200 Watts
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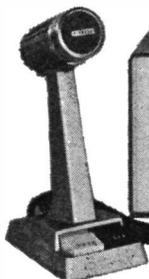
FT221
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The FT221. The 144 MHz
Multi-Mode transceiver. AM,
FM, USB, LSB, CW; P.L.L.
V.F.O. Mic. supplied, Noise
blanker, 240 AC or 12v. DC.
Side tone on CW, Front panel
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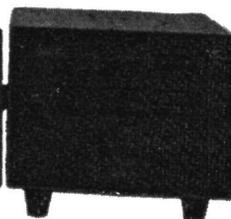
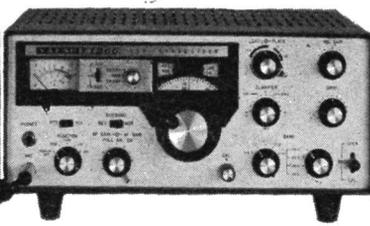


FT101E
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The FT101E/EE. The latest
versions of the renowned
FT101 series. Hundreds of our
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so few FT101 available second
hand. 160 to 10 metres transceiver
with built-in AC and DC p.u. 260
Watts pep, SSB 180 Watts CW and
80 Watts CW. See Yaesu advertisement
for further details.
Ex Stock from S.M.C.



FT200B



FP200B

YD844
FV200
FT200B
FP200B
Ex Stock

The FT200B is one of today's "best buys". Its features compare favourably
with markedly more expensive units. 260W PIP (SSB/CW), 75W (AM),
1kHz read out on all bands, 3-5-4 to 28.5-29 MHz (3 optional 10m.
crystals available), sensitivity 0.5µV for 10dB s/s + n, selectivity
2.3 kHz (6dB), 4 kHz (60dB), 1.75 : 1 shape factor, solid state gear driven

FET VFO with excellent linearity, 100 kHz calibrator VOX/PTT, clarifier
(±5 kHz) break in CW keying and sidetone monitor. The pre-mix
oscillator gives superb signal handling and low noise capability of a
single superhet whilst at the same time retaining a 9 MHz IF, with high
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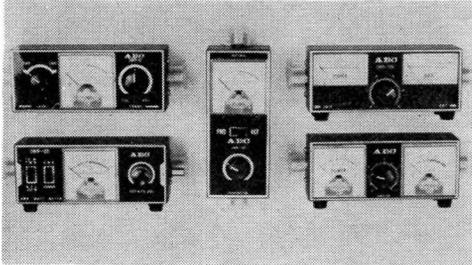
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COMMUNICATIONS LTD.

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NEW Extended range of meters

SWR10 (T.L.H.) (50/75 ohm) SWR only ($\pm 10\%$ over 1 to 3:1) 1.5 to 160 MHz ...	T.O.S.
SWR20 (B.L.H.) (50 ohm) Power 10 and 100W FSD ($\pm 10\%$) Field strength and S.W.R. ($\pm 10\%$ over 1 to 3:1) 1.5 to 160 MHz ...	£9-90
SWR40 (centre) (50/75 ohm) Field strength and SWR ($\pm 10\%$ over 1 to 3:1) 1.5 to 160 MHz ...	£7-80
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SWR50 (B.R.H.) As SWR50A (300uA) but 100uA movements ...	£11-20

ROTATORS

First time shown the control unit of the AR33. The deluxe version of the AR40 with a redesigned smart control unit incorporating 5 preset pushbutton positions and dial control. SMC as main distributors also has the largest range of CDE rotators, in fact, over a 1000 ex stock with spares, guarantee, and service at your disposal.

Rotors : VAT 25% ...	Cables : VAT 8% ...	AR33 de luxe version of AR40 ...	£37-65
Carriage (B.R.S.) free Securicor delivery 80p extra.		CD44 for large VHF, medium HF band ...	£60-00
AR30 for Stereo and small VHF beams ...	£25-00	Ham II for large arrays ...	£90-00
AR40 for Medium VHF Small HF beams ...	£30-00	Control Cable : 5 core for AR30/40 at 8 core for CD44/HII at	18p/yd. 27p/yd.

CRYSTAL FILTERS. Excellent spec yet low cost

3-18 MHz	10-7 MHz	9 MHz
XF30C 600Hz ...	YF107M600 600Hz ...	YF90M600 600Hz ...
XF30A 6 kHz ...	YF107M2-4 2.4 kHz ...	YF90F2-4 2.4 kHz ...
YF30F12 12 kHz ...	YF107M12 12 kHz ...	YF90F12 12 kHz ...
XF30D 20 kHz ...	Carrier crystal HC18/U ...	Carrier crystal HC18/U ...
£16-00	£13-00	£13-00
£16-00	£12-00	£11-00
T.O.S.	£12-00	£13-00
£16-00	£1-50	£1-50

NEW to the UK — 2M 6dB

SMC proudly introduce into the U.K. the CUSH CRAFT range which includes the worlds' most popular F.M. vertical antenna (Carriage paid but plus VAT 25%).

RINGO RANGER 144 MHz (illustrated left) Over $\frac{1}{2}$ dB whip (4.5dBd) uses $3 \times \frac{1}{2}$ 6dB in phase and $\frac{1}{2}$ 6dB stub. Ultra low angle radiation (approx. 10ft. high) ...	£15-60
Also	
ASQ1 2m. squalo $\frac{1}{2}$ horizontal, roof mounting ...	£10-50
ASQ22 Stacked squalo ...	£20-00
ABW144 2m. clover leaf (big wheel) horizontal omnidirectional 1dB gain over dipole ...	£12-00
ABW125 Stacking kit for above gives 4dB gain ...	£7-30
AR2 2M. Ringo vertical 3-4dB ...	£10-30
CX1000 Suitable for Oscar 6 10 Mtrs. 3.75dB gain ...	£20-00

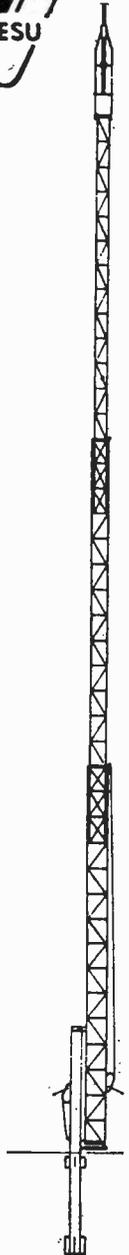
MASTS

Versatowers (see right), Alimast, Telomasts, Hamtower, Teletowers. In fact the largest range in the U.K. for Amateur or commercial applications. Further details upon application, over 500 masts ex stock.

HYGAIN (Ex-stock) + VAT 25%

The 18AVT (see far left). The self-supporting vertical for 10-80m. it offers low angle radiation from the smallest garden. Also available, direct from SMC, the importers, remainder of the renowned Hy Gain H.F. range.

HY TOWER 10-80m. VERT RAD. ...	£132-00
18V 10-80m. LOAD VERT. ...	£18-00
12AVQ 10-20m. TRAP VERT. ...	£25-00
14AVQ 10-40m. TRAP VERT. ...	£36-00
18AVT/WB 10-80m. TRAP VERT. ...	£52-00
103BA 10m. 3 ele. ...	£35-00
153BA 15m. 3 ele. ...	£44-00
203BA 20m. 3 ele. ...	£80-00
TH2 Mk.III 10-20m. 3 ele. ...	£69-00
TH3 JNR 10-20m. 3 ele. ...	£74-00
TH3 MK.III 10-20m. 3 ele. ...	£99-00
TH6DXX 10-20m. 6 ele. ...	£109-00
HY QUAD 10-20m. 2 ele. ...	£99-60
DB1015A 10-15m. 3 ele. ...	£76-00
DB24B 20m./3e, 40m./2e ...	£142-00
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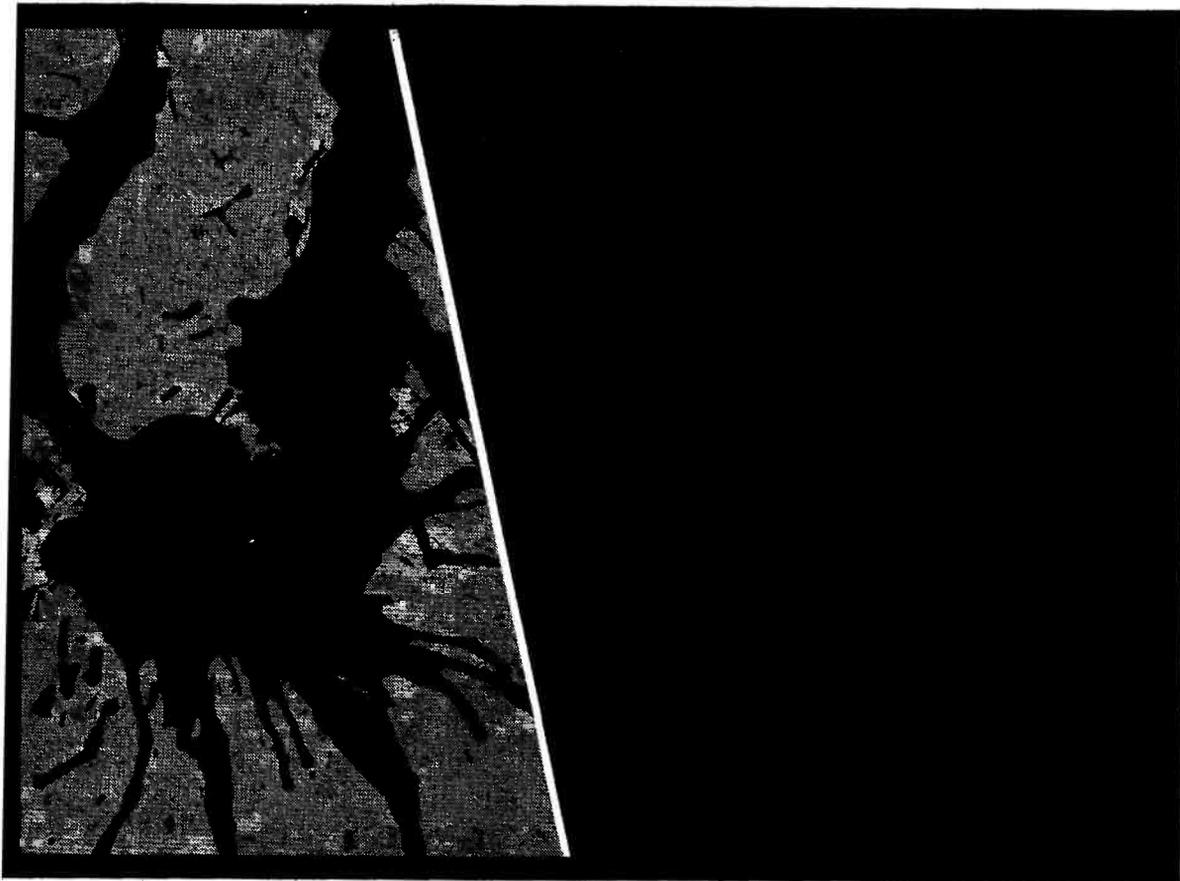


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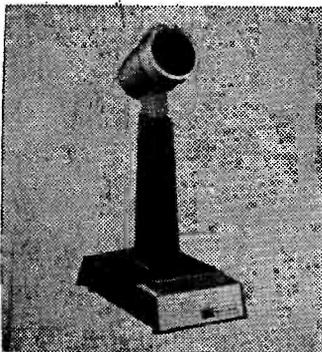
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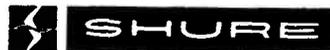
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ADVERTISERS' INDEX

	Page
Aero & General Supplies	605
Amateur Electronics (G3FIK)	554, 555
Ashley Dukes (Honda) ...	600
Axial Products ...	596
Baginton Electronics ...	599
B. Bamber Electronics	<i>back cover</i>
J. Birkett ...	595
British National Radio School	566
C. & C. Electronics ...	603
Cambridge Kits ...	607
Campione Electronica	564, 592, 593
Catronics ...	602
I. N. Cline ...	607
Datong Electronics ...	591
Derwent Radio ...	601
G.I. Amateur Supplies ...	599
G3HSC (Rhythm Morse Courses) ...	606
G.W.M. Radio Ltd. ...	608
Hamgear Electronics ...	604
Heath (Gloucester) Ltd. ...	553
D. P. Hobbs Ltd. ...	607
J. Yu ...	600
K.W. Communications Ltd.	566
Lowe Electronics	<i>inside front cover,</i> 549, 550
S. May (Leicester) Ltd. ...	600
M.H. Electronics ...	603
Microwave Modules Ltd....	556
Mosley Electronics Ltd. ...	608
Partridge Electronics Ltd.	597
P.M. Electronic Services ...	604
Radio Shack Ltd. ...	558, 559
R.T. & I. Electronics Ltd.	598
Rutland Communications Ltd.	551
Shure Electronics Ltd. ...	562
Small Advertisements ...	601-606
Solid State Modules ...	594
Southern Surplus Merchants	600
South Midland Communications Ltd. ...	560, 561
Spacemark Ltd. ...	596
S.S.B. Products ...	607
Stephens-James ...	557
S.W.M. Publications	<i>inside back cover,</i> 600
Telecommunications International Agency Ltd. ...	598
Telford Communications...	607
Thanet Electronics ...	591
T.M.P. Electronic Supplies	600
Reg Ward & Co. Ltd. ...	608
Waters & Stanton Electronics	563
Western Electronics Ltd. ...	552
W. H. Westlake ...	608
Chas. H. Young Ltd. ...	597

SHORT WAVE MAGAZINE

(GB3SWM)

Vol. XXXIII

DECEMBER, 1975

No. 386

CONTENTS

	Page
Editorial ...	567
Communications and DX News, by E. P. Essery, G3KFE ...	568
The Leicester Show ...	572
Auto-Scan Unit for Two-Metre FM Receivers by H. R. Ward, G8KGG and D. E. Clark, G8GPF ...	575
Mains Voltage Adjustment, by N. A. S. Fitch, G3FPK ...	579
Break-In for the Codar AT-5, by A. P. Kerford-Byrnes, G6AB ...	580
VHF Bands, by N. A. S. Fitch, G3FPK ...	583
The Month with The Clubs—From Reports ...	587
New QTH's... ..	590

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

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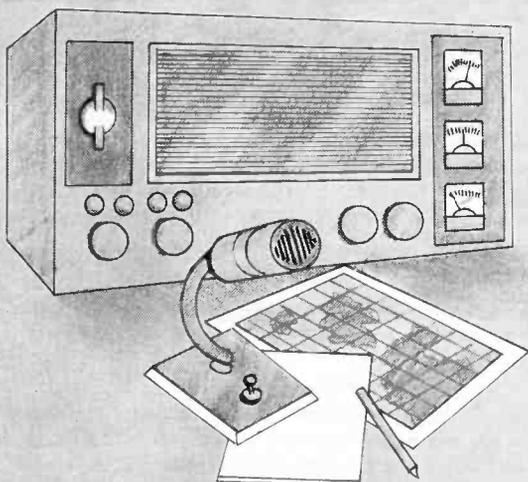
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The **SHORT-WAVE** *Magazine*

E D I T O R I A L

PUBLICATION DATES—JAN./FEB.

Because our due date for the January issue falls right in the Christmas period—when anyway there are to be no mails, be it noted—our next appearance will be on Friday, January 2, 1976 with the issue for that month. The February publication date remains Friday, January 30, as it would normally be. We would ask that all feature correspondence — for CDXN, VHFB and “Clubs”, also Reader Small Advertisements—should reach us as early as possible following publication of the December, January and February issues.

* * *

INCREASE IN LICENCE FEES

The Home Office, Radio Regulatory Division, announces an increase in licence fees to take effect from December 1st, 1975. The standard amateur licence will go up to £4·80 for the year. The regular ship (commercial) licence will be £5·50 and for aircraft it goes to £4·00.

* * *

POINT ON FEEDER LINES

On p. 391 of the September issue it was suggested how a 10-metre dipole could be knocked up quickly, using ordinary flat-twin lighting flex. Some correspondence since brings out the point that—though the method suggested is perfectly satisfactory with moderate powers up to 100 watts or so—it is not

the case, when, say, an SSB linear is being run at full puff. Under QRO conditions “interesting things” can happen along the feeder line, due to breakdown of the insulation, as in the experience of G3NXM (Shipley, W. Yorks.) who first raised the query—and, as a matter of fact, it is in accord with our own experience when using high power with a poor SWR on feeders made with ordinary flat-twin lighting flex.

* * *

RUGBY, GBR—GOLDEN JUBILEE

During the period January 1-11, a station signing GB3GBR will be active on most amateur bands, to celebrate the 50th year of the operation of the Post Office world-wide VLF service—meaning 16 kHz, or 18750 metres. GBR can be heard, unfailingly, all over the world. Appropriately enough, this anniversary station is to be operated by members of Rugby Radio's own Amateur Transmitting Society, G4APD, of which the hon. secretary is M. J. Hancock, G8EYY.

* * *

SIR ROGER HAWKEY, Bt., G5ZG

The death is reported, at the age of 70, of G5ZG, Takeley, Essex, who became prominent in the 1960's as one of the leaders of the movement against the proposal to develop Stansted as London's third airport—the extensions of the runways would have obliterated not only his home but most of the village of Takeley. Sir Roger was the second baronet, and was licensed in the late 1920's.

*To all our Readers and Trade friends, every good wish for a
Happy Christmas and a Prosperous New Year from
the Editor and Staff
SHORT WAVE MAGAZINE*

COMMUNICATION and DX NEWS

E. P. Essery, G3KFE

DOUTBLESS one of the high spots of the period for many was a visit to the Leicester Show—and, if nothing else, the arrays of commercial gear there displayed lots of interesting ideas—the latest gadget from Datong as a way of getting rid of those pestilential heterodynes from commercial stations, for example, and the way some of the more modern gear is packaged for convenience of service; or the delightful aerial and mast ideas, these *must* have set minds thinking. And, thanks to our pestilential politicians, it is all warranted to produce a new generation of homebrew—prices including allowances for inflation were bad enough (though amazingly low for the quality of the stuff), but the iniquitous VAT makes it just that more difficult. And, interestingly enough, one could enquire why the reasons which were considered valid for exemption from the old Purchase Tax are now considered *in-valid* enough to justify the walloping 25% level? *Possibly* muddled thinking?

On another tack, and yet still with our lords and (so they think!) masters, how comes it that so many rumours are abroad as to the hardened attitude of the Home Office as compared with our old friends in the Post Office who cared for us so well for years? One thing is certain—there is no smoke without at least a semblance of fire. Perhaps the time is ripe for the Home Office to make a statement as to its attitude towards the radio amateur.

But, for the writer, the show was made the more pleasant for meeting so many of the DX'ers, both those who contribute to these columns, and those who read; notably G4AYS of the crystal-controlled QRP, G3RJV who is the dynamo of the QRP Club, and others too many to name.

The Bands

For much of the period, the W4UMF forecasts of conditions which, by the way, are now printed regularly in Geoff Watts' admirable DX News Sheet) have been Normal or High-Normal, and, taking into consideration the low sunspot number, conditions in fact have reflected this situation. DX is there, provided one is prepared to define DX as countries containing a resident amateur population; but it would be a very brave man who would mount a major DX-pedition and expect really to cover the whole amateur world, at this time. Now, in three years time . . . !

However, before we delve into the reporting, a call for help. Quite a few people will be aware that G3KGM (Sidcup) spends much of his time helping the invalids and the blind operators to get their tickets, and then tackling the tougher task of actually getting them on the air. Don wants to know how one nets on a KW-2000E and just what the CW position of the function switch actually does, on "transmit" and on "receive"; also whether the "offset" is the same on LF bands as it is on the HF Bands. Don wrote to your scribe because he recalled that at one time old 'KFE wrote up the '2000E model—but, alas, he only had the rig for a few weeks while his own was being "tickled-up" after it's European and Stateside trip, and the desired information is not retained in this one's memory. If anyone can help—*please* get in touch with G3KGM, QTHR, as fast as possible, so that he can get another disabled chap—who has already passed R.A.E. and Morse, though paralysed from the neck down—on the air with his own rig, rather than just listening when Don can be with him.

News of DX

Just too late for last time, the news of the VE DX-pedition to Sable Island and St. Paul Island—though both these have received the thumbs-up from the DXCC arbiters. The first is in the Atlantic, at about 60°W and 44°N, while St. Paul lies in the Cabot Strait, which is between Nova Scotia and Newfoundland. The call for Sable Island was VX9A, and they seem to have knocked up well over 8000 QSO's from there, partly due to a considerable problem in getting off the place, which meant that each morning they packed (960 pounds of gear in 19 boxes!) ready to go, and then were unpacking and working some more of the faithful before packing again ready for the next morning. However, delays notwithstanding, they got to their second port of call and operated from there for several more days. They apparently operated on all bands from 160 metres right through to Fifteen, although we have no indication that they tried Ten.

Just as this comes to hand will be the time to start cranking up the rig if you need a contact with Macao, as it is understood that K6AHV and W6MAV will be at CR9AK; full-bore contest-style

operation by one of the most formidable contest teams in the business; look for them on CW at 25 kHz inside the band edges, and for SSB they will be just above 14195 kHz, around 21295 on Fifteen, but they also promise to be on Forty and Eighty. Operation will be round the clock as far as possible, and for four days. No details as yet as to the QSL'ing arrangements.

Willis Island operation by VK4LX is possible, and may even be past by the time you come to read this; Ed is also still interested in the Hutt River Principality as an operation but awaits rulings from ITU and ARRL, while operation from Mellish is definitely out until the end of the cyclone season next May.

Another one which may qualify as a new country is the Dry Tortugas, where KT4MB was recently being heard; the critical part lies in a court decision of last March which has it that "the boundary of the State of Florida lies between the Dry Tortugas and Cape Romano" which would move the area outside the fifty states. So, if you worked KT4MB, maybe you snagged a new one!

On the Iraq question, the news at the time of writing is more or less along the lines of "if you hear one, work him and hope!" as we hear that although W7KW did not get the green light, someone else is in there trying to organise things.

Looking ahead a bit, we hear that Lloyd and Iris Colvin, and the Ysme Foundation, are setting things up for the new country of Tuvalu; VR8A has been allocated to VRIAT, and the Colvins have VR8B and VR8C, the intention being that they will be on Funafuti to greet the new Year and the Tuvalu independence celebrations.

Back to the Equatorial Guinea/Annobon chatter now: This one came unglued when the contact with officialdom moved, but it is now said to be rather solid for the CW leg of the CQ WW affair, with a few days of SSB and CW action prior to the contest; they would then move on to Annobon.

Rumour hath it that FR7BE may well be heading for Glorioso first, and then, after the turn of the New Year, to 3B7, St. Brandon; another snippet of news indicates that more people will be living in the Agalega area ere long—who knows, there *might* be another amateur.

Now, back to the question of Amateur Radio in China: Yet again we have to report vibrations indicating some interest in amateur activity, but still there does not seem to be great likelihood of *transmitting* stations coming on, even though SWL activity appears to run at a high level. Things being what they are in China, the release of amateur licences would seem to be unlikely at the moment, but when the succession question is resolved and forward planning can again be conducted with some security, who knows? Anyway, again the motto must be that if you hear one, you work him and QSL, and then hope.

Now, having muttered on about the earth-shattering things just



"... did you say we'd lost the audio here ..."

Here are two fathers who will be kept off their rigs for a while—to the right, standing, G3ZFQ and G4CWD, both of Leicester, whose 14-year old sons passed R.A.E. this year and now have G8 calls, G8KRY, son of G3ZFQ, and on the right G8CQW, who holds his father's original G8/3 call, re-issued by the Home Office on G4CWD's request.



past or in the pipeline, what about the stuff actually being worked?

Twenty

G3CED dropped power to 300 milliwatts into his Joystick at Broadstairs, but found conditions pretty awful—not so much a lack of QSO's but the sudden QSB which would take a 599 CW signal right down to inaudibility, or the situation where a station would not come back after an over and a tune round showed the whole band to be dead—you can't fight that sort of thing with more power or a better receiver! Nonetheless, an average four QSO's a day have been made, and another W worked on this low power with the Joystick.

G2BY (Wroxall, I.o.W.) found plenty doing with world-wide QSO's available for the taking throughout the day, good signals being exchanged with VK, ZL, SZ, W1-7, KV4, KH6, UWØFB on Sakhalin, and VEØNEH, who turned out to be H.M.C.S. *Iroquois* in Halifax harbour.

Still no beam for G4DMN, who had a week at home (meaning unlimited time for radio) and has now brought his countries-worked total up to 152. On Twenty, there were good openings to W6 and W7 in the afternoons, and SSB contacts were marked up with C5AR, CR4BS, CR6IK, FP8DH, JA2HLX, JEISSE, OD5IO, TG9UA, TI2VC, UK2FAU (Kaliningrad), VP2KJ, VP5WW, VP8NP, VX9A, W1-5, W6YVK, OH35A/W6, SV1FT (Crete), VK2AMD, XE1KS, 3A2GX, WB1AJF/6YS.

G2BZQ is also at times G2BZQ/W0 from the Minneapolis area, and operates on Top Band and Twenty. Richard will be all CW, but no schedules can be made as his work for an international company is such that he is doing some DX-commuting as he calls it. Reports or QSL's will be appreciated, and should be addressed as shown in this month's "New QTH's" and not *via* bureaux. All reports and QSL's will be acknowledged.

At GM3YOR (Kirkcaldy) the shift working has now stopped for a while, to Drew's relief, even though one gets the feeling he misses the opportunities for being on at different times. SSB was used only in the contests, and yielded contact with EP2FR, but at other times CW was favoured; this mode was used to raise FG7AT, FG7AX, HI8HAM(?), HR1DH, JA1FHK, JA1ITS, JA1NYZ, JA2KOW, JA3KM, JA7JWF, JF1VSA, K4JS, KL7MF, UL7TBF, UK9WBD, VE2BAQ, VE2DYE, VE7CXE, W4AX, W9BR, WASYMW/5, XE1FL, XJ3AR and 9J2RW.

G3NOF (Yeovil) had almost been given up for lost, but right on the line in came his very characteristic two pages of data. On Twenty it has been a question of long-path openings to VK/ZL/JA in the mornings, with West Coast VE and W knocking around with some Africans intermingled. SSB QSO's were made with AP2AD, CT2BB, CY6AGV, CY6AKG, CY6ANO, CY6AO, CY6ANO, CY6AWY,

CY6HN, CY600, DJ6QT/CT3, EA9FF, FGØMM, FP8DH, JA1BRK, JA2HLX, JA3IG, JA3PFZ, JA3WQH, JEISSE, K7PPQ/5 (New Mexico), KL7CYH, KV4IJ, PJ1AA, PJ3AR, TI2CF, TU2FH, UAØFCK, UKØFAJ (both Sakhalin for Zone 19), VE1VE/SU, VE4SY, VE6GT, VE7AZC, VE7BC, VE7DAJ, VE7DAY, VE7KC, VE7MR, VE7TL, VP2AB, VP2GMB, VP2M, VP2VBH, VX9A, VY9A, WA6JNH, WA7LAG, W7ZXH (Nevada), WØROW (Colorado), XJ4SK, XJ6MP, XJ7WJ, W7AEK/XJ6, ZE1DP, ZL1AGO, ZL1VY, ZL2CE, ZL3FK, ZS1FP, ZS1OK, ZS4KC, 3A2GX, 5Z4GK, 5Z4NY, 6W8DY, 8P6AH and 9X55M.

At G2HKU (Sheppey) there seems to have been quite a bit of activity from Top Band right up to Fifteen, with 14 MHz supplying the contacts with, on SSB, DA1DS/P/LX, DA1BZ/P/LX, EP2TW, UK9AAN, UL7ØAO, W3PHL—and CW with K4GSU, K4JD, W2GAM, WA2SDX, UT5SG/UF6, UA9WS and XJ1ATI.

Fifteen Metres

When even Ten has been showing signs of life, it is not at all surprising that 21 MHz should be in reasonable fettle. QSO's have been available and, as ever, the QRM situation is rather better than elsewhere generally. G2BY looked at things and found the band slowly picking up, which he hopes presages an upturn in the sunspot count—optimist! JA's were worked in mid-morning, and later, in the afternoons, PY, LU, W6, W7 and ZS.

In general this view of things is echoed by G4DMN, although Richard adds that his reports on SSB have been pretty awful, he having had to enter such as R4SI in the log! Nonetheless, A4XVI, A6XP, C9MAF, C9MIZ, CR6TA, CR6WT, CR6LB, CX3BH, DJ6QT/CT3, LA15H/MM (in the Black Sea), KZ5BC, LJ2S, PJ1AA, TU2EF, TU2FH, UK7GAA, UK9AAN, U18AAV, YV4YC, ZS1XG, ZS6ERB, 4Z4EC, 5L2A, 5L2CY, 5N2ESH, 7P8AC, 7Q7RM, 7XØBI, 9G1ILZ, 9J2BO, 9J2PH, EP2SN, VP2M, WA2WMT/WO, WØNAG and LU3DLU were all booked in, along with CW to Novices in W1-4, and a lone W5. However, Richard comments that the number of gotaways is probably about the same!

Fifteen for GM3YOR showed SSB with A4XGD, OJØMA, W4MB, WA1STN, ZC4RC, 4Z4OE, 7Q7RM, 9HIEN and 9G1ILZ; the CW accounted for its share of the spoils with PY2DEH, PY7AMX, WA4DGX, WA4QKV, WN4NEP, WA9RKK, ZS4MJ and 5R8AL.

At G3VEA/G3CED, a few contacts are noted on Fifteen CW, and the net in general seems to have spread a little wider than on Twenty; however, we like the note about the optimistic UA3 who keep calling him as VK3VFA! And, just to round it all off, the 300 milliwatts managed to get over to W4 on this band as well, just to satisfy the credulous!

G2HKU managed a CW contact with 9HIEL, and an SSB one

to EA8BF, just to prove to himself that the band was still there!

For G3NOF the form seems to have been that he found a few morning openings to VK, JA, VU, KG6, via the short path, while the W-customers started to appear from noon onwards. QSO's, SSB of course, were made with A2CAB, A4XGD (Masirah), DK5EC /ET3, DJ6QT/CT3, EA8CR, EA8JJ, EP2SN, FL8AC, HC1KH, HI8MOG, HR6SWA (Swan Is.), KA6A1, KV4IJ, KZ5IM, P29WG, SV0WZ (Rhodes), UJ8JJ, VK6CT, VP2G, VP5GT, VP5WW, VU2DK, VX9A, WA1RGV/KG6, YC2CR, ZP3CW, ZS4MZ, ZS6AW, ZS6YK, 5L2A, 6W8FP, 9G1LZ, 9J2BO, 9Q5SW, 9Y4NP and many East Coast VE's and W's, to make Don's largest haul from the band for a very long time.

G3ORP (Maidstone) reports mainly about Top Band, but Peter did have one session on Fifteen, on October 18, and worked SSB to all W call areas saving for the Sixes and Sevens, at S9 both ways, and VP8NY, who was a bit hard to copy due to her signal having some FM and drift on it, possibly due to poor mains regulation. Oh, and a long chat about Top Band with K9MBS. However, with plenty of Channel 1 viewers still around him, G3ORP's four low-pass filters stay in the feed line!

Comments

Among all the dire thoughts on the subject of VHF operation and the trend among so many G's to operate nohow else, it is nice to hear the other point of view occasionally—for example, an engineer friend of your scribe's was talking about using the R.A.E. pass he gained years ago to get a licence—while he would have a Class-B licence to keep up the enthusiasm, he would not (looking down his nose) consider it as anything but a stop-gap while Morse was being got up. And another newly-licensed G8 who is going into hospital soon for a few days is taking some Morse practice material with him; and yet a third one says VHF is played out and will old "KFE band out some CW for him in the lunch hour—all is not yet lost, clearly!

A letter from G3XKX (Leicester) who is a newspaper photographer, mentions that many of us, hearing that Prince Charles was in the Navy as a Communications Officer, wondered about his ever having a call sign, the more so after that bit in one of the national papers that indicated he had been using CW as part of the job. G3XKX has covered a number of Royal assignments, and had the chance to ask the vital question when they were crawling down a South Wales coal-mine. It seems Prince Charles certainly knows about Amateur Radio and pretty obviously must have listened on the bands. The telling answer came when, asking whether the Prince

would consider ever taking out a call, the reply was: "What, be like King Hussein of Jordan? No, I don't think so; just think of the pile-ups!"

But, of course, if Prince Charles *did* have his own call, he would no doubt be the owner of a "normal" G prefix, rather than the odd JY1 used by King Hussein which in itself attracts much DX to the JY1 receiver and so puts him well up the DXCC lists. And, of course, the right to with-hold licence details from the *Call Book* lies with all of us, and could well ease the problem. (Incidentally, the late King, George VI, when at R.A.F. Cranwell as Duke of York in the mid 1930's, was a very good CW operator and class-instructor in Morse. It was at one time thought that he would come on himself with a G-call, as he had a positive interest in Amateur Radio. *Editor*).

Ten Metres

More comment than we have had for a long time appears in the clip this month. G2BY reports it as closed for most of the time, but with the occasional contact made, the best of the bunch being a UA6. No beacons were audible at all, and the GB3SX one at Crowborough had not been heard for over a year now.

G4DMN reports that although he checked the band quite regularly, he found previously nothing!

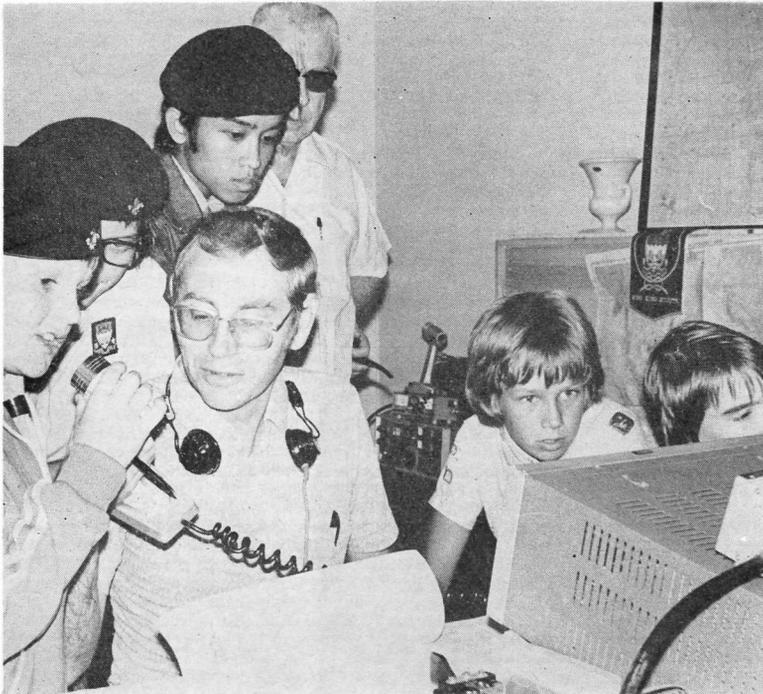
GM3YOR played in the RSGB 21/28 MHz contest, and reports some European QSO's made; but against the beams and linears he had no change of raising ZS, 7Q7, 9G1, 9J2, ZE or 6W8, all of which were heard at what would normally have been workable strength. Turning to other ten-metre activity, the band was monitored quite a lot, nothing was heard saving for the beacons, DL0JGI, 3B8MS and 5B4CY, which appeared at various times and at strengths from barely audible up to S7 on occasion.

G3NOF found lots of short-skip about at times, with Europeans, G and GW signals. A few South Americans appeared in the early evenings, and QSO's were made with FH8CY, HV3SJ, JY9CS, UK9AAN, SV1GA, ZE3JO and 3B8CV.

Forty

You either love it or detest it—so it *must* be a band with a personality of its own! However, it helps if you have a receiver which is as good as it can be expected to be, and if you don't expect it to do the impossible—another way of saying that the most important bit of the rig lies between the operator's ears!

GM3YOR tackled the CW end and found himself tangling with



J-O-T-A station VS6AJ (Hong Kong) operated continuously on the three bands 10-15-20m., working a total of 129 stations in 38 countries. More than 500 Scouts, Cubs and Guides visited VS6AJ over October 18-19, and four nationalities—English, Chinese, Australian and American—are represented in this picture.

Station of SM7QY Gunnar Ekstrom, Villa Bokliden, 37100 Karlskrona, who has a 500-watt Class-A licence under Swedish regulations. He also has a nice array of gear.



PY6AOV, PY7AMX, UA9MBT, VE1AXT, WB2ALX and ZS6ABT.

For G2BY Forty is basically an early-morning band; he found good contacts with VK and ZL, and also worked W3, W4, W5, W6, W7, W9, KV4 and JA's, out of which perhaps the most interesting QSO was that with VK3XB at 0700 one morning, when G2BY had taken the car to Littleton Down, one of the Island's high spots, and fired up the /M rig, hearing plenty of ZL's but working only the VK.

G4DMN compares the FT-501 at home with the KW-2000B at school, as far as their ability to wrinkle things out of Forty goes, giving the verdict to the school rig; nonetheless, Dad's gear at home was still able to net CR4BS, CT7ZXA, DJ6QT/CT3, EA8CR, EP2TW, UP2ER, VP5WW, VK7GK and PJ8YFQ, plus W's, all on SSB, while CW came up with PJ8YFQ again, W1-4 and WØRP.

G2HKU gave Forty quite a going-over, which resulted in SSB contacts going into the log with DA1DS/P/LX, DA1BZ/P/LX, EP2TW, UK9AAN, UL7AOA, W3PHL; and CW bookings of K4GSU, K4JD, W2GAM, WA2SDX, UTSSG/UF6, UA9WS and XJ1ATJ.

G3CED/G3VFA is clearly on an HF-bands kick at the moment, and only a few forays on Forty appear in the log, resulting in just four CW contacts, nicely spread round Europe—but who's complaining about working EU's on Forty when you've only got an odd few milli-watts?

Eighty Metres

It has been suggested that, had there been Amateur Radio in mediaeval times, tiresome radio amateurs might have been forced to do penance by making them work a specified number of QSO's in the DX area of the band without losing their temper. That would have been far worse than the hair shirt!

G4DMN classifies conditions as "not brilliant but OK!" Another way of announcing that his RF penetrated the QRM to (as far away) as KV4FZ, PJ2CW, VO1KM, VP2A, VX9A, W1-4, W8-9, 7XØBI all on SSB.

G2NJ (Peterborough) stuck to his QRP theme and this time recalls with satisfaction hunting down G6AB for an hour-long ragchew on CW while G6AB was on 970 milliwatts; G3IGU was another one, also at the one-watt level. Both these QSO's were around noon, at which time Nick usually checks the band to look for the QRP lads.

One of the interesting things about the G3VFA log is the data on the rig at the far end of the QSO, and to note the growing number of stations behind the Iron Curtain who now are using commercial equipment, particularly the HA's. Of George's 80m. work, we note that he seems to favour the idea of getting on the air at the sort of times when most of us are braving the traffic QRM in order to get to, or home from, work, and lunchtimes—which seems an admirable way of avoiding the traffic! The CW contacts covered most of the U.K. and into Europe—and it is of interest to note that in five pages of logs there are only two CQ calls, both of which resulted in contacts with stations at a fair distance for the time of day.

G2BY reports nothing of note found on Eighty but he still uses it for CW, as much as anything for the pleasure of a contact with yet

another Old-Timer not previously worked for many years; even G2AA pops up occasionally—and you can't have an earlier call than that!

Top Band

GW3WMY (Cardiff) queries the number of counties currently on the list, saying he seems to recall just 98 of them—memory is dead right at that, 98 being the number possible under the old county rules. But when we made the change to the new administrative areas we added a few more possibilities in the way of Islands and such so as to give people some reasonable places for them to practice DX-perimenting, most of the rare counties in the old list which were fairly easy to reach having been abolished—Rutland for instance. GW3WMY also queries whether GI, GM, GW, and G count as separate countries—of course they do; and finally he puts in the first entry for the 1975/1976 table with a cracking 72 points in the first ten days of the new period.

GM3YOR rolled up contacts on SSB with eleven countries in the CQ WW contest, these being DJ, EI, G, GD, GI, GM, GW, HB9, OE, OH and PA. Otherwise it seems to have been CW activity, and this way resulted in DJ5DI, GC3APA (on Sark again), HBØNL, PAØNK and XN1KE.

A first letter comes in from G4EAX (Nottingham), who has a Mk. II Vespa, and on the receive side a Lafayette HE-80, coupled to a thirty-foot vertical; John worked hard to produce his 59 points but sadly he didn't notice the starting date was November 1, and so the work was wasted—not really though, as it has no doubt served to generate his record-keeping system and to prove it out. A new job has come into the way of radio-activity for the moment, but no doubt that problem will ease off as G4EAX brings things into focus there.

G4BOH (Bury) came on for twenty minutes in the CQ WW Phone contest, and worked DLØWW, DLØPG, W8LRL, PAØHIP, OH2BO and OH1NK; quite a trick for a station who has never worked outside the U.K. before on Top Band phone!

For 160m. G2BY uses a wire running along the apex of the roof inside as his aerial, tuned against ground Marconi-fashion. With this he has managed to work G, GM and PA during the dark hours.

G2HKU, as indicated earlier, has devoted rather more than usual of his time to other frequencies, but this didn't stop him from having his usual PAØPN QSO's on SSB, which mode also raised GM3WTA.

G3ORP (Maidstone) has been "doing his thing" on Top Band with rather good effect, and his SSB was used on PAØHIP, DKØKX, HB9ZE, DLØWV, DK2BI, OH2BO, PAØCFW, HB9H, OH1VP/3 OH1NK, OH3VV, PAØFXF, DLØPG, W8LRL (who, incidentally, used to be known on the band as WB8APH), OH2BM and EA8CR, the latter being a new one. CW managed a half-contact with K9MBS (the static at the K9 end being too heavy), W1BB (who chipped in to tell Peter he was getting over OK), W8LRL, XN1KE, W2PV, W3AU, VE3EK, XJ1MX, K1PBW (from his new QTH), W1GJE, WA4RHG, W3HUS, K2GMF, W9UCW, K2GNC, W1SRQ, KP4AN, EA8CR, W2LWI, K2GNC again, three contacts with KV4FZ, and a second, 100% this time, QSO with KP4AN. (over)

G3ORP also adds some interesting notes. Looking first at the frequency area where the DX transmits, namely 1800-1806 kHz, there are Hi-Fix beacons on 1800, 1802.6, and 1804.2 kHz and there is an AO carrier on 1801.9 kHz which seems to be slowly drifting towards 1801.5 kHz; this last seems to be strongest when the N/S DX path is at its best; and occasionally there are strong bursts of RTTY on 1801 kHz. This means the best areas are 1802 kHz, 1803.4, and sometimes 1805 kHz. Looking at the W's DX-window, they should recall we have a coast-station on 1827 kHz with upper side-band, and that can make it inconvenient for the Europeans to transmit in the area 1827-1829 kHz. DX stations should always indicate where they are listening—and don't forget, if you have doubts about your frequency calibration, that DHJ is on 1830.5 kHz.

Some Late Bits

Very much here-and-there, this collection. Our latest news on the Dry Tortugas situation is very confused, one source saying it will not count, another that it will. Doubtless it'll all come out in the wash! TI9FAG QSL cards, we learn have been offered to the DXCC arbiters and accepted without any argument.

When thinking of the VX9A and VY9A operations, cards should go to VE3MJ, but don't forget there is a postal strike on in Canada. We hear little mutterings that because of this they may load all the QSL's into the Bureau system, or alternatively, take them over the border and inject them into the U.S. mails.

If you worked or heard GB2BP, you were listening to a station on the "Forties Charlie" rig, at 110 miles east of Aberdeen; they had 790 contacts including 312 U.K. stations and covering 59 countries. G5APC had a Collins 75-S3A and Collins KWM-2A with a Millen matching unit, while GM3OXC used an FT-101B and a KW Super-match. For aeriels, they used an eighty-metre vertical dipole at 200 feet, hanging from one corner of the helideck and fed through 150 feet of coax, while for the HF bands there was a 14-HVQ at 280 feet. QSL's via BP Telecomms, Dyce, Aberdeen. It's a pity that your scribble only got the news too late to pass the word on through CDXN, but GM3OXC was not able to give the final details until long after deadline-time, through no fault of his own.

If you ran across N8GMI, he was in the State of Michigan, and

was a special from the General Motors Institute, not to mention the first N call to have been issued. QSL's go by way of K8HPS which is the Institute's Club station call.

Jamboree-on-the-Air in October is now a well-organised activity each year; this time we have a report from the group on GB3SG, operated by the Northern Heights Club for Bradford and Bingley scouts; out of 213 contacts, some 39% were with Scout stations, of whom the best was surely that with 5N2BSN, Minna, the District Commissioner for North West Nigeria, although they managed to be in touch with four continents—Asia, Africa, Europe and North America.

During October the St. Dunstan's group members had their conference, the first one to be held in the Jan Fraser House at Ovingdean, to where the amateurs concerned travelled from far and wide; most of the attendance comprised licensed amateurs who are war-blinded, plus a few SWL's studying for the ticket. If you heard GB3STD, that was their conference station. We understand they intend to operate a regular net, no doubt on Eighty.

A contest to be noted—an *important* one, too, at that! The CQ WW DX 160 Contest, which runs 2200z Friday, January 23 to 1600z on Sunday, January 25. CW only, and rules are the same as last year. You exchange RST plus a serial number starting with 001; W/VE send their state or province. Two points per QSO, save that W/VE/VO score ten points for each contact with DX, while the DX countries score ten for each W/VE/VO contact. Multiplier for all stations is the sum of states, provinces and districts in W/VE/VO, plus the number of other DXCC countries worked. Logs, which are to be mailed before February 28, go to CQ 160 Contest, 14 Vanderventer Avenue, Port Washington, L.I., N.Y. 11050, USA.

Finale

We seemed to be low on material when we started to put the piece together—then it all landed! Next time, we will be in the thick of the Christmas post delays, and so the deadline must be December 8, *latest* here, to get the completed piece to the Editorial Department in time. Send it to "CDXN," *SHORT WAVE MAGAZINE*, BUCKINGHAM, MK18 1RQ. Meantime, from G3KFE, may you all have a Merry Christmas and a Happy New Year.

THE 1975 A.R.R.A. EXHIBITION — LEICESTER

October 30-31, November 1



General view of the Hall at lunch-time on the Friday, October 31. Total attendance was just over 6,000—about the same as last year—and there were some 30 trades stands, with additional Club and group representation, i.e., Royal Navy A.R.S., Home Office Interference Dept., RAIBC and others.

The Lowe Electronics stand featured the very comprehensive Trio range and their whole layout was most professional. Left to right in this picture are: John Wilson, G3PCY; Bill Lowe, G3UBO; and Alan Whitford, G3MME.



Waters & Stanton Electronics were showing, among many other interesting items, the Technical Associates peak-and-notch filter, new at this Exhibition. Peter Waters, G3OJV (centre) is demonstrating to G3RCQ (left) with Richard McLachlan, G3OQT, of Bredhurst Electronics, Chester, looking on.

One of the larger stands at the Leicester Exhibition was that of Amateur Electronics UK, Birmingham, who hold a number of agencies for Amateur Radio equipment. Left to right here are Ken Reeves, G3WZI; Ken Perfect G3FIK, the principal of the firm; and Malcolm Board, G8GUS





Malcolm Sparrow, G3KQJ, of QM-70 Products, Droitwich, discussing one of their VHF items with G3JKV, (left).

The Home Office Radio Interference Dept. were at Leicester with an interesting display showing the effectiveness of GPO-type filters against TVI. They were also able to test, for visitors to the stand, such filters as were brought along for the purpose.



Group from the Wolverhampton area resting their legs in the bar. Left to right: G3ONP, Mrs G3NOW (foreground), G8BHH, G3NOW, G4DYR and Mrs G4DYR.

AUTO-SCAN UNIT FOR TWO-METRE FM RECEIVERS

DISCUSSING A PRACTICAL DESIGN, USING IC's

A. R. WARD (G8KGG) and D. E. CLARK (G8GPF)

WITH the advent of channelised simplex and repeater operation on two metres it was thought that an autoscanner system would be a most useful addition to a transceiver, especially when working mobile. A brief period of operation with a commercial rig offering this facility confirmed this impression and the system described here was evolved for converting multi-channel rigs to "autoscanner."

After much deliberation over the actual method of scanning, and the question of whether priority channels and the like were really necessary, the following mode of straightforward operation was decided on:

With the receiver squelched the required channels (in this case any number up to 10) would be sequentially scanned, the scanning speed being adjustable to suit individual requirements. When an occupied channel is encountered and the squelch broken, the receiver will lock on to this channel for a certain period of time (again, this period can be adjusted) after which the unit will continue scanning sequentially until another occupied channel is encountered. The scanning speed and lock-on time have been made adjustable to give satisfactory operation with as wide a range of equipment as possible, allowing for different squelch voltage characteristics.

A block diagram of the system is shown in Fig. 1 and consists of the following circuits:

- The main low frequency oscillator controlling the scanning speed.
- A counter, driven by the oscillator, giving a binary output.
- A binary-coded-decimal to decimal decoder-driver giving decimal outputs, from the binary inputs, to switch the channels.
- A comparator giving an output which, when the squelch voltage changes due to an incoming signal, is suitable to trigger.
- A long delay monostable which, by disabling the oscillator, causes the receiver to lock on to an occupied channel for the desired period.
- A 5v. regulated supply to give a +5v. line from the main 11-14v. receiver supply.

As cost was, as always, a primary consideration, and also for reasons of simplicity, integrated circuits (especially TTL) were made use of wherever possible.

The complete circuit of the unit is shown in Fig. 2 and the operation of each stage will be explained separately:

The Oscillator (A)

The main low frequency oscillator controlling the scanning speed utilises a dual TTL monostable, the SN74123N, connected as an astable multivibrator. One of the monostables is triggered, when power is applied to the circuit, by the output of the long-delay monostable rising to its quiescent state of a logic 1 level (3-5v.),

causing its output to go high. This first oscillator monostable is connected to the second one so that when its output falls again after a time determined by the R-C combination (R11, C3) it triggers the second monostable, causing its output in turn to go high for a period of time determined by R12 and C4. The output of the second monostable is then fed back to the first monostable so that when it returns to a logic 0-level it retriggers the first monostable and the cycle is repeated. Thus, by cross-coupling the monostables an astable circuit can be produced, one output of which is fed to the counter, thus advancing the counter by one for every complete oscillator cycle. The values of R11 and R12, and C3 and C4 are equal, thus giving an equal mark-space ratio waveform. The values of these timing components are chosen for different scanning speeds and the resistors can be made variable if desired. The values used in the prototypes are shown in Table 1.

The factor determining the maximum scanning speed is the squelch voltage time-constant (*i.e.*, the time taken for the squelch voltage to rise on receipt of a signal and to fall when the signal disappears). Also, the receiver oscillator must be given time to start and to reach a suitably high and stable output for the receiver to squelch on each channel change. The scanning frequencies used in the two prototypes were 2 Hz (10 channels scanned in 5 seconds) and 1 Hz, using respectively diode switching and relay switching for the crystals. The actual methods of crystal switching which can be used are discussed later.

The Counter (B)

This is a 4-bit binary device, the SN7493N, but other binary counters are suitable (*e.g.*, the 7490). The binary

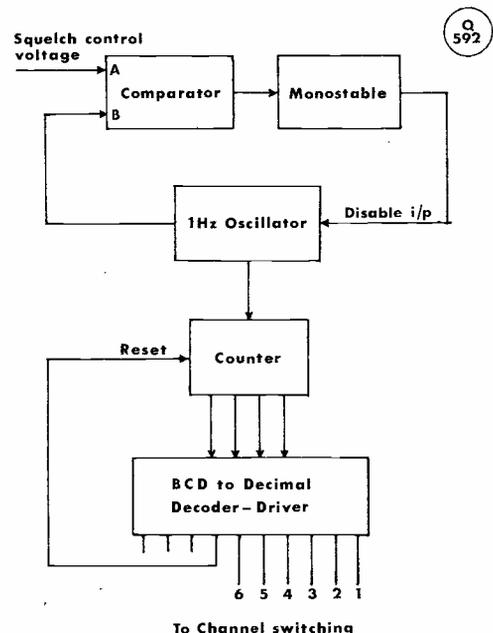


Fig.1 Block diagram of Auto-scanning system

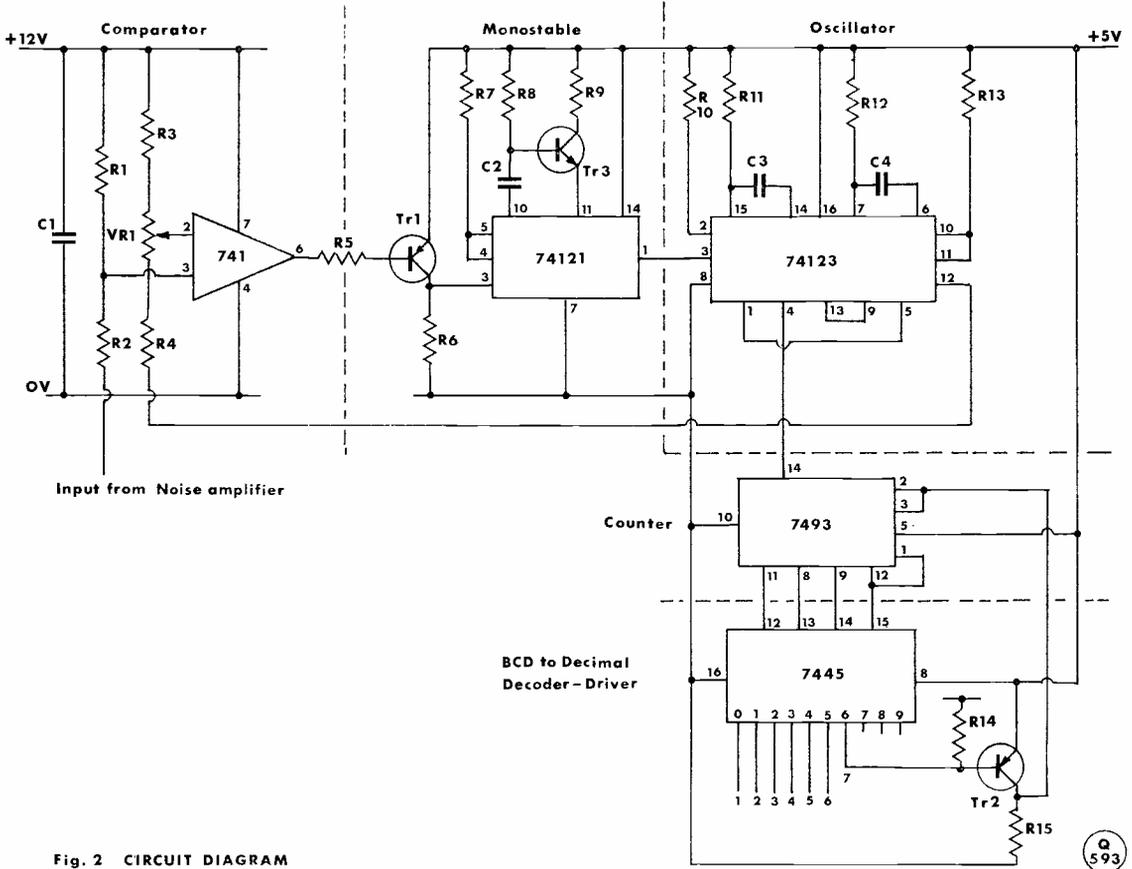


Fig. 2 CIRCUIT DIAGRAM

outputs of the counter are taken to the *BCD-to-decimal decoder-driver*, the SN7445N. When the required number of channels has been scanned—say, for example, six—the counter is reset to start the counting sequence again, when the counter has gone up to 6, by taking the output No. 6 to an inverter consisting of Tr2 (required because the 7445 has active-low outputs) and taking this inverted output back to the reset inputs on the 7493.

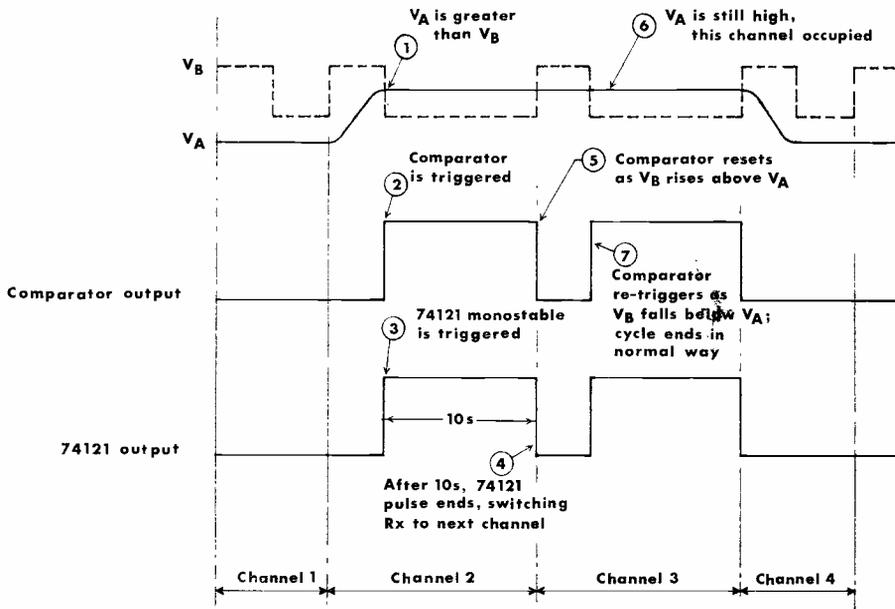
Although the counter resets immediately it reaches 6, all the channels will still be scanned because the counter resets to 0, not to 1, and always counts 0, 1, 2, . . . 5. Thus, if the receiver has two, four or eight channels the reset pulse can be taken direct from the 2, 4 or 8 (B, C or D) outputs of the counter which are "high" when on.

The Comparator (D)

The comparator compares the squelch voltage with a fixed DC potential (see Fig. 4) and gives a corresponding logic output to trigger the lock-on long delay monostable when the squelch voltage (derived from the noise amplifier) varies on receipt of a signal. This is the only part of the circuit which requires any real setting up and the circuit used was made as flexible as possible to accommodate different squelch voltage characteristics. It comprises

a 741 operational amplifier and a switching transistor Tr1 to give a TTL compatible logic output. In most cases it was found that on receipt of a readable signal the squelch voltage (the DC control voltage from the noise amplifier) will vary depending on the received signal strength. In both the receivers used in conjunction with the prototypes (one solid-state receiver, one valve) the rise was from -4 to -1 v. This is by no means the general case, but if it is found that the squelch voltage does rise, the following procedure can be adopted for setting up the comparator stage:

- (i) Set the squelch so that the receiver is fully squelched and measure the squelch control voltage (V1),
- (ii) Check to what value this voltage rises on receipt of a very strong signal (V2),
- (iii) Calculate Ohm's Law the voltage which will appear at the centre of the potential divider chain formed by R1 and R2 (VA) when,
 - (a) V1 is applied to the point A in Fig. 4 (VA1),
 - (b) V2 is applied to the point A in Fig. 4 (VA2),
- (iv) Set the standing DC potential (VB) on the inverting input of the 741 to a value just below



Q 594

Fig. 3 Complete switching cycle waveforms

VA2, so that when a signal is detected the squelch voltage rises, thus making the non-inverting input (at VA) positive with respect to the inverting input (which is at VB). This will cause the 741 output to go high, and this transition is inverted by Tr1 to give a falling edge suitable to trigger the long-delay monostable, causing the receiver to stay on the occupied channel for the preset period.

If the squelch voltage falls on receipt of a signal this can easily be catered for by connecting the fixed potential divider chain to the non-inverting input and applying VA to the inverting input. The golden rule for setting up this simple comparator is to cause the 741 output to go high on receipt of a readable signal. This signal level, at which lock just occurs, can then be adjusted by the squelch control from a very strong signal (receiver fully squelched) to zero signal level (when the receiver is completely unsquelched). These comments apply to a receiver with a noise squelch.

Long-Delay Monostable (E)

The long-delay monostable uses the SN74121N TTL monostable chip with an external timing circuit to obtain a very great output pulse width without having to use large electrolytic timing capacitors. This monostable disables the scanning oscillator by feeding a logic-0 to an input of the 74123, and re-triggers it at the end of the timing period by the leading edge as it rises to logic-1.

It became apparent however that if, in scanning a number of channels, two consecutive channels were occupied, say channels 2 and 3, then the receiver would stay on channel 2 for the required time but only remain on channel 3 for the scanning oscillator period, which is much shorter than the period of the long-delay monostable. This happens because when switching from 2 to

Table of Values	
Referring to all Circuits	
C1 = 47 μF, 18v.	R16 = 270 ohms
C2, C3,	RV1 = 47,000 ohms
C4 = 22 μF, 6.3v.	IC's = μA741C,
C5 = 0.1 μF	SN74121N,
C6 = 47 μF, 6.3v.	SN74123N,
R1, R2 = 1 megohm	SN7493N,
R3 = 56,000 ohms	SN7445N
R4, R5 = 33,000 ohms	Tr1, Tr2 = BC212
R6, R10,	Tr3 = BC182
R15 = 1,000 ohms	Tr4 = 2N3053 (with
R7, R13 = 820 ohms	h'sink)
R8 = 680,000 ohms	D1 = 1N4148
R9 = 27,000 ohms	D2 = 5.6v. zener,
R11, R12 = 39,000 ohms	BZY88C, 5V6
R14 = 10,000 ohms	

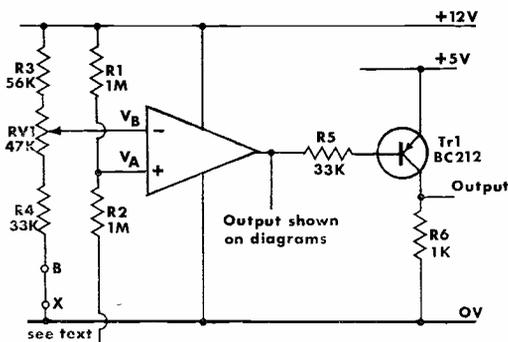


Fig. 4 Comparator details

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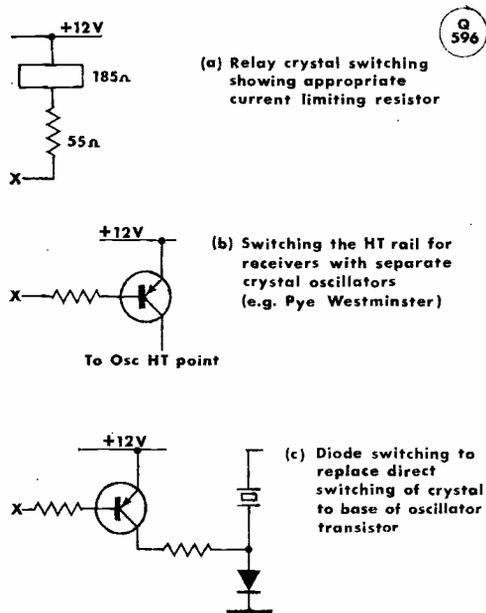


Fig. 5 Different methods of crystal switching; in all cases 'X' comes from automatic/manual switching circuits (see Fig. 6)

3 the squelch voltage would remain almost constant and would not cause any voltage transition at the 741 output to retrigger the 74121.

This was overcome by connecting the earthy end of R4 not to earth, but to the second of the two outputs of the main scanning oscillator. This action is best explained by careful study of the waveforms at each stage in the switching cycle, and these are drawn, and explained in steps 1-7 in Fig. 3. This shows how during the first half of the scanning oscillator cycle VB rises above VA (whatever signal is being received) thus resetting the comparator. This ensures that the 74121 will be re-triggered when VB goes low for the second half of the scanning oscillator cycle if VA is still high, as when consecutive channels are occupied.

It is important to note that the maximum scanning speed depends upon the squelch voltage time constant—that is, the time for the squelch voltage to go from an unsquelched to a squelched state. The first half of the oscillator cycle must be long enough for VA to decay below VB when the receiver is switched from an occupied to an unoccupied channel. The waveform of the scanning oscillator can, if desired, be made asymmetrical to help increase the scanning speed.

The +5v. regulated supply consists simply of a zener and a current amplifier, Tr4. See Fig. 7.

Timing Circuits

The values of the components in the RC timing networks used for determining frequency of scanning and lock-on time can be altered to suit different squelch characteristics and crystal switching techniques. The values used in one prototype are tabulated below along with the periods they gave.

TABLE 1

Scanning Oscillator Period: R11, R12, 39K; and C3, C4, 22 μ F; gave a period of 1s (frequency 1 Hz). The ratio of C3 to the oscillator period can be considered linear over one order of magnitude.

Long-Delay Monostable Period: R8, 680K and C2, 22 μ F gave a period of roughly 15s. These values will not give consistent results with different 74121's and 74123's as the period is not only dependent upon C and R.

Crystal Switching

A 7445 is specified for the BCD-to-decimal decoder driver. This has open collector outputs which can sink up to 80 mA. This makes it ideal for switching LED's as channel indicators (they consume 15 mA on average) which leaves a considerable power margin to perform the switching operations, three methods of which are discussed here.

Relay Switching

When crystals are switched by relays they can be driven direct from the 7445 outputs. It is important to note the relay resistance and to include a series resistor to limit the current through the relays so as not to draw more than 80 mA total from the 7445, taking into account any current used by channel indicators. This method of switching, successfully used in one prototype, is shown in Fig. 5(a).

Oscillator Switching

When a receiver with a separate oscillator for each channel is used switching is also very simple and can be carried out as indicated in Fig. 5(b). This will enable the

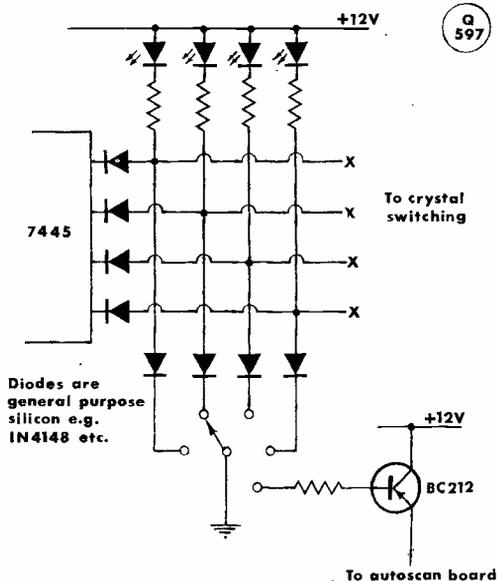


Fig. 6 Details of LED channel indicators and autoscan/manual channel switching

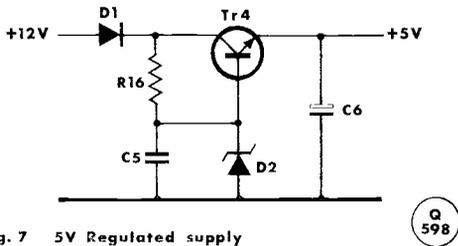


Fig. 7 5V Regulated supply

HT rail to the oscillator transistor to be switched by the 7445 using a p.n.p. transistor.

Single Oscillator Switching

If separate crystals are switched to base of a single oscillator transistor the circuit shown in Fig. 5(c) can be used. A diode is connected between crystal and

ground and a "grounded" emitter transistor switches a bias current through the diode. This simple method was most successful with 44 MHz crystals in the second prototype using IN4148 diodes.

Details of a method for channel indication and auto/manual switching are shown in Fig. 6. If an extra contact is not available on the channel selector switch to control the autoscan, an extra single-pole change-over switch may be added to connect earth from the wiper of the selector switch to the base of the p.n.p. power switching transistor. *Note:* The current consumption of the board is roughly 150 mA.

Conclusion

A component list has been included for a basic auto-scan board. However, the main intention of the authors when designing this unit was to give ideas on how an auto-scanning system can be designed by the home constructor, and it is hoped that the circuits given here will be developed into a more comprehensive system.

MAINS VOLTAGE ADJUSTMENT

TO COPE WITH LINE VARIATIONS

N. A. S. FITCH (G3FPG)

IN the U.K. most people take it for granted that the domestic AC mains supply is 240 volts under normal circumstances. Many items commonly found in the home, such as toasters, irons, food mixers, fires, refrigerators, vacuum cleaners and shavers, are rated for 230/250 volts or even 200/250 volts. No means of adjusting to the actual supply voltage is provided, nor is it necessary.

Some domestic electrical appliances do require that a reasonably accurate voltage be supplied. Television receivers, audio hi-fi equipment and slide or film projectors fall in this category as do many Amateur Radio products like transceivers, receivers, oscilloscopes, etc.

Actual Supply Voltages

Emergencies apart, the various U.K. Electricity Boards have a statutory obligation to maintain the supply within $\pm 6\%$ of the nominal value, now almost invariably 240 volts. In round figures, this means that one may have to cope with inputs varying from 225 to 255 volts. At the author's QTH 255 volts is frequently measured especially during periods of low demand.

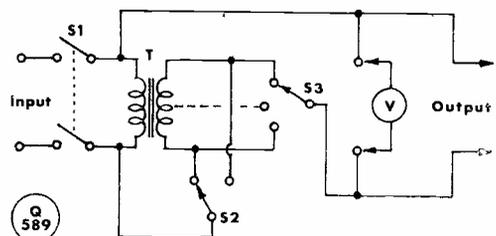
Imported Equipment

Within the last decade, a vast amount of domestic electrical and Amateur Radio equipment has been imported from Europe and hi-fi audio and Amateur Radio items from Japan and the U.S.A. To pick four products currently advertised in the Amateur Radio press we find input voltages quoted as follows: Very popular HF transceiver, 100/234 volts; New HF transceiver, 110/220/235 volts; Two-metre transceiver, 230 volts; Frequency counter, 110/220 volts.

Effects of Higher Input Voltages

Probably all amateur equipment designed to operate directly from the domestic AC supply incorporates a mains transformer. Taking the case of the transceiver on its 234-volt input tapping connected to a 255 volts supply, this would mean that its power supply output voltages would be 9% up, whilst the power handled by the transformer could be up by 19%, causing it to run appreciably hotter. No doubt the supplies to sensitive circuits, such as the VFO, would be stabilised, but then the voltage stabilising components could dissipate more power than the designer intended.

The modern trend for smaller yet more powerful equipment has increased the problem of dissipating the heat from the PA compartment of an SSB transmitter, for example. This is exacerbated when further heat is generated due to higher-than-designed-for AC input voltages. Some components, such as electrolytic capacitors, need to be derated if operation at elevated temperatures is likely. It is possible that electrolytics in a power supply, whilst adequate for the designed AC input voltage of the equipment, might fail due to the combined effects of over-voltage and consequent extra heat generated.



In this circuit, T is a small heater transformer, see text; S1, DP mains switch; S2, SPDT toggle, mains type; S3, as S2, but 3-way rotary if c-t transformer is used (see text); V is 0-300v. AC meter. Switches should be good quality.

This is likely under standby conditions in a multimode transmitter or transceiver.

The Solution

Whilst it is feasible to run, say, 220-volt equipment from a 250-volt supply through a variable-voltage transformer, such components are bulky and expensive. Fortunately, a much simpler and entirely satisfactory solution can be achieved using a small heater transformer, as shown in the diagram. The secondary current rating of the transformer must equal or exceed the current required by the equipment to be supplied. This is not usually stated in the maker's specification, rather the maximum power consumption is given. To take a typical example of a 350 watts device at 230 volts, the current rating should be at least 350 divided by 230 equals 1.52 Amps. A two-ampere rating would be quite suitable.

As drawn, the output could be either 12.6 volts higher or lower than the line voltage depending upon the phase relationship of the primary and secondary windings.

BREAK-IN FOR THE CODAR AT-5

EFFECTIVE ADD-ON UNIT

A. P. KERFORD-BYRNES (G6AB)

THERE must be many amateurs who use the AT5 transmitter, either at the home QTH or mobile. After a time they may get a bit frustrated because break-in can not be used, and when one is monitoring the transmitted signal, the beat of the oscillator, running all the time, can prove rather distracting.

It was therefore decided to build a little add-on unit which would enable transmission without having to listen to the continuous note of the oscillator, and with which break-in could be used.

A 2-oz. tobacco tin was salvaged from the shelves. It was the type which has a detachable lid rather than a hinged lid. This was to form the "cabinet" for the break-in unit. The components used were a reed relay (obtainable from *G.W.M. Radio*), two twin-connector blocks, a single-pole toggle switch and a standard jack socket. A couple of rubber grommets are also required to lead the wires out of the tin.

The relay was bolted to a small block of wood which was then fixed to the bottom of the tin. The connector block was also fitted to the bottom of the tin, with the key jack socket and toggle switch mounted on the side. These items were connected as shown in the circuit diagram. (It may be found easier to wire up all the components before mounting them in the tin.)

The reason for a standard type of keying-jack socket being used was that all transmitting gear at this QTH is fitted with similar socketry for keying, but the miniature type of jack socket may be used if desired. Two holes are drilled in the sides of the tin and the two rubber grommets are fixed therein. One pair of outgoing wires

Should the output voltage be higher than the line value, the situation can be reversed by switching both S2 and S3. For straight-through operation, either S2 or S3 but *not* both should be switched. Obviously this is a two-way device. Either it can be used to operate 230 volt gear off 240 volt mains or it can be used to boost low, continental supply voltages to suit U.K. equipment.

Naturally, this principle can be extended to give finer control in 6.3 volt steps by using a centre-tapped secondary in which case S3 would need to be a three way switch, as shown dotted.

Limitations

It is suggested that this technique be limited to cope with $\pm 10\%$ voltage variations and that adjustments be made before switching on the equipment to be supplied. To operate 110 volt, American gear from 240 volt mains, an autotransformer should be used. It hardly needs mentioning that for safety reasons, this little device should be housed in a properly insulated box and good quality switches used.

from the relay coil is made long enough to reach the key-jack socket on the AT5, and this pair is terminated with a miniature jack plug. The other two wires are connected to the twin connector block, and made long enough to pass through a small hole which is drilled in the rear chassis drop of the PSU of the Codar. This pair of wires is terminated with another twin connector block under the chassis of the PSU. The lead beneath the chassis of the PSU of the AT5—which runs from pin 5 of the OA2 stabiliser to pin 7 at the output socket,

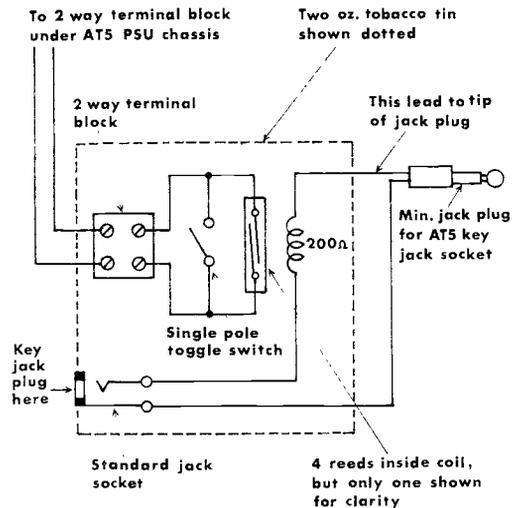
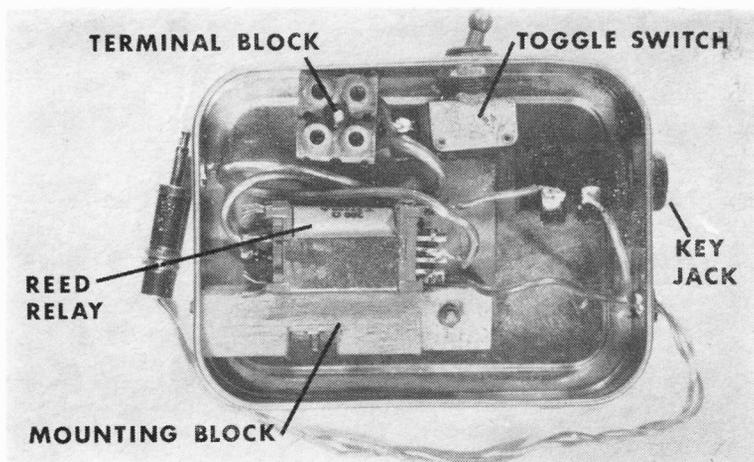


Fig. 1

Parts required for the unit discussed in the text: Small tobacco tin (detachable lid); reed relay, 4-pole (G.W.M. Radio, Ltd.); two 2-pole terminal blocks; single-pole toggle or slide switch; standard key-jack socket; rubber grommets.

The unit as constructed by G6AB and described in his article.



carrying the stabilised HT supply to the output socket— is then cut. The two wires under the chassis which are terminated in the twin terminal block under the PSU chassis are in turn connected to the two cut ends. In the author's case the wire which was cut was the blue insulated one, though this may not apply to all these PSU's.

Netting

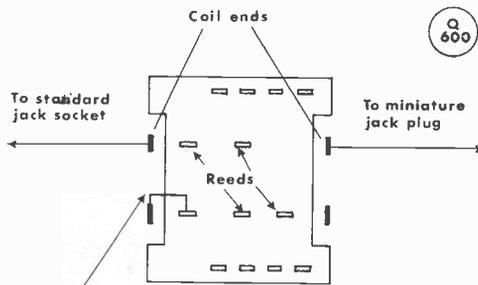
It will now be observed that the cutting of this wire has destroyed the netting facilities previously available, and that is the reason for the single-pole toggle switch in the tobacco tin. This is joined up across the twin terminal box in the add-on unit, and when put in the closed position, will restore HT supplies to the oscillator if the "Net, Standby, Transmit" switch is put to "Transmit," enabling netting to be done without putting the carrier on the air.

Construction

The circuit diagram shows the connections to the components and the photograph can be used as a guide to the layout. The original keying jack plug, the coil of the relay, and the extra jack socket are wired in series, which puts the 200-ohm coil of the relay in the cathode circuit of the PA when the key is closed.

Break-in working can now be easily accomplished by providing a separate aerial for the receiver and keying the AT5 through the add-on unit, though at G6AB the transmitter aerial is used as this is changed over from "receive" to "send" by another relay, operated by an additional contact on the key.

The relay used here has actually got four separate normally-open gold-plated contacts, vacuum sealed in a glass tube, inside the 200-ohm coil. When the coil is energised by the cathode current of the PA valve all four contacts close. If the constructor wishes, all four reeds



Looking on end of relay having shorting strap

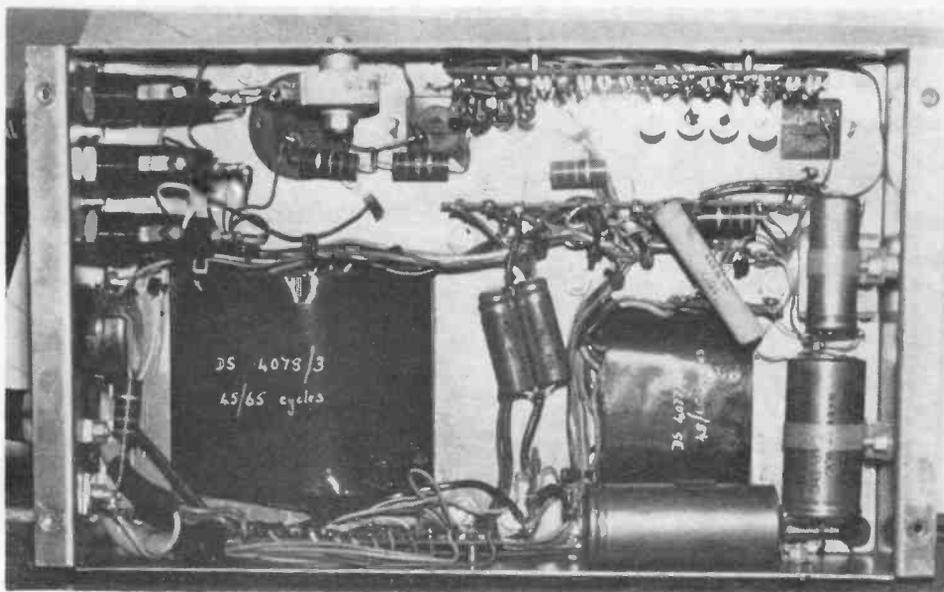
Opposite end of relay has 4 large tags which connect to other ends of reeds

Connections of four pole reed relays

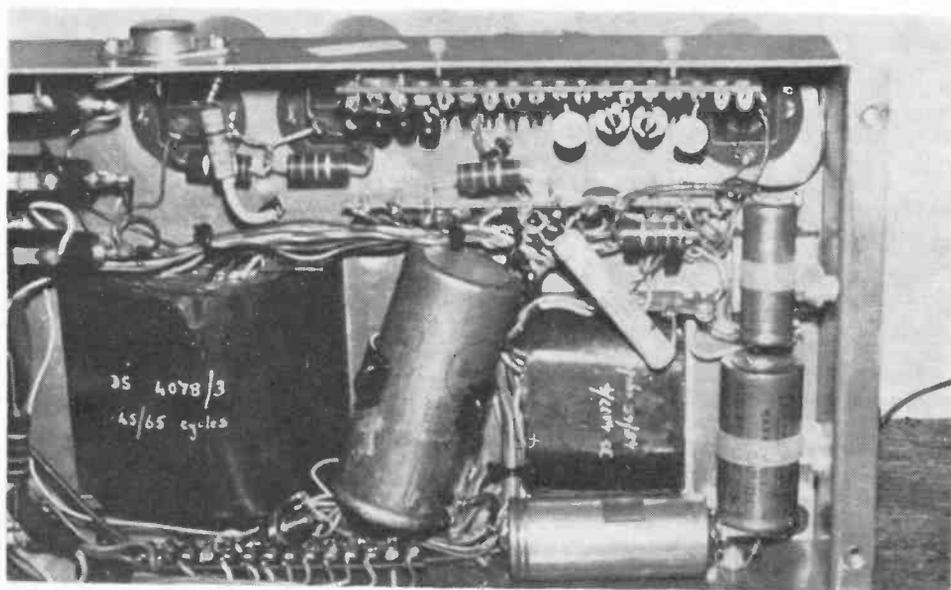
can be strapped in parallel to share the load (though each one is rated to carry 500 mA!). Alternatively, one of the reeds can be used to apply an earth to the station receiver when the key is closed, in which case it is recommended that the two-pole terminal block in the add-on unit be replaced by a four-pole and the extra pair of wires run to the aerial and earth terminals of the receiver.

Operation

In conclusion, for the benefit of CW operators who have not yet used break-in, it is most satisfying to be able to monitor one's own transmission and at the same time to listen between the dots and dashes and hear immediately if any QRM should appear on the channel, or if the station with whom one is in contact has any difficulty in receiving one's signal. He can stop your transmission at any time by just pressing his key or sending a string of dots. Break-in thus leads to better operating.



These two pictures refer to the article "Modifications for the KW-2000 Transceiver Series", in the November issue of the Magazine. Above is the underside of the KW-2000A and below the appearance after the modifications discussed in the article by G3ZSU and G3OUV.



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VHFCC Awards

CONGRATULATIONS to three readers this month who have qualified for their VHFCC awards. Ray Cox, G8FMK (Thame, Oxon.) earns No. 19 for 70 cm. He first came on 70 cm. in May, 1972, with a 2N3866 tripler from 2m. Since September, 1972, the present rig, a 6J6 tripler into a QQVO2-6 PA, running up to 3 watts of AM and FM, has been used. Antennae have varied from a home-built, 10-ele. Yagi to a 46-ele. Multibeam. However, the present, home made, 11-ele. Yagi on a wooden boom seems to give as much gain as the 46-ele. job but with greater beam width.

Certificate No. 246 for 2m. goes to Tony Oakley (Beverley, N. Humberside). In spite of the call, G8IWA, he passed the R.AE back in 1956 under the guidance of GM3JIG and GM3IHV and later of his Merchant Navy "sparks," G3APX. It was G3IHV and G3VXN (who work for the same company) who finally persuaded him to become a G8 in August, 1974. First rig was a Heath HW-202, used mobile only, then a Liner-2 was acquired, courtesy of Father Christmas, and home station operation commenced in December, 1974. Later acquisitions were a Datong clipper and a home-brew 4CX250B linear. However, all that has been sold and a TS-700 now feed the 14-ele. Parabeam. Tony is p.r.o. for GB3NA and project manager for GB3HU. A very active mobile, he sometimes works portable from Argyllshire and Renfrewshire.

J. O. Burns, G8FNL (Worlebury, Avon), receives 2m. award No. 247. Licensed in November, 1971, he is a GB2RS news reader from his QTH, 350 feet a.s.l. overlooking the Bristol Channel. The gear used includes the Heath HW-30 "Two'er" followed by the HW-17 from the same stable, a Microwave Modules Rx and Tx and a FR-DX400 Rx. G8FNL is still active on 2m. and informs he has "... recently become one of the 'Black Box Brigade'..."

Contests

The reason we received no written reports from participants in the UHF Open Contest seems to be that the dates were wrongly stated from the beginning, whilst the very mediocre conditions produced little of much newsworthiness. The 70 MHz Fixed Station contest on October 26 coincided with the fine opening on the VHF/UHF bands. G4BYP (Liverpool) found it provided a welcome relief from the hectic activity on 2m. Alan writes, "At last stations that wanted to work me! Best DX was G3XCS in Saltash, Cornwall, but Kent, London, Essex, Surrey, etc., were all coming through well. However, no GW's at all. GB3SX was copied at unprecedented strength throughout, averaging S8." G3DAH (Herne Bay) reports about 60-70 stations active in this contest; Mike assessed the conditions as reasonable and expects the leading stations would have made 50 QSO's. G4BWG (Peckham) enjoyed the contest and made 61 contacts but not too many points. Steve found signals from GM and the North reasonable but those from the West much stronger.

Conditions for the 144 MHz CW contest on November 1/2 were average. G3FPK managed 33 QSO's, the best DX being G3BW in Whitehaven for 17 points. At a guess, maybe there were 60 stations participating in this 5-hour event. Also on November 1/2 was the 24-hour Samuel Morse Cup contest, a 144 and 432 MHz affair in

VHF BANDS

NORMAN FITCH (G3FPK)

Europe. This would explain why the writer's first contest exchange with ON5FF produced a serial number of 023. A QSO later with ON6AT/A revealed that ON5FF, ON5UN and ON6AT/A operate from the same QTH. Apparently they did not think there was very much activity in the contest as ON5FF only managed 106 QSO's in the 24 hours, best DX being in QRA square ZE.

The March & DARC were again the overall winners of VHF NFD with 11,214 points, runners up being the University College of N. Wales ARS & S. Manchester RC with 10,789 pts. Westmorland/Fylde Group, G3FDW/P, again led the field in the 70 MHz section; Southdown ARS, G8BQX/P, were leaders on 144 MHz; GW3UHF/P, the 70 cm. station of the overall runners up, topped the 432 MHz section.

The last VHF contest for 1975 is the 144 MHz Fixed, 1000-1800z on December 7, so lay in a stock of throat pastilles, blow the dust off the key and sharpen those pencils.

Repeater Meeting

Your conductor was invited to the meeting on October 18 at Brunel University, Hillingdon, the venue for the 1976 VHF Convention. This meeting was arranged by the RSGB, and 33 repeater groups, as well as observers, were invited. The main idea was to give an up-to-the-minute account of the status of the 41 repeater proposals, to scotch a lot of the rumours about the Society and the Home Office's attitudes to VHF/UHF repeaters and to discuss technical standards. G6JP went through the complete list of proposals, some of which were bogged down because the applicants had not submitted the all-important site clearance form, without which the RSGB will not forward applications to the H.O. The H.O., in correspondence with the Society, suggested that the RSGB should now draw up a comprehensive repeater plan for the U.K. so that all future proposals could be fitted into it. Also, they felt that such a plan should aim at harmonization of operating standards. At this meeting a ballot was held to elect people to serve on a Working Group which will draw up this plan. The nine elected will be provided by the following groups:—GB3PI, GB3SN, GB3MH, GB3BC, GB3LO, GB3BM, GB3PO, GB3CI (Corby Group 70 cm.) and GB3LT (Dunstable Downs Group 70 cm.) We understand this group has already met, one of its immediate tasks being to decide what to recommend regarding input/output QRG's for 70 cm. repeaters, i.e. the 2 MHz or the 1.6 MHz out of the IARU Warsaw plan.

High Power on VHF

A few comments have been received from readers on the topic of using, and coping with, high power on the VHF/UHF bands. G4AZV (Salop) located near the Welsh border, has to suffer a lot of big signals from the GW/Portables at contest times. Generally, Richard finds the signals to be clean, but there are one or two who, even after many complaints, still spread over a considerable portion of the band. To prove the receiving systems, G4AZV and G4AZS, who is only 8 miles away, line-of-sight, have carried out tests running 400 watts to an 8-over-8 and 300 watts to a 10-ele. Beaming at each other, the resulting bandwidth is never more than 20 kHz. Both stations use DL6HA converters into Drake receivers and home-brewed transverters with 4CX250B linears. Richard sensibly concludes that, before one accuses a QRO station of spreading, it should be established that it is not the receiver which is generating splatter.

Much the same point is made by G3XDY (Ipswich) who writes to support the use of high power. John says; "It seems to me that the protesters want everybody to descend to the same level of technical mediocrity as themselves, so as to mask the deficiencies of their knowledge and equipment." He has no doubt that the consistent success of his contest group, G3XDY/P, running 400 watts p.e.p. output to 2 x 10-ele. Yagis, is due to the ability to make 500 km.-plus contacts via troposcatter. A very valid point is that a high-power station will necessarily have more tuned circuits than would a QRP

TWENTY-THREE CENTIMETRE

ALL-TIME TABLE

Station	Counties	Countries	Total
G4BEL	38	10	48
G3NHE	24	5	29
G3JXN	25	4	29
G3DAH	23	4	27
G3JVL	21	4	25
G4BYV	17	7	24
G3OBD	20	3	23
G6NB	19	4	23
G3COJ	17	6	23
G3ARM	20	2	22
G4ALN	19	3	22
G8FMK	12	1	13
G8AOD	11	2	13
G5DF	11	1	12
GD2HDZ	5	4	9
G8FJG	7	1	8
G8ABH	7	1	8
G8AII	5	2	7
G8GNZ	4	2	6
G8EOP	2	1	3

one ending up with a high Q, 4CX250B tank circuit, so that out-of-band radiation should be less than that from a lower-power transmitter. With some justification we agree, G3XDY puts a lot of the blame for both bad radiated signals and complaints of alleged, received splatter, on the Lincor-2. Here we must mention that, whilst it is all too easy for this set to radiate an abominable signal and with most anti-social results if fed into an amplifier, it *can* sound very nice provided it is intelligently set up and operated. This has been proved by Angus McKenzie, G3OSS, now dubbed, "The Lincor Doctor" by a local wag! John Quarmby's letter is a

most constructive appraisal of the problem and could well form the basis of a separate article. The main conclusion is, that the fact that QRO stations are here should encourage us to design much better receiving systems. The all-important front-end should incorporate a low-noise, highly linear RF stage, followed by a low-noise mixer with excellent intermodulation and desensitisation performance. We will return to more points from John's letter next month.

GM8FFX (Aberdeen) is another proponent of QRO. Graham comments: "It has always been my experience that in an opening, the people who work *real* DX

use *real* watts." However, he points out that it is very important to radiate a clean signal and to this end, he says that he has given up using transverters because of the high level of in-band spurious signals. He now runs a In-Band SE-600, which mixes a 133 MHz VFO into a 10.7 MHz strip. GM8FFX finds that those who complain of splatter are invariably using one or two preamplifiers ahead of a high gain converter, into an efficient 10m. receiver, with no means of controlling the gain of the pre-amp and converter. "They should try using their HF receivers on 40m. with no AVC on the front end," he concludes.

Meteor Scatter

G3POI (Downe, Kent) continues to expand his MS activity. For those wishing to listen in, Clive advises of a weekly sked with OE3UP, HI70j, 1900-2100z on 144-110 MHz at a speed of 400 letters per minute. The OE transmits for the first five minutes, then G3POI has a go. Obviously a tape recorder running at 7½ i.p.s. played back at quarter speed is a must. The Wednesday sked with SM3BIU in HX19h has proved very successful from 2100z on 144-025 MHz, this one at 300-350 l.p.m. G3POI has been copied on MS by UK3YAJ in RN52c. Other QSO's have been completed with I4BER (FE54e), 14XCC (GDO3d) on the doorstep of San Marino, SM2CFG (JX30f) and SM2CKR (KX12g). For the uninitiated, MS QSO's, either random or in definite showers, are usually set up on the VHF net on 14340 kHz or by letter. Clive says a sked with M1C is lined up and that I3FGX in QRA square FF should be QRV soon. There are unique problems associated with MS work, such as an agreement on frequencies to be used by strong stations within range of each other, and on calling periods during random MS work. With interest growing in this sophisticated communication medium, we might run a separate article sometime.

Beacons

The Swansea beacon, GB3GW, is now QRT as its keeper has moved to VE7. We found it a useful indicator of band conditions on 2m. in a Westerly direction although, being in the middle of the SSB part of the band on 144.250 MHz, it often disappeared under a QSO. On the vexed topic of *where* in the 2m. band regional beacons should be parked, surely they should be centred around 144.150 MHz? Those who make most use of them are the more DX-minded who operate on SSB and CW, so what more logical place to put them than the boundary between the two modes? In any case, many DX types cannot tune up to 144.9 MHz where the IARU Region 1 latest band plan would have them.

Four Metres

Apart from the contest, very little to report this month. Understandably, many forsook the band at the end of October when the higher frequencies were in such great shape. G4BYP (Liverpool) suggests that EI activity on Sunday mornings would be very welcome and writes: "... if they could turn their vertical dipoles horizontal and key the carrier there would be no problem working into Northwest England." PAØHLA (The Hague) listens on 4m. although the band is not allocated over there. Dick is QRV in *all* modes and from Top Band through to 23 cm. and would like to make cross-band contacts with U.K.

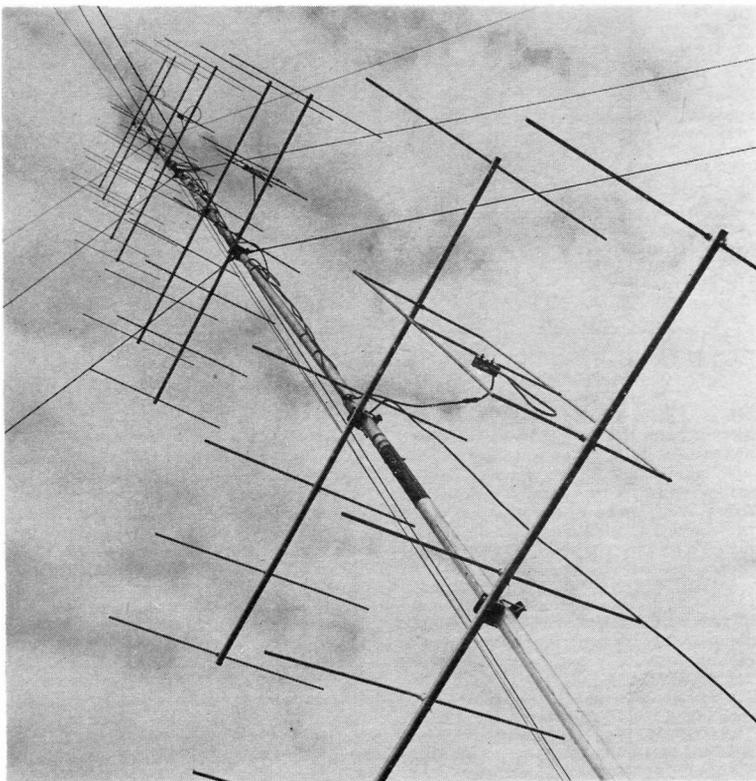
THREE BAND ANNUAL VHF TABLE

January to December 1975

Station	FOUR METRES		TWO METRES		70 CENTIMETRES		TOTAL Points
	Counties	Countries	Counties	Countries	Counties	Countries	
GD2HDZ	58	5	71	16	39	8	197
G3DAH	47	5	49	9	39	11	160
G2AXI	45	4	54	15	32	10	160
G3ZMD	34	3	64	16	32	9	158
G4BWG	44	4	60	20	19	5	152
G4BYP	58	5	68	13	—	—	144
G3BW	—	—	74	13	44	8	139
GM4CXP	29	5	74	17	9	4	138
GM8FFX	—	—	93	17	11	10	131
G3FIJ	47	4	50	12	6	3	122
G4AEZ	25	3	45	15	18	8	114
G3BHW	—	—	55	16	30	9	110
G4CIK	19	2	65	15	—	—	101
G4CZP	—	—	84	15	—	—	99
G5DF	48	6	—	—	33	10	97
G8BKR	—	—	68	15	12	2	97
G18HXY	—	—	70	11	6	4	91
G8IAT	—	—	77	13	—	—	90
G3FPK	—	—	68	19	—	—	87
G4AJE	—	—	50	13	17	5	85
G8INL	—	—	66	12	1	1	80
G13JLA	13	5	44	11	3	3	79
G8ABH	—	—	40	11	21	5	77
G8EOP	—	—	40	12	20	4	76
GD3YEO	—	—	62	14	—	—	76
G8GII/P	—	—	56	13	—	—	69
G8FMK	—	—	31	3	30	4	68
G8GLS	—	—	54	10	—	—	64
G8GHZ	—	—	50	9	3	1	63
GW8HVP	—	—	54	9	—	—	63
G8KSP	—	—	45	13	—	—	58
G8FWB	—	—	47	8	—	—	55
G4DNJ	—	—	45	8	—	—	53
G8JKA	—	—	42	6	—	—	48
G3EKP	10	3	24	5	1	1	44
G4AIR	29	4	7	2	—	—	42
G4AGE	—	—	23	9	6	1	39
G8ITS	—	—	31	8	—	—	39
G8JAJ	—	—	29	6	—	—	35
GW8GLG	—	—	30	3	—	—	33
GW8FKB	—	—	—	—	18	6	24
G4BKY	—	—	8	2	—	—	10

The Table shows claims to date from January 1, 1975, and will close on December 31, 1975. All claims should be sent to: "VHF Bands," SHORT WAVE MAGAZINE, BUCKINGHAM, MK18 1RQ as soon as possible. Final table for the year 1975 to appear February 1976 issue. The new Table opens with effect from January 1, 1976.

The Newquay & District A.R.S. signed G4ADV for the recent VHF Field Day. Here is a shot of their beam for two metres—a six-element slot-fed array, stacked four.



stations. G3DAH has written to him with details of activity times, polarisation, modes, etc. Meantime, if anyone would like to try some cross-band work, Dick's QTH is; D. G. Velcamp Helbach, Waldeck Pyrontkade 931, 's-Gravehage, Netherlands, NL-2004.

GSUM (Leics.) reports increasing Midlands 4m. activity as Band I, Channel 4 TV becomes less of a problem. The Sunday morning activity is good and cross-mode QSO's are common. Tuesday lunchtime also sees some action. Jack reckons that 4m. activity is now better, there, than it is on 70 cm. By contrast, the lack of GC 4m. operation is directly related to 405-line TV on Ch. 4.

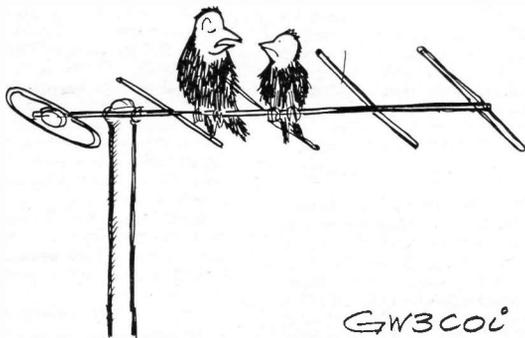
Two Metres

"God's gift to VHF Columnists" could well describe the very widespread extended tropospheric lift between October 24 and 29. Some *real* DX was worked, especially on CW, and the writer was amazed at the number of G's on CW, never heard before at this QTH. At least 25 countries were worked from the U.K. The band was open for long periods from the Western USSR, through SP, OK, OE, HB and F, down to the Pyrénées. To the Northeast, scores of SM and OZ stations were worked, whilst there were hordes of DL, DM, PA and ON's on, from the East. G3COJ (Bucks.) says there was too much QRM to use SSB so he kept to CW, his best DX being SM5EJN (IT77h), SP5JC (KM56f), SP7DCG (KM62h) and SP7DQX (JL18d). Your scribe had a ball in spite of severe key clicks from a station 30 km. away,

and managed 46 QRA squares during the opening, the total for the month being 65. The most Southerly DX was F1DGD on SSB in ZD38j, Dept. 64, whilst SM5EJN was the best to the North-East. To the West, EI9Q on CW was, believe it or not, a new country. The other new country was SP1PFG (IO68e) after which we had fun chasing SP111 all over the band. G3POI worked UQ2GDA (KQ36f), SM1BSA on Gotland (JR22e) but missed OH0NI. Clive bagged 64 SM, 19 SP, 17 DM, four HB, plus DL, EI, GI, LA, LX, OE and OK to bring his 1975 countries score to 24 with 113 QRA squares worked. Although the best of the opening seemed over by the small hours

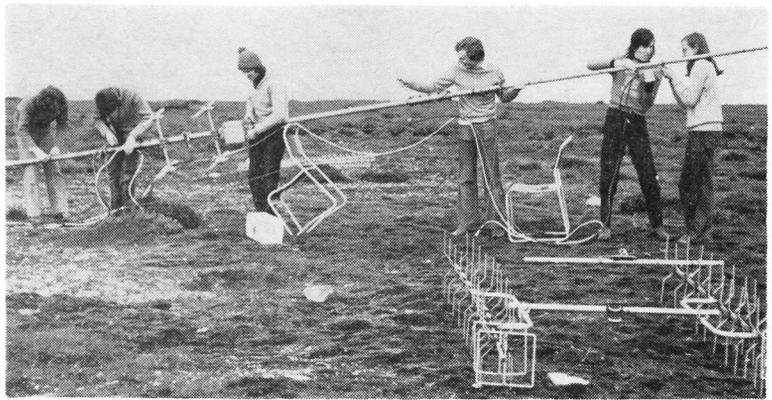
of the 29th, G3POI raised SM6FRS (GQ14j) in the evening, the SM running *half-a-watt*. G3SCP (Luton) reports 22 countries worked in a 36-hour period, including UC2AAB (NNO8j), and G3YFO (Bucks.) winkled out UP2AAF.

G4BWG also booked in lots more QRA squares and added GI, LX and OK to the countries total. By contrast, G4BYP reports only Jersey as a new country. Alan found he could make no impression through the racket from portables and QRO stations even though he spent the best part of 2½ days and nights on 2m. He spent four, wasted hours trying to get a portable HB9, using off-frequency calling and calling on CW. G8BKR (Bristol) managed 42 D and four HB, as well as F, ON, OZ, PA and SM, using a barefoot TS-700 to a 10-ele. Yagi at 40ft. Best DX was SM7WT (GP47b) who says he worked 750 stations in the lift! John expresses some surprise at the lack of SSB activity above 144-350 MHz and says how much easier it was to work stations up there. Although the longest spell he can remember since September, 1970, John doesn't think the skip was as good as in January, 1974. G8ITS is somewhat of a rarity in that he lives in the City of London, in the Barbican. George uses a very old KW-2000 and Europa B. His antenna is an 8-ele. Yagi on a 5ft. pole on the balcony of his first floor apartment. In spite of this, since he started to operate seriously on 2m. at the beginning of April, he has worked 31 countries, many by bouncing signals off nearby, tall buildings, and 8 countries, including HB and OZ. This performance should surely encourage others who feel they have an "impossible" QTH? (over)



"... You should come over to us sometime—we have a six-over-six ..."

The Univ. Coll. of North Wales A.R.S. joined the South Manchester Radio Club for VHF Field Day, putting on a four-band entry as a combined effort. Outcome was that GW4BUC/P made 131 contacts on four metres; GW3UCB/P 376 on Two; and GW3UHF/P got 91 on Seventycms and another 21 on 23 cm. Here they are at work on the 23/70 cm. array.



George suggests that to assist poorly-sited stations, perhaps local syndicates could be formed whereby a better equipped station could help some of his less fortunate neighbours to work the occasional DX. G8KSP (Abbey Wood, London) had plenty of German language practice during the lift, filling up four log pages with DL's, plus DM, GC, LX, OZ and SM.

GD2HDZ (Laxey) thought October was going to be a poor month. DM2CFG and SP5JC gave Arthur a couple of new countries all-time and five more for the table, thanks to the fine opening. GD3YEO (Douglas) brought off his best DX so far with SPIJX. He also managed HB9AEN/P. On the 26th, along with GD3TNS, they operated the Club call, GD3FLH/P, raising 145 stations between 1030 and 2110, the majority being DL, DM and PA, but with Scandinavians as well. Richard reckons the SP6FUN QSO may be a GD/SP first? Another possible first is LX1PQ. Any challengers?

The sole Northern Ireland report from G18HXY (Co. Down) mentions plenty of Continentals from the morning of the 26th through the evening of the 27th, mainly PA and DL, from which it would seem that the G1's missed out on the East Europe and Scandinavian DX. GM3XNE (Ayrshire) is a newcomer to 2m. SSB and is enjoying operating with the Liner-2. Despite considerable QRM, Arthur managed QRA squares CK10e, DL59b, DL70c and FM44d. GM4CXP (Roxburghshire) added HB and OK for a couple of new countries, working 50 Continentals, including DM and SM. His best DX was SP5JC. GM8FFX reports that piles of DX were worked by the Aberdeen lads, like DM, OK and SP. SWL David Wakefield (Herts.) reports good reception of DB0BU on the evening of the 25th with his 4-ele. beam aimed North-West. As a round-up to the opening, G3XJS (Bucks.) mentions that GB3VHF is always S9+5dB but at 1200z on the 29th it dropped suddenly to S6 building up steadily to the usual strength over the next 40 minutes. Peter says he has never observed this before and wonders if it heralded the end of the lift?

Seventy Centimetres

G2AXI (Hants.) updates his table score and had a lot of fun in the grand opening, even though the wall of G-QRM to the East of Basingstoke had to be breached. The DL7HGA beacon on 432.045 MHz was received throughout the period Oct. 26-28th and Berlin stations worked were DC7CWA 11.1 MHz and 'COJ' couldn't receive there.

and DL7QY. Whilst OK1K1R/P was a got-away, DC9CSA, DM2CPA (near Rostock) and DM5TI/P are safely in the log. G3BW (Cumbria) was beginning to think he would never get out of the country on 70 cm, so was delighted to work DC, DJ, HB9 and PA. Bill is now looking for one more country and doesn't care whether it is F, LX, ON, OZ or SM! We will try to find space for a list of VHF/UHF beacons soon, OM. G3COJ managed three new countries, DM, LX and OK in his 41 stations worked, the more DXier being DM2BIE (HM53a), OK1K1R/P (GK45d) and SM5CCY (HS36f). G3OSS (Finchley, N.3) raised a fair bit of DX but mentions some strong, presumably radar, QRM, all the time when beaming North. G3DAH made a good haul on the band with DL, DM, F, HB9, LX, OK, ON, OZ, PA and SM, no less. G3POI has bought a QM-70 transverter so will soon be QRV on this band and your scribe is keen to hear what Clive thinks of this equipment.

G4AEZ (Enfield) worked HB9AMH/P using one watt p.e.p. output and a 46-ele. Multi-beam at 50ft. Well done, Brian!

GD2HDZ thinks his QSO with HB9AMH/P to have been a GD/HB9 first? G18HXY is yet another who managed a QSO with the HB9 and also wonders if it was a G1/HB9 first on the band? During the lift, Norman added G4BEL in Cams. for a new county but was unable to hook a PA. DK6ASA was a new country for GM4CXP after four tries and Derrick is sure there will be a few records broken and 70 cm. "firsts" claimed after this opening. GM8FFX's best DX was the same HB9 in DH66c, using SSB and Graham wonders if it was a GM/HB9 first? Operating his station, G3ZSS hooked SP6BPR (LL76h) on CW for a possible GM/SP first? The remark in last month's piece about a 70 cm. Liner-2 was quite prophetic as the "Liner-430" made its debut at the Leicester Show. Coverage is 432.00-432.48 and 433.433-48 MHz, USB and LSB, using IF's of 50 and 7.8 MHz.

Twenty-Three

G3COJ (High Wycombe) worked some fine DX on 1296 MHz, to bring his score in the Table to six countries and 17 counties. During the opening, he hooked Berliner DC7CWA (GM47j)—QRB 598 miles; DK6ASA (FM44), DL3NQ (EJ34j), DL3SPA (FJ27a), HB9AMH/P (DH66c) and PA0ZM (DM64e). Brian also had a cross-band QSO with F8OD (ZH63a) because the Frenchman could only transmit on 1239.33 MHz and 'COJ' couldn't receive there.

G6NB (Aylesbury) missed the HB9 but worked into Berlin, Bavaria and PA to bring his score to 19 counties and 4 countries. GD2HDZ believes his QSO's with HB9AMH/P and PA0VV to be more "Firsts."

Possibly the best way to sum up this superb VHF/UHF opening is to record that SM7AED, who has been a keen VHF man for 30 years, reckons this was *the* best opening he has ever heard.

The Scottish Scene

GM6XI reports that latest recruits to 70 cm. SSB are GM3BQA and GM8BJF. Interest in A/TV is expected to increase in the Edinburgh area now that GM8ARV and his wife, G8JAV, have arrived. GM8IAP has passed his Morse test so should be a GM4 now. GM8HXM runs a Liner-2 mobile and at home, where an 8-ele. Yagi at 40ft. and rotatable, completes the set-up. Jack assures us that GM8FFX *does* now use FM, as well as SSB. The Lothians Radio Society has started a Club project in the form of a hand-held, 2m. FM transceiver designed by GM8BJF. P.c.b's have been prepared and no doubt increased FM activity will result, the latest recruits to that mode being GM3LIB and GM6XI. Thanks for your kind wishes, John.

QRA Squares Table

We propose to start this in the January, 1976 issue, using the 144, 432 and 1296 MHz bands and with a January 1, 1975 starting date. List the total squares worked on each band—it won't matter if you do not operate on each band—and the grand total. Some readers thought we should start on 1-1-76 but we feel the Annual Tables take care of that. G3FJJ (Colchester) has already sent in a total of 30 for two bands.

We have not included 4m. as we hope some Continental readers might submit entries. Again, 4m. is covered suitably in the annual table. Only tropo, MS, Sporadic-E and Aurora contacts will count, *no* repeaters or Oscars.

Space has run out. No room for technical offerings. Perhaps next month will be less hectic though, as we write this, there is an Auroral opening taking place!

Deadline

All offerings for the next issue by December 5 to "VHF Bands," *SHORT WAVE MAGAZINE*, BUCKINGHAM, MK 18. *IRQ. 75 de G3FPK*—and a Happy Christmas!

THE MONTH WITH THE CLUBS

By "Club Secretary"

(Deadline for Jan. Feb. issues: December 5)

AS this comes to be written, there is just a week to go before MCC, and already the indications are that it will be a fine contest once again. Those responsible for logging—and sending in the completed entry—should note that we hope to see "fair copies" laid out strictly as Rule 7, p.458, October, enjoins—otherwise, quick and accurate checking is almost impossible. And note, too, that the closing date for entries is Monday, December 1.

Your scribe was at the Leicester Show on the Saturday, and had the pleasure of meeting some of the "regulars" in this section, which gave him a better insight into the workings of the groups concerned, and some of the problems encountered and overcome.

The Mail

In addition to the Wednesday evening sessions at Derby's Hq., they have a Slow Morse class there each Friday evening from 1900, to which all are welcome. On the Wednesday evenings, we see a Surplus Sale on December 3, and on the 10th an Extraordinary General Meeting followed by the Constructor's Contest. This in its turn leads up to the Christmas Party in the Clubroom, and a blank on Christmas Eve. Finally on New Year's Eve, December 31, they have "Technical Topics" at Hq. 119 Green Lane.

At Torbay it all seems to be happening; the R.A.E. is well under way, a repeater project is being sponsored, new calls are appearing among the members, visitors are still dropping in, and this year's effort in J-O-T-A was a cracker with contacts all over everywhere on HF, as well as a two-metre set-up. Looking forward to December, the advertised date is December 13, when they are having the annual Christmas Party, entertaining Plymouth and Exeter Clubs and having an event to settle the disputed home for the Quiz Cup. To find them, look for the Hq. in Bath Lane, rear of 94 Belgrave Road, Torquay.

On to Cheltenham where the group meets at the Royal Crescent

Hotel, Clarence Street, the next even occurring on December 4, when a representative from a local concern is coming to introduce his company's range of components and equipment which has been declared surplus to their requirements. Sounds as if someone may be able to pick up the odd bargain!

Up to Scotland now, to Ardeer, where they can be found at the meetings every Thursday evening, and also doing Morse and R.A.E. on Tuesday evenings. For more details, contact GM3XNE, as Panel. Incidentally, the lack of details does not mean any absence of an organised programme, but merely that while several interesting items are already set up, dates are not yet finalised. Hq. is at Ardeer Recreation Club, of which they are the Amateur Radio Section.

The Secretary at South Manchester offers the VHF nights at Greeba, Shady Lane, Manchester 23, where the Club shack is, or the more formal sessions at Sale Moor Community Centre, Norris Road, Sale. The VHF affairs are on Mondays, and the others on Fridays; the programme for the latter includes: December 5, a film showing the development of computer technology, by ICL; December 12 is down to Films from Cable and Wireless, one on the opening of the earth station in Barbados and another called Arabia the Fortunate. The Christmas Party has to be fitted in and takes up December 19, while the December 26 date is passed up as part of Christmas. (This old scribe sometimes wonders whether, with the excessively long Christmas breaks being enforced on people by industry, the chance to break the monotony by nipping down to the Club on Boxing day wouldn't be rather welcome!)

Now we turn to Spalding and their annual get-together and junk sale on December 12, at the Ship Albion in Albion Street, Spalding. We have it that all the usual attractions at the event will be repeated, including a trade stand by J. Birkett and the great welcome—which will be even greater if you bring something to enter in the Sale! More details can be obtained from G3VPR, at the address in the Panel.

Up at White Rose the painting and decorating—not to mention removal of walls and things!—in the Hq. have all but been finished, and so it isn't quite so important to wear overalls to Club meetings. These are every Wednesday evening at 83 Town Street, Armley, Leeds, plus a morning session on the air on the first Sunday in the month, 1030-1300. December 3 is down for a Grand Open Night, Christmas Party and surplus equipment sale, and on December 20—a Saturday—there is the dinner dance at the Tudor Cafe in Pudsey. Looking into the New Year, they have booked March 28 for their Mobile Rally at Lawnswood High School, a week in advance of the date previously notified, thanks to a hiccup with the Local Authority.

The Secretary at Maidstone YMCA has a rebellious typewriter—

The Amateur Radio Club of Nottingham, G3EKW, run an annual contest for their members, and here are the winners of recent events. Left to right, standing: SWL Gambles, G3TVY, G4ANS and G4AFJ. Seated front is G8FRB, who holds the Arcan cup for the most meritorious performance of the year.



it wrote his own call wrongly! Luckily this old scribe spotted it immediately he looked at his own card-index and checked with the *Call Book*. This is a very well-equipped group, operating from the Y-Sportscentre, Melrose Close, where they can be found on Friday evenings—visitors, YL's and XYL's all welcome.

Echelford have bookings at St. Martin's Court, Kingston Crescent, Ashford, Middx. on the second Monday and the last Thursday in each month, the start being set at 7.30 for 8.00. December 8 sees a surplus equipment and Christmas Sale to which you are asked to bring your Christmas offerings. As for the December 18 date, the newsletter confidently predicts it will turn out to be "some sort of a social event at a local tavern." That rather suggests a need for a last-minute contact with G2FNK—see Panel.

For **Hereford** the routine seems to be to get together on Fridays of alternate weeks at County Control, Civil Defence Hq., Gaol Street, though at the time of writing we haven't any data on the December doings, there having in any case been an EGM during November. This being so, once again we have to recommend you to the Secretary.

At **Cray Valley** everyone was saddened recently by the passing of G3HOZ; the funeral was attended by members of four Radio Clubs—Cray Valley, North Kent, Dartford Heath D/F, and RAIBC—as well as by his late employers and relations. Ken had long been active in the area, and was a founder member of the North Kent group. Turning to their programme, we note Hq. as being at Eltham United Reformed Church Hall, 1 Court Road, Eltham, S.E.9. on the first and third Thursdays in the month. But, as we don't have December's details, we suggest checking before you make for the latter session, lest it has been wiped off the slate as being too near Christmas.

At **Maidenhead** there is still room for visitors at the British Red Cross Hall, The Crescent, where the bookings are arranged for December 4, when the talk will be of the history of the Club, with slides and, maybe, some cine film, not to mention photographs and the scrapbook, to bring back memories for some and interest for all. Then on December 16, there is the matter of a home-construction contest with cups, rosebowl and certificates to be presented for the lucky winners of the contest and operating contests.

* * *

Acton, Brentford & Chiswick have pressed G3CCD into service again, this time to demonstrate the audio CW filter he has designed, at 66 High Road, Chiswick (The Chiswick Trades and Social Club). This one kicks off at 1930 as usual, on December 16.

Lots of things are going on at **Basingstoke**; the regular dates are December 6, when Station Operating Techniques are discussed, followed by calibration of the wavemeters they have constructed as a project, while on December 20 there will be a Film Show. In addition, G3TCR will be on HF CW and G8JYN on Two-metre FM from 2000. The R.A.E. course is running on Thursday evenings at 1900 prompt, and then on Wednesdays there are Morse classes planned to start at 7.30 p.m. All the activity is centred on Chineham House, Shakespeare Road, Popley.

On December 10, the **Farnborough** group will get together at the Railway Enthusiasts Club, 103 Hawley Lane, Farnborough; the meeting which would normally occur on December 24 is naturally, cancelled. On a different tack, the story, related in the newsletter, of how life changed for G3VAA; first he was called when he was out /M by G4EAA, and discovered it was *his own XYL* calling him for her first QSO! Then follows the tale of G3VAA being all but driven off the air by G4EAA using the rig, and how the old problem of how to persuade her a new rig was necessary has been replaced by the problem of stopping her spending all the housekeeping money on nice new stuff for the shack—a terrible warning indeed of what happens to the chaps who encourage (or even don't *dis*-courage!) the XYL in getting a licence! Be warned!

Down in the West Country we have **Cornwall**, and the group which covers a whole county—Cornsh. The Hq. is the SWEB Clubroom, Pool, Camborne, and the date December 4. On this evening the topic will be one for the SWL's—a demonstration of Standing-Wave Ratios.

Up in **York** the chaps are just getting their breath back after their efforts at the opening of the National Railway Museum, when they were able to show the flag to many people. For December we notice they are planning a showing of the film made of their recent St. John Ambulance exercise activity, and a Christmas party. The normal rule is to foregather at the British Legion Club, 61 Micklegate, each Friday evening, though of course in December the third Friday will be missed.

Every Tuesday evening at the Mosses Community Centre, Cecil Street, Bury, you can find members of the Bury & Rossendale Club; the second Tuesday in the month is *the* meeting, the others being informal, with R.A.E. tuition and Morse figuring largely. Over the past year a large increase in numbers has been noted, which must encourage them as they go into the AGM which takes place at the formal meeting in December.

A nice comment on the piece we write each month comes from Nunsfield House (Derby), where the Secretary says they often get

Names and addresses of Club Secretaries reporting in this issue:

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BASINGSTOKE: R. J. Siery, G3CBU, Ashley, Orchard Road, Basingstoke, Hants.

BISHOPS STORTFORD: C. Harlow, G8BTK, Thorn Cottage, Old Mead Lane, Henham, Elsenham, Bishops Stortford, Herts.

BLACKWOOD: S. Rees, 10 Tudor Crescent, High Cross, Newport, Gwent NP1 9BS, South Wales.

BURY & ROSSENDALE: M. Howarth, G4ECM, 11 Worthington Avenue, Heywood (65911), Lancs.

CANNOCK CHASE: P. Robinson, 2 Thornley Road, Wednesfield, Staffs.

CHELTENHAM (RSGB): G. D. Lively, G3KII, 131 Mandaring Way, Wymans Brook, Cheltenham (34783), Glos.

CORNISH: H. Webster, G3XTF, Crandale, Gillyfields, Redruth (6905), Cornwall.

COVENTRY: D. R. Farn, G8DMI, 3 The Mount, Cheylesmore, Coventry, West Midlands, CV3 5GR.

CRAY VALLEY: M. Tripp, G3YWO, 57 Cathcart Drive, Orpington (38199), Kent.

DERBY: F. C. Ward, G2CVV, 5 Uplands Avenue, Littleover, Derby (21931), DE3 7GE.

DERBY (Nunsfield House): I. Cage, G4CTZ, 25 Petersham Drive Alvanston, Derby, DE2 0JU.

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HEREFORD: S. Jesson, G4CNY, 181 Kings Acre Road, Hereford (3237), Herefordshire.

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MAIDENHEAD: E. C. Palmer, G3FVC, 37 Headington Road, Maidenhead (20107), Berks., SL6 5LA.

MAIDSTONE YMCA: G. H. Taylor, G4BNI, 26 Valley Drive, Loose, Maidstone (43976), Kent.

MIDLAND: A. L. Walton, G3ZKQ, 243 Barnes Hill, Birmingham, B29 5UJ. (021-427 3088.)

NOTTINGHAM: M. C. Shaw, G4EKW, 50 White Road, Nottingham, NG5 1JR.

R.A.I.B.C.: Mrs. R. Shepherd, G3NOB, 59 Pantain Road, Loughborough, Leics., LE11 3LZ.

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ST. DUNSTONS: G. Taylor, G4BNI, 26 Valley Drive, Loose, Maidstone, Kent, ME15 9TN.

SPALDING: R. Harrison, G3VPR, 38 Park Avenue, Spalding, Lincs., PE11 1QX.

SCARBOROUGH: C. H. Whitaker, 1 Ryefield Close, Eastfield Scarborough, North Yorkshire, YO11 3DN.

SOUTH MANCHESTER: C. Scholefield, G8GDM, Silverdale 57 St. Werburgh's Road, Chorlton-cum-Hardy, Manchester M21 1UN.

STAR: T. Leeman, G4BUU, 599 Dewsbury Road, Leeds, West Yorkshire.

SURREY: S. A. Morley, G3FWR, 22 Old Farleigh Road, Selsdon, South Croydon, Surrey, CR2 8PB. (01-657 3258.)

SUTTON & CHEAM: A. Keech, G4BOX, 26 St. Albans Road, Cheam, Sutton, Surrey.

TORBAY: M. Yates, G3UIQ, Top Flat, 23 Waverley Road, Newton Abbot (3025), Devon.

WHITE ROSE: K. R. Robson, G3VTY, Flat 7, 34 St. James' Drive, Horsforth, Leeds, West Yorkshire.

WORTHING: S. G. Williams, G3LQI, 58 Grinstead Lane, Lancing (4017), Sussex.

YORK: K. R. Cass, G3WVO, 4 Heworth Village, York, North Yorkshire.

ideas for their own meetings from reading what others do. On a sadder note, inflation has hit them hard, and the proposal to put the sub. up from 50p to £1.50 is they feel, long overdue, even though all the nice facilities they have in the shack and elsewhere have not been obtained from subscriptions but by hard work in other directions. Normally, they are in Room 7, Ninsfield House, Boulton Lane, Alvaston, Derby on Fridays, but the December 26 date is scrubbed off the list, leaving a talk on Hang Gliding by G3NYZ on the 5th, and a Technical Film Show on the 12th. December 19 is down for a Night on the Air.

It seems to have been a very popular activity, the recent convention of St. Dunstons Radio Society, which was held at Ian Fraser House, Brighton on 18-19 October. Among the speakers, they had Capt. J. Cooper, G3DPS, H. G. Hughes, G3GVV, Ron Ham on his various activities, solar and otherwise, for which he had a lot of recordings and of the actual equipment, and C. Scarrott of RAIBC. Naturally, there was a station, the callsign being GB3STD. What a pity that Ian Fraser, G3SU, after whom the House is named, could not personally be there—though now a Silent Key he has been a shining example to many and many a blind person, and not just in the Amateur Radio contest at that.

At Star they have the big annual Christmas Party on December 3, at the New Inn, Bramley Town Street, Leeds 13. There will be a trade stand—John Birkett of Lincoln—and all sorts of other attractions, raffles, a free glass of wine, a talk-in station on Two, and other things. Admission is at a cost of 10p according to the hand-out, and 20p if you read the later letter; but free to YL's, XYL's and junior ops. Get more details of this one from G4BUU—see Panel.

It is quite surprising how the continuity has been kept up at Coventry despite changes of scribe. Our latest correspondent is G8DMI, who also is the speaker on December 5. A Night on the Air appears in the programme against December 12, and the Christmas Party on the 19th. There is a break on the 26th, and then comes the Club dinner on January 2 and another Night on the Air on January 9. From all this it will be deduced that the form is to foregoer on Friday evenings, the venue being Baden-Powell House, St. Nicholas Street, Radford, Coventry.

Once in a while one gets a note from a Club scribe who is, by the very tone of his letter, the best advertisement his Club could wish for—one such appears this time to ask for news to be mentioned of Scarborough; an SWL mentioning how much the SWL's are part of the picture is indeed a rarity! They can be found at the Technical College, Scobly Road on Friday evenings, and we are told that a programme is being drawn up to interest all. Further, they would like to see any amateurs or SWL's who may be in the area, either to visit or to become members.

Sad to say, the Nottingham letter for last month missed the deadline despite being sent a week earlier; but the luck was better this time, and we see they have one of their popular Forum sessions on December 4, and a talk on Operational Amplifiers on the 11th. There is an Activity Night on the 18th, and on Christmas Day the meeting is "on the air from home." Hq. is at Sherwood Community Centre, Mansfield Road, Nottingham.

Bishop Stortford have the third Monday in the month booked, at the British Legion Club in Windhill; however, sad to say the programme is not finalised at the time of writing, though something is warranted to happen on the night.

Another Ashford now, namely Ashford (Kent), who have their Hq. at Fleetmarsh, Hart Hill, near Ashford, every Monday evening. The Club Hq. is at 600 feet a.s.l., which means they have a largely VHF orientation, though they are sometimes to be heard on Top Band CW for contrast. The Secretary—see Panel—says the Hq. is a bit hard to find, so if you think of paying a visit, get in touch with him first and he will lead you there.

RAIBC of course is the one to join if you are at all disabled or without sight; or as a supporter if you lack the qualifications outlined for full membership! Often one wonders who gets most pleasure out of the operation—the full members or the supporters. Seriously though, do give it a thought, and contact G3NOB at the address in the Panel. And, even if you can't help by joining either grade, you can always move that a donation be made from your own Club's funds when the AGM gives you the opportunity.

It will be recalled that there has been a problem about accommodation for Sutton & Cheam; it is now understood to have been resolved by a move to Sutton College of Liberal Arts, Cheam Road, Sutton, in the Lecture Theatre, and that it has been possible to retain the old pattern of a session on the third Tuesday of each month. Meantime the poor old Secretary has to sort out his programme "dates" in a durry—he could hardly firm up anything if he didn't know where or when they would foregather! Hence, if you want the very latest gen—get in touch with G4BOX at the address in the Panel.

Also changing their Hq. is Worthing who are now at the Adult Education Centre, Union Place, Worthing, and finding the change beneficial to their membership numbers—the aim is to get up to 50 paid-up members by Christmas. To help the good work you can join, on any Tuesday evening, starting from 8.0 p.m.

Blackwood & District have their Hq. at Oakdale Community College, Oakdale, Gwent, and can be found there on any Friday evening from 1900 onwards—and they claim to be for most people the friendliest Club they have ever visited. The "big one" for December is on 12th, a tape and slide showing on the GW6GW DX-pedition on 1973.

Apparently the Hampshire air was too much for some smaller clubs, and so a new, stronger one has been formed, to be known as Horndean, meeting on the second Thursday in each month at the Community Association, Merchistoun Hall, which is on the A3 just south of Horndean. December's talk will be on VHF topics, by G8HVO. Let us hope they can thrive where the others seemingly failed.

Midland have their Christmas Party on December 9 (at the Birmingham and Midland Institute?) as their meeting for the month. For more details, get in touch with G3ZKQ quickly, so he can see how his planning is to be set up; the address is in the Panel.

An interesting point is that the Reigate Club net has moved to 28.6 MHz—and immediately the turn-out rose to double its previous level! The latter session is on December 2, at the Marquis of Granby, Hooley Lane, Redhill, and the main event is on December 16, a Construction Contest, at St. Marks Church Hall, Alma Road, Reigate.

Another group who have transferred their nets to 28 MHz is Surrey. They have a monthly evening booked at the Ship Inn, Croydon, at which there is usually some interesting talk or film, or whatever. For more details, we suggest you get in touch with G3FWR, address as Panel.

It's quite a while since we heard from Cannock Chase, but it seems they are none the worse for that. They get together informally every Thursday but keep the first Thursday in each month as the formal; all are at Bridgetown Social Club, which is about half a mile from Cannock. Future events are being set up, the new committee having just been elected at an AGM.

Finale—For This Year

For reports next time, please include details forward for January and February, as the January issue will appear on January 2 (because of the Christmas mail dislocation), and the February on January 30. This makes things tight so your deadline for Jan.-Feb. must be first post on Friday, December 5, addressed as usual to: "Club Secretary", SHORT WAVE MAGAZINE, BUCKINGHAM, M18, 1RQ. It is tight, we know, but it has to be so to make the allowances experience shows to be necessary if we are to cope through the Christmas pressure on the mails.

But don't let that prevent you from having a jolly good Christmas, with hopes for better prospects in the New Year.



“... could you stand by for a short mike test ...”

NEW QTH'S

This space is for the publication of the addresses of holders of new call signs, 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 Section. Be sure to give correct County designation and post-code. In the case of direct subscribers needing Change of Address, please state for card index adjustment. Address items for this space to: "New QTH Page," *SHORT WAVE MAGAZINE*, BUCKINGHAM, MK18 1RQ.

EI4CV, J. Menton, 190 St. Donaghs Road, Kilbarrack, Dublin, 5, Eire. (Tel. 01-316852).
 EI0CY, G. H. O'Reilly, 96 Boulevard North, Bayside, Sutton, Co. Dublin, Eire.
 G3MYM, R. W. Micklewright, 5 Sandringham Road, Yeovil, Somerset, BA21 5JE. (Re-issue.)
 G4EGG, W. Higginson (ex-G81ZR), 1 Clive Road, Daisy Hill, West Houghton, Bolton, BL5 2HR, Greater Manchester.
 G4EGY, S. J. Liptrott (ex-G8EGY), 91 Southdale Road, Carlton, Nottingham.
 G4EIM, J. Beaumont, 153 21st Avenue, North Hull Estate, Hull (853588), North Humberside.
 G4EJN, P. F. Cope, 3 Walsall Street, Canley, Coventry, West Midlands, CV4 8EZ.
 G4EJT, A. E. Kilner, Deeping, Martinsend Lane, Great Missenden (4694), Bucks., HP16 9BH.
 GM4EJX, A. R. Murray, 67 Carronvale Road, Larbert, Stirlingshire.
 G4ELK, A. Lewis, 8 Springcroft, Parkgate, Wirral, Merseyside, L64 6SE. (Tel. 051-336 2646).
 G4ELL, R. E. James-Robertson, 8 Whittington Road, Worcester, WR5 2JU.
 G4ELZ, G. Pascoe, 19 Kiln Orchard, Bradley Barton Estate, Newton Abbot, South Devon.
 G4EMC, J. King, 11 Forstal Road, Aylesford, Maidstone, Kent, ME20 7AU.
 G4EMM, N. Richardson, 95 Vectis Road, East Cowes, Isle of Wight.
 G4EMN, G. D. Cole, 6 St. Anthony's Road, Bournemouth (20027), Hants., BH2 6PD.
 GM4EMY, J. Ferguson, 26 Caledonian Road, Stevenston (65727), Ayrshire.
 G4ENK, P. Kelly, 30B Roughdale Avenue, Southdene, Kirkby, Merseyside, L32 7QW.
 GM4ENP, J. P. Johnston, 28 Gallowden Avenue, Arbroath, Angus, DD11 3EX.
 G4ENV, K. Grabban, 1 Blackthorn, Lower Strand, Grahame Park Estate, Colindale, London, NW9 5ND.
 G4EOC, R. S. Grunwald, 1 Dysarts Close, Mossley, Ashton-u-Lyne, Lancs., OL5 9DD.
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 G8KTL, M. J. Gardiner, 30 Wordsworth Avenue, Manor Park, London, E12 6SU.
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 G8KUX, S. J. Cowie, 28 Conqueror Road, St. Leonards, East Sussex, TN38 8DD. (Tel. Hastings 426737.)
 G8KVU, G. J. Smith, 19A Hendre Close, Broad Lane, Coventry, West Midlands, CV5 7AG.
 G8KWZ, B. Nelves, 17 Woodfield Road, Woodfield, Dursley, Glos., GL11 6HB.
 G8KXS, J. O. Bailey, 15 The Morelands, West Heath, Birmingham, West Midlands, B31 3HA.
 G8KYV, B. Graham, 36 Cambrian Avenue, Chester (40592), Cheshire, CH3 5LG.
 G8KZU, C. Morrison, 103 Hawthorn Avenue, Carrickfergus, Co. Antrim, BT38 8EQ, Northern Ireland.

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 G2FHW, W. Mills, 3 Lea Terrace, Pitt Hill, Appledore, Bideford (6854), Devon, EX39 1PZ.
 G2FKS, G. D. Wilcock, 19 Cavendish Avenue, Cambridge.
 GM3CFS, J. M. Robson, Ferndale, East Mey, Calthness, KW14 8XL.
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 G3IYT, S. R. Walker, 71 Humberston Avenue, Humberston, South Humberside.
 G3KIL, G. D. Lively, 26 Priors Road, Cheltenham, Glos., GL52 5AA.
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 GW3XJC, B. S. Luke, 33 Maiden Street, Cwmfelin, Nr. Bridgend, Glam.
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 G3XQT, F. G. Holt, 2 Kemberton Close, Finchfield, Wolverhampton, West Midlands.
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 GM3ZRC, Greenock & District Amateur Radio Club, 22 Inverkip Street, Greenock, Strathclyde.
 G3ZZT, R. Perrow, 17 Maidstone Drive, Dene Park, Middlesbrough, Cleveland.
 G4AIQ, G. J. Mitchell, Ashleigh Farm, Gayton-le-Marsh, Alford, Lincs., LN13 0NW.
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 G4EBY, G. M. M. Head (ZC4GH), 33 S.U., BFPO 53.
 G5LH, F. Thompson, 82 Weardale Avenue, Forest Hall, Newcastle-on-Tyne, NE12 0HY.
 G5BIU, D. Earl-Clark (W42TLQ), Route 12, Box 541, Tallahassee, Florida 32304, U.S.A.
 G5BL, R. A. Allen, 123B First Avenue, Box 34, Menwith Hill, Nr. Harrogate, North Yorkshire.
 G8BZW, J. Langan, 421 Liverpool Road, Ainsdale, Southport, Merseyside, PR8 3BW.
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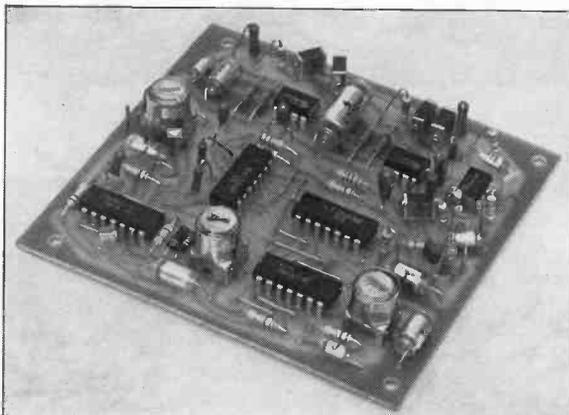
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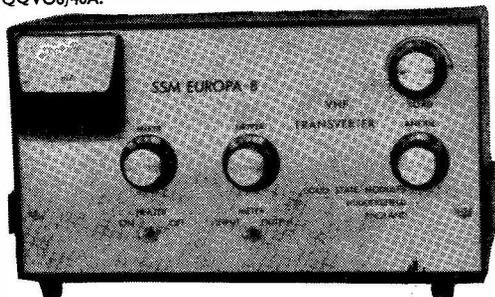
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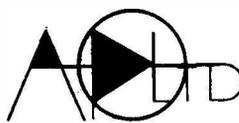
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Re-alignment of valved receivers, etc., at reasonable cost. Available for sale: Oscilloscopes — Heathkit 0-12U, Hartley 13A, also Noise-Factor Meter, Valve Millivoltmeter (needs PSU), R.1132J receiver, etc. Send s.a.e.—Drybrough Communication Services, Ltd., Mounts Lane, Newnham, Daventry (3964), Northants., NN11 6ES.

Valves: Radio, TV, transmitting and industrial types. 1930-1975, many obsolete, 2200 types in stock. List 20p, for quotation send s.a.e. Postal export service. We also wish to buy all types of valves, new and boxed. Wholesaler/Dealer, etc. stocks purchased.—Cox Radio (Sussex), Ltd., The Parade, East Wittering, Sussex, PO20 8BN. (Tel: West Wittering 2023).

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January Issue: Due to appear January 2. Single copies at 45p post free will be sent by first-class mail for orders received by Wednesday, December 31, as available.—Circulation Dept., Short Wave Magazine, Ltd., 29 High Street, Welwyn, Herts, AL6 9EE.

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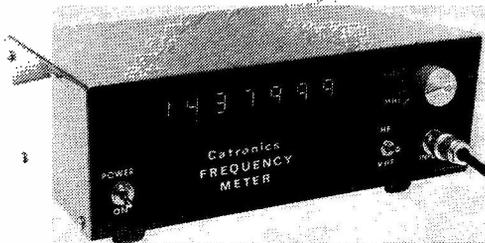
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READERS

For sale: Eddystone EC-10 Rx, cabinet slightly marked, £50. Almost completed "G2DAF linear", in professional steel cabinet, £30. Plated brass chassis, with two 4CX-250B bases, £14. Two very powerful mains-operated fans, £11. Offers considered.—Kinnersly-Taylor, GM3WTA, P.O. Box 49, Aberdeen. (Tel: 0224 53553, day).

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Wanted: SSB Transceiver, Yaesu FT-201 or similar. Hickman, G3LXR, QTHR, or ring Brownhills 3335.

Sale: Heath SB-102, with SB-600/HB23, very good condition, £155. SB-610 Monitorscope, £45. Hand microphone, £1. FT-101B, in very good condition, £385. EC-10 Mk.II, £48. Burns FM demodulator, new, £3. Medco low-pass filter, 75-ohm, £3.50. Stolle 2030 rotator, unopened, £35. Crystals, HC-6U mounting, 8075, 8007, 8055, 8021, 8032, 8061, 8026 kHz, £1.50 each. Aluminium telescopic tower, 40 ft., liftable with one hand, £45. Self-supporting 30 ft. tower, complete with new base, £75. All "or near offer".—Day, G4DED, QTHR, or ring 086-75 (Kidlington) 2215.

Wanted: SSB-220 Linear Amplifier, also FV-401 remote VFO. — Martin, G1X3CZ, 21 Kylemore Gardens, Omagh (44321), Co. Tyrone. (Ring after 6.30 p.m.).

Selling: Heathkit DX-40U with VFO, £25. Heath 20-metre SSB transceiver, £65. Sixty-watt CW Tx, with PSU, £8. **Wanted:** Digital read-out general coverage receiver.—Box No. 5465, Short Wave Magazine, Ltd., 29 High Street, Welwyn, Herts., AL6 9EE.

For sale: Superb Telrex Monarch 3-element optimum-spaced 20m. beam, on 26 ft. boom, current price over £250, accepting £140. Unused Labgear wide-spaced Quad, fibre-glassed bamboo spreaders, three-band coverage (cost over £90), price £55.—Cheadle, G3NUG, QTHR, phone Radlett (Herts.) 4435.

Wanted: "Command" receiver, medium-wave coverage, with spare IFT's. Also Kokusai mechanical filter, around 2.2 kHz.—Maxwell, GW3UMD, 1 Nantfawr Crescent, Cyncoed, Cardiff (751332), Glam., South Wales.

Wanted: Trio 9R-59D or 9R-59DS receiver, must be in good condition, details and price, please; all enquiries answered. — Stevens, 26 Raleigh Road, Newton Abbot, South Devon.

Selling: Codar CR-70A receiver, with speaker, £25. Also Roamer Eight Rx, £3.—Ring Stoneman, Fern-down (Dorset), 77902.

Wanted: FL-DX400 transmitter, also matching speaker for FR-DX400 receiver.—Ring Cleaver, G5HX, Coventry 412397.

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Sale: KW-204 transmitter with Shure microphone, £100. Also KW-Match, £4; Heathkit oscilloscope, £10; HRO receiver, £15. All items perfect.—de la Bertauche, G3RCO, QTHR, or ring Seaton (Devon) 21016.

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Sale: Yaesu FR-50B receiver, coverage all amateur bands 10-160m., with crystal calibrator, in excellent condition, £60.—Ring Hull, Sleaford (Lincs.) 2018, evenings.

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For sale: Datong Electronics RF speech clipper, 4-pin Jap input, £35. Also universal frequency standard. TTL logic, 18 markers from 1 MHz down, as K4EEU design, "Ham Radio," Feb '74, £25. Both items postage extra.—Michaelson, G3RDG, QTHR, phone 01-455 8831.

For sale: Yaesu FT-101 Mk.II transceiver, as new, with additional CW filter, fan and spare valves, £275. — Gent, G4AKE, QTHR.

Selling: W9TO-type keyer, £20. Army A.41 transceiver, aerial and phones, £25. AR-22 rotator, £15. BC-221 frequency meter, £12. TF-144 signal generator, £8. Marconi Q-meter, £10. "I.o.W" traps for dipole, £2.50. NCX-5 DC/PSU, rated 200w., £18. Mosley trap dipole for 10-20m., £5. Mechanical filter, 445 kHz with xtal, £12. Clock, 24-hour, £3. Two-metre 4-ele beam, £3. Two-metre 6-ele beam, £3.50. Four-metre 4-ele, £5.50. Portable mast, £5. Shack standard calibrator, £10. Old Vibroplex key, £3. Morse key, £1. G4ZU-type beam, £10. Quad for 10m., £5. B.44 Rx, £5. Voltmeter, 20K, £3. Motor-cycle battery, 12v., £5. Accumulators, 10v., £1. DC/AC inverter, 10-watt, £4. CW Tx, 15-80m., 30-watt, £10. Tape recorder, £10. Plug-in 20w. PSU-modulator unit, £10. VHF Monimatch, £3. HF Monimatch., £3. Four-metre AM Tx. 6146B PA, £5. Heath audio generator, metered, £25. Heath "Antenna", £5. Telescope, 2½-in., £20. Ali. tubing, suitable 20m. beam, with some ali. angle, £20. — Heaton, Worston House, Nr. Clitheroe, Lancs.

Wanted: For R.C.A. 8516L receiver, Collins mechanical filter Type F455-H-31, also any spares. **Selling:** G.E.C. BRT-400 and Marconi B.28 receivers, both in mint condition, with spare valves. Buyers collect. — Bilton, 68 Rickman Hill, Coulsdon, Surrey.

For sale: For RTTY, Creed 7ERP teleprinter, £25. Also Creed 6S auto-transmitter, £10. Both in good order. Delivery extra, by arrangement. — Michaelson, G3RDG, QTHR, or ring 01-455 8831.

Wanted: Racal LF converter, RA-63 Sideband Adaptor and Panoramic Adaptor, also good-quality signal generator. — Ring Lord, G3PHN, 05304 (Ashby-de-la Zouch) 4626.

Wanted: In mint condition, Trio 9R-59DS receiver with matching speaker. — Ring Hunt, Standish (Wigan) 422799.

For sale: Trio JR-599 with two-metre coverage, not used and in mint condition, £140 or near offer. — Ring Middleton, Otley 4067, Yorkshire.

Wanted: Drake SPR-4, please advise condition and price. — Alis, 7 Hillside Avenue, Wembley, Brent.

Sale: Parabeam, 14-element 75-ohm, £12.50. Also 30 metres of 75-ohm UR-57 coax, brand new, £6 carriage paid. — Rabjohns, G3YBG, Quarries Bungalow, Barley Lane, Exeter (74607), Devon.

For sale: Heath SW-717 Rx, only six months old, aligned and in excellent condition (owner now hooked so moving to more expensive equipment), £26, carr. paid. — Dodd, 25 Orchard Way, Fleggburgh (497), Great Yarmouth, Norfolk.

For sale: Drake T-4XC SSB transmitter, £290. Also Magnum-6 speech processor suitable for Drake Series-4 transmitters and transceivers, £45. — Chesley, G4CHP, QTHR, Tel: Swainsthorpe (Norwich) 365.

Sale: 4-400A valves, little used, less bases, at £10 each. — Ring Alderton, G3UXV, Brentwood 221604.

Wanted: 18-AVT/WB antenna. Please state price and details. — Brown GW4EJE, DFP 8, 1 Sqdn., B Flt., R.A.F. St. Athan, Barry, Glam.

Wanted: Lafayette "Guardian-7700" portable, or similar Rx with UHF coverage 450-470 MHz. — Jones, 10 Boyd Street, Largs, Ayrshire, KA30 8LD. (Tel: 0475 674505, evenings).

Wanted: HF-band beam, HQ-1, TA-33, etc. Also rotator, low-pass filters, KW-107/9, KW-108 or similar; Shure 444 mic.; linear; and Omega-T unit. — Hodgkinson, G3NZT, Fell Foot, Newby Bridge (550), Cumbria.

Manuals: Such as for CT-342, BC-221, CR-300, £1.50. Also RA-17, R.1294, CT-218, £2. — Brooks, 5 Farrant House, Winstanley Road, London, SW11 2EJ.

Selling: Yaesu FT-101 Transceiver, with SSB and CW filters, mic. and handbook, little used and in mint condition, complete amateur station, £265. Also Heathkit desk microphone, HDP-21A, for SB series equipment, £18. — Ring Beeker, G3WY, Evesham 45497.

Exchange: In good condition, Decca Universal Klystron power unit, metered, stabilised supplies, with internal mod. **Wanted:** All-band SSB transceiver, but would consider two-metre Tx, or relatively modern communications receiver, general-coverage or amateur. — Smith, Eaton Bray (Beds.) 220565, after 7.0 p.m. or week-ends.

Selling: Tandberg two-track mono tape recorder, Model 92; three speeds, takes 7-in. reels, built-in 7 x 4 in. Goodmans speaker, with dynamic mic. and tapes. — Ring Moyle, Lichfield 54033.

Wanted: KW-1000 or similar linear amplifier.—Plant, G5CP, QTHR, or ring 024-689 253.

Sale: For RTTY, NS1 phase-locked loop demodulator, self-contained power loop and T/P motor supplies, after W4AYV, "Ham Radio", Feb. '75, in black-silver metal case, with circuitry, £30. Also digital auto-start printer control unit, self-contained loop power and T/P supplies, after K4EEU in "Ham Radio" of June '73, in black silver metal case, with circuitry, £35. Creed 7B Teleprinter, in good order, with base and silence cover, £17. All items carriage or delivery extra.—Michaelson, G3RDG, QTHR, phone 01-455 8831.

Offering: Robot Type 70/A monitor, modified, with manual and in excellent working condition, offers around £200. Delivery can be arranged.—Burton, G2JR, QTHR, or ring 0203 (Coventry) 455021.

For sale: Europa two-metre Transverter, with c/o relay, £75. Heathkit GR.98 air-band monitor, £25.—Thexton, G3URE, QTHR, or ring 089-426 3044, evenings.

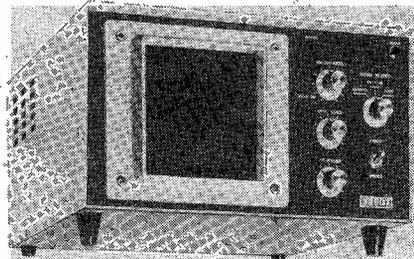
Selling: KW-107, £39. Garex "Fourmobile", AM operation, £45. Emsac 70 MHz converter, (IF 26-30 MHz), £7.50. All in new condition. — Haylock, G3ADZ, 6 St. Marks Avenue, Rugby (815222), West Midlands, CV22 7NP.

For sale: FR-50B receiver, new May '74 and little used, £60.—Box No. 5469, Short Wave Magazine, Ltd., 29 High Street, Welwyn, Herts., AL6 9EE (or ring Jones, Wetherby, Yorks., 4971).

For sale: Heath HW-7 QRP CW transceiver, £35. Also KW-107 antenna tuning system, £35. Buyers collect. Would **Exchange** my 18-AVT/WB for a 12-AVQ plus £5.—Fowler, G3IQF, QTHR, or phone Marlow (Bucks.) 6421.

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Wanted: Manual for Hammarlund SP600-J6X receiver, purchase or for loan to copy, all expenses paid. — Beerling, Highland, Staines Hill, Surrey, Canterbury (710743), Kent, CT2 0ER.

January Issue: To appear Friday, January 2, 1976, single copies at 45p post free will be despatched first class mail on receipt from printers. Orders by Wednesday, December 31, with remittance to: Circulation Dept., Short Wave Magazine, Ltd., 29 High Street, Welwyn, Herts., AL6 9EE.

Selling: Heathkit SB-303 receiver with three filters, matching speaker and converter for Top Band, £195. Recording taps, 7-in. by $\frac{1}{4}$ -in. reels also $\frac{1}{2}$ -in. computer tape, £1. Tuning fork, 125-cycle for checking 45/50 baud teleprinter speeds, £3 Grundig 4-channel audio mixer, £3. BCC 4-metre base station with QQVO3-20A, £10. Also Pye two-metre base station, QQVO3-20A PA, £10. BCC-69 mobile Tx/Rx with mobile and mains PSU's, mounting frame, microphones, connectors and spare valves, £12. Paging units, 25p. Valves: AH.201, RG1, 6080, QVO4-7, 50p each. Will haggle.—Watson, G3WMQ, QTHR or ring 01-903 4363.

For sale: National HRO-5T receiver, coil packs, in good condition, £30. — Rowley, 44 Oliver Street, Foleshill, Coventry. (Home week-days 5-6 p.m.).

Sale: Barlow-Wadley XCR-30 receiver, in good condition, £110. — Alis, 7 Hillside Avenue, Wembley, Brent.

Wanted: Eddystone EC-10 receiver; please advise price and condition. — Newman, 49 Blackmoor Drive, West Derby, Liverpool, 12.

For sale: Marconi aircraft receiver AD.108D, coverage 260 kHz to 18.5 MHz, with crystal filter and mains unit, compact in excellent condition, £25. — Box No. 5471, Short Wave Magazine, Ltd., 29 High Street, Welwyn, Herts., AL6 9EE.

Selling: Heathkit GR.98 air-band monitor Rx, factory aligned, very good condition, £25.—Ring Ross, Aberdeen 41469.

Sale: Two 1760v. 1.53 amp transformers, £30 each. R.C.A. xformer 2300-0-2300v. 800 mA, £14; five 2.5-0-2.5v. 15 amps, £2 each. One 12v. 50 amp, £10, also 5 kV 1 amp choke, £8. R.C.A. Type 4336 mod. transformer, £8. PSU rated 1000v. at 350 mA, £8. PSU, 20 + 10v. stabilised, 450 mA, £4. R.C.A. speech amp., 500 ohms, £8. Jennings variable vacuum capacitor, 3-1000 pF, rated 10 kV, £22. Capacitors, 4 mF rated 6 kV, £3.50. Used QY4-400 valves, £8 pair. New 810, with holder, £5. Valves type 828, with holders, £3. Jumbo holders 813, 50p each. Many meters, HV capacitors, ceramic, etc. Send s.a.e. for list, offers considered.—Vacani, 5 Courtlands, Herne Bay (66888), Kent.

Wanted: Eddystone amateur-band or general-coverage receiver. — Evans, 7 Castle Street, Clackmannan, Scotland. (Ring Alloa 5449, any time).

Wanted: Heath HW-101, with PSU, in good condition and without mods. Details and price please. — Pope, G3SKE, 47 Paget Street, Gillingham, Kent. (Tel: Medway 575747).

Selling: Trio JR-310, with speaker and as new, with manual, £65.—Ring MacLeod, Bedford 52812.

Selling: R.C.A. AR88D, £27. Lowe 1422C monitor receiver, complete with repeater crystal + 144.50 MHz, £23.—Simmonds, 50 Sunray Avenue, Herne Hill, London, SE24 9PX.

For sale: FT-250, with mic., extra xtals, manual, etc., in good condition, £190. KP-202 two-metre walkie-talkie, six-channel, as new, with ni-cads, charger, helical aerial adaptor, case and strap, all as new, £100. SB-300 receiver, coverage 10-160m., recently over-hauled, with de luxe filter, in excellent condition, £110. Europa, with built-in c/o relay and gain controls, £65. New Osker Power/SWR bridge, £20. "DJ4BG" speech processor, with mic., £12. Also 18-AVQ Ac., in good condition, £45. — Neil, G4DOJ, QTHR, or ring 061-437 (Cheadle) 4716, after 6.0 p.m.

Selling: BXI two-section tower, with raising motor and control unit, sturdy job (motor costs £90), offers? "Magnum-Six" for S-line or KWM-2, offers? Katsumi MC-701 processor, £6. Seco antenna tester, good-bad reading, £12. Various American mobile antennae, Send s.a.e. for details. — Barnett, G3DAM, QTHR.

For sale: KW-2000, with AC/DC PSU's. £110. Home built Linear, 2/6LQ6, with built-in VSWR meter and PSU, £30 or near offer.—Limehouse, G2FDF, QTHR, Tel: Weybridge 45214.

Selling: Good Heathkit RA-1 amateur bands receiver, with crystal calibrator and manual, £30, buyer collects. Also No.19 Set, Tx/Rx with mains HT PSU, £10 or near offer.—Reed, G4BZF, 1 Redwood Way, North Colerne, Chippenham, Wilts., or ring Box (Wilts.) 2833.

Sale: BC-221, with charts, crystal, mains PSU, checked, and in excellent condition, £20. Signal generator, coverage 20-88 MHz continuous, with three outputs (RF, RF-pulsed, noise) 230v. mains operation, with manual, £15. R.209, tuning 1-20 MHz, 12v. input, with manual, £12. Leland Audio Oscillator, two ranges 0-1000 Hz and 0-20 kHz, with manual, £10.—Ring Barnes, 051-966 2393 (day), or St. Helens (Merseyside) 53018, evening.

Wanted: Marconi receiver, CR-100 series, working and in very good condition. Also recent valve-type Rx, coverage 160m. to 10m., or two metres, mint, and xtal calibrator desirable. Also any ancillary equipment. Would consider complete SWL station. Details first instance, please.—Box No. 5472. Short Wave Magazine, Ltd., 29 High Street, Welwyn, Herts., AL6 9EE.

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Wanted: Heath HWA-17-2 FM Adapter.—Davis, GW8II, QTHR, Tel: Aberystwyth 3591.

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