

The SHORT WAVE Magazine

VOL. XLI

MAY 1983

NUMBER 3

what is short wave radio?

Not so many years ago, an evening's entertainment for the family was to sit around the fireside, the young ones in their dressing gowns, and listen together to radio broadcasts from the BBC. With the advent of television things changed; no more was radio the single source of news and entertainment and consequently, the listening habits of a nation changed. The short wave listeners of these times still had their "shacks" full of equipment, usually located at the bottom of the garden. These were the people who were always well informed, one step ahead of the newspapers and, more often than not, the domestic service of the BBC.

Times have changed; man has landed on the moon and come back. Television although now in colour, has lost its initial aura and the short wave receiver has, with the advent of the microprocessor, become acceptable alongside the HI-FI equipment. The result is that now more people are rediscovering radio. The short wave receiver is their ticket to far away places and, again due to the

application of advanced technology, the set that now enables you to listen to the world can also be easily used to listen to Radios One, Two, Three and Four, etc. What do I mean by the term "Listen to the world"? The majority of countries world wide have radio stations, not only to broadcast to their own population but to inform others world wide of their life styles, customs and political beliefs. Many interesting programs can be heard and those beamed to us are, of course, broadcast in English.

Do not think for a minute that this is all the short waves have to offer; one can hear radio amateurs conversing — distances to them seeming insignificant. Ship's radio officers discussing matters with the owner's back in the home port, aircraft in mid Atlantic seeking out long distance weather information, in short, the world going about its business.

There's no need to worry about aerials either, your house does not have to look a miniature version of Jodrell Bank. The Trio general coverage receivers have as an included

accessory a simple length of wire which will enable you to listen immediately. In most cases, a length of wire down the garden will give good results, keep it away from trees and other buildings and the world will knock on your door.

I can hear you now saying, this is all very well but isn't a Short Wave receiver a very expensive item to buy? The answer is no, a good piece of equipment can be bought for as little as £215 and don't forget, you will have many years of pleasure from the receiver and unlike a conventional radio the equipment, if you buy wisely, will have a realistic second hand value. Of course you can pay more than £215, the two Trio receivers are priced at £398 for the superb R2000 and £257.60 for the simpler R600 model. For the enthusiast who wants a top notch Short Wave receiver then we have at the top of our range the NRD515 which will lift you into the professional sphere. You don't have to buy a new receiver though, we also have second-hand pieces of equipment. These items are all checked by our skilled workshop staff and each is sold with a full 3 months warranty. For a good second hand short wave receiver prices start at around £150. For more information regarding new or used equipment then don't hesitate to ring us, either here at Matlock or our London (01-837 6702) or Glasgow (041-945 2626) shops.



LOWE ELECTRONICS

Chesterfield Road, Matlock, Derbyshire. DE4 5LE.
Telephone 0629 2817, 2430, 4057, 4995. Telex 377482.

remember the **KX 2** now available the **KX 3**

The KX3 is a wide range general coverage tuning unit specially developed for the short wave listener. Using high Q coils, and air spaced variable capacitors, the KX3 is designed to give additional front end selectivity as well as wide range impedance matching.

As a further feature, the range from 10KHz to 500KHz is provided with a low pass filter so as to allow listening below 500 KHz whilst rejecting strong medium wave stations in the 500 KHz to 1.5 MHz band.

Provision is made for using the tuning capacitors in the KX3 to resonate an external loop type aerial for medium wave directional reception.

Frequency range	10 KHz-30 MHz
Functions	10 KHz-500 KHz L.P.F. 500 KHz-30 MHz Pi match
Number of bands	8
Input and output impedance	50-600 ohms
Size	220 x 66 x 154 mm

Both coaxial and wire aerials can be connected to the KX3.

KX3 RECEIVER ANTENNA TUNING UNIT £42.50 inc. VAT.



AF 606K

AUDIO FILTER £63.25 carr. £2.00

From Daiwa yet another aid to operating. In addition to the notch, SSB and CW filters, the AF606K is equipped with a PLL tone decoder; when the tone frequency of the CW signal and the free running frequency of the PLL tone decoder are the same a locked signal is generated. This locked signal keys an audio oscillator which then reproduces the received CW signal. However, there is a tremendous difference between the produced signal and the received one — no noise and, of course, no fading. **ANOTHER PIECE OF EQUIPMENT TO ENHANCE YOUR LISTENING.**



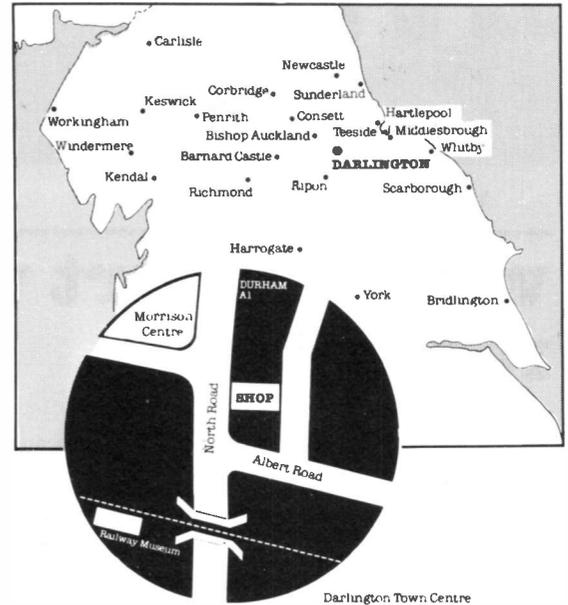
DK 210

ELECTRONIC KEYS
£47.00 inc. VAT carr. £2.25

With so many electronic keys and keyers on the market, it's hard to describe one that is better than the rest. Inevitably it is a matter of "feel", and the feel of the New Daiwa DK210 is superb. Being Daiwa, the quality of design and construction has to be of the best, but it's in use that the DK210 is so impressive. Designed to be used with an external paddle, to give greater personal choice, the DK210 is otherwise self contained, even to being battery powered (PP3). It offers a speed range of 10 to 50 w.p.m., built in sidetone, facilities for semi auto, or fully auto keying, and a tune position for adjusting your transmitter, but the outstanding feature is the adjustable "weight" control. This control gives an amazing improvement in the character of the sending, and completely removes that mechanical sounding "electronic morse" characteristic. Those experienced CW users who have tried out the DK210 have all said how good it sounds — and have usually purchased one. So will you if you try it out.

DK210 from DAIWA — A truly nice keyer.

LOWE ELECTRONICS IN THE NORTH EAST



A huge free car park, a shopping complex which has within it a large supermarket, a wine and spirits shop, a bistro restaurant and convenient banking facilities has nothing at all to do with amateur radio.

However, as all these facilities are to be found across the road from our new amateur radio shop in the North East of England, then you will appreciate that we take great care in positioning the Lowe Electronic shops to help both you and other members of your family. The shop is in Darlington, 56 North Road, that is on the A167 road to Durham, only a few minutes from the town centre. Darlington is a delightful market town with extremely good links to the A1 north or south and to the west and east. Indeed, Darlington is easy to get to from towns such as Scarborough, Bridlington, York, Harrogate, Penrith and Carlisle. To the fortunate Radio Amateurs of the North East, then you have Lowe Electronics in your own backyard.

A Lowe Electronics' shop means the opportunity to browse, to try out, without sales pressure, a new or second hand piece of equipment before you buy it. And not only that, the shop will stock all the usual accessories, aerials, swr meters, cables, rotators, tuning units, plugs, sockets, etc. All equipment bought from the Darlington shop will carry the now well-known Lowe after sales service. It is a fact that today's equipment, although very reliable, is extremely complex and although not beyond the amateur, the expensive test equipment required for the repair leave most of us in the hands of the person who sold us the rig.

With Lowe Electronics not only are the hands helpful but technically able.

RING FOR OPENING DETAILS

LOWE IN LONDON, Open monday to saturday, six days a week
lower sales floor, Hepworths, Pentonville Rd, London. telephone 01.837.6702
LOWE IN GLASGOW, Open tuesday to saturday
4,5 Queen Margarets Rd, Glasgow. telephone 041.945.2626

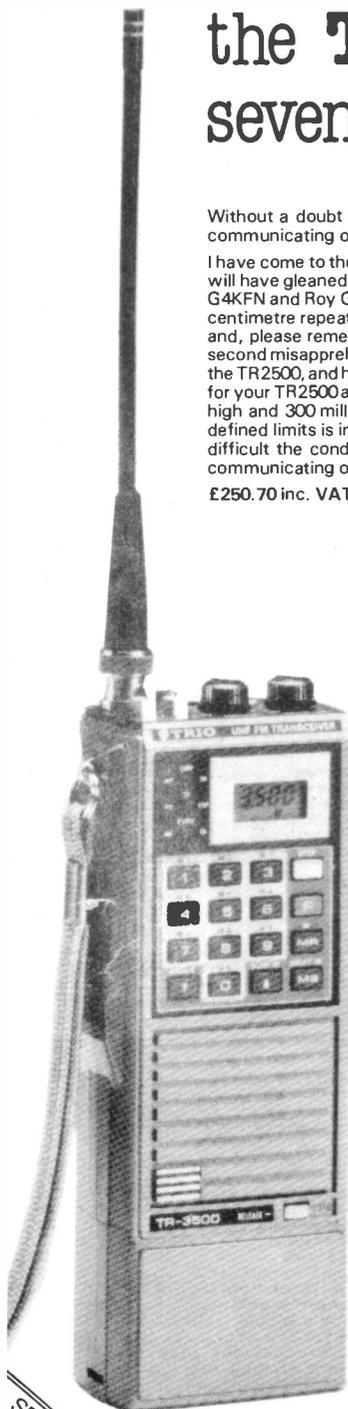


the **TR 3500** handheld for those seventy centimetre contacts

Without a doubt one of life's great mysteries to me is why, when the two metre band is at times so busy, few people are to be found communicating on the wide open spaces of the seventy centimetre band.

I have come to the conclusion that misapprehensions exist about the band. The first being the lack of activity. From my first comments you will have gleaned the fact that seventy centimetres is not a busy band, however there are stations on, myself G8GIY, my colleagues David G4KFN and Roy G8ROR form the nucleus of a UHF group here in Matlock, there are many others like us up and down the country. Seventy centimetre repeaters abound and are a perfect means of communication, their somewhat shorter range serving well their immediate area and, please remember, in the words of that doyen of seventy centimetres Jack G5UM, "Activity breeds activity", simple but true. The second misapprehension is that the equipment is expensive. Not so, the Trio TR3500 costs only slightly more than its matching stable mate, the TR2500, and here again, with the same sensible approach which we have all come to expect from Trio, the accessories which you bought for your TR2500 are compatible with the new TR3500. The appearance, size and weight are similar to the TR2500, output power is 1.5 watts high and 300 milliwatts low, repeater shift is programmable, ten memory channels are provided and frequency scan between operator-defined limits is included. The conventional memory scan and reverse repeater facilities help to make operating a pleasure no matter how difficult the conditions. With the Trio TR3500 handheld as part of your station, you are equipped to expand your operating and begin communicating on the wide open spaces of the seventy centimetre band.

£250.70 inc. VAT; carriage £5.00



and the **TR7930** for the two metre mobile operator.

Any amateur who has used or owns a Trio TR7800 has had the finest piece of 2 metre mobile technology at his fingertips. The TR7800 had simply everything that the keen mobile operator could ever want. Of course, there were a few points which customers said could be improved on and, I must admit, we, in the majority of cases, agreed. Trio, with the introduction of the new TR7930, have taken note of this feedback of information and the result, I am sure you will agree, is as close to perfection as you will find in a rig.

The improvements are, a green floodlit LCD readout which does not disappear in strong sunlight, additional memory channels, both timed and carrier scan hold on occupied channels, selectable memory channel for the priority frequency and automatically corrected mode selection (simplex or repeater) without having to instruct the rig. The most significant change is the liquid crystal frequency readout on a green illuminated background, but closely following this must be the ability to omit specific memory channels when scanning, and the programmable scan between user designated frequencies. This gives the rig the ability to scan simplex channels only, without holding on repeaters.

The Trio TR7930. The mobile 2 metre FM rig designed with ease of operation coupled to outstanding performance.

£305.21 inc. VAT; carriage £5.00.

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AND ANTENNAE CATALOGUES.
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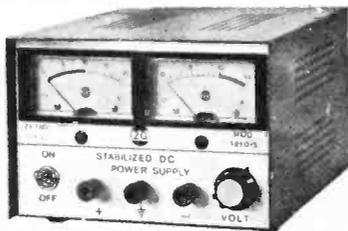
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The TS930S latest transceiver from Trio Price: £1,216.00 inc. VAT.



MOD. 1210 S

SOLID STATE STABILISED POWER SUPPLIES
 Maximum ratings quoted. Prices include postage.
 Model 125 10-15V 5amp. £29.50
 Model 156S 4-15V 5amp Twin Meter. £40.00
 Model 1210S 4-20V 10amp Twin Meter. £75.00

ANTENNAS	
Hy-Gain	
12AVQ 3Band Vertical	£50.60
14AVQ/WB 4Band Vertical	£64.40
18AVT/WB 5Band Vertical	£109.25
TH2MK 3 2El. Tribander Beam	£169.06
TH3MK 3 3El. Tribander Beam	£274.95
TH3JNR 3El. Tribander Beam	£202.40
TH6DXX Tribander Beam	£396.75
205BA 5Element 20m Beam	£396.00



TRIO TS430's
£736.00



J.R.C. NRD515D

General coverage receiver 100 KHz to 30 MHz fully synthesised. Digital readout PLL synthesiser with rotary type encoder pass band tuning - modular construction. £985.00

Mini Products	
HQ1 Minibeam 10-15-20m	£135.00
C4 3Band Vertical	£59.00



TR2300
£152.00

NSD515 TRANSMITTER & AC PSU £1,371.00
NEW 96 CHANNEL MEMORY UNIT.
J.R.C. JST 100HF TRANSCEIVER + Ac PSU £1,147.50

T.E.T.	
HB23SP 2EL Tribander	£135.60
HB33SP 3EL Tribander	£192.50
HB34D 4EL Tribander	£222.90
HB35C 5EL Tribander	£283.95
HB35T 5EL Tribander	£278.50
MV3BH 3Band Vertical	£37.99
MV4BH 4Band Vertical	£48.90
MV5BH 5Band Vertical	£63.95
TE214 14Element 2m Beam	£74.40

G4MH 10-15-20m Minibeam	£86.50
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TONNA	
4Element 2m Yagi	£13.01
9Element 2m Yagi	£15.44
17Element 2m Yagi	£35.19
19Element 432MHz Yagi	£18.14
21Element 432MHz Yagi	£26.00

Hokasin	
1/4 wave 2m Whip mobile	£1.65
5/8 wave 2m Whip mobile	£9.00
7/8 wave 2m Whip mobile	£13.77
5/8 wave Base Station antenna	£15.50
GPV-5 2m Base Station Co-Linear	£33.90
GPV-7 70cm Base Station Co-Linear	£29.00
GPV720 144/432MHz dual base station	£33.90
GDX2 50-480MHz Discone antenna	£46.50

Welz Diamond Antennas	
DP, CP5 Vertical	£79.00
KB105 Vertical	£79.00
KB101 Vertical	£54.00

JAYBEAM	
LW5 5El 2m Yagi	£14.37
LW8 8El 2m Yagi	£17.82
LW10 10El 2m Yagi	£24.15
LW16 16El 2m Yagi	£35.08
PBM10 10El Parabeam	£44.85
PBM14 14El Parabeam	£56.78
C5/2m 2m Co-Linear	£54.63
D5/2m Double 5Element Slot Yagi	£25.30
D8/2m Double 8Element Slot Yagi	£34.50
Q4/2m 4Element 2m Quad	£29.33
Q6/2m 6Element 2m Quad	£39.10
Q8/2m 8Element 2m Quad	£44.85
C8/70cm 432MHz Co-Linear	£62.00
D8/70cm Double 8Slot Yagi	£25.88
PBM18/70cm 18El Parabeam	£32.20
PBM24/70cm 24El Parabeam	£42.55
LW24 24El folded dipole	£27.00
MBM28 28El multibeam	£21.28
MBM48 48El multibeam	£35.65
MBM88 88El multibeam	£48.88
8XY/70Crosed 8Yagi	£42.55
12XY/70 12El Crossed Yagi	£52.90
5XY/2m Crossed 8El Yagi	£28.18
8XY/2m Crossed 8El Yagi	£35.65
10XY/2m Crossed 10El Yagi	£46.00

G-Whip Full range of Mobile HF Antennas with the new Ten Band Mobile at £99.00.

ISOPOLE 2M ANTENNA £35.00
NOW AVAILABLE FROM STOCK

For the caller we have a wide range of aluminium tubing.

20ft x 2" O.D.	£14.50
16ft x 2" O.D.	£12.75
12ft x 2" O.D.	£8.75
10ft x 1 1/2" O.D.	£5.50
6ft x 1 1/2" O.D.	£2.50
18" Wall Brackets	£6.00
12" Wall Brackets	£4.00
2" mast couplers	£6.00
Double Lashing Kits	£5.75



TRIO R600 RECEIVER
£257.00

DATONG PRODUCTS	
PCI General Coverage Converter	£137.42
Low Frequency Converter	£29.90
FL1 Frequency Audio Filter	£79.35
FL2 Multi-Mode Audio Filter	£89.70
Automatic FR Speech Clipper	£82.80
RF Speech Clipper	£29.90
D70 Morse Tutor	£56.35
AD370 Active Antenna (outdoor)	£64.40
AD270 Active Antenna (indoor)	£47.15
2M Converter	£39.67
Keyboard Morse Sender	£137.42

ANTENNA ROTATORS	
Diawa	
DR7500X	£110.00
DR7500R	£125.00
DR7600X	£141.00
DR7600R	£156.00



TRIO R2000 RECEIVER
£398.00

KENPRO	
KR400C	£116.15
KR600C	£154.10
KR500 Elevation Rotator	£97.75

Station Accessories	
Welz SP200PWR/SWR Meter	£61.95
SP300	£85.00
SP400	£61.95
SP10X	£21.95
SP15M	£32.00
SP45M	£45.00
Welz AC30 Antenna Tuner	£59.00
Global SWL AT1000 Tuner	£34.95
SWR25	£12.75
HK 706 Morse Keys	£13.50
Diawa 2 way Ant Switch	£13.95
SWL 2 way Ant Switch	£4.75
V2 2 way Ant Switch	£6.00
V3 3 way Ant Switch	£10.00
V4 4 way Ant Switch	£11.00
DL50 500hm 50 watt D. Load	£6.50
DL300 500hm 300 watt D. Load	£20.70
DL600 500hm 600 watt D. Load	£29.50
DL1000 500hm 1KW D. Load	£43.70
DL150 1KW D. Load Wattmeter	£56.00
KX3 SWL Antenna Tuner	£42.50



TRIO TS830S
HF SSB TRANSCEIVER
£697.00

DRAKE	
MN75 Antenna Tuner	£163.00
MN2700 2KW Antenna Tuner	£220.00
TR5 Transceiver & AC PSU	£625.00
Full range of Drake accessories. Available to order.	

Microwave Modules, FDk, and other equipment also available, including I.C.S. - Diawa.

As the North West's only official Trio stockist we carry the full Trio range of equipment and accessories. Full service facilities. Send s.a.e. for up-to-date information.

DATONG

New



AUTOMATIC NOTCH FILTER MODEL ANF

Why suffer when you don't have to? Model ANF provides the high-technology answer to tune-up whistles and other heterodyne interference to SSB communications. It also features an excellent 4-pole tunable bandpass filter to make life easier on CW. Connected in series with the receiver's loudspeaker Model ANF continuously searches the audio spectrum for continuous tones. When it finds one it stops the search, locks on, and removes it with a really deep, narrow notch. The filter's centre frequency is shown on a 10 LED bargraph-type display at all times. You can see at a glance the position of the sweep during the search or the approximate frequency of the interference during "lock". The display is also useful when using the auto-assisted manual tuning mode or the CW mode. A built-in compandor system eliminates the need for careful input level setting. The receiver volume control works exactly as normal yet the auto-notch performance and signal-to-noise ratio remain just as good at any volume setting. Built to truly professional quality standards, Model ANF is available now either direct or via Datong Dealers, price £59 plus VAT (£67.85 total). Send for a free copy of the full data sheet.

COMING SOON

The amazing Datong Automatic Woodpecker Blanker - the star of the recent RSGB show at the NEC.

AUDIO FILTERS MODELS FL2, FL3, FL2/A

Model FL3 represents the ultimate in audio filters for SSB and CW. Connected in series with the loudspeaker, it gives variable extra selectivity better than a whole bank of expensive crystal filters. In addition it contains an automatic notch filter which can remove a "tuner-upper" all by itself.



Model FL2 is exactly the same but without the auto-notch.

Any existing or new FL2 can be up-graded to an FL3 by adding Model FL2/A conversion kit, which is a Fully tested auto-notch module in P.C.B. Form. Datong filters frequently allow continued copy when otherwise a QSO would have to be abandoned.

Prices: FL2 £78.00 with VAT £89.70, FL3 £112.50 with VAT £129.37, FL2/A £34.00 with VAT £39.67

GENERAL COVERAGE RECEIVER CONVERTER MODEL PC1

Once upon a time it was the norm to use a ten metre receiver to receive the two metre band. Now, large numbers of special purpose two metre SSB rigs are in use and conversion the other way becomes a very attractive possibility.



MODEL PC1

With the addition of Model PC1 each of these two metre SSB rigs becomes a really good general coverage receiver (from 50 kHz to 30MHz!). Two metre SSB rigs are not cheap and it makes good sense to get the most out of them. They also tend to have very good performance in terms of sensitivity, selectivity, and big signal handling. Each of these features is just as vital for short wave reception and Model PC1 is designed not to degrade them at all. The result, your two metre SSB rig receives below 30 MHz as well as it receives on two metres. And compared to many medium cost general coverage sets, that is saying a lot!

Try this test. Listen on twenty metres after the band goes dead in the evening. With many general coverage receivers the band never dies. It remains populated with phantoms generated by the receiver from the many very strong signals on forty metres. This is the kind of effect that the higher quality receivers minimise, and that goes for PC1 plus a good two metre rig. Reviews: Rad. Com., April 1982.

PC-1 £119.50 with VAT £137.42

KEYBOARD MORSE SENDER THE ULTIMATE "MORSE KEY"

- STRAIN-FREE sending: Converts "hunt and peck" typing to perfect morse. Just plug into any key jack and type.
- CONVENIENCE: no need for a power cable, four internal pen cells last for 300 hours and give continuous memory back up.
- EXCLUSIVE COLOUR CODED KEYBOARD DESIGN: Separate key switches beneath a tough polycarbonate membrane combine excellent "feel" with a splash proof wipe clean surface.
- LAVISH MEMORY: four 64-character memories with auto-repeat and programmable "pause" function, for all the routine sending.
- BUFFER MEMORY: ensures perfect sending despite less than perfect typing.
- COMPREHENSIVE CHARACTER SET: includes punctuation, procedure signals, accented letters. Plus a "merge" key for making any non-standard character. BEAUTY AND STYLE: only one inch thin and with four-colour panel Model MK
- looks every bit the thoroughbred it is. Model MK is supplied with output leads and spare connectors but without batteries (four HP7 pen cells).



COMPACT RECEIVING ANTENNAS MODELS AD270/370

Datong Active Antennas solve the age-old problem of finding space for a "good" receiving aerial. Model AD370 mounted on a roof top or Model AD270 in a loft will give similar sensitivity for much larger conventional aerials yet are only 2 1/2 and 3 metres long respectively. More over they do not suffer from interference picked up by the feeder cable; such pick-up can be a problem with conventional dipoles because it is hard to maintain good balance over a band of frequencies.



MODEL AD370 HEAD UNIT

Although active antennas were introduced to the amateur market by Datong only a few years ago they have long been used by military and commercial receiving stations. The performance specifications achieved by the Datong AD270/370 are very close to those of "professional" active antennas selling for ten times the price - a point which is not lost on our many professional customers. The advanced design ensures two things: that you don't miss signals through inadequate sensitivity and that the antenna does not invent signals which are not there. Datong Active Antennas represent an advanced solution to a common problem and so far as we know have no serious competition in terms of performance at the price. (Reviewed in Rad. Com., June 1982).

AD270 £41.00 with VAT £47.15 AD370 £56.00 with VAT £64.40



ALL DATONG PRODUCTS ARE DESIGNED AND BUILT IN THE U.K.

PRICES

All prices include delivery in U.K. basic prices in £ are shown with VAT inclusive prices in brackets.

FL3	112.50	(129.37)	AD370	56.00	(64.40)	Codecall		
FL2/A	34.00	(39.67)	AD270+MPU	45.00	(51.75)	(Linked)	28.00	(32.20)
FL1	69.00	(79.35)	AD370+MPU	60.00	(69.00)	Codecall		
FL2	78.00	(89.70)	MPU	6.00	(6.90)	(Switched)	29.50	(33.92)
PC1	119.50	(137.42)	DC144/28	34.50	(39.67)	Basic DF System	149.00	(171.35)
ASP	72.00	(82.80)	DC144/28			Basic Mobile		
VLF	26.00	(29.90)	Module	28.00	(32.20)	DF System	159.00	(182.85)
D70	49.00	(56.35)	Keyboard Morse	119.50	(137.42)	Complete Mobile DF		
D75	49.00	(56.35)	Sender			System	214.00	(246.10)
RFC/M	26.00	(29.90)	RFA	29.50	(33.92)	PTS1	39.99	(45.99)
AD270	41.00	(47.15)				Model ANF	59.00	(67.85)

Data sheets on any products available free on request -

DATONG ELECTRONICS LIMITED

Dept S.W. Spence Mills, Mill Lane, Bramley, Leeds LS13 3HE, England. Tel: (0532) 552461

THANET'S GUIDE

Just a few stars to choose from the fabulous galaxy of Amateur Radio Equipment available at Thanet Electronics.

IC-720A £949 inc.



The main problem that the amateur of today has to deal with is deciding just which rig out of the many excellent products available he is going to choose. Technology is advancing at such a rapid rate and getting so sophisticated that many cannot hope to keep up. Some go too far!

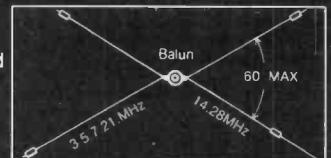
Perhaps one way of dealing with the problem is to look at just what each model offers in its basic form without having to lay out even more hard earned cash on "extras". The IC-720A scores very highly when looked at in this light. How many of its competitors have two VFOs as standard or a memory which can be recalled, even when on a different band to the one in use, and result in instant returning AND BANDCHANGING of the transceiver? How many include a really excellent general coverage receiver covering all the way from 100KHz to 30MHz (with provision to transmit there also if you have the correct licence)? How many need no tuning or loading whatsoever and take great care of your PA, should you have a rotten antenna, by cutting the power back to the safe level? How many have an automatic RIT which cancels itself when the main tuning dial is moved? How many will run full power out for long periods without getting hot enough to boil an egg? How many have band data output to automatically change bands on a solid state linear AND an automatic antenna tuner unit when you are able to add these to your station?

Well you will have to do quite a bit of hunting through the pages of this magazine to find anything to approach the IC-720A. It may be just a little more expensive than some of the others – but when you remember just how good it is, and of course the excellent reputation for keeping their secondhand value you will see why your choice will have to be an IC-720A!

Securicor or post despatch free.

trap dipole £49.50.inc.

The MT-240X Multi-band trap dipole antenna (80m – 10m) is a superbly constructed antenna with its own Balun incorporated in the centre insulator with an SO239 connector. Separate elements



of multi-stranded heavy duty copper wire are used for 80-40-15 and 20-10 Metres. Really one up on its competitors

IC-730 £629 inc.



ICOM's answer to your HF mobile problems – the IC-730. This new 80m–10m, 8 band transceiver offers 100W output on SSB, AM and CW. Outstanding receiver performance is achieved by an up-conversion system using a high IF of 39MHz offering excellent image and IF interference rejection, high sensitivity and above all, wide dynamic range. Built in Pass Band Shift allows you to continuously adjust the centre frequency of the IF pass band virtually eliminating close channel interference. Dual VFO's with 10Hz, 100Hz and 1KHz steps allows effortless tuning and what's more a memory is provided for one channel per hand. Further convenience circuits are provided such as Noise Blanker, Vox, CW Monitor APC and SWR Detector to name a few. A built in Speech Processor boosts talk power on transmit and a switchable RF Pre-Amp is a boon on today's crowded bands. Full metering WWV reception and connections for transverter and linear control almost completes the IC-730's impressive facilities.





South Midlands

SMC YOUR SINGLE STOP SOURCE FOR RECEIVERS,

12 MEMORY RECEIVER: — FRG 7700M; £399 inc. VAT @ 15% & SECURICOR

- ★ 30MHz down to 150kHz (and below).
- ★ 12 Channel memory option with fine tune.
- ★ SSB (LSB/USB), CW, AM, FM.
- ★ 2.7kHz, 6kHz, 12kHz, 15kHz, @ — 6dB.
- ★ 3 Selectivities on AM, squelch on FM.
- ★ Up conversion, 48MHz first IF.
- ★ 1kHz digital, plus analogue, display.
- ★ Inbuilt quartz clock/timer.
- ★ No preselector, auto selected LPF's.
- ★ Advanced noise blanker fitted.
- ★ Antenna 500Ω to 1.5MHz, 50Ω to 30MHz.
- ★ 20dB pad plus continuous attenuator.
- ★ Switchable A.G.C. Variable tone.



'7700 THE ONE WITH FM!
Non memory version £335

- ★ 110 and 240V ac, 12Vdc option.
- ★ Signal meter calibrated in "S" and SIMPO.
- ★ Acc; Tuners, Converters, LPF, Memory.
- ★ FR7700; 150kHz-30MHz, Switch, etc.
- ★ FRV7700A; 118-130, 130-140, 140-150MHz.
- ★ FRV7700B; 118-130, 140-150, 50-59MHz.
- ★ FRV7700C; 140-150, 150-160, 160-170MHz.
- ★ FRV7700D; 118-130, 140-150, 70-80MHz.
- ★ FRV7700E 118-130, 140-150, 150-160MHz.
- ★ FRV7700F 118-130, 150-160, 160-170MHz.
- ★ FF5; 500kHz (for improved VLF reception).
- ★ MEMGR7700; 12 Channels (internal fitting).
- ★ FRA7700; Active Antenna.

JRC COMMUNICATION RECEIVER NRD515 £985 inc. VAT @ 15% SECURICOR

- ★ 30MHz to 100kHz or lower, 100Hz steps.
- ★ PLL digital VFO, outstanding, (50Hz AWU) stability.
- ★ Backlash free, 10kHz rev, 500Hz analogue calib.
- ★ Fast tune up/down switch, dial lockout.
- ★ SSB (USB/LSB), CW, AM, RTTY.
- ★ 6 and 2.4kHz, 600* and 300* Hz @ 6dB.
- ★ Passband tuning ±2kHz for SSB and CW.
- ★ Variable BFO on CW for preferred tone.
- ★ Modular plug in design with mother board.
- ★ High reliability — low power schottky & CMOS.
- ★ Designed for maximum ease of operation.
- ★ Noise blanker. 0-10-20dB attenuator.
- ★ Small (140 x 340 x 300mm), light 7½kg, rugged.



PROFESSIONAL MONITOR

- ★ Up conversion, 70.455MHz and 455kHz.
- ★ No R.F. amplifier, balance U310 mixer.
- ★ Crystal filter before first IF amplifier.
- ★ Transceiver provisions; mute, trip, etc.
- ★ Frequency data input/output port.
- ★ NHD518 96 (4 x 24) channel memory unit.
- ★ NCM515 Remote frequency keypad, LCD readout. Up/down step tuning, 4 chan. memory.
- ★ CQE515 Junction unit (NCM515-NHD518).
- ★ NVA515 External 3W speaker.
- ★ CFL260 600Hz mechanical filter.
- ★ CFL230 300Hz crystal filter.

FT726R £699 inc. VAT @ 15% & SECURICOR



★ NEW ★

MULTI-BAND VHF/UHF
* Option

- ★ 3 Bands*! 2 metres. 70cms* (10MHz) & 6M* plug-ins.
 - ★ Full Duplex*! Cross band Tx & Rx simultaneously.
 - ★ SSB-CW-FM! All optimally catered for, clarifier all modes.
 - ★ Variable bandwidth and IF shift! SSB & CW.
 - ★ Processor! Front panel mic gain and variable power.
 - ★ Two main VFO's! A & B with 20Hz/1kHz steps.
 - ★ Separate channelised VFO! (for FM operation).
 - ★ Scanning! band scan, memory scan, memory mode.
 - ★ Repeater splits! programmable and preset.
 - ★ Instant reverse! and + & - splits and A/B.
 - ★ Twin meters; PO/DISC, S/ALC. Duplex switchable.
 - ★ Switchable; AGC, CW bandwidth, * dial lock, noise blanker.
 - ★ Priority channel operational split mode end split band.
- | | | |
|-----------|-------------------------|---------|
| FT726R(2) | Transceiver c/w 144 MHz | £699.00 |
| 430T726 | 430-440 MHz module | £230.00 |
| 50T726 | Six meter module | £170.00 |
| SAT726 | Full duplex unit | £90.00 |

- ★ 2M. 12 VDC compact 2 3/16" x 6 3/8" x 7 3/16".
- ★ 25W (+ adjustable low power), 12 1/2 kHz steps.
- ★ 10 "year long" memories for "crystal control".
- ★ Display reads to 100's of Hz or channel number.
- ★ Sensitivity < 0.2µV for 12dB SINAD (0.14µV typical).
- ★ Single knob frequency selection. 20 steps rev.
- ★ Rapid QSY button, end to end in a single turn.
- ★ Digital RIT 1kHz steps, adjusted from main tuning.
- ★ 2, 5 slot memories, simplex, cross or 600kHz split.
- ★ Memories entered by pushing main tuning knob.
- ★ ± 600kHz split. Instant repeater input monitor.
- ★ Band scan between front panel selectable, limits.
- ★ Scan stop requires squelch open and centre zero.
- ★ Scanning and up/down tuning on the microphones.
- ★ Reprogrammable; steps, tone, splits, and coverage.
- ★ C/W mic. "Easy out" mobile mount and handbook.

2030 £199 inc. VAT @ 15% & SECURICOR

★ NEW ★



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SMC SERVICE
Free Securicor delivery on major equipment.
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Twenty-four years of professional experience.

Communications Ltd.



HF TRANSCEIVERS, VHF/UHF MULTIMODES, FM TRANSCEIVERS.

- ★ 80-10 metres including WARC allocations.
- ★ Multimode LSB-USB-CW (W)-CW (N)* and FM*.
- ★ 100W PEP output. (IOW "S" version).
- ★ No tune design — inbuilt SWR meter.
- ★ Only 3¼" x 9½" — Less than a foot deep!
- ★ Dual selectable pulse width noise blanker.

FT77	Transceiver 100W output	£515.00
FT77S	Transceiver 10W output	£435.00
MARK7	Crystal Marker board	£9.60
FMU77	FM Unit	£25.30
XF8.9HC(N)	600Hz or 300Hz (N)	£26.05
FV707DM	Digital Memory VFO	£200.00
FC700	Antenna Tuner	£99.65
FP700	Mains P.S.U.	£110.00
FTV707	Transvertor, frame only	£79.00
Modules:	432... £214.65 144... £109.65 70... £84.70	



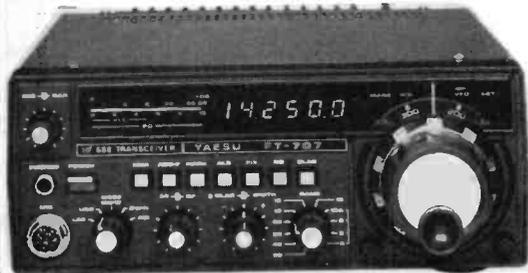
FT77 £515 inc. VAT @ 15% & SECURICOR



★ NEW ★

ALL BAND MULTIMODE

FT707 £515 inc. VAT @ 15% & SECURICOR



★ THE SMC FM VERSION ★ AVAILABLE ONLY £549.00

- ★ 80-10 metres (including 10, 18 and 24MHz bands).
- ★ USB-LSB-CWN-AM (Tx and Rx operation).
- ★ 100W PEP. 50% power output at 3:1 VSWR.
- ★ Full "broad band" no tune output stage.
- ★ Excellent Rx dynamic range, power transistor buffers.
- ★ Rx Schottky diode ring mixer module.
- ★ Local oscillator with ultra-low noise floor.
- ★ Variable IF bandwidth — 16 crystal poles.
- ★ Bandwidths 6kHz*, 2.4kHz-300Hz. (600-350) Hz* AGC; slow-fast switchable. VOX built-in.
- ★ Semi-break in with side tone for excellent CW.
- ★ Digital (100Hz) plus analogue frequency display.
- ★ LED Level meter reads: S, PO and ALC.
- ★ Indicators for: calibrator, fix, int/ext VFO.
- ★ Receiver offset tuning (RIT-clarifier) control.
- ★ Advanced noise blanker with local loop AGC. *Option

- ★ 160-10 metres including new allocations.
- ★ Variable IF bandwidth 2.4kHz down to 300Hz.
- ★ Audio Peak and independent notch controls.
- ★ AM, FSK, USB, LSB, CW, FM, (Tx and Rx).
- ★ Semi-break in, inbuilt Curtis IC Keyer.
- ★ Digital* plus analogue frequency displays.
- ★ VOX built-in and adjustable.
- ★ Instant write in memory channel.
- ★ Tune up button (10 sec, of full power).
- ★ Switchable AGC and RF attenuator.
- ★ 350 or 600 Hz CW, 6kHz, AM filters *included!*
- ★ Clarifier (RIT) switchable on Tx, Rx or both.
- ★ Plug in modular, computer style constructor.
- ★ Fully adjustable RF Speech processor.
- ★ Ergonomically designed with necessary LEDES.
- ★ Incredible range of matching accessories.
- ★ Universal power supply 110-234V AC and 12V DC.



FT902DM £885 inc. VAT @ 15% & SECURICOR



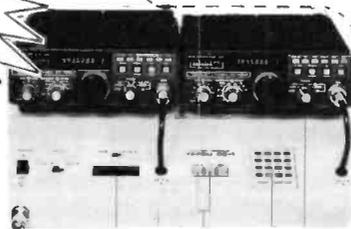
★ "FREE" SECURICOR ★

D & DE MODELS AVAILABLE

- ★ USB-LSB-CW-FM (A3j, A1, F3).
- ★ 30W PIP A3j, 10/1W but A1, F3.
- ★ Any Tx Rx split with dual VFO's.
- ★ Four easy write-in memory channels.
- ★ Memory scanning with slot display.
- ★ Up/down tuning/scanning from mic.
- ★ Priority channel on any memory slot.
- ★ Digital RIT. Advanced noise blanker.
- ★ Satellite mode allows tuning on Tx.
- ★ Semi break in with side tone.
- ★ Very bright blue 100Hz digital display.
- ★ Display shows Tx & Rx freq (inc RIT).
- ★ String LED display for "S" and PO.
- ★ LED's; "On Air" Clar, Hi/Low, FM mod.
- ★ Size (Case): 8.3" D, 2.3" H, 6.9" W.

SPECIAL OFFER

FT780R £389 inc. VAT @ 15% & SECURICOR



*Limited Offer

- ★ 430-440MHz (440-450 possible).
- ★ GaAs Fet RF for incredible sensitivity.
- ★ FM; 100kHz, 25kHz, 1kHz, steps.
- ★ SSB; 1,000, 100, 10Hz steps.
- ★ FT780R 1.6 fitted 1.6MHz Shift £399 inc.

FT480R RIP

Sadly Yaesu has discontinued the FT480R. As a mark of respect on this dark occasion, to complete your VHF/UHF station, if you originally bought your FT480R from S.M.C. and you buy a FT780R we will give you a free SC1 matching station console/power supply worth £138.00. Alternatively, anyone buying a FT780R will get a free FP80A matching power supply worth £55.00.

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South Midlands

SMC FOR SERVICE, FACTORY BACKED

- ★ 150(W) x 50(H) x 176(D)mm.!!
- ★ Up/down, memory/band scanning.
- ★ Easy "write-in" memory channels.
- ★ Memory back-up "5 year" lithium cell.
- ★ Ten memories with priority functions.
- ★ Supplied with scanning microphone.
- ★ Illuminated "any angle" LCD display.
- ★ Display to 100's of Hz and functions.
- ★ Two completely independent VFO's.
- ★ Operation between memory and VFO.
- ★ Full reverse repeater function.
- ★ Manual and automatic tone burst.
- ★ Large "full sound" internal speaker.
- ★ Concentric volume and squelch.



2 or 70!

FT 230R £ 255 inc. VAT @ 15% & SECURICOR

- ★ 144-146 MHz (extensions possible).
 - ★ 25W RF output, 3W on low.
 - ★ 25 and 12½ kHz steps provided.
 - ★ ±600kHz repeater split, 1750Hz burst.
 - ★ Tx; 5A. Rx 300mA (standby).
-
- ★ 430-434MHz (440-445MHz possible).
 - ★ 10W RF output, 1W on low.
 - ★ 25 and 100kHz steps provided.
 - ★ ±1.6MHz repeater split, 1750Hz burst.
 - ★ Tx 3A, Rx 300mA (standby).

- ★ Multimode USB, LSB, FM, CW
 - ★ 100Hz backlit LCD Frequency display
 - ★ 10 memory channels '5 year' backup
 - ★ Any Tx/Rx split with dual VFOs
 - ★ Up/down tuning from microphone
 - ★ AF output 1W @ 10% THD
 - ★ Bandwidth 2.4kHz and 14kHz @ -6dB
 - ★ LED's; 'On Air', 'Busy'. m/c meter; S, PO.
 - ★ 58 (H) x 150 (W) x 195 (D) (1.3kg)
- | | | |
|--------|----------------------------|--------|
| 2.0C | Nicad 2.0A/hr "C" | £2.35 |
| SMC8C | Slow Charger (220mA) .. | £8.80 |
| MMB 11 | Mobile Mount | £24.90 |
| CSC1A | Soft carrying case | £3.85 |
| FL2010 | Linear Amplifier 2m 10W. . | £59.00 |
| FL7010 | Linear Amplifier 70cms .. | £91.00 |



6 or 2 or 70!

FT 290R £ 285

VAT @ 15% & CARRIAGE

- ★ 144-146MHz (144-148) possible
- ★ 2.5W PEP, 2.5W RMS/300mW out
- ★ FM: 25kHz and 12.5kHz steps
- ★ SSB: 1kHz and 100Hz steps
- ★ ±600 kHz repeater split 1750kHz burst
- ★ Integral telescopic antenna
- ★ Rx, 70mA, Tx; 800mA (FM maximum)

FT 790R £ 349

VAT @ 15% & CARRIAGE

- ★ 430-440MHz (440-450 alternative)
- ★ 1W PEP, 1W/250mW FM/CW out
- ★ FM: 100kHz and 25kHz steps
- ★ SSB: 1kHz and 100Hz steps
- ★ 1.6MHz shift with input monitor
- ★ 1750Hz burst
- ★ Rx; 100mA/200mA. Tx; 750mA max
- ★ BNC Mounting ½λ flexi antenna

- ★ Keyboard entry of frequencies/splits
- ★ LCD digital display with backlight
- ★ Any split + or - programmable
- ★ Ten memory channels '5 year' back up
- ★ Up/down manual tuning. Memory scan
- ★ Manual or auto scan for busy/clear
- ★ Priority channel with search back
- ★ Scan between any two frequencies
- ★ Auto scan restart. 1.750Hz tone burst
- ★ Built in condenser microphone
- ★ 500mW to int/ext speaker
- ★ External speaker/mic. available
- ★ 168(H) x 61(W) x 39(D)mm
- ★ C/w Quick change NiCad pack, helical



2 or 70!

FT 208R £ 199

VAT @ 15% & CARRIAGE

- ★ 144-146MHz (144-148 possible).
- ★ 12.5/25kHz synthesizer steps.
- ★ ±600kHz repeater split.
- ★ 2.5 or 0.3W RF output.
- ★ Rx: 20mA squelch 150mA max. AF.
- ★ Tx: 800mA at 2.5W RF.
- ★ 0.25µV for 12dB SINAD.

FT 708R £ 229

VAT @ 15% & CARRIAGE

- ★ 430-440MHz (440-450 option).
- ★ 25kHz synthesizer steps.
- ★ ±7.6MHz EU split standard.
- ★ 1W or 100mW RF output.
- ★ Rx: 20mA squelch, 150mA (max AF).
- ★ Tx: 500mA at 1W RF.
- ★ 0.4µV for 12dB SINAD.

- ★ Four easy write-in memory channels
 - ★ Rx priority channel (auto check)
 - ★ Scanning band/memory empty/busy
 - ★ Up/down tuning/scanning from mic.
 - ★ Optically coupled tuning control
 - ★ Manual and automatic tone burst
 - ★ String LED's for 'S' and PO, 7 status LEDs
 - ★ 1½ W of audio to internal/external speaker
 - ★ FT 720 Control Head
 - ★ 3.3 (4.3)" D x 6" W x 2 (2.2)" H
 - ★ S72 Switching box
 - ★ Pushbutton band change Auto steps/splits.
- | | |
|------|----------------------------------|
| E72S | Extension cable, 2m long |
| E72L | Extension cable, 4m long |
| MMB3 | Mobile Mounting bracket for deck |

Ills. c/w S72 and two E72S cables.



2 and/or 70!

FT 720RV £ 199 inc. VAT @ 15% & CARRIAGE

- ★ 144-146MHz (144-148MHz possible).
 - ★ 12½ kHz-synthesizer, 600kHz shift.
 - ★ 0.3µV for 20dB quieting.
 - ★ Rx 0.5. Tx RV 3.5A, RVH 6.5A.
 - ★ 5.8 (6.5)" D x 6" W x 2(2.2)" D.
-
- ★ 430-434MHz.
 - ★ 25kHz synthesizer steps, 1.6MHz shift.
 - ★ 0.5µV for 20dB quieting.
 - ★ Rx 0.5A, Tx 4.5A.
 - ★ 5.8 (6.5)" D x 6" W x 2 (2.2)" D.

FT 720RU £ 229 inc. VAT @ & CARRIAGE

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Communications Ltd.



GUARANTEE, LARGEST STOCKS, FREE FINANCE,

FT980 £1,215 inc. VAT @ 15%
 ⚡ SECURICOR



★ CREDIT COVER ★

- ★ Rx 150 kHz-30MHz.
- ★ Tx 160-10m. 9 bands x 3 x 500 kHz Aux bands.
- ★ All modes AM, CW, LSB, USB, AFSK & FM (inc.)
- ★ IF shift & variable bandwidth 2.6kHz → 300Hz.
- ★ Inbuilt keyboard operation & scanning.
- ★ Switchable attenuator 10, 20, 30 dB.
- ★ Audio peak & notch filter - 40dB.
- ★ RF processor and Auto mic gain control.
- ★ 3rd order IMD - 40dB at 100W PEP.
- ★ AFSK shift 170, 425, 850 Hz selectable.
- ★ Multi channel memory + programmable scan limits.
- ★ Optional computer interface available.
- ★ Notch filter in IF (AGC immune to heterodynes).
- ★ Full break in keying. 500/600/700 Hz beat.
- ★ Unique analogue scale of digital type.
- ★ Comprehensive twin meter metering.
- ★ Memory retains mode information.

- ★ Rx: 150kHz-30MHz. Continuous general coverage.
- ★ Tx: 160-10m (9 bands) or 1.5-30MHz commercial.
- ★ All Modes: AM, CW, FM*, FSK, LSB, USB.
- ★ 10 VFO's!!! Any Tx-Rx split within coverage.
- ★ Two frequency selection ways, *no* bandwidth.
- ★ Main dial, velvet smooth, 10Hz resolution.
- ★ Inbuilt keyboard with up/down scanning.
- ★ Dedicated digital display for RIT offset.
- ★ Receiver dynamic range up to 100dB!!!
- ★ SSB: Variable bandwidth *and* IF shift.
- ★ 300* or 600Hz*, 2,400 → 300Hz, 6kHz*, 12kHz*.
- ★ Audio peak and notch filter. FM squelch.
- ★ Advanced variable threshold noise blanker.
- ★ 100W RF, key down capability, solid state.
- ★ Mains and 12VDC. Switch mode PSU built in.
- ★ RF processor. Auto mic gain control. VOX.
- ★ Last but not least *full* break-in on CW.

FT ONE £1,450 inc. VAT @ 15%
 ⚡ SECURICOR



★ FREE FINANCE ★

- ★ 160-10 Metres (inc WARC) plus standard service Rx.
- ★ SSB, CW FSK, 100 Watts output (adjustable).
- ★ Two 10 Hz step digital variable frequency oscillators.
- ★ Split frequency or cross mode single frequency operation.
- ★ 3 PLL's (inc BFO) locked to 10MHz reference.
- ★ 11 Channel memory retains operating freq. and mode.
- ★ Listen on memory (fix Tx on VFO), microcomputer control.
- ★ Display of memory contents during operation. Up/down/lock.
- ★ Pass band tuning, tuneable notch, 10-20dB attenuator.
- ★ Adjustable noise blanker, switchable AGC, calibrator.
- ★ Adjustable RF output, RF speech processor, Vox.
- ★ Comprehensive metering including compression level.
- ★ Small 300 (W), 327(D), 130(H), mm. 10Kg.
- ★ NBD500 Mains PSU. NFG97 A.T.U. NVA88 Ext. speaker.
- ★ CFL260 600Hz filter CHG43 Desk Mic. CFL230 300Hz filter CHG44 Hand mic. KY3A Morse key.

JRC JST100 TRANSCEIVER



★ NEW ★

FT102 £839 inc. VAT @ 15%
 ⚡ SECURICOR



★ "INSTANT" H.P. ★

- ★ 1.8-3.5-7-10-14-18-21-24.5-28MHz.
- ★ All modes: - LSB, USB, CW, AM±, FM±, (±Option board).
- ★ Front end: extra high level, operates on 24V DC.
- ★ RF stage bypassable, boosts dynamic range over 100 dB!
- ★ Variable bandwidth 2.7KHz → 500Hz *and* IF Shift.
- ★ Fixed bandwidth filters, parallel or cascade configurations.
- ★ IF notch (455KHz) *and* independent audio peak.
- ★ Noise blanker adjustable for pulse *width*.
- ★ External Rx and separate Rx antenna provisions.
- ★ *Three* 6146B in special configuration - 40 dB IMD!
- ★ Extra product detector for checking Tx IF signal.
- ★ Dual meter, peak hold ALC system.
- ★ Mic amp with tunable audio network.
- ★ SP102: - Speaker, Hi and Lo AF filters, 12 responses!
- ★ FV102: - VFO, 10Hz steps and readout, scanning, QSY.
- ★ FC102: - ATU, 1.2KW, 20/200/1200 W FSD PEP, wire.
- ★ FAS-1-4R: - 4 way remote waterproof antenna selector.

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SP300	SWR PWR Meter H.F./2M/70cm	85.00	(1.50)
SP400	SWR PWR Meter 2M/70cm 150W	69.95	(1.50)
SP600	SWR PWR Meter H.F./2M/2KW	95.00	(2.00)
SP10X	SWR PWR Meter H.F./2M	24.95	(0.75)
SP350	SWR PWR Meter H.F./2M/70200W	55.00	(1.50)
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CT300	300/1kW Dummy Load 250MHz (SO239)	49.50	(2.00)

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—	2 Way Toggle Switch (H.F./2M)	6.00	(0.50)
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CH20N	2 Way WELZ - N plugs (900MHz)	31.95	(1.00)
—	5 Way Western Rotary (H.F.)	13.95	(1.00)
—	3 Way LAR Rotary (H.F.)	16.95	(1.25)

TRIO

TS930S	9 Band TX General Cov Rx	1296.00	(—)
TS830S	160-10m Transceiver 9 Bands	697.00	(—)
VFO230	Digital V.F.O. with Memones	243.00	(2.00)
AT230	All Band ATU/Power Meter	135.00	(2.00)
SP230	External Speaker Unit	41.00	(1.50)

TS430	160-10m Transceiver	736.00	(—)
PS430	Matching Power Supply	112.00	(3.00)
SP430	Matching Speaker	29.44	(1.50)
MB430	Mobile Mounting Bracket	11.27	(1.50)
FM430	FM Board for TS430	34.50	(1.00)

TS130S	8 Band 200W Pep Transceiver	559.00	(—)
TS130V	8 Band 20W Pep Transceiver	456.00	(—)
VFO120	External VFO	98.00	(1.50)
TL120	200W Pep Linear for TS120V	167.00	(1.50)
MB100	Mobile Mount for TS130/120	18.60	(1.50)
SP120	Base Station External Speaker	26.40	(1.50)
AT130	100W Antenna Tuner	93.00	(1.50)
PS20	AC Power Supply - TS130V	57.96	(2.50)
PS30	AC Power Supply - TS130S	101.66	(5.00)
MC50	Dual Impedance Desk Microphone	30.80	(1.50)
MC35S	Fist Microphone 50K ohm IMP	14.70	(0.75)
MC30S	Fist Microphone 500 ohm IMP	14.70	(0.75)
LF30A	HF Low Pass Filter 1kW	21.00	(1.00)

TR9130	2M Multimode	433.00	(—)
TS9500	70cm Multimode	450.00	(—)
BO9A	Bass Plinth for TR9130	39.30	(0.50)
TR7800	2M FM Mobile 25W	257.00	(—)
TR7730	2M FM Compact Mobile 25W	283.00	(—)

TR2300	FM Portable	152.00	(—)
VB2300	10W Amplifier for TR2300	65.70	(1.50)
MB2	Mobile Mount for TR2300	21.00	(1.50)

TR3500	70cm Handheld	250.00	(—)
TR2500	2M Synthesised Handheld	232.00	(—)
ST2	Base Stand	51.90	(1.50)
SC4	Soft Case	13.80	(0.50)
SMC25	Speaker Mic	16.10	(1.00)
PB25	Spare Battery Pack	25.00	(1.00)
MS1	Mobile Stand	31.90	(1.00)

TR8400	70cm FM Mobile Transceiver inc. PS10	299.00	(—)
PS10	Base Station Power Supply for TR8400	64.00	(2.00)
R600	General Coverage Rec	257.00	(—)
R2000	Synthesised 200KHz-30MHz Rec	398.00	(—)
HC10	Digital Station World Time Clock	67.60	(1.50)
HS5	Deluxe Headphones	23.00	(1.00)
HS4	Economy Headphones	11.27	(1.00)
SP40	Mobile External Speaker	14.26	(1.00)



TS830S



R2000

DATONG PRODUCTS

		£	c&p
PC1	Gen. Coverage Converter HF on 2M	137.42	(—)
VLF	Very Low Frequency Converter	29.90	(—)
FL1	Frequency Agile Converter	79.35	(—)
FL2	Multi-mode Audio Filter	89.70	(—)
FL3	Audio Filter & Notch	129.37	(—)
ASP	Auto RF Speech Clipper (Trio or Yaesu 4 pin Plug)	82.80	(—)
D75	Manually controlled RF Speech Clipper	56.35	(—)
RFC/M	RF Speech Clipper Module	29.90	(—)
D70	Morse Tutor	56.35	(—)

AD270	Indoor Active Antenna	47.15	(—)
AD370	Outdoor Active Antenna	64.40	(—)
MK	Keyboard Morse Sender	137.42	(—)
Codecall	Selective Calling Device (Link prog)	32.20	(—)
Codecall	Selective Calling Device (Switch prog)	33.92	(—)
RFA	Wideband Preamplicifier	33.92	(—)
DC 144/28	2 Metre to 28MHz converter	39.67	(—)
MPU	Mains Power Unit	6.90	(—)

SWR - POWER METRES

Model 110	H.F./2M Calibrated Power Reading	11.50	(0.50)
YW-3	H.F./2M Twin Meter	11.50	(0.50)
UH-74	2M/70cm	14.30	(0.75)
SP 15M	Welz H.F./2M 200W	35.00	(1.00)
SP 45M	Welz 2M/70 100W	51.00	(1.00)
SP 200	Welz H.F./2M 1KW	69.95	(1.50)
SP 300	Welz H.F./2M/70	97.00	(1.50)
SP 400	Welz 2M/70 150W	69.95	(1.50)
SP 600	Welz H.F./2M/70 2KW max.	97.00	(1.50)
SP 10X	Welz H.F./2M Handheld	24.45	(0.75)
SP 380	Welz H.F./2M/70 Compact	49.00	(1.00)
T 435N	2M/70CM Twin Meter N plug 120W	37.00	(1.50)
CN 620A	Daiwa H.F./2M Crosspointer	57.00	(1.00)
CN 630	Daiwa 2M/70 Crosspointer	85.00	(1.00)

TELEREADERS (CW & RTTY)

TASCO CWR 610	189.00	(—)
TONO 500	299.00	(—)
TONO 9000	669.00	(—)

DRAE PRODUCTS

4 AMP	30.75	(1.50)	12AMP	74.00	(2.00)	
6 AMP	49.00	(2.00)	24 AMP	105.00	(3.00)	
VHF	Wavemaster 130-450MHz				27.50	(—)

ROTATORS

Hirschman	RO250 VHF Rotor	45.00	(2.00)
9502B	Colorator (Med. VHF)	56.95	(2.00)
EMR400	Ainco	89.95	(2.50)
KR400RC	Kenpro - inc lower clamps	125.00	(2.50)
KR600RC	Kenpro - inc lower clamps	175.00	(3.00)

DESK MICROPHONES

SHURE 444D	Dual Impedance	39.00	(1.50)
SHURE 526T	Mk II Power Microphone	53.00	(1.50)
ADONIS AM 303	Preamp Mic. Wide Imp.	29.00	(—)
ADONIS AM 503	Compression Mic 1	39.00	(—)

TEST EQUIPMENT

Drae VHF Wavemeter	130-450MHz	27.50	(—)
DM81	Trio Dip Meter	71.00	(0.75)
MMD50/500	Dig. Frequency meter (500MHz)	75.00	(—)

MOBILE SAFETY MICROPHONES

ADONIS AM 202S	Clip-on	24.50	(—)
ADONIS AM 202H	Head Band + Up/Down Buttons	34.50	(—)
ADONIS AM 202F	Swan Neck + Up/Down Buttons	37.00	(—)

YAESU

		£	c&p
FT1	Superb H.F. Transceiver	1349.00	(—)
FT102	AM Band Transceiver	785.00	(—)
SP102	Matching Speaker	45.00	(2.00)
FC102	Matching A.T.U.	209.00	(2.50)
FT101Z	160-10m 9 Band Transceiver (FM)	590.00	(—)

FT101ZD	160-10m 9 Band Transceiver (FM) Dig	665.00	(—)
FC902	All Band A.T.U.	135.00	(1.50)
SP901	External Speaker	31.00	(1.50)
DC/101Z	DC/DC Power Pack	42.55	(1.50)
FAN101Z	Cooling Fan for 101Z/ZD	13.80	(0.75)
FT707	8 Band Transceiver 2000W Pep	509.00	(—)
FP707	Matching Power Supply	112.50	(5.00)
FC707	Matching A.T.U./Power Meter	85.00	(1.00)
MMB2	Mobile Mounting Bracket for FT707	16.10	(1.00)

FT77	Economy H.F. transceiver	475.00	(—)
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FRG7	General Coverage Receiver	199.00	(—)
FRG7700	200KHz-30MHz Gen. Coverage Receiver	335.00	(—)

FRG7700M	As above but with Memones	399.00	(—)
FRT7700	Antenna Tuning Unit	37.00	(1.00)
FT208R	2M FM Synthesised Handheld	199.00	(—)
FT708R	70cm FM Synthesised Handheld	229.00	(—)
NC7	Base Trickle Charger	26.88	(1.30)
NC8	Base Fast/Trickle Charger	44.10	(1.50)
NC9C	Compact Trickle Charger	8.00	(0.75)
FNB2	Spare Battery Pack	17.25	(0.75)
PA3	12V DC Adaptor	13.40	(0.75)
FT480R	2M Synthesised Multimode	369.00	(—)
FT780R	70cm Synthesised Multimode (1.6MHz Shift)	411.00	(—)
FT790R	70cm Portable multimode	325.00	(—)
FT290R	2M Portable Multimode	265.00	(—)
MMB11	Mobile Mounting Bracket	22.25	(1.00)
CSC1	Soft Carrying Case	3.45	(0.75)
NC11C	240V AC Trickle Charger	8.05	(0.75)
FL2010	Matching 10W Linear FT290R	64.00	(1.20)
Nicads	2.2 amp HR Nicads Each	2.50	(—)

FF501DX	HF Low Pass Filter 1kW	23.00	(1.00)
FSP1	Mobile External Speaker 8 ohm 6W	9.95	(0.75)
YH55	Headphones 8 ohm	10.00	(0.75)
YH77	Lightweight Headphones 8 ohm	10.00	(0.75)
QTR24D	World Clock (Quartz)	28.00	(0.75)
YM24A	Speaker/Mic 207/208/708	16.85	(0.75)
YD148	Stand Mic Dual Imp 4 Pin Plug	21.00	(1.50)
YM38	Stand Mic dual Imp 8 pin	24.90	(1.50)

ICOM

IC740	H.F. 9 Band Transceiver	725.00	(—)
IC720A	H.F. Tx + Gen. Cob. Rx	949.00	(—)
IC-PS20	P.S.U. for above with Speaker	139.00	(—)
IC-PS15	P.S.U.	119.00	(—)
IC2KL	H.F. Linear 500 Watts O/P	915.00	(—)
IC2KLPS	P.S.U. for above	234.00	(—)
ICAT500	1.8-30MHz Auto A.T.U.	339.00	(—)
ICAT100	3.5-30MHz Auto A.T.U.	249.00	(—)

IC251E	2M Multimode Base Station	559.00	(—)
IC290E	2M Multimode Mobile	379.00	(—)
IC25E	2M FM Mobile 25W	269.00	(—)
IC2E	2M Handheld	169.00	(—)
IC4E	70cm Handheld	199.00	(—)
ICBC30	Base Charger	45.00	(1.50)
ICHM9	Speaker - Microphone	12.00	(1.00)
ICML1	10 Watt 2M Booster IC2E	59.00	(1.00)
ICSM5	Desk Mic (8 pin for Icom only)	29.00	(1.00)
ICR70	General Cov. Receiver	469.00	(—)

F D K

Multi 700AX	2M FM Mobile 25W	215.00	(—)
Multi 750X	2M Multimode	315.00	(—)
Expander	70cm transverter for 750X	199.00	(—)

MAIL ORDER

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All prices correct at time of going to press.

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Mon-Sat. 9-12.30/1.30-5.30

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Your number one source for YAESU MUSEN

KEEP AHEAD WITH THE YAESU FT-102!

Better Dynamic Range

The extra high-level receiver front end uses 24 VDC for both RF amplifier and mixer circuits, allowing an extremely wide dynamic range for solid copy of the weak signals even in the weekend crowds. For ultra clear quality on strong signals or noisy bands the high voltage JFET RF amplifier can be simply bypassed via a front panel switch, boosting dynamic range beyond 100dB. A PLL system using six narrow band VCOs provides exceptionally clean local signals on all bands for both transmit and receive.

Total IF Flexibility

An extremely versatile IF Shift/Width system, using a totally unique circuit design, gives an infinite choice of bandwidths between 2.7kHz and 500Hz, which can then be tuned across the signal to the portion that provides the best copy sans QRM, even in a crowded band. A wide variety of crystal filters for fixed IF bandwidths are also available as options for both parallel and cascaded configurations. But that's not all; the 455kHz third IF also allows an extremely effective IF notch tunable across the selected passband to remove interfering carriers, while an independent audio peak filter can also be activated for single-signal CW reception.

New Noise Blanker

The new noise blanker design in the FT-102 enables front panel control of the blanking pulse width, substantially increasing the number of types of noise interference that can be blanked, and vastly improving versatility.

Commercial Quality Transmitter

Introducing to amateur radio design concepts that have previously been restricted to top-of-the-line commercial transmitters; far above and beyond government standards in both freedom from distortion and purity of emissions.

Transmitter Audio Tailoring

The microphone amplifier circuit incorporates a tunable audio network which can be adjusted by the operator to tailor the transmitter response to individual voice characteristics before the signal is applied to the superb internal RF speech processor.

IF Transmit Monitor

An extra product detector allows audio monitoring of the transmitter IF signal, which, along with the dual meters on the front panel, enables precise setting of the speech processor and transmit audio. A new "peak hold" system is incorporated into the ALC metering circuit to further take the guesswork out of transmitter adjustment.

New Purity Standard

Three 6146B final tubes in a specifically configured circuit provide a freedom from IMD products and an overall purity of emission unattainable in two-tube and transistor designs.

New VFO Design

Using a new IC module developed especially for Yaesu, the VFO in the FT-102 exhibits exceptional stability under all operating conditions.

ANCILLARY EQUIPMENT

SP-102 EXTERNAL SPEAKER/AUDIO FILTER
The SP-102 features a large high-fidelity speaker



with selectable low- and high-cut audio filters allowing twelve possible response curves. Headphones may also be connected to the SP-102 to take advantage of the filtering feature.

FC-102 1.2 KW ANTENNA COUPLER
1.2KW band-switched L-C pi-network antenna

coupler. In-line wattmeter with three ranges (20, 200 and 1200 watts full scale), and "peak hold" system.

FV-102DM SYNTHESIZED, SCANNING EXTERNAL VFO

FRG-7700 High Performance Communications Receiver



YAESU's top of the range receiver. All-mode capability, USB, LSB, CW, AM and FM 12 memory channels with back-up. Digital quartz clock feature with timer. Pictured here with matching FRT-7700 Antenna tuner and FRV-7700 VHF converter.

FT-708R/208R Synthesized UHF/VHF Transceivers

- NC-7 - Standard charger
- NC-8 - Standard/quick charger/DC Power supply
- NC-9C - Compact charger (220-234V)
- PA-3 - Car adapter
- YM-24A - Speaker/microphone
- FL-2010 - 10 watt power amplifier for FT-208R
- FL-7010 - 10 watt power amplifier for FT-708R



FT-290R/790R 2m & 70cm PORTABLES

10 memories, 2 VFO's, LCD display, C size battery, easy car mounting tray, FT-290R 0.5 low/2.5 high watts out FT-790R 0.2 low/1.0 high watts out (incorporates speech compressor).



FT-230R/730R 2m & 70cm FM MOBILES

- Two independent VFO's
- 10 memories
- Priority function
- Memory and band scan
- 12.5/25KHz steps (25/100KHz FT-730R)
- Large LCD readout.



FT-480R/780R 2m & 70cm MOBILES

The most advanced 2 metre and 70 cm mobiles available today — USB, LSB, FM, CW full scanning with priority channel, 4 memory channel, dual synthesized VFO system.





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Your number one source
for YAESU MUSEN

FT-980 ALL MODE HF CAT *

This incredible new transceiver incorporates the highest level of microprocessor control ever offered in an HF all solid-state radio. Including a general coverage (0.15-30MHz) receiver with its own, separate front end, this amateur transceiver offers a new dimension in frequency control; whereby frequencies can be entered by either front panel keypad or tuning dial, and then scanned in selectable steps either freely or between any two programmable limits. Twelve memories include four with special protection, and two large digital displays allow full flexibility and control for split frequency operation while two meters allow full transmitter information.

Additional controls include IF Width and Shift on concentric controls, AMGC (Automatic Mic Gain Control) to set microphone input threshold, RF Speech Processor, ALC Meter Hold function, IF Notch and Audio Peak filters, Transmit Monitor, Noise Blanker and CW Full Break-in. Controls



NEW!

* Computer-Aided Transceiver

are also provided for FM Squelch and CW Keyer Speed when the optional FM and Keyer Units are installed.

The most important feature of the FT-980 is that practically all of the above features can be controlled by the user's separate personal computer, when connected through an optional Interface, also available from Yaesu. Where up to now the

few amateur transceivers that offered any kind of computer interfacing at all permitted only frequency control, the FT-980 permits almost total control of all functions from a separate micro-computer, including Mode; IF Width and Shift; Scanner Step, Speed and Limits; and switching of most other functions. (Microcomputers are not available from Yaesu.)

FT-77 THRIFTY HF TRANSCEIVER



UTILIZING THE NEW CAD/CAM* MANUFACTURING TECHNIQUES, YAESU PRESENTS THE FT-77 AS A NEW MILESTONE IN RELIABILITY, SIMPLICITY AND ECONOMY IN HF COMMUNICATIONS.

Thrifty

Featuring efficient, all solid-state, no-tune circuitry, the FT-77 offers a nominal 100 watts of RF output on all amateur bands between 3.5 and 30 MHz, including the WARC bands. New CAD/CAM techniques plus the simple design of the FT-77 add up to one of the smallest, lightest HF transceivers ever; both in your hands, and on your wallet.

Simple

The front panel control layout and operation are actually simpler than some VHF FM transceivers, with only essential operating controls; while the simple circuit design leaves fewer parts that could cause problems. Nevertheless, all of the essential modern operating features for HF SSB and CW are included, along with extras such as dual selectable noise blanker pulse widths (designed to blank woodpecker or common impulse noise), full SWR metering, and capabilities for an optional internal fixed-frequency channel crystal, narrow CW filter and FM Unit.

Reliable

Computer-aided design of the circuit boards in the FT-77 ensures the most efficient component layout possible in the smallest space, while automatic parts insertion and soldering greatly diminish the chance for human error. Reliability and quality control are thus improved and simplified beyond the degree previously attainable in amateur equipment. This means longer equipment life with less chance of breakdown.

Expandable

The extremely compact size and simple control layout make the FT-77 ideal for mobile operation, or as the heart of a complete base station with the optional FP-700 AC Power Supply, FV-700DM Digital Scanning VFO and Memory System, FTV-700 V/UHF Transverter and the FC-700 Antenna Tuner. The competitive price of the FT-77, coupled with the expansion capabilities presented by these accessories, make this transceiver the perfect choice for those new to amateur HF communication, or as a practical second rig for old-timers.

*Computer Aided Design/Computer Aided Manufacture

FT-726R VHF/UHF Multi- bander



Combining all of the best features from Yaesu HF and V/UHF transceivers, the FT-726R opens a new world of operating ease and flexibility for FM, SSB and CW on the 50*, 144 and 430/440 MHz amateur bands. The design of the FT-726R integrates the individual operating requirements of each of the three operating modes into one unit, and the user can then select which of the optional plug-in band modules he desires.

The VFO-A/B scheme has ten programmable memories, and can be tuned in 20Hz steps for CW and SSB operation, or in selectable steps for FM. FM tuning is accomplished by an indented tuning knob. IF Width and Shift controls are provided for CW and SSB operation, while both preset standard and user programmable repeater offsets can be selected for all modes. An optional Satellite Unit makes the FT-726R into a full duplex cross-band satellite transceiver.

*144 MHz Unit installed, other Units available as options according to local regulations.

AGENTS

North West - Thanet Electronics Ltd, Gordon, G3LEQ, Knutsford (0565) 4040
Wales & West - Ross Clare, GW3NWS, Gwent (0633) 880 146
East Anglia - Amateur Electronics UK, East Anglia, Dr. T. Thirst (TIM) G4CTT
Norwich 0603 667189
North East - North East Amateur Radio, Darlington 0325 55969
Shropshire - Syd Poole G3IMP, Newport, Salop 0952 814275

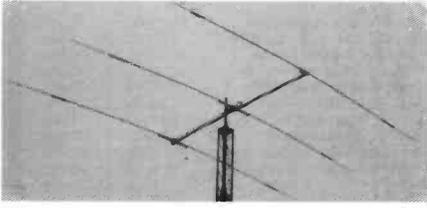
For full details of these new and exciting models, send today for our latest SHORT FORM CATALOGUE. All you need do to obtain the latest information about these exciting developments from the World's No.1 manufacturer of amateur radio equipment is to send 36p in stamps and as an added bonus you will get our credit voucher value £3.60 - a 10 to 1 winner!

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TET ANTENNA SYSTEMS



AX210N	10 ele. yagi for 2m crossed	74.95	(n/c)
H810F2T	2 ele. 10m mono band beam	51.50	(n/c)
H810F3T	3 ele. 10m mono band beam	74.95	(n/c)
H815F2T	2 ele. 15m mono band beam	60.66	(n/c)
H815F3T	3 ele. 15m mono band beam	93.46	(n/c)
H815M25P	VP mini size 15m 2 ele.	69.50	(n/c)
H815M35P	VP mini size 15m 3 ele.	102.30	(n/c)
H834D	4 ele. tri band beam 10/15/20m	222.90	(n/c)
H833SP	3 ele. tri band beam 10/15/20m	192.50	(n/c)
H835C	Tri band array 10/15/20m	283.95	(n/c)
H835T	5 ele. 10/15/20m	278.50	(n/c)
MV3BH	Vertical for 10/15/20m	37.99	(n/c)
MV4BH	Vertical for 10/15/20/40m	48.90	(n/c)
MV5BH	Vertical for 10/15/20/40/80m	63.95	(n/c)
MLA4	Loop antenna 10/15/40/80	105.60	(n/c)
SQ22	Phased 2 ele. swiss quad 2m	58.95	(n/c)
SOY06	6 ele. quagi 2m	45.75	(n/c)
SOY08	8 ele. quagi 2m	52.75	(n/c)
H8210S	10 ele. dual driven yagi 2m	47.99	(n/c)
TE214	14 ele. long yagi 2m	74.40	(n/c)
SSL720	9 x 2 ele. (18) slot fed 70cm	77.20	(n/c)
H8235P	2 ele. tri band beam 10/15/20m	135.60	(n/c)
SSL218	9 x 2 ele. (18) slot fed 2m	144.79	(n/c)
TPH2	Phasing harness 2m	17.25	(n/c)
QYU10	10 ele. quagi 70cm	67.90	(n/c)
SO007	70cm 2 ele. phased swiss quad	66.99	(n/c)
SO10	Swiss quad 10m	97.50	(n/c)
SO15	Swiss quad 15m	106.90	(n/c)

YAESU ANTENNAS			
Base			
RSL145GP	1/2 wave base ant. 2m	21.20	(1.50)
RSL435GP	1/2 wave co-linear 70cm	31.60	(1.50)
HF Mobile			
RSL3.5	3.5MHz resonator & whip	12.21	(0.50)
RSL7.0	7.0MHz resonator & whip	11.80	(0.50)
RSL14.0	14.0MHz resonator & whip	11.45	(0.50)
RSL21.0	21.0MHz resonator & whip	11.20	(0.50)
RSL28.0	28.0MHz resonator & whip	11.00	(0.50)
RSL2A	Mast to suit above	5.00	(0.50)
RSM2	Gutter mount/Feeder/PL259 suit above	10.94	(0.75)
VHF Mobile			
RSL145	2m 1/2 wave fibreglass whip	12.10	(0.50)
RSL145S	2m 1/2 wave steel whip foldover	9.25	(0.50)
RSL150SS	2m 1/2 wave PL259 shock spring	3.90	(0.50)
RSM2	Gutter mount/Feeder/PL259 (RSL145)	10.94	(0.75)
RSM4M	Heavy duty mag/Feeder/PL259	13.25	(1.00)
UHF Mobile			
RSL453S	1/2 wave antenna	15.50	(0.50)
ANTIFERRE ANTENNAS			
VHF Mobile			
TAP3009	1/2 wave 3db snap-in hinged whip	11.42	(3.00)
TAP3677	1/2 wave 3db snap-in shock coil	15.64	(3.00)
TAP3002	1/2 wave unity gain snap-in hinged whip	8.81	(3.00)
UHF Mobile			
TAP3462	1/2 over 1/2 wave 3db	9.89	(3.00)
TAP3697	1/2 over 1/2 wave 5db	18.40	(3.00)
K220	Mag mount/Feeder to suit above	10.73	(2.00)

Antennas Various/Accessories			
HQ1	Mini beam 10/15/20m 2 ele. 1kW	TBA	(4.00)
C4	Vertical 10/15/20m	48.50	(3.00)
G4MH	Mini beam 10/15/20	85.00	(4.00)
KTLM-4	Gutter mount/Cable assy. SO239	6.90	(0.50)
DATONG PRODUCTS			
PC1	50KHz to 30MHz receive converter	137.42	(0.50)
VLf	Very low freq. converter	29.90	(0.50)
FL1	Frequency agile audio filter	79.35	(0.50)
FL2	Multimode audio filter	89.70	(0.50)
ASP/A	Auto RF speech clipper (YAESU)	82.80	(0.50)
ASP/B	Auto RF speech clipper (TRIO)	89.70	(0.50)
D75	Manual RF speech clipper	56.35	(0.50)
RFC/M	RF speech clipper module	29.90	(0.50)
D70	Morse tutor	56.35	(0.50)
AD270	Active dipole RX ant. (indoor)	47.15	(0.50)
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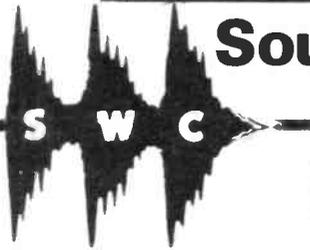
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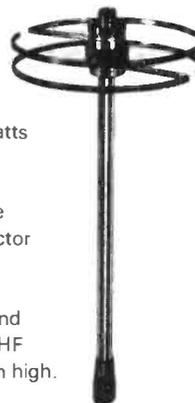
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COMMUNICATION and DX NEWS

E. P. Essery, G3KFE

ANOTHER month comes and goes: doing things with aeri-als, listening to G4AKY talking to the Bishops Stortford club about Top Band DX (and after half-a-lifetime on the band finding lots to learn about), trying hard to persuade reflexes to master — and retain mastery — of a new keyer, and of course looking round the bands as and when opportunity offers. Add to that a look at the bands as seen by Simon, G4PEM, down in Penzance, which was almost (not quite!) enough to make the writer a VHF enthusiast, a visit to G3IUE and G3UZZ with G4PEM, and a few days on the Isles of Scilly. One notes over there the confluence of four unoccupied WAB squares where one could put a rig into each square at once with the aid of a large-scale map, and generate an interesting domestic event . . . Who cares about *conditions* when there are so many things to do?

The Bands

We are undoubtedly now seeing the steeper part of the downward slope — and after all, the long plateau of good conditions over a period of years must inevitably result in a precipitate fall to the bottom of the sunspot cycle; which is the very time to start looking for the start of the upward swing of the next cycle.

Silent Keys

The DX fraternity in Europe has taken some hard losses over the last few weeks.

First we must mention John C. Graham, G3TR, of Crawley; he died of a heart attack while on holiday in Maderia on February 19. For a long time John was a contributor to this piece, and of course many will know of his long and honourable service to the hobby by way of his involvement with RSGB — an involvement which in the writer's view was very much in the interests of all. His election to President of RSGB in 1968 was a justified honour, but he continued to put more into the hobby than ever he took out. His AA licence was 2BQR, and he made the full call as GM3TR before WW2. After the war he was at Southampton, and then moved to the Crawley area where he was to serve the club for many years as Chairman and then Life President. Despite a severe illness four years ago, John continued to put his utmost into his hobby and into the club, and it was a sad shock to many to hear of his death. To say G3TR will be missed is an understatement, and our sympathies go out to his wife and family in their loss.

Next we have a brief note from G3IDA to advise that Jack Stock, G3PKS, (Wells), died suddenly on March 26. Jack will be greatly missed by everyone; and especially, perhaps, by the writer, who had his task of putting *CDXN* together lightened, not just by Jack's reports, but by the spice of wisdom and the tang of humour which was always there to be read and appreciated. *Vale* G3PKS.

Outside of the U.K., we were shocked to hear of the death of OK3UL. Joko was murdered in his own home by intruders after loot. People who steal from and murder a physically handicapped person are beyond the pale, and we hope that the killers of OK3UL are brought to justice. Our sympathies go out to OK3UL's friends and relations in their sad and shocking loss. DX-ers will miss a familiar call on the bands.

The Future

This is where we gaze into the crystal ball; with a lot of help from *The DX Bulletin* on the one hand and, of course, *DX News Sheet* on the other.

From *TDXB* we hear that WB7VKI is hoping, at the Dayton Hamvention, to break that over forty-years-old record for Morse reception made by Ted McElroy; the old record is 75.2 wpm, and Jerry Farrell has broken 70 already and takes his practice at 100 wpm!

The same source mentions the Spratly Is. expedition as being due to be on as this is being written; they have 1S1S1 on offer, but a little punt round the usual spots has not indicated anything strenuous in the pile-up line as yet.

The BY stations are on and active, but we have it that the QSL cards are coming through rather more slowly of late. BY1PK was understood to have been indulging in some cross-mode working, using CW but listening around 14.2 MHz for replies on SSB, as a 'training exercise' — VE7BC, Tom Wong was understood to have been operating.

That St. Peter/St. Paul expedition came good for a lot of hopefuls; QSLs via DA2ZH. All those of you who would like to validate an A6 QSL for DXCC, take heart. ARRL has accepted A6XJC's documentation, and cards from him are OK.

There was to have been a Hong Kong to Beijing car rally during May, and it is understood that amateur radio was to be used to keep in contact with competitors; but the activity has been postponed until September by the Chinese authorities. It is

also said that OY7W has hopes of being able to operate BY1PK during May.

The East Burma stations have changed from XZ and are now using 1Z — for example 1Z9B.

Despite that enormous effort on Clipperton a few years ago, the place has crept back up the wanted list, and we now know that a group of sixteen DX-ers, mainly FO8s and Ws, intend to mount another trip there around the turn of the year.

On June 21, the first-ever use of a GB1 callsign; Bromsgrove club are celebrating the first birthday of Prince William by operating GB1BOY. The operation will be right round the clock, but we haven't received the details of bands and modes they will use from the Foxlydiat Hotel, Tardebigge, which lies on the A448 between Redditch and Bromsgrove. There will be club members present to explain the whole business to strangers, and, we hope, attract a few more members.

Eighty

G2NJ (Peterborough) that ever-faithful supporter of the band — and us! — writes with a mention of the ON4ABT signal being transmitted around 3525 kHz. It appears to be some sort of QRP beacon, and asks for those hearing it to QSL — but the locals don't seem to know anything much about it! The interesting thing is that the format of the transmission varies from day to day; sometimes it contains the word 'beacon' and sometimes not, and the callsign is sometimes sent three times in a sequence, sometimes five, and on occasion eight. About the only constant factor is that each transmission states that it is QRP and at either five watts or, more recently, one watt. It doesn't sound very beacon-like to this old cynic, albeit 'he' may be gathering some very interesting data. On a different tack, Nick notes that G2CNN is getting ready for his /P and /A travels, with the HW-8 and the golf-ball. At the time of writing we understand G2CNN is operating from Thame, the golf-ball having assisted with the important matter of slinging a wire up a tree . . . G2CNN has received a one-year licence as an EA6, so we can expect him to appear from more new places.

G2HKU (Sheppey) says that conditions in general were pretty punk; but on Eighty he managed to find XT2AW, which needed the Big Rig on CW, but the little box at four watts was quite enough to account for G2FC1, G6AB, and GM3HBT.

Turning to G2HLU (Reading), we find that Harold has been persuaded to use his microphone a little more, the villain of the piece being old friend G8PP; they have a sked which is usually on Forty but turns to Eighty when the going gets rough. Another G2HLU activity on the band was the RSGB Activity Period, in which Harold operated 'with no complaints.'

The Edware Straight Key Evening seems to have 'touched on a spot' and we hear the organising group (Edware club) are being asked to repeat it. One idea, offered by G3ZPF (Dudley) is to run it annually but shift it to the birthdate of Samuel Morse. SKE itself was an evening of hard work, with lots of G signals worked by G3ZPF; otherwise it was largely a matter of EUs, and a gotaway W2BBK/PJ7 which caused much wailing, beating of breasts and gnashing of teeth.

At G4BUE (Upper Beeding) the Eighty-metre activity has been with his latest QRP rig; priced from the *Ambit* catalogue, the bits cost under a fiver, and the whole shooting-match — excluding projections like knobs — goes into a two-inch cube for about one watt out. The basic design is a variant of the 'Oxo' transmitter by GM3OXX, but Chris couldn't resist adding a couple of LEDs to indicate power and keying! As he says, he does like things to light up when they are switched on!

Top Band

LIDXB, according to *DX News Sheet*, says that XT2AW is to be found on 1828 kHz from 0400z, and that ZS6BPJ/ZS3 is on from 0330z around 1826, listening on 1804 kHz. For those new to the idea of DX-chasing on this band, while it is still very true that there is a 'DX Window' around 1825-1830 kHz and that the Ws — the DX to us! — tend to congregate around the bottom five kHz of the band, we do strongly suggest you also check your own channel, as there seems to be an increasing amount of DX replies co-channel. Possibly something to do with the increasing number of transceivers with Top Band available.

Top Band for G2HKU included CW QSOs with EA8QO, EA6JD, GU5BLG, and GWSTW, while SSB was used to tackle EA6CE, YU3EF, and PA0PN.

G3BDQ (Hastings) seems to have made his literary mark in the May issue of *Practical Wireless* with his great account of the mystical Arabackle Oblifork. Like John, your scribe received much of the tale from the previous commentator on DX in these pages, the great G6QB himself; and we suspect that ZA1AO and G6QB are busily spinning in their respective graves! However, we digress, and must return to the G3BDQ Top Band affairs, where CW contacts are mentioned with such as RC2LBD, UM8MAZ, UM8MCY, RB5GAS, TO3AT, ZB2EO, UA3PFC, who is classified as one of the

regulars, UA4CIB, EZ3XAS, UB5MDD, UK5WAW and lots of lesser fry.

Forty

Again a good band but neglected. Perhaps the majority of the writer's brief operating/listening time was spent here, and it really is quite surprising just how much there is kicking about, if one is prepared to spend a little time quietly lurking. G3BDQ noticed ZL2AGY at 1907 GMT, and JI1QQI at 1926, and snaffled both of them on CW.

During the RSGB Commonwealth Contest — what a long-winded name for what everyone still calls BERU — G2HLU managed to snag some VKs and ZLs to the tune of "a good handful." We like the added comment — "People with real aerials did better!"

We look now to G2HKU, who used his CW to good effect; the QRO machine dealt with CW to VP2MM, PY1EHN, PP7CAR, CO1RH, UL7IBZ, 8P6FZ, VP9JR and VE7DP. Turning to QRP, four watts was enough to key with GM3ITE, GU5BLG, and again VP2MM.

Odds

The group of beacons on 14.100 MHz is now almost a complete network, with 4U1UN, W6WX, KH6O, JA2IGY, 4X6TU, OH2B, a space, which will presumably be the Maderia beacon when it becomes operational, and ZS6DN.

May 7-8 is the date for the G-QRP club SSB activity; the times and bands are: 3690 kHz, 1200-1300, 1400-1500, 2100-2200; 7090 kHz, 1100-1200, 1300-1400; 14285 kHz, 0900-1000, 1300-1400, 1730-2000, 2200-2300; 21285 kHz (and 28885 kHz) 1000-1100 and 1500-1730; all the times mentioned being GMT of course. Not a contest, but just get on and work other QRP types, and send a report to Chris Page, G4BUE, QTHR.

May 28-29 sees the CW leg of the CQ WW WPX shindig; the rules are as previously given. The mailing deadline is July 10, addressed to CQ Magazine, WPX Contest, 76 N. Broadway, Hicksville, NY 11801, U.S.A.

To revert to May 7-8, we note that besides the QRP club SSB affair already mentioned, there are a couple of world-wide contests on as well. Firstly the Russian CQ-M, which is CW or SSB. Send RS(T) plus a serial number, Russian stations will send report plus the number of the oblast in which their station is situated. Contacts between stations on the same continent count one point, different continent three points; you may work your own country for multiplier credit. You may work the same station once on each band but not on both modes. Score is the total QSO points times the multiplier for each band. The multiplier is determined by the countries worked, in accordance with the Russian R-150-S list, which in essence

is the DXCC one, plus the following oblasts: 002, 013, 014, 056, 084-5-6-7-8-9, 090-1-2-3-4-5-6-7-8, 159, UA1 Novaya Zemla, UA0 Kuril Is., UA0 New Siberian Is. For the SWLs there is a separate class; score one point for reporting one station in the exchange, and three points if you can report both ends. Mailing deadline is July 1, to Krenkel Central Radio Club, CQ-M Contest Committee, Box 88, Moscow, USSR.

And we still haven't mentioned the Seville world-wide contest on the same date. The first prize for this one is an all-expenses paid trip to the Seville April Fair Feast, offered by the Seville City Council. Top-Band to Ten, only single-op category, same station may be worked on each band but only on one mode, for QSO and multiplier credit. Exchange RS(T) and a QSO number starting at 001. Logs to be covered with summary sheet and declaration and to be posted by June 15 to Seville World Wide contest, Radio Club Seville, Box 555, Seville, Spain.

28 MHz

This band has fallen away sadly, but it is hardly to be wondered at, this far down the slope of the sunspot cycle — the marvel indeed is that it has lasted so well.

"CDXN" deadlines for the next three months:

June issue—May 5th
July issue—June 2nd
August issue—July 7th

Please by sure to note these dates.

G2ADZ (Chessington) found some blank days and some 'funny' ones when *only* DX was to be heard. We suspect that the no-activity syndrome is rearing its ugly head. Bill managed CW with 3B8FK, VU2VZ, ZD7WT (QSL to ZD8TM), PY0ZSD (QSL via DA2ZS), ZS6DL on a dead band, DU1TV, G3LEW/MA off Dubai, K1BJ/3B8; and the gotaways included 4S7RR, SU1MI, 5N7HKR, and 9K2QL.

A first report from a 'new' licensee, by way of the letter from G6QQ (Hoveton) who was licensed on March 16, and is on with an FT-101. David was originally licensed back in 1932, and active until 1937, when a move to London put a stopper on things. Retirement has put a different complexion on matters and so RAE and Morse have been taken and the old call re-activated. David was a bit miffed to find himself waiting for the postman during the period in February when the ten-metre band was hopping; and of course just as soon as the ticket came the band died! However, G6QQ has made it to PY2MIK, PY4YW, PY3BTR,

A92CE, JY8KG, PY3CEM and 4Z4OM, all CW. The aerials are a Cushcraft vertical and G2DYM trap dipole. Welcome aboard David and your reports, too!

G4HZW (Knutsford) philosophises sadly on the way the band has deteriorated; on the Sunday morning of the CQ WW SSB contest the band was good but then Tony had a power cut — but at least the dog got a walk! SSB contacts were registered with 9H3TM, 9K2BE, 9K2CX, A4XJW, CE3RC, DU1CPL, G14AHD, JY8KG, LU7TD, LU3ECJ/X (Tierra Del Fuego), P29NAB, DF3NZ/ST2, SV1EX, lots of Asian Russians, TR8JD, DJ5RT/TT8, VKs, W5s W6SOV with three watts, other W6s, W7FDQ (Arizona), N0CDN (Iowa), then three gotaway KH6s at 2300z on the day of the ARRL contest; they were all working Ws 59+ in the contest. Even better, a last despairing spin of the dial located and hooked VE8JW at Inuvik, VO2AG, VP2EC, VP2MGQ, VP2EH, PY4CAX, PY5BAB, YB1CPL, YB0ACL, and ZS1QN.

G4LDS (Chelmsford) seems to have stuck largely to the HF bands this time; his SSB went out on Ten to EA8SK, 3B8FK, SV1OI who was using QRP, ZS6A00, ZS6BXB, A71AB, ZS5UW, AP2ZR, W1RR, UK9BTR, 9K2BF, VP2MGQ, ZY1NEZ — a PY prefix — VP2EC, VK9YC, NU4Y, NA5R, K5LZQ, 9H3AM, SV1MO and, on FM, UK6HEC.

G3NOF (Yeovil) found the band patchy at the times he could get on; Ws were heard early in March, but later they had disappeared. African and South Americans were heard in the afternoons. SSB QSOs were made with HC1BP, HH2WW, N6AW, N8DCJ/8P6, VP2EC, VP2MGQ, VP2MKD, VP2MRA, VP8SB (Falklands), S83H, W2-3-4-8-9-0, ZF2FL, ZS6ABU, 5B4MF, and 9K2BE.

G4BUE reckons his activity was somewhat downed by the decorating and other chores, as well as the time spent constructing the little rig, but he did manage to work TT8AD for a new QRP country on CW.

A brief session by G3ZPF on Ten sideband yielded contacts with UAs, Ws, VP2EC for a band new one, JY8KG, and OK0WCY, who was a 'special' for World Communications Year.

Since he last wrote, G2HLU reckons there has been very little on the band; his only two CW QSOs worth reporting were LU5QAF, and W0UKK; Harold did try the RSGB Activity Period on Ten, but found it very hard going with not much about at all.

10 MHz

Our little bleat about the dearth of reports on the new bands brought out a memory of the past, from G4BKI (St. Ives, Cornwall) who was one of the group we dubbed the 'Pirates of Penzance' some ten

or so years ago. Paul says that the others, Terry, G4AMT is back on the air but mainly on contests, while Doc, G4AMJ is on occasionally as G4AMJ/W0. G4BKI reckons the lack of activity on 10 MHz is a bit of a myth; he offers a sample of twelve hours of his activity on CW, during which he worked 5Z4CS, VP8ANT, DL2GG/YV5, C6ABA, KV4CI; and many W/VE signals; gotaways included OY7ML, 4X4, VK, ZL, and ZS. All this with a TS-130S, 100 watts and a very poor aerial. There are some twelve 'regular' Gs on the band and plenty of DX. The best time for activity is 2130-0130z in the bottom five kHz of the band on Saturday and Sunday evenings.

Fifteen Metres

Let G2HKU have first knock this time; Harold notes one afternoon in early March when there was a splendid opening to W7, during which he hooked three in quick succession — but not a sign of a W6 to be heard! During BERU nothing was worked and only 9J2BO heard, but a fair amount of activity was about during the PACC contest.

A brief look at 21 MHz by G3ZPF produced SSB with VK4ALV and UA6LHB but it was, David stresses, a very brief look!

G4BUE's miniature rig worked into Italy and Sweden, and then raised K9QIE for a 17-minute QSO at a steady 20 w.p.m. solid both ways.

Fifteen for G3NOF was also a patchy effort, with a dead band on a few days. The short path to VK opened on occasion around 1100, and the Ws were on from 1200 to as late as 2200z on days when the band was open. Africans, plus some DU and YB were to be found around 1600. SSB contacts were clocked up with AI6V, AK6S, AP2P, CO2OM, CT2FH, D44BC, DU6BE, EA8BS, EW2A, HH5CB, J88AQ, JA6YAI, JR6YAH, JY8KG, JY9RV, K6HNZ, KOOSN/V2A, KA5W, KB6UI, KL7IHP/VS6, N5AU, N7ER, NA5R, NE6I, NS6G, OD5SM, S79ARB, PY1EFM, T30CJ, TG9GI, T12CCC, TL8DC, UD6DFH, UK7LAA, UK7PAL, UL7QF, VEs, VE6OU, VE7FEG, VK2PAU, VK5AZ, VK5PAN, VK9ND, VP2EC, VP2MKD, VP2MRA, Ws, W5XZ, W6RTN, W0ZV (Colorado), YB2CR, YB0AV, YV0BUU, ZC4CW, ZB2HP, 3D6BZ, 5Z4CI, 6T1YP, 6W8HL, 7P8BX, 7P8CL, 9G2XX, 9N1MM, XO7IN, and XO7WJ.

Turning now to G4LDS, we find Chris worked East and Central USA stations during the contest; otherwise it was PY0ZSH, G4AVI/ST2, HL0CBD, ZD8FX (QSL via G3VBY), 7P8CL (QSL via SM5GOJ), EA8SK, EA8AHR; then a whirl in the WPX affair fished out all W call areas, XO7ZZZ, VP2MRA, PP2ZDD, LU2X, and LU1CBE.

G6QQ seems to be rapidly picking up the tricks of the trade after his 45-year lay-off; CW to ZL2UW, 3B8FK, JR2UJT, HC1VU, N6OM/TI2, W7MCG, PZ2AA, KA6WZI/DU2, K1BJ/3B8 and YC2BDJ all attest to that!

G2ADZ lowered himself from his 28 MHz eyrie for a while, and as a result raised VP5FUX, EW2A, VK5DP, JY8KG, KC6SZ, and then heard HL1CX complaining of BY QRM although to Bill the BYs were not audible. BY1PK was in the end heard but seemed to get disheartened and gave up — G2ADZ still can't fathom out their operating ways.

Now Twenty

G2HKU comes in first, and offers SSB contacts with VP2MCG, ZL3FV, and ZL3RS, albeit he does mention that magnetic storms wiped out his ZL skeds on several days. On the CW front, VK3XB, ZL4CO, and W0MLD/ID9 were worked, the latter on Lipari Is.

G3BDQ made some SSB contacts, including HG35HA for a 'special-event' station, A4XCB, G4AVW/ST3, VK7GK, C53AP who is leaving The Gambia very soon, VE2FOU/MM in the Persian Gulf, 9K2BE, VP8LB, ZD8FX, 9L1DR (QSL address: Private Mail Bag 502, Freetown), 7P8CR, and 5H3BH (QSL via SM0EAI). As for CW, John just had himself a bit of fun working Russians with one watt. On a different tack, G3BDQ has put up a Delta Loop on this band and says it's just great to the South, being some three S-points better than the long-wire in the way of VP8, ZD8 and so on, which are to the side of the L/W.

G2HLU felt compelled to go back to an IV3 one morning, because the chap seemed to be using spark! Harold was generous and gave him 582, with which report he seemed pleased; so G2HLU amplified it and told him there was something wrong with the rig, and the note was quite unacceptable — but it all seemed to go over his head! Otherwise there was a gaggle of VK/ZLs during BERU. Another interest that is beginning to stir is QRP, although G2HLU reckons he hasn't got the bug *properly* as yet!

Oddly enough, the next letter is the one from that arch-QRP-er, G4BUE, and Chris reckons that the club is now handsomely over the 2000 members; number 2000 itself went to Les Hawkyard, G5HD, and they have added some 400 new members in the first part of 1983!

G3NOF says he didn't operate a lot on Twenty, but he did notice that there were long-path openings to the Antipodes around 0700z; SSB contacts were made with OH0XX/CT3, VS5GA and Ws.

One of the first sessions on the band by G6QQ after the ticket arrived was on March 23, yielding CW contacts late in the evening with PY2KQ, K3, OA4AHO, HH2VP, and CX1DZ; later on in the

month, PYs, ZS and W1-5 were raised, all on CW.

Our final report on the band is from G4LDs, who worked all W call areas, JG1ZUY, 8Q7AH, 8Q7BS, PY0ZSG, 9K2QL, 5Z4DJ, 5H3BH, VK2APG, VK3OM CQ4UA (=CT4), OH0RJ, K2NJ, W7LI, KS70, W6YB/3D6, 8Q7AH, VP9KH, VP9IX, IO9GSF (=IT9GSF), A71BJ, JA3JHF, JG1ZGY, JH7JHF, JA3JHF, JH8TRP and ZB2J.

Conclusion

That's it for another month. Deadline for your letters for the next time is as per the 'box' in the body of the piece, and is for *arrival*, addressed to your scribe, "CDXN", SHORT WAVE MAGAZINE, 34 High Street, Welwyn, Herts, AL6 9EQ. But — if you want to write before that, and discuss some related subject in depth for the piece, or if you've hooked anything special, please

feel free to write in earlier — we like getting letters!

Late Flash

Reports are coming in of a group of German radio amateurs missing after their boat was attacked and set ablaze while attempting a landing on Spratly Is. The area is in contention between China and Vietnam, and is also infested with pirates.

NEW QTH's

- This space is for the publication of the addresses of holders of new call signs, or change of address, in EI, G, GJ, GU, 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 on a separate slip and address 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: "QTH Section," SHORT WAVE MAGAZINE, 34 HIGH STREET, WELWYN, HERTS. AL6 9EQ.
- E14EZ, H. R. Spier, 46 Knocklyon Avenue, Knocklyon Woods, Templeogue, Dublin. 16.
- EI4FA, J. M. Garner, (ex-G3KEC), 31 Seabank Court, Sandycove, Co. Dublin.
- E17EX, I. H. V. Stewart, (G14POV/exEI9AYB/exG16FFP), 164 Ballymoney Road, Ballymena, Co. Antrim. BT43 5BZ (Tel: Ballymena 6872).
- G3CNR, F. Goodliffe, (ex-G6FVG), 7 Lancaster Road, Uxbridge, Middlesex. UB8 1AP (re-issue).
- G3DCC, E. J. King, 109 Marlborough Park Avenue, Sidcup, Kent. DA15 9DY (re-issue).
- G4NYA, R. C. Hyams, 38 Parsonage Road, Withington, Manchester. M20 9PT.
- G4OKD, A. M. Forryan, (ex-5B4LN), 9 East House Drive, Hurley, Atherstone, Warks. CV9 2HB.
- G4ORX, P. M. Baggett, (ex-G6DLE), 21 Buttons Farm Road, Penn, Wolverhampton, West Midlands. WV4 5LR.
- G4PBM, A. H. Marshall, (ex-G6DQF), 1 Moore Road, Barwell, Leicester. LE9 8AF.
- G4PDX, A. Blears, (ex-G6CHG), 53 Ashwood Avenue, Denton, Manchester. M34 2PA.
- G4PEW, R. N. Wood, (ex-G8TLQ), 1 Springfield Villas, Hensingham, Whitehaven, Cumbria. CA28 8TT.
- G14POV, I. H. V. Stewart, (EI7EX/exEI9AYB/ex-G16FFP), 164 Ballymoney Road, Ballymena, Co. Antrim. BT43 5BZ. (Tel: Ballymena 6872).
- G4RAX, G. Pandel, 47 Bessborough Road, Birkenhead, Merseyside. L43 5RN.
- G4RBD, D. W. Batchelor, 14 Oakleigh Heath, Hallow, Worcester. WR2 6NQ. (Tel: 0905-641733).
- G4RBN, A. F. Pearson, 31 Thorpe House Avenue, Sheffield. S8 9NG.
- G4RCU, J. V. Shirley, 17 Frobisher Road, Rugby, Warks. CV22 7HU.
- G4RFV, B. Adams, 28 Pergin Crescent, Fleetsbridge, Poole, Dorset. BH17 7AL.
- GW4RGA, J. M. Dunnett, 7 Grasmere Close, Prestatyn, Clwyd. LL19 7TU. (Tel: 07456-88480).
- G4RNW, M. S. Stewart, 2 Hawbush Rise, Welwyn, Herts. AL6 9PN.
- G4RSN, R. Burman, (ex-G8ZSU), 10 Oak Tree Drive, Englefield Green, Surrey. TW20 0NR.
- GW4RWR, R. Thomas, Ystrad Isa, Denbigh, Clwyd. LL16 4RL.
- G4SBU, B. H. C. Gundry, 50 Cedar Road, Farnborough, Hants. GU14 7AX.
- G4SCT, J. Hawkins, 1 Orchard Caravan Park, Shouldham, King's Lynn, Norfolk. PE33 0BZ.
- G4SDZ, M. J. Gayler, (ex-G6NMP), 58 Fosse Road, Newark, Notts. NG24 4ST.
- GM4SLO, J. J. Downie, 67 Galt Road, Musselburgh, East Lothian, EH21 8DZ.
- G4SLV, J. M. Green, Glebe Cottage, Esh Village, Co. Durham. DH7 9QR. (Tel: Durham 733743).
- G4SNR, E. Merkers, 5 Frobisher Close, Mudeford, Christchurch, Dorset. BH23 3SN.
- G6MIF, D. Cooper, 7 St. James Terrace, Buxton, Derbyshire. SK17 6HS.
- G16NDZ, G. S. Devenney, 6 Gormley Crescent, Strabane, Co. Tyrone. BT82 9HZ.
- G6NJS, D. Pearson, 68 Berwick Road, Foxlow Park, Buxton, Derbyshire. SK17 9PE.

- GW6OKK, G. Thomas, "Ffaldwen", Heol-y-March, Welsh Saint Donats, Cardiff, South Glamorgan. CF5 6TS.
- G6RAU, P. Johnstone, 5 Tansey Crescent, Stoney Stanton, Leics. LE9 6BT.
- GW6SNP, R. Lewis, Siop Penygraig, Llangwnnadd, Gwynedd. LL53 8NT. (Tel: Tudweiliog (075 887) 213).
- GW6SOM, F. C. Wybrew, 11 Clifton Terrace, Blaenavon, Gwent. NP4 9QR.
- G6SPG, P. A. Cesnavicius, 136 New Lane, Peel Green, Eccles, Greater Manchester. M30 7JB.
- G6TLO, J. Allardyce, 33 Rowbrook Close, Paignton, Devon. TQ4 7BU.
- G6TQM, A. G. Lawrence, 48 Water Lane, Oakington, Cambs. CB4 5AL.
- G6TTP, K. M. Jones, 189 Suttonway, Ellesmere Port, South Wirral. L65 7BD.
- G6UKD, J. R. D. Brown, 17 St. Ursula Grove, Pinner, Middlesex. HA5 1LN.
- G6UTI, R. Fox, 72 Artizan Road, Northampton, Northants. NN1 4HS.
- G6UVA, F. C. George, 20 Tile Farm Road, Orpington, Kent. BR6 9RZ.
- G8TLR, Mrs. Helen Wood, 1 Springfield Villas, Hensingham, Whitehaven, Cumbria. CA28 8TT.

Change of Address

- G3HDM, S. G. Campbell, 34 North Street, Maldon, Essex. CM9 7HN. (Tel: Maldon 56266).
- G3JNW, H. L. Fleming (ex-GM3JNW), 22 Roseberry Road, Norton, Stockton-on-Tees, Cleveland. TS20 1JZ.
- G3KPO, D. Byrne, "Lynwood", 52 West Hill Road, Ryde, Isle of Wight. PO33 1LN.
- G3LPB, J. Brown, 45 Marlborough Avenue, Falmouth, Cornwall.
- G4BJF, B. R. Marshall, 58 Broad Street, Syston, Leics.
- G4DSD, R. Woodman, 89A Western Way, Darras Hall, Ponteland, Newcastle-upon-Tyne. NE20 9AW.
- G4FGK, R. P. Tandy, "Fairmile", Daux Road, Billingshurst, West Sussex.
- G4KBY, E. A. Homewood, 6 Stembridge Road, Annerley, London. SE20 7UF.
- GM8WGU, A. M. Irving, 4 Campbell Street, Ayr, Ayrshire. KA8 9AR.
- G8WRY, G. G. Brock, 54 Lord Haddon Road, Ilkeston, Derbyshire. DE7 8AW.

Correction

- G6NUO, S. Clark, 90 Hamstead Road, Great Barr, Birmingham. B43 5BN.

A MICROPROCESSOR CONTROLLED MORSE DECODER PART VI

CONCLUDING THE SERIES

Peter Lumb, G3IRM

As stated in *Part I* of this series, by far the biggest problem to contend with is interference in one form or another. The better the signal presented to the decoder the better will be the copy. The writer has built many audio filters with varying degrees of success. In general it can be stated that the simplest are the worst and the most complicated are not necessarily the best.

One of the best tested so far has been a communications audio processor for reception described by Don E. Hildreth, W6NRW, in *Ham Radio* for January, 1980. Designed for both SSB and CW the processor has a number of good features, many of which are not needed for the Morse decoder. The sections of use are the nine-pole filter for CW centred on 700 to 800 Hz and the summing amplifier which follows. A switch drops the level of all signals other than the wanted one in the filter by 20 or 40dB and makes a considerable improvement in copy, leaving the other signals in the receiver pass band at a lower level to retain the feel of the band. This part of the circuit can be recommended for use with the decoder. It should be noted that the filter is fixed tuned and of fixed bandwidth: this avoids additional controls as the decoder does not particularly care what CW note is presented to it as the signal must be changed to on/off TTL levels anyway. Perhaps the answer is for the builder to use his own favourite audio filter.

After the Hildreth filter the writer uses a circuit based on an article in *QST* for July, 1982. This is the KC2FR "QRM Fighter" in a very much modified form. The filter does a good job on its own so far as the decoder is concerned and the revised circuit is shown in Fig. 14. The original circuit keyed an audio oscillator from the Morse receiver; similar circuits have been published on many occasions but the writer has found them of little use.

Signals from the receiver are first applied to a source follower which includes a level control. Some modifications may be needed here depending on the level of the signal available. If an additional filter such as the Hildreth design is used it should be provided with two outputs, one of which feeds the second filter and the decoder and the other becomes the output to the headphones or speaker. After the follower the signal goes to a phase splitter and a constant level amplifier in the form of an SL1626. The audio filter which follows is the KC2FR version except that an LM358 has been used in place of two 741 amplifiers. The filter consists of an amplifier with a 'Q' of 10 and a gain of 4, together with a centre frequency control; the second stage is a comparator with variable bias which determines the bandwidth. If this circuit is used on its own it will be a good idea to retain both these controls, but if it follows another filter the frequency control can be a trimmer to set the centre frequency to the same frequency as the first filter. In this case the bandwidth control will not be as effective but the writer decided to keep it as a panel control.

The constant level amplifier keeps the input to the filter at an optimum level for best results. Admittedly the noise level rises during pauses in signals but, due to the circuits which follow, this has no effect on the decoder once the input level has been set to its most suitable position; it is a good idea to make the input level control a panel mounted potentiometer for this purpose. If the input to the source follower can be taken from a point before the

receiver audio gain control so much the better. As an alternative the receiver gain control can be preset and the processor gain set by the follower, the speaker level being set by the amplifier in the Hildreth or other filter being used.

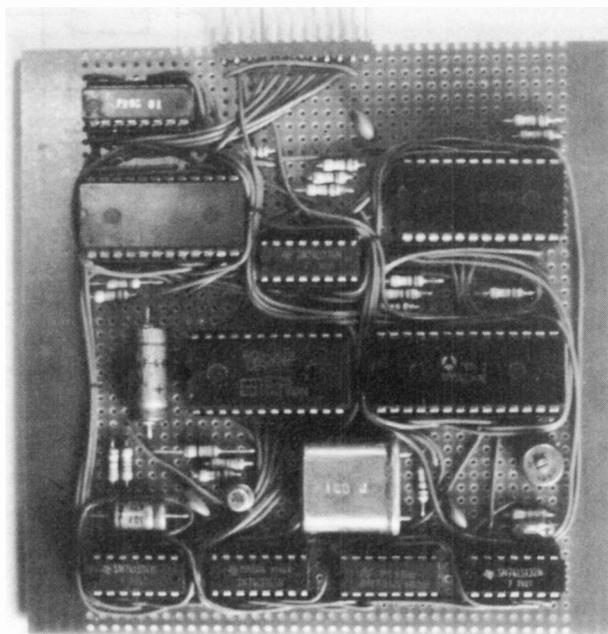
The next stage is a 7555 timer — KC2FR used an NE555 but the CMOS version gives improved performance. It functions as an envelope detector and is followed by a noise blanker. The writer's version uses two diodes and a two-gang potentiometer in place of the single circuit used in the original design. The circuit acts as a delay so that signals whose duration is less than the delay set by the potentiometer are not passed on to later circuits. Introducing more delay in the KC2FR version shortened the receiver signals and this became quite noticeable. Using long delays before the decoder reduced the length of dots and dashes so much that the processor circuits did not always recognise the correct symbols; however, this is an extreme case. It was cured by introducing a delay on the trailing edge of the signal by adding the reversed diode and second potentiometer. The incoming signals are now progressively delayed more and more as longer delays are introduced but the dot/dash relationship remains essentially the same. Signals shorter than the delay are ignored. Although the processor ignores short signals, that part of the program has largely been superseded by the noise filter now added but it has been retained in case other filters are used — and two strings of the bow are said to be better than one.

The last device in the chain is a collection of Schmitt triggers using CMOS devices to present a high impedance to the output of the noise blanker and to buffer the output. These are followed by a single transistor to provide a TTL output for the decoder. An LED indicator is added on the front panel and helps in setting the input level and in monitoring the Morse.

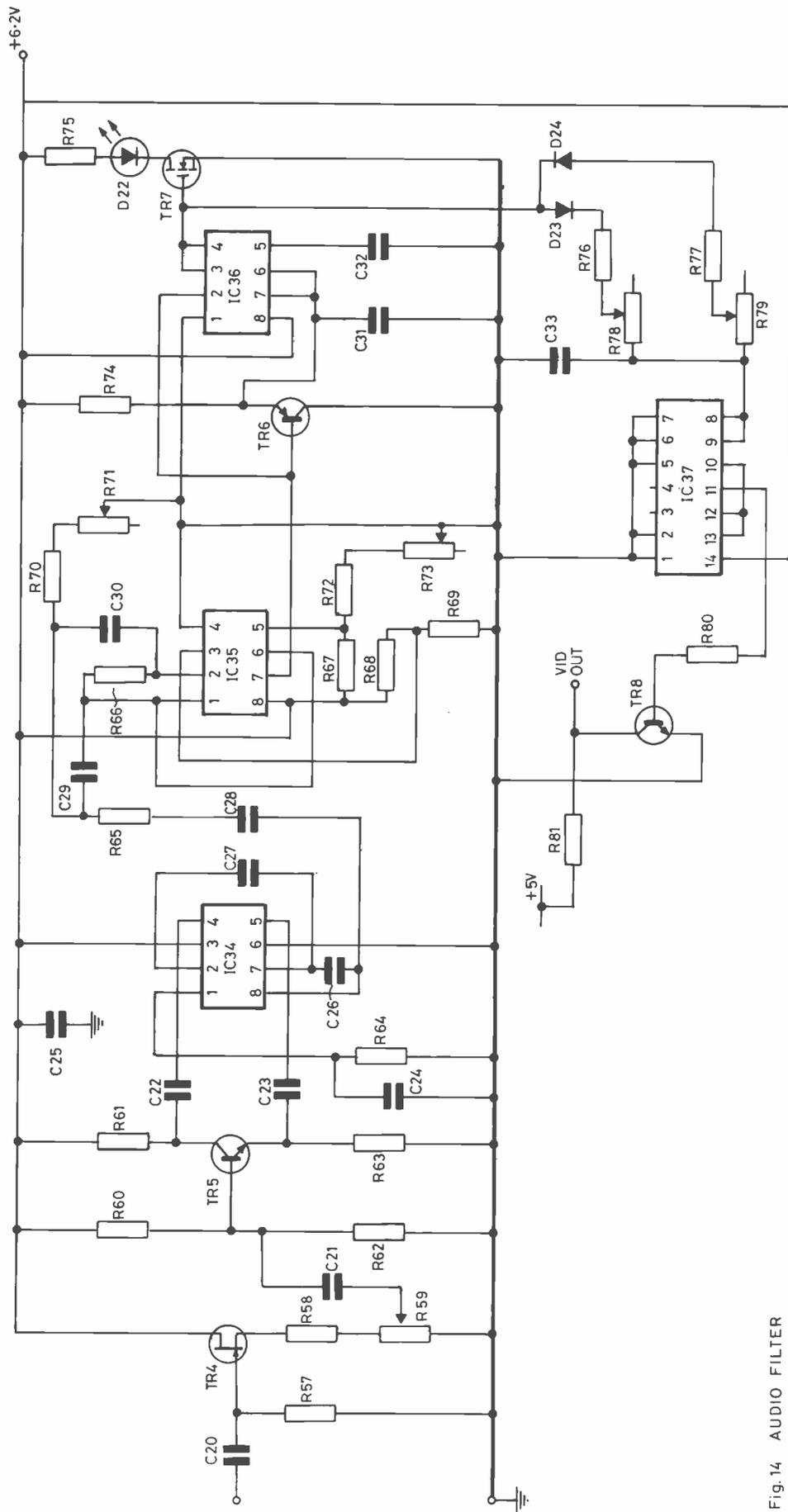
Final Thoughts on the Decoder

The speed controller meter should be adjusted to produce full scale deflection at 2.3v. and looks better if it is uncalibrated as it acts as a centre-zero meter. The markings on many meters can easily be removed with a typewriter rubber and new markings added to suit the purpose in hand.

The final casing can be left to the builder, but a metal cabinet is strongly recommended as digital circuits can radiate and cause interference in the receiver. The writer has had no trouble from



Display Board



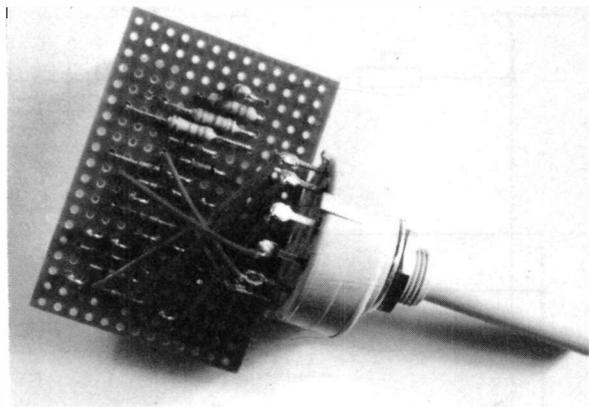
E
054

Fig.14 AUDIO FILTER

Table of Values

Fig. 14

R57 = 100K	C24 = 100 μ F tant. bead
R58, R59, R62, R65, R80 = 4K7	C26 = 0.0047 μ F
R60 = 8K2	C27 = 2.2 μ F tant. bead
R61, R63, R76, R77 = 1K	C31, C32 = 0.01 μ F
R64 = 1M	C33 = 0.47 μ F
R66 = 36K	TR4 = 2N3819 or similar
R67, R72 = 1K8	TR5, TR8 = BC107 or similar
R68, R69, R81 = 2K2	TR6 = 2N2907
R70 = 39R	TR7 = VN10KM
R71 = 220R frequency control	IC34 = SL1626
R73 = 470R bandwidth control	IC35 = LM358
R74 = 270K	IC36 = 7555
R75 = 820R	IC37 = CD4093
R78, R79 = 100K ganged delay control	D23, D24 = 1N4148
C20, C21, C22, C23, C25, C28, C29, C30 = 0.1 μ F	



Spacing Switch

this source but it is suggested that mains filtering be included in the lines to the decoder power supply as a precaution. The whole of the circuitry, including the monitor, should be in the cabinet if possible.

It is not anticipated that hosts of amateurs will wish to attempt a comparatively complex piece of equipment, especially as a pair of ears, a pencil and a piece of paper can be used as an alternative; poor Morse which the decoder could not hope to copy accurately can often be read this way. However, it has proved to be an interesting project and there is much satisfaction in sitting back and watching it copy commercial and good amateur Morse.

which can be found in the first two parts. The notes on the processor and programmer may help someone building digital circuits, as the programmer can be used as inputs and outputs and as a pulse generator. The display may be useful to anyone wanting this type of equipment in connection with microprocessor experiments or as a display for RTTY. For the latter a UART will be needed and the Thomson EFCIS data sheets will provide the necessary details. The simplest pulse generator described in *Part V* may come in handy especially if switched capacitors are added to vary the range covered, and some of the notes on filters may be useful if reference is made to the original articles.

Table 11

000	035	007	
	042	074	
	043	062	STA
	044	010	
	045	004	
	046	076	MVIA
	047	016	RST 5.5 Mask
	050	060	SIM
	051	303	JMP
	052	064	
	053	000	
001	006	010	
	007	004	



“... running 20 watts. ...”

The series cannot be taken as an introduction to microprocessors or microprocessor programming, and background information can be found in the books recommended in *Part I* which should help with any problems in understanding the somewhat condensed descriptions given in this article. If the writer can help with any particular problems he will be pleased to try and do so. Although everything has been checked and double checked there is still the possibility that the odd error or two may have crept in and it would be helpful if any of these that are discovered can be pointed out. Assembling an article from numerous notes and diagrams written over a few months and amendments made from time to time can easily cause errors.

Looking back on the series it could be that someone is looking for a programmable memory and a method of programming —

As a final thought, how about someone making a microprocessor controlled Morse key which will produce perfect Morse with perfect spacing? Some sort of first-in first-out memory would be required so that keying can take place at any rate, perhaps with inaccurate timing, but the memory and microprocessor can send the code correctly at any desired speed. One of the single component microprocessors such as the Intel 8048 series is a possibility but, as this device uses a different set of instructions from the 8080A/8085A processors, some interesting development problems may be encountered. The final device count should not be high. It should at least be cheaper and smaller but just as good as a keyboard keyer. The writer may give some thought to this and, if built, the Editor may even be persuaded to publish an article on it!

Table of Values

Fig. 2A

R9A = 47K	IC5A = CD4011
IC4A = 6116	

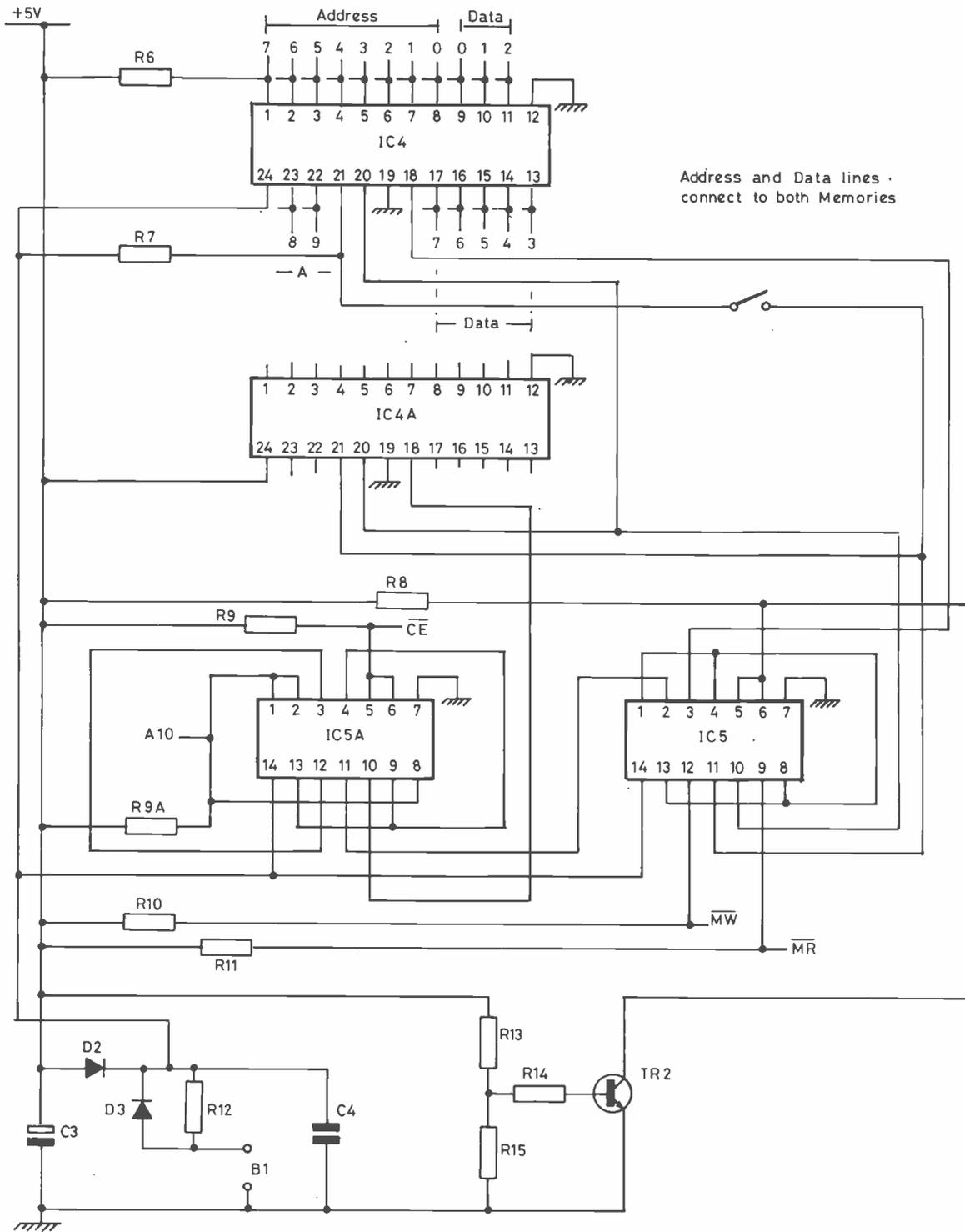


Fig. 2a REVISED MEMORY BOARD CIRCUIT



APPENDIX

In Fig. 1: R2 should connect to pin 7 of IC2.

In Fig. 4: Processor reset, which also clears the display, should connect between pin 36 of IC8 and 0v. A push-to-make switch can be used.

Since writing the series of articles and after a few months of operation a number of tests have been carried out on the decoder. When this was done it was found that data at two of the addresses had changed for some reason which the writer has so far been unable to explain. It may be due to transient interference on the power lines. Should this occur in the program it is possible that the decoder may stop working until the memory is checked and

corrected. In order to avoid any possibility of this happening a second memory board has been built. This separates the program from the read/write memory so that the program cannot be altered when the decoder is in use; a second memory with an additional IC have been added. The memory is much larger than needed but was used because it was to hand and is similar to the one already in use; a much smaller 8-bit wide memory would be used. A switch has been added and this is closed to program the read-only memory. After it has been programmed the switch is opened to isolate the MW line. The revised diagram is shown in Fig. 2A.

Some amendments are needed to the program for the new memory and these are listed in Table 11.



SHORT WAVE LISTENER FEATURE

By Justin Cooper

OFTEN we hear from people who prefer a valve receiver to a transistor type, or *vice versa*, but rarely do we hear from someone who has thought about the whole business of what makes a receiver good, bad, or indifferent. Perhaps we could do a spot of defining, given first that these apply to all types of receiver.

Clearly we want the receiver to be as sensitive as possible, bearing in mind that the *usable* sensitivity is what matters — not much use in being able to copy a 0.1 microvolt signal if there is always tens of microvolts of noise at your shack. Selectivity is the ability of the receiver to separate two close-by signals; it is usually defined by the quality of the IF strip in a superhet receiver and has nothing to do with the parameter with which it is so often confused, namely the bandwidth or tuning rate. This last is a measure of how easy it is to tune the receiver to a given signal by use of the dial knob. While it has now to do with selectivity, the more selectivity you have the better the tuning rate needs to be if you are not to shoot clean over the top of a wanted signal while searching.

Calibration accuracy is not so very important *per se* as long as one has some means of checking, but it is for most of us important to be able to come back accurately on to a given signal, whether by inherent accuracy or by way of a logging scale. Here one should note that there is nothing inherently more accurate in a digital readout, save for the accuracy of the master crystal against which the count operation is done. The latter's frequency will vary quite a bit with temperature and age, and ideally the crystal should live in a suitable oven to keep its temperature constant.

Perhaps the most important parameters of the receiver are related to its behaviour while listening to a small signal in the presence of a nearby much larger one. This comes in two forms. First we consider a signal at the level of the noise floor of the receiver, and then we increase that signal until we note the receiver blocking. The difference between these two we can call the single-tone dynamic range. Secondly, we can consider what happens with two signals entering a linear stage of the receiver. The stage in fact is less than perfect (it isn't *quite* linear!) and we can say that if the two signals are perfectly pure, they will appear with harmonics at the output, caused by this deviation from perfection.

Now, some of these distortion products will lie within the band; for example, if we have two signals at 14030 and 14060 kHz, say, then we will find distortion products around 14000 kHz, on the original frequencies, and at 14090 kHz. Let us sit on one of these distortion frequencies. Starting with the two pure input signals, turn them right down until they are level with the noise floor of the receiver, and note the output level — it is understood they are both all the time at the same level as each other. Listening carefully to the frequency of one of the unwanted outputs as above, wind up the two input signals in step until the spurious signal appears out of the noise; note the level of the input signals when the distortion product is level with the receiver noise floor. The difference between these two levels is the two-tone dynamic range.

While we have applied the argument to a single Class-A stage, clearly it applies to a complete receiver also, and so we may say of a receiver that it has a dynamic range of so many dBs. The greater the dynamic range of the receiver the better it will be when there is QRM around in the way of Big Boys when we are trying to copy Tom Tiddler who is very near the noise level of the receiver.

Finally, gain. In any receiver, we need enough gain to turn the minimum signal the receiver can look at into a usable signal at the loudspeaker or headphones, and we can define the latter as we can measure the former; the difference between them in dB is the gain we need. Extra gain above this we require like a hole in the head! All the surplus gain can do is tend towards the reduction of the dynamic range of the receiver, which is the last thing we want.

All these things apply whether we talk transistor or valve, superhet or direct conversion or TRF. When the early solid-state receivers came along, they were sadly lacking in dynamic range, and it is indeed only within the past five years that it has become normal for a solid-state receiver to be as good as a good valve one in this department. Where the valve receiver falls down badly though, is, and always was, in the matter of *stability*; there are two reasons for this, namely the amount of heat that the thing generates (and the poor design of the cooling!) and the fact that by its very nature the valve receiver is more apt to 'wobble' with the slightest variation.

The Mail

These reflections were brought on by our first letter in the pile, from *T. Morris (Leeds)*, who is as pleased as Punch after changing from his home-brew solid-state double superhet to a Trio 9R-59DS. Sounds as if the home-brew job needs some tickling-up — and it is always a help to be the owner of a receiver of known performance against which one can make comparisons.

Questions from *C. H. Kirk (Leeds)*, who says he would have thought a QSL or similar proof would be required for a score. No, but in general we prefer to have as much detail as may be, as to band, mode, etc., particularly where one is talking about a rare one or a possible phoney. Others will have heard him too, and putting all we get together, we can often determine the status. As to what defines the 'hearing' of a station, all we ask is that you be certain you are receiving him, and not the other end of the QSO; but most people put on their own, more stringent requirements, such as copying both ends of the complete QSO without break. If you are unlucky enough to hook a phoney, and we spot him, out it comes; a red pencil *and* a reserve is always kept for these!

HPX LADDER (All Time Post War)

SWL		PREFIXES	
PHONE ONLY			
		K. Cooke (Cardiff)	762
		J. Dunnett (Prestatyn)	732
B. Hughes (Worcester)	2646	J. Heath (St. Ives, Cambs.)	655
S. Foster (Lincoln)	2304	A. J. Hall (Alvaston)	595
Mrs. R. Smith (Nuneaton)	2322	R. Wooden (Staines)	570
E. W. Robinson (Bury St. Edmunds)	2139	B. Patchett (Sheffield)	531
H. M. Graham (Chesham)	1560	A. Pilkington (Chesterfield)	518
G. W. Raven (London SE3)	1441		
M. Toms (Barkingside)	1400	CW ONLY	
M. Rodgers (Harwood)	1392	E. B. Ward (Ruddington)	1560
Mrs. T. Parry (Blackpool)	1292	J. Goodrick (I.o.W.)	1356
N. Askew (Coventry)	1279	J. M. Dunnett (Prestatyn)	1127
M. Law (Chesterfield)	1268	A. F. Roberts	
N. E. Jennings (Rye)	1120	(Kidderminster)	1117
H. Bale (Cardiff)	1091	H. Scott (Wetherby)	1105
D. J. S. Williams (Wednesbury)	1028	D. J. S. Williams (Romsey)	269
B. A. Payne (Leeds)	1025	R. Fox (Northampton)	276
A. Pyne (Bradford)	959		
Mrs. J. Charles (Colchester)	896	RTTY ONLY	
R. Everitt (Bluntisham)	872	N. E. Jennings (Rye)	364
R. Fox (Northampton)	859	P. Lincoln (Aldershot)	344
P. Lincoln (Aldershot)	762	J. M. Dunnett (Prestatyn)	287

Minimum score for an entry: 200 for CW or RTTY, 500 for Phone. Listings to include only recent claims and to be in accordance with HPX Rules, see p. 26, March issue.

R. Carroll (Worksop) is a very new reporter, and he wants to know about licences for SWL. No, not required; even when one used to have to get a licence for the old 'steam radio' the small print contained a reference to what could be listened to without a licence, and amateur radio was included. The buying of QSL cards is very much a matter of personal choice, although the writer is firmly convinced that no report of any use can be attached to a QSL, for sheer lack of space. However, if you use the Bureau system, you really have to stick to QSL cards or report forms; which brings me to the other matter, of a 'station number' as reader Carroll terms it. This is in fact the individual's membership number of whatever group he belongs to, such as ISWL or RSGB, which are put to use as 'callsigns' for the purposes of the operation of the Bureau system.

Yet more questions, this time from *A. J. Chapman (Newark)* who wonders why that on, say, Twenty, he will often hear a W or whatever, thousands of miles away, and be unable to get even a sniff of the G station he is working. This phenomenon is down to the fact that the G station's signal going out to the DX is the sky-wave, going up into the ionosphere and being refracted, while the ground-wave signal is only travelling a short distance before being attenuated below usefulness by buildings and other obstructions. Therefore there will be a silent zone between the point where the ground wave dies out — say twenty miles away from the transmitter as a round figure — and the first point on the earth's surface where the sky-wave signal can be detected. This blank area is called the 'skip distance'. It is true to say that in the skip zone the signal will in fact be detectable with a good enough aerial and receiver system by way of 'scatter' modes, but this is outside the average amateur station's limits. From the average aerial the first hop may return to earth after about 1000 miles or even less. Europeans are sometimes referred to as shortskip signals in error: the true short-skip situation that sometimes happens is quite unmistakable, when stations as near as fifty miles or so suddenly roar in at high strength and displaying all the sky-wave propagation characteristics.

Another New Chum with lots of questions is *D. B. Shapiro (Manchester)* who firstly wonders where ED9EA goes; in his HPX list or the WPB. ED9 is just a 'special' for EA9; and it's 'Africa' for the purposes of WAC, as also is EA8, unlike the mainland EAs who are very definitely Europe. This is one of the questions most easily answered by reference to Geoff Watts' *Prefix List*. — see his advertisement in any issue of *S.W.M.* As to licensing in Italy, the situation seems to be that the number following the I in the call-sign refers to a call area, rather like USA; I8 for instance covers Campania, Molise, Calabria, and some offshore islands, albeit the offshore islands always have a two-letter prefix such as IC8 covering Capri and nearby islands.

G. Skipton (Rye) is our second reader from that beautiful little port; and not surprisingly we find that he was shot-gunned a little by Norman Jennings, who also took the trouble to 'vet' George's first HPX list with a thick nib! Welcome aboard, George!

Still with the New Boys — the largest new entry for a long time — we have *G. A. Carmichael (Lincoln)* who runs a Realistic DX-302 into an ATU and 33-foot wire for 14 MHz, with vertical dipoles on 21 and 28 MHz.

C. Burrells (Stevenage) wonders a bit about how to put his entry on paper and ends up with a nice layout — go to it Charlie!

S. J. Bedford (Wakefield) is a fairly new recruit to SWL, and says his first list was compiled with the aid of an FR-101 receiver and about 60 feet of wire in the backyard with dreams of towers and aerial wires above the roof line. Climbing seems to be the word — or knowing a climbing type in the local radio club!

The last of our new entries comes in from the *Falkland Islands*, where *S. Marshall* wrote from Mt. Kent. He uses an Army 'Clansman' receiver which is quite effective but lacks lower sideband operation, so below 14 MHz he has problems. Another snag is the aerial, which is just the proverbial bit of wire, suspended from a chunk of four-by-two timber. The 'local QRM' for them is the macho Latin-Americans, but when the band is open for DX they can hear the UK, and W7 and other *exotica*. As

ANNUAL HPX LADDER

Starting date, January 1, 1983

SWL	PREFIXES		
G. Skipton (Rye)	333	T. Kirby (Cheltenham)	221
D. B. Shapiro (Manchester)	319	T. Morris (Leeds)	206
G. A. Carmichael (Lincoln)	282	S. J. Bedford (Wakefield)	202

200 prefixes to have been heard since January 1, 1983 for an entry to be made, in accordance with HPX Rules shown on p. 26, March issue. At a score of 500, transfer to the All-Time listings is automatic.

for VHF, they have a scanning receiver presented by *Lowe Electronics*, which Scott says gives them coverage of all that goes on on that band across the whole group of islands.

Other Letters

An interesting question comes up from *J. Heath (St. Ives, Hunts.)* who wonders why he hasn't heard any TAs, XEs, or COs, when he can hear stations in other nearby countries with ease. A Very Good Question! Probably it is just a matter of *activity*. The TAs aren't all that common, and we're not even sure that the ones who do come on are not 'undercover' ones. As for the XE and CO signals, it is just a matter of searching until you can find one — your J.C. heard a CO on CW a few evenings ago.

D. J. S. Williams (Romsey) refers to a PET computer at work which has a program for use as a Morse tutor — odd, what business computers are used for, isn't it? However, we also get the word that the local chaps are getting at him for a crack at the RAE in December — we must wish him the best of luck with that.

Only a short list from *A. J. Hall (Alvaston)* who lists the reasons as "lack of energy, overwork and two new computers!"

RAE studies are holding lots of SWLs at the moment, as the dread date draws near; added to which *A. Pyne (Bradford)* says he has to keep up his Morse practice. All that having been said, he still has a reasonable size of list for one nearing the 1000 mark.

Mrs. T. Parry (Blackpool) says the OM has gone VHF-mad, and added a 70cm. converter to the existing two-metre one; but he is scratching a bit on the aerial front. On 144 MHz, one evening in February, the Wrotham beacon shot up from S3 to S9 + 20, while the noise level at the same time went up to around S7; what happened? We would hazard a guess on this one that Tina had found a localised lift in conditions due to weather conditions. Perhaps if we knew the date we could tie it up with the events known about from others.

Turning to *Mrs. J. Charles (Colchester)*, she is in for the May RAE, but seems to have been backsliding a bit over the studying . . . however, there is a G4 son coming home at Easter who will be worked hard on for the needful information; and June seems to have the 'examination technique' thing well buttoned up as well. After signing her letter she was going to head out into the garden and hope to glean inspiration from the efforts involved in tackling the spring tidy-up work.

Mrs. R. Smith (Nuneaton) says she is finding it hard going — people keep wanting to be fed and watered! But there are always the times in between the chores, and Ruth still seems to pick up the odd new one regardless.

Spring is in the air at *A. F. Robertson's Kidderminster* home, and so Tony has made time to service the aerials. Most of his listening time was spent on Top Band, looking out for WAB entries, but a session on March 12 showed with some odd Auroral-type signals from several West Coast Ws and 4X4NJ at 2040z.

Talking of Top Band, *B. Ward (Ruddington)* notes one signal down there in his list — OL8CNI — and says he came out unscathed! The old FRG-7 has been replaced by an FRG-7700, plus FRT-7700, in mint condition and this caused Barry to shy away from the books for a few days while he tried out the new toy; but since then it has been a matter of nose to the grindstone in

preparation for the RAE, plus helping the XYL with some decorating. On HPX, Barry wonders about T42AMC — so do we, but he's 'possible' — TO6FQ, who was a special prefix from France, and EA3CRU/GE; just what the suffix means we don't really know but we think he is just a variation of the EA3 tribe. The OD5 that appeared to be OD6 on the following evening is probably just a mis-copying of a somewhat malformed OD5. But as for the prize of the month — BY5IG heard and logged on 14 MHz at about the 'right' time, we have to sadly say we don't know, although we believe he was a phoney.

J. Goodrick (*Newport, I.o.W.*) says it must be 'Mariners of the World' year to judge by the numbers of /MM signals in his list! On a different tack, John notes how the conditions have been falling, and comments that when Ten is open it is odd to hear a signal that is Q5 but not even lifting the S-meter!

A. P. Lincoln (*Aldershot*) says that since he took out a subscription with us he gets his *S.W.M.* sometimes ten days earlier than he used to from the newsagent. Like several others, Peter has been using the *Datong* active antenna on a rotator and says it is quite an improvement over previous aerials, and the directivity is useful. CW and RTTY are now taken care of by way of a CW670 Telereader instead of the MM2001. Peter says he now has the 1983 *Call Books*, and if anyone wants the DX information available in these he can be reached by telephone at most times of the day — 0252 317870.

We come now to the long and interesting letter from H. M. Graham (*Chesham*) whose analysis of conditions is always so helpful, especially as his listening times are so different to the writer's. Maurice notes just how band conditions can vary from day to day, with the MUFs on occasion being such as to only favour N/S working even on 21 MHz. Be that as it may, an all-time new one was collected in PY0SA (St. Peter & St. Paul Rocks), three brand new ones on 7 MHz, and couple of new ones on Top Band.

A couple of new ones are in the log of R. Wooden (*Staines*) in the shape of KL7H in Anchorage, Alaska, and OX3JF in Greenland, the latter heard on Eighty. As Roy says, these two countries must have the smallest amateur radio population relative to their land area, in the world.

N. E. Jennings (*Rye*) enquires after the letter from George Skipton — the answer is a few paragraphs back! — and notes that he has had quite a good month in terms of DX with 5V7HL, ZD8DA, 9U5JM, J28DT, and D44BC, the last-mentioned popping up several times. On a different tack, Norman says he hasn't seen a recent note of the address of the ISWL Hon. Sec. — he is at 88 The Barley Lea, Coventry CV3 1DY.

R. Everitt (*Bluntisham*) passed the December RAE, and says that he didn't go to evening classes, but used the Home Office pamphlet "How to Become a Radio Amateur" for mugging up the licence conditions, plus the RSGB and P.W. books for the technical side. Richard compares our RAE with the way the French do things: they also have multiple-choice exams, but it is done with the help of forty slides shown on a screen, with a tape-recorded statement of the possible answers in parallel — three marks for a right answer, one for a wrong, and no marks for no answer! On the Morse, it is also on tape, but includes punctuation. Still with Morse, Richard used the ZX81 program in the August, 1982, *SHORT WAVE MAGAZINE*, and it has so far got him up to around 14 w.p.m., so he is by-passing the G6 in favour of a full Class-A ticket; and at the time of writing he was playing with an NE555 circuit with which to begin practising sending.

T. Kirby (*Cheltenham*) has been listening to the RS satellites recently, but on the whole SWL-ing has taken a dive with the arrival of G6TTU and the Morse test in view. Aerials are now going up for 'proper' satellite reception, plus a pre-amp, which latter makes all the difference. The aerial question for satellite reception is a bit knotty, as the use of a ground-plane type is fine when the satellite is near the horizon but may result in loss of contact as it goes overhead, when the low horizontal may prove better.

H. Scott (*Wetherby*) still continues booking 'em in, and in parallel keeps a list of USA places heard. This yielded a bit of a surprise recently when Haydn heard the first station from Boston for two years — as he says, maybe amateur radio isn't 'U' in Boston!

As usual, we get just a list from B. F. Hughes of *Worcester* but it is of interest to note how the 'shape' of the list has changed since he moved to Harvington, which looks to be a better spot.

Finally, H. Bale (*Cardiff*) who has a fat 76 new ones to add to a total already over the 1000 mark.

Final Points

On the subject of /MM stations with W calls, several readers have asked what the numeral suffix after the /MM means; this defines the part of the world in which the ship lies at the time of transmitting. There are three Regions: Region 1 covers Europe, Africa, and parts of Russia-in-Europe, Region 2 all the Americas and out into mid-Atlantic and on the other side out into Mid-Pacific, while Region 3 covers Australia, New Zealand, China, India and most of Asia. Thus if a /MM is signing say K1ABC/MM/3 he will be by any standards a DX station, while if he signs /1 he may be in the North Sea!

On a different tack, it was nice this time to read so many letters from new contributors, and to get so many questions; it is the questions and the answering of them that makes much of the pleasure in writing the piece, and we suspect gives others pleasure in the reading — so keep up the good work. However, if you want a personal reply please include an *s.a.e.* But if it can be dealt with in the piece don't ask for a personal reply; that way, J.C. gets at least the odd chance to get on the air himself!

Conclusion

And so another pile of letters bites the dust. Keep them rolling in — the more the merrier — and send them (and your HPX entries, too) to arrive by first post on May 19, addressed to your scribe, "SWL", *SHORT WAVE MAGAZINE*, 34 High Street, Welwyn, Herts. AL6 9EQ. Meanwhile, keep at it, and may your mower never, never, entangle with the remains of the aerial!



Advanced Electronic Applications Inc. of the U.S.A. claim that, for the first time, a simple and really effective "Woodpecker" blanker is available with their WB1-C Moscow Muffler, shown above. The unit is connected into the antenna lead from the transceiver, ahead of any stages of amplification and any filters, and incorporates carrier operated antenna switching and is adjusted by two simple controls. The makers say the for the serious HF operator the WB1-C is a "must", allowing otherwise impossible QSO's to be made. The Moscow Muffler is now available in the U.K., and costs £126 inc. VAT (plus £2.50 post/packing and insurance); it can be obtained from I.C.S. Electronics Ltd., P.O. Box 2, Arundel, West Sussex BN18 0NX. (Tel: 024365-590), or from other leading retailers throughout the country.

THE "WHITFIELD"

SSB/CW/QSK

TRANSCEIVER,

PART III

AN EASY-TO-BUILD, 5 WATTS OUTPUT,
MODERN DESIGN COVERING 160
METRES, 80 METRES, AND 3 - 3.5 MHz

IAN KEYSER, G3ROO

THIS month we complete the receiver circuitry and construction of the receiver sub-module. The VFO section is simple enough and should pose little problem, but the switching for the VFO and RF tuned circuits is a bit more daunting — though with the use of a PCB and *Superglue* it should not be too difficult. For those who wish to avoid this complexity it is recommended that the switching is left out and a single-bander built first, adding the other bands at a later date; it must be pointed out, though, that the holes should be cut out during the initial metalwork stage, as doing it later will be very difficult indeed.

We will cover the circuitry first, and then progress on to the metalwork. The circuit of the complete VFO box is given in Fig. 6. This includes the VFO PCB, with components preceded by '20', and the preselector components preceded by '30'.

The VFO

The VFO itself is the familiar Hartley circuit. In my view it is one of the most simple circuits, though this will no doubt cause a few raised eyebrows! The Hartley and Colpitts are both suitable for wideband use — and that is what we need here as the range of the VFO is 2.3 to 4.5 MHz. (To simplify setting-up I have cheated a little by using C2003, but more of that later.) A Clapp circuit would have been an advantage with its large swamping capacitors which 'cover up' internal capacitance drift in the transistor, but the Clapp is only suitable for frequency range 1.2:1 and so completely unsuitable in this situation.

Q2001 is the VFO transistor and L2001 the inductor; these along with VC2001a and the capacitors on S3001a set the frequency of oscillation. D2001 is the IRT varicap diode which receives its bias from the IRT pot on the front panel. R2001, R2002, C2012 and C2013 form the filter for the IRT bias to ensure that no external RF reaches the diode, and that the oscillator signal across the diode is not radiated from the IRT line. R2007, with R2001, reduces the impedance of the IRT line so as to make the line less susceptible to mains hum and consequential FM of the VFO signal. R2003 and R2004 set the base bias for the VFO transistor, and R2006 and C2006 decouple the collector. The feedback for the emitter circuitry is taken from a tap on the coil. C2005 couples the VFO signal to Q2002 for amplification and 'buffering'. The output from Q2002 is fairly high impedance and so the signal is coupled to Q2003, an emitter follower; this reduces the output impedance and so provides power gain. The emitter load is made up of two presets to enable two independently settable outputs, one for the receiver mixer and the other for the transmitter mixer.

To complete the VFO description we now have to look at the circuitry around S3001a. The requirement for frequency stability in the oscillator is threefold. First, and most important, is mechanical stability; second is loosest possible coupling to the oscillator transistor and, third, the internal mechanical and

Table of Values
Fig. 6

PCB2

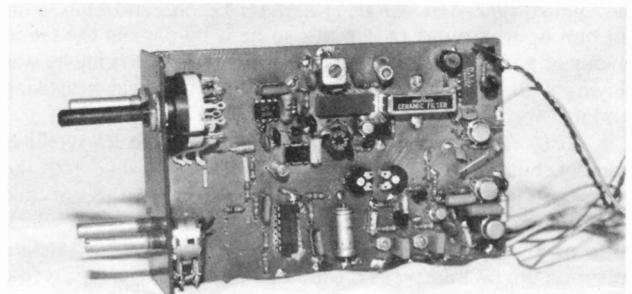
R2001, R2007, R2012 = 10K	C2004, C2006, C2008, C2010,
R2002, R2008 = 100K	C2011 = 0.01 μ F d/c
R2003 = 47K	C2005, C2009 = 0.001 μ F d/c
R2004 = 22K	C2007, C2012, C2013 = 0.1 μ F,
R2005 = 1K5	C280
R2006 = 1K	C2014 = 1 μ F elec.
R2009 = 220R	Q2001 = BF185
R2010 = 3K3	Q2002, Q2003 = BC108 or
R2011 = 22K	similar
RV2001, RV2002 = 2K2 min.	D2001 = Varicap
horizontal	Reg 2001 = 78L06
C2001 = 47pF poly.	L2001 = Toko 10K coil former
C2002 = 6.8pF d/c	with 36 turns, 9t per rank
C2003 = 22pF d/c	tapped at 4t

PCB3

C3001 = 3.3pF cer.	TC3009, TC3015 = 8-90pF plus
C3002 = 15pF cer.	120pF poly
VC3001 = 3 x 360pF air-spaced	TC3012, TC3018 = 8-90pF plus
TC3001, TC3002 = 5-60pF, plus	270pF poly
68pF poly.	T3001, T3002 = KANK3333R,
TC3003 = 8-90pF plus 180pF	Ambit 35-33330
s/m	T3003 = 3t primary, 3 + 3t sec.,
TC3004, TC3005 = 5-60pF,	38 s.w.g. on ferrite bead
plus 180pF poly.	S3001 a, b, c (d used in LPU
TC3006 = 8-90pF plus 82pF plus	unit) = 4-off, 4-pole 3-way
55pF s/m	wafers RS 327-793; shaft RS
TC3007, TC3008, TC3010,	327-894
TC3011, TC3013, TC3014,	
TC3016, TC3017 = 5-60pF	

thermal stability of the components themselves. The first requirement is up to the constructor himself. The second is one of design — and this is why C2003 is switched in parallel with C2002 on the 1.8 to 2.0 MHz range as C2002 is insufficient to maintain oscillation in this range. S3001 (ii) switches capacitors in series with the tuning capacitor to reduce its effective capacitance swing, and S3001a (iii) is used to switch capacitance across the tuned circuit; this sets the HF end of the tuning on each range. It can therefore be seen that we can now set the HF and LF points on each range.

Next we have to cover the input preselector. This comprises two tuned circuits with top coupling, the input and output coupling is by link winding on the two tuned circuits. We require a 'push-pull' output to drive the receiver mixer and as there is not a commercial coil available for this function, T3003 is included to take the low impedance output from the preselector and transform it to push-pull output with a ratio of 1:1:1. This is wound on a small ferrite bead such as is used for threading on wires for decoupling purposes, three turns on the primary and three turns each secondary is sufficient. The same switching arrangements for the



The main PCB. Note the method of mounting the controls.

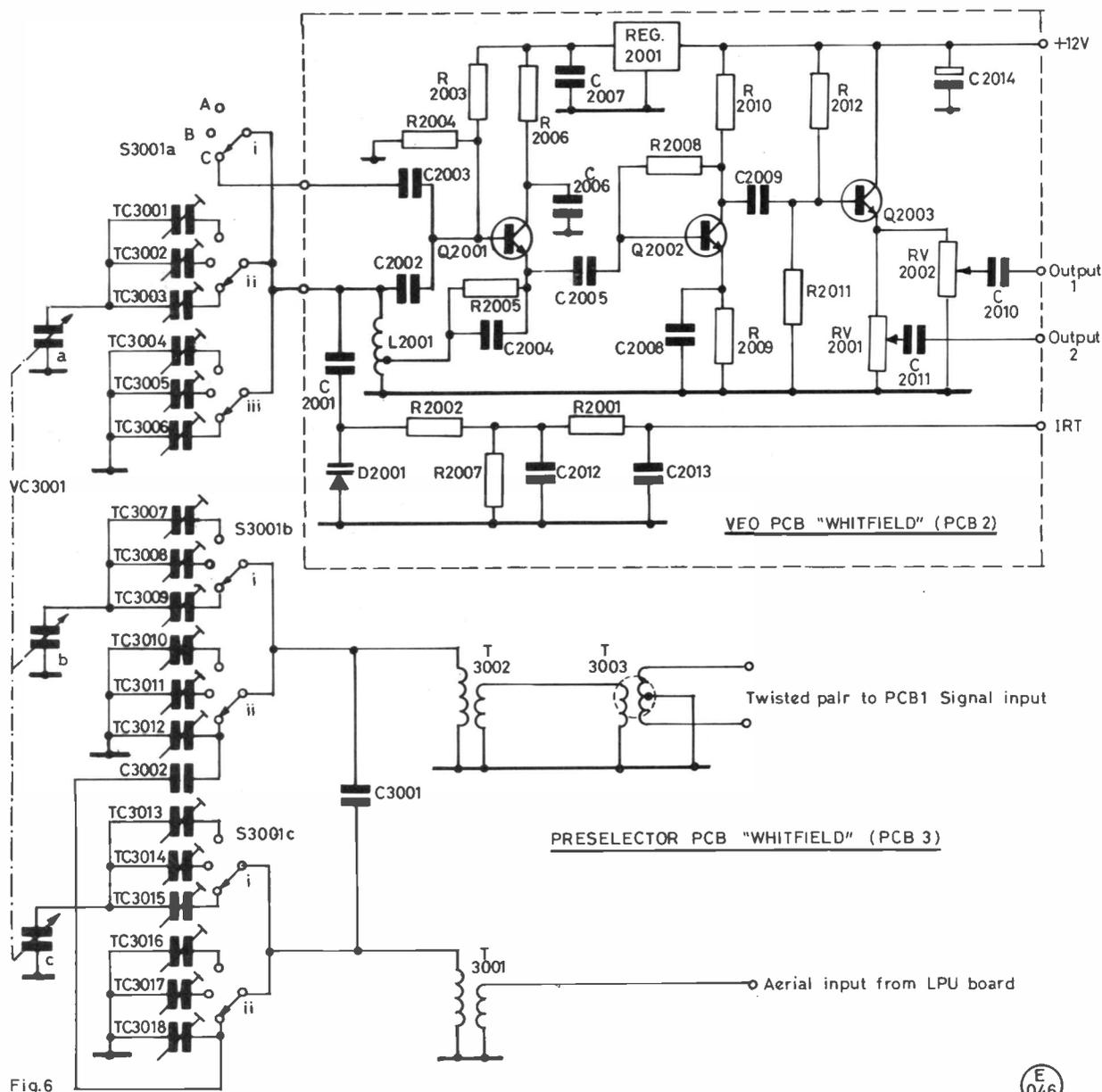


Fig.6

E 046

series and parallel capacitance are used as in the oscillator section to allow maximum flexibility for setting the HF and LF tuning points on each range. C3001 is used for top coupling on the two HF ranges, and on the LF Top Band range an additional capacitance, C3002, is switched in as the reactance of C3001 on this low frequency is too high to allow optimum coupling.

VFO Metalwork

This is the one part of building gear that gets me down! So much so that rigs have remained unfinished after final testing until eventually parts are robbed for other projects. The most important thing about the metalwork of a rig, especially one that

E 047

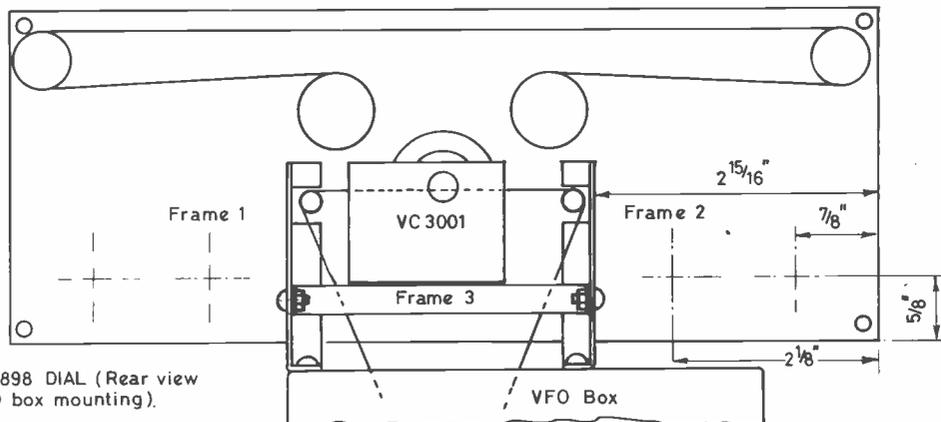


Fig.7 EDDYSTONE 898 DIAL (Rear view showing VFO box mounting).

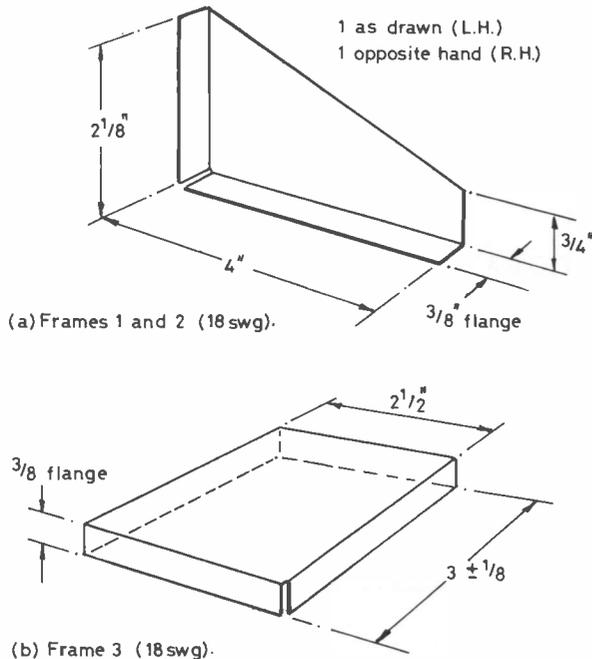


Fig.8 FRAMES 1 2 and 3 FOR "WHITFIELD"

E 048

contains a free running VFO, is that it must *not* be skimped. The finished result depends so much upon rigidity and I feel that it is almost impossible to go 'overboard' in trying to accomplish this end. There is nothing worse than to touch the front panel and have the VFO shift in frequency. To reduce the chance of this I have used the Eddystone 898 dial as the 'back' front panel and mounted the VFO box and tuning capacitor on its rear. Also the main receiver PCB is mounted on the dial plate to make the receiver a self-contained 'module'.

Fig. 7 gives the rear view of the 898 dial assembly and shows the mounting positions of the frames, the dimensions of which are given in Fig. 8; the VFO box dimensions are given in Fig. 9. Firstly fix frame 2 to the 898 dial in the position shown by drilling and tapping holes in the dial plate; the positioning of this frame is fairly important as the switch assembly runs close alongside it. It will be necessary to cut a notch in the frames to accommodate the pillars on the dial gearbox. Next, with the aid of the tuning capacitor, fix frame 3 in the correct position on frame 2 using two 6 BA nuts and bolts. Now fix frame 1 in position. The distance from frame 1 to the edge of the dial is not critical as there is plenty of room on this side. Next cut out the hole in the VFO box to accommodate PCB3 and mount the box as shown in Fig. 8 close

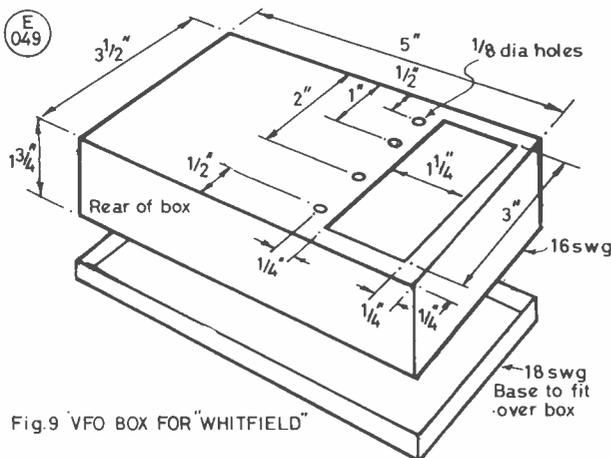
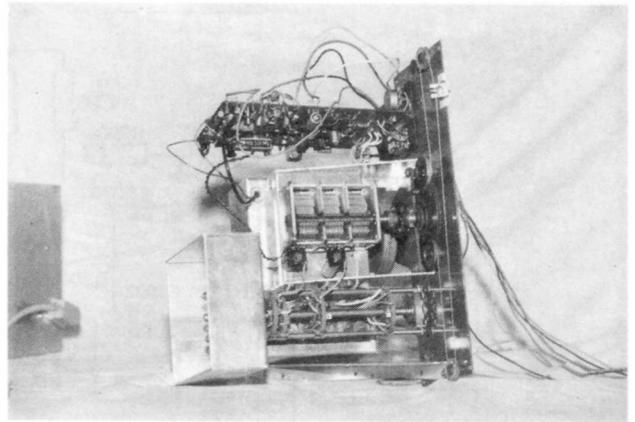


Fig.9 VFO BOX FOR "WHITFIELD"

E 049



Top view of the receiver module. The LPF box is on the rear of the switch.

up to the dial flywheel. Finally, now that the gearbox is protected by the VFO box and frames, carefully drill the dial plate in the positions shown in Fig. 7 for the mounting of the controls.

PCB3 (Fig. 9) should be made and the capacitors mounted as in Fig. 10. Solder thin flexible wires (insulated) into the holes remaining in the PCB, these should be about 2 inches long, and colour coding for the three ranges helps to get them wired correctly. Then, using *Superglue* (you see I wasn't joking when I said that earlier!) fix the PCB in the cut-out in the VFO box keeping TC3001, TC3002 and TC3003 to the front of the box.

E 050

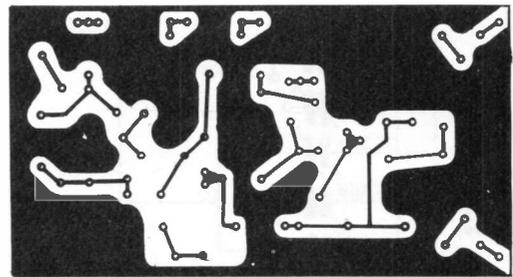


Fig.10 'WHITFIELD' VFO PCB 2 FOIL SIDE (Single sided pcb).

Now comes the worst job in the whole construction! I say that because time has come to wire PCB3 to the switch assembly and although it is not difficult it is *very* fiddly as the wires must be as short as possible *without* being tight. Allow the wire to sag 1/4 inch before soldering to the switch wafer. This is very important as no strain at all must be placed on the wafer to ensure long life of the contacts: a little care now will save a lot of work later if a contact fails prematurely. Having done this you will find that the switch assembly hangs over the rear of the module and that there is a wafer left over. On the rear of this switch is mounted the LPF box and the job of this spare wafer is to switch these filters.

The VFO PCB2 is the next job to be tackled. Having built and checked it, drill three holes in suitable positions on the PCB for mounting; then fix *Radiospares* plastic mounting pillars, cut in half, to the PCB using self-tapping screws. Fix these to the inside of the box along the front edge, allowing clearance, again using *Superglue*. Better adhesion to the metal is gained if the metal is scraped with a screwdriver where the pillars are to be fixed.

Setting-Up

The first thing to do is to set all trimmers and presets to 'half way'. The first tuning operation is to set the VFO to cover the required ranges. These are Range 'A', 2.2 to 2.5 MHz; Range 'B', 3.4 to 4.0 MHz; and Range 'C', 3.9 to 4.5 MHz. Now, with

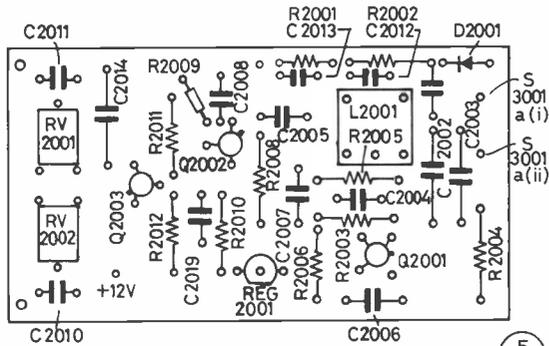
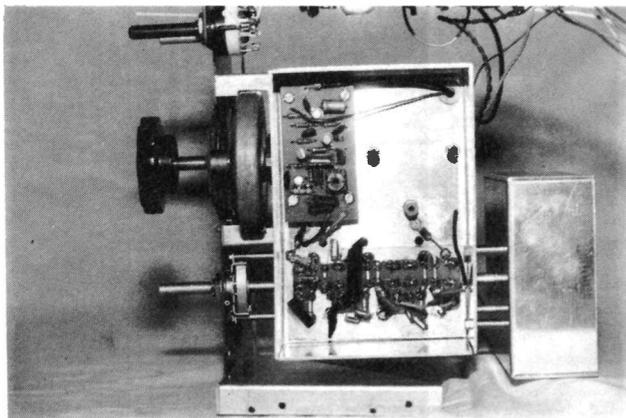


Fig.11 'WHITFIELD' VFO PCB 2 COMPONENT SIDE

VC3001 unmeshed, measure the output frequency from the VFO with either a counter or general coverage receiver, adjust L2001 for a frequency of 2.5 MHz, then fully mesh VC3001 and adjust TC3003 for a frequency of 2.2 MHz. Next open VC3001 and adjust TC3006 to put the output back onto 2.5 MHz — it should not be very far out; do these last two adjustments again and then check that the oscillator covers the range 2.2 to 2.5 MHz. Now seal L2001 lightly with candle wax as that should be the last time that it will need to be touched. Next switch to Range 'B' and adjust TC3005, with TC3001 fully open, for 4.0 MHz; close VC3001 and adjust TC3002 for a frequency of 3.4 MHz. Repeat this several times until the oscillator covers the required range. Switch to Range 'C' and repeat the procedure using TC3001 for the HF end and TC3004 for the LF end until the range covers 3.9 to 4.5 MHz. When this has been completed the VFO is set up.

Now we make the necessary connections to PCB1 and apply power (with fingers crossed). A hiss should be heard from the loudspeaker, if this is not the case almost certainly it is the CIO is not oscillating. The most probable reason is that the capacitors VC1001 and VC1002 are unmeshed, so turn them until the oscillators start. By placing a finger on the input of IC1002 noises should be heard, perhaps even some CW on the marine band. All being well, hang an aerial on the input of T3001 and by tuning across the band signals should be heard. Find a nice steady signal and adjust T1001 for maximum output from the loudspeaker. If a signal generator is available the next part is so much more simple, but by finding suitable signals on the band it is possible to use these. I will explain the procedure using a signal generator as I will be quoting frequency, but if 'off air' signals are used make sure that they are on or near the desired frequency by checking on the general coverage receiver.

First we set up Range 'A'. Inject a signal on 1.975 MHz and tune it on the receiver, adjust T3001 and T3002 for maximum output and then seal them up. Now adjust the generator for 1.825 MHz and tune in the Rx, adjusting TC3012 and TC3018 for



The "Whitfield" VFO box.

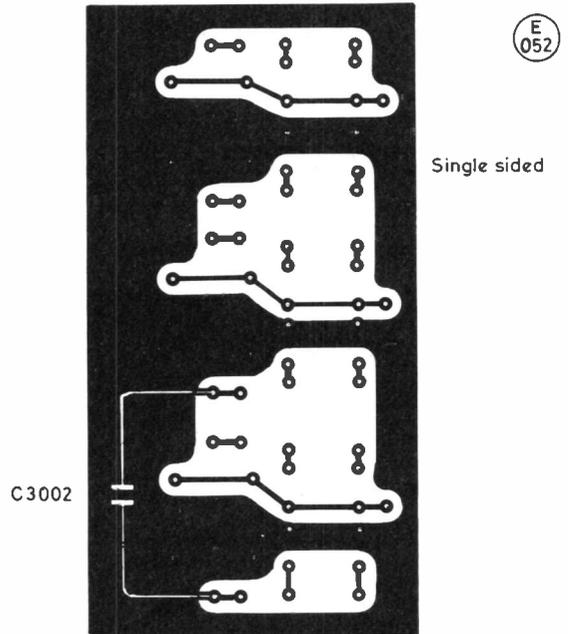


Fig.12 FOIL SIDE PCB3 (C3002 mounted on foil side with all capacitors used in parallel with trimmer capacitors).

maximum output. Re-adjust the generator to 1.975, tune in the signal and peak TC3009 and TC3015; repeat these last two actions until they are 'spot on'.

Now for Range 'B'. Inject a signal on 3.4 MHz and tune it in, adjust TC3008 and TC3014 for maximum output, retune the generator to 3.1 MHz and tune it in, adjust TC3011 and TC3017 for maximum output. Repeat this procedure until no further improvement can be made.

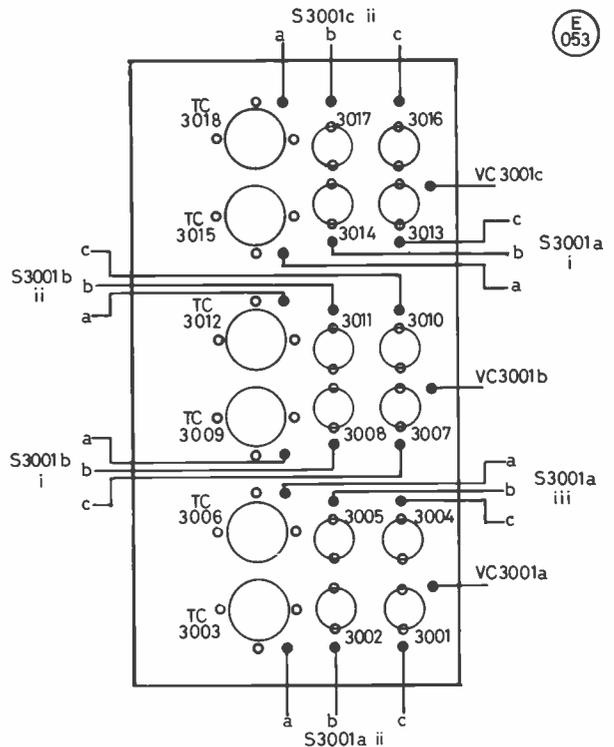


Fig.13 TOPSIDE OF PCB 3 Capacitors used in parallel with trimmers mounted on underside of PCB 3

For Range 'C' carry out the same procedure as for Range 'B' using TC3007 and TC3013 for 3.9 MHz, and TC3010 and TC3016 for 3.6 MHz. This completes the RF tuning of the receiver.

The final tuning procedure is for the CIO. Firstly select the LSB oscillator and then find a strongish signal either off-air or from the signal generator. Tune into it from the HF side and the beat note should decrease in pitch. Do not worry if it does not — that is what we are now going to make it do! Keep slowly tuning in an LF direction until a drop in the signal strength is noticed: *stop*, and adjust VC1002 until the beat note drops to zero Hertz. Flip the tuning HF a few kHz HF and start tuning LF again. The beat note should decrease when the frequency reaches about 200 Hz: weakly but disappear when the frequency reaches about 200 Hz. Now, using the same signal in reverse, set up the USB CIO. This time we tune for from the LF side, tune until the signal strength drops off and set VC1001 for zero beat.

Having done this the receiver should be fully tuned up and it

only remains necessary to set the levels of the CIO and VFO. Tune into a weakish signal, turn RV1002 to zero and the signal should disappear. Now increase RV1002: the signal will reappear and slowly build in strength as the control is rotated. There will come a point where the increase suddenly slows down and this is where the setting should remain. The same procedure is carried out for the VFO using whichever output is used for the receiver.

That completes the receiver section, next time we will cover the transmitter circuit.

to be continued

Note: all the metalwork for the "Whitfield" can be purchased from *H. L. Smith*, 287-289 Edgware Road, London W.2, for around £15.00. This price includes the case but not the drilling, of which there is not a lot to do.

OPERATING THE "CQ" WORLDWIDE CW CONTEST FROM ALDERNEY, CHANNEL ISLANDS

N. S. CAWTHORNE, G3TXF

The view from the roof of the hotel was straight out over the sea from southwest through northwest, encompassing the two most important directions for HF contests, namely NW to the U.S.A. and NNE to Japan. Even in the directions that were not directly overlooking the sea, the smallness of the island ensured that there would be good HF performance.

Planning

As with any venture, planning is particularly important for a successful DX-pedition. Since the journey to Alderney was to be by air, we had to plan in great detail the packing beforehand in order not to omit anything that was vital to the operation and not to take anything that would unnecessarily add to the already large Excess Baggage surcharge that would have to be paid.

Initial planning started in earnest about six weeks before each of the visits. Checklists were drawn up of the equipment to be taken. Cables, terminations or connectors that looked in any way to be 'dodgy' were remade. Dipoles were accurately cut and neatly rolled-up. Lengths of coax cable were individually labelled with their length and purpose. (Decent sized HF coax begins to get very bulky, particularly when you need about 450 feet of it!). Final detailed checklists covered everything from spare PA tubes to pencil sharpeners. In spite of all these checklists, we still managed to leave behind two important items on the second visit: a



Ian, GW3WVG, searching the bands for another multiplier! Band multiplier check-sheets are seen pinned to the table by the antenna selector switch.

THE last full weekend of November is an important date in the calendar for HF CW Contest operators the world over — it is the occasion of the annual CQ Worldwide CW Contest. The CQ WW CQ Contest generates more CW activity on the HF bands than any other international CW Contest. For the past two years small scale DX-peditions have been organised to Alderney specifically to take part in the CQ WW CW Contests. Calls used were (1981) GU3SXW and (1982) GU3TXF. The following notes and photographs describe some of the highlights as well as some of the problems involved in organising such an HF Contest DX-pedition.

Alderney

The immediate attraction of Alderney as an HF contest location is the GU prefix, which ensures plenty of interest from other contest stations particularly if there are only a very few, or no other, GU stations active during the contest. For UK county chasers and WAB'ers, Alderney is also a rarity on HF; a glance at the *Callbook* shows that there are only two or three Class-A licencees permanently on Alderney.

The further attraction of Alderney as an HF contest location is its small size (about 3 miles long by 1 mile wide); any QTH on the island is never very far from the sea. For our two visits we stayed at one of the hotels on the island — this made an ideal QTH. The Belle Vue Hotel offered not only what its name suggests, but also a large flat roof which made antenna erection relatively easy.

compass to set the beam heading (you cannot rely on using the sun or North Star from Alderney at the end of November!) and a multimeter. Cable continuity checks therefore had to be made using the classic "touch bulb and battery" method — not the ideal on a cold windswept roof in a Force 10 gale!

The Journey

The only practical way of travelling quickly to Alderney in winter is by air, and Aurigny-Air fly small propeller aircraft from Southampton to the island. The flight lasts about 45 minutes and can be pretty bumpy. As we were taking everything with us, the Excess Baggage surcharge became a major expense of the trip. In 1982 we checked in with about 250 Kg of baggage — the equivalent of about 12 large suitcases, fully packed. Several loads of brussel sprouts that were also due to be flown to Alderney on the same flight as us had to be unloaded to make room for the radio gear that just had to arrive in time for the Contest!

The Station

On both visits we operated in the multi-single category of the Contest, *i.e.* more than one operator, but working with a "single transmitter." We took two complete HF stations so as to be sure that we could remain on the air even if one station failed; the standby station could also act as a spotting station on a different band to the main station. The present rules of the CQ WW Contest allow a spotting station to work multipliers on a second band while the main station is active on another band, subject to a ten-minute rule. To be competitive within this category even a "single transmitter" entry must have sufficient flexibility to be able to operate on more than one band under particular circumstances.

The proprietors of the hotel kindly allowed us the use of a number of rooms in the hotel, so we were able to set up the operating station in a room on its own. Both stations were set up side-by-side so as to allow easy communication between operators. This close positioning of the stations, as well as the close proximity of the antennas on the roof, did generate co-interference problems between the stations, and the spotting station was not able to operate as effectively as was hoped. During the second contest visit, one transmitter did fail, but by having a second full standby station no time nor any QSO's were lost. For the first visit we used the single driven-element from a triband beam as, in effect, a single triband dipole antenna for the HF bands. For the 1982 visit we installed a three-element triband beam with rotator which made a considerable difference to our signal. As seen from the photograph the beam was not very high



Nigel, G3TXF, with some of the 250 Kg. of luggage that was flown to Alderney for the Contest. Despite the use of numerous checklists, one or two minor items still got left behind!

off the roof, but this was more than compensated for by the excellence of the hotel as an HF QTH. There was a 150-ft. drop from the hotel to the sea.

For the LF bands, single band wire dipoles were used on each of 40, 80 and 160m. The relative confinement of the roof space meant that the LF antennas were all electrically very close to one another, which was the cause of much of the difficulty in achieving fully effective spotting station facilities.

The Contest

The CQ WW CW Contest lasts 48 hours and multi-operator stations must plan to be active throughout the full period if it is intended to make a reasonable score. In 1981 on the first visit, with just two operators (G3SXW and G3TXF) it was found impossible to be active on the air for the full 48 hours. Any antenna work that needed doing on the roof in the middle of the night, with the ever present gales blowing, was only sensibly undertaken with both operators involved (leaving no-one other than the memory-keyer to operate the station!). However on the second visit we were joined by Ian, GW3WVG, which eased the problem of continuous station manning.

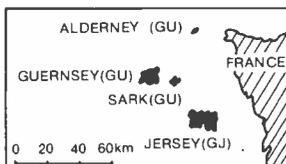
Fig. 1 shows the hourly QSO rates achieved throughout the Contest. The highest QSO rates were 118/hour (1981), and 130/hour (1982). The average hourly QSO rates throughout the 48 hour period of the contest were 68.9/hour (1981) and 72.7/hour (1982) — or the equivalent of one QSO every 52 seconds (1981) and one QSO every 50 seconds (1982).

Although it is usually planned that every operator takes plenty of rest before the Contest starts, in practice we have found that the

ALDERNEY, CHANNEL ISLANDS
1982 CQ WW CW CONTEST DX-PEDITION

GU3TXF

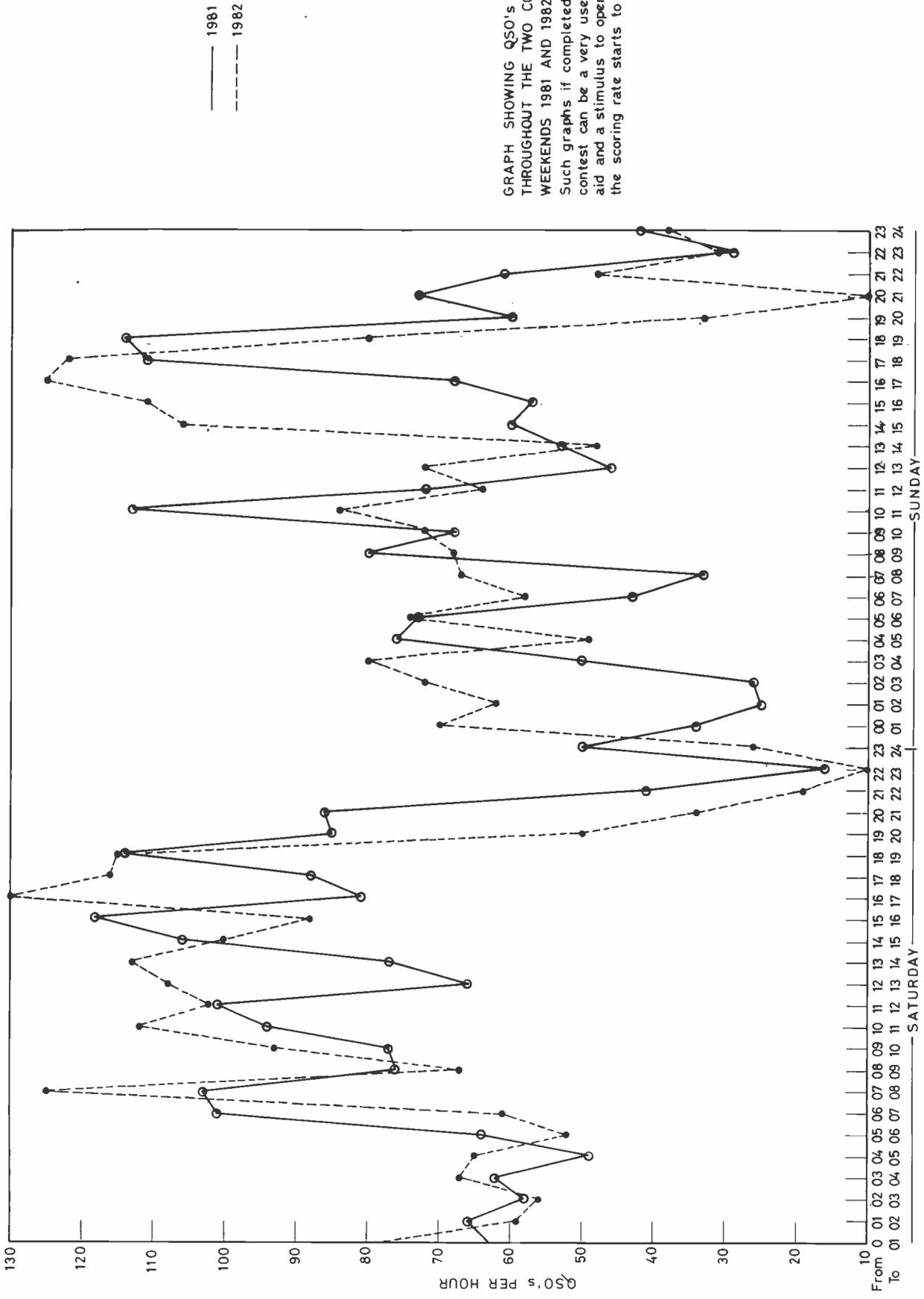
Operators: G3SXW Roger FOC 847
G3TXF Nigel FOC 1266
GW3WVG Ian



Radio	
Date 27 28 November 1982	
GMT	MHz
Two Way CW	RST 59914
100% QSL Via G3TXF Nigel Cawthorne Holt Cottage Kingston Hill, Kingston-upon-Thames Surrey, KT2 7JH England	
PSE/TNX QSL	
See you again soon in another Contest!	
73 de	

QSL's for both GU3SXW (1981) and GU3TXF (1982) for all QSO's made in the CQ WW Contest were despatched via the RSGB Bureau. Including QSO's made prior to the Contests, this totalled some 7,000 QSL's!

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GRAPH SHOWING QSO'S PER HOUR THROUGHOUT THE TWO CONTEST WEEKENDS 1981 AND 1982. Such graphs if completed during the contest can be a very useful operating aid and a stimulus to operators when the scoring rate starts to fall.

last few hours leading up to the start of the Contest are filled with last minute preparations and tidying-up rather than relaxing! Also the excitement of the build-up to the start of the Contest makes it hard to rest and relax just before the beginning.

During the Contest with three operators, the ideal operating combination was that there would be one operator on the main station and working continuously on a main band, with the second operator spotting for multipliers on the other bands on the standby station. The third operator would be fully occupied keeping the various operating check-logs, graphs and computation tables up-to-date. Operators would rotate according to the prevailing conditions. The standby station could immediately take over as the main station, which made for rapid band changing.

Recording Progress During the Contest

Throughout the Contest attempts were made to keep the operating records as up-to-date as possible. These included tabular analyses of "QSO's per hour", "QSO points per hour" as well as "points and multipliers per band". Comparative performance with the previous year was continuously checked by means of the "QSO's per hour graph", which was completed hourly. By using different coloured pens a direct visual comparison could be made between one year's performance and the next. Red was used to show where QSO's/hour had fallen relative to the previous year and blue was used where the QSO's/hour exceeded the previous year. This type of contest operating aid helps to keep enthusiasm going particularly during the slack hours when operators are getting tired and every band seems to be dead or very slow.

The Log

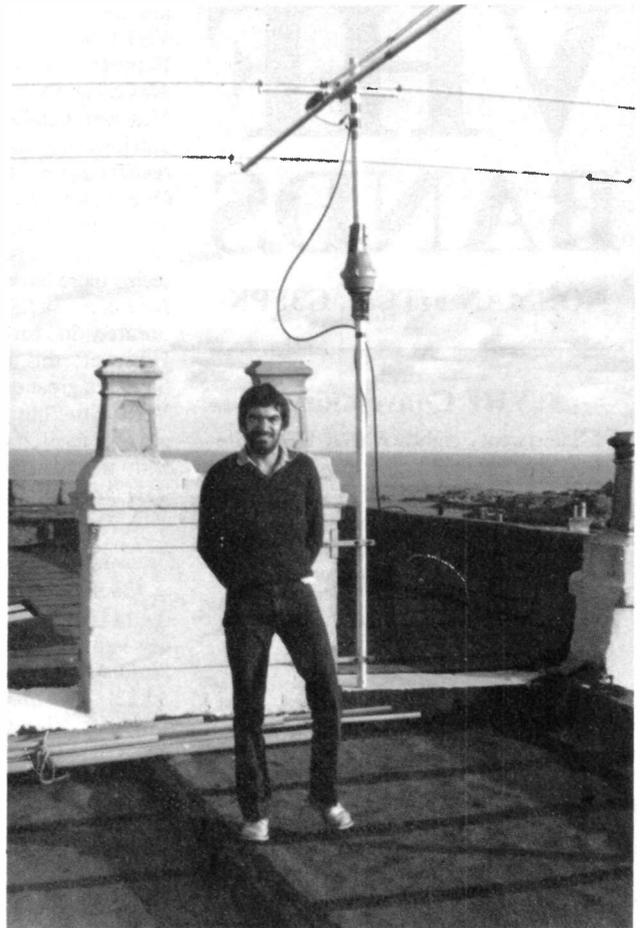
As many man-hours, if not more, are spent on checking and cross-checking the logs after the Contest as in operating the Contest itself. The first check is to eliminate all the duplicate contacts. The only really effective manual method of doing this laborious task is to draw up band-by-band QSO analysis sheets. The use of separate QSO analysis sheets for U.S. stations and "rest of the world," can make it a lot easier for checking.

Having thoroughly cross-checked each of the band logs to fully eliminate all duplicate QSO's, a careful check is made of all the multiplier QSO's.

Multiplier totals have a dramatic effect on the final score. It is as equally important to check that no multiplier has been missed as it is to check that all the claimed multipliers are correct. The CQ WW CW Contest uses DXCC countries and the CQ Zones as



Roger, G3SXW (left) and Ian, GW3WVG, operating GU3TXF during the 1982 CQ WW CW Contest from Alderney. One operator was working the pile-up on one band, while the other was chasing multipliers on other bands



Ian, GW3WVG, with the triband beam on the roof of the hotel. The clear take-off to the north over the sea is in the background. LF antennas were supported by a 24-ft. pole lashed to another chimney stack.

multipliers. (To the normal ARRL DXCC countries must also be added the WAE countries of UN1, GM-Shetland and IT9; these are not normally considered as DXCC countries). The time taken to fully cross-check the log and prepare the log-entry can take about a month of intermittent work after the Contest itself!

QSL's and Conclusion

QSL's have been despatched by the RSGB Bureau for all QSO's made during the two visits to Alderney. It is hoped that the receipt of these Alderney QSL's will bring some pleasure to the recipients, whether it is a first QSO with Alderney, a new country or just another piece of pasteboard on the shoebox! In the 96 hours of the two Contest weekends on Alderney we made a total of 6,798 QSO's: the equivalent of 70 QSO's per hour over four days of non-stop CW contesting!

No matter where our scores come in the results tables, we shall have two great weekends devoted entirely to operating the CQ WW CW Contest from a DX location not very far from home!

Finally, we would like to thank The States Telecommunications Board of Guernsey; it is perhaps worth reminding intending visitors to GU that they should first advise the STB in Guernsey of their proposed visit. We would like also to thank the proprietors of the Belle Vue Hotel, Alderney — for allowing us to clamber over their roof at all hours of the day and night! — and the local amateurs that we met on Alderney: Stan GU3EJL, Colin GU3EIG, and Tony GU3LPV.

VHF BANDS

NORMAN FITCH, G3FPK

VHF Convention

THE twenty-eighth *RSGB VHF Convention* held on March 26 at Sandown Park Racecourse was a great success with an attendance of just under 1,600. At times, the large hall seemed quite crowded and the traders seemed to be doing a brisk business. Typical was *Randam Electronics*, whose Malcolm Andrew, G8NRP, spoke of the large number of 23cm. antennas sold. *MuTek Limited* had their new, high performance masthead 144 MHz preamplifier on display. This uses an MGF1200 *Gasfet* in a "noiseless" negative feedback circuit. The claimed performance includes a noise figure of 0.9 dB or better, a gain of 13 dB, input and output third order intercepts of +14 and +27 dBm respectively and a power handling capability up to one kilowatt in SSB mode. It is housed in a waterproof polycarbonate box with a breathing hole and has female "N" connectors. The *gfba 144e* comes complete with a control sequencer.

The RSGB Bookstall was very busy and the new, fourth edition of the *VHF UHF Manual* made its debut; see the review in this issue. Another new volume was a large A4 size *VHF/UHF Compendium* written by a team of German amateur radio authors, two of whom were at the Convention. The Equipment Test Facility, operated by Don Hamilton, G8DON, featured thousands of pounds-worth of *Hewlett-Packard* gear and was a welcome inclusion. Clive Penna, G3POI, took along his home made MGF1200 mast head pre-amp. "... thrown together on a bit of bent brass ..." and was very satisfied to find the *n.f.* was 0.68 dB. The usual wide range of components and equipment was on sale from the numerous traders and it seems that a respectable volume of business was transacted.

The afternoon lectures were well attended. Your scribe went to the Field Aligned Scatter Propagation one delivered by Serge Canivenc, F8SH. It must be very difficult for anyone to deliver a lecture on a very complicated subject in a foreign language, more particularly in this case when there was so much to get through in the limited time. A follow-up paper was promised.

The day ended with the Social Evening

attended by over seventy people. Various VHF trophies were presented by Mr. Don Baptiste, President of the *RSGB*. The *Magazine* was represented by Advertising Manager Charles Forsyth, and G3FPK, and it was a great pleasure to meet so many readers during the day and in the evening. Once again, this event has proved to be a great success and the venue, excellent — easy to get to and no parking hassles. It seems there have been suggestions that the *National VHF Convention* be incorporated in future *N.E.C.* exhibitions. However, this is unthinkable; after all, there is a great demand for a London area VHF gathering and, as the present event pays for itself, it must be retained, together with the Scottish, Welsh and Midlands VHF conventions.

Awards News

Jon Stow, G4MCU, the 20th member of the 144 MHz QTH Squares Century Club, was issued with his "125 sticker" on April 8 and now has 131 squares confirmed from AL23f. Two more readers have joined the 144 MHz VHF Century Club. Certificate no. 355 was issued on March 11 to Neil Sanderson, GM8GFF, from Edinburgh who was first licensed in 1972. His first station consisted of a *Pye* base station Tx, a converter and R107 Rx and an 8-ele. *Yagi* in the loft. By 1975, a *Belcom* Liner 2 was in use with an external, rotatable 10-ele. *Yagi*, the next up-grade being a *Yaesu* FT-290 acquired in Sept. 1981. A year ago, a 40w amplifier was added and the antenna changed to a 9-ele. *Tonna Yagi* at 35ft. The *a.s.l.* is 500ft. Future plans include a masthead preamp., a bit more power, MS work, 70cm. operation and a Class "A" licence.

Ted King, G6KYM, from Sidcup in Kent, was awarded Certificate no. 356 on April 11. After some years as an *s.w.l.*, Ted got his licence in August 1982. Since then he has devoted all his time to 2m. SSB using an *Icom* IC-290E and 4-ele. *Quad* antenna. To date, he has worked 10 countries and 47 counties.

Beacon Notes

From Paul Johnson, ZS1BR, comes information on a new 6m. beacon at Piketberg in Cape Province in the Republic of South Africa. The exact location is at Aasvöelskop. 807m. *a.s.l.*, at 32.91583°S and 18.73889°E. The QRG is 50.945 MHz, the callsign ZS1SIX and the power 16w to a ground plane antenna. The message, from a 256 × 4 bit *PROM*, is alternatively in FSK and FM modes, the latter by a 1 kHz keyed tone, and sends:—"CQ DE ZS1SIX QTH PIKETBERG SA FSK MODE PSE QSL TO ZS1CT 73," the following sequence being similar except for "... Piketberg RSA FM mode ...". Reception reports to ZS1CT at the Cape Town branch of the SARL, P.O. Box 5100, Cape Town 8000, Republic of

South Africa.

The RSGB is seeking permission to operate a 50 MHz beacon from Headquarters with the callsign GB3NHQ. Initially it would be QRV outside TV hours, but next year continuous operation is envisaged.

A new beacon is operating from Norden, West Germany, its prime purpose being to give *auroral* information. The callsign in DK0WCY and the QRG is 10.144 MHz in the new, 30m. HF band. It has been received at G3FPK sending:—"DE DK0WCY BEACON QTH NORDEN/DN37G RST TO DK2ZF." When *auroral* propagation on VHF is observed in northern Germany, the beacon will send an appropriate message switched on by DK2ZF or his wife. Later, it is planned to use a magnetometer to measure the geomagnetic field activity, calculate the "K" figures and transmit them continuously. This data has to be in A1A form and 20 seconds dashes will indicate no *Ar* observed or expected, while 10s. ones will mean either an *Ar* is in progress or expected. DK2ZF is Rolf Niefind, and his telephone number, from the U.K., is:— 010 4931 15884. This beacon project is part of the *DARC's* contribution to the *World Communications Year, 1983*. DK0WCY is licensed to operate between 10.140 and 10.145 MHz as it may have to QSY from 144 if primary services are interfered with.

DX Notes

The *HADRABS* group plan to operate again from Andorra, C3, between July 16 and 24 on at least 144 and 432 MHz running 400w. The previous call of C31XV has been reissued and another, possibly C31YR, is awaited. Requests for skeds. to Robin Lucas, G8APZ, at 84 Woodman Road, Brentwood, Essex. A Dutch group plans Liechtenstein activity on June 10–12, between 0900 and 2000 GMT. The CW QRGs are 144.065 and 432.065 MHz, the SSB ones, 144.265 and 132.265 MHz. After 2000, they will be on the HF bands. The five calls are:— PA3BXM (Peter); PA3CII (John); PB0ACG (Theo); PA3BGI (Huub) and Piet van den Bos, PA3BZO, who sent the information. All will sign their own calls —/HB0 and QSLs should go *via* the Dutch QSL bureau. MS operation was not mentioned, by the way.

Chris Easton, G8TFI, Tony Collett, G4NBS, and a few others are planning a trip to southwest Scotland from July 23 through August 6, taking gear for 4m., 2m., 70cm., and 23cm. of "contest type." Dumfries and Galloway Region is "definitely favourite" with XP and WQ squares too, time and weather permitting.

Satellite News

Russell Coward, G6HRI, (Blackpool) has been working the usual Europeans on the Russian satellites on SSB and notes

QSOs with UA9FDZ and UR2RK1 (MT02e) in late Feb. via RS-6; UB5VEP on Mar. 10 via RS-8 and KA0JMK in Kansas on Mar. 31 via RS-6, orbit no. 5692.

At the AMSAT-UK Annual General Meeting on Apr. 9, the 1982 Committee was re-elected to serve another year. The Chairman, Dr. Arthur Gee, G2UK, spoke of considerable progress in spite of the setback of the loss of the *Phase 3A* satellite. An increasing proportion of new members were not so much amateur radio orientated as computer buffs and this was posing some problems. A new, draft Constitution was thoroughly discussed, slightly amended and ratified by members present.

Dr. Martin Sweeting, G3YJO, gave a detailed account of the events leading to the regaining of command of *UOSAT* by the amateur radio team at the *Stanford Research Institute* in California. To commemorate this success, a large, illuminated address had been prepared for presentation to the *SRI* team at a suitable occasion. Martin paid tribute to the prior efforts of Dave Olean, K1WHS, in Maine to try to "rescue" *UOSAT* with his formidable *E-M-E* station.

Martin reported that repeated efforts to fully deploy the satellite's gravity gradient boom had been thwarted due to a cable fouling something or other. The received optical quality from the on-board charged coupled device "camera" had been disappointing and some image enhancing was necessary to get meaningful pictures. The 2.3 and 10 GHz beacons worked well and the HF beacons will be activated even though the boom might not be fully extended, but that the 7 MHz signal would be weaker than planned.

Looking much further ahead, Martin mentioned a "private" N.A.S.A. type organisation with which his team was in contact to explore future, "cheap" amateur satellite launches via the American *Space Shuttle*. The newish idea of *Packet Radio*, or *PACSAT*, was touched upon. Jack Ward, G4JJ, reported that *Oscar 8's* batteries got very hot at times, so its operating schedule has been altered. Telemetry reports are needed from 0-8's beacons on 29.402 and 435.095 MHz and Jack said that the short wave listeners could assist here by recording this data and sending it to him.

A number of observers have heard unusual telemetry around 29.401 MHz recently. At G3FPK on Apr. 5 at 1900, for example, the figures "5015" were repeated 15 times, followed by "55" and continuous repeats of this performance. The exact QRG was 29.4006 MHz and it is suggested that this is meaningless telemetry from the old *RS-1* Soviet amateur satellite.

The *Phase 3B* satellite has been completed in Germany and was due to be taken to the U.S.A. on Apr. 12, and



The neat VHF station of Frank McCarthy, G16EYO, in Bally Crummy, Co. Armagh. The "prime mover" is a *Drake TR-7* HF transceiver driving a 2m. transverter with BF900 RF and mixer stages. An 8874 PA drives four *Cushcraft 214-B* Yagis, with elevation control, at a height of 60ft. and fed with *Andrews Heliac* cable. A modified *SSB Electronics* masthead preamplifier with a BF981 is used. The station has proven E-M-E capability and K1WHS in Maine was worked on Feb. 28 this year for a claimed "first" Ireland/U.S.A. 2m. QSO via the Moon. That's Frank in the foreground, holding an Astro compass and the chap operating the *Vibroplex* key is James Finnegan, G14FFL.

shortly thereafter to Kourou in French Guiana. The launch date was June 3, but there could be another slippage. Circular polarization is essential for this satellite as linear polarization will result in a 2 Hz spin modulation effect. *AMSAT-UK* has Home Office permission to broadcast news bulletins over the special service channels on 3B, the first time this facility has been granted to an organization of this kind. Six volunteers with reliable 435 MHz transmitting equipment are sought to send these European bulletins. 1,000 watts e.r.p. capability would be adequate. Interested readers should contact G3AAJ at *AMSAT-UK*, London E12 5EQ. (Phone: 01-989 6741).

Six Metres

Paul Turner, G4IJE, (Essex) has reported that the 6m./2m. crossband MS QSO with CT1WW (WB) on Mar. 5 was 100% successful. Paul now has weekly MS skeds with GM3WOJ and GM3WCS. Crossband QSOs have been conducted with DK1PZ on Mar. 9, who got an 11s. burst from Paul; with DJ5MS who was using a 20m. dipole antenna for reception and which brought 10b. and 12p., and with DL3MBG (GI), completed in two hours. Two MS back scatter QSOs have been completed with G4BPY on SSB on Mar. 12 and 19, one completed in 20 mins. A back scatter test was successful with GM3WCS on Mar. 24.

Dave Lewis, GW4HBK, (Gwent) has worked nine of the now 38 6m. operators and has heard a few more. He complains of QRM as everyone seems to operate within a few kilohertz of 50.1 MHz! Pierre Pasteur, HB9QQ (EH45e) is keen to

operate crossband MS on 6m. and 4m. with himself on either 2m. or 10m. He suggests arranging such tests via the 20m. VHF net (14.345 MHz) or via 2m. in good tropo. openings.

Four Metres

Syd Harden, G2AX1, (Hants.) caught the Aurora of Mar. 12 and worked GM4DIJ (Lothian) and GM4IGS (Strathclyde). Tim Raven, G4ARI, (Leics.) worked his 5th 1983 country with GW6PZ/P (Clwyd) on Mar. 20. Dave Thorpe, G4FKI, moved to Flitwick in Bedfordshire in Nov. 1982 and has got going again. On 4m. he is just using a dipole in the loft. There are three other amateurs in his road!

Dave Robinson, G4FRE, (Suffolk) made his first non-G QSOs in the Mar. 12 *Ar* with GMs 3WCS and 4DIJ and on tropo., the next day, GD2HDZ was no. 3. The 4m. antenna was due to come off in April to make way for 23cm. and 13cm. antennas. Arthur Breese, GD2HDZ, (sorry for GD3HDZ in last month's "squares," OM) was QRV in the Mar. 13 leg of the *Cumulatives* getting across to G4ODA (Lincs.), G4FXW (S. Yorks.) and G4FRE (Suffolk). GW4HBK reports good conditions at the beginning of March, but low activity. Dave heard beacon EI4RF at 1320 on Mar. 2 in the *Ar*, "... but no QSOs in the log." He has received a reception report from SM6PU on his tropo. signals last Sept. 14. The irony was that, although he was calling "CQ" for 15 mins., nobody answered! From Penzance in Cornwall, Simon, G4PEM, writes that he is now QRV on the band having got his transverter working.

ANNUAL VHF/UHF TABLE

January to December 1983

Station	FOUR METRES		TWO METRES		70 CENTIMETRES		23 CENTIMETRES		TOTAL Points
	Countries	Countries	Countries	Countries	Countries	Countries	Countries	Countries	
G3UVR	31	6	62	22	45	10	—	—	176
G8TFI	—	—	52	13	47	14	8	1	135
G2AXI	24	3	51	14	33	8	6	2	133
G3BW	15	5	43	10	24	5	—	—	102
G4ARI	15	2	64	14	1	1	—	—	97
G4NBS	12	1	28	8	33	11	—	—	93
G4MUT	10	2	39	11	22	6	—	—	90
G8ULU	—	—	36	12	27	9	4	1	89
G6HRI	—	—	53	9	21	6	—	—	89
G4FRE	26	3	6	2	37	11	2	1	85
G6DER	—	—	48	8	24	5	—	—	85
G6ECM	—	—	60	19	—	—	—	—	79
GD2HDZ	21	3	19	8	17	6	—	—	74
G3FPK	—	—	59	15	—	—	—	—	74
G8PNN	—	—	24	10	24	8	3	4	73
G4ROA	—	—	26	6	22	7	6	3	70
G8FMK	—	—	18	4	18	6	20	4	70
G3PBV	2	1	20	13	19	9	5	3	69
G8KAX	—	—	17	8	35	8	—	—	68
GW6JDK	—	—	48	14	—	—	—	—	62
G4DEZ	—	—	39	22	—	—	—	—	61
G3FIJ	17	1	23	9	6	1	—	—	57
G8RWG	—	—	42	8	—	—	—	—	50
G8XTJ	—	—	36	7	—	—	—	—	43
G6TTU	—	—	35	6	—	—	—	—	41
G6HDD	—	—	29	10	—	—	—	—	39
G4NRG	4	1	16	7	3	1	—	—	32
G4FKI	7	1	20	2	1	1	—	—	32
GM4CXP	—	—	18	12	—	—	—	—	30
GU4HUY	—	—	17	5	—	—	—	—	22
GW4HBK	18	3	—	—	—	—	—	—	21
G2DHV	4	1	2	1	3	1	—	—	12

Three bands only count for points. Non-scoring figures in italics.

Two Metres

Prompted by GD2HDZ, Bill Hodgson, G3BW, took up the pen and advised of his VHF activity thus far in 1983. The only DX this year was OH1ZAA (KV) worked on random MS, to bring the 2m. squares tally to 204. A brief note from Jack Mitchell, G3KEQ, your scribe's erstwhile near neighbour, says that he is off the air pending a move to another QTH, his final 2m. squares total being 194 from Sanderstead.

Dave Sellars, G3PBV, (Devon) reckons March to have been a quiet month apart from an *Ar* on the 12th. Strong GMs only were heard in the first phase which ended at 1730, while a second one from 2200 to 2300 favoured G1. OZ, UQ2 and SM5 stations were also copied. Denis Jones, G3UVR, (Merseyside) has already accumulated more table points than the most dedicated participants usually get in six months. His 2m. total was boosted by the Mar. 5/6 contest and EI8EF (VO49j) was a nice one on the 10th. The Mar. 12 and 28 *Ar*'s gave Grampian, Tayside, Co. Clare and LA7LG (ET29j).

G4ARI was in on the Mar. 2 *Ar* and used the contest to add a few more. Ray Elliott, G4ERX, (Essex) is very busy these days so not too active, but did add LA6VBA (ES) and SM0EJY (IT) in the Mar. 12 *Ar*. Using a 4-ele. beam in the loft, pointing north from Felixstowe, G4FRE worked G6OVL/A in Cornwall on the 8th. G4PEM admits to missing the good conditions that have occurred, "... as I have been wasting my time on those HF bands." Simon has been working stations

through distant repeaters, including ON0HT.

Rod Burman, G4RSN, (Surrey) had a QSO with Y23BD (GM05f) at 2029 on Mar. 8 for a new square and country, then some DL and PA folk the next day. He has recommissioned his 55-75 MHz scanning Rx for the *E*'s season. Mick Cuckoo, G6ECM, (Kent) was on for the early March contest in which he made 341 QSOs, including DC1ZN (EK), DK1KW (EJ), F6CVN (CI) and HB9RDB/P (DH) for the better DX. The nice tropo, conditions on the 8th brought more choice stuff including DB2RR (FJ), DF1CF (FH), DL5MCG (FI), OE2KMM (GH) and Y23DB. Mick had three QSOs in the Mar. 12 *Ar* and, in the *Barking Club*'s contest on the 27th, in which 154 contacts were made, lists G14GVS (Co. Antrim) as best DX.

Phil Ingham, G6HDD, (Bolton) has installed a *Zetagi* 100w amplifier and 14-ele. *Parabeam* so looks forward to good DX later. G6HRI found things rather quiet in the Blackpool area in the Mar. 5/6 contest, but did work F1KBF (AK) and PE0MAR/P (CL). Russell has regular, daily skeds on SSB with EI1CR in Dublin at 2000GMT on 144.210 MHz. He listed some nice GDX worked in flat conditions during March.

Welcome now to Tim Kirby, G6TTU, from Cheltenham, a past contributor to Justin Cooper's column. He uses a *Yaesu* FT-480R and 9-ele. *Tonna Yagi*, 30ft. *a.g.l.*, the site being 220ft. *a.s.l.* behind the Cotswold Hills. A borrowed 100w amplifier is currently helping. Best DX in the Mar. 5/6 contest was F1KBF/P on

10w, this power being used to reach G4OOP (ZP) and GD3LSF on the 13th. Tim managed G14GVS in the *Barking Club*'s contest on the 27th after having contacted EI9Q (WM) the day before.

Jim Rabbitts, G8LFB, (London) was on during the tropo. opening to southern Germany on Mar. 8, but activity was very low. DL1MBV (F179h) was calling "CQ" on '300 for long periods without replies in the afternoon. Jim's successes were:— HB9QQ (EH) at 1019; DL1MBV at 1410; OE2AOM/2 (GH) at 1935; DB2RR (FJ) at 2035; DL6XZ/P (GI) at 2040 and Y23BD (GM) at 2125. The Cornish beacon, GB3CTC, was very strong and Y23BD called a station in St. Austell for ages, but the Cornishman kept working people in AL and ZL.

Gordon Emmerson, G8PNN, (North-umberland) got two new squares in *Ar* events; SM5MIX (HS) on the 5th and LA1JU (ES) on the 28th, plus assorted 1983 countries in the 5th to 7th period. Neil Montanana, G8RWG, (Surrey) reckons he got a bargain at the *VHF Convention* when he bought a secondhand *NAG* amplifier for £100. Pete Godfrey, G8ULU, (Kent) was on for the Mar. 8 tropo. lift and worked Y23BD, the previous day bringing GW6DOK in XN for a new square.

H. Irwin, G18ROJ, (Co. Armagh) sent details of a claimed "first" Ireland to U.S.A. 2m. *E-M-E* QSO on Feb. 28 at 0115 to 0235 GMT between G14FFL/A, at the station of G16EYO, and K1WHS in Maine. Signals peaked about 3 dB over noise. See photo on p.149.

Andy Steven, GM4IPK, (Edinburgh) did well in *Ar*'s on Mar. 11 and 12. At 2230 on the 11th, GB3LER was *Auroral* and at 2252, LA2BBA (GU) was worked, followed by SM5BEI (JU) and LA1K (FX). From 2300 for an hour, mainly LAS were worked and RQ2GAG was heard. QTFs were 0 to 20°. Another *Ar* started around 1600 on the 12th with lots of PAs and DLs at 50° azimuth. But beaming due north brought in SM4, 5 and 0 stations plus GU4IUW (YJ) for a new one. Andy was called by OH7PI (NW) the best *Ar* DX to date, at 1656 GMT. A call from OH1DP at 1731 revealed that many OH stations were calling GM4IPK but they must have been rather QRP as they were not heard in Edinburgh. At 1739, the QSB was bad, but UR2RIW (LS02e) was worked.

The event returned again at 2200 and Andy worked XN square on SSB before reverting to CW mode and working a few D, F and G stations at QTF 30°. At 2305, OH2TI (MU65g) called but it was a scratchy, incomplete QSO. Andy reports other *Ar*'s on Mar. 18, early evening, only GB3LER heard, and 0210 to 0430 on the 19th.

Kelvin Weaver, GW6JDK, (Gwent) has added four new squares in March: F1CNG (AJ), EI9Q (WM), GM4IPK (YP) and

QTH LOCATOR SQUARES TABLE

Station	23cm.	70cm.	2m.	Total
G3VYF	—	117	307	424
GJ4ICD	1	103	225	329
G3JXN	57	98	155	310
G8TFI	—	95	82	177
G8KBO	4	91	172	267
G3COJ	36	87	150	273
G3PBV	18	86	163	267
G3XDY	30	86	131	247
G8FUO	3	86	80	169
G8ATK	15	81	129	225
G38KNV	12	76	191	279
G4RZP	—	76	147	223
G2AXI	9	76	121	206
G8RZO	—	75	148	223
G4NBS	13	75	92	180
G4BVY	9	72	—	81
G8HHI	12	70	133	215
G8PNN	30	70	108	208
G4JZF	—	68	140	208
G8ULU	2	66	98	166
G6ADE	—	64	70	134
LA8AK	25	62	200	287
G3IMV	—	61	324	385
G8CXQ	—	61	146	207
G6HKT	—	60	89	149
G4HFO	—	59	102	161
G8FMK	21	59	74	154
G3NAQ	—	58	128	186
G8KAX	17	57	82	156
G4MUT	—	57	84	141
G4ERX	7	53	131	191
G4MCU	—	50	163	213
GW3NYY	—	48	185	233
G4NQX	—	47	113	160
GD2HDZ	13	46	91	150
G3UVR	—	44	180	224
G4ROA	6	43	58	107
G8VRJ	16	38	101	155
G8ORP	—	37	76	113
G3BW	6	36	204	246
G4NFD	—	36	138	174
GM8BDX	—	33	53	86
G4NQC	5	32	136	173
G4HMF	—	32	140	172
E43LL	—	30	261	291
G4KUX	—	30	105	135
G8WPL	—	30	79	109
G3FIJ	—	29	92	121
G4PCI	—	28	167	195
G4OAE	—	28	164	192
G6ADH	—	27	129	156
G6DER	—	27	76	103
G8WUU	—	27	72	99
GM4COK	—	26	194	220
GM4CXP	—	26	163	189
G8WPD	—	24	139	163
G4NWT	—	22	55	77
G8SRL	—	21	83	104
G8LXY	—	20	34	54
G4IGO	—	19	245	264
G4RSN	2	19	72	93
G6HTJ	—	17	66	83
G4ERG	—	16	235	251
GW3CBY	5	16	79	100
G6HRI	—	13	34	47
G4MJC	—	12	108	120
9H1BT	—	11	210	221
G6DDK	—	11	122	133
G4NRG	—	11	61	72
G4KLY	—	5	74	79
G8XQS	—	4	76	80
G8VR	—	3	224	227
G4LDY	—	3	41	44
GW6JDK	—	2	77	79
G3FOI	—	—	393	393
DK3UZ	—	—	308	308
G4IJE	—	—	292	292
SP2DX	—	—	280	280
G4DEZ	—	—	236	236
G3CHN	—	—	225	225
G3KEQ	—	—	194	194
G3FPK	—	—	193	193
GW4EAI	—	—	187	187
GJ8SBT	3	—	161	164
G8LFB	—	—	150	150
G6ECM	—	—	141	141
GM4IPK	—	—	139	139
G8TGM	—	—	133	133
GM8OEG	—	—	115	115
G8XJR	—	—	115	115
G4MEJ	—	—	114	114
G4GHA	—	—	104	104
G4MWD	—	—	95	95
G8VFX	—	—	89	89
G8RWG	—	—	84	84
G6ABB	—	—	75	75
G6ELQ	—	—	69	69
G4PEM	—	—	63	63
G6CNX	—	—	63	63
G8XMP	—	—	62	62
G6DFT	—	—	60	60
G8XTJ	—	—	48	48
G8ZYL	—	—	46	46

Starting date January 1, 1975. No satellite or repeater QSOs.
 Band of the Month, 70cm.

G4PEC (ZP), plus assorted new counties for the tables. Planning permission for the tower is still awaited. G4IJE had a successful MS QSO on Apr. 6 with

DF1CF/IM0 in EY, his 292nd square. Paul has received a Bulgarian s.w.l. report from LD square of Ar signals last year.

Seventy Centimetres

Time was when the only signals to be heard between 430 and 440 MHz were amateur ones. However, this band is, and always has been, a shared band with amateurs as secondary users. This sharing is something we have to live with now and there are two services with which we must not interfere. The first is *Syledis*, a navigation chain system used by the offshore oil exploration industry for the very accurate positioning of drilling rigs, etc. Initially temporary installations set up when and where required, there are now permanent chains which are switched on automatically when a navigational fix is required.

The frequencies of the three, primary group transmitters are 432.463, 432.513 and 432.563 MHz and those of the three, secondary Tx's are 432.144, 432.303 and 432.383 MHz. The pulse nature of the transmissions occupies a generous bandwidth. There is a strong possibility that the Dutch *Intersite* Tx will move from 408 MHz to 437.5 MHz some time, just to rub salt into the wound.

As most readers will know, the *Ministry of Defence* is establishing its *MOLD* communications network from scores of U.K. sites, the Tx's being slotted in between amateur repeater channels. It remains to be seen whether *Syledis* and *MOLD* can co-exist in the band; that is not our problem. However, our licences require that we do not cause the primary users interference.

In a more positive vein, G2AXI's list shows another 22 counties and one more country added in the month, including Cleveland and Northumberland. G3PBV found conditions fair, but activity low in the contest with only 19 QSOs, worth 215 points, completed. Dave's best DX was DJ5AP/P (EH), a QRB of 899 kms. in this Mar. 5/6 event. The Apr. 3 contest brought "pretty poor" conditions with only 10 QSOs and 116 pts. scored. The best contact was G4PEC/P (YP) at 518 kms., Dave's best northerly tropo. DX on any band.

G3UVR mentions only GM8BDX for a new country on Apr. 3, while G4ERX notes G4LIP/P in AN, the same day, as a new band square. G4FRE also noticed a great lack of Gs in the Mar. 5/6 contest and one PA asked him if there actually was a contest on in the U.K! Dave managed 105 QSOs, mostly with continentals, including 3 HB9s in DH and DG, and G8UML/P (I.O.W.) after many attempts over a three hour period. On Mar. 7, G8AGU (Devon) and G6ECC (Cornwall) running just one watt. The next day saw "... the usual assortment ..." of Germans in the E and F squares, plus OE2CAL in GH for square no. 50 in 46

days. A beacon on 432,004 MHz turned out to be DB0AC (DJ55j) with "wrong way" FSK.

John Lemay, G8KAX, (Essex) operated in the 432 MHz Trophy event and reckoned conditions were average, but activity low, likely due to the Easter holiday. He worked 4 PAs out of his 61 QSOs, worth 211 pts. but the leading stations were around serial number 150. G8ULU contacted OE2CAL and GW8AAP/P on the 8th March.

Twenty-three Centimetres

G2AXI made his first Welsh contact on Apr. 2 with GW4NBS/P, in the contest. G3BW does not have much luck with his one watt from Cumbria and wishes somebody would come up with an article on a simple, solid state amplifier giving 3 to 4 watts to put between the usual transverter and a 2C39 PA. Any offers? G3PBV found the U.K. beacons up on Mar. 8, but in the Apr. 2 contest the conditions were very poor, only one QSO with GW4NBS/P being made although G4HWA/P (AN) was heard weakly.

G6HDD is just about QRV on the band from Bolton with 250mw. to a 3ft. dish. G8TFI is now on the band with an *MM* transverter and four 23-ele. *Tonna Yagis* loaned by G4NBS. A 150w amplifier will follow soon and later, full legal power will be available from Gloucestershire. So far, Chris has got his 300mw. to G4BYV (Norfolk) and G3TDG (Kent) with good reports. This summer, he will be out portable in Wales in YL and XM squares on this band at weekends, and on 70cm. as well. Very shortly after the *April Magazine* was published, G8ULU's "... wayward transverter ..." came back from the mender's so Pete has 1.3w to a 23-ele. *Yagi*. He is contemplating a 2C39 PA now.

Contest Notes

Just space to mention the dates of some May events starting with the 432/1,296/2,320 MHz one on the 7/8th from 1400 to 1400 GMT. The 144 MHz QRP affair is on the 8th, Tx output not to exceed 25w p.e.p. 0900-1700 GMT. The 432 MHz CW affair is on the 22nd, 0900-1500 GMT. The first leg of the 10 GHz *Cummulative*s is on the 29th, from 0900 to 2000 GMT as is the first stage of the *Microwave* one, this session for 5.7 GHz.

Sign Off

Perhaps by next month we will be reporting the first *Sporadic E* QSOs and, with the Polish stations back again, it could be a rewarding year. All your reports and claims for the June issue by **May 4**, please, and for the next one, by the very *early date of June 1*. Don't forget the Bank Holidays immediately prior to those dates. The address is:—"VHF Bands," SHORT WAVE MAGAZINE, 34 High Street, WELWYN, Herts., AL6 9EQ. 73 de G3FPK.

BOOK REVIEW

THE VHF/UHF MANUAL

Fourth Edition

THE fourth edition of the RSGB's **VHF/UHF Manual** was published in time for the VHF Convention on March 26. These notes will compare it with the third edition which this writer reviewed in the July, 1976 issue of the *Magazine*.

The first chapter is "Historical Perspectives" and replaces the "Introduction." It includes tables of all the amateur VHF/UHF/SHF bands but there is no reference now to any band plans. The second chapter, "Propagation," has been enlarged from 21 to 36 pages and retains the basic data on tropospheric propagation, with additional sections and tables on tropo. scatter mode, free space attenuation and path losses. Simple programs for working out the radio and potential refractive indices from basic meteorological data, using a *Texas TI58/59* pocket calculator, have been added. In the light of recent developments, the Sporadic E and Auroral sections have been largely re-written with the latter including Charlie Newton's G2FKZ, "boundary fence" theory. The circuit and layout of a simple converter to receive the BBC's Band 1 Meldrum TV sound channel on 58.25 MHz as an auroral early warning aid, is included. In the expanded section on trans-equatorial propagation there are solar rotation maps on which the reception of the ZE2JV beacon on 144.160 MHz in the then Rhodesia by 5B4WR in Cyprus from April, 1978 to May, 1979 is plotted. A solar rotation calendar up to the end of 1990 is included.

The text of chapter 3, "Tuned Circuits," is virtually identical to that of the previous edition and now includes the table of self-resonant frequencies of capacitors which was in the "Transmitters" section of the third edition. The fourth chapter, "Receivers," now incorporates a section on synthesizers, PLL VFOs and Gafset preamplifiers and has been much rearranged with some of the old "valve" material, such as the parametric amplifier and Kaliatron oscillator, deleted. However, such museum pieces as the 6CW4-ECC85-ECC88, 144 MHz valve converter, the 6CW4 Nuvistor preamp. and the 6J6-6J6-Z77 432 MHz converter are still there. The section ends with a 144 MHz multimode receiver design featuring a PLL local oscillator, receiver incremental tuning and digital frequency display.

Chapter 5, "Transmitters," has been rearranged and extensively revised to include a few more pages on amateur TV, and some more modern valve power amplifier designs, for example. A potent beast featured is a grounded grid, 144 MHz amplifier using an 8877 triode which gives 1,255 watts output from 60 watts drive at an efficiency of 61%. As in the last edition, this section is copiously illustrated with 215 circuit diagrams and drawings, and numerous photographs.

Chapter 6 is a new one entitled "Integrated Equipment" wherein circuits and ideas for inter-connecting and controlling receivers, transmitters and converters are dealt with, along with some transceiver projects. The following chapter on "Filters" is a rearranged re-run of that in the third edition but with an Oscar 8 Mode J filter added.

The aerial chapter, number 8, is now called, "Antennas" and has been increased from 36 to 47 pages. The extra text includes consideration of antenna height gain and mention of the Chen and Cheng, and N.B.S. Yagis. The captions to the graphs of figures 23 and 24, taken from the ARRL *Antenna Book*, have been transposed. Read together, these are intended to show the optimum number of Yagi elements for a given boom length, and the gain expected therefrom. However, these gains seem very optimistic. For example, the graphs show that a 14-element Yagi with a 4-wavelength boom will give a gain of 16.7dB over a dipole. A more realizable gain would be about 14dBd. It seems a pity that these Yagi gain myths are perpetuated now that there is abundant

evidence concerning the real gain from such researchers as DL6WU and SM5BSZ. There is much new material on mobile and hand-portable antennas, and a description of a quarter-turn volute, or resonant quadrifilar helix antenna for circular polarization, suitable for satellite work, for instance.

Chapter 9, "Microwaves," now has 83 pages, 13 more than in the third edition. It has been rearranged and includes much extra material on 1.3 GHz equipment, and the "flyswatter" or periscope antenna. The "Space Communications" chapter has been revised to deal with the current and future amateur satellite scene. The power link budget on page 10.5 is wrong in quoting the maximum slant range of Oscar 8 as 4,550 kms. which was the figure for the higher flying Oscar 7. It should be about 3,525 kms., thus reducing the path loss to 146.6dB.

Chapter 11 deals with "Test Equipment and Accessories" and much of the text is a reprint of the third edition material, which was very comprehensive. This section comprises 46 pages and is excellently illustrated. The 19 page Appendix is sub-titled "Data" and includes the usual, and perhaps to some, less familiar colour coding methods for components, as well as lots of other very useful data. The very detailed drawings illustrating how to properly wire up the various coaxial plugs used in VHF and UHF work are very welcome. The two page "Index" is adequate but, for a volume of this size, ought to be more comprehensive.

So much for what is *in* this manual. Now the "end product" must be radio communication between amateurs, so it seems odd that there is no coverage of operating procedures or the closely related subject of band planning. With so many more keen, but raw, licensed radio amateurs than ever before, a comprehensive manual of this kind really ought to give some operating guidance by including parts of the RSGB's *Amateur Radio Operating Manual*. The non-inclusion of band plans is understandable inasmuch as they could radically change before the next edition appears, however it is felt that some explanation and details of the current band plans should have been incorporated. However, these are relatively minor criticisms of a classic volume which can truly be described as the VHF/UHF enthusiast's "Bible." Edited by George Jessop, G6JP, the RSGB's **VHF/UHF Manual** is a 528 page, hardback production in 246 by 184mm. format. The cost is £10.30 including postage and packing and it is available from The Publications Department, *Short Wave Magazine*, 34 High Street, WELWYN, Herts., AL6 9EQ.

N.A.S.F.

CLUBS ROUNDUP

By "Club Secretary"

EVEN though the pile this time is well thinned of out-dated entries (hint!) we still have more than enough to fill the space, so we will go straight into action.

Our first stop is **Abergavenny**, where they meet every Thursday evening at Pen-y-Fal Hospital, in the room above Male Ward 2.

May 14 is the date and Chiswick Town Hall the venue for **Acton, Brentford & Chiswick** to listen to G3IGM leading the discussion on "Going Mobile".

Stone Village Hall, Stone, is the home of the **Aylesbury Vale** group; on May 17 they have a talk by Peter Blair, G3LTF on moonbounce.

On the first Friday of each month you can find the **Bangor** club in the Sands Hotel, Bangor, Co. Down. More details from the Hon. Sec. — see the Panel for his details.

The home of the **Basingstoke** outfit is now the British Legion Hall, Crown Lane, Old Basing, where they may be found on the second Tuesday in each month. If you heard GB2XXI around the New Year time, you might have had a bit of birthday cake with your QSL from the club, part of their 21st anniversary celebrations. A successful idea for the club, and certainly different.

The **Bath** meetings are every other Wednesday evening at the Englishcombe Inn, Englishcombe Lane, Bath; as they have just had their AGM we have to refer to the Hon. Sec. — see Panel — for programme details.

It looks as though May 17 is the only open date for **Biggin Hill**, at the Memorial Library, as their other dates are for outside visits, something which, to judge by the programme, are a regular feature of the activities.

Bristol put G3TAD on the air on May 3, and on 10th they have a talk entitled “Crystal and Spark” by the Club’s tame historian G4REH. May 17 is down for the videotape of *Oscar*, the computer group have May 24, and on 31st it is an Open Night. To find all this, look for the YMCA, Park Road, Kingswood, Bristol.

On the second Friday in the month the **Bromsgrove** group will be at Avoncroft Arts Centre, while on the fourth Friday the QRP group foregather at the same spot. Elsewhere we have a mention of their special-event station GB1BOY, celebrating the first birthday of Prince William, on June 21.

May 10 is Talk Night for **Bury**, at Mosses Community Centre, when G8XUR offers “The Confessions of a TV Repairman”. However, you can meet the mob on any Tuesday evening at the same place in Cecil Street, Bury.

The **Cambridge** crowd foregather at the Visual Aids Room, Coleridge Community College, Radegund Road, off Coleridge Road, Cambridge. May 6 is a constructors evening, with a trophy to be awarded; May 13 and 27 are informals with Morse, and the club station on the air, and May 20 sees a talk by G8OFA on direct-conversion receivers.

Turning to **Cheltenham** we find them nicely settled in to the new place at Stanton Room, Charlton Kings Library, Cheltenham, where they are to be found on first and third Fridays. For the other details, check with the Hon. Sec. — see Panel for the details.

Every Wednesday the **Chesham** club meet at the Stable Loft, Bury Farm, Pednor Road, and they welcome new members. Details from the Hon. Sec. — see Panel.

At **Cheshunt** the venue — though they don’t say so! — is Church Room, Church Lane, Wormley; May 4 sees a chat on the principle of contest operating by G3OJI and G8NDR, while 11th is a natter night. May 18 is an equipment evening, and on May 25 they are out /P on Baas Hill Common.

May 5 at **Colchester** is NFD preparation night; and on May 19 they have an evening of QRP operation. Find them at Colchester Institute, Sheepen Road, Colchester.

Down west, **Cornish** have their berth at the SWEB Club Room, Pool, Camborne, on May 5, when G3OCB, G3VWK, and G3XFL combine forces to mount a talk on test equipment and how to use it.

For the details of the next **Crawley** club meetings at Trinity United Reformed Church, Ifield, Crawley, we must refer you to the Hon. Sec. — see Panel.

At **Cray Valley** there seems to be a spirit of self-examination about; just why seems to be something to be found out by attending a meeting or three; try Christchurch Centre, High Street, Eltham, on May 5 for G3VLX to talk about “Australia and Back”, or May 19 for a natter.

On the third Saturday evening of each month the **Crystal Palace** crowd foregathers at All Saints Parish Room, at the junction of Beulah Hill and Church Road, opposite the ITA mast; May 21 will be interesting with G2MI talking about the running of a QSL bureau.

Turning to **Dartford Heath D/F** we see a meeting on May 11 at



Chris Day, G4MAS, of Cheshunt and District A.R.C., operated GB4HGG for Hoddesdon Girl Guides recent ‘Thinking Day’. The event proved very popular with a steady stream of visitors over the two days. More than 250 contacts were made, including Africa and Australia. As far as the club was concerned, the Guides looked after them well — with constant tea and coffee!

the “Malt Shovel”, Eynsford, which means also that they have a hunt on May 15. Details from the Hon. Sec. — see Panel.

May in **Derby** sees a junk sale on May 4 — members only due to lack of space! — Professor Chaddock on computer arithmetic on 11th, a talk on batteries on May 18, and on 25th a talk by G8TSQ on underwater acoustic imaging. The venue is, as ever, 119 Green Lane, Derby, where the club occupy the top floor.

Now **Droitwich**: they live in the Scout Hq., Station Road, on the first Monday in the month. More details from the Hon. Sec. — see Panel.

Dudley have their Hq. at Dudley Central Library; on May 10 they have a talk about telecommunications within the *Express and Star* Newspaper group, and on May 24 there is a natter evening.

Now to **Echelford** where they have the second Monday and the last Thursday in each month at The Hall, St. Martin’s Couri, Kingston Crescent, Ashford, Middx.

At **Edgware** the venue is 145 Orange Hill Road, Burnt Oak, Edgware, on the second and fourth Thursdays. Our programme details don’t go far enough ahead to give you information, but doubtless the Hon. Sec. would be pleased to oblige — see Panel.

The 6th Exmouth Scouts Hut is on Marpool Hill, **Exmouth**, and this is where the locals get together on alternate Wednesday evenings. Again, more details from the Hon. Sec. — see Panel.

The Portchester Community Centre, where **Fareham** meets, used to be adorned with their aerials and feeders but it may not be so nowadays. However, find out on May 4, when they have a D/F project evening, May 11 or 25th when they have the club station on the air, or May 18 when G4CJO will be talking about AMTOR.

The May dates for **Farnborough** are 11th and 25th; the former was still to be finalised at the time of their letter, and on the latter date they, like so many other groups, will be making final preparations for NFD.

On the first and third Tuesdays of each month, the Kite Club, Blackpool Airport, is home to the **Fylde** club; on May 3 G8GG looks at the various angles to certificates and awards, and on 17th the meeting is an informal.

The monthly Sunday session at **Glenrothes** is at Provosts Land, Leslie, Fife, as are the weekly evening ones. For the other details we refer you to the Hon. Sec. — see Panel.

We nearly missed out the **G-QRP Club** due to the universal eagerness to snaffle our copy of *SPRAT*, their quarterly magazine. The club, as its name implies, is the one for all who are

Names and Addresses of Club Secretaries reporting in this issue:

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- CRAY VALLEY: P. J. Clarke, G4FUG, 42 Shooters Hill Road, London SE3. (01-858 3703)
- CRYSTAL PALACE: G. M. C. Stone, G3FZL, 11 Liphook Crescent, London SE23 3BN. (01-699 6940)
- DARTFORD HEATH D/F: A. R. Burchmore, G4BWV, 49 School Lane, Horton Kirby, Dartford, Kent DA4 9DQ.
- DERBY: Mrs. J. Shardlow, G4EYM, 19 Portreath Drive, Darley Abbey, Derby DE3 2BJ. (0332 556875)
- DROITWICH: E. G. Taylor, G4HFP, 6 Marlborough Drive, Stourport-on-Severn, Worcs. DY13 0JH. (S-on-S 3818)
- DUDLEY: N. Rock, G3RLY, 28 Conway Avenue, Kingswinford, Staffs. (Kingswinford 277617)
- EHELDFORD: A. Matthews, G3VFB, 13A King Street, Twickenham. (01-892 2229)
- EDGWARE: H. Drury, G4HMD, 11 Batchworth Lane, Northwood, Middx. (Northwood 22776)
- EXMOUTH: H. Edwards, G4RUT, Crimond, The Common, Exmouth, Devon. (Exmouth 73157)
- FAREHAM: B. Davey, G4ITG, 31 Somervell Drive, Fareham, Hants. PO16 7QL. (Fareham 234904)
- FARNBOROUGH: I. Ireland, G4BJQ, 118 Mychett Road, Mychett, Camberley, Surrey. (Farnborough 43036)
- FYLDE: H. Fenton, 5 Cromer Road, St. Annes, Lytham St. Annes, Lancs. FY8 3HD.
- GLENROTHES: A. Givens, GM3YOR, 41 Veronica Crescent, Glenrothes, Fife. (Kirkcaldy 200335)
- G-QRP: Rev. G. C. Dobbs, G3RJV, 17 Aspen Drive, Chelmsley Wood, Birmingham B37 7QX. (021-770 5918)
- GLOUCESTER: A. J. Martin, 12 Redwood Close, Podsmead, Gloucester GL1 5TZ.
- GREATER PETERBOROUGH: F. Brisley, G4NRJ, 27 Lady Lodge Drive, Orton Longueville, Peterborough. (0733 231848)
- GRIMSBY: R. J. Scarlett, G4HZF, 1 St. Martins Crescent, Grimsby, South Humberside.
- HARROW: C. D. Friel, G4AUF, 17 Clitheroe Avenue, Harrow, Middx. (01-868 5002)
- HASTINGS: G. North, G2LL, 7 Fontwell Avenue, Little Common, Bexhill-on-Sea. (Cooden 4645)
- HAVERING: A. Negus, G8DQJ, 17 Courtenay Gardens, Upminster, Essex RM14 1DH. (Upminster 24059)
- HEREFORD: S. Jesson, G4CNY, 181 Kings Acre Road, Hereford. (Hereford 273237)
- I.R.T.S.: S. Nolan, E17CD, 68 Ratoath Estate, Ratoath Road, Dublin 7.
- ISLE OF MAN: J. D. Melling, GD4MNS, The Round House, Ballamoor Castle, Ballamoor, Jurby, Isle of Man.
- JERSEY: P. Johnson, GJ8KNV, Mon Repos, Fauvie Grauville, Jersey. (Jersey 53333)
- KEIGHLEY: G. Fuller, G3TFF, 17 Baden Street, Haworth, Keighley, Yorks. (Haworth 42977)
- LEYLAND HUNDRED: A. J. Jolly, G4JCO, 20 Crawford Avenue, Chorley, Lancs. PR7 2QT.
- LINCOLN: Mrs. P. Rose, G8VRJ, Pinchbeck Farmhouse, Mill Lane, Stutton-by-Stow, Lincoln. (Gainsborough 788356)
- MARCONI: V. G. Scambell, G3FWE, 52 Freshwater Road, Cosham, Hants.
- MEIRION: R. Halhead, GW3KOR, Bryn Derw, Golf Road, Dolgellau, Gwynedd.
- MIDLAND: N. Gutteridge, 68 Max Road, Quinton, Birmingham B32 1LB. (021-422 9787)
- MID-WARWICKSHIRE: Mrs. C. Finnis, G6LKP, 37 Stowe Drive, Southam, Warks. CV33 0NZ. (092681 4765)
- NEWARK: J. R. Hiscock, G4MDV, 17 The Green, Elston, Newark, Notts. NG23 5PF.
- NORTH DEVON: H. G. Hughes, G4CG, Crinnis, High Wall, Sticklepath, Barnstaple, Devon EX31 2DP.
- NORTH WAKEFIELD: S. Thompson, G4RCH, 3 Harlington Court, Morley, LS27 0RT. (0532 536603)
- R.A.I.B.C.: Mrs. F. Woolley, G3LWY, 9 Rannoch Court, Adelaide Road, Surbiton KT6 4TE.
- READING: C. Young, G4CCC, 18 Wincroft Road, Caversham, Reading, Berks. RG4 7HH.
- REIGATE: C. S. Barnes, G8FEE, 25 Hartswood Avenue, Woodhatch, Reigate, Surrey RH2 8ET.
- ST. HELENS: D. Filer, G4OAM, 9 Heswall Avenue, Clock Face, St. Helens, WA9 4DR. (Marshalls Cross 820471)
- ST. NEOTS: S. Foote, G4FOH, Whiteknights, 10 Old Farm Close, Neddington, Huntingdon PE17 3SG.
- SALISBURY: A. C. A. Newman, G2FIX, 74 Victoria Road, Wilton, Salisbury, Wilts. SP2 0DY.
- SEFTON: M. Webb, G6ICR, 33 Belle Vue Road, Gateacre, Liverpool, L25 2QD. (051-487 0756)
- SHEFFORD: A. R. Little, G4PSO, 41 St. Michaels Road, Hitchin, Herts. SG4 0QA. (Hitchin 57946)
- SOUTH DORSET: A. Prior, G6HEL, 3 Greenways, Dewlish, Dorchester, Dorset DT2 7LP.
- SOUTHDOWN: T. Rawlance, G4MVN, 18 Royal Sussex Crescent, Eastbourne.
- SOUTH ESSEX: D. V. Pritchard, 55 Walker Drive, Leigh-on-Sea, Essex.
- SPALDING: I. Buffham, G3TMA, 45 Grange Drive, Spalding, Lincs. PE11 2DX. (Spalding 3845)
- STEVENAGE: T. Bailey, G6CRF, 187 Archer Road, Stevenage, Herts.
- STOURBRIDGE: M. Davies, G8JTL, 25 Walker Avenue, Quarry Bank, Brierley Hill. (Lye 4019)
- SUNDERLAND: A. Everard, G8PCD, 19 Roker Park Road, Sunderland, Tyne & Wear.
- SURREY: R. Howells, G4FFY, 7 Betchworth Close, Sutton, Surrey SM1 4NR. (01-642 9871)
- SUTTON & CHEAM: G. Brind, G4CMU, 26 Grange Meadow, Banstead, Surrey.
- SWALE: B. Hancock, G4NPM, Leahurst, Augustine Road, Minster, Sheerness, Kent ME12 2NB. (Minster 873147)
- THAMES VALLEY: J. Axe, G4EHN, 65 Ridgway Place, Wimbledon, London SW19 4SP. (01-946 5669)
- THANET: I. B. Gane, G4NEF, 17 Penshurst Road, Ramsgate, Kent. (Thanet 54154).
- TORBAY: Mrs. M. Rider, 7 Kingston Close, Kingskerswell TQ12 5EW. (08047 5130)
- VALE OF WHITE HORSE: I. White, G3SEK, 52 Abingdon Road, Drayton, Abingdon, Berks. (0235 31559)
- VERULAM: E. Bailey, G4KLQ, 50 Bettespaw Meadows, Redbourn, St. Albans, Herts. (Redbourn 3291)
- WEST KENT: P. Reeve, G4GTN, 2 Court Road, Tunbridge Wells, Kent. (Tunbridge Wells 24689)
- WIRRAL: N. McLaren, G4OAR, 596 Woodchurch Road, Oxtou, Birkenhead. (051-608 1377)
- WORTHING: Mrs. J. Lillywhite, 41 Brendon Road, Worthing, Sussex BN13 2PS.
- YEOVIL: A. Denning, G4BJH, 19 The Park, Yeovil. (0935 23873).
- YORK: K. R. Cass, G3WVO, 4 Heworth Village, York.

interested in low-power (and therefore homebrew for almost nothing!) equipment and operation. To date there have been some 1700 people enrolled, and more each day. Details of the club from the Hon. Sec. at the address in the Panel.

St. Barnabas Hall, Stroud Road, is the home of the **Gloucester** crowd, and it is here that they are holding a Beginners Evening on May 18, as a recruiting exercise for the hobby and the club; they are also to be found at Hq. most Wednesday evenings.

May 26 is films and NFD preparations for the **Greater Peterborough** club, at Southfields Junior School, Peterborough.

The **Grimsby** venue is now Cromwell Social Club, where they

are to be found on alternate Thursdays. Full details on what goes on can be obtained from the Hon. Sec. — see Panel.

The **Harrow** newsletter contains some interesting articles, and we were interested to note they have their publicity on display with some score of local traders — one of the best ways to draw newcomers into the hobby. Meet them at Harrow Arts Centre, on Friday evenings.

Hastings have their main meeting on the third Wednesday each month at West Hill Community Centre; G4BUE has the floor on May 18, to talk about QRP. The other Wednesdays are taken at Ashdown Farm Community Centre and seem to be mainly

devoted to micros; in parallel with these there is a computer language course on BASIC on the go. In addition, Tuesdays are the RAE nights and Fridays the chat nights, both also at Ashdown Farm.

Over to **Havering** and Fairkyles Arts Centre, Billet Lane, Hornchurch; they have an informal on May 4, and a briefing for the contest on 11th. On May 18, they will be listening while John Longley elucidates the Smith chart's mysteries, and on May 25 they have another contest briefing followed by an informal.

The two May dates for **Hereford** are 6th and 20th; for both we may say that although nothing is set up at the moment there will be something 'on the night'. They get together at County Control, Civil Defence Hq., Gaol Street, Hereford.

IRTS are in the run-up to their AGM, which will be over by the time this reaches print. However, the Hon. Sec. will no doubt be pleased to hear from you if you need to know anything about amateur radio in EI.

The **Isle of Man** Hq. is at the Keppel Hotel, Creg-ny-Baa, and they are in session every Monday evening, alternating talks with informal natter evenings. The gang would be glad to hear from visitors and see them at the club meetings.

May 11 for the **Jersey** Amateur Electronics Club is a junk sale (and second-hand equipment) which should net a good turn out at the Quennevais Communicare Centre.

Keighley next, which means the "Globe Inn", Parkwood Street, on the last Tuesday in each month. More details on what goes on from the Hon. Sec. — see Panel.

Next we come to **Leyland Hundred**, which means the second Monday of each month at Astley Park Social Club; meetings vary from formal lectures through to informal natter dates, with some visits also thrown in for good measure. Details from the Hon. Sec. — see Panel.

Lincoln have their place at the City Engineers' Club, Central Depot, Waterside South, Lincoln; May 8 sees the Lincoln Hamfest, May 23 a visit to Lincolnshire Police Hq., and on May 25 comes the all-important AGM.

We have a letter from the Hon. Sec. of the **Marconi Space and Defence** club, regarding the *Mary Rose* Award, which readers will recall as requiring the working of various stations including the GB2MAR call. We are told that they will be operational throughout June, as a prelude to the hoped-for opening of the *Mary Rose* Museum in the Dockyard at Portsmouth. The latter is possibly going to be delayed, being very much at the mercy of the weather, but the GB2MAR operation goes on regardless. We also hear of a VHF award in the same context — details from the Hon. Sec. at the address in the Panel.

May 5 at **Meirion** will be a 'Problem and Discussion Forum', at the Nannau Country Club, Llanfachreth, a couple of miles to the North of Dolgellau.

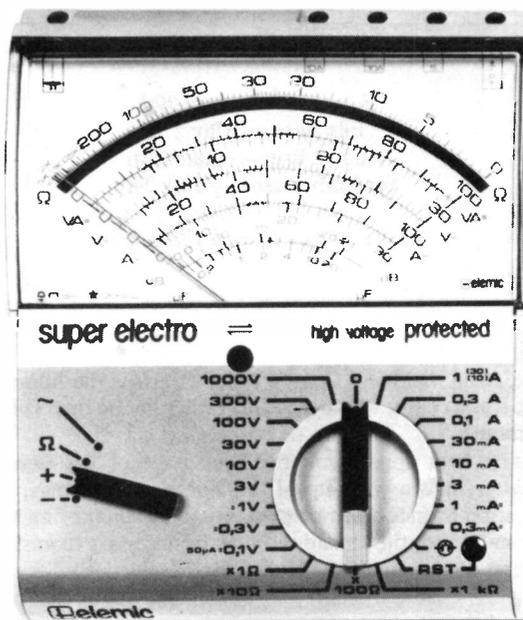
There is always plenty going on at **Midland** at 294A Broad Street, Birmingham, which lies opposite the Repertory Theatre. On Mondays they have working parties at Hq., Tuesdays are the main meetings of the various sections, Wednesdays see a Morse class and natter evening, Thursdays are down for HF, and Fridays the RAE class. The weekends are left clear. . . .

At **Mid-Warwickshire** they have a demonstration of the spectrum analyser on May 3; the general routine is first and third Tuesdays at 61 Emscote Road, Warwick. The May 17 date is down for a foxhunt.

The **Newark** group are having a junk sale on the first Thursday in May, at the Palace Theatre, Appleton Gate, Newark. More details, if required, from the Hon. Sec. — see the Panel for his address.

The **North Devon** crowd held their 14th AGM back in February and G4CG continues as Hon. Sec., as he has done since the beginning. They get together on the fourth Wednesday in the month; on even months at Pilton Community College, Chaddiford Place, Barnstaple, and on the odd months at Bideford Community College, Abbotsham Road.

May 12 at **North Wakefield** is down for G3UGF to talk about "Gadgets in Amateur Radio"; but the gang can be located on any



Pictured here is the *Elemic Super Electro*, a new analogue multimeter from Italy. Features include 57 ranges, 50,000 volt protection on all ranges, DC and AC measurements to 1000 volts and 30 amps, resistance and capacitance ranges, phase sequence detection for 3-phase systems, and a mains and insulation tester. The Super Electro comes complete with a protective case, fused test leads and a year's guarantee and costs £39.95 plus VAT. Further details are available from the exclusive importer, *Black Star Ltd.*, 9A Crown Street, St. Ives, Huntingdon, Cambs. PE17 4EB. (Tel: 0480-62440.)

Thursday evening at Carr Gate Working Men's Club.

Next we turn to **RAIBC**, the club for the blind and disabled amateurs and SWLs; and of course they always need supporters and representatives as members too. The object of the exercise is to get SWL members fixed up with a receiver first, then to get them licensed and on the air in their own right, which means they are always in need of funds; a collection at the local club meeting is a good way of helping. Details from the Hon. Sec. — see Panel.

Reading have their place at the Clubroom, "The White Horse", Peppard Road, Emmer Green, Reading, where they can be found on alternative Tuesdays. On Thursday, May 5, they have the away leg of a Quiz with the Maidenhead club, and on May 10 they are at home to hear G3RZP talking about HF receiver parameters.

We don't have the latest details of the **St. Helens** group programme, but we can say they have Hq. at the Conservative Rooms, Boundary Road, St. Helens, where they can be found every Thursday evening.

Alternate Mondays at the "Horseshoe Inn", Offord Darcy, is the routine for **St. Neots**; the lounge bar is the spot to home on. On May 2 they have the 1983 contest briefing by G8BBK, and on May 16 they are away for Beer and Skittles at the "Plough Inn", Abbotsley. Bank Holiday on May 30 sees them having an informal session at the 'home base' in Offord Darcy.

Down in **Salisbury** the locals are booked in every Tuesday evening at the Grosvenor House, Salisbury, with various activities in the pipeline, and of course help with Morse, from G5YN, and RAE if needed.

Sefton are at the Liverpool Prison Officers Social Club, Hornby Place, off Hornby Road, on alternate Wednesdays; for details, contact the Hon. Sec. at the address in the Panel.

Every Thursday evening you can find the **Shefford** club at the Church Hall, Amphil Road, Shefford, Beds. More details from the Hon. Sec. — see Panel.

Deadlines for "Clubs" for the next three months —

June issue — April 29th
 July issue — May 27th
 August issue — June 24th
 September issue — July 29th

Please be sure to note these dates!

The Army Bridging Camp, Wyke Regis, is the home of the **South Dorset** club, where they foregather on the first Tuesday in each month.

A nice idea appears on the back page of the **Southdown** newsletter; it is a write-up of the club and its doings, plus an application form for membership. They meet on the first Monday of the month (or the second should it be necessary to miss a Bank Holiday) at the Chaseley Home for Disabled Ex-Servicemen, Southcliff, Eastbourne; on May 9, G5CRD will be talking about RTTY.

The **South Essex** club is a new formation who get together at the Paddocks Community Centre, Canvey Island, on Wednesdays. On May 4, they have a comparison of computers, to precede a talk by G3XOI on the use and abuse of BASIC. May 14-15 sees them involved in a sponsored station operation weekend, and on 18th G3LST of *Arrow Electronics* will be talking about their range. May 25 is down for a talk on clocks and watches.

One of the few clubs in Eastern England is at **Spalding**, where on May 14 they have a visit from Region 4 RR, Martin Shardlow; as with all their meetings this one is at the "White Hart", Market Place, Spalding.

The **Stevenage** programme details for May are not yet finalised, but we can tell you that they meet on the first and third Tuesday in each month, and at *TS Andromeda*, Fairlands Valley Park, Shephall View, Stevenage.

We see from the latest issue of the **Stourbridge** newsletter that they have now moved their venue to The Garibaldi in Cross Street, Stourbridge, where they will have the exclusive use of the Smoke Room, entering from the car park at the rear of the building. We assume, though it is not stated, that they will continue with the first and third Monday of each month routine. Better check with the Hon. Sec. — see Panel.

Sunderland 'opening hours' at The Brewery, Westbourne Road, Sunderland, are Mondays and Thursdays 7-9 in the evening, and Sunday mornings from 10 a.m. Sad to say, despite the name of the venue, they are teetotal.

Turning to **West Kent** they have a Construction Contest on May 13, and make their final NFD arrangements on 27th. Both events are at the Adult Education Centre, Monson Road, Tunbridge Wells. We notice a reaction in the Newsletter against all this commercial equipment; it contains a set of drawings to make a working *sundial!*

The **Surrey** crowd hold their meetings at *TS Terra Nova*, 34 The Waldrons, South Croydon. May 9 is the Constructional Contest, and on 23rd they have the informal.

At **Sutton & Cheam** they will be at Sutton College of Liberal Arts on May 13, and on May 27 they go to their other place, at Carshalton Sea Cadets Hq., *TS Puma*, Church Path, Beddington.

Every Monday evening the **Swale** crowd is to be seen converging on Nina's Restaurant, 43 High Street, Sittingbourne. Details of the meetings and other activities (like RAE and Morse, for instance) from the Hon. Sec. at the address in the Panel.

It's NFD briefing time at **Thames Valley**, on May 3, at Thames Ditton Library Meeting Room, Watts Road, Giggs Hill, Thames Ditton, Surrey.

A new home for **Thanet** calls for mention next; it will be the

Grosvenor Club, Grosvenor Place, Margate, on the second and fourth Thursdays. May 10 is down for a talk on the Spectrum micro, while on May 24, the topic will be high gain aerials by G3BHW.

Over to **Torbay** now where they are getting ready for their Rally at the end of August. May's main meeting will be on the last Saturday in May for a junk sale; and they continue the weekly Friday informals.

Now we head for the **Vale of White Horse**, and the "White Hart" in Harwell Village; the formal session on May 3 is down to G3BLS to talk about Morse, but they are there every Thursday evening informally; look for the upstairs meeting room.

Almost all the meetings of the **Verulam** club will be from now on at the R.A.F. Association Hq., New Kent Road, St. Albans, but for dates and details we must refer you to the Hon. Sec. — see Panel for his details.

Wirral, West Kirby end, is a club which is based on Irby Cricket Club, on the second and fourth Wednesday in each month; we like the comment in the newsletter: "If you find mistakes, please consider they are put there for a purpose. We publish something for everyone, and some people are always looking for mistakes!"

Looking at the **Worthing** newsletter, we see they are at home to visitors every Tuesday evening at the Amenity Centre, Pond Lane, Worthing. May 3 is a talk on D/F techniques and on 10th there is a talk on plastics in amateur radio. May 17 is a D/F contest, and on May 24 they have the tape of the Dud Charman aerial lecture. Finally, May 31 is set aside for G8MSQ to talk about printed circuit board techniques.

Milford Recreation Centre, Milford Park, is the new Hq. of **Yeovil's** club. Here they are to be found every Thursday; May 5 is the AGM, and on 12th there will be a talk on the club two-metre propagation experiment. G8MZI talks about how to work DX on VHF on 19th, and on 26th they have a natter night.

Finally, to **York**, where the venue is the United Services Club, 61 Micklegate, York, where they are to be found every Friday evening. We liked the comment on G4EYF's talk on the Sinclair Spectrum and the CW practice it can produce: "It seems that you get good at CW but no time left to go on the air!"

Finale

Once again. For the next three issues, the deadlines are to be found, as usual, in the 'box' in the text. These dates are for the arrival of your information, addressed to "Club Secretary", SHORT WAVE MAGAZINE, 34 High Street, Welwyn, Herts. AL6 9EQ.

Till then, have fun!

Hamfest 83

This is the name of a mobile rally promoted by Bournemouth and District RAIBC, at the invitation of Flight Refuelling A.R.S., to be held at Wimborne, Dorset, on August 21st. A special demonstration station will be operating, using the call GB2FRH. More details later.

Special Event Stations

Abergavenny & Nevill Hall A.R.C. will be operating three special event stations this year: GB2NHF on June 4th at Nevill Hall Fete, GB4AC on July 24th at Abergavenny Castle, and GB2ABC on July 30th at the Abergavenny and Border Counties Show. Further details from David Jones, GW3SSY, QTHR.

Bournemouth and District RAIBC will be operating GB2WEC on May 14th at the Old Power Station, Bargates, Christchurch, Dorset, which is the home of the Wedgwood Electrical Collection. The Collection displays the progress of the electricity supply industry, and will be open to visitors between 10 a.m. and 5 p.m. while the station is on the air. Talk-in will be available on

VHF, and the station will be active on 2m. FM, 10/15/20/80m. SSB and CW, with a special QSL card. Full details from R. Burrows, G6DUN, QTHR (tel: 0202 474305).

R.A.E. Course

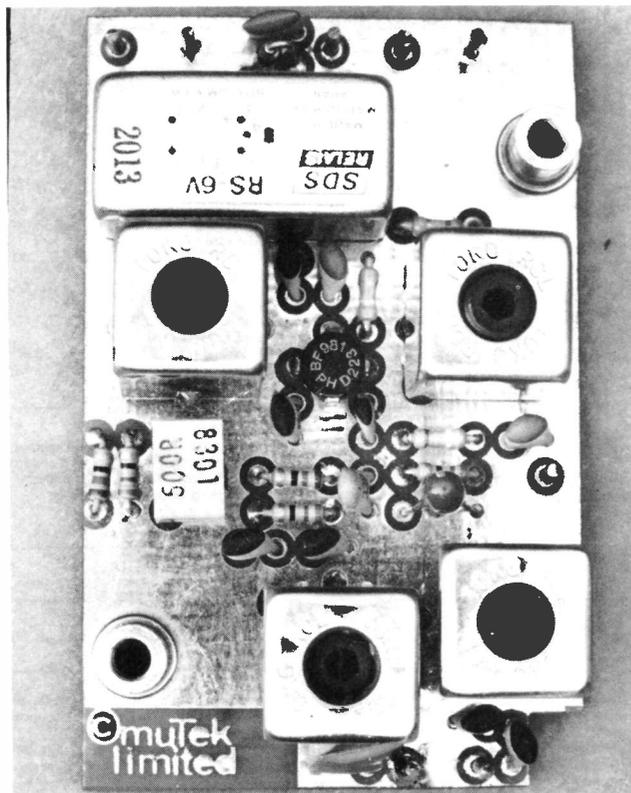
A new R.A.E. course was to begin on April 28th at Sutton College of Liberal Arts, St. Nicholas Way, Sutton, Surrey (tel: 01-661 5060). Beginners will be welcome, and the tutor is Alun Palmer, G8VUK. Notification of this was received too late for inclusion in last month's issue.

A.R.R.L. National Convention

The 1984 Convention is to be held on July 20-22nd, and will be hosted by the Hudson Division of the A.R.R.L. at the New York Statler. Detailed information and registration forms may be obtained from Mike Troy, AJ1J, R.R.4 — Box 19C, Pound Ridge, New York 10576, U.S.A.

Correction

In the article on Repeater Shift for the Icom ICB1050 in last month's issue, IC1 should be CD4008 or MC14008, or equivalent, and not as given in the table of values on p. 88.



muTek Limited announce the availability of their SLNA 145sb Transceiver Optimised Preamplifier for the Yaesu FT-290R. This unit provides the definitive solution to 'deafness' problems associated with this transceiver, the makers say, and it has been engineered to fit neatly within the transceiver, providing a sensitivity improvement sufficient to ensure that external noise is the limiting factor whilst minimising dynamic range degradation. Additional benefits include much improved front-end selectivity, and an on-board low-loss nitrogen filled antenna transfer relay which eliminates the losses inherent in Yaesu's diode antenna switch. The SLNA 145sb costs £24.90 inc. VAT, and full details are available from muTek Ltd., Bradworthy, Holsworthy, Devon EX22 7TU. (Tel: 040924-543).

“A Word in Edgeways”

Letters to the Editor

The views expressed here are not necessarily those of the Editor, nor should they be taken to represent any particular SHORT WAVE MAGAZINE policy.

Dear Sir — I wonder if I might put forward a word on the controversial subject of contests.

As I am only the YL of a keen radio amateur, I confess that I know nothing of the intricacies of wavelengths, etc., but I do know how important is the social value of these contests. I attend all of them and spend a very pleasant weekend meeting people, learning things, and generally “mucking in”.

However, I am rather confused by remarks made in a letter in a recent issue of the *Magazine*. The suggestion was made that contests should be held on weekdays. Isn't the country in a bad enough state as it is without thousands of radio amateurs all taking the same two days off work?

Valerie, G6BEL's YL

Dear Sir — How much I agree with the comments of G3OUC in the March issue.

As an SWL, I have the capability of receiving signals in the range 500 kHz to 30 MHz — which unfortunately includes that portion of the spectrum where illegal AM/SSB operators pursue their activities. Many times I have been listening on 28 MHz, only to hear the sudden intrusion of these so called “serious and basically responsible citizens”, using SSB.

Lured by my curiosity as to what motivates these people, I proceeded down into “the pits” (26 and 27 MHz) and, to my surprise, discovered a couple of fellow-students who are attending the same R.A.E. course as myself! Deeply shocked at their piracy (on SSB), I listened on, only to hear them boast that they were going to continue this practice (on 11 metres) if and when they acquired a licence.

What does one do in such a situation? Is it any wonder that 2-metres is daily becoming more and more like the CB band while it is possible for such people to be so easily licensed? I do hope that the powers-that-be will take heed of what is really happening on 11 metres, and what will happen on 2-metres if appropriate action is not taken.

As for myself, I must confess that I am rather disillusioned by these people, and shall be making every effort to obtain a Class-A licence in the belief that it will enable me to evade them and their behaviour.

Anthony Mayers, BRS 52063

Dear Sir — “G6 — — /M testing access”. Repeaters — those wonderful robotic machines which handle strange, nonsensical, conversations with no emotion of their own.

These wonders of amateur radio which start to work, like sheepdogs, with a high-pitched whistle from their masters.

Perched high on a hill, always willing to listen for those distant stations when conditions are right. Long may they stay, to help the mobile station find directions when lost in an unfamiliar town or city.

And let us all help in our own way in the upkeep of these strange, talking machines.

Byron Fletcher, G6HCV

Address your letters for this column to “A Word in Edgeways”, SHORT WAVE MAGAZINE, 34 High Street, Welwyn, Herts. AL6 9EQ.

P.M.

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Holders: Low Frequencies 6 to 150 kHz HC13/U, 150 kHz to 3.4 MHz HC6/U, 3.4 MHz to 105 MHz HC 6/U, HC18/U or HC25/U, over 105 MHz - HC18/U and HC25/U. HC33/U (wire end HC6/U) is available on request as per HC6/U.

Unless otherwise specified, fundamentals will be supplied to 30pf circuit conditions and overtones to series resonance.

COMMERCIAL AND PROFESSIONAL CRYSTALS NEW FASTER SERVICE

We are now supplying crystals to most commercial and MIL specifications in the range 1MHz to 60MHz ordered in small quantities in 2½ weeks at NO EXTRA CHARGE. We also have even faster EXPRESS SERVICES available for that VERY URGENT order. We can also supply crystals for commercial applications e.g. Microprocessor, TV, etc., at very competitive prices. Let us know your needs and we will send you a quote by return, alternatively telephone or telex our Sales Engineer Mr. Norcliffe who is normally available in the office for technical enquiries between 4.30 and 6.30 p.m.

TERMS: CASH WITH ORDER - MAIL ORDER ONLY. PRICES INCLUDE P. & P. (BRITISH ISLES) EXCEPT WHERE STATED - OVERSEAS CHARGED AT COST.

TWO METRE CRYSTALS

CRYSTAL FREQUENCY RANGE USE (TX or RX) and HOLDER	OUTPUT FREQUENCY										
	4MHz-TX-HC6/U	6MHz-TX-HC25/U	8MHz-TX-HC6/U	10MHz-RX-HC6/U	11MHz-RX-HC6/U	12MHz-TX-HC25/U	14MHz-RX-HC25/U	18MHz-TX-HC6/U	44MHz-RX-HC6/U	44MHz-RX-HC25/U	52MHz-RX-HC25/U
144.4 (433.2)	b	e	b	e	e	b	e	e	e	e	e
144.800	e	e	e	e	e	c	c	c	e	e	e
144.825	e	e	e	e	e	e	e	e	e	e	e
144.850	e	e	e	e	e	e	e	e	e	e	e
145.000/ROT	a	a	c	a	c	c	b	e	e	b	e
145.025/R1T	a	a	c	a	c	c	b	e	e	b	e
145.050/R2T	a	a	c	a	c	c	b	e	e	b	e
145.075/R3T	a	a	c	a	c	c	b	e	e	b	e
145.100/R4T	a	a	c	a	c	c	b	e	e	b	e
145.125/R5T	a	a	c	a	c	c	b	e	e	b	e
£11.01	a	a	c	a	c	c	b	e	e	b	e
145.150/R6T	a	a	c	a	c	c	b	e	e	b	e
145.175/R7T	a	a	c	a	c	c	b	e	e	b	e
145.200/R8R	a	a	c	a	c	c	b	e	e	b	e
145.300/S12	e	e	e	e	e	e	e	e	e	e	e
145.350/S14	e	e	e	e	e	e	e	e	e	e	e
145.400/S16	e	e	e	e	e	e	e	e	e	e	e
145.425/S17	e	e	e	e	e	e	e	e	e	e	e
145.450/S18	a	a	e	e	e	b	b	b	a	a	e
145.475/S19	a	a	e	e	e	b	b	b	a	a	e
145.500/S20	a	a	c	a	c	c	b	b	b	a	a
145.525/S21	a	a	c	a	c	c	b	b	b	a	a
145.550/S22	a	a	c	a	c	c	b	b	b	a	a
145.575/S23	a	a	c	a	c	c	b	b	b	a	a
145.600/ROR	a	a	c	a	c	c	e	b	e	a	a
145.625/R1R	e	e	e	e	e	e	e	e	e	e	e
145.650/R2R	e	e	e	e	e	e	e	e	e	e	e
145.675/R3R	e	e	e	e	e	e	e	e	e	e	e
145.700/R4R	e	e	e	e	e	e	e	e	e	e	e
145.725/R5R	e	e	e	e	e	e	e	e	e	e	e
145.750/R6R	e	e	e	e	e	e	e	e	e	e	e
145.775/R7R	e	e	e	e	e	e	e	e	e	e	e
145.800/R8R	a	a	c	a	c	c	b	b	b	a	a
145.950/S38	a	a	c	a	c	c	e	b	e	a	a

PRICES: (a) £2.15, (b) £2.55, (c) £2.80, and (e) £4.87.

AVAILABILITY: (a), (b), (c) stock items, normally available by return (we have over 5000 items in stock). (e) 4/6 weeks normally but it is quite possible we can supply from stock.

N.B. Frequencies as listed above but in alternative holders and/or non stock loads are available as per code (e).

ORDERING. When ordering please quote (1) Channel, (2) Crystal frequency, (3) Holder, (4) Circuit conditions (load in pf). If you cannot give these, please give make and model of equipment and channel or output frequency required and we will advise if we have details.

EXPRESS SERVICE

Many types of made to order crystals are available on our "EXPRESS SERVICE" - with delivery of three days on our class "A" service. Telephone for details.

70 cm CRYSTALS

Due to the much higher multiplication involved compared with 2 metres all our stock 70cm crystals are to much higher tolerances than our standard amateur spec. crystals.

We are stocking the following channels: RB0, RB2, RB4, RB6, SU8, RB10, RB11, RB13, RB14, RB15, SU18, and SU20, TX & RX for use with: - PYE UHF Westminster (W15U), UHF Cambridge (U10B), Pocketfone (PF1) and UHF PF70 Range, and STORNO CQL/CQM 662 all at £2.55.

For other channels and/or equipments crystals can be made to order to the same closer tolerances as our stock range at a cost of £5.72 for frequencies up to 63MHz and £6.58 for 63-105 MHz, or to our standard Amateur specifications see "CRYSTALS MANUFACTURED TO ORDER" prices opposite.

4m CRYSTALS FOR 70.26MHz - HC6/U
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10.245MHz "ALTERNATIVE" I.F. CRYSTALS - £2.55. For use in Pye and other equipment with 10.7MHz and 455kHz I.F.s to get rid of the "birdy" just above 145.0MHz. In HC6/U, HC18/U and HC25/U.

CRYSTAL SOCKETS (LOW LOSS)
 HC6/U and HC13/U 25p each, HC25/U 20p each plus 20p p. & p. per order (p. & p. free if ordered with crystals).

CONVERTER/TRANSVERTER CRYSTALS - HC18/U
 All at £3.00. 38.666MHz (144/28), 42MHz (70/28), 58MHz (144/28), 70MHz (144/4), 71MHz (144/2), 96MHz (1,296/432/144), 101MHz (432/28), 101.50MHz (434/28), 105.666MHz (1,296/28) and 116MHz (144/28).

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THE ARAKI RANGE OF AERIALS

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2 metre ¼ whip with guttermount	£9.70 p. & p. £2.50

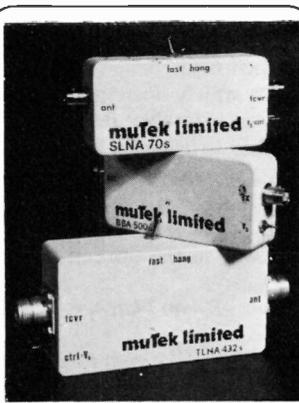
Base Station Aerial

2m ¼ groundplane 3.5dB gain £18.95 p. & p. £3.50
 The Araki Range are handmade of top quality anti-corrosion treated aluminium or stainless steel.

DOUBLE BALANCED MIXER

We are now stocking two new double balanced mixers which are pin compatible with both the MD108 we used to stock and also the SBL1, but have much superior specifications covering 500 kHz to 500 MHz. The M8 is hermetically sealed @ £7.83. The M18 is non hermetically sealed @ £6.09.

PLEASE ENCLOSE S.A.E. WITH ALL ENQUIRIES



IC211/251 front-end board

If you read GBLEF's article in October's SWM you'll appreciate that fitting one of our FT221/225 front-end boards in a 211 or 251 is quite an involved operation! To simplify this we've custom designed a front-end board for the Icom transceivers which incorporates all the features required for (relatively!) simple installation and superb performance.

The rf circuitry is an updated version of that used in our outstandingly successful FT221/225 front-end whilst an on-board antenna change-over relay minimises losses ahead of the rf amplifier.

Solid state dc switching allows easy interface with the Icom circuitry.

For those with doubts about their ability with a soldering iron we've also negotiated a fitting service at extra charge.

RPCB251ub £69.90 inc VAT

The Best Got Better!

Over the years there have been many claims of 'less than 1dB noise figure' from the less reputable manufacturers of 144MHz equipment. Although the gullible may have been taken-in, we suspect that most people rightly dismissed these claims as advertising hyperbole! The situation has changed! After secretly supplying our SLNA144 series of preamps with sub-dB noise figures (and checking our production measurements rather carefully!) we're pleased to announce that we are now supplying our 144MHz preamps with a typical noise figure of 0.9dB! We've done this by careful attention to our production engineering and by giving the 3SK88 the order of the boot! The new device is the BF981, which has both better dynamic and noise performance at 144MHz than the '88 or any consumer gasfet we've tried (now watch our competitors!).

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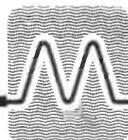
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MML144/30 - LS MML144/100 - LS
£69.95 (p&p £2.50) £159.95 (p&p £3)

These products have been specifically designed for the many low power multimode 2 metre transceivers, and have a switchable input for either 1 or 3 watt levels.

The MML144/30 - LS provides 30 watts RF output power, whilst the MML144/100 - LS will provide 100 watts. Both units require 13.8V DC and include an ultra low-noise receive preamp (3SK88), which can be controlled from the front panel.

An RF vox circuit is incorporated with switched delay times, suitable for FM or SSB, thus making the unit simple to operate.

When the DC supply voltage is removed, a straight through path is made so that the transceiver can be used barefoot, without disconnecting any leads.

MML432/50 MML432/100
£109.95 (p&p £3) £228.65 (p&p £4)

These amplifiers are compatible with any 10 watt 70 cm multimode equipment, and can be supplied for ATV use at no extra charge.

The MML432/50 provides 50 watts RF output power whilst the MML432/100 will provide 100 watts.

Both units require a 13.8V DC supply and include an RF vox circuit, thus making operation simple. (The MML432/50 also includes a low-noise receive preamplifier).

Current drain is 8 amps for the 50 watt version and 18 amps for the 100 watt.



MML144/30 - LS



MMS1



MMT432/144R

MMS1

£115 (p&p £2.50)

MMS1 - THE MORSETALKER

An ideal morse tutor, which sends random morse code in the range 2 - 20 w.p.m., and provides speech talkback of the morse so that the pupil may check his/her ability.

Letters and numbers can be selected and the alphabet is formatted in 4 sections to aid learning. Group lengths of 1, 5 and 50 characters can be selected, and the facility to send continuous morse without speech talkback is included.

A 12 volt DC supply is all that is needed and the unit can be used in a vehicle from the standard battery.

MMS2 - ADVANCED MORSE TRAINER

This unit is based on the MMS1, and boasts the same basic features, with the following additions:-

- 1/ The pupil may key in his/her own morse code. In this way, sending proficiency can be perfected.
- 2/ An uprated speed range: 6 - 32 w.p.m.

MMS2

£169 (p&p £2.50)

MMT432/28 - S

£159.95 (p&p £2.50)

MMT432/28 - S

This transverter provides coverage of 432 - 436 MHz in two ranges, switch selectable, and is compatible with any 10 metre transceiver having a low-level output. (5 - 500mw).

The unit produces an output power of 10 watts and incorporates a low-noise receive converter, which together provide high performance in all respects.

MMT432/144 - R

Similar to the unit above, this transverter is compatible with 2 metre multimode transceivers, and incorporates a repeater shift of 1.6 MHz.

An attenuator is supplied to allow use with transceivers having an output power of 10 watts nominal. (An alternative attenuator allowing other levels is available to order).

MMT432/144 - R

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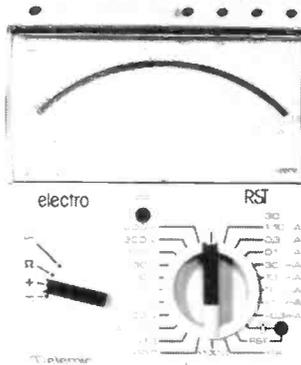
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ASP	Auto RF speech clipper (Trio or Yaesu plug)	82.90/89.70
075	Manually controlled RF speech clipper	56.35
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070	Morse Tutor	56.35
AD270	Indoor active filter (inc. PSU)	54.05
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MK	Keyboard Morse sender	137.42
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RFA	Wideband preamplifier	33.92

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SLNA 70s	70MHz switched preamp	33.90
SLNA 70u	70MHz unswitched preamp	20.38
SLNA 70ub	Unboxed SLNA 70u	12.41
SLNA 144s	144MHz switched preamp (now 0.9dB nF typical)	33.90
SLNA 144u	144MHz unswitched preamp	20.38
SLNA 144ub	Unboxed SLNA 144u	12.41
SLNA 145sb	Optimised preamp for FT290RD NEW	23.95
BLNA 432ub	1.3dB nF sub-min 432MHz preamp	12.43
TLNA 432s	432MHz bipolar switched preamp	54.90
TLNA 432u	432MHz bipolar unswitched preamp	26.40
TLNA 432ub	Unboxed TLNA 432u	18.50
GLNA 432u-1	432MHz gasfet unswitched preamp 0.8dB nF/13dB gain	46.90
GLNA 432u-2	0.65dB nF/13dB gain	56.90
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HDRA 95u-2	11.5dB gain variant (input intercept + 16dBm)	29.90
BBBA 500u	20-500MHz broadband high dynamic range preamp	26.40
XBPF 700ub	Band IV-V bandpass tvf filter	2.95
PPSU 012	12v (nominal) mains PSU for BBBA 500u and BBBA 860u	6.95
RPCB 251ub	IC211/251E replacement front-end board	69.90

ALINCO

ELH 230	2m RF amp 3W in/30W out	39.00
ELH 720	70cm RF amp 1W in/10W out	59.00
EMR 450	Rotator - heavy duty	69.00

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