

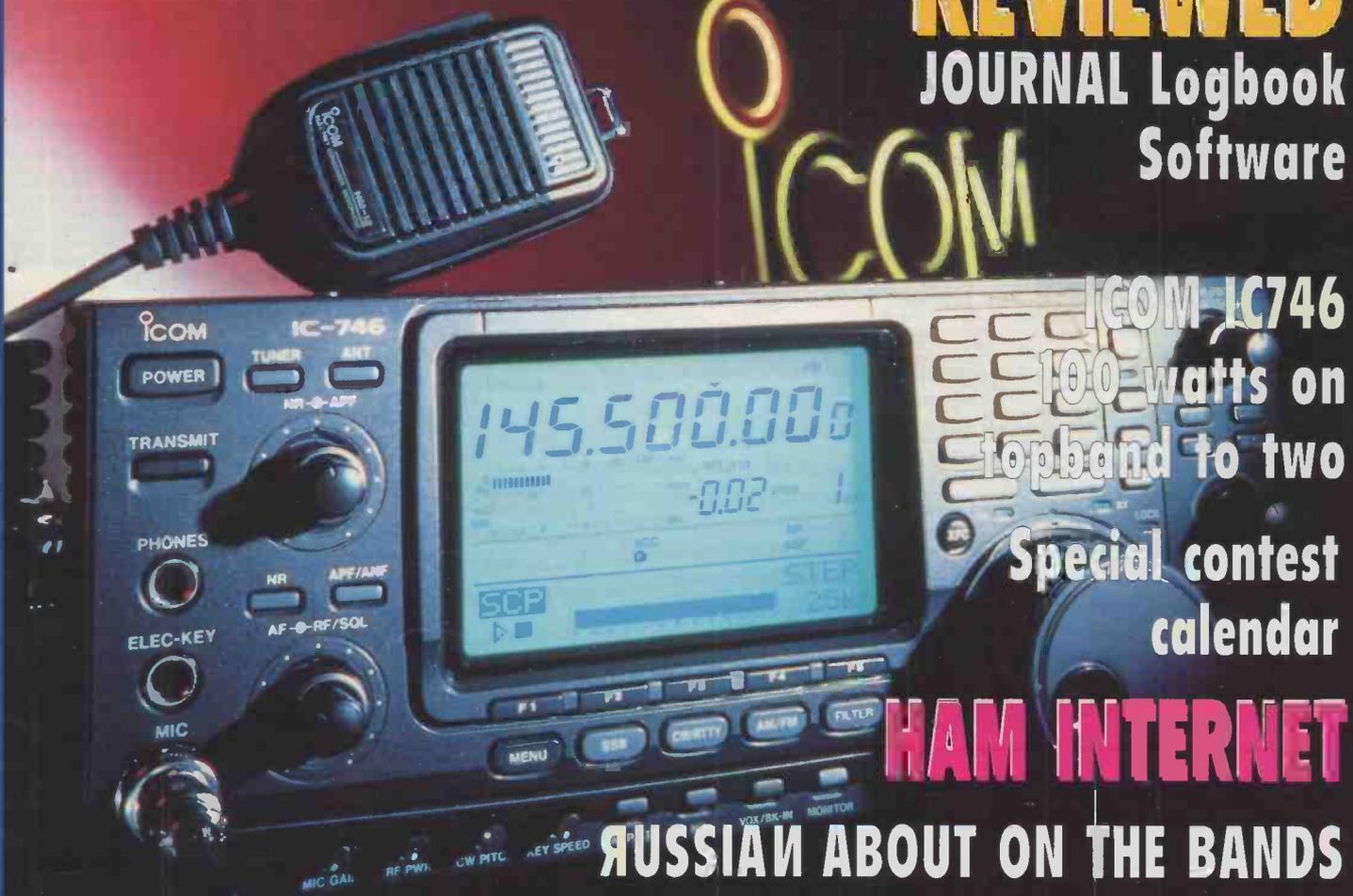
THE UK'S PREMIER HAM RADIO AND LISTENER MAGAZINE

Rig bargains in our 2nd hand dealer equipments lists

Latest amateur radio software

Ham Radio TODAY

REVIEWED
JOURNAL Logbook Software



ICOM IC746
100 watts on topband to two
Special contest calendar

HAM INTERNET
RUSSIAN ABOUT ON THE BANDS
with Ben Nock

9 770269 826130

02 >

NEXUS

Ham Radio TODAY

HAM RADIO TODAY VOLUME 16 NO. 2

REGULAR COLUMNS

- VHF / UHF MESSAGE** 36
Geoff Brown, GJ4ICD, reports on an excellent month's meteor scatter activity
- HF HAPPENINGS** 38
Don Field, G3XTT, is in reflective mood as he looks back to his first station in 1968 - and forward to some exciting operations
- SATELLITE RENDEZVOUS** 40
Richard Limebear, G3RWL, with his regular round-up of AMSAT-UK news
- NET COMMUNICATION** 42
Jeremy Boot, G4NJH, looks at how amateur radio can be benefitted by the Internet
- DATA CONNECTION** 44
Chris Lorek, G4HCL, shows how to sample APRS activity on-line, and gives a hint on how to overcome a unique 70cm packet frequency problem
- COMPUTER CONTACTS** 46
This month Paul Simpson, GORUR, answers questions from readers about amateur radio computer programs
- QRP CORNER** 48
Dick Pascoe, G0BPS, has some suggestions for 'home-brew' projects for these long winter evenings
- FREE READERS' ADS** 56
For Sale, Wanted, Exchange and Helplines, all published free - a service for Ham Radio Today readers

NEWS AND VIEWS

- RADIO TODAY** 4
The latest Amateur Radio news
- TRADE TOPICS** 6
The latest equipment news
- LETTERS** 24
Our readers have their say, no censorship here
- CLUB NEWS & RALLIES** 51
Go-ahead clubs, national and international societies, and an up-to-date rallies listing

READERS' INFORMATION

- PUBLICATION DATES & NEWSAGENT CONTACT DETAILS** 58
- ADVERTISERS' INDEX** 58
- EDITORIAL & READER SERVICES CONTACT INFORMATION** 58

REVIEW

'JOURNAL' PC-BASED LOGBOOK 9

Chris Lorek, G4HCL, reviews a new British logging program for Windows written by Derek Hughes, G7LFC. Best of all: it's absolutely free!

FEATURES

HRT 1998 CONTEST CALENDAR 12

Our guide to this year's major operating events on HF and VHF / UHF

RUSSIAN AROUND ON THE BANDS 14

Ben Nock, G4BXD, guides us through the 'minefield' of former Eastern bloc radio equipment now available on the surplus market

ALL IN A DAY'S WORK 17

Harry Leeming, G3LLL, says equipment from the Canaries doesn't always go 'cheap', and revisits the important area of electrical safety

AN INTRODUCTION TO JAPANESE AWARDS 28

A special report from Japan by Kouji Hoshi, JQ1HBT, on some of the JARL amateur radio awards

TRADE-IN MARKET PLACE 30

Latest second-hand dealer equipment lists - get your bargain here!

ON THE AIR FROM MYKONOS 33

Phil Whitchurch, G3SWH, reports on his latest Greek odyssey



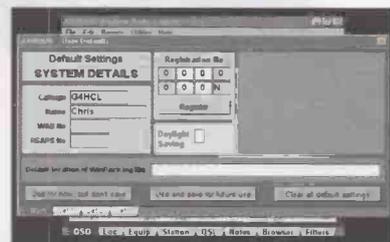
SUBSCRIPTIONS AND BACK ISSUES HOTLINE:

ORDERS:

01858-435344

ENQUIRIES:

01858-435322



One of the Journal logbook program windows. See the review by Chris Lorek, G4HCL.

All reasonable care is taken in the preparation of the magazine contents, but the publishers, nor the Editor, cannot be held legally responsible for errors in the contents of this magazine, or for any loss arising from such errors, including loss resulting from negligence of our staff. Reliance is placed upon the contents of this magazine at readers' own risk.

Please note our new Editorial Email address;

editor@qsp73.demon.co.uk



Published by
Nexus Special Interests Limited
Nexus House, Boundary Way,
Hemel Hempstead, Herts HP2 7ST
Tel: 01442 266551
Fax: 01442 266998

EDITORIAL

Senior Editor
David Watkins

PRODUCTION

Designer
David Rice

Production Executive
Marie Quilter

Production Administrator
Theresa Davis

Printed by
Stones The Printers, Banbury, Oxon.

Origination by
Atelier Data Set, Wheal Northy, St
Austell, Cornwall

SALES

Group Advertisement Manager
Diane Farnham

Advertisement Manager
Alison Weatherill

MANAGEMENT

Divisional Director
John Bridges

Business Manager
Stuart Cooke

Circulation Manager
William Pearson

SUBSCRIPTIONS

UK £29.00 for 13 issues (1 year)
Europe and Eire £39.50
Overseas (Surface mail) - £41.50,
US \$66
Overseas (Airmail) - £59.00, US \$95
Subscription/Back Issues Orders
Hotline
Tel. 01858 435344
Enquiries Hotline
Tel. 01858 435322



© Nexus Special Interests Limited 1997
All rights reserved
ISSN No. 0269-8269

The Publisher's written consent must be obtained before any part of this publication may be reproduced in any form whatsoever, including photocopyers, and information retrieval systems

RADIO

Now Emma's a TV Star

The Young Amateur of the Year, Emma Constantine, 2E1BVJ, featured live on BBC TV's Blue Peter programme on 8 December. Emma, 16, was interviewed by presenter Richard Bacon, then made a couple of contacts as GB0BP (standing for 'Blue Peter') with Novice stations on 70cm FM. The special event callsign had been arranged in order to allow the presenter to pass greetings messages to the stations contacted. The station was supervised (just off camera) by David Wilkins, G5HY, of Kenwood (UK), who also loaned the equipment used by the station.

Emma pointed out that amateur radio equipment needn't be expensive, and demonstrated a £5 crystal set and a £25 transceiver kit for the TV cameras.

It's not Emma's first time as a TV star. When she was just 11, she took part in another children's BBC programme called Why Don't You . . . ? in which she also demonstrated amateur radio in action.



Emma Constantine, 2E1BVJ (right), in the Blue Peter studio

'A Modern and Exciting Hobby'

Two days before her appearance on Blue Peter (see separate story), Emma Constantine, 2E1BVJ, who is the current Young Amateur of the Year, made an impassioned speech to the RSGB's AGM in London. She had been invited to the AGM to present the trophies and awards on behalf of the RSGB's President.

She said, 'It is good that we mark the achievement of those who succeed in the hobby, but it is also vital that we encourage those who wish to join it. As the first YL Young Amateur of the Year, I see it as my responsibility to encourage people of all ages and abilities - but particularly young people - to find out more about amateur radio and to dispel the myth that amateur radio is very esad.

'In the same way that I have been supported and encouraged by my school and those around me, I would urge all amateurs to support the Novice programme, the work of the RSGB and STELAR.

'Amateur radio is a modern and exciting hobby and just as relevant to our world as it was when Marconi was a boy. . . Without the will and enthusiasm of those that know, to pass on their experience to those who wish to learn and who may become the engineers of the future, the survival of the hobby will not be guaranteed. . .

'Therefore, may I on behalf of the young people of this country and the wider world, take this opportunity to make a plea: to ask you all to come out of your shacks and actively pass on your knowledge to the next generation of amateurs who will hopefully become the professionals of tomorrow. I can assure you that your efforts will bring you much reward and personal satisfaction and that the hobby will, by your efforts, survive well into the next millennium.'

Emma's speech was received with warm applause by the audience of over 100, the majority of whom were old enough to be her grandfather.



Emma Constantine, 2E1BVJ (right), presenting one of the awards at the RSGB's AGM

TODAY

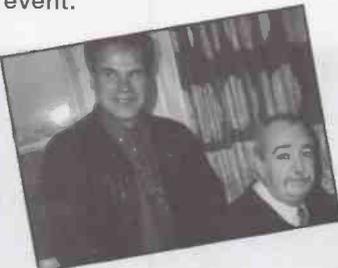
Britannia's Last Radio Message

The Royal Yacht Britannia's final radio transmission before it was decommissioned was on the amateur bands. The contact was with special event station GB100IOW, which had been set up to celebrate the 100th anniversary of the world's first permanent radio station at Alum Bay.

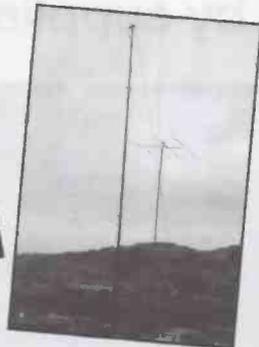
At 1500UTC on 6 December, Jim Barlow, G3VOU, the QE2's Chief Radio Officer, re-transmitted from GB100IOW the first message sent by Marconi from the same site exactly 100 years earlier. The CW message, 'V V V Orange Orange Orange', was picked up by Britannia on 80m. The Royal Yacht responded on SSB using its own callsign, Golf Quebec X-Ray Charlie. Britannia's Commodore sent a greetings message to GB100IOW, stating that after 43 years of operational service, the Royal Yacht was about to be decommissioned and that this was the final radio transmission to be made from the Royal Yacht.

GB100IOW also made contacts with HMS Brave, Nottingham and Illustrious. Special permission had been obtained from the RA for GB100IOW to contact stations other than those in the Amateur Service.

The Isle of Wight Marconi centenary celebrations received a lot of media attention, including articles in The Times and The Guardian. The organiser of the event, Ben Clegg, G7RER, was interviewed on several national BBC radio news broadcasts, and viewers of the national BBC1 Late Evening News saw John Francis MBE, G3LWI, transmitting on CW, and Dennis Goodwin, G4SOT, on SSB from GB100IOW. Dennis was representing Icom (UK), who loaned a number of HF and VHF / UHF transceivers for the event.



Dennis Goodwin, G4SOT, of Icom (UK) (left), and Jim Barlow, G3VOU, at the GB100IOW station which contacted HMV Britannia.



The antennas were supported by Clark Masts, one of the many commercial sponsors of GB100IOW.

Ham Radio 100 Years Old

In 1898, Lieutenant M J C Dennis, having heard about Marconi's wireless experiments, set up his own station at Woolwich in London. Dennis claimed that his was 'the first non-professional wireless experimental station in the world'. This claim has never been challenged, and so it can safely be said that Dennis was the world's first true radio amateur. He was licensed as DNX and later moved to Ireland, where he became EI2B.

To celebrate the 100th anniversary, two new awards for HF and VHF or UHF activity have been launched by the RSGB. Both require applicants to score 100 points by making contacts between 1 January and 31 December 1998. On HF, points are obtained by working different IOTA references, Commonwealth Century Club call districts, ITU Zones, Postal 'District Codes', and IARU Region 1 Countries. A special plaque will be awarded to the first successful applicant.

On VHF / UHF, a contact with each different station on 50, 144 and 432MHz scores one point and on 70 and 1296MHz each contact scores two points.

Long Distance LF Reception

On 14 December, DA0LF near Frankfurt was readable in the UK on the 137kHz band. Sending extremely slow Morse with an ERP of just 50mW, DA0LF was received at distances of up to 750km by using DSP techniques to receive in bandwidths of less than one hertz.

The 137kHz band will eventually become a European-wide amateur allocation and it is hoped that all class A amateurs in the UK will gain access to the new band soon. The distances so far achieved by German and Finnish stations, who already have access to 137kHz, have greatly exceeded those attained by stations operating in the UK-only 73kHz band.

Good News for SWL DXers

The CQ World Wide 160m Contest has an SWL section this year for the first time. The organisers have agreed that leading British SWL Bob Treacher, BRS32525, should adjudicate the listener section.

The CW section of the CQ WW 160 contest is from 2200UTC on Friday 23 January until 1600UTC on Sunday 25 January, whilst the SSB section is between the same times from 27 February to 1 March.

The full rules can be obtained by sending an SASE to Bob Treacher, 93 Elibank Road, Eltham, London SE9 1QJ.

Editorial Team

This edition of Ham Radio Today has been put together by a temporary editorial team prior to the appointment of a new editor. The next issue, Vol 16 No 3, will be edited by the new team.

National VHF Convention

The RSGB tells us that their National VHF Convention will take place at the usual venue, Sandown Exhibition Centre, Esher, in Surrey, on Sunday 22 February. The event features three lecture streams, a trade exhibition, book stand, and specialist groups and RSGB committees.

The lectures include talks on VHF direction finding in the UK and Europe, portable contesting, VHF DXpeditions, and 'Europe from Down Under' by VK3OT. During the convention, trophies will be presented to the winners of VHF / UHF contests. Morse code tests will also be available on demand. The National VHF Convention is open between 10.30am and 5.00pm and entry costs £3.00.



From left to right: Colin Smith, GM0CLN; Bob Glasgow, GM4UYZ; Wallace Moodie, MM0AMV; Heather Gregory, the Area Organizer for the British Heart Foundation; and Ron Brown, GM4IKU.

Big-Hearted Club

The Cuckney and Port Seton Amateur Radio Club recently presented a cheque worth £1190 to their adopted charity, the British Heart Foundation. The sum was raised by a series of fund-raising events during the course of the year.

5000 QSOs

On 6 December, Denis Bosworth, G8BAV, in Derby and John Tye, G4BYV, in Swanton Morley, Norfolk, had their 5000th contact on 70cm. Denis and John first made contact 30 years ago on AM, though they now use SSB. The distance between the two stations is in excess of 100 miles, which disproves the fallacy that 70cm is only suitable for very local contacts.

Trade Topics

The following information is based upon submissions by suppliers, and is not necessarily endorsed by Ham Radio Today. We cannot be responsible for false or misleading claims by suppliers.

New Icom Multi-Band Rig

Icom have launched a new state-of-the-art HF / VHF transceiver - the IC-746 [featured on our cover this month - Ed]. Following hot on the heels of the highly-successful IC-706 and IC-706 Mk II, this new transceiver takes radio technology a step further. The IC-746 operates from 1.8 to 144MHz on all modes including RTTY.

The IC-746 combines high-tech features with 100W output on all bands, making it the ideal base station transceiver for VHF as well as HF use. Icom have developed a twin PBT (passband tuning) system for the IC-746, which efficiently eliminates interfering signals. The twin PBT makes this transceiver unique in its class.

Fitted with a large, easy-



to-read function display, the IC-746 indicates standard details like operating frequency and memory channel number, as well as function settings and digital meter indications. However, in order to provide all essential information at a glance, the display also features a multi-function dot matrix screen which registers the 'bandscope' settings, twin PBT settings, split frequency operation modes and the contents of the memory keyer.

Other outstanding features include DSP for sound clarity, an automatic antenna tuner with preset memories for each 100kHz step allowing for quick tuning, a digital multi-function meter, tone squelch as standard and a channelled 'quick split' function.

The Icom IC-746 became available from Icom retailers just after Christmas and costs £1695. We hope to feature an in-depth review of this rig in Ham Radio Today shortly.

Icom (UK) Ltd, Sea Street, Herne Bay, Kent CT6 8LD; tel: 01227 741741; fax: 01227 741742; Internet: <http://www.icomuk.co.uk>; e-mail icomsales@icomuk.co.uk

Yaesu FT-847

The Yaesu FT-847 is the first transceiver covering all the HF bands plus 6m, 2m and 70cm as standard. With 100W output on all bands 'topband to six' and 50W output on 2m and 70cm, the FT-847 is sure to be a winner with hams who are active on all bands 'DC to daylight'.

Ideal for amateurs who operate via the satellites, the Yaesu FT-847 allows crossband duplex operation. It also has normal and reverse tracking for operating via satellite, and provides dedicated alphanumeric



Photograph of FT-847 from Martin Lynch & Son web site: www.martin-lynch.co.uk

satellite memories. CTCSS and DCS (digital code squelch) encode and decode is fitted as standard, and for packet radio enthusiasts, the FT-847 is 9600 bps (and 1200 bps) 'packet-ready'.

The FT-847 is due to be launched first at the London Amateur Radio and Computer Show at Picketts Lock on 7 / 8 March - look out for it there! Recommended retail price will be around £1695.

Yaesu UK Ltd, Unit 2, Maple Grove Business Centre, Lawrence Rd, Hounslow, Middx TW4 6DR; tel: 0181 814 2001; Internet: <http://www.yaesu.co.uk>

Dual Output Power Supply

Do you need a DC power supply unit with a bit more versatility than the usual 13.8V DC at 20A? If so, you'll be interested in the Vann Draper Electronics ADPS305 dual output power supply.

The ADPS305 is a dual output 0 to 30V 0 to 5 amps regulated DC linear bench power supply,



which is capable of operating in constant voltage and constant current modes, with front panel switching for isolated, serial or parallel operation. This has the advantage of allowing the user to select easily 0 to 60V at 0 to 5 amps, or 0 to 30V at 0 to 10 amps, or dual 0 to 30V at 0 to 5 amps.

The output voltages are set by both coarse and fine controls, with the output voltage and current monitored by four LCD display panels which provide clear and accurate readings.

Load regulation is better than 0.2% and ripple less than 5mV. Full overload and short circuit protection is provided. The ADPS305 measures 350 x 320 x 150mm and costs £289, making it one of the best value units in its class. It comes with a 12-month guarantee.

Vann Draper Electronics Ltd, Unit 5, Premier Works, Canal Street, South Wigston, Leicester LE18 2PL; tel: 0116 277 1400; fax: 0116 277 3945.

Tandy Launches Biggest Ever Catalogue

Britain's largest high street electrical retailer, Tandy, has launched its biggest ever catalogue, with nearly 500 products packed with

thousands of products. Equipment which will be of interest to radio enthusiasts includes shortwave portable and communications receivers, handheld and base station scanners, scanner antennas, CB transceivers (handheld and base station units), CB antennas and other accessories, GPS 'direction finder', soldering irons and other tools, switches, cables and thousands of components.

In addition, the catalogue includes consumer electronics products such as televisions, video recorders, hi-fi equipment, cellular phones, PCs, computer accessories, and games and toys such as radio-controlled model boats and planes. To keep the youngsters entertained, radio enthusiast parents will be interested in the Star Wars and Barbie walkie talkie sets!

Tandy's Managing Director, Andrew Fryatt, said: "A new feature of the catalogue is Tandy 'Unlimited'. This offers customers a mail order facility to products featured exclusively in the new catalogue. By doing this we have supplemented the range of products available in our 340 high street stores."

We understand that Tandy will shortly be launching a new 2m FM

handheld transceiver at a competitive price. Tandy say that this is already "America's best selling FM transceiver." Of course, we plan to review it in Ham Radio Today when it becomes available.

The new catalogue is available for £1 from all Tandy stores and it includes £25-worth of redeemable vouchers.

New Drake Communications Receiver

Any new piece of equipment from the R L Drake Company is awaited with interest by Drake's many fans. Their new R8B 'base station' communications receiver is an updated version of the Drake R8, but with further improved receive performance, no fewer than 1000 programmable memories, and selectable sideband synchronous detection for the best-possible audio quality reception of shortwave AM broadcast stations.

The R8B retains all the features of the earlier R8, including alphanumeric LCD display of station name and frequency, direct keypad entry of mode and bandwidth, multiple scan functions, multiple antenna inputs, attenuator, passband offset tuning, etc. It has fitted as standard a noise blanker, selectable pre-amp, multi-voltage power supply, RS-232 serial interface, and a built-in loudspeaker. The R8B measures 134 x 334 x 330mm, weighs 5.9kg, and costs £995. Further details are on the R L Drake web site at <http://www.rldrake.com> or can be obtained from the UK distributor, Nevada, Nevada, 189 London Road, North End, Portsmouth PO2 9AE; tel: 01705 662145; fax: 01705 690626; Internet: <http://www.nevada.co.uk>; e-mail: info@nevada.co.uk

Lake Electronics

The 1998 Lake Electronics catalogue is now available. It contains details of the DTR series of HF CW transceivers, including the new 10MHz version, together with a range of receiver ancillaries, such as filters, ATUs and Lake's ever-popular Antenna Coupling Transformers.

Included for the first time is a section devoted to vintage radio, particularly out-of-print books and obsolete components. The catalogue is free, but please send an A5 SASE or a self-addressed envelope and two IRCs to cover return postage. Lake Electronics, 7 Middleton Close, Nuthall, Nottingham NG16 1BX; tel / fax: 0115 938 2509; e-mail: 100775.730@compuserve.com

Mscan v3.0 SSTV Program

The Dutch firm CombiTech, run by Mike Versteeg, PA3GPY, released version 3.0 of their SSTV program, Mscan, just before Christmas. Mscan v3.0 is a completely new program to receive and transmit slow scan television pictures by amateur radio.

The program uses all the latest features that were introduced in Windows 95 and can really be called multitasking, eg you can run multiple programs whilst monitoring your favourite SSTV channel. Scale the Incoming Video window to any size you want, from a small thumbnail in the corner of your screen, right up to full screen size.

Mscan v3.0 even supports both receiving and transmitting at the same time. Of course, whilst transmitting you can also enter text and load or save pictures. These pictures can be retrieved from any source, including JPEG and Kodak Photo-CD.

Mscan v3.0 will run on any Windows 95 PC with a P100 processor and Multiscan interface. Drivers for EasyDSP, HariFax IV and PTC-II are under development (for technical reasons interfaces such as Miniscan, Hamcomm, Viewport or EasyFax cannot be supported.)

For further details on Mscan v3.0 or their other products, and information on the price and how to pay, please contact CombiTech at the address below. A list of local agents is available on their web site. CombiTech, PO Box 507, 3235 ZG Rockanje, Netherlands; tel / fax: +31 181 404252; e-mail: combitech@mscan.com

Universal Radio Catalogue

Universal Radio Inc of Reynoldsburg, Ohio, USA, recently launched a 100-page amateur radio and SWL catalogue. They say: "Universal is pleased to process overseas orders. We can prepare quotes or proforma invoices on request." [However, beware that shipping costs, UK duty and VAT must be added to USA prices, and that it is illegal to install and use non-CE approved equipment in the EU - Ed.] Universal Radio, 6830 Americana Pkwy, Reynoldsburg, OH 43068-4113, USA; 24hr fax: +1 614 866 2339; e-mail dx@universal-radio.com

Run Your Computer From Your Car

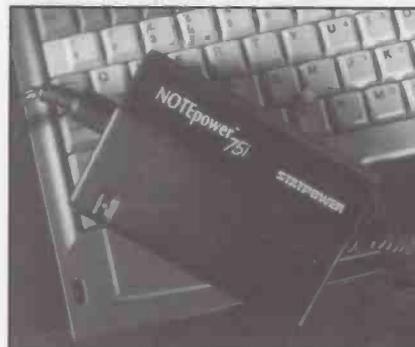
Merlin Equipment's new NOTEpower 75i inverter allows you to run and recharge notebook computers, camcorders, mobile telephones and even video games in their car. Although not specified, it would presumably also be fine for



QRP amateur radio equipment.

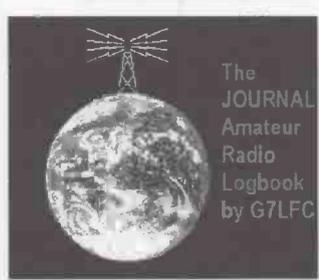
The inverter converts the car's 12V DC battery voltage to 230V AC which means you won't need to buy expensive battery packs or keep recharging the nicads. Just the size of a matchbox, the NOTEpower 75i inverter is supplied with a cigar lighter plug for easy connection. The 'mains' output is available from a standard socket on the side of the unit.

A useful feature is a battery alarm which will warn that the vehicle's battery is low. The inverter is fully overload and heat protected and is CE approved. The NOTEpower 75i costs £86 (plus VAT and P&P) and is the smallest such unit made by Merlin Equipment. Other units are capable of providing up to 2500 watts of power, and UPS systems at up to 20kW. Merlin Equipment, Unit 1, Hithercroft Court, Lupton Road, Hithercroft Industrial Estate, Wallingford, Oxfordshire OX10 9BT; tel: 01491 824333; fax: 01491 824466



JOURNAL PC-Based Logbook Review

Chris Lorek, G4HCL, reviews a superb UK-written Windows logbook program



This review is about something a little different than a commercial product. Instead it's about the free-to-use amateur radio logbook which many hams are already asking about on the air. It's been spoken about on the packet network, there are links to it from several ham radio Internet sites, it's even been announced on the RSGB's national GB2RS news service.

The program in question is JOURNAL, written by Derek Hughes, G7LFC. It's a Windows-based amateur radio logbook, and it's great value for money because it's free! Derek says he chose the name JOURNAL because, in his dictionary, it means a book recording daily events, which he thought rather apt.

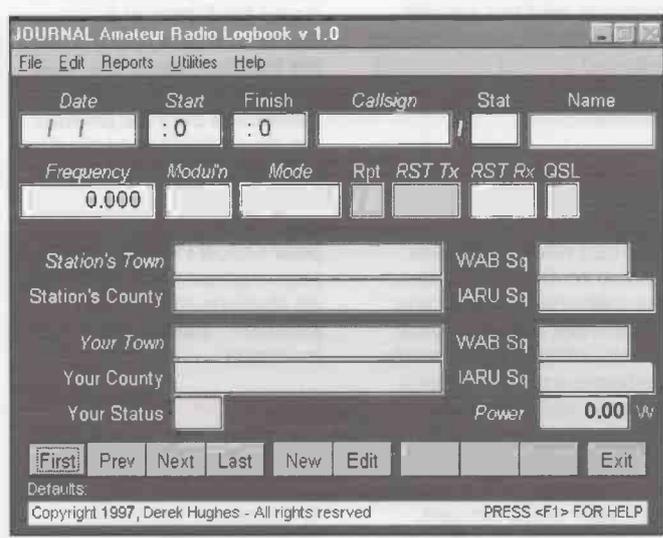
Installation

To use JOURNAL you'll need a PC running Windows 3.1, 3.11, Win 95 or Win NT4. The program reviewed here is the v1.0 Windows version, although two DOS versions are currently also in the development stage. The

program isn't small: with over 3Mb needed for all the installation files, it requires three 1.44Mb disks to fit them all on. The subsequent installation to your PC's hard disk, in order to run the program, is a very simple affair, the program automatically creating the required subdirectories, program icons etc. On my 150MHz Pentium, installing from hard disk stored files, it took me less than a minute to do all this.

Running the program

The logbook is shown on your PC screen always in a single window, which you can move around the screen as you wish if you're also running other Windows tasks. In the JOURNAL window, besides the usual 'menu' bar along the top, at the bottom there are eight 'tabs' visible, each tab giving you access to a different page of information. The available pages are the QSO screen, Location

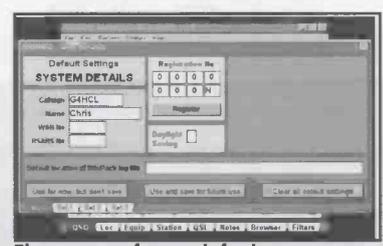


The main screen for QSO details entry

screen, Equipment screen, Station screen, QSL screen, Notes screen, Browser screen and the Filters screen. To move between these, you simply click on the relevant tab with your mouse.

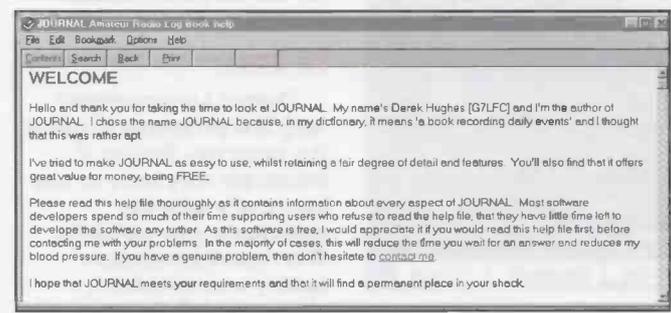
User defaults

When you're operating on-air and having contacts, especially during contests, entering the same details such as the power and modulation used together

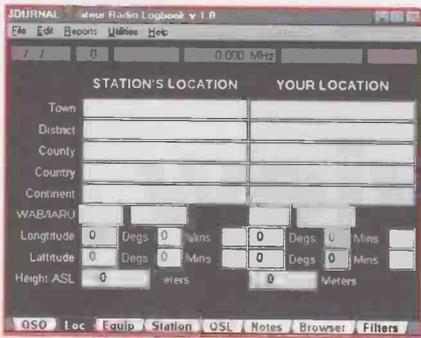


Three sets of user defaults are available

with your location and equipment (eg for QSL purposes) is of course rather repetitive. You naturally want to be operating, not entering information, so the program can insert these for you as a matter of course. Three sets of user defaults can be recorded by JOURNAL, which you can set up for, say, different locations, or maybe for a dual-operator station set-up. Before you



On-line help is readily available with a press of the F1 key



Location entry is very simple

start logging QSOs, you select a set of user defaults and the details recorded are automatically entered for you every time you create a new QSO record.

Filters

A very useful facility of the program is the fact that you can filter your data based on the contents of the following fields: date, frequency, callsign, your status, modulation, mode, station's town, station's county, station's WAB square, station's IARU square, your town, your county, your WAB square, and your IARU square.

I quickly found that this very usefully extends to report generation, including QSL cards and address labels. So, for

example, if I entered a weekend contest either from home or an alternative location, or if I went on a mini-DXpedition, I could generate QSLs or a logsheet for just for that location, or date range, or WAB square etc.

Being able to print all the QSL cards and / or address labels for a specific day is very useful if you took part in a contest. If you apply a filter for the required date, QSL cards and / or address labels will only be printed for those QSO records that passed through the filter. This of course can also help by showing me all the past QSOs I've had with, say, a given station, or say all stations in a given location - useful for 'square hunting'!

Reports

JOURNAL can provide the following useful 'reports' from within the program:

- 1) Standard log book
- 2) WAB Award application forms
- 3) WAB exception reports
- 4) QSL status report

- 5) QSL address labels
- 6) QSL cards

You can run the standard logbook report in date order, or in callsign order. The report itself is a landscape report, similar in layout to the pages in paper-based logbooks. If you don't want to print out all of the QSO records stored by JOURNAL, you can set a filter to hide those you don't want to appear on the report.

There are three Worked All Britain (WAB) Award application forms included in the version I tested.

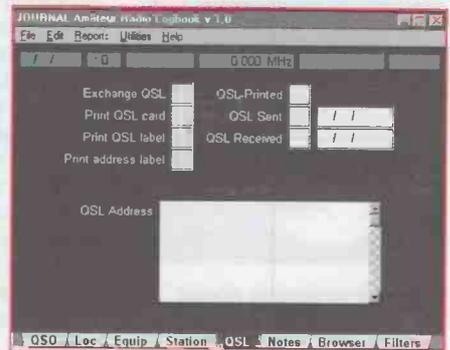
These include the Small Squares, Large Squares and Counties awards, and I'm told that each of these application forms have been submitted to the WAB Awards Manager and been approved as acceptable replacements to those supplied in the WAB Awards membership pack. More are also planned for future versions.

Other reports are planned for a future release of JOURNAL include the Royal Signals Award application forms, Darlington and District ARS Award application form, and the Postcode Challenge application form, together with the new RSGB 100 Years of Amateur Radio awards. The latter is currently with the RSGB's VHF / UHF Award Manager for approval, and is planned for the very next version available.

In Use

Overall I encountered very few problems in using the program, finding it intuitively very easy to use especially with the selectable user defaults. The report generation facility was excellent, although I felt I'd have liked the facility for serial

number generation and 'dupe checking' for some contests - maybe a future version will have these, though, as it's still early days. I only found one or two minor bugs, eg when I clicked on the Help icon it resulted in an invalid command. However, a press of the F1 help key instantly brought up the full Windows help file, complete with hyperlinks. I must say this contained excellent instruction on running the program,



JOURNAL has facilities for QSL card and address label generation

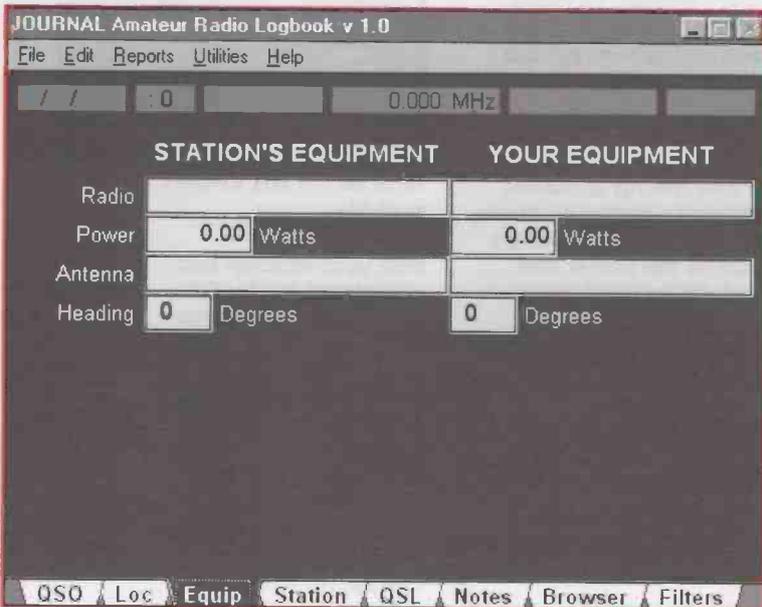
generating output, answers to commonly asked questions etc.

Obtaining the program

If you've received a copy of the QSP73 CD-ROM, as detailed in last month's issue and which contains over 600Mb of the very latest ham radio software (tel: 01703 263429 for info), you'll already have the latest copy of JOURNAL on there at the time of issue. Derek has kindly given permission to include his latest version of JOURNAL on this CD-ROM software collection for the benefit of amateurs.

You can also download the latest version of the program via Internet from http://ourworld.comuserve.com/homepages/derek_hughes_g7lfc

It took me around a half hour with a 33.6k modem this way. It's also available via landline BBS download



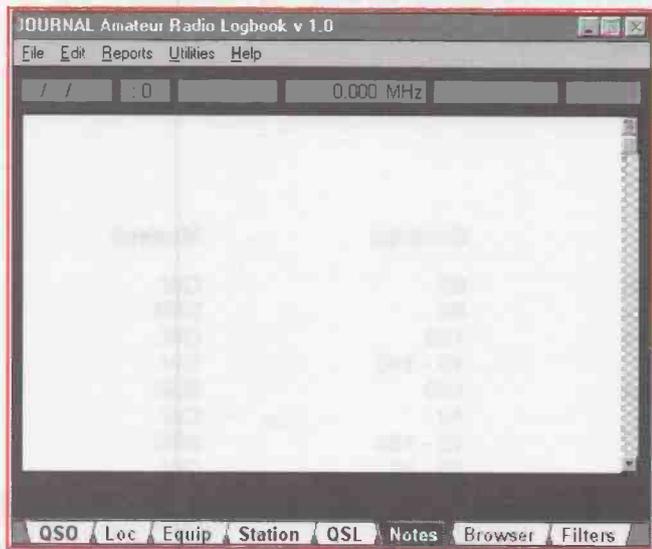
Equipment details can be entered if you wish

from various sites such as the Crocks Corner BBS (tel: 01253 305040) if you don't have Internet facilities. Alternatively (and possibly rather cheaper than a long landline modem download), for a copy on disk you can send three blank formatted 1.44Mb disks in a returnable padded envelope together with return postage in stamps to Derek Hughes, G7LFC, 86 Colinmander Gardens, Ormskirk, Lancashire L39 4TF.

The licence agreement for the program specifically prohibits anyone from charging, or requesting donations, for supplying copies of the software without written permission

program, he asks for no personal registration payment if you find it useful, you're free to use it for as long as you wish. Derek says that, having obtained your copy of JOURNAL, there is no more for you to pay in order to continue using it. Unregistered copies of JOURNAL are not crippled, time limited and will not time-bomb on you. If you don't want to register JOURNAL you will not be snubbed, or shunned. You are an official user of JOURNAL, providing you use the software within the terms and conditions of the license agreement.

However, voluntary registration with a donation cheque of £10.00 made



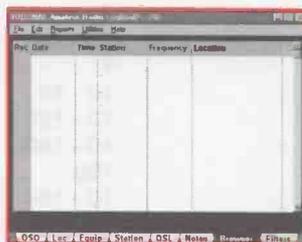
Free-form notes can be entered for each contact

from the author. This includes charging for disks, postage and packing, or any other charges incurred during the supply of the software. An exception to this is for RSGB-affiliated amateur radio clubs, who may charge a maximum fee of £5 for each copy of the software supplied with any profit going to club funds.

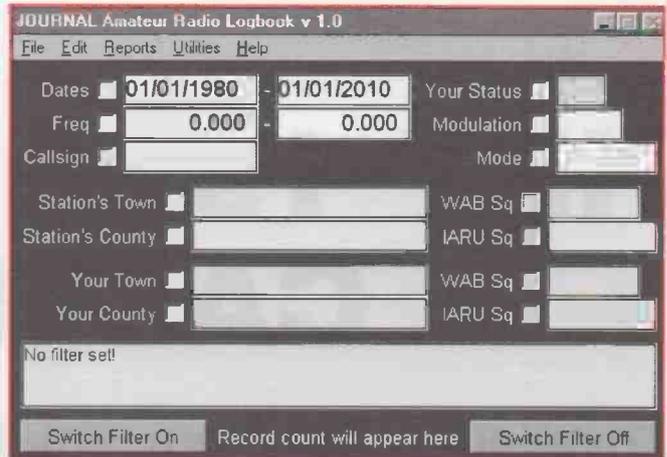
Registration

Even though the program author has spent much of his time in putting together this superb

payable directly to a very worthy cause, this being the RNLI (Royal National Lifeboat Institution), is encouraged. Sending this to the program author



A browser facility lets you see who you've worked in the past



The superb filter facility is extremely useful for report generation

together with a completed registration form (from the program's Help file) and £1.50 worth of stamps together with a padded A4 envelope brings you a registration pack which will normally include some add-on modules for JOURNAL as well as a specially printed manual. An add-on module currently available for v1.0 is 'DBL', a Distance, Bearing and Locator calculator, more add-ons will be made available in future versions. Registered users will gain automatic access to them without having to re-register.

Further versions

At the time of writing, v1.1 of JOURNAL is in the testing stage. I'm told this new version will hopefully be released in late January 1998, ie by the time this appears in print, and will fix a couple of bugs as well as introduce some new and enhanced features. It's also planned to include the application form for the new VHF / UHF RSGB 100 Years of Amateur Radio Award in this, and Derek believes that JOURNAL will be the first product to support this award.

As well as the updated Windows version, there will possibly be two versions of JOURNAL for DOS users available in the future, which the author is currently working on. The first version will be a very basic logbook with none of the 'bells and whistles' of the current Windows program and will be called JOURNAL Lite. It'll be for

those who only want to keep the minimum of information and print it out using simple filters. The second version will be a full version, similar in features to the current Windows version. The data stored in both DOS versions will be fully interchangeable between themselves and the Windows version of JOURNAL.

JOURNAL newsletter

If that's not all, there is a freely-available JOURNAL newsletter available, which contain news about the software and Derek's latest exploits. Edition No 1 (1 November 1997) marks the launch of JOURNAL version 1 and explains a little about Derek's plans for an RNLI Amateur Radio Society. JOURNAL Newsletters are available by REQFIL over the packet network (not via any other method) and are available to all users of JOURNAL, not just the registered ones.

If you'd like more details on the program, you can contact Derek via packet with a message to G7LFC@GB7OMN.#16.GBR.EU or by e-mail to 100023.1134@compuserve.com

Finally, my thanks go to Derek, G7LFC, himself for his invaluable help and assistance in providing me with information and updates on the JOURNAL logbook. Both Derek and I hope many amateurs will enjoy benefiting from this program.

HRT 1998 CONTEST CALENDAR

Love 'em or hate 'em, amateur radio contests are here to stay. At best they provide an excellent means of testing your station performance - and your operating skills. Here's a list of the most popular UK and international events

If you live in the UK, you must be an RSGB member to put in a scoring entry to an RSGB contest, although non-members can of course participate without entering. Exceptions are made for VHF Field Day, and the RSGB Affiliated Societies contests on HF and VHF / UHF, where you must be a member of the Affiliated Society, although not necessarily of the RSGB itself. There are many more RSGB contests: those listed here are just the most popular ones (full details of RSGB contests were published in the September 1997 edition of RadCom).

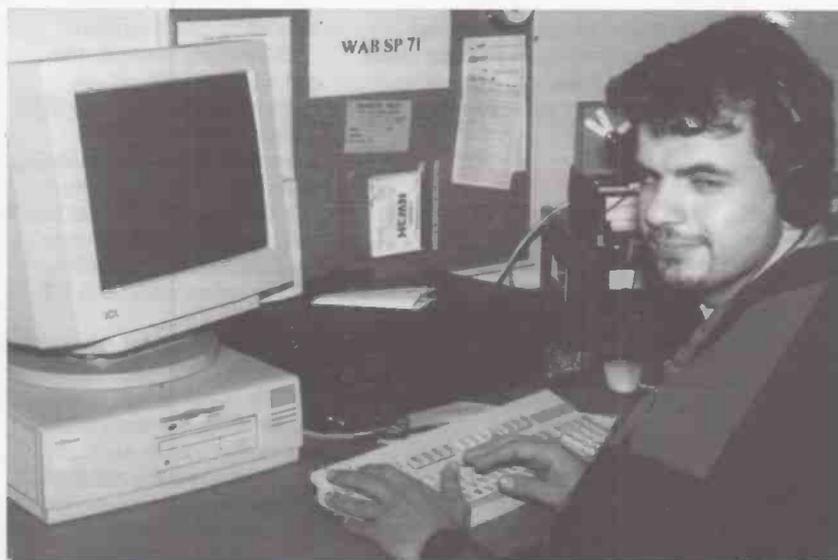
The WAB contest rules can be found on the Internet at www.users.zetnet.co.uk/g1ntw/contest8.htm whilst the BARTG contest rules are at www.bartg.demon.co.uk/Contests/98rules.htm

HF Contests

Date and Time (UTC)	Event	Bands(s)	Mode(s)
11 Jan, 1400 - 1800	RSGB Affiliated Societies Contest	80	CW
17 Jan, 1400 - 1800	RSGB Affiliated Societies Contest	80	SSB
23 - 25 Jan, 2200 - 1600	CQ World Wide DX 160m Contest	160	CW
21 - 22 Feb, 0000 - 2400	ARRL International DX Contest	10 - 160	CW
27 Feb - 1 Mar, 2200 - 1600	CQ World Wide DX 160m Contest	160	SSB
28 Feb - 1 Mar, 1500 - 0900	RSGB 7MHz DX Contest	40	CW
7 - 8 Mar, 0000 - 2400	ARRL International DX Contest	10 - 160	SSB
14 - 15 Mar, 1200 - 1200	RSGB Commonwealth Contest	10 - 80	CW
21 - 23 Mar, 0200 - 0200	BARTG Spring RTTY Contest	10 - 80	RTTY
28 - 29 Mar, 0000 - 2400	CQ WPX SSB Contest	10 - 160	SSB
18 Apr, 1500 - 1900	European Sprint Contest	?	SSB
16 May, 1500 - 1900	European Sprint Contest	?	CW
17 May, 0900 - 1800	WAB LF Phone Contest	40 - 160	Phone
30 - 31 May, 0000 - 2400	CQ WPX CW Contest	10 - 160	CW
6 - 7 Jun, 1500 - 1500	RSGB National Field Day	10 - 160	CW
11 - 12 Jul, 1200 - 1200	IARU HF World Championship	10 - 160	SSB / CW
25 - 26 Jul, 1200 - 1200	RSGB IOTA Contest	10 - 80	SSB / CW
8 - 9 Aug, 0000 - 2400	Worked All Europe DX Contest	10 - 80?	CW
5 Sep - 6 Sep, 1300 - 1300	IARU Region 1 SSB Field Day	10 - 80	SSB
12 - 13 Sep, 0000 - 2400	Worked All Europe DX Contest	10 - 80?	SSB
3 Oct, 1500 - 1900	European Sprint Contest	?	SSB
4 Oct, 0700 - 1900	RSGB 21 / 28MHz Contest	10 - 15	SSB
10 Oct, 1500 - 1900	European Sprint Contest	?	CW
18 Oct, 0700 - 1900	RSGB 21 / 28MHz Contest	10 - 15	CW
24 - 25 Oct, 0000 - 2400	CQ World Wide DX Contest	10 - 160	SSB
25 Oct, 0900 - 1800	WAB LF CW Contest	40 - 160	CW
14 Nov, 2000 - 2300	RSGB Club Calls Contest	160	SSB / CW
28 - 29 Nov, 0000 - 2400	CQ World Wide DX Contest	10 - 160	CW
4 - 6 Dec, 2200 - 1600	ARRL 160m Contest	160	CW
5 - 6 Dec, 1200 - 1200	WAB HF Phone Contest	10 - 20	Phone
12 - 13 Dec, 0000 - 2400	ARRL 10m Contest	10	SSB / CW

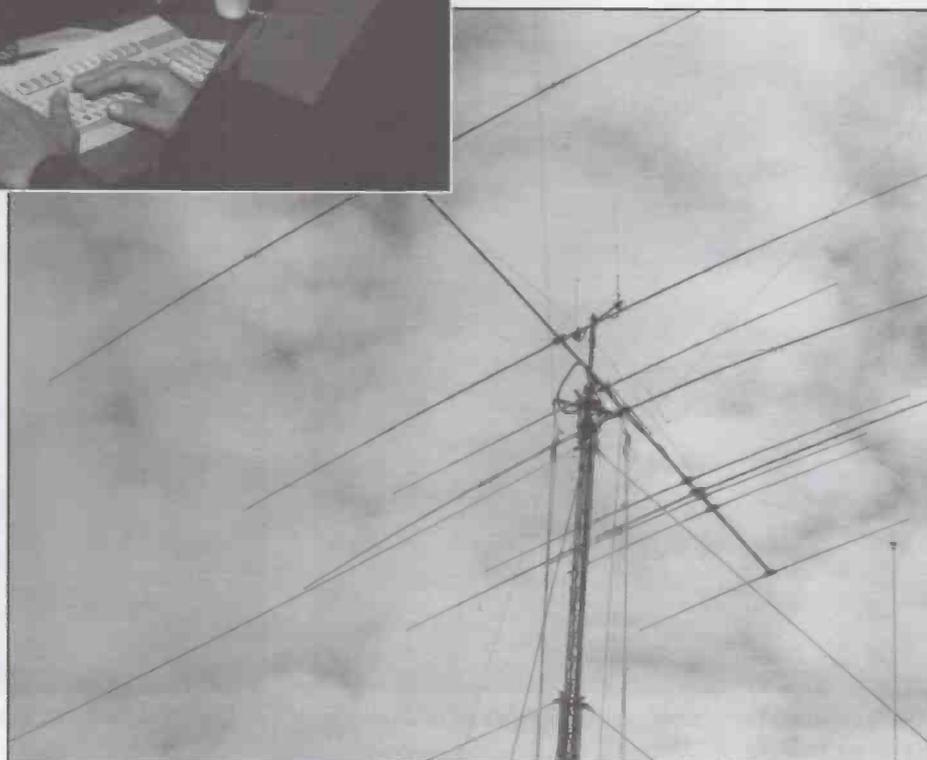
VHF / UHF Contests

Date and Time (UTC)	Event	Bands(s)	Mode(s)
1 Feb, 0900 - 1500	RSGB 432MHz Fixed / Affiliated Societies	70	Any
7 - 8 Mar, 1400 - 1400	RSGB March 144 / 432MHz Contest	2, 70	Any
15 Mar, 0900 - 1500	WAB VHF / UHF CW Contest	2, 70	CW
19 Apr, 0900 - 1300	RSGB 50MHz Fixed Station Contest	6	Any
2 May, 1400 - 2200	RSGB 432MHz Trophy	70	Any
2 - 3 May, 1400 - 1400	IARU UHF / SHF Contest	70 and up	Any
16 - 17 May, 1400 - 1400	RSGB 144MHz Contest	2	Any
6 - 7 Jun, 1400 - 1400	IARU 6m and RSGB 50MHz Trophy	6	Any
21 Jun, 0900 - 1600	PW 2m QRP Contest	2	SSB / CW / FM
21 Jun, 0900 - 1500	WAB 70MHz Phone Contest	4	Phone
28 Jun, 0900 - 1500	WAB 144MHz QRP Contest	2	?
4 - 5 Jul, 1400 - 1400	VHF Field Day	4, 2, 70, 23	Any
12 Jul, 0900 - 1500	WAB 50MHz Phone Contest	6	Phone
23 Aug, 1700 - 2100	RSGB 432MHz Fixed Station Contest	70	Any
5 - 6 Sep, 1400 - 1400	IARU 2m and RSGB 144MHz Trophy	2	Any
13 Sep, 0900 - 1700	WAB 144MHz Phone Contest	2	Phone
3 - 4 Oct, 1400 - 1400	IARU UHF / SHF Contest	70 and up	Any
4 Oct, 0900 - 1500	WAB 70cm Phone Contest	70	Phone
18 Oct, 0900 - 1300	RSGB 50MHz Fixed Station Contest	6	Any
6 Dec, 0900 - 1700	RSGB 144MHz Fixed / Affiliated Societies	2	Any



Top Cypriot contester Marios Nicolaou, 5B4WN, in action here in the UK

You don't need a big antenna system to take part in amateur radio contests (but it sure does no harm).



RUSSIAN AROUND ON THE BANDS

Former Eastern Bloc military equipment is now finding its way on to the surplus amateur radio market. Ben Nock, G4BXD, guides us through some of the sets available

Since the fall of the Berlin Wall there has been a steady trickle of interesting sets - receivers, transmitters and transceivers - from Eastern Bloc countries coming on to the surplus market. Many of the former communist countries used

sets manufactured by the Russian State Collective, simply re-artworked into their own language, be it German, Czech, etc.

Some are very good, others not so, but all are interesting. A sample of those sets are described below. More and more

seem to be finding their way into the hands of short wave listeners and radio amateurs alike here in the UK.

The R-326 HF Receiver

As an example of the Russian output, this set is a good one to start with. This set is a five-band HF receiver covering 1 to 20MHz. The set is capable of receiving AM, CW or SSB signals, has a self-contained battery pack, provides high impedance phones output and is very

robust in construction.

Strangely though, the set can operate off an external supply of only 2.5 volts! An AC adaptor comes with the set, running from 220V AC, providing the stabilised 2.5 volts the set needs. A inverter can be heard faintly whistling inside, generating the HT supplies.

The R-326 is a valve set, containing 19 miniature valves in all. There is also an R-326M version, which is transistorised and has digital frequency readout. The valve set uses valves numbered such as



The R-326 receiver. The window top centre lights up to display the frequency scale.



The R-326 AC PSU which provides 2.5V for the receiver.

1SH29B, 1SH24B and 1SH3B.

There is a funny thing with the IF stages. Trying to decipher exactly what is happening from the Russian handbook, even assisted by a German language translation, is quite hard, but it seems that the set is double conversion with the first IF changing between bands. It seems that when the set tunes 1 to 4.3MHz, the first IF is 460kHz, with the second IF at 215kHz. When tuning 4.3 to 20MHz, the first IF changes to 2.2MHz, with the second IF again being at 215kHz.

A crystal filter in the second IF line allows for a variable bandwidth response, capable of being sharpened up for CW reception. The BFO stage even has two oscillators, one variable over a considerable range, the other one being crystal controlled. Either is selected from a front panel switch.

Front panel adjustments allow for correct alignment of the set on all bands. A small plastic window allows a frequency scale and calibration marks to be read and the set adjusted as required. Fast and slow motion tuning are provided for by the large central tuning knob.

As stated, the set can be powered from batteries, carried in a compartment at the rear of the set. Two 1.25V, 14Ah batteries are required, or an external 2.5 volt stabilised supply, or the WS- 2.5M, the correct AC PSU capable of 127 or 220 volt operation.

Tuning around the bands is very easy with the R-326. The tuning knob is very positive, there being no backlash or slip. The absence of a separate RF gain pot does mean that on strong SSB signals the AF gain, which may be joined with an RF pot, needs backing off quite a bit.

The variable filter allows



The R-5P receiver, this one intended for the Czechoslovakian military. The tuning knob (Ladeni) pulls out for slow-motion tuning

the reception of CW signals to be greatly improved. Adjusted to its sharpest setting, I would guess less than 1kHz, it does cut out a lot of the background mush, making copy of weak CW quite easy. In all, the R-326 is quite a nice receiver to play with. The R-326 is 225W x 270H x 370D mm and weighs just 14.7kg with batteries.

The R-5P HF Receiver

Again of Russian manufacture, this set comes in numerous markings, including Russian, Czech and German, depending upon which country it was destined for. The seven valve and nine transistor set covers 1.5 to 22MHz in six bands, again resolving AM, CW and SSB signals.

The R-5 can again, like the R-326, be powered from internal batteries or an external supply. A 1.2 and 7.2 volt supply is needed and the 220V AC supply comes in a unit which

attaches to the rear of the set in place of the battery cover.

Somewhat simpler in operation than the R-326, the R-5P nevertheless boasts a CW filter, built-in calibrator and a fast and slow motion tuning drive. A button on the front panel illuminates the tuning pointer and moves up and down the scale with it.

The tuning knob has the facility that when pushed in it operates in a fast tune mode. Pulling out the tuning knob until it clicks into its extended position reveals a slow motion facility that allows a small portion of the range to be tuned at once. Other controls include a band change, a mode switch and a volume control combined with the on / off switch.

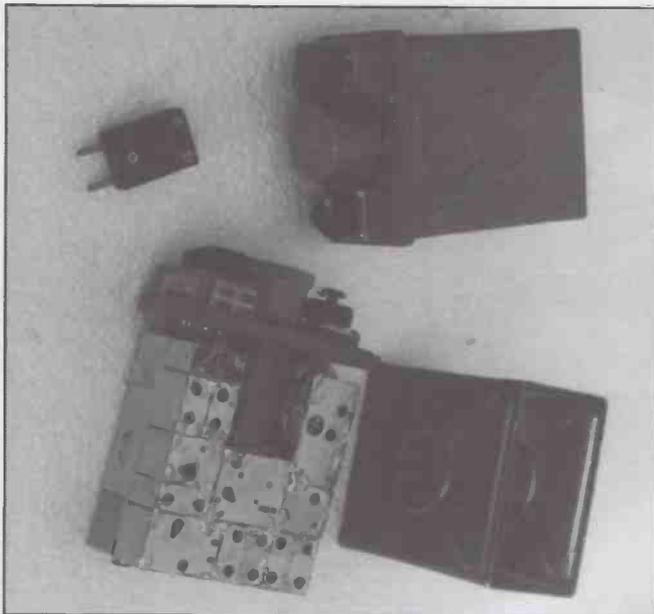
Again, there is no separate RF gain control provided and tuning-in strong SSB stations requires the AF gain to be reduced. It must be remembered that these sets were designed for use with short 'whip' antennas

of 3 or 5m or so. Putting them on a long external wire does overload the front ends somewhat.

In fact, the accessory pack with the R-5P, a camouflaged cloth bag that attaches to the top of the set, has a whip of around 1.5m which attaches to a bracket on the side of the set. The pack also contains a couple of headphones and wire with which to make a longer antenna.

For its size, the R-5P is a nice little receiver. It tunes the bands very easily, and a nice large tuning scale makes readout quite easy. The tuning scale has calibration marks that when used with the internal calibrator, allow the scale pointer to be adjusted for accuracy.

A small meter on the front panel can be used to test the state of the batteries, two push switches being provided for that job. A carry handle on the side makes for easy transportation. The set does have two runner type fitting on the base, for



Internal view of the R-147. Compare the size with the crystal holder.

sliding into some mobile housing no doubt. The R-5P is 370W x 153H x 320D mm and weighs 13.8kg.

The R-147 VHF Transceiver

And now for something completely different. QRP is something of a peculiar arm of the amateur radio hobby. There are those who connect an antenna to an oscillator and call it a transmitter, then there are those who use the nine valves in an old war time 6Z set (like me) to generate 1 watt of RF, whilst using 6 watts in heater power in the process!

At last the Russians have us beat. I refer to the R-147, used in East Germany, but of Russian manufacture. A miniature VHF transceiver, no bigger than a pack of cigarettes, it is a four-channel crystal-controlled transmitter, with double conversion receiver, a feat of Eastern European engineering in all respects.

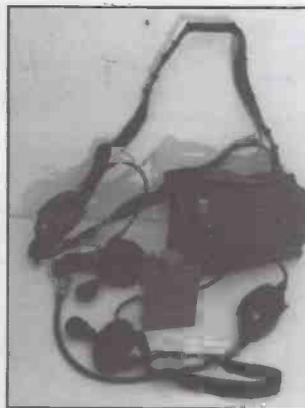
This miniature transceiver was used by the Nationale Volksarmee of Der Deutschen Demokratischen Republik, in other words, the People's Army of the

German Democratic Republic, with the manual I have being dated 1979.

The Funkgerat R-147, radio set R-147, runs F3 frequency modulation, and is available with 26 various frequency allocations. Its frequency range is any 300kHz segment from 44 to 51.8MHz, making it ideal as a QRP rig on the 6m amateur band.

As supplied to the military, it came with four channels fitted, each 100kHz apart. It seems the standard frequencies fitted were 45.5, 45.6, 45.7 and 45.8MHz. Of the two examples I have, one is stamped with the serial number of 000045, the other with a number in the 275,000s (it is debatable whether over a quarter of a million were made, more likely an out of sequence numbering system was used).

The dimensions of the transceiver, out of its canvas carry case, are 77 x 120 x 45 mm, with a weight of 0.68kg. The set is powered from a single seven volt battery, fitted into the transceiver, or via an external supply of two 4.5 volt batteries, held in a separate container and



The R-147 VHF transceiver, showing the rig itself in the centre, with the canvas carry case and headset.

connected via a cable and battery adapter link.

The 'Empfänger' (Receiver)

The receiver section of this little wonder consists of a double conversion superhet, with a first IF of 14MHz, and with a second IF of 650kHz. The sensitivity of the receiver is quoted as being in the order of 1.5µV, very good for gear of this age and design. The current consumption using the internal seven volt battery is stated as less than 25mA.

The construction of the set resembles that used in the Burndept B470 pocketphones: small self-contained units, with soldered covers, grouped together around a motherboard. As can be seen from the photographs, the construction is extremely tight, which means that repairs or modifications would be extremely difficult.

The 'Sender' (Transmitter)

It appears from the limited information I have on the set that the FM modulation is performed on an oscillator at the frequency of the second IF, eg 14MHz, because this signal is then mixed with the

output of the first oscillator in the receiver chain. The output of this mix is then filtered and amplified before passing to the antenna at around 130mW. For those with decent German, the block diagram stages of the transmitter are labelled: 1) Steuerst u Modulations verst; 2) Mischstd Send; 3) Filter; 4) Vorverstärker; 5) Treiberstufe; and 6) Leistung Verstärker.

A combination headset and mic are connected to the set with a large 'pod', for want of a better word, joining the headset to the transceiver. This pod contains the PTT switch and a control which allows selection between full or muted receive audio. There is also a call button which, when pressed at the same time as the PTT, will emit a beep in the other set's headphones.

The set's antenna can be either a metal tape measure type aerial which clips to the headset, or a wire aerial which is attached to the carry strap of the case.

And Finally

As stated, more and more of these types of sets are appearing on the surplus market. Like many military sets, some are not much use for short wave listening or operating, because the tuning is too difficult, or because of the lack of facilities (RF gain pots), lack of accessories etc. However, some are usable and are interesting to 'play' with.

As well as several Russian sets, I have a few Czech sets that may well have been made in former Czechoslovakia as they differ quite a bit from the normal Russian style. I am presently trying to track down the origin of these and hope to bring them to you later.

So, if you see one of these babies around, you might care to try it out. Good hunting, and "Do svedanya, tavarish."

ALL IN A DAY'S WORK

Harry Leeming, G3LLL, says equipment from the Canaries doesn't always go 'cheap' and revisits the important area of electrical safety

As a retailer I often have to listen, and try to look interested, whilst customers tell me tales of bargains bought VAT and duty free abroad. Sometimes, however, the boot is on the other foot. I've had a couple of disappointed non-electronics enthusiasts in of late, with items bought on holiday in the Canary Isles. It seems that there are electronic stores there, that would do well selling freezers at the North Pole.

One, a company director, wanted a set of PMR equipment for his factory, and proudly appeared on my doorstep with 10 handhelds, which he had been assured would be ideal for use, and fully licensable in the UK. Another came in and asked to be shown how to use his 'bargain buy scanner'.

The strange thing is that they had both purchased the same model of 2m handheld, and the first had paid 20% more than the full UK RRP! To cap it all, the units were without tone burst, and so hardly sellable at all in the UK, as well as being totally useless for the intended purpose. Keeping one's face straight in these circumstances is very difficult!

The moral is don't buy equipment abroad unless you are absolutely certain that it is fit for the intended purpose. If in doubt, get this in writing, and pay by credit card. In this case, if any lies have been told, the credit card company may be able to do something.

Look After Your Memory

Having managed to stay alive in the electronic servicing game, without wrecking too

much equipment, for over 40 years, there are certain basic personal safety precautions that are now second nature. One is never to change parts on equipment which is plugged into the mains supply. Another is to make sure that I do not touch, hold, or stand on anything which is earthed when working on equipment which has the remotest chance of being live. Trying to keep these two rules gives you a fair chance of surviving if you inadvertently break one of them!

Like many hams in the last year or so I have started to take an interest in computers. It comes as somewhat of a shock to find the above rules are thrown to one side by 'experts' who seem quite paranoid about static electricity, and indifferent to personal safety. Computer processors and memory chips do contain millions of fets, which like the original none gate protected mosfets are very easily 'zapped' by static voltages. Unfortunately many computer experts do not have a background in electronic servicing, and more to the point, are American!

In one magazine I read that to change memory chips one should wear an earth strap attached to one's wrist, and leave the computer plugged in but switched off at the mains socket. No thank you, at the risk of sounding selfish, I think my life is more important than a few bits of silicon. Quite a fair number of mains sockets and switches are wired in reverse, so that the switch breaks the neutral and not the live lead, and are just as dangerous switched off as on. Grab hold of some exposed mains wiring when wearing an earthed wrist

strap under these circumstances and you're dead. There are special safety earthing wrist straps that incorporate a high value resistor, but this is often not mentioned. Even then, if an earth strap wasn't Kite marked, and very obviously well made and safe, you wouldn't catch me wearing it.

Killing yourself on an American 115 volt mains supply is not impossible, but you have to try a lot harder than on 230 volts! When reading anything remotely connected to electrical safety there is one question you should always ask yourself: "Is it possible that these directions came from someone who lives and works in a 115 volt area, or have been copied from someone writing in such an area?" If the answer is 'yes' or even 'maybe', treat them with extreme caution.

My experience with the early type unprotected fets is that they are more likely to be blown due to leakage from the mains supply, than because of static. I have certainly popped quite a few by accidentally leaving a rig connected to unearthed test equipment which was connected to the mains, or some accessory, when soldering them in.

If you want to upgrade your computer and plug in extra memory chips here is how I would do it:

1. Make sure you are not working in a very dry static-prone area, eg that you are not stood on a nylon carpet, and roll your sleeves up. (Use a scent spray filled with water and dampen the area a little if in doubt).

2. Disconnect the computer from the mains and from everything that can possible have any capacitive

coupling to the mains supply (ie monitor, energised speakers, printer, modem etc. Better play safe and plug the lot out.)

3. Make your hands slightly damp, and touch something that is earthed for a moment.

4. Hold the computer chassis with one hand and then pick up and plug in the chip. If you need to use two hands, keep touching the chassis of the computer with your bare arm.

No doubt some computer specialists will find fault with the above, but at the least you will not electrocute yourself. We value our readers more than their possessions.

Make Do and Mend

Albert had made rather a good buy at the 'bring and buy' stall, a Yaesu FT-101. It was in quite good condition, and he was soon on the air with it. He found out, however, that it had an intermittent fault, and every so often the transmit output would fade away to nothing. Albert soon established that this was due to a poor connection on a heater pin of one of the output valves, and that as the two 6JS6C valves were in series this was causing both heaters to go out. At some time in the past a valve had obviously been wrongly forced into place, and this had damaged the spring contacts. He arrived at my counter looking for a spare valve holder, which I did not have.

In the early 1950s, I was in the radio and TV trade servicing 405 line sets. With typically 20 or more valves to a set, faulty valve holders were by no means unusual. Most valves do not require a connection to every pin on

the holder, and so when the construction of the holder allowed it, we found it much easier to repair holders than to replace them. The dodge is to squeeze the indentation which is on the underside of an unused pin, and push it out of the holder with a pair of long nosed pliers. This pin can then be used as a replacement for the pin with the faulty contact, and everything is as good as new.

I passed this tip on to Albert, and he was able to do a repair at no cost. He later told me that it had taken him about five minutes, whereas to replace the whole holder he reckoned would have needed a couple of hours work.

Too Bassy a Sound (1)

Jack had rather a deep voice. He had no problems with local stations, or with inter-G working on 80 metres, in fact he got excellent audio reports from his FT-101. When trying to work DX, however, he got many reports of 'strength 4 or 5, but difficult to copy'. A few stations did also comment that his audio was short of 'top', and at last he came in to ask what he could do.

It seems that much early Japanese equipment was optimised for the Japanese voice, which on average tends to be higher pitched than European voices. The cheapest way to 'brighten' up the audio on transmit is to role off the bass by fitting a series capacitor in the mic lead. As a rough guide the reactance of the capacitor at 1kHz should be about the same as the input impedance of the microphone socket. This is only a starting point, and in practice I have found that 2000pF for 50k ohm inputs, and 0.1µF for 1k ohm inputs works well with my voice.

Better still, use a microphone that is brighter in itself, such as the Shure 444, or incorporate a really good speech processor. When trying to work DX I have always achieved the best

results from using RF speech processing, and in recent years have had excellent reports from the Datong ASP. Besides giving RF processing, this unit also boosts the treble and cuts the base, and probably this tailoring of the response does as much for the readability of the signal, as does the RF clipping.

Jack decided on the 'low cost, low tech' approach for a start and went away with a 10p 2000pF capacitor. A week later he was back telling me that it was the best 10p he had spent in his life.

Too Bassy a Sound (2) - or G3LLL Adds Brightness!

Fred complained that on FM with his FT-290 Mk1 he found it difficult to copy some stations, especially when he was mobile. If he turned the volume up to try to hear them better, the speaker rattled, and in general the sound was rather muffled. Fred had tried an extension speaker, and this did improve things, but he still felt that in comparison with his other FM rig the sound was 'muddy'.

This is typical of the FT-290, and when I started to use one myself, I just had to do something. It seems that once again it is tailored for best results with a higher pitched voice, and has too much de-emphasis. I initially tried reducing the values of the capacitors in the de-emphasis network in my unit, but soon found out that the simplest move was to remove one altogether. Fred was given a copy of the drawing shown in Fig 1, and told to crush C110 with a pair of long-nosed pliers, and shake out the bits. Judging by the FT-290s that come in for repair, hundreds of other people have also carried out this mod, as it really does make the FM receive audio very much easier to copy. However, before crushing any capacitors do be sure that a previous owner has not already carried out this mod!

The problem of muffled

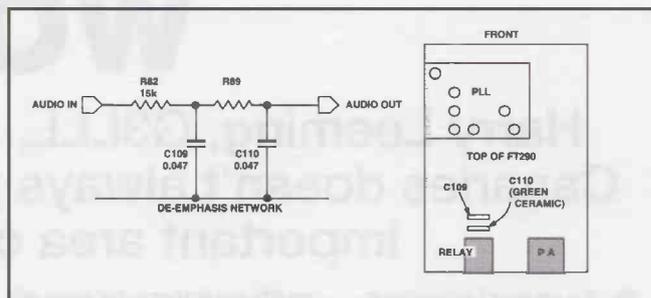


Fig 1: How to "brighten" up the receive audio on an FT-290 by crunching up C110.

receive audio is by no means confined to the FT-290, and many FM rigs benefit considerably if the audio is brightened up a little. Sometimes it is difficult to get at the de-emphasis components, and in these cases it will be found easier to partially bypass the network. Fig 2 shows this part of the circuit of an FT-230. There are two circuit pins, one at the input, and one at the output of the de-emphasis circuit. I have found that if the circuit shown is added to these pins, the receive audio is much brighter and clearer.

FT-757 on 10m

Bert came in with his FT-757 with the complaint that the output had started to fall off on 10 metres, and then had disappeared altogether. I asked him how much power he normally used and on what mode he operated. "Oh I'm a 10metre FM enthusiast, and I usually run the full 100watts."

I have had quite a few FT-757s in over the years owned by 10metre FM QRO enthusiasts, all with the same fault. The instructions and specification that come with the FT-757 are rather ambiguous. These seem to imply that the unit is rated at a full 100 watts in the FM mode, but then tell you to turn down the power once one has made contact. In reality, if one runs much more than about 30 watts on FM for more than very short transmissions, the coils in the low pass filter unit get very hot.

Bert was lucky in that one of the coils had just

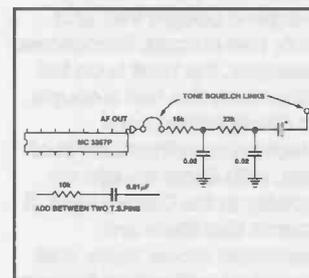


Fig 2: Brightening up the receive audio of an FT-230 by partially bypassing the de-emphasis circuit.

unsoldered itself, but he was told that if he didn't "turn the wick down" he would soon be back again.

A Not So Faulty FT-990

Terry came in with a long face and an FT-990 reporting that the receiver had gone dead. Having had a few in with the same complaint, I decided to check it while he waited and, sure enough, there was nothing wrong with it.

On the top left hand corner of the front panel of the FT-990 is a small push on and off switch, which is used only if one is using separate transmit and receive antennas. It is in just the position where one can inadvertently press it when moving the rig. The result of this is that the receive antenna is then switched to the auxiliary receive antenna socket - hence no reception is obtained. I wonder how many FT-990s have been shipped the length of the country, just because this button has been pressed?

GAREX ELECTRONICS

PMR SPARES

Extensive range of PYE radiotelephone spares including parts for 50/70/145/433MHz bands. ASK FOR "PYELIST".

BANDWIDTH CONVERSION KITS

Get your W15FM up-to-date, full kit of parts + data for 12.5kHz spacing £9.95

WIDEBAND SCANNER AERIALS

"REVCO" premium quality British VHF/UHF Discone 16 element for all-round coverage. S0239 connector £38.95 or N-type connector for improved UHF performance £39.95
 "REVCO PLUS" with improved low frequency coverage £48.95
 "REVCO EXTRA" ready to go package: discone, 10m co-ax fitted PL259, mast clamps. BNC plug £49.95

THE "REVCO" IS THE UK'S ORIGINAL QUALITY DISCONE VHF/UHF MOBILE AERIALS

REVCO premium quality aerials (established 37 years) - full range for Amateur bands. ASK FOR "AMCAT".

"NOMAD" PORTABLE SCANNER AERIAL Lightweight design using ribbon cable elements: rolls into a small bundle for ease of transport, hang from any convenient point, ideal for travelling, with 4m co-ax & BNC plug. £17.95

ACTIVE "NOMAD" as above, with built-in wideband preamp complete with supply/splitter box (internal battery or external 9-15v supply) £29.95

NEW "ANGLER" HF/VHF/UHF PORTABLE AERIAL covers 100kHz - 1GHz VHF/UHF vertical section + long-wire HF section can be used separately £19.95

SCANNER AERIAL FILTER Is your scanner useless due to breakthrough? Then this product could solve your problem: a specially designed tuneable filter to be fitted in-line with the aerial feeder, reduces breakthrough from strong VHF signals, (e.g. band II, pagers, police) also includes HPF to reduce SW & MW interference, BNC connectors £28.95

VHF PREAMPLIFIERS Miniature (only 34x9x15mm), any frequency in the range 40-300MHz, up to 25dB gain. Assembled, but unboxed pcb. Stock versions: 6m, 4m, 2m, 137MHz (W-Sat) £12.95

Airband (118-136MHz) (reduced gain due to frequency spread) £12.95

Other frequencies in the range 40-300MHz to order: £14.95

VHF AIRBAND PREAMP 118-137MHz 16dB gain, boxed ready for use, powered by internal battery or external 9-15v DC, BNC connectors and patch lead £29.95

VHF MARINE BAND PREAMP 156-162MHz 20dB gain, (other details as Airband model) £29.95

WIDEBAND PREAMPLIFIER Model GA4-B. Covers 25 - 1300MHz, typical gain 12dB (at 500MHz): (other details as Airband model) £35.95

MAINS ADAPTOR Suits our preamps, Active "NOMAD", etc. 3/4.5/6/7.5/9/12v at 300mA £8.95

FLEXIBLE 1/4 WAVE AERIALS Discover a whole new world of signals: full-length 1/4 waves are several dB better than "rubber ducks". BNC plug. Available for VHF & UHF bands to order.

VHF models: £11.95, UHF: £9.95 Centre-loaded model for 70-71MHz £15.95.

Write, phone or fax for lists. Callers by appointment only, please.

ALL PRICES INCLUDE UK CARRIAGE AND VAT AT 17.5%

GAREX ELECTRONICS

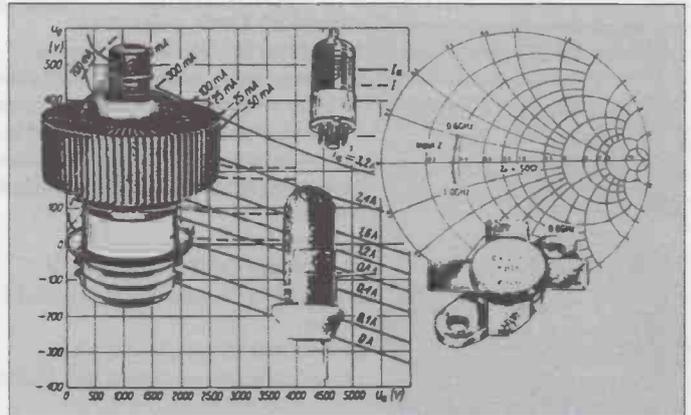
Unit 8, Sandpiper Court, Harrington Lane, Exeter EX4 8NS
 Phone: (01392) 466899 Fax: (01392) 466887



CHELMER VALVE COMPANY

If you need Valves/Tubes or RF Power Transistors etc. ...then try us!

We have vast stocks, widespread sources and 35 years specialist experience in meeting our customers requirements.



Tuned to the needs of the Radio Amateur

Chelmer Valve Company, 130 New London Road, Chelmsford, Essex CM2 0RG, England.

Tel: 44-01245-355296/265865

Fax: 44-01245-490064

The UK Scanning Directory

6th Edition



The UK Scanning Directory covers everything from secret government frequencies down to your local traffic warden. This new edition, which cover 26 MHz to 1.8 GHz, has been revised throughout and many new frequencies added. Its larger format gives easier reference and it is divided into three parts.

Part 1 list tens of thousands of frequencies which continue to amaze everybody. Included are Civil and Military Aviation, Army, Navy, the largest Police list every published, DSS Snoopers, GCHQ, Eye-in-the-Sky Links, Bailiffs, Prisons, Motor Racing, Universities, Railways, Telephones, Couriers and many more we dare not mention. Part 2 covers the Civil Aviation Band and list every airport and airfield alphabetically in the UK and Ireland, and Part 3 has European frequencies for DXers.

This book remains Britain's largest and best selling scanning directory, the undisputed leader in the field. No other book dares to list so many frequencies and in such great detail.

Price: £18.50 + £1 UK post. For Europe add £3.25, elsewhere £7.50

Ask for Free New Catalogue.

Allow 14 days delivery.



INTERPRODUCTS (HR28)

8 Abbot Street, Perth. PH2 0EB, Scotland

Tel. & Fax: 01738-441199

e-mail: interproducts@netmatters.co.uk

WANTED!

DEAD OR ALIVE

All makes of radio equipment, hand portables or mobiles, FM, AM or UHF

BEST PRICES PAID

CASH WAITING!!!

We will collect anywhere in the UK.

Call today

C-FONE COMMUNICATIONS

on

01502 531 531 anytime

or fax us your list on

01502 531 111

ELECTRONICS DIRECT

SUBSCRIBE & SAVE WITH ELECTRONICS DIRECT

Our Summer subscription deals just get better and better - now you can save up to £20 if you subscribe today!

HAM RADIO TODAY, code: 0214

The UK's Premier Ham Radio and Listener Magazine.

Every issue gives superb, in-depth coverage of all the latest equipment, together with features on scanners, packet radio, construction advice and club news. Our Internationally respected editorial team are renowned for providing the authoritative word on the current and future developments in this fast moving industry, making Ham Radio Today essential reading for all amateur radio enthusiasts.

13 issues

UK: NOW ONLY £29.00 YOU SAVE £3.50

Europe: £39.50, Overseas: £41.50, USA: \$66.00

26 issues

UK: NOW ONLY £56.00 YOU SAVE £9.00

Europe: £79.00, Overseas: £83.00, USA: \$132.00

ETI, code: 0214

Electronics Today International - The Project Magazine for all Electronics Constructors.

The single source guide to electronics for today and tomorrow, packed with numerous projects for enthusiasts of all abilities. The detailed features and up-to-the-minute news items keep all readers fully informed of the latest, exciting developments in this ever changing hobby, whilst the equipment reviews ensure that you always know exactly what to buy.

13 issues

UK: NOW ONLY £29.00 YOU SAVE £3.50

Europe: £42.00, Overseas: £43.75, USA: \$69.00

26 issues

UK: NOW ONLY £56.00 YOU SAVE £9.00

Europe: £84.00, Overseas: £87.50, USA: \$138.00

ACORN ARCHIMEDES WORLD, code: 0214

In the constantly changing world of IT, it is vital to keep abreast of all the latest trends and developments. Of course, this is easier said than done. However, you CAN keep fully informed by reading Acorn Archimedes World, Britain's most respected computing magazine devoted to all Acorn 32-bit RISC OS systems. The wide ranging editorial brings you in-depth hardware and software reviews, evaluates new products and forecasts what will happen next, and includes a dedicated educational section. Each issue also comes with a free cover-mounted disc, often containing complete, usable programs as well as workable and playable demos.

13 issues

UK: NOW ONLY £39.75 YOU SAVE £9.00

Europe: £60.50, Overseas: £62.50, USA: \$100.00

26 issues

UK: NOW ONLY £77.50 YOU SAVE £20.00

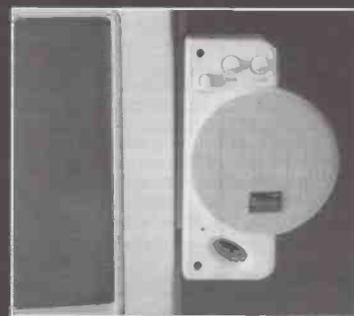
Europe: £121.00, Overseas: £125.00, USA: \$200.00

REMEMBER, it's always cheaper to subscribe - and you avoid future cover price increases!

All savings are based upon buying the same number of issues from your newsagent, UK only.

SENSATIONAL SUMMER READER OFFERS SAVE £5

This month we have put together an exclusive selection of high quality offers for you, two of which are at special discount prices, exclusive to Electronics Direct. As is always the case with Electronics Direct, please remember that all our prices include postage and packing - there are no hidden extras to add!



'HAMA' MONITOR STEREO ACTIVE SPEAKER SYSTEM

The perfect extension speaker system for all multimedia computers with a sound card. These high quality loud speakers produce a remarkably detailed sound with a deep, rich base, allowing you to enjoy your multimedia system to the full.

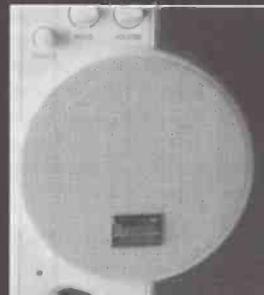
- 2-way active speaker system.
- separate base and volume controls.
- can be neatly attached to the side of any monitor, using the fully adjustable bracket included.
- separate built-in amplifier.
- comes complete with a AC/DC mains adapter.
- superb sound characteristics.
- magnetically screened.
- technical data:

80W max. output
Impedance 4 Ohms

Frequency range 20 Hz - 25 KHz.

These speakers also give superb results if used with personal CD players.

Code: MONSP
R.R.P. £69.99
NOW ONLY £64.95 UK,
including postage and packing
(overseas rates on request).



BINDERS

Keep your favourite magazines in mint condition in one of our sturdy binders. Each binder will hold up to 13 issues.

Code: Bind 02

ONLY £7.50 UK, £8.00 Overseas.

Binders available:

ETI, Ham Radio Today, Acorn Archimedes World.



SPECIAL OFFER SAVE OVER £5

'HAMA' COMPUTER STEREO ACTIVE SPEAKERS

Slightly smaller than the 'monitor' speakers, these are ideal as extension speakers for multimedia computers, portable CD players, Walkmans, television, video recorders or amateur radio equipment.

- 3 band graphic equaliser - super-base, base & treble controls.
- separate volume controls.
- each speaker has its own battery operated built-in amplifier (can also be powered by separate mains adapter, not included)

- superb sound characteristics.
- magnetically screened.
- technical data:
2 x 12W output
Impedance 8 Ohms
Frequency range 40 Hz - 16 KHz.

Code: COMSP

R.R.P. £44.99

NOW ONLY £39.95 UK

including postage and packing
(overseas rates on request)



Welcome to the very first 'Electronics Direct', the new One Stop Shop for all your computing, electronics and amateur radio needs from Nexus Direct. This month we are offering some sensational Summertime deals on Subscriptions, Books & Reader Offers - all available direct by mail order. Remember, all our prices include postage and packing - so there are no hidden extras to add! You can order by phone, fax or use the coupon below.

SUMMER SAVINGS ON BOOKS

This Summer we have a great selection of books on offer, including one brand new publication. This is just a small selection from the huge range of Nexus books currently available.

Remember, ordering couldn't be simpler as all book prices INCLUDE postage and packing - there are NO hidden extras!

NEW FROM ELECTRONICS DIRECT AVAILABLE IN OCTOBER AN INTRODUCTION TO ROBOTICS.

A fascinating and unique book that breaks new ground by exploring the exciting world of robotics in a clear and concise way. Both the theoretical and practical aspects are presented in an uncomplicated fashion using everyday English, which makes this an ideal book for the amateur. Divided into two sections, the first part explains how and why robots work and are controlled, while the second shows you how to make a simple two legged humanoid robot that can be programmed to walk. There are no complicated formulas or equations to grapple with or incomprehensible circuit diagrams to decipher - this robot can be built on your kitchen table and can be run from any personal computer! All you need are model aeroplane servos, a controller, a power supply and some plywood - and all parts are easily available in the UK and the USA. This is a book that will be of interest to modellers and everyone with a fascination for things mechanical and electronic.

Code: NB299

ONLY £11.50 UK £12.50 Overseas

Please note, this book is not available until the end of October - orders will be held until then & despatched 1st class.

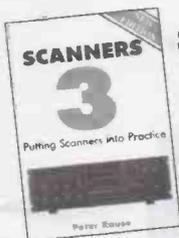


ETI BOOK OF ELECTRONICS

This is the perfect book for beginners, offering a clear and concise introduction to both the theories and principles of electronics. Each chapter also allows you to put this theory into practice with an easy to follow project to make, including a loudspeaker divider, continuity tester, 'brown-out' alarm, freezing alarm, loudspeaker, mini-amplifier and a burglar alarm.

Code: NB214

ONLY £12.45 UK £12.95 Overseas



SCANNERS 3 - PUTTING SCANNERS INTO PRACTICE

This is the fourth revised and completely updated edition of Scanners, the complete VHF/UHF radio listeners guide, containing everything you need to know to put your scanner to better use. There is a great deal more information than ever before on frequency listing: in particular, actual frequencies used by coastal stations, airfields and the emergency services. Also included for the first time is a section on the HF (short wave) band as many scanners now cover this range.

Code: NB217

ONLY £11.45 UK £11.95 Overseas

SCANNERS 2 INTERNATIONAL

The companion book to 'Scanners' provides even more information on the use of VHF and UHF communication bands, and gives details on how to construct accessories to improve the performance of scanning equipment. The book is international in its scope and contains frequency allocations for all three ITU regions, including country-by-country variations.

Code: NB216

ONLY £11.45 UK £11.95 Overseas



BOOKS DIRECT

'TECHVAC' MICRO VACUUM

You won't know how you managed without it!

This hand held vacuum sucks dust and debris from sensitive equipment with ease - computer keyboards, fax machines, cameras, hi-fi and video, amateur radios, electrical circuits ...

Includes a neck extension, crevice tool, bristle brush,

sweeper tool and reusable dust bag. High-tech styling with a metallic finish at a very reasonable price. Requires 2 'AA' batteries (included).

Code: COMVAC

ONLY £14.95 UK
Including postage and packing
(overseas rates on request)



ELECTRONICS DIRECT

Please order all your goods using the coupon below ensuring you fill in all sections OR simply use our order hotline. Thank you.

SUBSCRIPTIONS

Magazine	Code	No. of Issues	Price
.....	£.....
.....	£.....
.....	£.....
Total Subscription Value			£.....
Subscription No. if renewing			

READERS OFFERS/BOOKS/BINDERS

Title	Code	Qty	Price
.....	£.....
.....	£.....
.....	£.....
.....	£.....
.....	£.....
Total Order Value			£.....

Total Order Value £.....

METHOD OF PAYMENT

The total value of my order is £.....

I enclose a Cheque/P.O. made payable to Nexus Special Interests Ltd. or please debit my Access/Mastercard/Visa/AMEX account

Card No. [.....]

Expiry/..... Signature

Your Details

Name: (Mr/Mrs/Miss)

Initial Surname

Address:

Postcode

Telephone:

Send to:

Electronics Direct
Nexus House
Boundary Way
Hemel Hempstead
Herts. HP2 7ST.

Please Note

All prices include P&P where appropriate. All subscriptions start with the first available issue. Every effort will be made to despatch your order within 14 days but please allow up to 28 days for delivery. Individual items may be dispatched separately. These offers are not to be used in conjunction with any other promotion.

Please tick this box if you do not wish to receive direct mail from other companies



ELECTRONICS DIRECT

Express Order Hotline
01442 66551

9am - 5pm Monday - Friday

Fax order line: 01442 66998

**1686 Bristol Road South
Rednal
Birmingham B45 9TZ**

SRP TR

(COM213)

100 CHANNEL SCANNER

A high-specification scanner offering 100 channels in 10 banks, with 1 Priority Channel in each bank. For speed and ease of use it offers Jetscan, which can scan 100 channels per second, and also Jetsearch, which can search at up to 100 steps per second. It also features programmable band search, lock-out for up to 10 frequencies, channel look-out, 2 second scan delay, data noise/birdies skip, a key lock and a green back-lit display. 66-88, 108-174, 406-512, 806-956.

£119.99 + £5 P&P.



(COM102)

10 CHANNEL SCANNER

This state of the art 10 channel scanner is fully programmable and can receive a variety of PMR communications. It is robustly designed and offers a full frequency LCD display for ease of use. Also features an in-built circuit for recharging Nicad batteries. 66-88, 137-174, 380-512.

£49.99 + £5 P&P.



(COM205)

400 CHANNEL SCANNER

The B111 is the last word in programmable scanners. A free standing desk top unit covering nine radio bands in the 25-512MHz and 806-1300MHz ranges. Operates from AC mains or car cigar lighter via suitable adaptor. It incorporates a microprocessor avoiding the need to change crystals and gives special functions such as scan delay, memory back-up, priority channels and many more.

£249.99 + £5 P&P.



(COM215)

200 CHANNEL SCANNER

A highly-featured desktop scanner offering 200 channels arranged in 10 scanning banks, with one Priority Channel in each bank. For ease of use it offers Turbo Scan at 100 channels per second max with Autosort for maximum scan speed and Turbo Search at up to 100 steps per second. Other features include direct search programmable band search, auto station program mode, lock-out for up to 10 frequencies, manual frequency sort, programmable auto-recording and optional CTCSS tone squelch. The unit is powered by AC mains or 13.8Vdc. 66-88, 108-174, 216-512, 806-956.

£219.99 + £5 P&P.



SANGEAN ATS 909 FM-Stereo/MW/LW/SW PLL Synthesized receiver

The ATS-909 is a continuously tunable receiver from 153kHz-29999kHz. This receiver is capable of receiving and tuning all the short wave bands and any stations in between

■ 307 memories (261 in SW, 18 each in MW/FM, 9 in LW plus priority station)

■ Five tuning methods – direct frequency tuning, auto scan, manual tuning, memory recall and rotary tuning

■ ATS (auto tuning system) – auto scan and preset in priority of signal strength in FM/MW/LW bands

■ E2 PROM for memories back-up

■ FM stereo via earphones

■ 29 pages SW stations name memory, 9 memories in every page

■ Automatic search strongest signal station within SW station pages

■ SSB (USB/LSB) 40Hz/step on fine tuning

■ AM RF gain control

■ Built-in 42 world cities time plus D.S.T. device

■ 3 individual timers

■ Adjustable sleep timer

■ Alarmed by radio or HWS (Humane Wake System) buzzer

■ Battery and signal strength indicator

■ Direct key to recall favourite station in one button

■ Dual conversion device

■ REC out and standby control output

■ Pre-programmed station name and frequency according to customer's requirements before ex-factory

■ AM wide/narrow filter and FM mono/stereo selector

■ Optional features for European market

■ RDS (Radio Data System) on PI, PS and CT for station name and clock time

■ Size in mm: 215 x 133 x 37.5

■ Weight: 850g without batteries



£169.95 + £5 P&P.

- ★ Free batteries
- ★ Free SW frequency book
- ★ Free SW antenna
- ★ Free headphones

SCANNING

Telephone: 0121-457 7788
0121-460 1581
Fax: 0121-457 9009



Super Syncro 1100 – 1100mAh Nickel Metal Hydride (NiMH) AA size rechargeable cells. No memory effect. Twice the capacity of NiCds. **£3.00** inc P&P.



Skyscan DX-V1300 base discone – Most discones only have horizontal elements and this is the reason that they are not ideal for use with a scanner. Most of the transmissions that you are likely to receive on your scanner are transmitted from vertically mounted antennas. The DX-V1300 has both vertical and horizontal elements for maximum reception. Constructed from best quality stainless steel and aluminium and comes complete with mounting pole. **£49.95** + £3 P&P.



Skyscan Desktop Antenna Model Desk 1300 discone – Built and designed for use with scanners. Coverage: 25 to 1300MHz. Total height 36" and 18" wide at widest point. Comes complete with 4m of RG58 coax cable and BNC connector. High performance antenna, ideal indoor or as a car antenna when vehicle is stationary. **£49.00** + £3 P&P.



Airband mini-mag antenna – Civil (108-137MHz) and military (225-400MHz) dual band receive antenna featuring super strong miniature magnet and coax cable terminated in BNC connector. **£24.95** + £3 P&P



Wideband mini-mag antenna – Wideband (25-1300MHz) receive antenna featuring super strong miniature magnet and coax cable terminated in BNC connector. **£29.95** + £3 P&P.



Yaesu FRG-100 communications receiver – Award winning 50kHz to 30MHz base station AM, CW, USB, LSB, FM (optional) communications receiver. Features include two clocks and timer, 50 memories, FM option, remote control jack. Superb value at **£449.95** + £7 P&P.



Roberts R861 – compact digital world band receiver – Fully featured 153kHz to 30MHz (AM, SSB) and 87.5MHz to 108MHz (FM) portable digital world band receiver. Features include RDS, world time clock, 306 memories, RF gain control, direct frequency entry. Comes complete with free PSU, antenna, frequency guide and case. **£199.00** + £5 P&P.



Radio shack DX-394 communications receiver – 150kHz to 30MHz base station AM, CW, USB, LSB communications receiver. Features include clock and timer, signal meter, 100+ memories, RF gain control and direct frequency entry. A steal at **£149.95** + £7 P&P.



Uniden Bearcat 9000 XLT – AM/FM/WFM switchable base station HF/VHF/UHF scanning receiver. Covers 25-550 and 760-1300MHz. Features 500 memories, auto sorting, backlit orange LCD display. Scan rate of 100/300 channels/sec. **£249.95** + £10 P&P.



AKD Target HF3 communications receiver – 30kHz to 30MHz mobile or base station AM, USB, LSB communications receiver. Very simple to operate. Ideal for the novice, but with a performance more demanding listeners will appreciate. **£159.95** + £5 P&P.



Yupiteru MVT-7100 – All mode switchable handheld HF/VHF/UHF scanning receiver. Covers 0.5-1650MHz. Features 1000 memories, over 500 pass memories, 10 limit search banks, 12 step sizes. Comes complete with earpiece, belt clip, wrist strap, rechargeable batteries, PSU, in-car adaptor and telescopic antenna.

£199.99 + P&P (10 only)



Commtel COM 206 – AM/FM handheld VHF/UHF scanning receiver. Covers 66-88MHz (FM), 108-137MHz (AM), 137-174MHz (FM), 380-512MHz (FM). Full civil airband coverage, comes complete with free case and rechargeable batteries. **£129.95** + £5 P&P.



Realistic PRO-2042 – AM/FM/WFM switchable base station HF/VHF/UHF scanning receiver. Covers 25-520 and 760-1300MHz. Features 1000 memories, 100 monitor channels, backlit orange LCD display. Scan rate of 50 channels/sec. **£249.95** + £10 P&P.

WE ALSO HOLD A LARGE RANGE OF SECOND USERS SHORTWAVE AND SCANNING RECEIVERS. PLEASE CALL WITH YOUR REQUIREMENTS

LETTERS

£10 for letter of the month

Do you have something constructive to say on the state of amateur radio today? Perhaps you'd like to put your viewpoint to the readers, get some discussion going, or give an answer to one of the issues raised? We'll pay £10 for the best letter we publish each month (paid approx 6 - 8 weeks following the publication date). So write in with your views, to: Letters Column, Ham Radio Today, Nexus, Nexus House, Boundary Way, Hemel Hempstead, Herts HP2 7ST. Please keep your letters short, we reserve the right to shorten them if needed for publication. Letters must be original and not have been sent to any other magazines, and must include name and address plus callsign if held (name and callsign will be withheld from publication if requested).

Reader's views published here are not necessarily those of the magazine.

Letter of the month

Dear HRT,

Having re-visited the UK packet radio scene after a break of several years, I am very disappointed to find that most of the user access is still at 1200 baud and on the 2m band. The mailboxes look pretty much like they did ten years ago and we are still restricted to short text messages. Also, there is very little evidence of a high speed backbone network of the sort found in many other countries.

At a time when the greatest threat to amateur radio is the ease and convenience of the Internet, radio amateurs are failing to provide any real competition. The packet user interface is relatively 'techy', mailboxes require a 'driving lesson' before use and the speed of packet makes the Internet look like the superhighway that it is often (wrongly) dubbed.

Where is the inventiveness that radio hams are renowned for? Why can't I simply connect my favourite user-friendly e-mail program and browser, and receive news, correspondence and pretty pages like I can on my telephone line?

OK, it is a matter of bandwidth, but haven't we got many megahertz lying relatively idle in the UHF and microwave spectrum? Where are the megabit point to point links? Where are the 34kb user access channels? The Internet is getting more efficient all the time with higher speed modems, ISDN, coax to the house, fibre optic trunking etc. If we don't address this important issue - and very soon - we will lose the datacomms people to the landline.

Are we all content to relegate amateur radio to being the poor relation to the mobile phone?

Yours, John Mallard

Editorial comment:

What about it, packet SysOps? Where are the point to point links and 34kb user access channels? If these are being planned, let us know. We'd be delighted to report it in Ham Radio Today.

Dear HRT,

Or on this occasion, rather I presume to write Dear Sheila!

I am very sorry that you are leaving the Editorship. I always looked forward to Ham Radio Today, in which I usually looked for the editorial first - even when I was hoping to have a letter in.

Some other magazines have their points, but in HRT I could depend on a depth and independence of editorial analysis - not that I always agreed! - that I cannot always detect in other organs. And a broad cross-section of readers' opinions was selected.

I understand why you have to leave us and I wish you all the best for your family and hobbies, and tender many thanks for what you have done. I trust Chris Lorek, G4HCL, will still favour us with intelligible reviews. See you on HF in a couple of years?

Only, before you go, have that new team on the carpet and tell it some things must not be changed!

Yours, Alex 'Sandy' Dick, GM0IRZ.

Editorial comment:

Thanks for your nice comments, Sandy, which we have passed on to Sheila. We are aware that you have been one of the most loyal readers of Ham Radio Today for some time and wish to reassure you - and all the other 'Sandys' out there - that whilst HRT may change to some extent, the good things will remain. We are delighted to confirm that Chris Lorek will continue to provide reviews for HRT and indeed there is a plan to 'beef up' that side of the magazine. You may well not always agree with the editorial content in the future either, but suffice to say that HRT will still be editorially independent.

Dear HRT,

There's a lot of comment in Ham Radio Today and the other amateur radio magazines about the necessity or otherwise of having a Morse test before you're allowed on the HF bands. But what about the RAE itself? Why is it still necessary to pass the RAE, at least in the format in which it currently exists?

I think the RAE is now almost completely outdated. OK, once upon a time it was necessary to show that you understood circuit diagrams and such like, because you had to make your own transmitters, so it was important to prove that you were (a) not likely to electrocute yourself and (b) not likely to cause interference all over the band when your homemade transmitter eventually went on the air.

These days, all the amateurs I know just go out and buy a 'black box' and operate it, and unless you're really stupid, it is very difficult indeed to put out a bad signal with a black box transceiver!

The Novice RAE is a bit better, because at least it includes some practical elements, but even that has quite a few totally irrelevant technical questions. I think that both the RAEs should just contain questions about licensing conditions and how to cure EMC problems - and nothing else. What use is it to know how to calculate the value of a capacitor in a circuit or how to measure the voltage of the collector of a transistor? If you are going to service equipment, then you may need to know these things, but nearly all amateurs today send their rig back to the dealer in the very rare cases when they become faulty (in my case, I have owned two transceivers for over ten years and neither of them has had a single fault, so I've never even needed to open up their cases!)

[Name and address supplied]

Editorial comment:

We feel that our correspondent has a point, but feel that the RAE and Novice RAE ought to at least include some questions about operating practices as well as licensing conditions and EMC problems. After all, if you listen on the HF or VHF / UHF bands, you do hear people operating who have apparently never even switched on a receiver before obtaining their licences. Let's strive for better operating practices on all bands, and whatever the mode of operation!

Dear HRT,

Although we all complain about the price of commercial amateur radio equipment, there is no doubt that these days you have to work a lot less hours to buy a new transceiver than you did 20 or 30 years ago. It is also a fact of life that the facilities of modern equipment makes home construction an increasingly unattractive proposition. I wonder when we are going to see the first disposable handheld or HF transceiver which requires no antenna whatsoever?

The purpose of my letter is to ask why we keep seeing complex constructional projects in amateur radio magazines? Surely no-one builds them. As I see it, the sole purpose of such material is so that the author can see his (or her) name in print and show his friends how clever he is.

The sooner we see an end to home constructional features in HRT, the more space we will be able to devote to getting youngsters involved in our hobby. Young people these days expect a lot from life, and they expect it fast, so you can bet a pound to a penny there are hardly any of them spending endless hours building equipment.

The elimination of constructional projects would also free up more space for equipment reviews, and reports of on-air activities.

Yours, Graham Rogers

Dear HRT,

As a keen HF DXer and contester, and some-time DXpeditioner, I tend to get inundated with QSL cards, mainly through the bureau. Some of them include the text "the QSL is the final courtesy of a QSO", which presumably is designed to make the recipient feel guilty until he replies.

I don't want all these QSL cards, and they just clog up the QSL bureau system. If I operate during one of the major contests, I might make 1500 or more QSOs, and undoubtedly I will receive hundreds of QSL cards, from Italian, Russian, Czech and German stations. Why? Surely I - an ordinary G0 station - cannot be a new country for these stations? So why do they bother to send me a QSL card? Surely they want yet another G QSL card as much as I want another Russian card - ie, not a lot!

If I go on a DXpedition to somewhere considered to be 'rare', I can expect to receive even more QSL cards. I don't mind replying to QSLs that I receive after a DXpedition, because the whole point of going is to activate a place which many people will want to contact. But why should I reply to the hundreds of cards that will come through the bureau? I think if you really want a QSL card you should send the operator concerned an SAE with sufficient return postage, so that he is not out of pocket. If you don't want a QSL card, that's fine - don't send one!

The worst thing is those operators who QSL every single contact they make, whether or not they want a card back and whether or not the station they contact wants a card. There must be millions of unwanted QSLs circulating the world, clogging up the QSL bureaux. What a waste! Save the trees - only QSL if you really want a card from the station you work - and then send yours direct with an SASE!

[Name and callsign withheld]

MULTICOMM 2000

WORLDWIDE MAIL ORDER
LARGE SHOWROOM BEST PRICES

LOOKING FOR ALINCO?

Get on the 6 metre repeaters with the new



Alinco DR-M06
10 watt FM mobile ~~£249.95~~



Alinco DX70T
All mode HF + 6 ~~£695.00~~



Call this
number
NOW!

**(01480)
406770**

Multicomm 2000 are ALINCO specialists
Here's a selection of our stock

HANDHELDS

DJ-190E	2mtr h/h Tx + nicad & chgr.....	£149.95
DJ-191E	2mtr h/h Tx + nicad & chgr.....	£169.95
DJ-G5EY	Dual band h/h Tx.....	£299.95
DJ-S41C	UHF 340Mw h/h Tx.....	£129.95
DJ-S11E	VHF 140Mw h/h Tx.....	£99.95

MOBILES

DR-140E	2mtr 50W mobile FM Tx.....	£249.95
DR-150E	2mtr 50W mobile Tx + chs.....	£279.95
DR-430E	70cm 35W mobile FM Tx.....	£259.95
DR-610E	Dual band 50W mobile Tx.....	£525.00
DR-605F	Dual band mobile Tx.....	£399.95

TUNERS

EDX-1	Manual ATU for DX-70.....	£159.95
EDX-2	120W automatic ATU.....	£289.95

HF TRANSCEIVERS

DX-70T	10 band HF + 6mtr mobile.....	£695.00
DX-70TH	100 watt version of above.....	£775.00

We guarantee:

- Best stocks
- Best P/X deal
- Best prices
- Fast deliveries

LOOKING FOR A RECEIVER?

AOR

AOR AR 8000
£295.00



AOR AR 7030
£689.00



AOR AR 5000
£1299.00



AOR
3000A
£699.00



AOR
3000A+
£759.00



JRC NRD-535D
Superb De-luxe Short Wave Receiver
£1499.00



DRAKE
SW-2 £449.00



YAESU
FRG-100 £459.00



ICOM
IC-R8500 £1399.00



JRC
NRD-345 £699.00



BEARCAT
9000-XLT £259.00



ICOM ICR-8500
Super Wide Band Receiver
£1399.00

YUPITERU

MVT-9000
£355.00



MVT-7200
£315.00



MVT-7100
£220.00



MVT-7000
£210.00



VT-225
£225.00



SALES HOTLINE 01480 406770

★ USED EQUIPMENT ALWAYS WANTED
★ GUARANTEED TOP PRICES

★★★ JANUARY SALE ★★★ JANUARY SALE ★★★ JANUARY SALE ★★★



JRC JST-245
£1,899



ICOM IC-706 MkII
*£899.00



YAESU FT-1000 MP
*£1,799



YAESU FT-920
*£1,299



KENWOOD TS-570D
*£1,125



YAESU FT-840
*£579



WATSON 30A PSU
£80



ICOM IC-821H
*£1,325



MFJ 784B
£179



MFJ 949 ATU
£95



MFJ-948B ATU
£79



MFJ 969 HF + ATU
£139



MFJ-959B
£69



MFJ-259
£145



MFJ-941E ATU
£79

MFJ-921
2mtr ATU
£55

SALE ★★ SALE ★★ SALE ★★ SALE



HF VERTICAL

R-7000 10, 12, 15, 17, 20,30,40.....£339
APS-A 10, 12, 15, 17, 20, 40,80.....£225

BEAMS

A3-S 10, 15, 20 3ele£380
AR-S 10, 15,20 4ele£445
A3WS 12, 17 3ele£290

VHS VERTICALS

AR-6 6 mtr Ringo 3.7dB£55
ARX-6 6mtr Ringo 5.5dB£195
A2706-S 2/70 3ele£55
A2710-S 2.70 5ele£76

**FOR OUR USED
PRICE LIST...SEE THE
TRADERS TABLE**

**WE PAY CASH FOR YOUR
USED EQUIPMENT OR OFFER
UNBEATABLE PART-
EXCHANGE DEALS**

**WE SELL EQUIPMENT
FOR YOU!!!**

**PHONE FOR DETAILS
LOW COMMISSION CHARGE**

**WE KEEP A FULL RANGE OF
ACCESSORIES, ANTENNAS,
LINEARS, ETC.**

**24 HOURS UK AND 48 HOUR
WORLDWIDE SHIPPING**

**OVERSEAS AND GOVERNMENT
ORDERERS ARE WELCOME!!!**

**FRIENDLY FREE ADVICE AND
GUIDANCE FOR NEWCOMERS!!!**

**MULTICOMM 2000 THANKS ALL OF
IT'S CUSTOMERS FOR THEIR
CONTINUED SUPPORT AND WISHES
THEM A HAPPY AND PROSPEROUS
NEW YEAR!!!**

UNIT 3, 86 CAMBRIDGE STREET, ST. NEOTS, CAMBS PE19 1PJ

FAX: 01480-356192

EMAIL: Sales@multicomm2000.com

WEBSITE: www.multicomm2000.com



*CAN BE EX-DEMO OR USED

An Introduction to Japanese Awards

Amateur radio award hunting is very popular in Japan. Kouji Hoshi, JQ1HBT, tells us about two which can most easily be obtained from the UK

Do you know how many amateur radio stations there are in the world? The answer is approximately 2,500,000. There are about 1,320,000 stations in Japan. You may realise how large this number is if you compare it with the approximately 63,000 amateurs in the United Kingdom. Membership of the JARL (Japan Amateur Radio League) comprises 150,000 members. This shows you the high density of the radio amateur population in Japan, compared with the UK.

There are many award programmes in Japan run by JARL, various clubs and individuals, but I would like to introduce here the ADXA and WASA awards, which are issued by JARL headquarters. These are probably the easiest JARL awards to achieve from the UK.

Applications are accepted from outside Japan for all awards issued by JARL HQ. But not many applications have been received from Europe and America because of their distance from Japan.

It is not easy to set up a big HF beam antenna in the high-density populated cities in Japan. There are far more amateurs on UHF and VHF than on HF, due to the lack of antenna space. Therefore the domestic awards, which credit



The JARL Asian DX Award (ADXA) for working 30 Asian countries.

domestic QSOs, are more popular in Japan itself. There are four kinds of JARL award which have been issued since the 1950s. Those issued in high quantities are AJD (All Japan Districts), WAJA (Worked All Japan Award) and JCC (Japan Century Cities), all of which require contact with stations in Japan.

You may obtain more information about these JARL awards on <http://www.jarl.or.jp> or by post from JARL Award Desk (Operation Section), 1-14-2 Sugamo, Toshima, Tokyo 170-73, Japan.

ADXA (Asian DX Award)

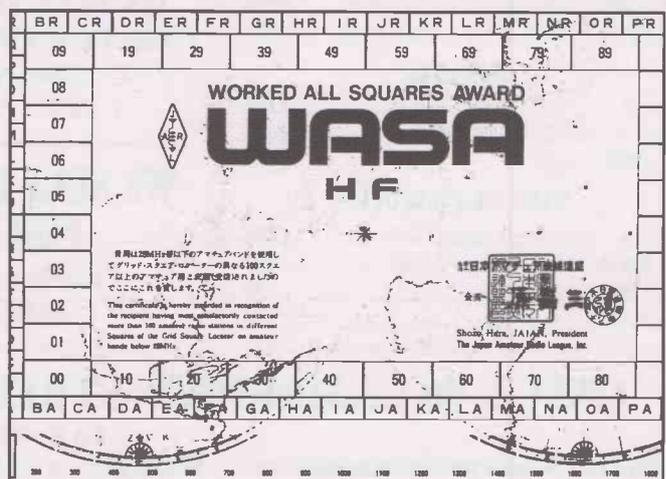
ADXA is the first JARL HQ award given for contact with

overseas stations issued since 1970. It is issued to stations who obtain QSL cards from 30 or more countries in Asia.

The countries are defined by the DXCC Country List issued by ARRL. There are about 50 countries in Asia

according to this list.

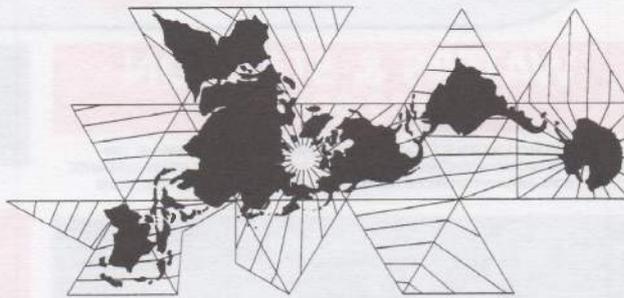
ADXA was a difficult award to achieve for a long time, due to low activity in most of Asia, except for a few countries such as Japan and Asiatic Russia. Also, Japan consists of islands located at the far eastern end of Asia, which means it is quite difficult to contact other Asian countries from Japan. Therefore in 1987 the JARL established the 'ADXA-Half' award, which requires contact with just 15 Asian countries. In recent years, Japanese amateurs have often operated from other Asian countries, so it is now getting easier to achieve these awards. Also, there are many countries in the Middle East and western Asia which are easy to contact from the UK, and this makes it relatively easy to achieve ADXA particularly from the UK and



The Worked All Squares Award (WASA), also issued by JARL.

ADXA-HALF

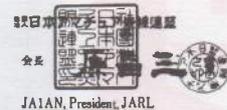
This certifies that _____ has this day submitted to the League satisfactory evidence of having worked amateur radio stations in fifteen Asian countries. He/she is authorized to include the letters ADXA-HALF (Asian DX Award-Half) on his/her cards and correspondence.



ADXA-HALF AWARD

Date _____

The Japan Amateur Radio League, Inc.



JARIAN, President, JARL

elsewhere in Europe.

WASA (Worked All Squares Award)

The Worked All Squares Award is for confirmed contacts with different QTH Locator Squares, regardless of political borderlines or countries. Whilst only Asian stations count for the ADXA award, all stations in the world count for the WASA award. These include /MM (Maritime Mobile) stations in the oceans of the world, which give you more chance to get points.

WASA has two versions defined by frequency bands, these are WASA-HF for the HF Bands and WASA-V-U-SHF for the VHF, UHF and SHF bands.

The basic WASA-HF awards requires 100 points (different squares) in the bands up to 28MHz, all worked from the same Grid Locator Square (first four digits).

Achieving 100 points is relatively easy if you work multi-band. Of course, you can attempt single band operation too. It is better to contact as many Maritime Mobile stations or rare island operations as possible, because they often give you unique squares.

The WASA-V-U-SHF award is for 50MHz and up, but it is not so easy compared with the HF award, due to the relatively limited chances to contact DX stations.

The WASA award is a young award, introduced in 1992. So not many people have joined 'square hunting' yet, but it's expected that this will become a more popular award programme in the near future.

The Official JARL Award Rules

Asian DX Award (ADXA), SWL-Asian DX Award (SWL-ADXA)

May be claimed for having contacted (heard)

and received a QSL card from an amateur station located in each of at least 30 Asian countries including Japan. DXCC countries are standard, the Asian ones grouped in the Asian Countries List. A list of QSL cards should be arranged in order of the listing of the Asian Countries List.

Asian DX Award Half (ADXA-HALF), SWL-Asian DX Award Half (SWL-ADXAHALF)

May be claimed for having contacted (heard) and received a QSL card from an amateur station located in each of at least 15 Asian countries including Japan. DXCC countries are standard, the Asian ones grouped in the Asian Countries List. A list of QSL cards should be arranged in order of the listing of the Asian Countries List.

Asian Country List for ADXA

- 1S, 9M0 Spratly Islands
- 3W, XV Vietnam
- 4J, 4K Azerbaijan
- 4L Georgia
- 4S Sri Lanka
- 4X, 4Z Israel
- 5B Cyprus
- 7O Yemen
- 8Q Maldives
- 9K Kuwait
- 9M2 West Malaysia

The ADXA-Half Award is issued by JARL for confirmed contacts with 15 Asian countries.

- | | | | |
|--------------------|-----------------------------|----------|------------------------------|
| 9N | Nepal | XW | Laos |
| 9V | Singapore | XX9 | Macao |
| A4 | Oman | XY, XZ | Myanmar (Burma) |
| A5 | Bhutan | YA | Afghanistan |
| A6 | United Arab Emirates | YI | Iraq |
| A7 | Qatar | YK | Syria |
| A9 | Bahrain | ZC4 | UK Sovereign Bases on Cyprus |
| AP | Pakistan | | |
| BV | Taiwan | | |
| BY, BT | China | | |
| EK | Armenia | | |
| EP | Iran | | |
| EX | Kyrgyzstan | | |
| EY | Tajikistan | | |
| EZ | Turkmenistan | | |
| HL | South Korea | | |
| HS | Thailand | | |
| HZ | Saudi Arabia | | |
| JA - JS | Japan | | |
| JD1 | Ogasawara Islands | | |
| JT - JV | Mongolia | | |
| JY | Jordan | | |
| OD | Lebanon | | |
| S2 | Bangladesh | | |
| TA | Turkey | | |
| UA8, 9, 0, RA - RZ | Asiatic Russia | | |
| UJ - UM | Uzbekistan | | |
| UN - UQ | | | |
| | Kazakhstan | VR2 | |
| | Hong Kong | VU | |
| | India | VU | |
| | Andaman and Nicobar Islands | VU | |
| | Laccadive Islands | | |
| | XU | Cambodia | |

Worked All Squares Award (WASA)

May be claimed for having contacted (heard) and received a QSL card from each of at least 100 different Grid Square Locators (First 4 digits). Sticker endorsements each additional 100 Squares (WASA-HF/SWL-WASA-HF), 50 Squares (WASA-V-U-SHF/SWL-WASA-V-U-SHF). Only contacts made on and after 1 July 1992 will be acceptable. All contact must be made from the same grid square in your country. Same station may be counted on each band and square. Available in two Classes: WASA-HF (28MHz and below) or WASA-V-U-SHF (50MHz and above). GCR list must include Grid square data. No endorsements for band / mode.

YOUR 4 WE TO USED EC

WATERS & STANTON 01702 206835

WATERS AND STANTON ELECTRONICS SECONDHAND LIST AS AT 7th JANUARY 1998
PLEASE NOTE SECONDHAND ITEMS COME WITH FULL 3 MONTH PARTS & LABOUR GUARANTEE
FOR MORE INFORMATION PHONE BARRY HILLSON 01702-206835 OR FAX 01702-205843

MAKE	MODEL	DESCRIPTION	PRICE
HF TRANSCEIVERS			
ICOM	IC-725 X2	BASE TRANSCEIVER 12V	£495.00
ICOM	IC-726	BASE TRANSCEIVER WITH 6M 12V	£549.00
ICOM	IC-729	BASE TRANSCEIVER WITH 6M 12V	£595.00
ICOM	IC-775DSP	BASE TRANSCEIVER	£1,895.00
KENWOOD	TS-440S	BASE TRANSCEIVER 12V	£525.00
KENWOOD	TS-930S	BASE TRANSCEIVER	£750.00
KENWOOD	TS-940SAT	BASE TRANSCEIVER WITH ATU	£1,049.00
KENWOOD	TS-950S	BASE TRANSCEIVER	£1,895.00
TEN-TEC	SCOUT555	MOBILE TRANSCEIVER (80M,40M)	£379.00
YAESU	FT-757GX0	BASE TRANSCEIVER 12V	£525.00
VHF/UHF BASE/MOBILE TRANSCEIVERS			
AKD	2001	2M 25W FM MOBILE	£129.00
AKD	6001	6M FM MOBILE	£129.00
ALINCO	DR-410	70CM FM MOBILE	£129.00
ICOM	IC-551	6M ALL MODE BASE	£395.00
KENWOOD	TM-241E	2M FM MOBILE	£225.00
KENWOOD	TR-7730	2M FM MOBILE	£89.00
KENWOOD	TR-9000	2M ALL MODE MOBILE	£199.00
YAESU	FT-2700RH	2M/70CM FM MOBILE	£269.00
YAESU	FT-290RII	2M ALL MODE PORTABLE	£299.00
YAESU	FT-480R	2M ALL MODE MOBILE	£199.00
YAESU	FT-5200	2M/70CM FM MOBILE	£379.00
YAESU	FT-736R	2M/70CM ALL MODE BASE	£975.00
VHF/UHF HAND HELD TRANSCEIVER			
ALINCO	DJ-190X2	2M FM H/HELD	£109.00
ALINCO	DJ-191	2M FM H/HELD	£119.00
ALINCO	DJ-F1E	2M FM H/HELD	£119.00
ICOM	IC-24ET	2M/70CM FM H/HELD	£179.00
ICOM	IC-ZEX2	2M FM H/HELD	£79.00
ICOM	IC-ZEX2	2FM MINI H/HELD	£119.00
ICOM	IC-P4E	70CM FM H/HELD	£169.00
ICOM	IC-M11	VHF MARINE H/HELD	£219.00
ICOM	IC-T7E	2M/70CM FM H/HELD	£199.00
ICOM	IC-W21E X3	2M/70CM FM H/HELD	£199.00
KENWOOD	TH-25E	2M FM H/HELD	£99.00
KENWOOD	TH-26E	2M FM H/HELD	£99.00
KENWOOD	TH-28E	2M FM H/HELD	£199.00
STANDARD	C-510	2M/70CM FM H/HELD	£165.00
YAESU	FT-203R X2	2M FM H/HELD	£79.00
YAESU	FT-23R	2M FM H/HELD	£99.00
YAESU	FT-411R	2M FM H/HELD	£99.00
YAESU	FT-470R X2	2M/70CM FM H/HELD	£199.00
SHORTWAVE RECEIVERS			
DRAKE	R8E	BASE STATION RECEIVER (P.SALE)	£695.00
DRAKE	R8E	BASE STATION RECEIVER	£625.00
GRUNDIG	YB-206	PORTABLE RECEIVER	£79.00
GRUNDIG	YB-500	PORTABLE RECEIVER WITH SSB	£99.00
ICOM	IC-R70	BASE STATION RECEIVER	£449.00
ICOM	IC-R71 X4	BASE STATION RECEIVER	£525.00
ICOM	IC-R72	BASE STATION RECEIVER	£549.00
JRC	NRD-525	BASE STATION RECEIVER	£549.00
KENWOOD	R-5000	BASE STATION RECEIVER WITH 108-174MHZ	£649.00
LOWE	HF-150 X2	12V BASE/MOBILE RECEIVER	£279.00
LOWE	HF-225 X2	12V BASE/MOBILE RECEIVER	£299.00
LOWE	HF-250 X2	12V BASE/MOBILE RECEIVER	£449.00
PANASONIC	RFB-65	PORTABLE RECEIVER WITH SSB	£109.00
RADIOSHACK	DX-394	12V BASE/MOBILE RECEIVER	£159.00
ROBERTS	R-808	PORTABLE RECEIVER	£69.00
ROBERTS	RC-818	PORTABLE RECEIVER WITH CASSETTE	£119.00
SANGEAN	ATS-803A X2	PORTABLE RECEIVER WITH SSB	£89.00
SONY	ICF-SW30	PORTABLE RECEIVER	£55.00
SONY	ICF-SW55 X2	PORTABLE RECEIVER WITH SSB	£189.00
YAESU	FRG-7700	BASE STATION RECEIVER	£225.00
YAESU	FRG-7700	BASE STATION RECEIVER (WITH MEMORY UNIT)	£259.00
SCANNERS MOBILE/BASE			
ICOM	IC-R-7000	25-2000MHZ ALL MODE RECEIVER	£55.00
REALISTIC	PRO-2039	66-68, 108-174, 380-512, 806-960MHZ	£99.00
REALISTIC	PRO-9200	66-512MHZ (WITH GAPS)	£145.00
YAESU	FRG-9600	60-905MHZ ALL MODE RECEIVER	£269.00
SCANNERS HAND HELD			
AILCO	D5-XJ	100MHZ-1300MHZ. AM, FM, WFM	£139.00
AOR	AR-1500 X2	500KHZ-1300MHZ ALL RECEIVER MODE	£139.00
AOR	AR-2000 X2	500KHZ-1300MHZ AM, FM, WFM	£139.00
AOR	AR-2700	500KHZ-1300MHZ AM, FM, WFM	£159.00

COMMTL	COM-102	68-512MHZ (WITH GAPS)	£79.00
COMMTL	COM-204	68-999MHZ (WITH GAPS)	£129.00
FAIRMATE	HP-2000E	500KHZ-1300MHZ AM, FM, WFM	£139.00
ICOM	IC-R1	100KHZ-1300MHZ AM, FM, WFM	£129.00
REALISTIC	PRO-62	68-960MHZ (WITH GAPS)	£129.00
WELZ	WS-1000E	500KHZ-1300MHZ RECEIVER	£159.00

SHORTWAVE SHOP 01202 490099

SECONDHAND LIST			
HF TRANSCEIVERS			
ICOM	IC745	HF & WARC NARROW CW FILTER & EXT SPKR	
KENWOOD	TS680S	HF & 6M (100W/10W)	£495.00
KENWOOD	TS120S	HF. 100W	£295.00
TRIO	TS530 SP	HF & WARC.	£375.00
TRIO	TS530SP	HF 7 WARC. NARROW CW FILTER FITTED	£395.00
TRIO	TS130S	BASIC HF & WARC	£325.00
VHF/UHF			
ADI	AT48	70CMS HANDHELD	£95.00
AKD	7003	70CMS MOBILE/BASE NOVICE SET	£125.00
ICOM	IC215	2M CHANNELISED PORTABLE SET	£85.00
ICOM	IC02A	2M FM HANDHELD - 1750 HZ	£89.00
ICOM	IC2E	2M FM THUMB/WHEEL HELD	£75.00
KENWOOD	TM733E	DUALBAND MOBILE (50W/35W)	£375.00
KENWOOD	TS711E	2M MULTIMODE BASE	£525.00
KENWOOD	TH42E	70CMS FM HANDHELD - CURRENT MODEL	£165.00
KENWOOD	TH22E	2M FM HANDHELD - CURRENT MODEL	£185.00
TRIO	TR9130	2M MULTIMODE	£350.00
TRIO	2550E	2M MOBILE 5/50W	£165.00
YAESU	FT290RII	2M MULTIMODE 2.5W	£325.00
RECEIVERS			
AOR	2001	VHF/UHF BASE SCANNER	£135.00
CODAR	CR70R	HF RECEIVER WITH ANALOGUE DIAL	£35.00
COMMTL	COM102	VHF/UHF FM SCANNER	£59.00
CORONA	CD8000R	AIRBAND RECEIVER	£65.00
EDDYSTONE	EC10	HF RECEIVER WITH BFO	£85.00
FAIRMATE	HP200E	HANDHELD WIDEBAND SCANNER	£135.00
ICOM	ICR72	GENERAL COVERAGE RECEIVER	£595.00
ICOM	ICR71E X2	GENERAL COVERAGE RECEIVER	FROM £395.00
LOWE	HF125	GENERAL COVERAGE RECEIVER	£235.00
LOWE	FS10	MARINE BAND RECEIVER	£85.00
REALISTIC	DX390	GENERAL COVERAGE RECEIVER & FM BRDCST	£95.00
SONY	ICF2001D	GENERAL COVERAGE RECEIVER & FM BRDCST	£165.00
SONY	ICF PRO80	GEN COV RX & FM BROADCAST	£135.00
SONY	AIR7	AIRBAND/MARINE RECEIVER - MINT	£145.00
TRIO	R1000	HF GEN COV RECEIVER	£255.00
TRIO	JR500S	HAM BAND HF RECEIVER	£85.00
WATKINS JOHNSON		HF-1GHZ RECEIVER WITH SPECTRUM DISPLAY	£795.00
YAESU	FRG8800	HF GENERAL COVERAGE RECEIVER WITH VHF	£495.00
YAESU	FRG7700	GENERAL COVERAGE RECEIVER	£295.00
DATA			
CWR	610E	DATA DECODER	£95.00
KANTRONICS	KAM	MULTIMODE TNC	£165.00
MISCELLANEOUS			
BNOS	12/12A	12V 12A PSU	£65.00
CATRONICS	CALLIBRATOR	CALLIBRATION UNIT	£9.00
DIAWA	CNA1001	AUTO ATU	£145.00
DIAWA	AF-60K	ACTIVE FILTER UNIT	£85.00
DIAWA	PS30411	30A VARIABLE PSU	£95.00
GLOBAL	AT2000	RECEIVE ATU NEW - NO BOX	£79.00
HANSEN	FS302M	COMPACT SWR/POWER METER	£35.00
HOWES	CTU8	RECEIVE ATU	£39.00
ICOM	AG-25	2M MASTHEAD PREAMP	£89.00
ICOM	SP-7	EXTERNAL SPEAKER	£25.00
KENWOOD	AT300	NEW - NEVER USED LONG WIRE ATU	£295.00
LAKE ELECTRONICS		AERIAL TUNER UNIT	£28.00
MANSON	EP925	12V VARIABLE 20A PSU	£70.00
MFJ	1701	6-WAY HF COAX SWITCH	£25.00
MFJ	407B	SW KEYS	£49.00
MICROSET	R432-90	90W 70CMS AMPLIFIER	£349.00
MICROWAVE MODULES		70MHZ 100W POWER AMPLIFIER	£95.00
MICROWAVE MODULES		432MHZ 30W POWER AMPLIFIER	£95.00
OPTOELECTRONICS	3300	COMPACT HANDHELD FREQUENCY COUNTER	£100.00
OPTOELECTRONICS	3000A	DELUXE HANDHELD FREQUENCY COUNTER	£120.00
OPTOELECTRONICS	1300H	HANDHELD FREQUENCY COUNTER	£55.00
REACE	RC100	MULTIFUNCTION POWER/SWR/MOD METER	£30.00
REVEK	S20	HIGH QUALITY LOW LOS COAX SWITCH	£20.00
STARTEK	ATH-15	LED HANDHELD FREQUENCY COUNTER	£120.00
SEM	ORM ELIMINATOR	FILTER UNIT	£50.00
TOKYO HY-POWER	HC400L	DELUXE MANUAL ATU	£135.00
TOKYO HY-POWER	HX240	2M TO 80M, 40, 20M, 15, & 10M TRANSVTR	£145.00

Neither the magazine nor its publishers will accept any responsibility for the contents of the advertisements, and by acceptance of these conditions the advertiser undertakes to indemnify the publisher against any legal action arising out of the contents of the advertisement

EKLY GUIDE EQUIPMENT

SRP TRADING 0121 460 1581

SECONDHAND LIST

SIGNAL	R535	CIVIL & MILITARY RCVR	£199.00
A.O.R.	AR3000A	COMPLETE SCANNER (BASE)	£449.00
A.O.R.	AR2000	H'HELD SCANNER	£99.00
REALISTIC	PRO2039	BASE SCANNER X 2	£99.00
YAESU	FT470	DUAL BAND H'HELD	£139.00
YAESU	FT530	DUAL BAND H'HELD	£159.00
YAESU	FT790R	MKI 70CM MULTIMODE	£199.00
NAVAL	2M	302 LINEAR AMP	£30.00
A.K.D.	HF3	SHORT WAVE RECEIVER	£89.00
ICOM	ICT7E	DUAL BAND H'HELD	£199.00
PHILLIPS	D2935	SHORT WAVE RECEIVER. 150KHZ TO 30 MHZ	£59.00
UNIDEN	UBC 860 XLT	BASE SCANNER	£129.00
DECOMM	ANT	ANT TUNER RX ONLY	£15.00
ICOM	ICR	MF RECEIVER (COMM MOBILE)	£349.00
ALINCO	DR605	DUAL BAND 2M/70CM SAIBLE FM (Ex Demo)	£349.00

MULTICOMM 2000 01480 406770

ICOM IC-706DX	HF+6+2-MTR (BOXED)	£679.00
ICOM IC-720A + PSU	GENERAL COVERAGE RX	£399.00
ICOM IC-720A + PSU	GENERAL COVERAGE RX	£345.00
ICOM IC-725	GENERAL COVERAGE HF TX/RX	£575.00
ICOM IC-725	HF + 6 WITH PSU (MINT)	£695.00
ICOM IC-740	HF GENERAL COVERAGE RX	£499.00
ICOM IC-775DSP	(8-MONTHS OLD) 'THE BEST'	£2,225.00
KENWOOD TS-440S	HF GENERAL COVERAGE	£599.00
KENWOOD TS-520		£225.00
KENWOOD TS-520	(BOXED & MINT)	£235.00
KENWOOD TS-520 SE		£249.00
KENWOOD TS690 SAT	HF+6MTRS FULL RX	£869.00
KENWOOD TS-920	(MINT)	£325.00
YAESU FT-1000 MP AC	(EX-DEMO)	£1,699.00
YAESU FT-101B HF	(GOOD CONDITION)	£140.00
YAESU FT-101E	(MINT CONDITION) CLASSIC	£195.00
YAESU FT-757GX	FULL COVERAGE HF	£349.00
YAESU FT-757GX	FULL COVERAGE HF	£399.00
YAESU FT-840	(MINT)	£599.00
YAESU FT-840	GENERAL COVERAGE TRANSCEIVER	£599.00
YAESU FT-902DM	GREAT TRANSCEIVER	£325.00

VHF/UHF TRANSCEIVERS

FDK MULTI 2 FM	MOBILE GREAT VALUE	£69.00
ICOM IC-211E	2-MTR MULTIMODE	£269.00
ICOM IC-2350	(EX-DEMO)	£329.00
ICOM IC-245E	2-MTR MULTIMODE	£139.00
ICOM IC-251E	2-MTR BASE MULTIMODE	£289.00
ICOM IC-290E	2-METRE MULTI-MODE 25W	£249.00
ICOM IC-2E	2-MTR HANDHELD	£115.00
ICOM IC-V200	2-MTR FM MOBILE	£99.00
ICOM ICW-21-ET	DUAL BAND HANDIE	£199.00
ICOM ICW-32-E	DUAL BAND HANDHELD	£169.00
KENWOOD TH-78E	DUALBAND (MINT)	£199.00
KENWOOD TH-79E	HAND HELD	£299.00
KENWOOD TR-741E	TRIBAND 6-2-70 MINT	£499.00
KENWOOD TR-751E	2-METRE MULTIMODE	£375.00
KENWOOD TS-711E	DELUXE 2MTR MULTIMODE	£449.00
STANDARD C-156	2-METRE HAND HED (EX-DEMO)	£125.00
TRIO TR-780	2-MTR MOBILE	£119.00
YAESU FT-10R	2-METRE HAND HELD	£129.00
YAESU FT-23R	2-MTR HANDHELD	£110.00
YAESU FT-2500M	2-MTR/70CMS MOBILE (6-MONTHS)	£299.00
YAESU FT-290R MK-1	"GREAT" 2-MTR PORTABLE	£210.00
YAESU FT-3000M	(3-WEEKS OLD)	£335.00
YAESU FT-480R	(MINT CONDITION)	£300.00
YAESU FT-480R	(MINT CONDITION)	£325.00
YAESU FT-480R + PSU	(MINT CONDITION)	£350.00
YAESU FT-51-R	DUAL BAND HAND HELD (MINT)	£289.00
YAESU FT-690 MK2	6METER MULTIMODE	£299.00
YAESU FT-727R	DUALBAND WITH ALL ACCESSORIES	£199.00
YAESU FT-790R 70CMS	MULTIMODE	£219.00

SHORT WAVE RECEIVERS

AOR AR-3030	WITH COLLINS FILTER	£399.00
AOR AR-7030	LATEST HOT RECEIVER	£599.00
DRAKE SW-8	SHORTWAVE + AIRBAND (MINT)	£399.00
ICOM ICR-72E	SHORT-WAVE RECEIVER	£450.00
JRC NRD-525	"GREAT RECEIVER"	£650.00
KENWOOD R-2000	(MINT)	£335.00
KENWOOD R-5000	DELUXE SHORT-WAVE RX	£515.00
KENWOOD R-5000	DELUXE SHORT-WAVE RX (INC VHF)	£599.00
KENWOOD R-5000	DELUXE SHORT-WAVE RX (INC VHF)	£629.00
KENWOOD R-5000	DELUXE SW RX	£579.00
LOWE HF-125	RECEIVER GREAT VALUE	£99.00
LOWE HF-225	GENERAL COVERAGE RECEIVER	£319.00
LOWE HF-225	GENERAL COVERAGE RECEIVER + KEYPAD	£325.00
LOWE HF-235	COMMERCIAL SHORT-WAVE RECEIVER	£559.00
RACAL RA-1792	(EX-GCHQ) 4 FILTERS	£579.00
RACAL RA-1792	(EX-GCHQ) 6 FILTERS	£675.00
REALISTIC DX-394	(AS NEW)	£165.00
SONY SW-100	MINI PORTABLE	£125.00
SONY SW-7600G	PORTABLE	£95.00
WIN RADIO PC-RX	WITH NEW SOFTWARE	£275.00
YAESU FRG-7700	GENERAL COVERAGE	£265.00

SCANNERS

AOR 3000A	SW+VHF+UHF	£550.00
AOR AR-2000	HAND HELD (BOXED)	£115.00
AOR AR8000	SCANNER	£245.00
AOR-AR-5000	(EX-DEMO)	£1,050.00
BEARCAT 220-XLT	HANDHELD HI SPEC.	£130.00
EUROSONIC	HANDHELD HI SPEC	£130.00
ICOM ICR-1 (NEW)	MINI-SCANNER	£259.00
ICOM ICR-7000	VHF/UHF RECEIVER	£575.00
ICOM ICR-7000	VHF/UHF RECEIVER + HF	£575.00
ICOM ICR-7000	VHF/UHF RECEIVER + HF	£645.00
REALISTIC PRO-2039	(EX-DEMO)	£139.00
YAESU FRG-9600	VHF/UHF ALL MODE	£299.00
YUPITERU MVT-8000	"AS NEW"	£199.00
YUPITERU VT-125	MK-2 CIVIL AIRBAND	£125.00

ACCESSORIES

DAIWA 12-AMP	PSU (MINT)	£50.00
DAIWA CNW-727	VHF/UHF ATU (MINT)	£145.00
DATONG FL-3	AUDI FILTER	£69.00
DATONG	MORSE TUTOR	£35.00
ERA	MICRO-READER V-2.0	£90.00
ERA	MICRO-READER V-4.0	£125.00
ERA RS-232	DISPLAY	£125.00
GLOBAL AT1000	RECEIVING ATU	£55.00
GLOBAL AT1000	RECEIVING ATU	£59.00
GLOBAL AT1000	RECEIVING ATU	£50.00
GLOBAL AT2000	RECEIVING ATU	£75.00
HOKA CODE 3 V5.0	ALL OPTIONS	£499.00
ICOM AH-3 AUTO	ATU	£225.00
ICOM AT-100	AUTO ATU MINT	£145.00
ICOM HS-51	HEADSET/MIC	£29.00
ICOM IC HP-1	HEAD PHONES	£29.00
ICOM IC SP-3	SPEAKER	£60.00
ICOM IC SP-3	SPEAKER	£60.00
ICOM RC-12	REMOTE	£35.00
ICOM RM-3	REMOTE	£49.00
ICOM SM-2	MICROPHONE	£30.00
ICOM SP-2	SPEAKER	£45.00
KENWOOD TL-922	LINEAR	£395.00
MFJ 1278-B	"AS NEW"	£225.00
MFJ 447	DELUXE KEYS	£39.00
MFJ 914D	SW ATU	£69.00
MICRO NTA 12A PRO	PSU	£50.00
MIZUNO AX-1 6-WAY	ANTENNA SWITCH	£45.00
SEM	HF CONVERTER	£25.00
SEM TRANSMATCH	INCLUDING EZITUNE	£89.00
SEM	WIDE-BAND PRE-AMP	£25.00
TOKYO	HF TRANSVERTER	£69.00
TONNA A-550	MONITOR	£125.00
TV-1000 RTTY	DECODER	£40.00
UNIVERSAL M-45	DECODER	£279.00
UNIVERSAL M-7000	+ MONITOR	£478.00
VARIOUS FILTERS	FROM	£20.00
YAESU FRF-7700	ATU	£50.00
YAESU FRV-7700	VHF CONVERTER	£50.00
YAESU MD-1	MICROPHONE	£50.00
YAESU SP-5	SPEAKER	£65.00
YAESU SP-901	SPEAKER	£59.00
YAESU SP-901	SPEAKER	£65.00
YAESU YD-14	MICROPHONE	£60.00
YAESU YH-2	HEAD-SET	£18.00
HITACHI 20MHZ	AC DC SCOPE	£95.00

Advertisements are accepted in good faith, however the publisher cannot be held responsible for any untruths or misrepresentations in the advertisement, nor for the activities of the advertisers or respondents.

PLEASE MENTION TRADE 'IN' MARKET PLACE WHEN ENQUIRING ABOUT ANY ITEM ON THESE PAGES!

YOUR 4 WEEKLY GUIDE TO USED EQUIPMENT

NEVADA 01705 662145

ADI AT-18	2MTR HANDHELD TRANSCEIVER	120.00
AKD-6001	6MTR TRANSCEIVER	139.00
ALAN AT-18	2MTR HANDHELD TRANSCEIVER	99.00
ALAN CT-145	2MTR HANDHELD TRANSCEIVER	99.00
ALAN CT-145	2MTR HANDHELD TRANSCEIVER	99.00
ALINCO ALM-203E	2M/70CMS HANDHELD TRANSCEIVER	149.00
ALINCO DJ-180	2MTR HANDHELD TRANSCEIVER	150.00
ALINCO DJ-180	2MTR HANDHELD TRANSCEIVER	150.00
ALINCO DJ-FI	2MTR HANDHELD TRANSCEIVER + AIRBAND	179.00
ALINCO DJ-FI	2MTR HANDHELD TRANSCEIVER + AIRBAND	149.00
ALINCO DR-112E	2MTR HANDHELD TRANSCEIVER	125.00
ALINCO DR-130	2MTR MOBILE TRANSCEIVER	225.00
BELCOM LINER	2MTR MULTIMODE TRANSCEIVER	199.00
CTE CT-1600	2MTR HANDHELD TRANSCEIVER	99.00
DENPA M-22	2MTR MOBILE TRANSCEIVER	249.00
FDK 750X	2MTR MULTIMODE TRANSCEIVER	199.00
FDK MULTI 700	2MTR BASE TRANSCEIVER	325.00
FDK MULTI 700EX	2MTR MOBILE TRANSCEIVER	135.00
ICOM IC-240	2MTR MOBILE TRANSCEIVER	140.00
ICOM IC-2400R	2MTR/70CMS MOBILE TRANSCEIVER	345.00
ICOM IC-551	50MHZ MOBILE TRANSCEIVER	495.00
ICOM IC-W2E	2M/70CMS HANDHELD TX	275.00
ICOM T-41	70CMS HANDHELD TRANSCEIVER	185.00
KENPRO 202	2MTR HANDHELD TRANSCEIVER	65.00
KENPRO KT-22	2MTR HANDHELD TRANSCEIVER	99.00
KENPRO KT-44	70CMS HANDHELD TRANSCEIVER	95.00
KENPRO KT-44	70CMS HANDHELD TRANSCEIVER	95.00
KENPRO KT-44	70CMS HANDHELD TRANSCEIVER	95.00
KENWOOD TH-215E	2MTR HANDHELD TRANSCEIVER	119.00
KENWOOD TH-215E	2MTR HANDHELD TRANSCEIVER	119.00
KENWOOD TH-26	2MTR HANDHELD TRANSCEIVER	95.00
KENWOOD TH-28E	2MTR HANDHELD TX+70CM RX	199.00
KENWOOD TH-45E	70CMS HANDHELD TRANSCEIVER	145.00
KENWOOD TM-251E	2MTR MOBILE TRANSCEIVER	295.00
KENWOOD TM-451E	70CMS MOBILE TRANSCEIVER	295.00
KENWOOD TM-751E	2MTR MULTIMODE TRANSCEIVER	425.00
KENWOOD TS-700S	2MTR BASE TRANSCEIVER	349.00
NAVICO AMR 1000-S	2MTR MOBILE TRANSCEIVER	195.00
REXON RL-102	2MTR HANDHELD TRANSCEIVER	129.00
REXON RL-102	2MTR HANDHELD TRANSCEIVER	99.00
STANDARD C-500	2M/70CMS HANDHELD TRANSCEIVER	225.00
STANDARD C-500	2M/70CMS HANDHELD TRANSCEIVER	225.00
STANDARD C-5200	2M/70CMS HANDHELD TRANSCEIVER	345.00
STANDARD C-5800	2MTR MOBILE TRANSCEIVER	175.00
STANDARD C-78	70CMS MOBILE TX + 10W AMP	199.00
STANDARD C-8800	2MTR MOBILE TRANSCEIVER	175.00
TRIO TR-2200	2MTR MOBILE TRANSCEIVER	95.00
TRIO TR-2200GX	2MTR MOBILE TRANSCEIVER	95.00
TRIO TR-7010	2MTR MULTIMODE TRANSCEIVER	139.00
TRIO TR-7200	2MTR MOBILE TRANSCEIVER	80.00
TRIO TR-9310	2MTR MOBILE TX ALL MODE	275.00
YAESU FT-11	2MTR HANDHELD TRANSCEIVER	125.00
YAESU FT-202	2MTR HANDHELD TRANSCEIVER	55.00
YAESU FT-208R	2MTR HANDHELD TX + ACCS	185.00
YAESU FT-208R	2MTR HANDHELD TRANSCEIVER	79.00
YAESU FT-211	2MTR HANDHELD TRANSCEIVER	145.00
YAESU FT-212RH	2MTR MOBILE TRANSCEIVER (45W)	225.00
YAESU FT-221	2MTR BASE TRANSCEIVER	299.00
YAESU FT-23R	2MTR HANDHELD TRANSCEIVER	125.00
YAESU FT-290	2MTR MULTIMODE TRANSCEIVER	269.00
YAESU FT-290	2MTR MULTIMODE TRANSCEIVER	245.00
YAESU FT-290 MKII	2MTR MULTIMODE TX + AMP	425.00
YAESU FT-290 MK2	2MTR MULTIMODE TRANSCEIVER	345.00
YAESU FT-411	2MTR HANDHELD TX + ACCS	189.00
YAESU FT-470	2M/70CMS HANDHELD TX	225.00
YAESU FT-470	2M/70CMS HANDHELD TX	225.00
YAESU FT-4700RH	2MTR/70CMS MOBILE TX	345.00
YAESU FT-480R	2MTR MULTIMODE TRANSCEIVER	225.00
YAESU FT-5100	2MTR/70CMS MOBILE TX	329.00
YAESU FT-530	2MTR/70CMS HANDHELD TX	225.00
YAESU FT-726	6/270CMS BASE TX ALL MODE	795.00
YAESU FT-726	6/270CMS BASE TX ALL MODE	795.00
YAESU FT-790R I	70CMS MULTIMODE TX	325.00
ALINCO DJ-XI	HANDHELD SCANNER	195.00
ALINCO DJ-XI	HANDHELD SCANNER	195.00

AOR AR-1000	HANDHELD SCANNER	165.00
AOR AR-1500	HANDHELD SCANNER	165.00
AOR AR-2700	HANDHELD SCANNER	135.00
AOR AR-3000	BASE SCANNER	395.00
AOR AR-3000A	BASE SCANNER	625.00
AOR AR-3000A	BASE SCANNER	595.00
AOR AR-3000A	BASE SCANNER	595.00
AOR AR-8000	HANDHELD SCANNER	215.00
AOR AR-800E	HANDHELD SCANNER	125.00
AOR AR-900	HANDHELD SCANNER	140.00
BEARCAT DX-1000	BASE SCANNER	185.00
BLACK JAGUAR BJ 200 M11	HANDHELD SCANNER	125.00
COMTEL	ANT PRE-AMP	19.00
FAIRMATE HP-100E	HANDHELD SCANNER	125.00
FAIRMATE HP-2000	HANDHELD SCANNER	165.00
FAIRMATE HP-200E	HANDHELD SCANNER	170.00
ICOM R-1	HANDHELD SCANNER	195.00
ICOM R-1	HANDHELD SCANNER	195.00
NETSET PRO-2005	BASE SCANNER	125.00
NETSET PRO-2005	BASE SCANNER	125.00
NETSET PRO-2029	BASE SCANNER	95.00
NETSET PRO-2032	BASE SCANNER	150.00
NETSET PRO-44	HANDHELD SCANNER	85.00
NETSET PRO-46	HANDHELD SCANNER	89.00
REALISTIC PRO-2006	BASE SCANNER	195.00
REALISTIC PRO-2022	BASE SCANNER	135.00
REALISTIC PRO-2024	BASE SCANNER	89.00
REALISTIC PRO-2036	BASE SCANNER	175.00
REALISTIC PRO-2039	BASE SCANNER	179.00
REALISTIC PRO-25	HANDHELD SCANNER	135.00
REALISTIC PRO-34	HANDHELD SCANNER	95.00
REALISTIC PRO-34	HANDHELD SCANNER	95.00
REALISTIC PRO-37	HANDHELD SCANNER	110.00
REALISTIC PRO-38	HANDHELD SCANNER	65.00
REALISTIC PRO-38	HANDHELD SCANNER	65.00
REALISTIC PRO-39	HANDHELD SCANNER	125.00
REALISTIC PRO-9200	BASE SCANNER	89.00
SONY PRO-80	HANDHELD SCANNER	180.00
TRIDENT TR-2400	HANDHELD SCANNER	225.00
TRIDENT TR-2400	HANDHELD SCANNER	199.00
TRIDENT TR-980	HANDHELD SCANNER	150.00
UNIDEN BC-200XLT	HANDHELD SCANNER	125.00
UNIDEN BC-200XLT	HANDHELD SCANNER	120.00
UNIDEN BC-200XLT	HANDHELD SCANNER	120.00
UNIDEN BC-200XLT	HANDHELD SCANNER	120.00
UNIDEN BC-3000XLT	HANDHELD SCANNER	159.00
UNIDEN BC-50XLT	HANDHELD SCANNER	68.00
UNIDEN BC-760	BASE SCANNER	50.00
YUPITERU VT-225	HANDHELD SCANNER	165.00
YUPITERU MVT-7000	HANDHELD SCANNER	175.00
YUPITERU MVT-7100	HANDHELD SCANNER	185.00
AOR AR-7030	HF RECEIVER	649.00
DRAKE-R8A	HF RECEIVER	899.00
DRAKE-R8A	HF RECEIVER	825.00
DRAKE-R8E	HF RECEIVER	795.00
ICOM IC-R71	SHORTWAVE RECEIVER	450.00
ICOM IC-R71	SHORTWAVE RECEIVER	575.00
ICOM R-7000	SHORTWAVE RECEIVER	595.00
ICOM R-71	SHORTWAVE RECEIVER	550.00
ICOM R-72	HF RX + BATTERY PACK & FILTERS	675.00
JRC NRD-345	HF RECEIVER	525.00
JRC NRD-525	HF RECEIVER	299.00
LOWE HF-225	SHORTWAVE RECEIVER	395.00
LOWE HF-225	HF RECEIVER	395.00
MATSUI 4099	SHORTWAVE RECEIVER	85.00
NR-56VFI	SHORTWAVE RECEIVER	49.00
RACAL RA-17	HF RECEIVER	140.00
REALISTIC DX-394	SHORTWAVE RECEIVER	110.00
ROBERTS R-861	SHORTWAVE RECEIVER	145.00
ROBERTS RC-828	S/WAVE RX - PORTABLE INC. CASS	129.00
SAISHO SW-5000	SHORTWAVE RECEIVER	69.00
SANGEAN ATS-803A	SHORTWAVE RECEIVER	99.00
SANGEAN ATS-818	SHORTWAVE RECEIVER - PORTABLE	105.00
SONY SW-55	SHORTWAVE RECEIVER	180.00
SONY SW-7600G	SHORTWAVE RECEIVER	145.00
SONY SW-77	HF RECEIVER	249.00
YAESU FRG-7700	HF RECEIVER	189.00
YAESU FRG-7700+MEM	HF RECEIVER	285.00
YAESU FRG-9600	BASE SCANNER	345.00
YAESU FRG-9600	BASE SCANNER	299.00
YAESU FRG-9600	BASE SCANNER	345.00

Advertisements are accepted in good faith, however the publisher cannot be held responsible for any untruths or misrepresentations in the advertisement, nor for the activities of the advertisers or respondents.

On the Air from Mykonos

It's never been easier to combine a holiday with amateur radio operation, although Phil Whitchurch, G3SWH, did have one or two gremlins with him . . .

I have never been a superstitious person, so the prospect of travelling by air on Friday 13 June 1997 held no fears for me. I may have to reconsider that!

This year was my third holiday expedition to the Greek island of Mykonos to operate as SV8/G3SWH, and our 15th visit in all. Mykonos is one of the Cyclades Islands and counts as EU-067 for the RSGB IOTA awards programme. Previous expeditions had proved very popular and I had racked up almost 2000 QSOs on CW during the previous two years' activities.

This year I arranged to borrow one of the RSGB IOTA Committee's Yaesu FT-900AT transceivers [1], as it is both lighter and more portable than my ancient and weighty FT-101ZD which I had used in previous years. The FT-900AT, complete with mains power supply, Bencher-type paddle, and microphone, had been received from Neville Cheadle, G3NUG, in a superb metal container which is suitable for the aircraft hold. I had previously carried the FT-101ZD as hand luggage without difficulty and stowed it in the overhead locker, but the FT-900AT container was too bulky to fit. I planned to check

in the radio as hold luggage, together with my 30ft telescopic mast.

A quick look at the tickets before leaving for Gatwick showed our baggage allowance to be only 15kg each, rather than the usual 22kg, so the telescopic mast was left at home.

To Travel Hopefully . . .

At the airport check-in desk the total weight of our luggage was 57kg, and the girl started talking to her supervisor about excess baggage charges. Fortunately, he allowed us through without making a charge. I was at pains to point out that the container held a radio and was requested to take all our baggage to the security desk where it could be X-rayed. We then went through into the departure lounge for a well-earned cup of coffee.

Hardly had we sat down than there was an announcement calling us and about a dozen or so other people to the Gatwick handling desk. The poor chap at the desk had no idea why all these people had been paged, and it was some time before another girl appeared and explained that the flight was going on to Santorini after Mykonos and that all our



SV8/G3SWH operating on the balcony, assisted by a large vodka and tonic.

baggage had been mistakenly marked with Santorini labels. She undertook that if we gave her our tags she would arrange for them to be re-marked for Mykonos. I asked her if we should actually identify our baggage, but was told that it wasn't necessary. For some inexplicable reason, our seat allocation was also changed, which did not endear us to the airline, as Jan and I had managed to get seats by the emergency exit with a bit of extra legroom.

The flight was uneventful, but cramped, and on arrival at Mykonos airport we waited in the arrivals area for our luggage to be unloaded. I

remember saying to Jan that I had a bad feeling about the luggage, especially when a lot of people got off the aircraft, but not a lot of luggage. Sure enough, only two of our three items of luggage arrived - the missing item being the radio. Panic set in! Fortunately, Eugene Griffin, a good friend of ours who spends each summer on the island, had met the aircraft, as had a Greek-speaking English friend of his called Julia.

Julia literally grabbed me by the arm and rushed me up to the airport administration office, held a vigorous conversation in Greek with an official. We then whisk off through the security checks into



The RSGB IOTA Committee's Yaesu FT-900AT, which is available on loan to would-be DXpeditioners.

the departure area, whereupon a further incomprehensible conversation took place with another official, who instructed me to go out to the aircraft with a Greek baggage handler.

There was another passenger who had lost all his luggage who came with us. At the aircraft, the baggage handler calmly opened the cargo hold door and invited us to climb inside to identify our missing bags. I found the radio almost immediately, still bearing the original Santorini label and retired to the terminal building. The other chap was not so lucky, as he had only found his rucksack before the captain of the aircraft arrived and ordered him out of the hold as he was "a security risk". I believe he then went and sat on the aircraft and refused to move until they found his missing bags!

At Last - On the Air

It was a short taxi ride to the Geranium Apartments, where another old friend, Paris Panayoyopoulos, made us most welcome.

After bringing each other up to date with events since last year, we got unpacked and I started to erect the inverted-V wire antennas which I have used on my previous expeditions, and which have proved to be very successful.

We originally started staying at the Geranium Apartments as they suited our holiday requirements - clean, well-appointed and with a much higher degree of comfort than the average Greek standard. They also turned out to be the most superb radio location, being located at the top of the hill overlooking the town, at about 200m above sea level, with a slight upward slope to the north and an otherwise clear take-off in all other directions.

Whilst Jan finished unpacking, I took the opportunity of a vodka and tonic and to set up the radio on the balcony and make a few QSOs on 18.1MHz CW. The first CQ at 1606UTC produced a nice run of 38 mainly European stations in just less than 30 minutes before we went to the beach for some food

before our first night on the town.

The following morning Jan was feeling tired, possibly as a result of the previous evening's revelling, but most likely because of the travelling. I was up at about 0600UTC and made a few QSOs on 18.1 and 10.1MHz before settling down to a three-hour run on 14 and 21MHz, again mostly with Europe. When Jan surfaced, we spent a few hours on the beach, but I was on the air again by 1530UTC for an hour or so, before dinner and another evening of revelry.

The pattern was thus set: an hour or so of activity in the mornings whilst Jan was sleeping, and an hour or so in the late afternoon over a vodka and tonic whilst Jan was getting ready for us to go out for dinner and to enjoy the evening. Such a formula had worked very successfully in previous years and once again caused no problems between us. The only thing I had to promise was to QRT when Jan was ready to go out (and to be ready myself by then).

Activity over the weekend 14 / 15 June was good, and accounted for almost 64% of the total of 1164 QSOs which I made this year, including 135 on 24.9MHz. The QSO rate was unusually low during the beginning of the week, but improved on Thursday,

the 19th, when I made 177 QSOs.

By far the most numerous were the Germans, who made a total of 217 QSOs, followed by the Italians at 115. UK was in third place with 66. I worked a total of 55 DXCC countries, bringing the total for three years to 97. Maybe next year I'll top the 100 and get a DXCC from Mykonos!

Special QSLs have been printed and are available either direct with reply paid postage from my home address (my address is correct in any callbook since 1970) or via the RSGB Bureau. For those without a callbook, the address is: Phil Whitchurch, G3SWH, 21 Dickensons Grove, Congresbury, Bristol BS19 5HQ.

Note

[1] The RSGB IOTA Committee's Yaesu FT-900AT, complete with mains power supply, key and microphone, supplied in a sturdy metal case, is available for loan to any bona fide amateur radio operation activating an IOTA island. However, please note that the rig is often booked well in advance during the popular summer months. To book, or for further details, please contact Neville Cheadle, G3NUG, Further Felden, Longcroft Lane, Felden, Hemel Hempstead HP3 0BN.

ISLAND OF MYKONOS, GREECE

SV8/G3SWH



IOTA: EU-067
 LOC: KM27QU
 Lat: 37°50'N Long: 25°20'E



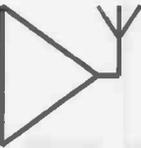
My special thanks to my wife Jan, and to Paris and Maya Panayoyopoulos of the Geranium Apartments, without whose tolerance and encouragement this operation would not have been possible.

73 and thanks for the contact

Phil Whitchurch, G3SWH

ADRI VILLAGE PRESS (G4BLJ) Telephone 01903 879750 Fax 01903 814594

Phil's QSL card for his Mykonos operations.

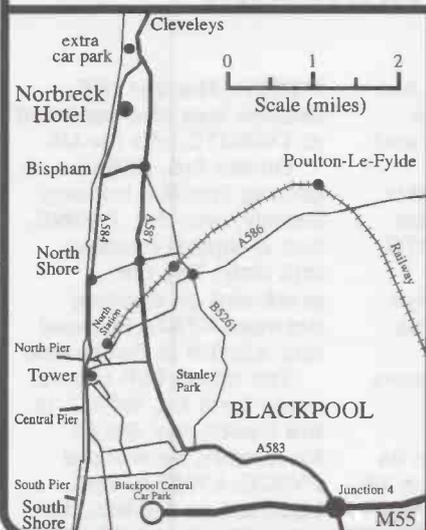
NARS
A*Don't miss the LARGEST single day show in the U.K.*

NORBRECK

NARS
A

Radio, Electronics and Computing Exhibition

by the Northern Amateur Radio Societies Association at the

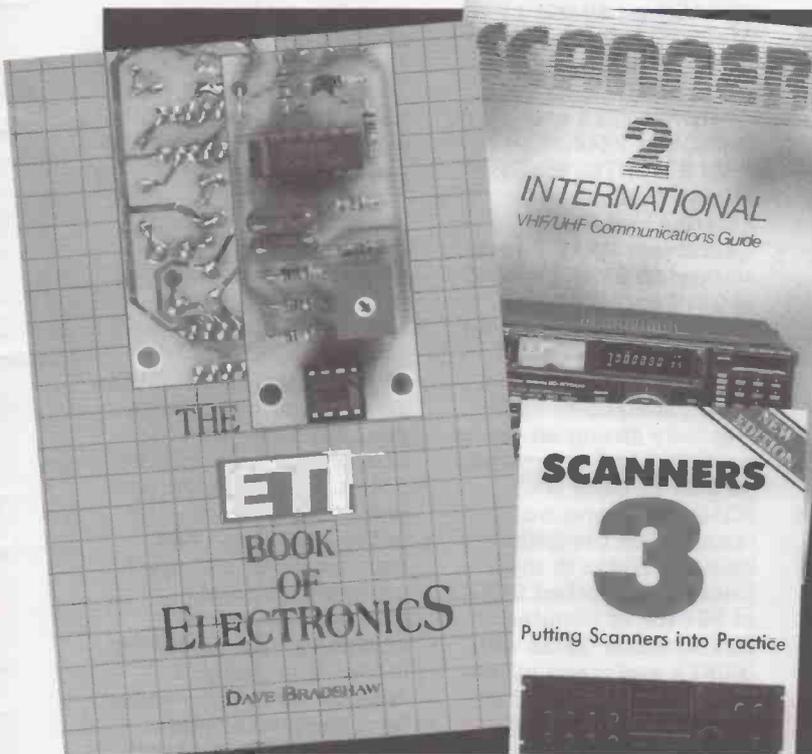
**NORBRECK CASTLE HOTEL EXHIBITION CENTRE
QUEENS PROMENADE, NORTH SHORE, BLACKPOOL****on Sunday, March 15th, 1998****Doors open at 11 a.m.**

- * Over 100 trade stands
- * Bring & Buy stand
- * RSGB stand and book stall
- * Organised by over 50 clubs
- * Facilities for the disabled (wheelchair access to all stands)
- * Overnight accommodation at reduced rates (contact hotel direct)
- * Club stands
- * Amateur Computer stands
- * Construction competition
- * Free car parking

RADIO TALK-IN ON S22

Admission £2 (OAP's £1, under 14's free) by exhibition plan

Exhibition Manager : Peter Denton, G6CGF, 0151-630-5790



ETI Book of Electronics

This book is both a theoretical and practical introduction to electronics. It clearly explains the theory and principles of electronics and each chapter includes a project for the beginner to make. The projects are a loudspeaker divider, continuity tester, 'brown-out' alarm, freezing alarm, loudspeaker, mini-amplifier and a burglar alarm.

NB214 £12.45 UK

£12.95 Overseas

Scanners 2 International.

The companion book to Scanners provides even more information on the use of VHF and UHF communication bands and gives details on how to construct accessories to improve the performance of scanning equipment. The book is international in its scope and contains frequency allocations for all three ITU regions, including country-by-country variations.

NB216 £11.45 UK

£11.95 Overseas

Scanners 3 - Putting Scanners into Practice

This is the fourth revised and completely updated edition of Scanners, the complete VHF/UHF radio listeners guide and contains everything you need to know to put your scanner to better use. There is vastly more information than ever before on frequency listing: in particular actual frequencies used by coastal stations, airfields and the emergency services. Also included for the first time is a section on the HF (short wave) band as many scanners now cover this range.

NB217 £11.45 UK

£11.95 Overseas

Telephone orders: 01322 616300 ask for Nexus Direct:

Please send me.....copies of NB.....@.....

Please send me.....copies of NB.....@.....

Please send me.....copies of NB.....@.....

I enclose my remittance of £.....I enclose my cheque/PO for.....made payable to Nexus Special Interests
or please debit my Access/Visa.

Expiry Date.....Signature.....

Name.....

Address.....

Post code.....

Telephone Number.....

Complete details and return coupon to: Nexus Direct, Nexus House, Boundary Way, Hemel Hempstead, Herts, HP2 7ST. If you do not wish to receive mailing from other companies, please tick box.

VHF/UHF MESSAGE

Geoff Brown, GJ4ICD, reports on an excellent month for 50MHz and meteor scatter contacts

Last year's November Leonids meteor shower produced some spectacular results and Dave Butler, G4ASR (IO81), posted this report. All stations were worked on SSB!

17 November 1997: 50MHz 0633 DL4MDQ, OE2UKL. And on 144MHz, Dave worked the following: HA7UL, IV3HWT, 9A1CAL, S52EA, YU7EW, DD6UFR, DL3IAE, LA0BY/P, F6DRO, IV3BBL, OE3MWS, 9A4EW, YU1WP, DJ9QV, IK1EGC, HA5CW, HA5OV, S51MQ, HB9FAP, EA3TI, I8MPO, EA7GTF, IK2EAE, IK4WIL, 9A2ID, DL4MEA, I8TWK. Dave also heard DJ9YE, EA3BTZ, EB1GIA, HB9QQ, I1DMP, I1JTQ, I4XCC, SP4MPB. He also passes on the following comments: "It would certainly help if stations did spread themselves out a lot more, but this has always been a problem on SSB random. There is nothing worse than hearing a raging pile-up and you move to a nice clear frequency and call many times without reply, even with the burst still going strong . . . it needs a lot of patience and fingers crossed".

Ray, GM4CXM, also reported a good response during the shower. He listed the following DX on 144MHz: EA3TI, S51AT, DJ9KV, HB9FAP, IW5AVM, IW1BCV, DL3IAE, DF1IAZ, DL9YEY, DG7RZ, DL1UL, F6DRO, HB9DFG, DF1CF, I1AMP, EB4GVA, EA2LU. All in all a very good shower.

Trans-Equatorial News

October, November and December produced some interesting openings on both 50MHz and 144MHz. Here is a summary of the events. On 50MHz, Alberto, LU2EGQ, reported that on 3 October he worked and heard a lot of W4s, W5s and W9 stations. KP4 and some Central Americans were heard or worked too. The band continued to be open for three hours. Also the YV4AB/B beacon was heard at S7. Ken, AC4TO, also reported the opening on 50MHz. He writes, "I was doing some preparation for some visitors to my QTH while listening to 50.110MHz, when I heard a voice suddenly come through speaking Spanish. I quickly got to the mic and called in Spanish with my call, and imagine my shock when it was CX1DDO who returned! This was at 2258UTC on 3 October, and it just opened from there, several CX and LU stations started coming in very nicely. My best DX was LU1DVT in GF11 at a distance of 5073 miles from my grid of EM70. I worked: CX1DDO, HH7PV (Es), CX4AAJ, LU1DVT, LU9EHF, LW6EUQ, LU8EWD, LW5EJU, LU3EMK, LU6DRV. These signals were strong even for my minimal antenna. The opening lasted two hours."

There were many more openings in October, including TR8CA, A22BW and ZS6XJ, who were all

working into Europe, but the best of all was the opening between PY and JA.

JR6HI made a 50MHz contact with PY5CC on 14 October, at 0102UTC. Reports were an astonishing 59 - 59. For 30 minutes PY5CC was strong at JR6HI's location. Congratulations to Kenji and Peter. Peter, PY5CC, again made the grade when he worked into Europe on 19 October on 50MHz. He started to hear the Portuguese beacon CS1ACP on 50.031 at 2143UTC and the signal went up to 579. He worked EH7CD at 2218, CT4QP at 2228 and EH7KW at 2244.

At 2312UTC, the TEP started to Central America and the Caribbean. KP4EIT was worked at 2312, V44KAO at 2318 and WP4O at 2325. At 2344 he worked 8P9HA on 6m with RS 59+.

At 2359UTC 8P6ER was very strong on 6m so we QSY'd to 2 metres and he was 51 (nice DX!) 9G1BJ in Ghana was reported on the 24th. Italian stations in the Rome area worked 9G1BJ at 59+ for 15 minutes. 9G1BJ made QSOs with IK0FTA and many others including IS0QDV, IW5BML, EA6NB and IOAMU.

In November there was still a continuation of 50MHz TEP. This is a little late for this type of propagation, however, Ivor, ZS6AXT (KG33), worked 9H5EE at 1455UTC on the 1st, plus

IT9ZR. The V51VHF beacon was also reported at 1400UTC into the UK.

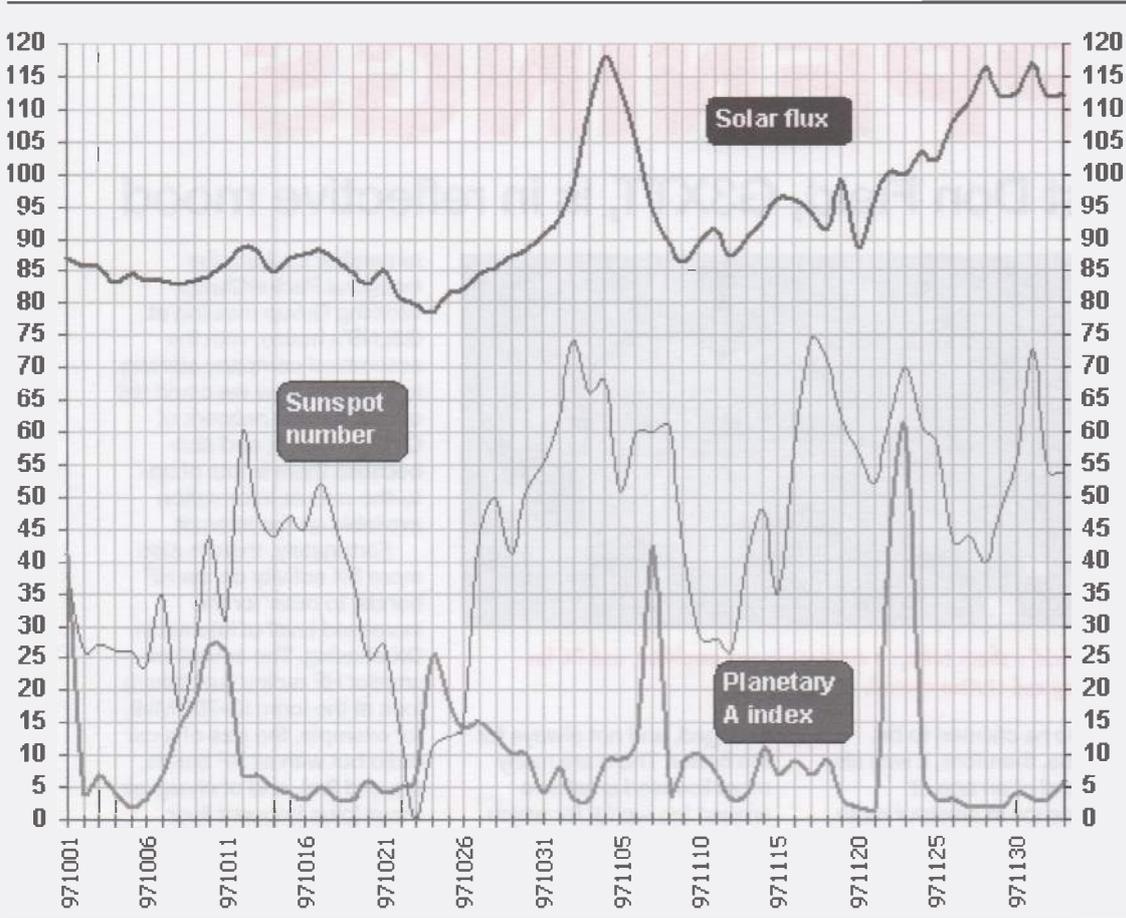
On the 3rd, ZS6XJ was getting into GJ, but only weakly, and Hal, ZS6WB, had a superb opening into Italy. The 5th produced an opening between 4Z5JA in Israel and A22BW in Botswana.

The latest TEP report came from Ed, WP4O, in the Caribbean. On 30 November, he worked PY5CC, LW5EJU and LU3EMK on 50MHz, the same day Jose, KP4EIT, and CX9DK finally made a completed two-way contact on 144.300MHz! The opening lasted about 10 minutes. CX9DK was 55 into KP4, and KP4EIT was 53 into CX. Some DX!

DX News

Jose, EA7KW, reports that the 50MHz EA permits have now lapsed. Stations in Spain now have to apply for a new permit.

John, G8DYK / VU3BIX, sent in a note regarding possible 50MHz operation from VU in the future. I just thought that you might be interested in the reply that I had from Saad, VU2ST, as it probably partially explains the lack of stations active on 50MHz in VU. Apparently, a 'special permit' is needed by a licensed operator and such 50MHz permits are issued 'occasionally'. "It took me about 12 months to obtain my reciprocal licence for VU, so as I have about another two years worth of trips out there, I will apply for a permit now -



The graph of the solar flux and sunspot number plotted with the geomagnetic A index for the months of October and November last year. The solar flux is showing an encouraging upward trend.

you never know, it may arrive in time".

Sid, ET3SID, in KJ99 is now QRV on 6m. His home call is G4CTQ and he is equipped with an FT-736. He started his 50MHz operation on 8 October 1997. His first QSO was with Carmelo, IW9EQS, followed by Maureen, 9H1JN, at 1240UTC and Alan, 9H1AW, at 1241.

Dale, W4QM, has informed Ted, G4UPS, that he will return to Chagos as VQ9QM in January 1998. Dale will be active on 6m as soon as he arrives there.

Tony, A45ZN, in Oman has been given verbal authority for operations on 6m and is waiting for the written permit. He intends to put up two 5-ele Yagis. QSL via G4UPS, who is QTHR.

News from Germany

DL8HCZ reports that last November it was decided that the new amateur radio law (AFuG 97), valid since July 1997, will be replaced by another law called 'AFuV' that regulates everything in detail. This AFuV will start on 1 January 1998. And with this new law, changes to the 6m band in Germany will be possible for the first time since 1991. All Class 1 (some 30,000 or so) licences will have access to 6m. A little more power is expected too.

Ezzat, SU1ER, reports that he is still trying to get full 50MHz permission for all amateurs in Egypt. Sadly the 100W amplifier he has is now 'QRT'.

Finally, some really interesting news about

Chad, TT8. Eric, F5JKK, hopes to activate TT8 between January and May 1998. He will be QRV around 15 January, depending on the geographical situation and also QRM. Eric hopes to use the call that he used the last time he was there: TT8AQ. QSL via F6FNU or direct with IRC / SAE.

Sporadic E Openings

There were several openings in October, one of the best was on the 13th, when EH9, I, IT9, S5, IS0, SP and YU were all worked on 50MHz from the UK. Also, the 5B4CY beacon was copied at 1230UTC via multi-hop Es.

November also produced a few openings within Europe, albeit only

on 50MHz. On the 23rd at 1800 to 2000UTC there was an extensive opening between G / GJ and SP, S5, OK, I and YU.

USA to Italy!

On 7 October, Mario, I5MXX, had an unusual opening to the USA on 50MHz. Mario states that at 1800UTC, K3RRE replied to his CQ call. "His signal was S7, but only for a few seconds. About five minutes later K1DT was calling CQ himself on 50.105MHz, at S3 - 4 and a lot of fading but he arrived for over two minutes. Unfortunately, he was not able to copy my call. Both signals were on SSB. The very strange thing is that I was beaming towards South America, around 240 degrees with my 4 x 9-ele Yagi and when I switched to my other antenna system (4 x 4-ele) directed to the USA all the signals disappeared."

Beacon News

There is a new beacon on the air from FN03 in Canada. The callsign is VA3BCN/B and it is on 50.0498MHz. I believe this beacon was off air for about the past three years, but is active again. Location is just west of Toronto, Ontario.

Another new beacon is WB9STR/B on 50.071MHz, with 5W output to a vertical ground plane antenna at 45ft. The location is EN61.

The ZS6TWB/B beacon on 50.044 is QRV again. It runs 15W into a 3-element Yagi beaming at 330 degrees. The beacon transmits the following: 'V V de ZS6TWB/B KG46RD' and about 30 seconds of carrier, and then repeats the sequence.

News and views can be sent by 'snail mail' to: Geoff Brown, TV Shop, Belmont Rd, St Helier, Jersey, CI or via e-mail to equinox@itl.net

HF HAPPENINGS

Our HF columnist Don Field, G3XTT, is in reflective mood

Maybe it's because I've been licensed so long (30 years later this year), or maybe it's because the year is just turning, but I've found myself reminiscing about how things have changed on the HF bands since I was first licensed. I covered some of this in my September 1993 column, but perhaps a little nostalgia once every five years might be forgiven.

When I started my amateur radio career, although the Class B licence existed, it was largely the preserve of experimenters, as it covered only 70cm and upwards, bands for which there was no commercial equipment. So the starting point for most amateurs was a Class A licence and a 10 watt AM and CW rig for 160 and 80 metres. That was certainly the case with me, starting out with a Codar AT-5 transmitter (British-made, I must add!), and a Lafayette nine-valve superhet receiver which I had assembled from a kit. Most of my activity was by way of local nets on 'topband' (160 metres), chatting to friends around town and just occasionally venturing down to the low end of the band to work some more distant UK stations and the occasional continental on CW.

Of course, there were HF DXers and contesters, with large aerial arrays and linear amplifiers (mostly home-built), and this was the era of the first real 'DXpeditions', put on by names that have since gone down in history. Gus Browning, W4BPD, and Don Miller, W9WNV, were two of the best known, though Don Miller was later discredited when it turned out that at least some of his operations had taken place from locations other than



Don Field's shack today: a modern rig and amplifier, and PC for logging and station control.

where he claimed to be. Maybe, therefore, it was also the end of an age of innocence in amateur radio.

There was plenty of activity from other places that would be considered rare nowadays, particularly from those parts of the map that were still coloured red. British ex-pats on government or commercial assignments in those days before satellite telephony and reliable international dialling often found amateur radio a good way of keeping in touch with home. And there was regular activity from places like Afghanistan, the Lebanon and Ethiopia, countries which were then stable and reasonably prosperous. These stations didn't attract the pile-ups that would jump on any appearance by them nowadays. Roger Brown, G3LQP, for example, ran the so-called Commonwealth Net for many years, and although there were regular appearances by amateurs from out of the way places, the net was always well disciplined and relaxed, with time to chat and share gossip, rather than just a hurried signal report.

These Days

Nowadays, much has

changed, and not always for the better. There are many more licensed amateurs around the world, for which we should be grateful insofar as we can use our numbers to justify retaining radio spectrum over which other potential users frequently cast an avaricious eye. And DXing has, in any case, caught on more as a specialism within the hobby. In the US, even when I was first licensed, the main HF interest was still traffic handling (the RSGB's sister organisation is not called the American Radio Relay League for nothing - its main purpose was to cater to a membership which enjoyed handling third party traffic, a role which grew out of the ability of amateurs to pass traffic long-distances within the US when long-distance telephony was still in its infancy). Nowadays, there are probably more HF DXers in the USA than anywhere else.

And, of course, it is a lot easier nowadays for HF operators to be aware when a new one appears, mainly due to the almost universal use of PacketCluster (it's hard to believe that the first PacketCluster in the UK started operation only about seven years ago - I well

remember chairing the inaugural PacketCluster Working Group meeting at G3LNS's house, with the assembled company starting to consider how we could roll out a UK-wide network of Cluster nodes), and also because there is lots of up-to-the-minute information available on the Internet.

Fortunately, there is also more DX activity on the HF bands, to cater for the increased level of interest in DX chasing. The advent of smaller HF radios (just take a look at the Icom IC-706 MkII, for example, the size of a car radio but with all HF bands, 6m and 2m), and of cheap air travel (plus frequent flyer schemes!), has made it possible for almost any of us to be DX. Compare this with tales of early DX operations, with amateurs hauling literally tons of heavyweight valve equipment round the world by sea, by rail, and even by pack horse. A modern shack (see photo) will almost always include a PC nowadays, to monitor PacketCluster, maintain the log, send CW, and even turn the aerial rotator.

But, despite all these changes, the basics remain the same. We continue to chase the DXCC awards which were introduced in their present form soon after amateurs returned to the air following World War II (albeit, several variants such as the five-band and single-band awards have been introduced since), and even SSB, our most 'modern' mode of operation was pioneered in the 50s and has been in almost universal use since the late-60s. Digital Signal Processing (DSP) techniques are finding their way into modern ham gear, but there is no sign yet that we will follow the



The original G3XTT shack, circa 1968

professionals into digital modulation techniques, a far cry from days gone by when amateurs generally led the way.

What of the future? It's hard to say, though maybe we will see a much closer integration of radio and Internet technologies and, eventually, the adoption of new modulation techniques such that the present debates about whether or not to retain the CW requirement will seem a bit like those old ones about how many angels can dance on the head of a pin. However, I have a feeling these changes will come more slowly than we might expect, and that the major change in HF amateur radio over the next 10 to 20 years will be a fall-off in interest in the so-called developed world, where amateur radio is increasingly considered passé, but an explosion in interest in countries like Indonesia, Thailand and China where newly-prosperous young people look to amateur radio to develop their technical skills and to reach out to other nations.

CQWW CW Contest

Looking back at recent band activity, the CQWW CW Contest at the end of November must rank as one of the highlights. Although 160-metre conditions were down on 1996, 80 metres was excellent and Ron Stone, GW3YDX, was able to work 120 countries in the course of the weekend! 40 metres was also in very good shape. My own efforts were on 20 metres, for which I put up a 4-element monoband Yagi which had been sitting gathering dust for some years. Its performance was noticeably better than that of

my usual trapped tribander, but activity was relatively low, with 20 metre band openings coinciding closely with those on the higher bands which is where most stations seemed to have migrated. Certainly 15 metres was excellent, and 10 metres produced a couple of exceptional, albeit short, openings to the USA. A friend of mine in Jersey worked as far across as Nebraska, and was still hearing East Coast and Canadian stations on 10 metres well into the evening.

As always, many of the expeditions which had gone out for the contest were active both before and afterwards, and the bands were buzzing with interesting call signs. To give you some idea of how good high band conditions were at times, let me tell you about a contact I made on 12 metres. Having just put up my 20m beam, KH8/N5OLS in American Samoa was 'spotted' on the PacketCluster as being on 12m CW. Without a 12m aerial I thought I would be wasting my time with a rare one like that, but used the aerial tuner in my Yaesu FT-1000D to allow me to transmit into the 20m aerial despite the mismatch, and ended up working the KH8 first call!

Latest DX News

Dov, 4Z4DX, and others have announced their intention to activate St Brandon Island, a dependency of Mauritius, in May. They will use the callsign 3B7AZ. Let's hope this one comes off, as it is some years since there has been a substantial operation from this DXCC 'country'.

Also in May (well, 30 April until 7 May), Hide, JL1LJS, will be active as 3D2LJ from Fiji. His operation will include 30, 17 and 12 metres.

Karl, K4YT, veteran of many operations from Africa and elsewhere during the course of his work, will be reassigned to the US embassy in Tel Aviv for three years from March and expects to be active from there.

Peter, PB0ALB, has

announced that he will operate for six weeks during April and May as 9M8CC from Sarawak, with a low-band vertical and a beam for the high bands. QSL to his home call.

John, CE0ZAM, a resident of Juan Fernandez Island (featured last year in Michael Palin's circular tour of the Pacific), expects to be active for about 20 days in April and May as XQ0X from San Felix, another of Chile's possessions in the Pacific Ocean. Again, it is some years since San Felix was activated, so John will no doubt be in great demand.

To commemorate Expo '98 in Portugal, Portuguese amateurs can use a series of special prefixes until the end of September. CT1 and CT2 stations can use CT98, CT4 stations CS98, CT3 stations (Madeira) CQ98, and CU stations (Azores) CU98. I wouldn't be surprised if there is some sort of award for working these special prefixes, so start chasing them now.

Joe, VE3BW, was expecting to be active as VE3BW/HR6 from Roatan Island off Honduras from 1 to 22 February. After very little operation from Honduras in recent years, it is nice to see a number of expeditions from there in recent months.

Ruby, K4UPS, and Bill, K4LTA, will be active from Grenada (J3) from 10 February until 3 March. Bill always does a great job on the low bands (especially 160 and 80 metres), so I would recommend taking a look for them. They will be joined by two more operators for part of the time, including the ARRL CW Contest.

Andy, K2LE, will be active from 2 to 15 February as P4/K2LE from Aruba and John, W1BIH, will be back in Bonaire until the end of March, signing PJ9JT. The various Netherlands Antilles have always been popular for radio expeditions, being easy to get to, counting as South America and hence extra points in several of the major contests, and with excellent

propagation into the USA. At different times there have been several permanent contest and expedition stations established on the various islands, and I know, for example, that Carl, A16V, rents out his cottage on Aruba (complete with radio and aerials) to visiting hams.

Oliver, OH2NSM, was due to be active from Guatemala as TG0OH until 25 February, all bands, and on both CW and SSB.

A German group should be active from Chatham Island, a New Zealand possession in a big way between 23 February and 9 March. This is the same group that has done a super job from the Cocos (Keeling) Islands, Christmas Island, Bangladesh and Papua New Guinea in recent years, so expect to run across them on all bands and modes. There should be good greyline propagation (ie along the line of the day / night boundary) to Europe at that time of the year, so signals could be excellent, even on 160 metres.

And finally, don't forget that the CDXC DXpedition to Layang Layang in the Spratly Islands will be on the air between 13 and 23 February, with a major all-band effort from 160 to 6 metres. The callsign will be 9M0C and the group, of which I am a member, will be on all modes CW, SSB and RTTY. We're taking some big antennas, so we should be easy to work even if you only have a modest station yourself.

Thanks

As always, I am grateful to the RSGB's DX News Sheet, in addition to Internet resources such as 425 DX News and the OPDX Bulletin for much of the above information. Please send your HF related news, views and photos to Don Field, G3XTT, 105 Shiplake Bottom, Peppard Common, Henley on Thames, Oxon RG9 5HJ, or by e-mail to g3xtt@lineone.net

SATELLITE RENDEZVOUS

Richard Limebear, G3RWL, with his regular round-up of AMSAT-UK news



Oscar 10 is still operational in Mode-B and available when in view but please do not attempt to use it if you hear the beacon or the transponder signals FMing. Generally, once AO-10 hits darkness, it shuts down.

The sun was estimated to be directly shining on the antenna end of AO-10 (illumination = 0) at the end of November and so the satellite should be in the middle of its 'sleep'.

However, by mid-January conditions should be quite good again and the solar angle will hit 0 degrees (100% illumination) between 21 and 28 February.

All this, of course, is based on 'guestimation' centered on the last 'sleep' phase. So far, however, the estimates seem relatively close to reality.

Russian Satellites

As part of ongoing frequency experiments to improve amateur radio operations on board Mir, and to better understand how these frequencies will be effective on the International Space Station, Mir is running a two-phase frequency experiment which began on 1 December and which will end on 31 May 1998.

For phase 1, a 70cm / 2m crosslink experiment is operating during a three-

month period from 1 December to 1 March 1998.

The Mir operating frequencies changed to: Uplink 437.850MHz and Downlink 145.800MHz on 1 December.

Phase 2 of this experiment will use a 2 metre-only set of uplink and downlink frequencies. This phase of the experiment will begin on 1 March 1998 and will also be of three month's duration.

This experiment was developed at the recent Toronto AMSAT-NA Space Symposium. It has been endorsed by the representatives present at the conference which included SAFEX, SAREX, AMSAT-UK, the IARU Region 2 President, the IARU Satellite Advisor (ZS5AKV), ARI (Italy) and RAC (Canada).

The SAFEX-II project on Mir came back for a while but, because of the new computer problems the crew is having, it is expected to be shutdown again.

On the simplex frequency, the crew believes the antenna coax for the PMS station may have been damaged during the space walk on 6 November. It has been suggested to the crew not to use the PMS station until the cable is repaired. The crew may attempt to fix the coax cable during a scheduled December space walk.

The Sputnik model displayed at the AMSAT-UK Colloquium is now in orbit. The official name is Sputnik-40 but folks are generally calling it 'RS-17'. The beacon is on 145.820MHz FM.

Two flight units were said to have been sent up to Mir. However, the second unit consisted of just spare

electronics modules and there is no way this can be orbited separately.

The satellite was hand deployed during a space walk on 3 November. The small satellite is battery powered, and is currently transmitting audio 'beeps' using 250 milliwatts of power. Reception reports have been received from around the world by people using even modest receiving equipment such as a handheld receiver in a car with a 'rubber duck' antenna. The frequency of the audio tone transmitted by the satellite is related to the internal temperature in the spacecraft. The batteries on the satellite were expected to allow operation for about one month.

The satellite commemorates the 40th anniversary of the original Sputnik 1 satellite. Sputnik 1, launched by the Soviet Union in 1957, was the first artificial Earth satellite. The original Sputnik 1 transmitted a similar beacon on approximately 20MHz.

Reception reports can now be sent directly to the Radio Club of Jules Reydellet school on Reunion Island. Those whose reports are confirmed will receive a 15 x 21cm, four-colour certificate on high quality paper with number identification and the radio club stamp. Requests for these certificates should be made only by letter with a 15 x 21cm SAE and 2 IRCs. The certificates will be sent after the end of the satellite's life. The mailing address for FR5KJ is: FR5KJ Radio Club, 103 Rue de la Republique, 97 489 Saint Denis Cedex, Reunion Island.

A more complete technical description of the satellite,

dealing with its electronic, mechanical and thermal designs, as well as its antenna patterns, is available from AMSAT-France for a nominal donation (it is written in French). Contact them at: AMSAT-f@AMSAT.org for more details.

Those interested in more information can also visit AMSAT-F's web pages at: http://www.ourworld.compuserve.com/homepages/AMSA_T_F

You can also visit the Reunion Island web site about Sputnik-40 at: <http://www.oceanes.fr/~fr5fc/spoutnik.html>

Digital Satellites

WD0E reports that the DOVE's command operators are attempting to keep the DOVE S-band transmitter activated for those who wish to test receive equipment on that band. One of the command team will make an announcement via the Internet if the transmitter temporarily goes off.

The S-band transmitter puts out about 0.8 watts to a bifilar helix mounted about 1.5 inches in from one edge. The antenna is generally pointed away from the Earth in the northern hemisphere and toward the Earth in the southern hemisphere. If users are listening from north of the equator they should hear deep fades about every 30 seconds or so as the satellite rotates about its Z axis and the S-Band antenna is blocked by the body of the satellite.

QSL cards for DOVE are once again available. These special cards depict a dove carrying an olive branch in its mouth and will be provided to anyone who sends a report

indicating they've heard the satellite. Send an SASE to: Dianne White, N0IZO, 45777 Rampart Road, Parker, Colorado 80138-4316, USA.

Phase-3D

Ariane 5 successfully lifted-off on 30 October from Kourou, French Guiana. The fairing that shrouds the payload during ascent phase was jettisoned three minutes after lift-off and final injection was performed by the storable propellant stage, which ignited ten minutes after lift-off.

Twenty-seven minutes into the flight, Maqsat H and Maqsat B (platforms carrying instruments to analyse launcher flight behaviour) and the technology satellite TeAMSAT were ejected into orbit.

This was the second test flight of Ariane 5 after the failure of the maiden flight on 4 June 1996. The third qualification flight is scheduled for spring 1998. Commercial Ariane 5 flights, managed by Arianespace, will then begin with the fourth launch in the second half of 1998.

Data collected during this flight indicates that the liquid-fueled core vehicle of the Ariane 5 rocket rolled in flight causing its Vulcain main engine to shut down 10 to 20 seconds earlier than planned so the upper stage booster and attached payloads did not attain the prescribed velocity and hence went into a lower orbit than expected. The roll caused fuel movement (by centrifugal force) so apparently the fuel gauge showed 'empty' before it really was.

ESA officials are reported to have said that, had commercial satellites been aboard, their onboard propulsion systems would have enabled them to attain geostationary orbits, despite the lower than planned insertion. However, it has been conceded that such a correction might have resulted in a reduction in the satellites' overall life, possibly up to 10%.

Apparently the apogee of the orbit is only 27,000km, not the scheduled 36,000km, but the perigee is 524km - not far from that expected.

An interesting rumour surfaced on a recent AMSAT-UK 80m net - that the extra strengthening added so much mass to P3D that the fuel capacity on-board is no longer sufficient to achieve the intended final orbit. AMSAT-DL say that the 'intended final orbit' is the so-called 16-hour orbit and the mass of P3D is currently about 630kg. Their information is that with this mass we will just make it into the 16h orbit.

The exact situation will be known when the parameters for the new launch are exactly known; it could be that some overweighted parts have to be offloaded. The team in Orlando is currently investigating the possibility to replace the AUX-battery by an NiMeH battery.

Those interesting in tracking events may want to watch: <http://www.newspace.com/future/newline/rocket.html> which seems to be the best 'unofficial' source of this kind of information that has been found so far.

Short Bursts

Followers of Oscar-11 will notice that the news bulletin doesn't get changed often. I received very little feedback from the regular bulletin service, and at a recent AMSAT-UK committee meeting it was decided to discontinue the weekly postings, and replace them by a static bulletin. This may be changed at monthly intervals and will contain items such as Keplerian elements and satellite frequencies.

Next year's AMSAT-NA meeting will be in Vicksburg, Mississippi. The following year it is likely to be in Detroit.

At the IARU International Satellite Forum held in conjunction with the AMSAT NA Space Symposium in Toronto from 17-19 October

1997, ZS5AKV reviewed the decisions taken by the IARU Region 1 Conference to introduce monitoring activity and they agreed that Ron Roden, the IARU Region 1 IARUMS Co-ordinator would, on a trial basis, act as co-ordinator.

The role of the IARU AMSAT Frequency Co-ordinator was discussed. It was agreed that the terms of reference continue to apply.

The meeting recommended that Wednesdays as 'experiments day' be continued and that the IARU Satellite Adviser and Frequency Co-ordinator should promote more experimentation.

There was unanimous agreement that higher frequencies above 70cm, new modulation techniques and operating modes, should be considered for future manned space missions.

The 1997 World Radio Conference concluded on 21 November in Geneva. Amateur radio survived WRC-97 largely unscathed, but the stage has been set for renewed spectrum battles at WRC-99.

The 'Little LEOs' (non-voice, non-geostationary mobile satellite interests: LEO = Low Earth Orbiting) - which put a huge scare into the amateur radio community in 1996 with their proposals to share amateur VHF and UHF bands - were unable to muster much support for new allocations at WRC-97. However, they came away with up to 3MHz of additional spectrum on a regional basis, in the bands between 454 and 460MHz. The Little LEOs also obtained a resolution calling for urgent studies in preparation for WRC-99 - what some at the conference called 'a hunting licence' for additional VHF / UHF spectrum. A second issue that will recur at WRC-99 is finding a place in the 420 - 470MHz frequency range for the Earth Exploration Satellite Service (EESS). Synthetic aperture radars (SARs) using frequencies in this range are said to be capable of

penetrating the rain forest for mapping purposes.

WRC-97 delegates did agree to upgrade the Earth Exploration Satellite Service from secondary to primary at 1215 to 1300MHz, which should have only minimal impact on amateur use of 1240 - 1300MHz. The presence of EESS there also reduces the possibility that other, less compatible, services might later be introduced into this band.

In other allocations decisions, amateur satellite segments were not included among allocations for wind profiler radars. Except for a worldwide primary allocation at 1270 to 1295MHz, the only specific allocations for wind profiler radars are in Region 1, and those are on a secondary basis.

For anyone with Internet access, there is an interesting 'Virtual Space Museum' with lots of pictures and graphics about many Russian space projects, including the moon rocket, lander, Sputnik and Mir space station. You can also take a virtual tour inside the Mir station. It is at <http://www.ccas.ru/~chemov/vsm/>

AMSAT-UK News

Ron Broadbent, G3AAJ, has retired as AMSAT-UK Secretary after many years of sterling service. All connected with amateur radio satellites owe Ron a huge debt of gratitude. The new contact details for AMSAT-UK, from 1 January 1998, is as follows: AMSAT-UK, 40 Downsview, Small Dole, West Sussex BN5 9YB; tel: 01273 495733; fax: 01273 492927.

A copy of the latest Keplers is available on request by mail or packet; my mailbox is GB7HSN but please note that AMSAT-UK Keplers are put out on packet fortnightly anyway and sent to KEPLER@GBR. When asking me for Keplers please say which satellites. All means about 250 satellites ('all amateur sats' is adequate if that's what you really really want).

NET COMMUNICATION

Jeremy Boot, G4NQH, suggests we all think more positively about our hobby this year

At this time of year - and, yes, I know it's now the end of January - it is traditional to talk of New Year Resolutions. My suggestion is: stop the moaning and the negativity in our hobby. Let's celebrate not only a past to be proud of, but an exciting time to come. Accessible technology is gaining momentum all the time and with a little creativity, good will, and a clear sight to the future, all of us, amateurs and radio societies, can look forward to 1998 with some real enthusiasm. As I have said before: you get out what you put in.

The Moaners

It is a fact that there are many people in the hobby who naturally bond, and spend much of their free time helping their fellow amateurs in a thousand ways. There are, alas, also the moaners. They can do much harm. This train of thought was occasioned by a gloomy posting to one of the amateur newsgroups this week in which a newly-licensed amateur replied to one of those "packet has killed amateur radio" themes which attract the usual resident groupies who have to see their name attached to every comment. In this case, the responses were polarised between: "I only live for packet" and the complete opposite.

The original writer opined that radio was

already dead as far as he was concerned, and anyway it now consisted largely of old fogies going on about their lumbago and the gardening, and that anyone who didn't fit the mould was doomed from day one. He didn't seem to consider that he might have a part to play himself in improving matters, even if that were true. But it makes you wonder how someone new to the hobby had obviously not been at all prepared for what he found. Other contributions to this sad debate included the odd insult, and a few in

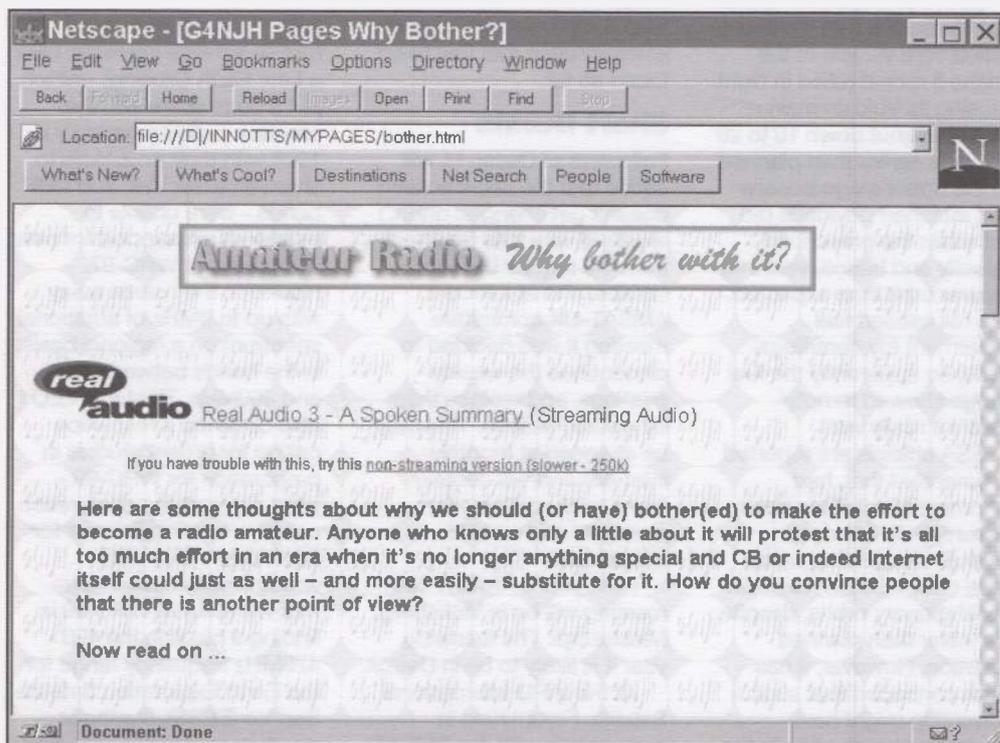
comments understood only by the writers. Heaven knows what non-amateurs make of such threads in newsgroups. No-one did actually determine what packet radio had destroyed or achieved.

First and Last an Amateur

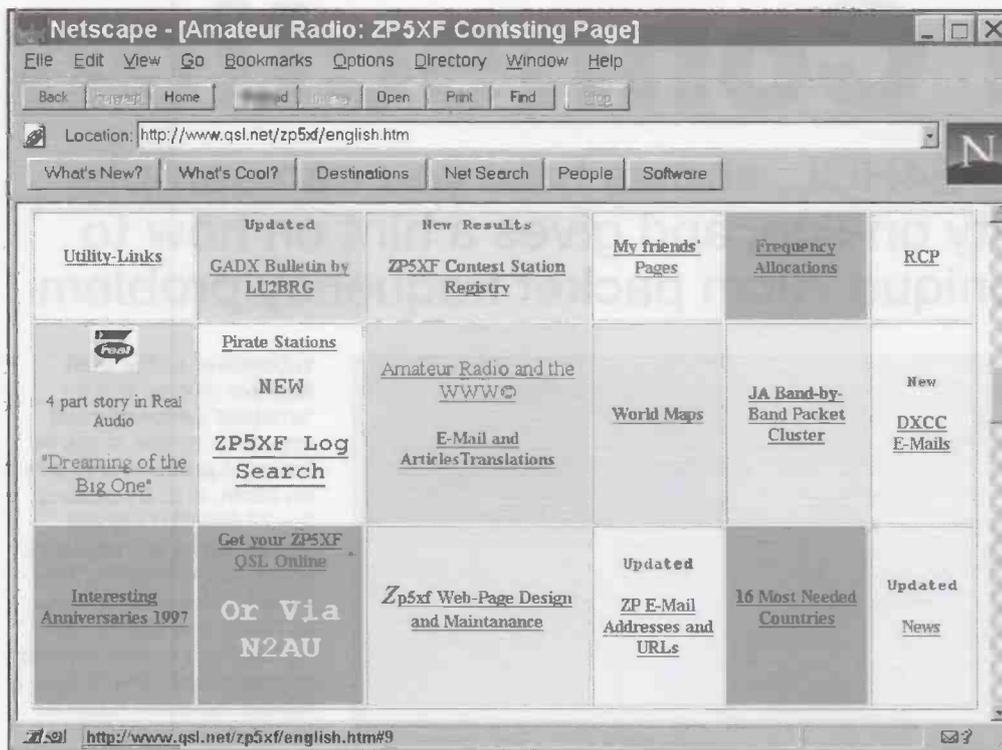
In reality, like other 'new' modes, packet has not harmed amateur radio. Of all the comments I get from my WWW page feed-back, packet is by far the most popular part of the hobby for my correspondents. I

am not entirely sure why. It was probably the first major departure from real-time QSOs. The Internet was a natural sequitor to the computer's presence in the shack and the rest is history.

It is now almost a year since I started to consider seriously the relationship between amateur radio and the Internet, in this series of articles and elsewhere. Once the message gets across that the key is being an amateur and that all else is subservient to that, the fear of innovation recedes. So it should. No-one has to



Those already on the Internet who do not know much about amateur radio might wonder just what use amateur radio is. I hope to educate them with this page!



This month's recommended amateur radio Internet page: that of Renato Bellucci, ZP5XF.

abandon his favourite aspects of the hobby, or go out and buy a computer, for example. But there are those who can and will use the new medium to reach and attract the many, who have still never heard of amateur radio, and there will be others who use it to keep on top of latest developments and adding to their communication abilities. That is entirely in the spirit of the hobby.

The Coming Year

So this year, what might we hope for? Well, I do look forward to that new breed of radio which interfaces with computers. When I bought my FT-767GX some years ago, it advertised a CAT interface, which seemed to me perfectly useless. I have just seen one of the new Icom HF rigs, however, with its LCD screen and myriad refinements and the idea of interfacing or using it with a computer now seems quite normal. (Icom's web site is at <http://www.icomuk.co.uk/>). I see too that Kachina have produced a wholly

computer-operated HF rig, the 505DSP, which is available in the UK through Waters & Stanton PLC. I also saw in the same shop an old FT-101 (I used to have one) still going strong. It seemed almost light-years away in its design and technology. Things do and will move on. That is good for all of us. It doesn't wipe out the good that preceded it, however. As what they call 'convergence technology' gets a grip, various clever devices which are now separate items (radios, TVs, computers) will merge.

The HF cycle is at last heaving itself into gear, and not before time. The bands have restored to us some of our old favourites: long-path VKs and ZLs in the morning, 21MHz and even 28MHz is now more useable and MUFs more healthy. I suspect that the Internet might not have taken off so quickly for amateurs these last two years, had HF not been so generally poor at the bottom of the last cycle. So we can look forward now to

not abandoning HF for the Internet in 1998. No more excuses! We can of course use them both. Why not? The information for hams has never been greater on the net and is likely to continue. I see no reason therefore for us not to consider some of the push technology which commercially is now available. This is the means whereby information is delivered to your desktop (often news and headlines) when you are connected. That is it comes to you: you don't have to go and look for it. Would any of the radio societies like to kick this off? Let's not be slow to embrace this new trend. The business end of the market is falling over itself to get in on the act. So should we.

As to the Internet itself, by the time this is printed, the Norweb area should be close to starting their experimental feeds via the mains supply (and a suitable modem, of course). The rates are supposed to be cheaper than ISDN and the

bandwidth available would be considerably greater, they say. Add to this the prospect of satellite feeds and even some sort of TV feed and / or cable links, and 1998 is likely at the least to see another large expansion of the Internet: more accessibility in general. Public reference libraries are also likely to be connecting if they haven't already. Gone are the days of looking up school projects on Saturday morning in a 1930 edition of Encyclopaedia Britannica, it seems.

Bill Clinton seems to think that there is money out there on the Internet untapped. He may be right, but I hope we don't see what is a unique global network become just an enormous shopping mall. I get far too many 'spams' (unwanted advertisements, usually for money-making scams) already.

Tailpiece

A number of articles ago [HRT Vol 15 No 8 - Ed], I wrote about SWLs and space did not allow a table I had prepared for useful SWL / broadcasting links. If readers would like a copy of these links, please write to me at the e-mail address below, or via my pages, and I will send you a copy.

A page to look at this month, I suggest, is from my good friend Renato Bellucci, ZP5XF, in Paraguay, at <http://www.qsl.net/zp5xf/english.htm> There are pages in Spanish as well as English, and there's a wealth of topics to keep you amused these cold winter evenings.

Meanwhile, may I wish everyone who reads these articles a happy, prosperous and successful 1998. Please send all e-mails about the Internet and amateur radio to Jeremy Boot, G4NJH at asperges@innotts.co.uk and take a look at the G4NJH WWW pages: <http://www.innotts.co.uk/~asperges/>

DIGICOM

The Newsletter of

MAXPAK

The Midlands Packet User Group



DEC. 1997
/ JAN. 1998

In This Issue

Node News	1
Compliance with 12.5Khz requirement	2
Editorial	2
Winpack with a Baycom Modem...Here's how	3/4
MAXPAK price list	5
Who's who in MAXPAK	5
For Sale	6
Shareware software	6
Wanted	6
UK National Node Map - North West	7
UK National Node Map - North East	8
9600 Baud Packet Manual	8
9600 Baud Packet Manual	1
9600 Baud Packet Manual	2

Node News

BLOX NODES

This is a proposed new node designed to give access to users in North Walsall, Bloxwich, Great Wyrley, Brownhills and surrounding areas. There will be a direct link from the node to WV which is directly linked to GB7MAX, both of these links are high speed (9K6 baud) connections.

The Sysop of this node will be Chris (G0CNG) and the call sign he has applied for is GB7BL. Chris is only awaiting receipt of the NOV before going fully operational.

The frequencies requested are
2 Metres -- 144.9375 Mhz. and
70 cm. -- 432.675 Mhz.

BNOR NODES

This site has closed down due to very low demand.

The Chairman will be pleased to receive any comments / suggestions regarding this.



Wishing you a
Happy Christmas
and
New Year 1998.

MAXPAK Digicom

Page 1

Issue 34 (Dec. 1997/Jan. 1998)

Digicom, the bi-monthly journal of the Midlands Packet User Group

APRS on the Internet

In last month's column I mentioned the use of the Automatic Position Reporting System (APRS) over packet. Well, even if you don't have APRS facilities yourself with a GPS receiver linked to your TNC, you can still get in on the action on the Internet with amateur radio APRS. Of course, you might even just take a look to find out a little more about the system. If you point your browser at http://sboyle.slip.netcom/LI_DSAPRS you'll find a page running a Live Internet Data Service for APRS, which collects, filters, stores and then serves the APRS packets from a TNC to the Internet. At this site you'll be able to see a real-time APRS map with constantly-updated information from packets received using a KPC-3 TNC connected to an Icom IC-228A on 145.010MHz, all located just outside Mountain View in San Francisco's South Bay in California. You can zoom the map in or out, scroll around, and list packet messages received by the system. Also on this site

you'll find links to a number of other real-time APRS sites located in Miami, Atlanta, New York and Washington in the US, and Southern Ontario in Canada.

The latest APRS programs as of late December 97 are version 8.05 for DOS (just over 1Mb compressed), and 2.08 for Windows (just over 3Mb compressed). The current QSP73 amateur radio software CD-ROM (£15.00 inc UK p/p, tel: 01703 263429 for info) has these included, together with additional Windows APRS wave sound files and a collection of UK maps.

A packet message from Ciemon, G10TRT, says that he 'took the plunge' and used WinAPRS208 to connect to the Internet and APRS server. The incredible result was over 800 stations logged on, with over 300 messages and people wanting to chat!

Maxpak network improvements

BLOX is a proposed new node designed to give access to users in North Walsall, Bloxwich, Great

Wyrley, Brownhills and surrounding areas. There will be a direct link from the node to the WV node which in turn is directly linked to the Maxpak BBS, GB7MAX, both of these links run 9600 baud. The SysOp of the BLOX node will be Chris, G0CNG, and he's applied for GB7BL as the callsign of the new node, with requested frequencies of 144.9375MHz and 432.675MHz.

With the ongoing improvements to the Midlands network, due to low demand the BNOR nodes in Bridgnorth have closed, although the MAXPAK chairman Brian, G3TIN@GB7MAX would be pleased to receive any comments or suggestions regarding this.

MAXPAK produce a very informative bi-monthly newsletter, Digicom, with the Dec 97 / Jan 98 issue including news, an offer of help with your rig and 12.5kHz channel spacing, details of how to use WinPack with a BayCom modem, and the first section of the excellent 9600 Baud Handbook by Mike Curtis, WD6EHR. This is being reproduced in print in 'serial form' in the newsletter's final pages, to eventually make up a complete reference volume for your packet station.

The active group also have regular meetings, they offer a packet software and hardware service including TNC and modem kits, and attend a number of rallies in the Midlands area. You can get further details on the group from Richard, G1NZZ, via packet with a message to G1NZZ@GB7MAX or by phone on 0973 262287 (1900 - 2200 Mon - Fri and 1000 - 2200 weekends).

Oakmoor BBS

If you're using landline-based amateur radio software download and have, like myself, tried out the Oakmoor BBS, you

may have been having a few problems with line noise. When I downloaded the Windows-based Journal logbook from there, I often experienced 'bad packet' messages on my terminal screen. The SysOp, Ron, G1MET, says that he's aware that there are quite a number of users of this system and that unfortunately major errors have been occurring when people have been using it for downloading. Ron says that all equipment has been checked and found to be OK, and that complaints have been made to BT but without too much success so far.

So, if you use the Oakmoor BBS and you encounter problems, Ron asks that you leave him a message to that effect with the nature of the problem including the time, date etc, but to please also complain to BT about it! I suffered for several months with intermittent line noise on one of my phone lines, and it was only when I managed to get the BT engineering department to actually hear the noise when I made a speech call to them, and for them to then formally log it as a definite and known fault, that they traced the noise to the local exchange and rectified the problem. But I wonder if some of the newer competitive landline providers would also be able to sort out line noise problems?

CTRL-Z, End of Message

That's my lot for this month. You can contact me via packet with a message to G4HCL@GB7SOU.#48.GB R.EU or e-mail to g4hcl@amsat.org or by fax or a phone message (auto-switching) to 01703 263429. See you next month.

COMPUTER CONTACTS

Paul Simpson, G0RUR, responds to some readers' questions

I hope you all had a very good Christmas and have recovered from the effects of bringing in the New Year. In my articles this year I plan to place a little more emphasis on the 'Millennium Bug', now that there are plenty of programs to support finding out if you are affected, and repair programs available. For those with Internet facilities I will provide software Web sites to visit.

Win 95

First, though, I wish to clarify some of the points made in Jeremy Boot's, G4NJH, Net Connection article in the November 1997 Ham Radio Today.

There is no reason why a DOS-based 386 PC with 4Mb of memory and Windows v3.11 running in Enhanced Mode cannot operate on the Internet quite comfortably. There is little importance attached to hard disk space for Internet browsing. There is also 32-bit software available to install into Windows v3.11 which allows automatic 16 - 32 bit operation. It should be remembered that there are lots of different systems being used, some only text-based, and patched from packet to the Internet. There has never been a better time to pick up a cheap PC to check things out.

The types of Windows of main concern are v3.1, v3.11 and Windows 95. The Winsock that allows

transparent connection of other programs for TCP / IP is a Data Link Library (DLL) file. Jeremy referred to it as built in to Windows 95, although in fact Windows 95 has both 16 and 32-bit Winsocks for compatability between applications (see pages 150 - 151 of Introducing Microsoft Windows 95, ISBN 1-55615-860-2).

I have been asked why I make no apology for excluding Windows 95. I see no benefit from an operating system which requires 16Mb of RAM, and over 50Mb of hard drive space as a base requirement, when most amateur programs are still DOS-based.

I recently asked a number of Windows 95 operators to tell me what I

would gain by upgrading above what I already have. 32-bit operation was the main reply, but my Windows v3.11 is 32 bit. After this there was only the meek response of a multitude of external applications that only operate on a Win 95 system. Well I'm afraid that's the restriction you put yourselves under. I can operate off an old 5.25in drive and 360k floppy disk and still run almost any facility including fax, e-mail, Web browsing, packet, SSTV etc. I think I have made my point!

Planned future reviews for 1998 include the RadioRaft v2.12 Multi-Mode Radio Decoder, and an update on the Rapid Results College RAE course.

HamComm v3.1

I had been asked by a number of HamComm v3.1 users to explain why the program display is full screen, but the writing is very small (see Fig 1). This is because the program does not default to the usual 25-line mode for VGA, and starts in 50-line mode.

There is no alteration to be made in the program configuration file (HC.CFG) to set the screen size, but there is a choice of two switches which we can use when starting the program to get the display to change to the setting we want. @BT2:Typing HC -LX would run the program and it automatically sets up the screen.

Typing HC -L25 would

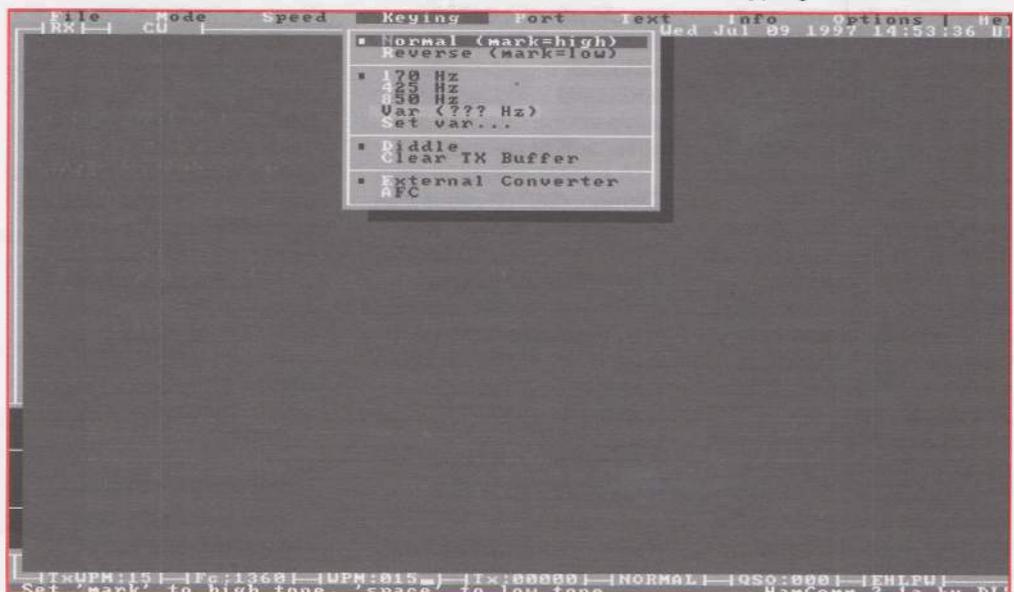


Fig 1: The default HamComm v3.1 program display screen in 50-line mode.

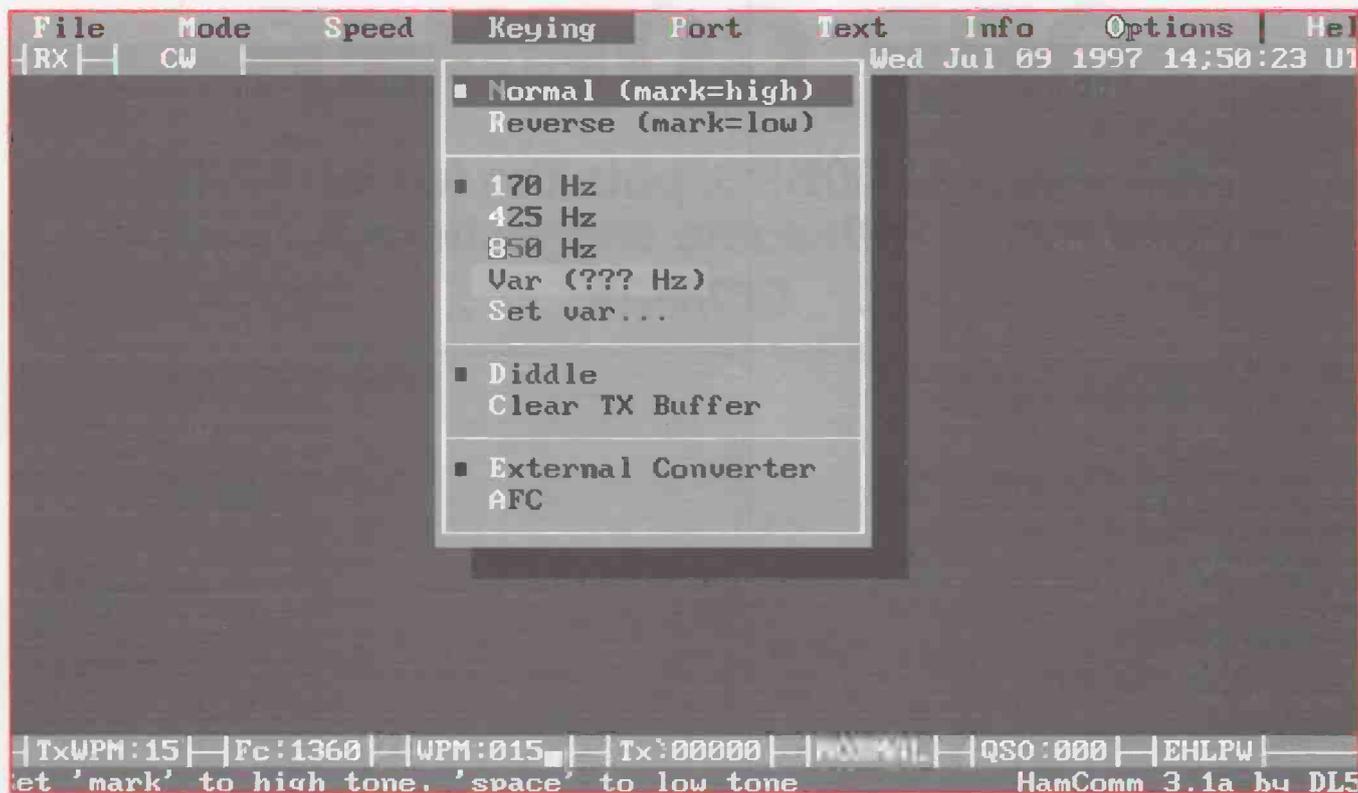


Fig 2: The HamComm v3.1 program display screen when reconfigured to 25-line mode.

run the program in 25-line mode (see Fig 2).

You could write the following batch file. Make sure you are in the HamComm directory, then type the following at the DOS prompt:

```
C:\HC>EDIT HC31.BAT
This will start the DOS EDIT program. Now copy the following lines:
```

```
ECHO OFF HC-L25
Save the file. Now when you want to run the program just type HC31 to start it in 25-line mode, or type HC to run in 50-line mode.
```

The other problem most enquired about was not getting any receive signal, and this was due to the External Converter in the KEY MENU being switched on as the default. The External Converter is a device for decoding RTTY that runs in parallel with the HamComm or alternative demodulator, and which would decode the signal if fitted, so you need to use EDIT again to alter the HC.CFG file to turn it off. You can do it by

selecting it from the menu, and I have shown this in both graphic examples. If to toggle the External Converter on the drop down menu it will not be saved when exiting the program so would have to be done every time the program is run. To alter the Configuration file and make a permanent change type the following:

```
C:\HC>EDIT HC.CFG
Scroll down to the line that reads the following:
set extconv on
Now alter it to read:
set extconv off
You could also enter your own details in the relevant areas if you intend to use the program to transmit. The file documents each section in clear detail. Now save the file. Job Done. I hope this helps. If you require the program, it is available from my Internet site HamWare FTP section, with the changes I have pointed out already done for you.
```

DL4SAW's SSTV
This program has a

colour restriction so requires a 1 meg graphics card and a minimum of 32,000 colours to operate.

WAB4WIN Update v1.07

As you may remember from my review of WAB4WIN by Alan Carpenter, GW3RQT, I agreed to become a beta tester for the program. Alan has just released v1.06 of the program instigating the proposed changes mentioned in the article. The installation now consists of a four disk set, and is offered at £17.50, part of which is donated to WAB funds.

Here are some of the changes which have been made: Added Windows Help System. Added new screen to enable browsing of all database records. Added buttons to main screen scrolling. Now smooth scrolls per 1000 records in log file. Tidied up various routines. New Installer System.

WAB4WIN is available from Alan Carpenter, 1 Dewing Ave, Manorbier,

Tenby, Dyfed SA70 7TS; tel: 01834 871604.

Lucid RAE Tutorial

I need to mention George Butler's, G4BXU, excellent RAE Tutorial program which is being updated as we speak. My apologies to George for the mistake in the price that was earlier printed in error. At £17.50 it makes a very good investment, or you can send two 1.44Mb disks and an SAE for a demo of the program, to George Butler, G4BXU, 18 Hobart Road, Ramsgate, Kent CT12 6NW.

You can get a program list from me direct if you send an SAE and disk, or from the G0RUR Web site: <http://www.innotts.co.uk/~rur/>

Please send any correspondence for this column to: Paul Simpson, G0RUR, 231 Caxton Street, Sunnyhill, Derby DE23 7RB; tel: 01332 737850; e-mail: rur@innotts.co.uk or rur@usa.net

QRP CORNER

Dick Pascoe, G0BPS, puts the fun back into homebrewing with some suggestions for simple projects

At my local radio club in Folkestone last week I was reminded that not all amateur radio 'homebrewing' of equipment is wrapped around making your own transmitter, receiver or piece of test equipment. Many amateurs make their own antennas and would never consider that they were into 'homebrew', as most of us would consider it.

I was reminded of this because another amateur had recently moved into the area and couldn't get any antenna to work from his small flat. The obvious answers were offered, each being discarded for some good reason. Finally, I offered the suggestion of a mobile whip attached to the metal window frame.

Not only was this accepted with alacrity, but also our trusty club host (the local dentist, Denis Pepper, G0SLJ) immediately brought out a suitable version made by another club member who no longer had use for it (see Fig 1). I didn't have a chance to measure the coils, but they should easily be found by the trial and error method.

The whole was made up of plumber's materials and was a joy to behold. The only non-plumbers bits were the whip and the plastic for the coil. I would not suggest using this at speed when attached to a car, as the pipe would bend easily. It should be usable at the

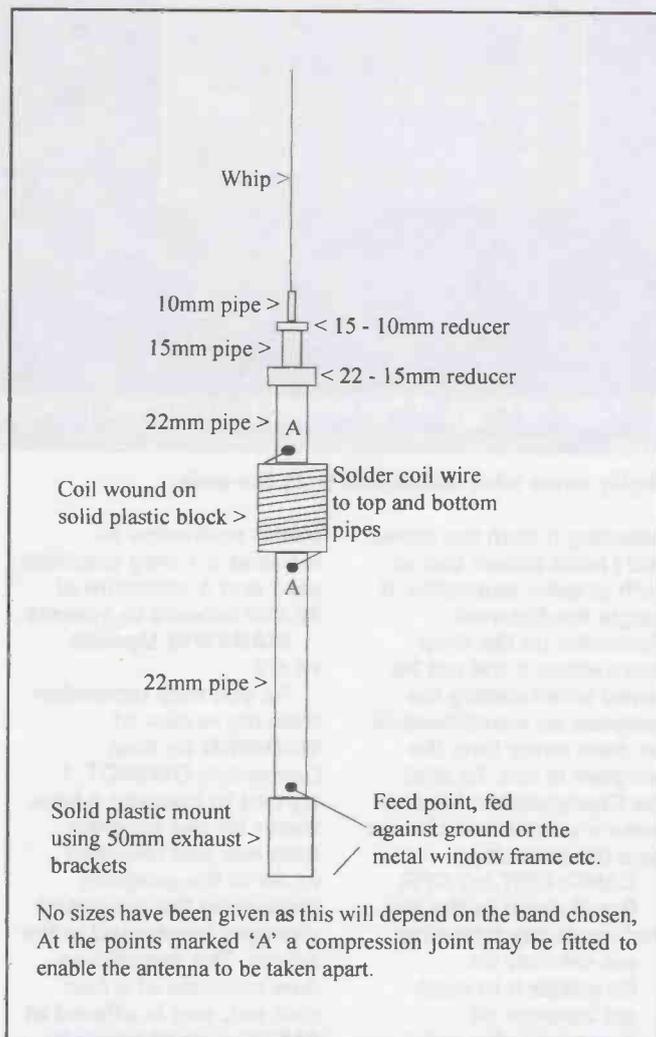


Fig 1: 'Home-brew' mobile whip antenna, also suitable for QRP use when fitted to an apartment's window frame.

flat and is easily dismantled when not required if compression joints are used instead of soldered joints.

A Winter's Project

Whilst we are talking homebrew, it might well be the time to consider some building during the

winter months. There are many circuits of projects that can be built during the long evenings. Just take a look around the shack and see if any items could be improved upon. Or is there just a 'black box' transceiver coupled to the station ATU and tribander?

It should be

remembered, as mentioned above, that when reference is made to 'homebrew', we are not specifically referring to the building of receivers or transmitters, although many would think this the case. Any item made at home could fall into this category, be it for the kitchen or the shack. Even the humble G5RV antenna made at home to Louis' original design falls into this category.

So, what to build? How about starting with a simple receiver. There are many circuits available, some are quite complex but many are so easy to put together. The easiest, perhaps, is the direct conversion receiver. This usually equates to a low component count and it can be built 'ugly style' in an hour or so. I well remember my own first receiver when it first hissed at me. What a feeling - something I had built worked!

Having built the receiver, and ensured it worked on the band(s) required, perhaps the time has come to add a simple transmitter. The most famous throughout the world must be the ONER from the G-QRP club. Just a handful of components and a fundamental crystal make this a joy to play with. "Only one watt?", I might hear you cry. Well, how about the UK to New Zealand on 30m using a ONER transmitter? It's been done!

Of course, using any

WISE BUY  BARGAINS!

G.W.M. RADIO LTD

(INCORPORATING DOWNLANDS SHAVER SERVICE)
Dealers in Radio and Electronic Surplus
Registered Office

40/42 PORTLAND ROAD, WORTHING, WEST SUSSEX BN11 1QN
Telephone: (01903) 234897 or 235913 - Fax: (01903) 239050

Storno 5662s UHF synthesised 12v. Mobiles supplied with 100 CH. Pre-programmed Eprom, BCD switches etc and full MOD info to make 15W RF O/P set for 70cms. Just needs crystals, MIC and loudspeaker to complete	£45
Motorola MCX100 32CH. 12V mobiles supplied with pre-programmed prom for 2M. Easy modification just needs MIC, L/S and power lead to complete	£45
Storno 4662 UHF synth H/holds with hi-head no ants.	£15
2-way Desktop Chargers for above series	£15
Ex-Mod Quartz Panel Mounting Clocks in brass case (painted) 4.5 inch black dial, sweep second hand, checked	£80
PYE M293 L/B AM. 6CH with MIC/L/S OK to Mod to Rac Rally etc	£15
Motorola MT700 UHF H/holds 10CH sets only with 70CMS tuning into 3 units for 10 units of above	£100
Storno 5114S Hi-Band FM synth mobiles sets only with 2M. mod info	£30

Note closed all day on Wednesdays
Most major credit cards welcome on orders over £15.
All goods supplied, unless stated otherwise, in 'As-is' condition.
All prices include UK mainland P/P and VAT.
Technical modification queries after 4.30pm please.

SERVICE MANUALS & Technical Books

Available for most equipment, any make, age or model.
Technical Book and Manual Compilations now on CD-Rom.
Return the coupon for your FREE catalogue on Floppy Discs.

Price Crash on all our CD-ROM's

MAURITRON TECHNICAL SERVICES (HRT)

8 Cherry Tree Road, Chinnor, Oxon, OX9 4QY.
Tel:- 01844-351694 Fax:- 01844 352554.



Email:- sales@mauritron.co.uk Web Site:- <http://dialspace.dial.pipex.com/mauritron/>

Please forward your latest Disc catalogues for which I enclose 4 x 1st Class Stamps or £5.00 for the complete Service Manuals Index on PC Disc plus catalogue.

NAME:

ADDRESS:

POSTCODE

Photocopy this coupon if you do not wish to cut the magazine

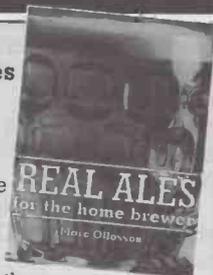
REAL ALES

FOR THE HOME BREWER by Marc Olloson

FREE Real Ales bottle opener with keyring while stocks last!

A Winner!
Classic authentic Real Ales for the home brewer.

In this book you will find many recipes which will allow you, the craft brewer, to make superb real ales at a fraction of the price of those that are commercially available. With easy to follow instructions, both beginners and seasoned mashers can quickly start brewing such classics as Flowers, Wadworths and many others.



All the recipes are based on information supplied by breweries which, combined with skill and quality ingredients from specialist homebrew shops, will virtually guarantee superb resulting ales.

Telephone orders: 01322 616300 ask for Nexus Direct

Please send me..... copies @ £ 7.95 inc. P&P

I enclose my remittance of £

I enclose my cheque/PO for made payable to Nexus Special Interests or please debit my Access / Visa.

<input type="checkbox"/>											
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Expiry date..... Signature.....

Name.....

Address.....

Post code.....

Telephone Number.....

Complete details and return coupon to:

Nexus Special Interests, Nexus House, Boundary Way, Hemel Hempstead, Herts, HP2 7ST.

If you do not wish to receive mailing from other companies, please tick box.

ANNOUNCING the launch of the **new**

radio ACTIVE MAGAZINE

Radio Active covers:

- AMATEUR RADIO
- SCANNING RECEIVERS
- SHORT WAVE
- CITIZENS BAND

Articles are written in an *easy to comprehend* style appealing to both beginners and dedicated enthusiasts.

Let us send you a copy!

If you would prefer to receive your mag post free send a cheque for £1.95 to: **RADIO ACTIVE**
• 1A Munster Road • Portsmouth • Hants • PO2 9BS
(Don't forget to include your Name, Address, Phone number and card number!)

Or call Radio Active on:

01705 613800

RADIO ACTIVE magazine
is available from your favourite Newsagents

Club News

To include your club, or rally, in this section, make sure you send us your events details in time. We only list active clubs, ie those who send us their diary of planned talks / events. Send your club event and rally details to: The Editor, Ham Radio Today (Club News), Nexus Special Interests Ltd, Nexus House, Boundary Way, Hemel Hempstead, Herts HP2 7ST; fax: 01442 266998.

Appledore and District ARC meets on the third Monday of each month at 7.30pm at the Appledore Football Club room. Club nets: Tue 2000 on 145.475MHz, Wed on 28350kHz; slow CW 2000 - 2030 then SSB 2030 - 2100. All welcome to join. Planned club events / talks; Feb 16th - TBA
Mar 16th - AGM
Contact Den Williams, G0UMT, on tel: 01237 471802 for further information.

Bangor and District ARS meet on the first Wednesday of each month (September to June), 8.00pm, at the Clandeboye Lodge Hotel. Everyone welcome especially newcomers interested in the hobby. Planned club diary; Feb 4th - Cellular telephones
Mar 4th - Packet radio, by Hugh G13TLT with live demos. Constructors' contest.
Apr 1st - Talk by R5GB
President Ian Kyle, G18AYZ / M10AYZ
May 6th - Barbecue and QRP talk and demo
Jun 3rd - Rally preparations, CW night and display of Morse keys. Further details from Terry Barnes, G13USS, tel: 01247 473948.

Bristol (RSGB) Group holds meetings on the last Tuesday in every month at 7.00pm for 7.30pm at Avon Combined Services Club, St Pauls Rd, Clifton, Bristol (please note this is a new venue). Planned events / talks;
Feb 24th - HF equipment design by Steve Price, G4BWE
Mar 31st - The Norman Lockyer Observatory, by Jack Wickins
Apr 28th - Burglar alarms and EMC, Hugh Pearson, G7KET
May 26th - Introduction to Gibraltar, Martyn Phillips, G3RFX / ZB2FX
Further details from Robin Thompson, G3TKF, tel: 01225 420442.

Bristol (South) ARC meets at 7.30pm every Wednesday at the

Whitchurch Folkhouse Association, Bridge Farm House, East Dundry Road, Whitchurch, Bristol. The club hold regular 'activity nights'. Planned events / talks;
Feb 4th - 10m activity evening
Feb 11th - Amateur radio software demo
Feb 18th - Morse keys display
Mar 4th - 15m activity evening
Mar 11th - Portable radio demo
Mar 18th - Club quiz night
Mar 25th - SWL evening - bring your own receiver
Apr 1st - 10GHz activity evening
Apr 8th - Amateur radio software demo
For more information contact Jean Fletcher, G0AWX, on tel: 01275 834282 (24hr answerphone).

Bromley and District ARC meet on the third Tuesday of each month, 7.30pm for 8.00pm at the Victory Social Club, Kechill Gardens, Hayes, Kent. Planned events / talks;
Feb 17th - Clandestine radio, Pat Hawker, G3VA
Mar 17th - Equipment test evening, Ian Daniels, G4VTD
Apr 21st - Railway signalling, Andy Brooker, G4WGWZ
May 19th - Packet radio, Alan Messenger, G0TLK
Jun 16th - Direction finding hunt, Graham, G4NPD and Alan, G0TLK
Jul 21st - Practical demonstration of electricity fundamentals, Ian Daniels, G4VTD
Aug 18th - Barbecue
Sep 15th - Construction competition
Oct 20th - Surplus equipment sale
Nov 17th - The Internet, Graham, G4NPD, and Alan, G0TLK
Further details from Alan Messenger, G0TLK, tel: 0181 777 0420; e-mail: alangm@clara.net

Cheltenham AR Association meets on the first Friday of the month at the Prestbury Library, The Burgage, Prestbury,

Cheltenham, at 7.45pm for 8.00pm. Visitors and prospective members welcome. Club nets: Wed 2m, Mon and Thu 1960kHz, Fri 70cm all at 9.00pm; Sun 1848kHz at 10.00am. Planned club events / talks;
Feb 6th - Magnox, power generation
Mar 6th - Constructor's contest
Details can be obtained from the Secretary, Mrs Patricia Thom, G1NKS, tel: 01242 241099.

Cockenzie & Port Seton ARC has 'normal club nights' on the first Friday of every month at the Thorntree Inn, High Street, Cockenzie, from 1900 'till late'. The club participates in many weekend contests. Other planned events;
Feb 20th - Radio check night, John, GM7OLQ
Mar 20th - Talk on IOTA / IOSA, Tom Wylie, GM4FDM
Apr 17th - Quiz night, Susan, 2M1EPK, and Colin, GM0CLN
May 15th - 144MHz DF hunt night
Aug 14th - 5th annual junk night
Nov 28th - Christmas dinner

Cornish RAC meet on the first Thursday each month, 7.30pm, at Perranwell Village Hall, near Truro. Planned club events / talks;
Jan 8th - The Electronic War by Bert
Feb 5th - Underground Photography by Roy
Mar 5th - Fund Raising and Radio by Dennis
Apr 2nd - Annual General Meeting
Apr 25th - International Marconi Day, run by the Cornish RAC from Penair School, Truro
May 7th - Ted and Tracey on Flatbed Scanners
Jun 4th - Photography, by Les
Jul 2nd - Pre-rally general meeting
For further details contact Robin, G0MYR, tel: 01209 820118.

Coulsdon ATS meet on the second Monday each month, 7.45pm, at St. Swithun's Church

Hall, Grovelands Road, Purley. Club 2m net: Sunday 11.00am on V40 (145.500MHz) initially, then to a working frequency. Planned club events / talks;
Feb 9th - Practical computing in amateur radio - bring own PCs and amateur radio programs
Mar 9th - The history of aircraft simulators, G6MFM
For further details contact Club Secretary, Alan Bartle, G6HC, tel: 0181 684 0610.

Dover Radio Club meets every Wednesday during term periods at the Duke of York's Royal Military School, Guston, near Dover, from 8.00pm with Novice and Morse training classes between 7.00pm and 8.00pm. All visitors welcomed. Planned club events / talks;
Feb 11th - Visit to Maidstone fire brigade
Feb 18th - Half-term
Mar 4th - Talk by Dr Ken Smith
Mar 18th - Video history of Dover Radio Club by G8ZYZ
Apr 29th - AGM
Further details may be obtained from the Secretary, Brian Hancock, G4NPM, tel: 01304 821007.

Dragon ARC meet on the first and third Mondays of each month at the Ebenezer Hall, Foel Graig Lane, Higher Village, Llanfairpwll, at 7.30pm. Visitors and new members are welcome. The club run several special event stations throughout the year. Club diary of events / talks;
Feb 2nd - Mr Bryan Hope, a talk on 'Shipbuilders of Amlwch'
Feb 16th - Amateur Radio videos
Mar 2nd - To be arranged
Mar 16th - Rob Mannion, G3XFD, a Practical Wireless club talk
Further details from the Secretary Tony Rees, GW0FMQ, tel: 01248 600963.

Exeter ARS meet on the second Monday each month, at The Moose International Centre, Blackboy Road, Exeter, starting

at 7.45pm. Planned club events / talks;
 Feb 9th - Surplus sale
 Mar 9th - Construction competition
 Apr 13th - Inter-club quiz
 May 11th - Visit (TBA)
 Jun 8th - Fox Hunt (Provisional)
 Jul 13th - Barbecue
 Aug 10th - Visit to Stockland Hill transmitter
 Sep 14th - Lifeboat visit
 Oct 12th - Annual General Meeting
 For further details contact Theo, G3EQM, tel: 01392 875498.

Halifax and District ARS meet at 7.30pm on the first Tuesday of each month at the Tap and Spile Pub (formally Royal Oak), Clare Road, Halifax, for committee and Morse tuition. On the second and fourth Tuesdays they meet, 7.00pm, at Queens Road (note Queens Road is closed for some periods at school holidays).
 Planned club events / talks;
 Feb 17th - Bill G4KQV, Cranwell and a strange meeting
 Mar 17th - Fibre optics, by Steve, G4RCH
 Further details can be obtained from Mr D Moss, GODLM, Beechwood Lodge, Lightcliffe, Halifax HX3 8NU, tel: 01422 202306.

Hambleton ARS meet 7.30pm, at Allertonshire School, Northallerton. Planned club events / talks;
 Feb 6th - Talk on 6m
 Mar 5th - Demo of new equipment
 Mar 19th - Operating night VHF/UHF
 Apr 2nd - Construction Competition final
 For further details contact John Hampson, G0VXH, tel: 01845 537547, or via Packet @ GB7CYM.

Hastings Electronics and RC meet, 7.30pm, on the third Wednesday of each month at West Hill Community Centre, Croft Road, Hastings. The club run RAE and Novice courses and is a registered City and Guilds examination centre. Planned club events / talks;
 Feb 18th - AGM
 Apr 15th - Auction
 May 20th - Engineering experience for Orange
 Jun 17th - Marine radio

Jul 15th - Auction
 Aug 19th - 'Bring your Thing'
 Oct 21st - Auction
 Dec 17th - Christmas dinner
 For further details contact Doug Mephram, G4ERA, 8 The Close, Fairlight, E.Sussex TN35 4AQ, tel: 01424 812350.

Hoddesdon Radio Club meets at the Conservative Club, Rye Road, Hoddesdon, Herts, from 8.00pm. Planned Club events / talks;
 Feb 5th - Inter-club left foot Morse competition
 Feb 19th - Visit by Badger Boards from Birmingham.
 Further details from Don, G3JNJ, tel: 0181 292 3678.

Horndean and District ARC meet on the first and fourth Tuesday of each month, 7.30pm, at Lovedean Village Hall, 160 Lovedean Lane, Lovedean, Hants. The first Tuesday is usually a 'Natter Night'. Visitors welcome. Club nets are Sundays 1955kHz 0900 CW, 0930 SSB, and Wednesdays 145.350MHz at 1930. Planned Club events / talks;
 Feb 3rd - Club social evening
 Feb 24th - Annual bring & buy sale
 Mar 3rd - Club social evening
 Mar 24th - Measurements, by Dr Dick Biddulph, G8DPS
 Apr 7th - Club social evening
 Apr 28th - 9M0C Spratly Island DXpedition by CDXC member Mike, G3SED
 Further details can be obtained from Stuart Swain, tel: 01705 472846.

Lincoln Short Wave Club meets at the Railway Sports and Social Club, Ropewalk, Lincoln, each Wednesday from 7.45pm. The club is holding an exhibition: 'The World of Communication 1900 - 1998' at the Central Library, Lincoln, 31 March - 4 April. Planned club events / talks;
 Feb 11th - Video: Basic Radio Measurements, G3NYK
 Feb 25th - Illustrated talk on bonsai, Bob Peach
 Mar 11th - Illustrated talk: Lincoln at War, Dave Willey, G1WVO
 Apr 15th - The Lincoln Aircraft Recovery Group.
 May 20th - BARTG, Ian Brothwell
 Jun 17th - Visit to Humber Radio

GKZ
 For further details, please contact Cliff Newby, G3EBH, on tel: 01522 750637.

Newbury and District ARS meet on the fourth Wednesday each month at the Memorial Hall, Upper Bucklebury, near Newbury from 7.30 - 10.00pm. Club nets: Sun 0830 3632kHz, Sun 1145 1920 to 1940kHz, Sun 1200 28305kHz. Planned club events / talks;
 Feb 25th - Analogue Devices, James Bryant, G4CLF
 Mar 25th - Homebrew transceivers and mobile aerials, Mike Grierson, G3TSO
 Apr 22nd - Annual General Meeting
 May 27th - 3rd Method SSB, Peter Rhodes, G3XJP
 Jun 21st - NADARS Amateur Radio Boot Sale, Cold Ash, near Newbury
 For further details contact the club secretary, tel: 01635 863310.

Norfolk ARC meets wach Wednesday at the Ugly Bug Public House, Colton. Planned club events / talks;
 Feb 4th - DXing for the Absolute Beginner, Victor Brand, G3JNB
 Feb 11th - Informal
 Feb 18th - Video, 'Battle of the Beams'
 Feb 25th - Informal
 Mar 4th - Foxhunt Forum
 Mar 11th - Informal
 Mar 18th - National Field Day briefing
 Mar 25th - Informal
 Apr 1st - AGM
 Apr 8th - Informal
 Apr 15th - Quiz, G3ASQ
 Apr 22nd - Informal
 Apr 29th - GB3NB repeater group AGM
 Informal evenings include night on air, construction QRP, and Morse practice. For further details please contact the Hon Sec, Sandra Simpson, 2E1FOF.

Spalding and District ARS meets every Friday night at 7.30pm at the Old Fire Station, Spalding, Lincs. For details phone 01775 750382 or 0976 271796. Planned club events / talks;
 Feb 20th - Offshore radio, Mick, G1APV
 Mar 20th - RAOTA, Dennis Houlit, G400

Apr 18th - Talk on computers
Stourbridge and District ARS meet on the first and third Mondays each month (except Bank Holidays), at the Robin Woods Centre, Scotts Road Entrance, off Enville Street, Stourbridge. Club Nets 2m Mon, Wed, Fri, 7.00pm 145.375MHz, 70cm 433.525MHz, 10m Mon (Tues on club weeks) and Fri 8.00pm, Wed 9.00pm, 28050 CW. The first Monday is usually an 'on air and natter night'. Visitors always welcome. Planned club events / talks;
 Feb 3rd - Informal night
 Feb 17th - Main meeting
 Further details from Gordon Bryant, G0TZV, tel: 01384 395206.

Stratford upon Avon & District RS meet on the second and fourth Mondays, at the Home Guard Club, Main Road, Tiddington, Stratford upon Avon, at 7.30pm for 8.00pm. Further details from J Porter G4OHJ, tel: 01789 773286. The club also run RAE, NRAE and Morse courses, write to Mr J Harris, 57 Evesham Road, Stratford upon Avon CV31 2PB enclosing an SAE or tel: 01789 295257 for details. Club events / talks include;
 Feb 9th - Test equipment evening
 Feb 23rd - Member's projects

Wirral ARS meet, 8.00pm, at The Club Room, Ivy Farm, Arrowe Park Road, Birkinhead, opposite Landican Cemetery. There are activity nights every first, second and fourth Wednesday evenings, lectures / talks every third Wednesday. 'Natter nights' are every Tuesday from 7.30pm and Morse tuition every Thursday evening. Visitors welcome. Planned club events / talks;
 Feb 18th - President's Night
 Mar 18th - 1st Surplus equipment sale
 Apr 16th - George Robbins, G3LNG
 May 21st - Bob Blain, G3NTI, Thailand and its People Part 2
 Jun 18th - Mike Tyrell, G6GAK, Another Construction Project. The society puts on Special Event Stations usually at the request of a third party, in 1998 they will have a station at Ness Gardens, Wirral, also at the

National Guide Jamboree 24 - 31st July 1998, all club members take part in these events. For further details contact John Phillips, G3PXX, tel: 0151 336 4452, @GB7OAR, or e-mail: vectis@nordee.u-net.com

National and International

British Amateur Radio Teledata Group (BARTG) have a quarterly magazine, Datacom, and hold a rally and HF RTTY contest each year. For more details about the group contact Membership Secretary Bill McGill, G0DXB, 14 Farquahar Road, Maltby, Rotherham, S.Yorks S66 7PD, tel: 01709 814010 (Tues, Thurs & Fri, 7.00pm to 9.00pm. Sat/Sun before 9.00pm), or via GB7WRG. Internet: <http://www.bartg.demon.co.uk>

British Amateur Television Club, are particularly active with Amateur Television (ATV) - the transmission and reception of vision. They produce a quarterly magazine entitled CQ-TV and have regular get-togethers at their rally stands, and hold their own rally each year. For details of BATC membership write to; Dave Lawton, Grenehurst, Pinewood Road, High Wycombe, Bucks HP12 4DD.

G-QRP Club publish a quarterly journal, SPRAT, devoted to low power communication, and hold regular get-togethers at their rally stands throughout the country. For membership details, contact their Secretary, Rev G Dobbs, St Aiden's Vicarage, 498 Manchester Road, Rochdale, Lancs OL11 3HE; tel: 01706 31812 or see their web site at <http://ourworld.compuserve.com/homepages/g4wif/gqrp.htm>

International Short Wave League who, as well as running an international QSL bureau for amateurs and SWLs, have a monthly magazine (Monitor) and regular get-togethers at their rally stands plus several on-air nets on HF and VHF. For more details send an A4 sized SAE to: ISWL HQ, 267 Pelham Road, Immingham DN40 1JU. Internet:

<http://www.aber.ac.uk/~srj5/iswl.htm>

The Irish Radio Transmitters Society (IRTS) publish regular newsletters giving details of local activities, and the yearly IRTS Callbook. They also have a video library. Their Annual General meeting this year takes place on March 22nd at the Limerick Rally. For further details on the IRTS contact Joe Ryan, EI7GY; tel: (Eire) 01 2854250 or by e-mail: jryan@iol.ie and for Book Sales: Dave Moore, EI4BZ, 12 Castle Ave, Carrigwohill, Co Cork; tel: (Eire) 021 883555.

Radio Amateurs' Emergency Network can be contacted at Hunters Moon, Newton le Willows, Bedale, N Yorks DL8 1SX. 24hr national emergency contact line: 0141 621 1211. Other contact points: Training Team, PO Box 2, Chinnor, Oxon OX9 4JY. Raynet Supplies, tel: 01842 860475. Packet @ GB7NRC. Internet Web Site: <http://www.reality.sgi.com/csp/aynet/>

The Radio Amateur Invald and Blind Club (RAIBC) is a registered charity which raises money for radio / computer equipment, and audio cassette courses for home study, for blind, deaf and disabled amateurs. The club attends rallies throughout the year, and collects surplus equipment for resale. If you have equipment to donate, contact Ian, 2E1EGV, tel: 01274 723951. The Northern Ireland Club collect unwanted tokens or vouchers (eg petrol etc), these can be sent free of charge to: The Charities Appeal Officer, RAIBC NI, Freeport BE 1789, Belfast BT15 3BR.

Radio Amateur Relief Expeditions (RARE) is a registered charity made up of radio amateurs and friends who take aid to Eastern Europe and organise summer camps for young people to learn about amateur radio, English language and life in the UK. New members are required to support this work both at home and by taking part in expeditions. Please contact: The Secretary, RARE, 1 Allfield Cottages, Conover, Shrewsbury SY5 7AP; tel: 01743 873815; fax:

01743 874729; packet: G6FHM@GB7PMB; e-mail: rare@donsun.demon.co.uk

Radiocommunications Agency (RA) is the licensing authority for all UK radio amateurs. They have a large number of free publications, including the booklet How to Become a Radio Amateur, and their Novice Licence Information sheet and can offer advice on many aspects of licensing. They're currently in temporary offices: New Kings Beam House, 22 Upper Ground, London SE1 9SA. Direct Amateur Radio line, tel: 0171 211 0160. General enquiries, tel: 0171 211 0211. Answerphone service, tel: 0171 211 0591.

Radio Society of Great Britain (RSGB) is the internationally-recognised national society, which has been representing UK radio amateurs and short wave listeners for 85 years. They are based at Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE, tel: 01707 659015. Internet: <http://www.rs.gb.org> or e-mail: info@rs.gb.org

United Kingdom Radio Society (UKRS) is a new national society for UK radio amateurs. They can be contacted at Box 100, Meadow Street, Northwich, Cheshire, CW8 1FA. tel: 01606 783270, or 0115 925 6597. Via Packet UKRS@GB7OAR, e-mail: admin@ukrs.org; Internet: <http://www.ukrs.org>

Subscription Services Ltd (SSL) handle the issuing of amateur licences in the UK, on behalf of the Radiocommunications Agency. They can help regarding enquiries concerning individual licences (rather than general licensing matters which the RA handle, see above). Contact details: The Radio Licensing Centre, SSL, PO Box 884, Bristol BS99 5LF, tel: 0117 925 8333.

Rallies

If you're travelling a long distance to attend rallies, we recommend you contact the organisers of the events first,

to check if there has been any changes since this magazine went to press.

February 1st

The 13th South Essex Amateur Radio Rally, The Paddocks, Long Road, Canvey Island, Essex (The Paddocks is situated at the end of the A130). The organisers say this is one of the biggest and best rallies in Essex. Doors open 10.30am, featuring amateur radio, computer and electronic component exhibitors, bring and buy, RSGB Morse tests on demand (two passport photos required), home made refreshments, free parking with space outside the main door for disabled visitors. Admission £1.00. For further details contact David, G4UVJ, tel: 01268 697978.

February 8th

Kidderminster Radio & Electronics Fair, Kidderminster College, Hoo Road, Kidderminster, Worcs. Featuring usual traders, Bring & Buy, Flea market, food and drinks. Doors open 10.00am to 3.00pm. Talk-in on 145.550MHz. For further details contact John, G8MGK, tel: 01527 545823, or Tony, G4ALT, tel: 01562 69652.

Spalding and District ARS 'junk sale', at Spalding Common Hall, signposted from Spalding bypass. Refreshments, free car parking, stalls and auction. Talk-in on 145.550MHz. For further details contact David Lindsey, G7VQH, tel: 0966 362828.

February 15th

Northern Cross Rally, Thornes Park Athletics Stadium, Wakefield - one large hall - just out of town on the Horbury Road. Easy access from M1 junctions 39 & 40, well sign posted and with talk-in on 2m & 70cm. Doors open 11.00am (10.30 for disabled visitors and bring and buy). For further details contact Peter, G0BQB, tel: 01924 379680, or 0976 834938 (mobile); e-mail: rally@waveg.demon.co.uk; Internet: <http://www.waveg.demon.co.uk/rally/>

February 22nd

RSGB National VHF Convention, Sandown Exhibition Centre, Esher, Surrey. Doors open 10.30am to 5.00pm. Three lecture streams, trade exhibition, awards presentations, specialist groups and RSGB committees, Morse code tests on demand, RSGB book stall and membership information stand. Entrance fee £3.00. For further details call RSGB HQ on tel: 01707 659015 or look at www.rsgb.org

March 7 / 8th

London Amateur Radio and Computer Show, Picketts Lock Leisure Centre, Picketts Lock Lane, Edmonton, London N9. Doors open 10.00am to 5.00pm each day. Featuring over 100 exhibitors, RSGB Committee, membership information and book stands, lectures, disabled facilities, free parking, restaurants, on-demand Morse tests (two photos needed), bring and buy, and special interests section. Talk-in will be on 2m and 70cm. Admission: Adults £3.00, Pensioners / under 14s £2.00. For further details tel: 01923 893929.

March 15th

Norbreck Radio, Electronics & Computer Exhibition, organised by the Northern Amateur Radio Societies Association (NARSA), will be held at the Norbreck Castle Exhibition Centre, Blackpool. The organisers say it's the largest single-day exhibition in the country. For further details contact Peter Denton, G6CGF, tel: 0151 630 5790.

March 29th

The Pontefract & District ARS Component Fair will be held at Carlton High School. Featuring traders (on the ground floor) and Morse tests. Tea room and bar available on the first floor. Doors open at 11.00am (10.30 for disabled visitors). Talk-in on 2m. Admission by prize programme. For further details contact Nigel, G0BPK, tel: 01977 616935 evenings, or 01977 606345 daytime (Trade

bookings tel: 01977 677006); e-mail: g0bpbk@aol.com; Internet: <http://members.aol.com/g0bpbk/pdars.htm>

April 4th

The Cambridgeshire Repeater Group annual rally, at the Bottisham Sports Centre (part of village college), Lode Road, Bottisham, near Cambridge (please note this is a new venue). Event features auction sale, trade stands, bring and buy stand, and car boot trading area. Further details from Paul Dyke, G0LUC, 41 High Street, Puckeridge, Ware, Herts SG11 1RX; tel: 01920 821536.

April 18th

SAMS '98 Computer & Electronics Show, Bingley Hall, Staffordshire Showground, Weston Rd, Stafford (A518 Stafford - Uttoxeter Rd). Featuring many trade stands covering radio, computing and electronics, plus large bring & buy. Doors open 10.00am to 4.00pm. For further details please contact Sharward Promotions, tel: 01473 741533.

May 17th

Dunstable Downs Radio Club will be holding its Annual Amateur Radio Car Boot Sale, at Stickwood Country Park, Luton, Bedfordshire. Site open 0900 - 1500. Leave M1 at junction 10A, turn left and follow signs for 'Mossman Collection'. Talk-in on V44 (145.550MHz). Please note new address for bookings, please do not use any other address or phone number: DDRC, PO Box 4053, Dunstable, Beds LU5 5ZJ.

May 24th

The 1998 Plymouth Radio Club Rally will be held at the College of Further Education, Kings Road, Devonport, Plymouth. Doors open 10.30am to 4.00pm. Morse tests on demand, ample free car parking, easy access for disabled visitors, talk-in on S20 (venue will be signposted from the Manadon junction of the A38 Devon Expressway),

refreshments and licensed bar available. For further details contact Stephen Ramsden, tel: 01752 662051 during office hours.

June 7th

Spalding & District ARS 30th annual rally, Springfields Exhibition Centre, Spalding. Amateur radio, scanners, shortwave and CB, satellite TV, books and components. Licensed bar and catering. Huge car boot area, plenty of free parking. Starts 10.00am, talk-in 145.550MHz. For further details contact Mick Pell, G1APV, tel: 0976 271796, or Dennis Houlst, G4OO, tel: 01775 750382.

June 21st

Newbury & District ARS Annual Radio Car Boot Sale, Cold Ash Playing Field, near Newbury. Sellers / traders to arrive at 8.00am, no earlier please. For further details contact Ian Trusson, G3RVM, tel / fax: 01635 826019; e-mail: G3RVM@compuserve.com

June 26th to 28th

Ham Radio '98 Friedrichshafen, Germany, Europe's largest gathering of over 20,000 ham radio enthusiasts, by the shores of the Bodensee (Lake Constance) at the Messe Friedrichshafen. Wide and varied selection of interests, immense trade presence with exhibitors from 40 countries, large flea market, on-site camping and caravan facilities. For further venue / rally details tel: +49 7541 7080; fax: +49 7541 75290; accommodation / tourist information tel: +49 7541 21729.

July 11th

Cornish 35th Radio Rally and Computer Fair at the Penair School, Truro. Doors open 10.30am. Further details from Robin Worsley, G0MYR, tel: 01209 820118.

July 19th

The McMichael Mobile Rally, the Haymill Youth and

Community Centre, 112 Burnham Lane, Slough. Doors open 10.00am. Admission: adults £1.50, children accompanied by adult: free. Talk-in on 145.550MHz. For further details contact Dave Chislett, tel: 01628 625720.

August 2nd

RSGB National Mobile Rally, Woburn. For further details tel: 01707 659015.

August 16th

9th Great Eastern Radio & Computer Rally. For further details tel: 01553 765614.

September 13th

The Lincoln Hamfest will take place at the Lincoln Showground on the A15 just north of Lincoln. Full details to follow, or contact Cliff Newby, G3EBH, on tel: 01522 750637.

September 25 / 26th

The Leicester Amateur Radio Show will take place at a new venue this year: Donington International Exhibition Centre, Donington Park, just a few minutes further up the M1 from the Granby Halls. The organisers expect it to be the UK's biggest amateur radio event in 1998! For further details, or to book stand space, contact Geoff Dover, G4AFJ, tel: 01455 823344.

October 9th - 11th

RSGB International HF and IOTA Convention, Old Windsor, Berks. For further details tel: 01707 659015.

November 14th

AMS '98 Computer & Electronics Show, Bingley Hall, Staffordshire Showground, Weston Rd, Stafford (A518 Stafford - Uttoxeter Rd). Featuring many trade stands covering radio, computing and electronics, plus large bring and buy. Doors open 10.00am to 4.00pm. For further details please contact Sharward Promotions, tel: 01473 741533.

CORNWALL

For All Your Marine Radio Communications



Try us first for all your Radio amateur and marine communications

ICOM YAESU NAVICO JAYBEAM

Give Mike G1DDK a call today!

SKYWAVE MARINE SERVICES, SQUARE SAIL BOAT YARD, CHARLESTOWN HARBOUR, ST AUSTELL, CORNWALL, PL25 3NT

LANCASHIRE

AMATEUR ELECTRONICS/HOLDINGS G3LLL.
YAESU, AOR, ICOM, ETC. FT 101 EXPERTS

6JS6C 6146B 12BY7A Original type approved valves & our own Double Balanced Mixer and new band WARC Kits for original FT101 MK1-E. S.A.E. List Full Yaesu range. 15 mins Junction 31 M6. Free parking. Call and consult G3LLL without obligation. Holidays? Phone, check we are open before calling. Lunch 12-1.30pm.

45 JOHNSON STREET, BLACKBURN BB2 1EF
(01254) 59595. OPEN: Thurs, Fridays & Sat ONLY from July '96

NORTH WEST & NORTH WALES

AMATEUR RADIO COMMUNICATIONS LIMITED

We are official factory appointed stockists and approved Service Centre for all the major brands.
ICOM - YAESU - KENWOOD - ALINCO

TEL/FAX: 01925 229881/2

OPEN
Tues to Sat
10-5pm

We are 1 mile from J23 M6,
4 1/2 miles off J9 M62



38 Bridge Street, Earlestown, Newton le Willows, Merseyside WA12 9BA

SCOTLAND

JAYCEE ELECTRONICS LTD
20 Woodside Way Glenrothes
Fife KY7 5DF
Tel: 01592 756962




NEW OPENING HOURS:
Tues-Fri 9 am to 5 pm, Sat. 9 am to 4 pm. Closed Sunday & Monday
Good range Kenwood, Yaesu & Icom etc, plus quality secondhand equipment

HOLIDAYS

NORTH WALES HOLIDAYS -
Caravan - bunkhouse - camping.
Elevated rural site, two miles from beach, use of shack and antennas, open all year. Tynrhos, Mynytho, Pwllheli. Tel: 01758 740712.

CAMBRIDGE

CAMBRIDGE MULTICOMM 2000

- Wide range of new and used equipment always in stock
- International mail order service
- Fast friendly service
Unit 3, 86 Cambridge Street, St Neots, Cambridgeshire PE19 1PJ
Tel: 01480 406770

CHARITY RADIO

CQ CHRISTIAN AMATEURS!

The World Association of Christian Radio Amateurs and Listeners actively promotes Christian fellowship worldwide, regular nets, activity days, Annual Conference, handbook, magazine etc. Call our UK Sunday SSB nets 3747 kHz at 8am and 2pm, or 144.205 MHz at 3pm.



For full info write to our Membership Secretary
WACRAL
51 Alma Road, Brixham, South Devon TQ5 8QR
See Web HTTP://www.G0PPQ.DEMON.CO.UK/

FOR SALE

£50 BT INSTRUMENT FOR ONLY £7.50

We refer to the BT insulation tester and multi-meter with which you can read insulation directly in megohms, AC volts up to 230, 4 ranges of DC volts up to 500, 3 ranges of milliamps and one 5A range and 3 ranges of resistance. These are in perfect condition, have had very little use, if any, tested and fully guaranteed. Complete with leads and prods £7.50, Order Ref 7.SP4. Carrying case which will take small tools as well, £2 extra. Postage £3 unless your order is £25 and over.

J & M Factors
Dept HRT, Pilgrim Works, Stairbridge Lane, Bolney, Sussex, RH17 5PA
Telephone: (01444) 881965

VALVES

WILSON VALVES
(PROP JIM FISH G4MH)

Over 50,000 valves stocked, 2000 different types, vintage, military, audio, etc. Fast service. Send SAE for list **VALVES WANTED FOR CASH**

28 Banks Avenue, Golcar, Huddersfield, West Yorks HD7 4LZ
Tel: 01484 654650
Fax: 01484 655699




ATTENTION ALL NORTH AMERICAN READERS!

Did you know that you can order an annual subscription to this magazine direct from our official U.S. subscription?

For more information and rates contact:
Wise Owl Worldwide Publications
4314 West 238th Street, Torrance, CA 90505 4509
Tel: (310) 375 6258

FREE READERS' ADS

Sell your equipment fast with Ham Radio Today's free private ads

FOR SALE

Trio 2600E 2m handheld with spare battery, Trio speaker mic, battery charger, leather case, rubber duck antenna, and separate telescopic 0.25 wave whip, shoulder strap and handbook. £125 ono. Brian, GM0EGI QTHR (Central Scotland). Tel: 01786 850377.

Microwave Modules

144meg to HF transverter, topband to 28MHz. 10W ideal mobile / Novice, £180. Isolation transformers, large 40 amp o/put 5 rcd and 1 on input. Cost over £1000 offers or WHY. (Wincanton) Tel: 01963 34938.

Yaesu FT-840 little use, boxed, £600 ovno. DX-250 PC multi-media 520 meg HD 12 meg RAM. 10 x CD. Internet blaster 288PNP modem. Astound sound card. Twin speakers, mouse, keyboard £450 ovno. IBM 386SX VGA monitor keyboard mouse £150. Tel. 01536 522007.

Dell 20MHz 386, drives, comms software, Win 3.11, DOS 6.2, h/drive £125. Spectrum 48k with Qark RTTY Morse transceiver £50. BBC-B D/D monitor, offers. Loads of software ZX81 + RAM pack, offers. Tel: 01963 34938.

Icom IC-R8500 wide-band receiver covers 100Hz to 2GHz. Top-notch professional quality, will swap for HF transceiver or high spec

computer or WHY. Cash either way. SG-230 Smart Tuner HF £200. Mr Howlett (Herts), Tel: 01438 750450 evenings or 0831 660 944 days.

Icom R-7000 in excellent condition with remote control and manual, £475. Timewave DSP 599ZX, only months old, mint: £225. John (Tayside), Tel: 01356 624039 anytime.

IC-706 £630. IC-721S special QRP model of IC-725 £450. KW-107 ATU £125. KW-Match £15. LP filter £15. Class D w/meter £10. H/kit 'scope IO18U £20. Admiralty h/books 2 vols £15. Various KW, Ten-Tec manuals £5 each. Carriage extra. G2HKU (Sheerness), Tel: 01795 873100.

Kenwood TH79 70cm 2m handheld. Faulty phase lock loop, hence price. Comes with two nicads and soft case £45. Tel: 01332 510073 (Derby).

Yaesu FT-50R 2m/70cm handheld, 1 month old, comes with soft case £200. Tel: 01332 510073 (Derby).

Ham tower 11m, three-section crank up £165. Moseley TA-33Jr 10, 15, 20m three-element beam £85. Yaesu KR-400C rotator cables £80. Yaesu FR-101 / FL-101 separate transceiver £350. SMC Transmatch ATU £65. Racal 1218 rx digital £275. Tel: 01225 753166 (Trowbridge).

Jaybeam six-element quad Yagi for 2 metres £20. Dave, Tel: 041 632 5408.

Auto ATU Daiwa 500W, will work with any rig, £150. Kenwood mobile antenna, AT-130 ATU, big mag mount, unused: £100. G3PTN QTHR (Leeds), Tel: 0113 265 4644.

Yaesu FT-290 Mk2 2m all-mode transceiver, VGC with 2 sets nicads, £325. MML 144MHz linear 3W in 100W out, as new £150. RN 2-6 transverter, 25W, as new £150. 6m band pass filter, VGC, £20. Andy (Ayrshire) Tel: 01292 520459.

Yaesu 2m FT-290 all-mode transceiver. In original boxed condition with instructions, carrying case and strap. Rechargeable batteries and charger. HK-709 Morse key. Price £200. (Ipswich) Tel: 01473 259317.

FT-757GX FP-757HD handbook all immac, boxed, £450. DR112E 2m mobile 35W mobile bracket, handbook, new lithium battery just fitted, £120. Datong Morse practice oscillator, £40. G4GBN (Yeovil, Somerset) Tel: 01935 862505.

AR8000 H/H scanner, hardly used, boxed, power supply, manual extra leather case. Nomad active portable VHF / UHF antenna

scanner book notch filter. Jim PSU-101A with swivel bracket and leads. £280. Mr Rigby (Morecambe) Answerphone: 01524 833506.

Yupiteru MVT-7100 multiband receiver, virtually never used, all original contents plus leather case and mains adapter, batteries, scanning directory, all boxing. £195 ono. (Cobham, Surrey) Tel: 01932 863519.

Trio TR-751 144 all mode boxed, complete, £280. MM 100 watt 144MHz linear £70. (Macclesfield) Tel: 01260 252287.

Yaesu FT-290R Mutek front end, mobile slide mount. Little used. Original boxes. £250. (Cambridge) Tel: 01223 836941, fax: 01223 834274.

Comms Receiver Icom R-70 100kHz to 30MHz all modes dual VFO excellent receiver £325. Kenwood DFC-230 frequency controller £45. Kenwood AT230 tuner unit £120. G4YYR (Stroud, Glos) Tel: 01453 764090.

WJ-521A Rx c/w panoramic display 2 - 80MHz, £575. WJ-9477G tuneable demodulator £575. EIP451 m/wave freq counter - 18GHz £350. Racal 1992 1.3GHz counter £350. Motorola P210 x 3 UHF c/w 6-way charger £450. Philips

PRP76 x 2 UHF c/w 5-way charger £375. Tel: 01908 365726.

Yaesu FT-107M HF transceiver and Yaesu FP-107 AC power supply. £350. Steve tel: 01947 601614.

Realistic PRO-25 handheld scanner, boxed with instruction manual and batteries, 16 months old, as new condition, perfect working order, reason for sale, upgrade. £100. Tel: 01926 814571 (Southam, Warks).

Ham-Master 2m home base all-mode Tx £125. Tokyo 2m all-mode linear 10W / 80W £85. Miniature G3TSO 80m Tx kit cost £70 for £30. Alan, G0HBC. Tel: 0121 745 1000 (Solihull).

With data: Eddystone 940 £120. Receiver R7020 £100. Datong VLF converter £25. Racal RA17L £80. ISB unit RA98 £50. VLF RA137 £75. RA37 £50. Diversity unit MA168 £30. Want Eddystone 830/7, 880. Tony (Worcester), tel: 01905 641759.

Drake TR7 manual PS7 PSU fan NB7 300Hz filter mic £550. MN7 ATU boxed £160. Datong FL3 filter with mains adaptor instructions £70. All plus carriage. Bill, G3WNI, (Devon), tel: 01823 680778.

Fairmate HP-2000 handheld 1000 channel wide-band scanner, 0.5MHz to 1300MHz coverage no gaps. Never used. Boxed £120. Peter (Grantham, Lincs), tel: 01476 565395.

MFJ-259 analyzer new £150. Hustler three element tri-bander never built SS hardware still sealed, 100MPH wind survival, 28F/B ratio, 8dB heavy duty antenna £175 + 50% help of postage, a

real bargain for someone. Call for details. Tom, tel: 01872 572535.

AOR 2001 home base scanner 25 - 550MHz well respected in its day with good filtering £125. Andrew (Gwynedd), tel: 01766 780043.

Yaesu 2500M 2m tcvr, Manson PSU, Nissei SWR / power meter 125MHz - 525MHz, Sirid dualband (2m / 70cm) vertical antenna (base) RF lead PL259 to PL259 £175 ono. G7ULS (Harlow) tel: 01279 641248.

Kenwood 770 UHF / VHF base TRX £350. TS-120 HF £250. Nova MR225 converted to two metres £90 ono. Wanted / swap SM-220 monitor scope, late FT-101E and display for 101E. Phone Dave on 01603 745512 weekends only.

Yaesu FT-480 2m all-mode mobile transceiver with original box and manuals. Adonis AM-503 base mic, all vgc £230. Contact Barrie, GM7CSY (Nairn), tel: 01667 452481 or barrie@smallshaw.softnet.co.uk

Yaesu FT-1000MP boxed with manuals in top excellent condition only 7 months old. Absolutely mint. Reason for sale is other commitments. Must sell, a bargain £1600. First come, first served. Tel: 01305 833307 ask for James, G0SEC (Weymouth).

Kenwood TS-711E 2m multimode £475. Kenwood TM-441E 70cm mobile £200. TM-79E d/band handy £250. All boxed with manuals. All ono. Tel: 01952 415207.

WANTED

Copy of manual and circuits for Yaesu FT-

290R Mk1. Standard C150 VHF handie, standard C7800 UHF mobile, Tait T500 VHF mobile. Please phone Peter, G1SFS, Tel: 0117 963 3306.

Spy 'suitcase' radio sets from WWII and since, wanted by private collector. B2. A MkIII AP4 BP3 Mk122, Mk123 RS6 AN/PRC64 SE109, R2, R3, NP3 tx or WHY? Send details and price wanted to W J MacDonald, 40 Latchett Road, London, E18 1DJ.

Matching loudspeaker for HRO rx + period microphone. WHY? Good price + p/p paid. Peter (North Yorks) 9 to 5 works QTH Tel: 01287 634397. Wanted WWII tx (few watts of AM), hope to get on the M Wars net. TCS-10 etc WHY? Tel: 01287 634397 works QTH, will ring back 9 - 4pm. Ask for Peter good price paid + p/p. Thanks.

Wanted Shure 444 base mic. Also, has anyone got any 'Popular Mechanics' (may have been called 'Practical Mechanics') magazines? Please send list or e-mail 106574.1725@compuserve.com or snail mail to: 120 Loughton Way, Buckhurst Hill, Essex IG9 6AR.

RCA AR88 / AR88 LF must be in excellent working order - mechanical and electrical, be 100% complete and pre-1945, also suitable period matching AM / CW transmitter in similar condition. Telephone Chris, G0LGZ on 01582 419385 (NW Herts) after 6pm or at weekends.

Trio TS-940. (Macclesfield) Tel: 01260 252287.

Wanted Yaesu FC-901 antenna coupler and SP-901. Reg, G4KZE

(Cheshire), tel: 0161 980 4195.

Drake matching speaker for Drake R8E receiver wanted. S Clifton, tel: 01492 878107.

Wanted Yaesu FT-77 for spares scrap non-worker any condition OK. Tel: 0141 632 5408.

Morse keys military types, Type D in particular, Navy etc. Vibro'x wanted (not Kent). Also military radio sets any sort or age, in particular No11, 12, 21, R1082, T1083, T1115A. Call Ben on tel: 01562 743253 or e-mail 106312.1035@compuserve.com

EXCHANGE

Yaesu FT-One fitted memory unit and FM board, with manual, for a good quality receiver. Derek, G7SYN (Ashington, Northumberland), tel: 01670 853778.

C5608DA (USA) 2 / 70, DTMF, CTCSS options fitted, programmable tone burst board fitted set at 1750Hz, owner's manual, workshop manual, for full details call. Exchange for Kenwood 751E multimode or FT-290R II + amp. Others considered. Tel: Tom on 01872 572535 any time.

HELPLINES

Help required for Multi 2700 for Rx preamp BPF, or where can I get one? Will pay good money. Mr Drury, tel: 01767 677070.

Help wanted to repair Datong model D70 Morse tutor. Handbook for Scopex 4S6 oscilloscope. Contact C J Wadley, tel: 01273 591304, or write to 9 Ridgeway Close, Southwick, Sussex BN42 4QQ.

Ham Radio TODAY

CONTACT INFORMATION

Ham Radio Today Editorial, Nexus Special Interests Ltd.,
Nexus House, Boundary Way, Hemel Hempstead, Herts, HP2 7ST
Tel. 01442 266551. Fax. 01442 266998 (All written queries must be
accompanied by an SAE if a reply is required).

Regular Contributors:

Computer Contacts; Paul Simpson G0RUR, Post: 231 Caxton Street
Sunnyhill, Derby DE23 7RB Email; rur@innotts.co.uk

Data Connection; Chris Lorek G4HCL,
Email; g4hcl@qsp73.demon.co.uk Packet; G4HCL@GB7SUN.#48.GBR.EU
Post; via Editor

HF Happenings; Don Field G3XTT, Email; g3xtt@lineone.net Post; 105
Shiplake Bottom, Peppard Common, Henley on Thames, Oxon RG9 5HJ

Net Communication; Jeremy Boot G4NJH,
Email; asperges@innotts.co.uk Post: via Editor

QRP Corner; Dick Pascoe G0BPS, Packet; G0BPS@GB7RMS Email;
dick@kanga.demon.co.uk Post; Seaview House, Crete Road East,
Folkestone CT18 7EG.

Satellite Rendezvous; Richard Limebear G3RWL, Email;
g3rwl@amsat.org Post; via Editor

Scanners; Bill Robertson, Email; scanman@qsp73.demon.co.uk
Post; via Editor.

VHF/UHF Message; Geoff Brown GJ4ICD, Email; equinox@itl.net
Post; TV Shop, Belmont Rd, St Helier, Jersey. Channel Islands,
Tel/Fax 01534 877067

Subscriptions:

Subscription rates; UK £29.00 for 13 issues (1 year), Europe and Eire
£39.50, Surface mail: Sterling £41.50, US \$66, Airmail rates: Sterling £59.00,
US \$95. Cheques payable to Nexus. Available from: Nexus Subscription
Services, Tower House, Sovereign Park, Lathkill Street, Market
Harborough, Leicestershire LE16 9EF. **Orders Hotline**; 01858 435344,
Enquiries Hotline; 01858 435322

Back Issues:

Back issues are normally available for the last twelve months, at £3.20 per
issue. Cheques payable to Nexus. Available from: Nexus Subscription
Services, Tower House, Sovereign Park, Lathkill Street, Market
Harborough, Leicestershire LE16 9EF. **Orders Hotline**; 01858 435344,
Enquiries Hotline; 01858 435322

Article Photocopies:

If the back issue you require is not available (these are normally held for
the last 12 months), photocopies of individual articles can usually be
provided, the price is £2.75 plus £1.00 p/p (UK) for the first article
(overseas add 20%), £2.00 for follow-up articles. Multiple parts count as
separate articles, cheques payable to 'Nexus Special Interests Ltd.'. Please
write to; Photocopy Service, Nexus House, Boundary Way, Hemel
Hempstead, Herts HP2 7ST, stating Ham Radio Today magazine, article
title and issue it appeared in (if you do not have this information please
include an additional £2.75 search fee). We are sorry but we are unable
to accept telephone orders, enquiries, or personal calls at the main office
for photocopies. Please allow up to 28 days from receipt of order for
delivery.

North American Subscription Agent:

Wise Owl Worldwide Publications, 4314 W.238th Street,
Torrance CA 90505 Tel.(310) 375 6258 Fax.(310) 375 0548.
Visa/MC/Discover accepted.

Ham Radio Today Binders:

Ham Radio Today binders are available from Reader Offers Dept., Nexus
Special Interests Ltd. Nexus House, Boundary Way, Hemel Hempstead,
Herts HP2 7ST, Tel. 01442 266551. £7.50 inc. UK P/P (Overseas add
£1.50). Cheques payable to Nexus. Please allow up to 28 days for
delivery.

Ham Radio Today Distribution:

UK newstrade distribution by Comag Magazine Marketing, Tavistock
Road, West Drayton, Middlesex UB7 7QE, Tel. 01895 444055, Fax.
01895 433602. Overseas and non-newstrade sales by Magazine Sales
Dept. Nexus Special Interests Ltd., Nexus House, Boundary Way, Hemel
Hempstead, Herts HP2 7ST, Tel. 01442 266551, Fax. 01442 266998.

ADVERTISERS INDEX

AMATEUR ELECTRONICS / HOLDINGS	55
AMATEUR RADIO COMMUNICATIONS	55
ASK ELECTRONICS	IFC
C-FONE COMMUNICATIONS	19
CHELMER VALVE	19
CMS	IBC
GAREX ELECTRONICS	19
GWM RADIO	50
INTER PRODUCTS	19
JAYCEE ELECTRONICS	55
J & N FACTORS	55
KANGA PRODUCTS	55
NORTHERN AMATEUR RADIO	35
MAURITRON	50
MULTICOMM 2000	TRADE IN 26, 27, 55
NEVADA COMMUNICATIONS	TRADE IN
RADIO ACTIVE	50
RSGB	IBC
SHORTWAVE SHOP	TRADE IN
SRP TRADING	TRADE IN 22, 23
SKYWAVE MARINE	55
SYON TRADING	55
WACRAL	55
WATERS & STANTON	TRADE IN
WILSON VALVES	55
YAESU U.K.	OBC

HAM RADIO TODAY PUBLICATION DATES

Are you having trouble getting a copy of your
favourite *Ham Radio Today* Magazine every four
weeks? Are you missing out on the great news,
views and features we pack into these pages? Are
you losing the race to grab the new issues? If the
answer to any of those questions is yes, then keep
these dates in your diary!

Issue No.	Publication date
Vol.16 Issue No.3	27th Feb '98
Vol.16 Issue No.4	27th Mar '98
Vol.16 Issue No.5	24th Apr '98

So don't miss out, place a regular order with
your newsagents - **TODAY!**

Dear Newsagent, Please deliver/save me a copy of
Ham Radio Today Magazine every four weeks

Name _____

Address _____

Ham Radio Today is available from: Comag Magazine Marketing
Tavistock Road, West Drayton, Middlesex UB7 7QE,
Tel. 01895 444055 Fax.01895 433602 ISSN No. 0269-8269

Make your hobby more exciting!

Join *other* like-minded people, the experimenters, the people who are not content with just sitting back waiting for things to happen - make things happen yourself with the RSGB. With us you will enjoy

RadCom - the Society's 100 page colour magazine, delivered to your door every month.

Special discounts off a comprehensive list of publications

EMC advice - solve those interference problems once and for all.

Technical advice

PLUS much more!

Join us, and be one of the radio amateurs enjoying their hobby to the full!



Radio Society of Great Britain (Dept HRT10), Lambda House Cranborne Road Potters Bar Herts EN6 3JE
 Tel: 01707 659015 Fax: 01707 645105
 e-mail: sales@rsgb.org.uk

The Low Cost Controller That's Easy To Use

Features

The K-307 Module provides the features required for most embedded applications

- Analogue** • 4 Channels in 1 Channel out
- Digital** • 36 Digital in or out & Timers
- Serial** • RS-232 or RS-485 plus I2C
- Display** • LCD both text and graphics
- Keyboard** • Upto 8 x 8 matrix keyboard
- Memory** • > 2Mbytes available on board
- Low Power** • Many modes to choose from

Development

The PC Starter Pack provides the quickest method to get your application up & running

- Operating System** • Real Time Multi Tasking
- Languages** • 'C', Modula-2 and Assembler
- Expansion** • Easy to expand to a wide range of peripheral cards

Other Features

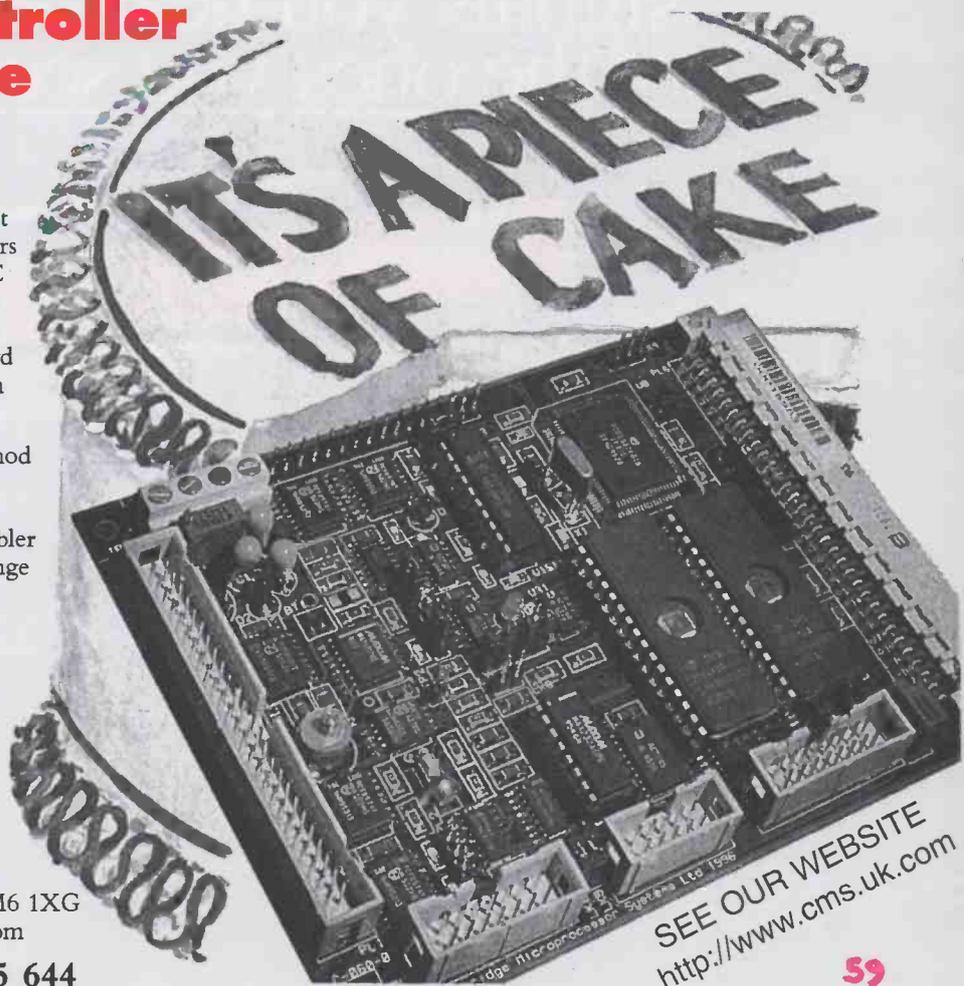
Real Time Calendar Clock, Battery Back Up, Watch Dog, Power Fail Detect, STE I/O Bus, 8051 interface, 68000 and PC Interface

Cambridge Microprocessor Systems Limited



Units 17 - 18 Zone 'D'
 Chelmsford Road Ind Est
 Great Dunmow Essex CM6 1XG
 E-mail cms@dial.pipex.com

Phone 01 371 875 644



SEE OUR WEBSITE
<http://www.cms.uk.com>

"The FT-920 is packed with really high-tech features!"

"And, it's got 6 meters built in, too!"



"Yeah! Shuttle Jog, DSP—with a 33MIPS* processor—fastest on the market."

"Looks like Yaesu did it again!"

FT-920

All-Mode HF/6m Transceiver

You know the difference—and so does Yaesu. Signals buried in noise and interference miraculously appear at your speaker—the surest indicator of HF quality. As always, cutting-edge technology inside separates the world leader in amateur radio from the rest of the pack. No surprise to you.

What makes the difference? High-performance 33MIPS* Digital Signal Processing (DSP), for razor-sharp selectivity, increased average power output, and voice pattern contour choice; automatic seeking DSP Notch filter and Noise Reduction; built-in high-speed antenna tuner for RX and TX; user-friendly DSP Bandwidth controls for enhanced interference reduction; and exclusive Shuttle Jog tuning controls for fine or rapid frequency excursions. For operating efficiency, the FT-920 also has a Digital Voice Recorder and Electronic Memory Message Memory Keyer. Providing up to

100W of adjustable power output on all amateur bands from 160 through 6 meters, the FT-920 uses rugged, low-distortion MOS FET final amplifier transistors. SSB, CW, AM (25W carrier), AFSK, and FSK are built in, with FM, optional.

All of this, and an ergonomically-designed front panel—including Yaesu's renowned Omni-Glow™ display—give you the highest-performing, HF/6 meter rig in its price class.

For more details on the new and different FT-920, call or write for a free brochure, or better yet: hear the difference at your dealer today!

YAESU

... Choice of the World's top DX'ers

For the latest Yaesu news, hottest products, visit us on the internet! <http://www.yaesu.com>

Features

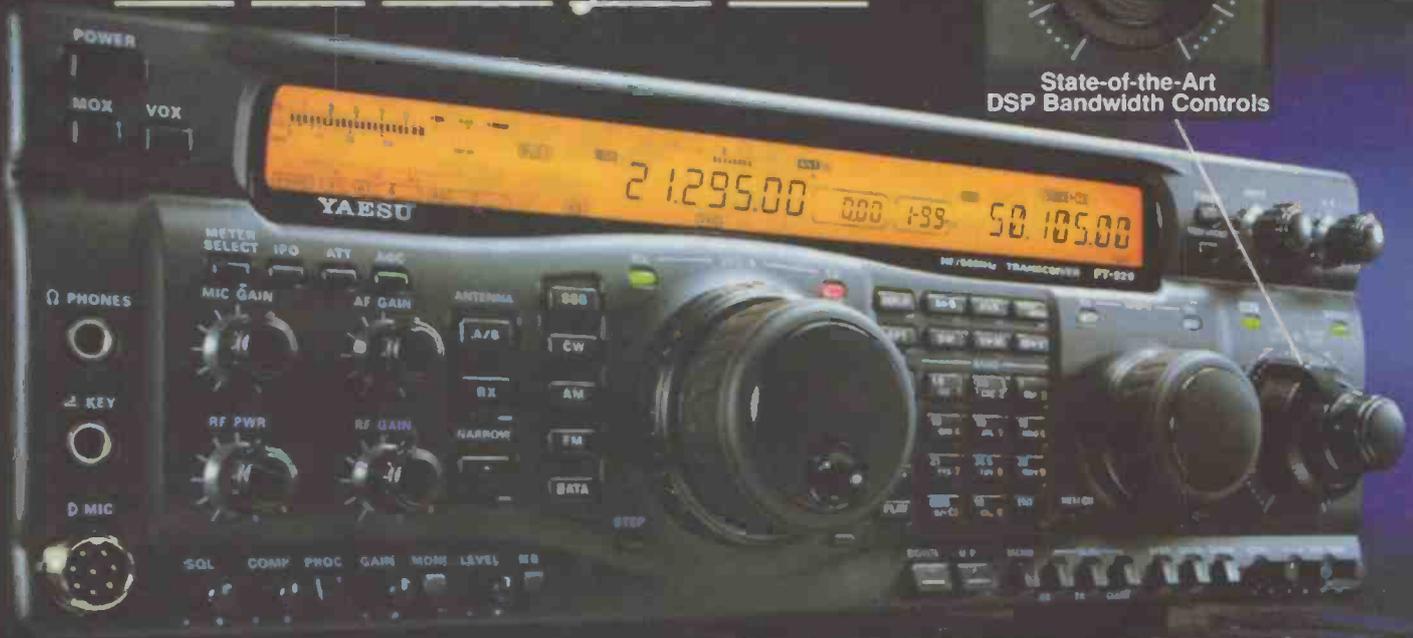
- High Performance 33 MIPS* Digital Signal Processing (DSP) in all Modes with one touch control
- HF + 50 MHz with 100 Watts Output on all Bands
- New Design MOSFET PA Finals
- Built-in High Speed Auto Antenna Tuner including 50 MHz (Antenna Tuner works on both RX & TX)
- Auto Notch/Noise Reduction Control
- Simplified Tuning with Shuttle Jog Control
- Omni-Glow™ Dual Display with Twin VFO Knobs
- Separate FET RF Amplifier for High & Low Bands
- Digital Voice Memory System
- Quick Memory Bank (QMB) Instant Frequency Memory System

*Million Instructions Per Second

The real difference is the signals you hear -- not the ones you see.



State-of-the-Art DSP Bandwidth Controls



<http://www.yaesu.co.uk>

Specifications subject to change without notice. Specifications guaranteed only within amateur bands. Some accessories and/or options are standard in certain areas. Check with your local Yaesu dealer for specific details. Collins is a trademark of Rockwell International Corporation.



FT-1000MP

This HF standout features a high-intercept front end design, EDSP, and built-in Collins SSB Mechanical Filter