

The
SHORT WAVE
Magazine
SWM



Scanning Special

**Dave Roberts Examines
 Scottish Ambulance
 Comms**

& Scanning Scene



**JW Gets to Grips with
 the Eddystone 6200**



**G3SWM On Air Day -
 What Went On**

**Looking For A Radio Club Near You?
 Then Look No Further...**

...plus all your regular monitoring favourites

World Radio History



**The B2s Have
 Gone Home**
**Graham Tanner and Peter
 Bond Round-up**

July 2003

£3.25



9 770037 426074

ALINCO

wideband scanning receivers

Awesome.

DJ-X10E ADVANCED FEATURED SCANNING RECEIVER

- Receives: 100kHz - 2000MHz
- Multi mode reception AM - WFM - NFM - SSB - CW
- 1200 memory channels
- Channel scope spectrum analyser that allows monitoring of 40 channels
- Advanced scanning features:
 - Programmed scan (up to 10 groups)
 - Programmed memory scan
 - Any memory scan
 - Mode scan (not found on many scanners!)
 - VFO search
 - Dual VFO search
 - Band excursion scan
 - Priority scan
 - Any channel ship scan
- Battery save facility
- Facilities for cloning another set
- Built-in 24 hour clock
- Switchable attenuator

DJ-X2000 THE 'INTELLIGENT' SCANNING RECEIVER

- Covers 100kHz - 2,149.99MHz
- 2000 channel memory
- Modes: AM/NFM/WFM/LSB/USB/CW auto mode position
- 'Flashtune' reads the frequency of a nearby transmitter and instantly takes your receiver to it
- Transweeper - Instantly locates hidden transmitters that may be used for eavesdropping
- Record - Up to 160 seconds with the digital memory of audio direct from the receiver or voice via the built in microphone
- Descrambler
- Channel scope
- Bug detector
- CTCSS decoder built in
- CTCSS - Search facility
- Frequency counter
- Field strength meter
- S-Meter
- FM Stereo receiver
- Two level attenuator
- PC programmable
- 24 hour timer

 £299.95

 £499

with 8.33kHz for airband

◀ DJ-X2 THE ULTIMATE LIGHTWEIGHT SCANNER

- Receives: 522kHz - 999.995MHz
- AM WFM NFM
- Selectable scan modes
- 700 memories
- Audio descrambler
- Bug detector - detects presence and frequency of bug giving audible warning
- Selectable internal / external antenna
- Internal or external supply
- Program Search banks
- Illuminated backlight display
- 2 performance mode, easy and expert
- RX attenuator
- Auto power off mode
- Priority channel monitoring
- Squelch control
- Volume control

£129.95

▲ DJ-X3 ULTRA MODERN SCANNING RECEIVER

- 100kHz - 1300MHz
- AM/FM/WFM
- 700 memory channels
- Steps: 5/6.5/8.33/10/12.5/15/20/25/30/50/100kHz
- Auto descrambler
- Bug detector
- Stereo FM (with headphones)
- Attenuator
- SMA Antenna
- Battery saver cct
- Size: 56w x 102h x 23d mm

- Weight: 14.5g (without batteries)
- Supplied c/w: 3 AA dry cell, battery case, carrying strap
- Optional extras: • Lithium ion battery pack, Ni-Mh battery pack, Drop in mains charger, Earphone

£129.95

NEW LOW PRICE

DJ-X-2000

INCLUDES FREE:

- Multi voltage 110V to 240VAC mains charger for easy use anywhere in the world
- 4.8V DC 700mAh NiCad battery pack
- Belt clip
- Carrying strap
- Flexible low profile antenna

Official UK Distributors of Alinco

nevada nevada

WorldRadio History

RETAIL ENQUIRIES: 023 9231 3090 DEALER ENQUIRIES: 023 9231 3095 • Unit 1 • Fitzherbert Spur • Farlington • Portsmouth • PO6 1TT • website: www.nevada.co.uk

Get Supercharged

LONG LASTING POWER
for your:

- Scanners
- Digital Cameras
- MP3 Players
- CD Players • PDA
- Game Boy - and more!



MAHA

MH-C777 PLUS II

Universal Charger and Analyser

- Charge nearly any Lithium Ion, NiMH, and NiCD battery packs for your ham radios, cellular phones, camcorders, AA, AAA, C, D battery cells using optional holders and more
- Analyse and condition battery packs and display capacity
- Display digital voltage, time and capacity during both charge and discharge
- Support 1.2V to 144.4V (1 to 12 cells) for NiMH & NiCD and 3.6V to 14.4V for Lithium Ion
- Lightweight international 80-240V AC mains adaptor
- Car kit for charging from cigarette lighter
- Alligator clip lead pack

£79.95 £8.00 P&P



MAHA

MH-C401 FS

100 Minute COOL CHARGER
for 1 - 4 AA / AAA

- RAPID CHARGE 1, 2, 3 or 4 NiMH / NiCD AA / AAA batteries under 100 minutes accurately and coolly.
- Manually select between 100 minute rapid charge and 5 hour gentle charge.
- FLEX Negative Pulse microprocessor-Allows the battery to accept a more complete charge regardless of the of battery's capacity, also significantly enhances battery life.
- Four independant charging controls - allows each battery to be charged to its full potential without risk of overcharging
- Includes 4 x AA 1800mAh NiMH Hi-power batteries
- Car adaptor kit
- Battery carrying case
- Multi-Voltage adapter (100-240V, 50/60Hz) Fitted with UK 13 Amp Plug.

SPECIAL WORLDWIDE TRAVEL EDITION
featuring a lightweight autoswitching travel adaptor suitable for 100 - 240V 50/60Hz (Fitted with 13A UK plug).
No need for extra transformers as you travel.

£44.95 £4.75 P&P

Reviews

EDITORS' CHOICE
Photo imaging resource
"Charge completeness numbers of 94% in fast charge mode and 97% in slow charge mode are pretty good..... I haven't really found any chargers that do a better job than this."

"Overall the C401FS looks like a nearly perfect battery charger for digicam enthusiasts...Very highly recommended - don't think twice."

PowerEx's MH-C401FS 100 Minute Cool Charger is awarded PC Photo's 2002 Editor Choice in its "Top 25 Picks."



MAHA

MH-C204F PLUS

INTELLIGENT 3 HOUR RAPID CHARGER

- RAPID CHARGE your batteries in 1-3 hours.
- CONDITION your batteries to rejuvenate them.
- 2 independent charging banks.
- Supplied with UK AC adaptor
- NOW WITH 4 x 1800 mAh batteries
- Car Kit

Intelligent 3-Hour Rapid Charger

Unlike other "dumb fast chargers", you can finally safely rapid charge your AA & AAA Nickel Metal Hydride batteries! You no longer have to wait for the tens of hours required by ordinary overnight charger!

Battery Conditioning and Rejuvenation

One of the most impressive features on this charger is its added conditioning ability, which will rejuvenate your batteries to their best performance by subjecting them to a automatic discharge / charge cycle.

Dual Charging Circuit

The intelligent MH-C204F Plus features two independent banks, able to perform different function simultaneously This means you can charge two unique sets of two batteries. You can put two NiMH AA in one bank and two NiMH AA in one bank and two NiCD AAA in the other bank. IT'S LIKE HAVING TWO CHARGERS!

£31.95 £4.75 P&P



NIMH HIGH POWER rechargeable batteries

MH-AA160 1600mAh AA Cells (x 4)	RRP £12.05	£7.95
MH-AA170 1700mAh AA Cells (x 4)	RRP £15.05	£10.95
MH-AA180 1800mAh AA Cells (x 4)	RRP £16.05	£14.95
MH-AA200 2000mAh AA Cells (x 4)		£16.95



www.mahaenergy.co.uk



ORDER HOTLINE 023 9231 3090

Unit 1 • Fitzherbert Spur • Farlington • Portsmouth • PO6 1TT
e-mail: sales@nevada.co.uk website: www.nevada.co.uk fax: 023 9231 3091

F&OF

The SHORT WAVE Magazine contents

July 2003

Vol. 61 Issue 07 July 2003 • ISSN 0037-4261
On Sale June 26 • August issue on sale July 24

Editor:

Kevin Nice, G7TZC, M3SWM, BRS95787

News & Production Editor:

Zoë Shortland

Art:

Steve Hunt & Bob Kemp

Editorial Address:

PW Publishing Ltd., Arrowsmith Court,
Station Approach, Broadstone,
Dorset BH18 8PW
Telephone: (01202) 659910 Fax: (01202) 659950

If you wish to send E-mail to anyone at SWM then
our internet domain name is: pwpublishing.ltd.uk
Simply add the name of the person you wish to contact.
For example: kevin.nice@pwpublishing.ltd.uk
Web site: www.pwpublishing.ltd.uk/swm

Books, Back Issues & Subs (all orders):

(01202) 659930 (Out-of-hours service by answering machine)

Finance/Accounts

Alan Burgess, Finance/Office Manager
Telephone: (01202) 659940 Fax: (01202) 659950

Advertising Dept.

Eileen Saunders M3TTO
Telephone: (01202) 659920 Fax: (01202) 659950

Advertising Typesetting & Production:

Peter Eldrett
Telephone: (01202) 659920 Fax: (01202) 659950

Advertisement Manager:

Roger Hall G4TNT
PO Box 948, London SW6 2DS
Telephone: 020-7731 6222 (Mobile: 07885 851385)
Facsimile: 020-7384 1031



cover subject:
**The major air
activities over
Iraq have
finished and
the USAF have
moved their
hardware
home. Graham
Tanner and
Peter Bond
wind up the
movements.**

Pic courtesy
Northrop
Grummen.

Features

Broadcast

13 Bandscan Europe

14 LM&S

24 Scanning Scene Special - Scottish Ambulance Service

A few weeks ago, Dave
Roberts was fortunate
enough to be able to pay a
visit to the Scottish
Ambulance Service's

Emergency Medical Dispatch Centre (EMDC) in Inverness - here's what
he found out.



27 Commercially Speaking - Eddystone 6200

John Wilson in deep with
another desirable
commercial h.f. receiver.
See how this professional
spec radio performs in the
hands of our expert and
under test in his lab.



Amateur Bands

Clive Hardy G4SLU,
c/o SWM Editorial Offices
E-mail: clive@pwpublishing.ltd.uk

Attention 123!

Enigma, 17-21 Chapel Street,
Bradford, West Yorkshire BD1 5DT.
E-mail: enigma@pwpublishing.ltd.uk

Bandscan

Bandscan America
Gerry Dexter,
c/o SWM Editorial Offices.
E-mail: gdexter@pwpublishing.ltd.uk

Bandscan Australia

Greg Baker, PO Box 3307, Manuka,
ACT2603, Australia. E-mail:
greg.baker@pwpublishing.ltd.uk

Bandscan Europe

Martin Peters, c/o SWM Editorial
Offices. E-mail:
martin.peters@pwpublishing.ltd.uk

Decode

Mike Richards G4WNC,
49 Cloughs Road,
Ringwood,
Hampshire BH24 1UU. E-mail:
decode@pwpublishing.ltd.uk

DXTV

Keith Hamer and Garry Smith,
17 Collingham Gardens,
Derby DE2 4FS
E-mail: dxtv@pwpublishing.ltd.uk

Info In Orbit

Lawrence Harris,
55 Richville Road,
Shirley,
Southampton SO16 4GH.
E-mail:
info.orbit@pwpublishing.ltd.uk

LM&S and Maritime Beacons

Brian Oddy G3FEX,
Three Corners,
Merryfield Way, Storrington,
West Sussex RH20 4NS.

Off The Record

Andy Cadier,
28 Romney Avenue,
Folkstone, Kent CT20 3QJ
E-mail:
off.the.record@pwpublishing.ltd.uk

Propagation

Jacques d'Avignon VE3VIA
E-mail:
jacques@pwpublishing.ltd.uk

Satellite TV News

Roger Bunney,
35 Grayling Mead,
Fishlake,
Romsey,
Hampshire
SO51 7RU.
E-mail:
roger.bunney@pwpublishing.ltd.uk

Scanning

Dave Roberts,
c/o SWM Editorial Offices.
E-mail:
scanning@pwpublishing.ltd.uk

ShackWeb

Jerry Glenwright,
c/o SWM Editorial Offices
E-mail:
shackweb@pwpublishing.ltd.uk

Sky High

Peter Bond,
c/o SWM Editorial Offices.
E-mail: skyhigh@pwpublishing.ltd.uk

SSB Utilities

Graham Tanner,
64 Attlee Road, Hayes,
Middlesex UB4 9JE.
E-mail: ssb.utilis@pwpublishing.ltd.uk

SWM Author Info
To provide you with a ready reference here are the contact details of all our regular authors

36 In The Ed's Shack

Editor Kevin, completes his build of the sophisticated Ten-Tec synthesised, digital display receiver kit.



38 G3SWM On Air

Kevin Nice reports on the day's events and the activity leading up to the airing of the magazine amateur radio callsign. The whole exercise was planned in support of the first SWM readers listening contest.

43 Tracking The Wrinklies

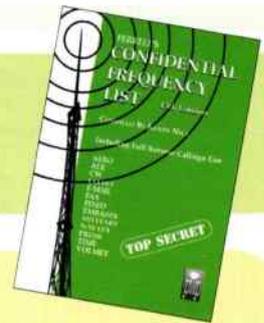
John Locker explains just what happens to aged satellites once they've come to the end of their planned life. Even though their fuel supply is almost exhausted, they still offer commercial use and fun is to be had for the microwave enthusiast.



66 SWM Club Listing

Are you alone with your radio interest? If you want to meet others with a radio passion, then look no further - use our comprehensive guide - which now includes International Radio Clubs on page 69.

Ferrell's Confidential Frequency List 13th Edition - page 71



Regular Columns

Advertisers Index	78	Info In Orbit.....	58	Satellite TV News	55
Amateur Bands.....	51	LM&S	14	Scanning	49
Bandscan Europe	13	Order Form.....	76	ShackWeb	47
Communiqué	9	Propagation Extra	63	Sky High.....	52
Decode.....	56	Propagation Forecast	62	SSB Utilities.....	46
DXTV.....	50	QSL	7	SWM Book Store Catalogue	73
Editorial.....	6	Rallies	12	Trading Post.....	70

Coming Next Month

in SWM August 2003

- Sky High Special with Peter Bond
- What will cross John Wilson's path this month - wait and see!
- In The Ed's Shack
- More fascinating features
- Keep on top of the world of monitoring with SWM
- and much more...

** contents subject to change*

For the latest radio news, see our web site
www.pwpublishing.ltd.uk/swm/news/

Join in with the on-line action on the SWM Readers' E-mail Forum - send an E-mail to swm_readers_subscribe@yahoo.com to subscribe - don't miss the on-line action!

Share your thoughts

© PW PUBLISHING LTD. 2003. Copyright in all drawings, photographs and articles published in Short Wave Magazine is fully protected and reproduction or imitation in whole or in part is expressly forbidden. All reasonable precautions are taken by Short Wave Magazine to ensure that the advice and data given to our readers is reliable. We cannot, however, guarantee it and we cannot accept legal responsibility for it. Prices are those current as we go to press. Short Wave Magazine, USPS No. 006996, is published monthly for £36 (UK) per year by PW Publishing Ltd., Arrowsmith Court, Station Approach, Broadstone, Dorset BH18 8PW. Second Class Postage paid at South Hackensack. Postmaster: Send USA address changes to Royal Mail International, c/o Yellowstone International, 2375 Pratt Boulevard, Elk Grove Village, IL 60007-5937.

DISCLAIMER. Short Wave Magazine wishes in no way to either condone, or encourage, listeners to monitor frequencies and services which are prohibited by law. We respectfully refer you all to both the Wireless Telegraphy Act 1949, and the Interception of Communications Act 1985. Some of the products offered for sale in advertisements in this magazine may have been obtained from abroad or from unauthorised sources. Short Wave Magazine advises readers contemplating mail order to enquire whether the products are suitable for use in the UK and have full after-sales back-up available. The Publishers of Short Wave Magazine wish to point out that it is the responsibility of readers to ascertain the legality or otherwise of items offered for sale by advertisers in this magazine.



SWM Services

Subscriptions

Subscriptions are available at £36 per annum to UK addresses, £43 in Europe and £48 (Airsaver), £54 (Airmail) overseas. Subscription copies are despatched by accelerated Surface Post outside Europe. Airmail rates for overseas subscriptions can be quoted on request. Joint subscriptions to both *Short Wave Magazine* and *Practical Wireless* are available at £61 (UK) £74 (Europe) and £82 (rest of world), £94 (airmail).

Components For SWM Projects

In general all components used in constructing SWM projects are available from a variety of component suppliers. Where special, or difficult to obtain, components are specified, a supplier will be quoted in the article. The printed circuit boards for SWM projects are available from the SWM PCB Service, **KANGA PRODUCTS, Sandford Works, Cobden Street, Long Eaton, Nottingham NG10 1BL. Tel: 0115 - 967 0918. Fax: 0870 - 056 8608.**

Photocopies & Back Issues

We have a selection of back issues, covering the past three years of SWM. If you are looking for an article or review that you missed first time around, we can help. If we don't have the whole issue we can always supply a photocopy of the article. Back issues for SWM are £3.25 each and photocopies are £3.25 per article. Binders are also available (each binder takes one volume) for £6.50 plus £1.50 P&P for one binder, £2.75 P&P for two or more, UK or overseas. Prices include VAT where appropriate.

A complete review listing for SWM/PW is also available from the Editorial Offices for £1 inc P&P.

Placing An Order

Orders for back numbers, binders and items from our Book Store should be sent to: **PW Publishing Ltd., Post Sales Department, Arrowsmith Court, Station Approach, Broadstone Dorset BH18 8PW**, with details of your credit card or a cheque or postal order payable to PW Publishing Ltd. Cheques with overseas orders must be drawn on a London Clearing Bank and in Sterling. Credit card orders (Access, Mastercard, Eurocard, AMEX or Visa) are also welcome by telephone to Broadstone (01202) 659930. An answering machine will accept your order out of office hours and during busy periods in the office. You can also FAX an order, giving full details to Broadstone (01202) 659950. The E-mail address is bookstore@pwpublishing.ltd.uk

Technical Help

We regret that due to Editorial time scales, replies to technical queries cannot be given over the telephone. Any technical queries by E-mail are very unlikely to receive immediate attention either. So, if you require help with problems relating to topics covered by SWM, then please write to the Editorial Offices, we will do our best to help and reply by mail.

ED'S comments

There are various rumours in circulation regarding the discontinuation of the very effective Icom R75 in the UK. This didn't ring true to me, especially as it seems the origin of the information seemed to be coming from the USA. It would indeed be a great shame if this fine h.f. set was to be removed from the market. Whilst I was visiting Icom UK last month, I took the opportunity to discuss whether the story bore any substance. Ian Lockyer, Icom UK's Marketing Manager, stated that he was completely unaware of any plans to have the set discontinued, nor could he see any justification for such a strange move. He told me that he had shipment details extending way into the future - a situation that certainly didn't correlate with the removal of the R75.

Hoka

Dutch decoder specialists Hoka have got themselves in the news recently. The Sunday Times ran an item saying that the firm's Code30, Code300 and Code3-Gold data mode decoding products had found their way into Iraqi hands. The Iraq monitors had also received training in Bulgaria posing as Intelligence Officers from Jordan and Syria back in 2000. The Iraqis appear to have purchased the decoding capability from Hoka via companies in Cyprus and Jordan. The sale of such decoders knowingly to Iraq, with the potential for military use, is in contradiction of UN resolution 661, which requires approval for such transactions.

Frequencies

In 'SSB Utilities' this month, Graham mentions that he's had a letter from a reader Rab Thompson regarding the use of MHz as a suffix for frequencies. It's my guess he objects and would prefer kHz to be used instead - well I'm sorry but it's magazine style and that's it. Same goes for the non-use of imperial measurements. Now if you have an insatiable desire to have all your h.f. frequencies in kHz, then can I suggest you obtain a copy of the brand new edition of Ferrell's *Confidential Frequency List* now in its 13th iteration - details page 76.

New USA Allocations

In the USA the FCC have recently announced the approval of five 60 metre Channels for US amateurs.

The allocation of just five spot frequencies 5.332, 5.348, 5.368, 5.373 and 5.405MHz in the 60 metre band was less of a surprise given opposition expressed last fall by the National Telecommunications and Information Administration (NTIA). The NTIA had cited a possible need for the requested band by federal government users and proposed the five specific frequencies for amateur use on a secondary basis. The FCC has granted operation on u.s.b. s.s.b. only, with a maximum effective radiated power limit of 50W relative to a 0dB gain antenna, a half-wave dipole. The

channels - each with a maximum permissible bandwidth of 2.8kHz - will be available to General and higher class licensees.

No More French Concorde Flights

The arrival at Paris Charles de Gaulle airport of flight AF001 from New York on Saturday 31 May marked the beginning of the rather sad end for Concorde, the Anglo-French supersonic icon.

Air France has been the quickest and keenest to stop the losses of the world's only successful supersonic airliner, which it first flew commercially more than 27 years ago on January 21, 1976 with two flights a week on the Paris-Dakar-Rio de Janeiro route.

It has been difficult to find fare-paying passengers during the last 18 months of global economic slowdown, which has taken a heavy toll on the first class travelling habits of the rich. Air France officially gave up the battle on May 31.

British Airways is continuing to operate until October, when all its commercial Concorde flights will also cease, although the airline said it was studying the feasibility of co-operating with a UK museum to keep one aircraft in operational condition for grand flypasts and air shows.

By the end of June, four of Air France's remaining fleet of five Concorde will already be parked at their final

destinations at museums. The fifth, which can no longer fly, will roll across the tarmac to go on display at Paris' Charles de Gaulle airport.

In France, the airline has chosen the Musée de l'Air et de l'Espace at Le Bourget, along with the future air museum, still under construction, at Airbus headquarters in Toulouse, close to the site of the old Sud Aviation factory, where Concorde 001 the first prototype took its maiden flight on March 2, 1969.

It is also donating one to the Smithsonian National Air and Space Museum in Washington.

The fourth will go to the private Technik Museum Speyer at Sinsheim, near Heidelberg, one of the world's fastest growing collections of aircraft, cars and steam trains which already boasts the only model on show outside Russia of the Tupolev Tu144, Russia's Concorde, which narrowly beat Concorde into the skies on December 31, 1968, but never succeeded commercially. Its international future was doomed after it crashed at the Paris Air Show at Le Bourget in 1973.

British Airways also has the Smithsonian on its list for one of its Concorde, along with the national aviation museum at Seattle, home town of Boeing, and the Airbus UK site at Filton, Bristol, where the British Aircraft Corporation's Concorde were built. One will be saved to go on display at the new Terminal 5 at Heathrow airport, and the airline is considering other requests from Manchester and Scotland.

Until next month,

AW 73 Kevin



SWM and RA Editors enjoy the recent Icom Buffet.

QSL

Is there something you want to get off your chest? Do you have a problem fellow readers can solve? If so then drop a line to the Editor at QSL, Short Wave Magazine, Arrowsmith Court, Station Approach, Broadstone, Dorset BH18 8PW.

THE BEST LETTER WILL RECEIVE A £20 VOUCHER TO SPEND ON ANY SWM SERVICE.

topqsl

Dear Sir

I need help! Due to a serious leg injury, my trusty metal detector has been confined to barracks. Since then, I've been totally enthralled by short wave. I bought a second-hand Realistic DX-394 with a Superscan Stick 2 and have been achieving fairly good results, but I know of no one who can help me improve my reception.

How do longwires compare to other antennas? What is the function of an a.t.u.? How can I pull those faint signals out of the background noise? Any helpful hints by you or your readers would be deeply appreciated if they fell on my doormat!

Love the magazine, especially 'LM&S' - keep it up guys.

**Lee Jessup
Pontypridd**

Hello Lee and welcome to the fantastic hobby of radio listening. You have asked a question that warrants much more of a reply than the space here allows. I would suggest that you try a wire antenna with your DX-394 as the Superscan Stick 2 is intended to be a v.h.f./u.h.f. antenna. Keep your eyes on this magazine as I'll be covering different antennas in a future 'In The Ed's Shack' together with the use of a.t.u.s and the importance of a good earth. - Ed.

Dear Sir

Can you please help me obtain an owners' manual for a Uniden Bearcat UBC9000XL. I purchased one second-hand, but cannot find an owners' handbook anywhere. Obviously I will reimburse any costs incurred.

**D. McLaughlin
N. Ireland**

Dear Sir

I do not think this letter to you will make the front page, but I have been thinking about the wonderful simple days of radio which has played a great part of my life. I am 62 now and when I left school in 1955 I was always at a junk shop looking at the fascinating dials on the cabinet sets with fascinating names like Droitwich, Tropical band, Hilversum, Stockholm, Sweden and many others.

We lived in a magnificent house with no up-to-date facilities, but a superb garden and it was by the canal one side and railway the other and we were in the middle. I remember going by these intriguing radio shops and although I could not afford to buy a decent radio, the dials all looked inviting and these places were like a magnet to me. I used to dream of these far away places - so much so I came across an old shop in Burton on Trent where my brother and I worked and time after time I was seen to be riding my bicycle from Burton in all four winds. I

had a number of sets; Cossor, Bush, Philco and one special Grundig, this was interesting as it was German, how it got to the junk shop, I don't know.

So, armed with these various sets, I strung up a long wire and listened night after night and day after day to the annoyance of my dad who used to say "take that b..... antenna wire down we don't want anyone from the radio people here", and so it went on. Next I got a pair of SG Brown headphones and listened without disturbing anyone and discreetly went in the loft and fed all the wire I could around. Marvellous days and yes we had QSL letters from broadcast stations. It was amazing.

One day, not understanding the innards of radio, I plonked my fingers into the set to undo a speaker which had what I now know to be a 500pF capacitor and yes, you have guessed it, I thought I was dead! I don't know what happened to the sets after that, but at 18, I joined the RAF and radio that previously gave me a short sharp shock, the RAF did the same and radio instead of taking my life came as a life saver as I was put on 5131 Bomb disposal squadron and cleared the north Yorkshire moors of munitions so the radar would not pick up reflections and images we used for a Bomb locator.

During lunch breaks we tuned the equipment and listened to the Light programme - so you see life is very unusual and history repeats itself as one day something can usually take your life while you are having fun and save your life when you are pursuing a dangerous job. I came out of the RAF and was a s.w.l. again.

In 1999 - having talked to your colleague Rob Mannion - I took the M1EDF and M3UXB after Bomb disposal, yes it's a funny old life, but I will never forget the four winds and a Cossor on the carrier, to pursue this wonderful hobby of ours of which a lot of people take so seriously when it is what it is - a hobby.

I have subscribed to PW and SWM all my life - what wonderful magazines we have and it is a privilege to be allowed this hobby by the powers that be. It could so easily be taken away from us, but listening would never be the same if we had to resort to those facilities, as it would never have that wonderful crackle. Finally, thank you for a wonderful magazine. God bless.

**Geoffrey A Powell F.S.S.Ch., M.B.Ch.A.,
M1EDF, M3UXB
Staffs**

I'm glad to learn that you're still enjoying the hobby Geoffrey. It's good to know you don't take it too seriously either. I hope you continue to enjoy SWM and PW for many years to come. - Ed.

Dear Sir

Your competition in the May 2003 issue of *Scanning Scene Extra* has really set me thinking - and not just about the answers to the questions. How long have you been reading SWM? Now, was it 1961, '62 or '63 - let's call it '63. I was a teenager, still at school - what was my interest in SWM? Well then, as now, it was undoubtedly the best and most interesting source of information for the Radio Amateur and the s.w.l. in the UK (and probably anywhere else in the world).

In those days, I used exclusively ex-military equipment and home-brew - I still have (and occasionally use) my old Marconi CR300 and Murphy 840 which consumed all my pocket money for years - though the Creed teleprinter and enormous, temperamental home-built f.s.k. adapter were re-homed when I went off to University. Subsequent military additions served me well a quarter of a century ago: my R210 is as lively as ever - but can anybody find me a p.s.u. for my R216?

I allowed my licence to expire many years ago when my employment totally took over my life. Thirty years of ever-demanding work schedule, until ultimately over 100 hours per week for several years took its toll! I had to take early retirement due to ill health three years ago and don't expect to work again.

I bought a cheap Realistic scanner and started once more to regularly buy SWM - I was hooked again! Next came my Icom IC-R1 - then my Yupiteru MVT-7100 (both second-hand) and with an Internet connected computer, I feel the world is again becoming my oyster!

I decided to confirm my answers to the more technical questions of your competition by checking the websites of the various manufacturers and their agents. What amazing specifications!

The various companies that provide the prizes for your competitions are very generous, but it must also be a real marketing investment. I have been drooling over my keypad and would love to win any of the prizes, but my appetite has been so whetted that, should lady luck not smile upon me - I shall start saving up all my pocket money (pension) all over again.

It all makes me wonder how many teenagers read your magazine now, how many of them will still be fascinated by our interest half-a-century hence, and what on earth (or wherever) will be the prizes in your competitions?

**Richard Simmons
Liverpool**

Sorry Richard, you've not been lucky enough to win one of our fabulous prizes this time. Don't be too disheartened and please keep trying. It's an interesting point re teenagers, I can't know how many read SWM in total, but I'm aware of quite a few. - Ed.

...America's Best!



RX340
best professional receiver
award 2003

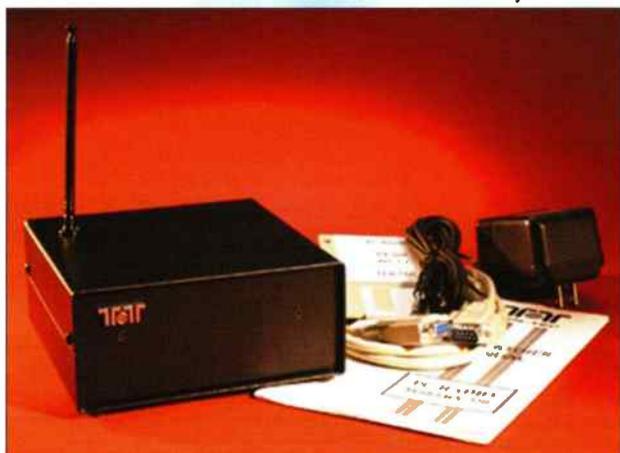
Buy DIRECT from the UK today, no worries. UK specification CE approved with 12 month warranty supported in the UK.

Ten-Tec products held in UK stock for immediate despatch, quick supply on special orders.



UK sales & support office operated by AOR UK LTD. E&OE.

RX320D with 12kHz I.F. output for DRM use and revised RF transformer for increased MW sensitivity



RX-320D: PC 'black box' dedicated short wave receiver. Now even more versatile due to the inclusion of the 12kHz I.F. socket on the rear panel for DRM use (demodulation software required). The opportunity has been taken to revise one RF transformer to increase sensitivity on MW (retro-upgrades available).

John Wilson, SWM April 2002 ...Third order intercept point measured at a nominal 14MHz was +15dBm with a 50kHz signal spacing as used by TenTec themselves (handbook specification +10dBm). Dynamic range was 98dB against the specification of 90dB, so all better than manufacturer's figures. In conclusion, the TenTec RX-320 is an amazingly satisfying receiver to use, and despite its simple appearance when you look inside, it really does perform and has perhaps come the closest yet to marrying the power of a PC with a high performance short wave receiver.

RX320D £269.00 inc VAT. UK mainland carriage £10.00
Other receivers include the desktop **RX350** and award winning 19 inch rack mounted **RX340**.

TenTec Kits

TenTec produce a wide range of kits with prices from less than £10 through to short wave receivers and transceivers. Full instructions supplied with each kit, support is via e-mail from the factory in the USA only. Please check the TenTec UK web for details or request the KIT CATALOGUE.



TenTec Transceivers

The Jupiter 538 transceiver has achieved CE/ETSI approval. First 'CE' stock is expected in the UK late June / early July 2003... watch this space! £ T.B.A.



TEN-TEC DIRECT Tel: 01773 880788 Fax: 01773 880780
4E East Mill, Bridgefoot, Belper, Derbyshire, DE56 2UA England
tentec@aoruk.com www.aoruk.com/tentec

TEN-TEC USA, 1185 Dolly Parton Parkway, Sevierville, TN 37862, USA

WINRADIO®

Innovative Hardware



Portable external receivers



Remotely controlled receivers



Internal receivers



Sonobuoy receiving systems



Wideband antennas



Directional antennas



Radio servers



Direction finding systems



Antenna distribution units



Multichannel systems

Advanced Software



The future of radio.™

For further product information and to download free software, visit our website:
www.winradio.com

Falcon-Protex

Importers and System Integrators

Phone: +44 (0) 1684 295807

Email: winradio@sda-falcon.co.uk

Web: www.sda-falcon.co.uk

SWM Winners A Plenty

Lots of lucky winners this month with over £2600 of prizes being drawn. The following lucky *Short Wave Magazine* readers have prizes heading their way. From the bhi NEIM1031 competition in the May issue of *SWM*, **David Stare** of Swansea collects the superb noise reduction unit and can therefore look forward to some easier and quieter listening. The tasty line-up of prizes from the free *Scanning Scene Extra* magazine bumper competition go to, **Geoff Crawford** of Nottingham who receives the Kenwood TH-F7 transceiver, **CJ Brewer** of Surrey - AOR AR8200Mk3, **Michael Lateo**, Slough - Icom IC-R10, **Aeron Williams**, Kent - Alinco DJ-X2000 and **Robin Brown**, Coventry wins the Fairhaven RD500VX.

Well done to all those who have been fortunate enough to win and a huge thanks to those companies donating the five terrific prizes.

Versatile Filter from SSE

Fresh onto the *SWM* news desk are details of a flexible add-on audio filter suitable for a wide variety of listening and decoding applications. The Jim AAF-2002B from Solid State Electronics (UK) is manufactured in the UK and is available direct from SSE. The unit provides.

- * Passive filter design. No d.c. power required allowing for full mobility.
- * Low internal attenuation (loss). Low d.c. resistance. Special power type inductors allow up to 5W of audio power through the filter.
- * Fully isolated 2-pole by-pass switch.
- * A choice of filter combinations for noise reduction on a.m., n.b.f.m., s.s.b., c.w., etc.
- * Compatibility with standard communications loudspeaker impedance of 4-8Ω with no instability as well as use with higher impedance headphones.
- * Standard 3.5mm diameter speaker socket and 3.5mm diameter plug.

For further details contact: **Solid State Electronics (UK), 6 The Orchard, Bassett Green Village, Southampton SO16 3NA, Tel: 023-807 69598,**



Catalogue of Goodies



Looking for a supplier of components, batteries, bits & pieces and all those sundry items that are useful to have to hand in your workshop? Look no further...Do you know about WCN

Supplies who are based in Totton, Southampton? They offer a variety of components, electronic gadgets, accessories, meters, tools, etc. for the radio constructor, hobbyist or anyone with an interest in electronics.

The latest WCN catalogue to land on the Newsdesk is Issue 17 and the *SWM* team (who know WCN from Rallies) were amazed by the vast selection of goodies inside. We found everything from batteries to computer accessories, connectors, power supplies and soldering irons!

The stock at WCN is ever changing and to make sure you don't miss out on the bargains and special lines, as well as ensuring you have a catalogue

to hand for everyday reference make sure you register your details today! Open Monday-Friday 0900-1700 and Saturday 0900-1300 WCN welcome callers to their premises. **WCN Supplies, The Old Grain Store, Rear of 62 Rumbridge Street, Totton, Southampton SO40 9DS Tel/FAX: 0238-066 0700. E-mail: info@wcnsupplies.fsnet.co.uk Web: www.wcnsupplies.com**

Jupiter Receives CE



The Ten-Tec Jupiter 538 transceiver has just achieved CE/ETSI approval following several months of evaluation and testing. The first CE stock will be available in the UK from early July 2003. Output power is variable from 5-100W from 160-10m, s.s.b., c.w., f.m., The Jupiter 538 provides 34 DSP bandwidths on receive, general coverage, triple conversion and more.

Several options are available from UK stock including an auto a.t.u., remote keypad/encoder, mains power supply, external speaker, desk microphone, etc.

Prices and information may be viewed on the TenTec UK web site at www.aoruk.com/tentec or by contacting TenTec DIRECT UK on: **(01773) 880788**

Atlantic Challenge

The Bank of Ireland Atlantic Challenge, in association with the Special Olympic World Games, led by British explorer and balloonist David Hempleman-Adams, will stage an attempt to cross the Atlantic from west to east in a traditional open basket Roziere balloon. If successful, the voyage will break the solo world distance record for the AM-08 Roziere class of balloon. This will be the second British attempt at a solo crossing of the Atlantic in a traditional open wicker basket. Last year David Hempleman-Adams attempted the crossing but was forced to land in Connecticut due to technical difficulties to do with the autopilot.

This second attempt follows in the wake of David's record-breaking 300 mile walk to the Geomagnetic North Pole during April. The solo balloon expedition will present tremendous challenges to a man who has already climbed the highest mountains on all seven Continents, walked to and across both North and South Poles and been the first to fly a balloon from land to the North Pole.

"I wanted to have a second attempt at this record following the unfortunate technical difficulties we experienced last year. I am confident this year we have every chance to succeed and I am grateful to The Bank of Ireland for their support" said David Hempleman-Adams from the Bank of Ireland Arts Centre in Dublin.

Bank of Ireland Group, is sponsoring the Challenge to promote its premier sponsorship of the 2003 Special Olympics World Games, due to open with a spectacular ceremony on June 21 in Croke Park, Dublin.

The Atlantic Challenge 2003 is scheduled to launch in June (so could be well under way as you are reading this) from Pittsburgh, USA and once airborne, David Hempleman-Adams will head for Newfoundland, keeping in constant communication with his trusted weatherman, Belgian meteorologist **Luc Trullemans**. The flight will be directed from the Control Centre in Bristol under the expert guidance of Flight Director **David Owen**.

Once over the Atlantic, David's voyage is expected to take about a week. During this time he will have to cope with sleep deprivation, high altitude, temperatures well below freezing and some of the worst weather imaginable.

According to the control centre, David will be taking a wide selection of radio equipment with him. The primary communications between balloon and control centre will be via Iridium 9505 satellite phones, two of which will be on-board the balloon.

Keep a listen out for the flight on the Trans-oceanic Air Traffic frequencies used by Gander and Shanwick, 5.249MHz is a good bet. The balloon's registration number is G-BYZX and the callsign to listen out for is 'Atlantic Challenge'. Due to the nature of balloon flights in general and particularly with an Atlantic crossing flight plans are rather flexible affairs so timings are at the mercy of the elements. We recommend the you keep tuned to the above frequency and listen carefully.

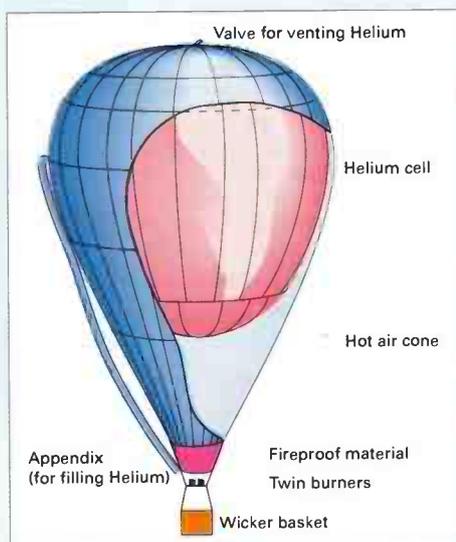
Also packed aboard G-BYZX will be an IC-A200 v.h.f. fixed airband transceiver as well as the IC-A3E and IC-A22E v.h.f. hand-held airband transceivers.

If all doesn't go quite to plan and David has to ditch into the sea there is also an IC-M1EuroV waterproof marine hand-held as a back-up.

This will be the first British attempt at a solo crossing of the Atlantic in a traditional open wicker basket. So keep a listen out for David and if you are more of an armchair adventurer you can track his progress at www.boi.ie/specialolympics

The Roziere Balloon

Registration:	G-BYZX
Envelope Height:	37.8m (42.4m with basket)
Take-off Weight:	1750kg
Volume:	2983L ³ of Helium
Fuel:	760L Propane



GM4V Benbecula Expedition

A team from the Forth Valley Contest Group will operate from Benbecula (IOTA EU-010, IOSA OH04, WAB NF75), one of Scotland's Outer Hebridean Islands, between 24 to 28 July 2003 to coincide with the RSGB IOTA (Islands on the Air) contest.

During the contest, which runs from 1200 26 July until 1200 27 July 2001, we will be using the special contest callsign GM4V.

At the time of this report, the team consists of John MM0CCC, Robert MM0ANT, Colin GM0CLN, Ian GM4ZRR and Keith GM0FZM.

The QSL manager for all GM4V operation is MM0ANT, his details are available at www.qrz.com

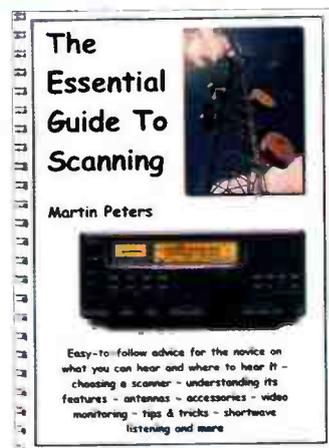
The group intend to post updates on their web page: www.gm4v.co.uk keep a listen during the above dates and if you're one of our licensed readers maybe you'll end up working the station.

New Scanning Guide

The *Essential Guide to Scanning* is just that. A self contained guide to enable the complete beginner to familiarise themselves with all that's needed to become competent with the hobby. This book covers more than just scanning and it also manages to provide guidance to other disciplines within the monitoring hobby in general.

Topics covered in this 108 page A5 guide include: The basics, spectrum users, choosing a scanner, antennas, video monitoring, accessories and much more.

SWM Author **Martin Peters** is responsible for producing this new book and copies can be obtained directly from Martin at **11 Filbert Drive, Reading RG31 5DZ**. *The Essential Guide to Scanning* costs **£6.00 inc P&P** in the UK. More details are available on the web at: <http://tinyurl.com/bnrf>



Icom Support GB100MAS

Icom UK Ltd. is supporting the Strathmore Amateur radio club who are putting on the second of two very important special event stations at the Montrose Air Museum. Between the 26th and 27th July 2003, the club will be operating a special event station, callsign GB100MAS, to coincide with the museum's own events celebrating 100 years of flight. The club will be running two stations, which will consist of one Icom IC-761 operating on 160, 80 and 40 metres. The second station will be a donated radio for the event, the IC-756PROII that will be running on 10, 15, and 20 metres. Peter Davies, Business Manager at the Montrose Air Museum Society said, 'In the Aviation World, 2003 is a very important year as it celebrates the 100th anniversary of flight. We as a Society are supportive of the plan by the Strathmore Radio Club to have a very special Callsign. We are very pleased that Strathmore Radio Club are putting in a very special effort and creating a display in support of our shows and which we hope will give the public an insight into the world of amateur radio.

If you are interested in this special event station, log on to the website www.rafmontrose.org.uk

Oops

We incorrectly printed Fairhaven's address in the *Scanning Scene Extra* in the May 2003 SWM. Please note the correct address is as follows: **Fairhaven Electronics Ltd., PO Box 6102, Hatton, Derby DE65 5WG, Tel: +44(0)1332 670707, Fax: +44(0) 87 00 55 88 99 or visit www.fair-radio.demon.co.uk**
Apologies for any confusion caused.

Narrators Needed

The Radio Amateur Invalid and Blind Club (RAIBC) is looking for more people to read their club Journal *RADIAL* onto cassette tape for its visually impaired members. Can you help?

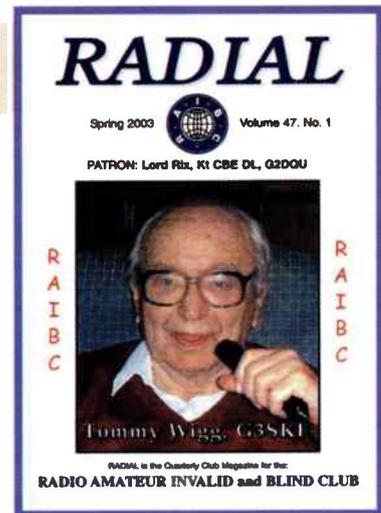
The *RADIAL* is published quarterly in A5 format and usually runs to between 50 and 60 pages of copy specifically of interest to blind radio operators. At present two readers share the work. One does most of the reading and the other acts as Editor, proof-reader and describer of circuits, cartoons and photographs.

The RAIBC now want to encourage extra readers from the wide field of people with an interest in Radio. The Club is seeking people who know how to make a decent voice recording on a machine with good pace, pauses and intonation for their listeners with hearing problems.

The hope is to get enough readers so that two or three can read and record each issue between them, giving the listeners' the benefit of a change of voice as the work progresses. An edited master tape is then made and is sent to an RAIBC member who makes multiple copies to be sent out to fellow members.

So, if you would like to join the team and make a hobby of reading to blind people with a similar interest, contact **Alan GM4FLX, 16 Grahams Avenue, Lochwinnoch PA12 4EG, Tel: (01505) 843524.**

You can then arrange to send in a tape with sample of your reading and voice presentation.



Broadcasts In English



The Summer 2003 edition of *Broadcasts in English* is now available from the British DX Club.

Broadcasts in English was compiled by Alan Pennington and includes details of all currently known international broadcasts in English on short wave and medium wave for the Summer A03 schedule period. The schedules are given in time order and covers all target areas, and transmitter sites are listed where known.

A comprehensive guide to DX and Media Programmes is also included. There are also schedules for the WorldSpace and World Radio Network for Europe.

Copies of *Broadcasts in English* cost: UK £2; Europe 5 International Reply Coupons (IRC), 5 Euros or 4 US Dollars and Rest of World: 6 IRCs or \$5 US. All prices include postage. Please make UK cheques/Postal Orders payable to British DX Club and payments in Dollars or Euros are only accepted in cash.

To order your copy or find out more contact: **British DX Club, 126 Bargery Road, Catford, London SE6 2LR, E-mail: secretary@bdxc.org.uk Web: www.bdxc.org.uk**

Three Peaks Challenge

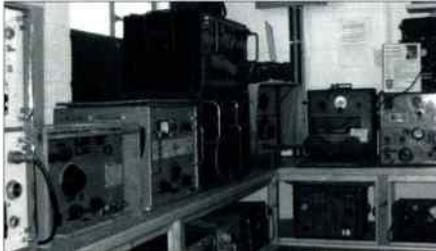
The Three Peaks Challenge Team are attempting to climb Ben Nevis, Scafell Pike and Snowdon in aid of the East Anglian Air Ambulance and SCOPE, as well as taking to the air too! The three peaks challenge takes place on the 21 & 22nd June 2003 and involves climbing in Scotland, England and Wales respectively within a 24 hour period, which includes the drive in-between the Peaks. Three of the team are licensed Amateurs and will be operating throughout the challenge.

The Challenge team consists of eight people, four walking and four supporting. Chris Backhouse G7VNN will be walking, together with his Dad, Ken Backhouse G4RHR and Brother Adrian Backhouse 2E0ACE in support. They will be operating on 144MHz f.m. mainly, but there will be some activity on 430MHz. The team also plan to have an APRS station running so that their progress can be monitored by those back at home.

So, listen out for the Challenge team on the air and make contact with them if you hear them! More information on the Three Peaks Challenge can be found at www.3peaks-online.co.uk



Scouting Around Arran



In celebration of the 50th Anniversary of the 135th Broadway Baptist Derby Scout Group, Geoff M5GAC is setting up 'camp' on the Isle of Arran.

The first main Scout camp of the 135th Broadway Baptist Derby Scout Group was held on the Isle of Arran off the west coast of Scotland, in the 1950s. Geoff M5AGC was one of the many Scouts who attended the camp and to commemorate the 50th Anniversary he will be on the island for a week from 20 July.

Geoff, who has a long association with the 135th Broadway Scout group, was not only on the first camp, but he was also the Scout leader of the troop in the early 1960s. Geoff will be operating daily on 7MHz IOTA EU-123 using the callsign **MM5GAC/P**. He will also be on 14 and 21MHz if conditions allow.

Geoff will be looking in particular for contacts with stations having a link to Scouting and all QSOs will be confirmed by a special QSL card. So, listen out for and make contact if you hear him!

Under 30, Interested In Radio?

Are you aged under 30, interested in Radio and would like to know where to find like minded enthusiasts? Then read on...

Did you know there is a group of Young Radio Amateurs all aged under 30 who are interested in Amateur Radio contesting? Well there is! The members have set-up a group called the World Wide Young Contesters where young people can 'meet up' and chat about radio (not just contesting) and share their experiences with each other.

The group are keen to encourage new members as they currently only have a handful of UK members and would like to invite many more to join especially M3 licence holders. The total membership world-wide currently stands at about 200.

Full details and further information about the World Wide Young Contesters activities can be found at www.wvyc.net Why not take a look?

June 28: The Reddish Rally is to be at held from 1100 at St. Mary's Parish Hall, St. Mary's Drive, South Reddish, Stockport. Admission is just £1, there will be refreshments, a talk-in on S22 and much more. More information from **John G4ILA** on **0161-477 6702** or E-mail: **John@McKae.freemove.co.uk**

July 6: The York Radio Rally takes place at York Race Course. Doors open at 1030 (1015 for disabled), talk-in on 144MHz. There will be Amateur Radio, Electronic components and computer traders attending as well as a Bring & Buy, clubs and specialist interest groups. More information is available from **Arthur G8IMZ** on **(01904) 787799 (business hours)** or E-mail: **APALG8@aol.com** website: **www.yorkradioclub.net**

July 12: The Cornish Radio Amateur and Computer Rally will be held at Penair School, Truro. Doors open at 1030. There will be trade stands, a Bring & Buy and refreshments, etc. Further details from **John** at **g4lly@qsl.net** or from **Ken** at **ken@jarray.freemove.co.uk**

July 13: To celebrate 90 years of amateur radio in Northampton, the Northampton Radio Club are holding a Radio, Electronics and Computer Fair at Northampton County Cricket Club in Northampton. Doors open 1030 till 1630. Lots happening throughout the day. Call **Andy M3AMF** on **(07970) 187529** for more information.

July 20: The Lincoln SWC Hamfest is being held at a **new venue** - this is the Lincoln University Sports Centre at Brayford Pool, Lincoln. More information from **John G8VGF** on **(01522) 525760** or E-mail: **scoop-g8vgf@ntlworld.com**

July 27: The Colchester Amateur Radio and Computer Rally will be held at St. Helena's School, Colchester. Further information can be obtained by 'phoning **Gary** on **(01621) 818620** or **James** on **(01255) 242748** or E-mail: **cra2003@garycavie.com** or **cra2003@mcginty.net**

July 27: Vintage Valve Technology Fair takes place at Haydock Park Racecourse, Junction 23 M6. Doors open at 1000 and admission is £2.50. There will be plenty on offer with up to 120 stalls to browse. For more information contact **Trevor MOTAN** on **(01274) 824816** or take a look at **www.myciunka.supanet.com/vtf2003**

August 9: The Rugby ATS Rally is to be held at Stanford Hall - please note this is a **new venue**. Stanford Hall is signposted from the M1 North and South - brown signs. Contact **Tony Humphries G0OLS, QTHR**.

***August 10:** The Flight Refuelling ARS are holding their Hamfest at the Cobham Sports & Social Sportsground at Merley, Wimborne, off the A31 (signposted). Doors open at 1000 and admission is just £3. Talk-in on

rallies

S22 from 0800. Overnight camping on Saturday. **Mike M0MJS** on **(01202) 883479** or **hamfest@frars.org.uk**

August 25: The Huntingdonshire ARS Annual Bank Holiday Monday Rally is to be held at Ernulf School, St. Neots, Cambs (near Tesco superstore on A428). Doors open at 1000 and admission is £1.50. Hot and cold refreshments will be available as will a talk-in on S22. Contact **Peter Herbert M5ABN** on **(01480) 457347** or E-mail: **peterherbert@aol.com** for more information.

August 31: The Telford Rally will be held at RAF Cosford, Aerospace Museum, one mile south of J3 M54 on A41. As in previous years, entrance and parking will be **free**. For more details contact **M0RJS, QTHR**, via E-mail: **bob@somrob.u-net.com**

If you're travelling a long distance to a rally, it could be worth 'phoning the contact number to check all is well, before setting off.

* At rallies marked with * look out for a representative from PW Publishing Ltd. Go along to the stand for great deals on subscriptions to **Practical Wireless, Radio Active** and **Short Wave Magazine**, clearance books and a selection of back issues.

Peter Pestered Persistently

Pete Asbury M0PCA's grandson Peter was among six youngsters who recently sat their M3 examinations at South Derbyshire.

You can't easily ignore an enthusiastic six-year-old who constantly 'phones you with the line 'hello M0PCA this is M3PCA over'... can you? And it was this line of pestering that eventually convinced Pete Ashby M0PCA to help his grandson Peter gain his M3 callsign.

So, with the encouragement and help Peter along with six others sat their Foundation Licence exam at the South Derbyshire and Ashby Wolds Amateur Radio Group course held at the Moira Replan Centre. Peter was the youngest candidate at just six years old. The other successful candidates were Hollie - eight, Naomi - nine, her mum Cathy, Matthew and another Peter who was the oldest at 70!

So, there was a good mixture of young and older candidates, but they all worked together



Shown here from left to right - front row: **Peter M3PCA, Naomi, Hollie, and Lewis G4CRT (Club President)**. Back row: **Berys G7EHU (Club Secretary), Cathy (Naomi's Mum), Matthew, and Peter**.

very well and one of the youngsters helped out a fellow candidate, who is dyslexic, with the Morse. All six passed, and were very pleased, as the photo shows.

The South Derbyshire and Ashby Wolds Amateur Radio Group meets at 1900hours on Wednesdays at the Moira Replan Centre Near Ashby de la Zouch, Leicestershire. The club runs courses and exams for the RAE, Intermediate and Foundation courses.

■ Martin Peters, c/o SWM EDITORIAL OFFICES, ARROWSMITH COURT, STATION APPROACH, BROADSTONE, DORSET BH18 8PW.

■ E-MAIL: martin.peters@pwpublishing.ltd.uk

Bandscan Europe

You just missed the big story of the year! Digital Radio Mondiale (DRM), hailed as the replacement for a.m. radio on long, medium and short wave, made its inaugural broadcasts on 16 June during the ITU's World Radio Conference in Geneva. At the time of writing, Radio Netherlands and Germany's Deutsche Welle were on schedule to transmit material using the DRM system from then with other international broadcasters pulling out all the stops to follow suit.

DW will broadcast 12 hours a day to Europe in German and English whilst Radio Netherlands will beam 37 hours of English and Dutch to various target areas including Europe. Sweden's SR International is the latest to join the fray, promising over three hours of English each week to the US Eastern Seaboard via rebroadcasting facilities in Sackville, Canada.

If you stumble across a channel within the broadcast bands, comprising of nothing but 10kHz wide white noise, then you're almost certainly tuned into a DRM transmission. I look forward to seeing the first reports of full DRM reception over the coming months in the 'LM&S' column. For the latest information, visit the DRM web site by first checking into www.pwpublishing.ltd.uk/swm/bandscan for links to this month's 'Bandscan Europe' related web sites.

Pilot Scheme

Just when you thought television had already completely taken over our lives, it transpires that Sky Digital is running a pilot scheme that will enable its digital subscribers to vote in local elections via their remote control. This, with the intention of facing off public apathy on such occasions by encouraging more people to vote. If successful, the service could be extended to embrace next year's general election. As to whether viewers unwilling to vote in a Murdoch-friendly fashion will be identified via their set top box address code and eliminated, remains to be seen.

The UK's Radio Authority invited applications recently for the new regional Independent Local Radio (ILR) licence for the West Midlands. The eleven applicants range from major players Capital and Virgin, to local hopefuls, Jump FM. They're bidding for an f.m. licence to serve the conurbations of Birmingham and Wolverhampton, and the surrounding areas, together with parts of Warwickshire and Staffordshire. The adult population of the area within which this new service should be received is around 2.3 million.

Denmark expects to be the first country in the world to have 100 per cent digital radio coverage. Opening its first digital radio transmitters only last autumn, Danmarks Radio expects to achieve total

coverage by this October.

The explanation as to how Denmark will have managed to roll out DAB within a year is simple - the country is flat, requiring a mere 33 transmitters to cover the entire territory. Not only that, there are only four national networks in existence requiring DAB outlets. Regional and local stations plan to open in due course.

Under Wraps

To Ireland now, where recently vacated 252kHz is poised to relay material from national broadcaster RTE. The final decision as to precisely which programme will be broadcast is still under wraps. One plan envisages a mix from several of their networks. The word on the street is that this has now been dropped in favour of a full time outlet for Radio 1.

Icelandic TV popped up on the Astra satellite at the beginning of May, ostensibly to cover their national elections. Several days later and they're still on the air, but I guess it would be too much to hope that they're there for the long haul. 28°E on 10.729GHz vertical in digital, if you want to give it a whirl.

For those of you with the desire to listen in to the multitude of radio broadcasts available by satellite from Europe and beyond, you need no more than a simple digital free-to-air receiver and a 600mm dish pointed at the Hotbird constellation at 13°E.

A very quick count reveals well over 250 radio stations (including many in English) beaming down from almost every European country, and more exotic fare from Canada to Oman. Even Radio Baghdad was up there until knocked off the air at the end of March.

Readers in the southeast with long memories will remember that much-loved medium wave pirate of the seventies and eighties, Radio Jackie. It seems that ex-Jackie bosses have acquired Kingston's Thames FM licence and the station will take to the air 107.8MHz f.m.

BROADCAST

Radios & Closures

After years of turning a blind eye, the Dutch Telecom Agency is hitting land-based pirates hard in a series of raids and closures. 'Operation Etherflash' looks set to run for a year - more if needs be. After only a month, up to sixty stations have been closed down and their equipment confiscated. This all coincides with a nationwide auction of frequencies following years of legal wrangling between legitimate broadcasters and the licensing authorities. So if it's oompah music you enjoy, tune between 1610 and 1650kHz most evenings, before it's too late.

An ongoing spat between the BBC and BskyB needs sorting, and soon. The BBC pays Sky for use of their proprietary Videoguard encryption system. This year, Sky doubled the cost of this service to £85m over the next five years.

The BBC responded by deciding to drop encryption and broadcast free-to-air from another Astra satellite at 28°E with a much tighter spot beam than previously. At the same time, the corporation would make the regional opt outs available to all. BskyB claim that if this happens they can not guarantee BBC1 and BBC2's prominence on channels 101 and 102.

The BBC have asked the ITC to adjudicate over the 'due prominence' issue whilst at the same time, trying to calm the fears of Hollywood and their ilk, concerned that European cable operators will tap into the unencrypted transmissions after May 30th to provide unpaid for films to their subscribers. Rights issues are what lie behind the requirement to encrypt in the first place.

Holiday Time

As the summer months roll on, I know that many of you will be upping sticks to spend a couple of weeks in Europe or beyond. If, like me, you want to keep in touch with world events and news from home, a visit to the BBC World Service web site before you depart will reward you with frequency schedules appropriate to your chosen destination. In addition to conventional short wave broadcasts, many cities around the world host f.m. relays of the service, either part or full time.

Whether or not you plan to get away this year, have a wonderful summer.



LM&S



The holiday season is here again! When packing your bags may I remind you to include a small portable radio and some spare batteries because searching the l.w., m.w. & s.w. bands at your chosen holiday location could well be an interesting experience.

When you return home could you please send the details of your reception to me for inclusion in LM&S, so that other listeners can share your experiences.

Long Wave Reports

Note: l.w. & m.w. frequencies in kHz; s.w. in MHz; Time in UTC (=GMT). Unless otherwise stated, all logs were compiled during April.

The l.w. transmitter at Clarkestown, Eire on **252kHz** was re-activated by Radio Telefis Eireann (RTE) on April 15. From 1330UTC **Bernard Curtis** (Stalbridge) received their test signals, also the RTE-1 programme which was relayed for a while. He says "I have seen it reported that this may become a regular transmission for Irish listeners over here."

A plain carrier from the Clarkestown transmitter was received at 1440UTC on the 15th by **Simon Hockenull** in E.Bristol, which he rated SINPO 43454. During most nights he found the propagation conditions disturbed but just after midnight on the 21st he managed to hear a broadcast from Rikisutvarpid (RUV) in Iceland via Gufuskalar, W.Iceland (300kW) on **189kHz** and via Eider, E.Iceland (100kW) on **207kHz**, which he logged respectively as SINPO 23442 at 0023UTC and 12441 at 0025UTC.

Over in Co.Down **Eddie McKeown** (Newry) also found it quite difficult to obtain good reception at night from some stations - for example, Taldom, Russia on **261kHz** rated only 14121 at 2328UTC. He logged Gufuskalar, Iceland on **189** as 24112 at 2326 but could find no trace of Eider on **207kHz**. At 2355 he picked up a very weak transmission from a station on **279** which he logged tentatively as Yuzhno-Sakhalinsk (1000kW) in Far East Russia and rated 15121.

Whilst searching the band from 2010-2030UTC on the 30th **Fred Pallant** (Storrington) noticed that several stations in N.Africa were audible as co-channel interference - see chart. The exception was Tipaza, Algeria on **252kHz** (1500/700kW), which was clearly received.

Medium Wave Reports

The sky waves from some of the many m.w. stations in the Middle East, N.Africa, Europe and Scandinavia were received after dark by several listeners - see chart.

During a holiday last year, **Michael Wasley** (Scunthorpe) and his family explored the Lleyn Peninsula, North Wales. They stayed in Morfa Nefyn and Michael was surprised by the low level of electrical noise present there, so they returned to the same location again this year for a two week Easter break in April. He says "This year things were different. There was a fair bit of noise at all times (using a Grundig Yacht Boy 400), which gave the impression it could have been connected with machinery somewhere - nothing in the house - as it was greatly amplified if I tried to use a mains adaptor. The house is isolated. There is a Celinet mast down the lane but that was there last year. Only obvious difference was caravans in adjacent fields with mains hook-up."

Reception in Morfa Nefyn proved to be not as good as during his previous visit but Michael compiled some interesting logs - see l.w. & m.w. charts; also the s.w. data. Braich-y-Pwll, at the extreme tip of the Lleyn, was visited on a very wet

afternoon and Michael and his daughter Louisa searched the band with the Volvo car radio. They picked up the ground waves from stations in Europe and logged some quite distant local radio stations - see charts.

The local radio scene also attracted the attention of several other listeners. BBC R.Norfolk was heard via Norwich (1.5kW) on **855** and via West Lynn (0.3kW) on **873kHz** by **Richard Reynolds** in Guildford. He rated the transmissions respectively as 54534 at 0850 and 54544 at 0853UTC. BBC R.York via Fulford (0.5kW) on **666kHz** was logged by **Sheila Hughes** in Morden as 43333 at 1035 on the 28th. Simon Hockenull was surprised to hear BBC R.Shropshire on **1584kHz** carrying the programme for BBC Hereford & Worcester. He asks "Have these stations been merged or has the Woofferton outlet been switched over to Hereford & Worcester?" Any information about this would be very welcome here for inclusion in LM&S.

Short Wave Reports

In the **25MHz (11m)** band the daily broadcasts from Radio France International (RFI) on **25.820** (Fr, Eng to E/C.Africa 0830-1300) continued during April. From time to time the effects of solar activity may have disturbed the propagation conditions to that area but no reports arrived here to indicate how well the broadcasts were received there.

In the UK the reception of RFI was sometimes good but more often poor. The SINPO ratings quoted in the reports were 25222 at 1000 in Newry; 23322 at 1030 by **Vic Prior** in Seaton; 35422 at 1135 in E.Bristol; 14242 at 1035 in Storrington; 24222 at 1230 by **Thomas Williams** in Truro; 45334 at 1250 in Stalbridge.

The propagation conditions in the **21MHz (13m)** band varied from day to day. R.Australia's broadcast to Asia via Shepparton on **21.820** (Eng 0900-1400) could often be received here. It was rated 25522 at 1147 in E.Bristol and during favourable conditions it peaked 44434 at 1250 in Stalbridge.

Also mentioned in the reports were BSKSA Riyadh **21.705** (Ar to Eur 0550-1500), rated 54444 at 0650 by **Jim Brown** in Dreghorn & 35444 at 1348 in Storrington; UAE R.Dubai **21.605** (Ar, Eng to Eur 0600-1630) 34434 at 0730 in Seaton, 33233 at 1340 by **Johan Leidekker** in Amsterdam; & 43444 at 1627 by **Ian Evans** in Ebbw Vale; R.Portugal Int, S.Gabriel **21.830** (Port to W.Africa 0700-1655, Sat/Sun) 24222 at 0909 by **Rhoderick Illman** in Oxted; R.Pakistan, Islamabad **21.465** (Ur, Eng to Eur 0700-1010) 33333 at 1000 in Truro; DW via Nauen **21.840** (Ger to M.East 1000-1355) 45534 at 1053 in E.Bristol; BBC via Ascension Is **21.470** (Eng to S.Africa 1200-1900) 35553 at 1210 by **John Parry** in Larnaca, Cyprus; Channel Africa **21.760** (Eng to Africa 1300-1455, Sat/Sun) 44444 at 1315 by Stan Evans in Herstmonceux; HCJB Quito, Ecuador **21.455** (Eng [u.s.b.] to Eur, Australasia) 33343 at 1320 by **David Hall** in Morpeth; BBC via Cyprus **21.660** (Eng to E.Africa 1400-1700) 55445 at 1400 in Stalbridge; BSKSA Riyadh **21.505** (Ar to N.Africa 0600-1500) 44454 at 1430 by **Robert Hughes** in Liverpool; WYFR Okeechobee FL, USA **21.455** (Eng to Eur, Africa 1600-1800) 44444 at 1630 in Morden; N.Netherlands via Bonaire, Ned.Antilles **21.590** (Eng to Africa 1830-2025) 22222 at 1958 in Newry.

Noted in the **18MHz (15m)** band were the Voice of America (VOA) via Sri Lanka on **19.010** (? to W/S.Asia 1030-1230), rated 45243 at 1107 in Newry; R.Norway Int via Kvitsoy **18.950** (Norw to S.E.Asia, Australia 1200-1230) 34333 at 1205 in Dreghorn; Family R, WYFR via Okeechobee FL, USA **18.930** (Eng to Eur, Africa 1800?-2200) 44333 at 2145 in Morden; also on **18.980** (Eng to Eur 1800?-2146) 44334 at 2100 in Stalbridge.

The propagation conditions in the **17MHz (16m)** band were slightly more reliable. R.Australia's transmission from Shepparton on **17.750** (Eng to E/SE.Asia) reached the UK most mornings. It was rated 33233 at 0750 in Stalbridge.

Also noted in this band were the BBC via Ascension Is **17.830** (Eng to W & C.Africa 0800-2100), rated 44444 at 0800 in Morden; Adventist World Radio (AWR) via Moosbrunn, Austria **17.780** (Eng to W.Africa 0830-0930) 44444 at 0830 by Gerald Guest in Dudley; Israel R. Jerusalem **17.535** (Heb to Eur, N.America 0500-0100)

Long Wave Chart

kHz	Station	Country	kW	Listener
153	Donebach DLF	Germany	500	B,C,D,E*,F*,G,H
162	Allouis	France	2000	D,F*,G,H
171	Nador Medi-1	Morocco	2000	E*,F*
171	B'shakovo etc.	Russia	1200	B,C,D,E*,G
177	Oranienburg	Germany	500	B*,C,D,E*,F*
183	Saarlouis	Germany	2000	D,E*,F*,G,H*
189	Gufuskalar	W.Iceland	150	B*,D*,F*
198	BBC R-4 via ?	UK	?	F*,G
198	Droitwich BBC	UK	500	C,D
207	Munich DLF	Germany	500	B,D,E*,F*,H*
207	Eidar	E.Iceland	100	B*
207	Azilah	Morocco	800	B*,E*,F*
216	Roumoules RMC	S.France	1400	B,D,E*,G,H
225	Polskie R-1	Poland	?	B,C,D,E*,F*
234	Beidweiler	Luxembourg	2000	D,E*,F*,G,H
243	Kalundborg	Denmark	300	B,C,D,E*,F*,G,H*
252	Tipaza	Algeria	1500	A,B,C,D*,E*,F*,G,H*
252	RTE Test Txms	Eire	500	A,B,H
252	Yerevan	Armenia	150	F*
261	Burg(R.Ropa)	Germany	85	E*
261	Taldom Moscow	Russia	2500	D*
270	Topolna	Czech Rep.	1500	B,D,E*
279	Sasnovy	Belarus	500	B*,C*,D*,E*

Note: Entries marked * were logged during darkness. All other entries were logged during daylight or at dawn/dusk.

Listeners:-

- (A) Bernard Curtis, Stalbridge.
- (B) Simon Hockenull, E.Bristol.
- (C) Sheila Hughes, Morden.
- (D) Eddie McKeown, Newry.
- (E) Fred Pallant, Storrington.
- (F) Michael Wasley, while at Morfa Nefyn, Gwynedd.
- (G) Louisa & Michael Wasley, while at Braich-y-Pwll, Gwynedd.
- (H) Thomas Williams, Truro.

Local Radio Chart

kHz	Station	ILR	e.m.r.p (kW)	Listener
558	Spectrum, London	I	0.80	B
603	C.G.Litt'brme	I	0.10	B,D
630	R.Bedfordshire(3CR)	B	0.20	B,D
630	R.Cornwall	B	2.00	F
657	R.Clywd	B	2.00	D
666	Cl Gold 666, Exeter	I	0.34	B,D,E,F
666	R.York	B	0.80	C
729	BBC Essex	B	0.20	B,D
738	Hereford/Worcester	B	0.037	B,C,D
756	R.Cumbria	B	1.00	E*
756	The Magic 756,Povys	I	0.63	B,F
765	BBC Essex	B	0.50	B,D
774	R.Kent	B	0.70	C,D
774	Cl.Gold 774, Glos	I	0.14	C,D,F
792	Cl.Gold 792,Bedford	I	0.27	C,D
801	R.Devon	B	2.00	B,D,E,F
828	Cl.Gold 828, Luton	I	0.20	C,D
828	Cl.G 828 Bournemouth	I	0.27	B
837	R.Cumbria/Furness	B	1.50	E,F
837	Asian Net Leicester	B	0.45	B,D
855	R.Norfolk, Postwick	B	1.50	D
855	Sunshine 855,Ludlow	I	0.15	B,C,D,F
873	R.Norfolk, W.Lynn	B	0.30	D
936	Brunel CG, W.Wilts	I	0.18	D
936	Fresh AM, Hawes	I	1.00	E,F
945	Capital G, Bexhill	I	0.75	D
954	Cl.Gold 954, H'ford	I	0.16	B
963	Liberty R, Hackney	I	1.00	B
972	Liberty R, Southall	I	1.00	B
990	R.Devon, E.Devon	B	1.00	A,B
990	Cl.G, Wolverhampton	I	0.09	A,B
999	R.Solent	B	1.00	B,C
999	Valley R, Aberdare	I	0.300	B
1017	Cl.G,WABC,Shr'shire	I	0.70	B,F
1026	R.Cambridgeshire	B	0.50	B,D
1026	Downtown R, Belfast	I	1.70	E,F
1026	R.Jersey	B	1.00	B
1035	Mean Country 1035	I	1.00	B,C*
1035	West Sound AM, Ayr	I	0.32	F
1116	R.Guernsey	B	0.50	B
1116	Valley R, Ebbw Vale	I	0.50	B,F
1152	Cap.G 1152,Birm'ham	I	3.00	A,B
1161	Brunel Cl.G,Swindon	I	0.16	A
1170	Swansea Snd,Swansea	I	0.58	A,B,F
1242	Capital G,Maidstone	I	0.32	D
1296	Radio XL,Birmingham	I	5.00	B,E,F
1323	Capital G,Southwick	I	0.50	B*
1332	Wiltshire Sound	B	0.30	A
1359	Breeze, Chelmsford	I	0.28	D
1359	R.Solent,Bournemouth	B	0.85	B
1359	Capital G, Cardiff	I	0.20	A
1368	Wiltshire Sound	B	0.10	A
1413	R.Gloucester via ?	B	?	F
1413	R.Gloucester,B'oton	B	0.50	E
1431	Cl.Gold, Reading	I	0.14	B
1458	R.Cumbria	B	0.50	F
1458	Sunrise, London	I	50.00	B,E*
1458	Asian Net Langley	B	5.00	B
1485	Cl.Gold, Newbury	I	1.00	B
1485	R.Merseyside	B	1.20	B*,F
1485	Southern Counties R	B	1.00	B*
1503	R.Stoke-on-Trent	B	1.00	C*
1530	Cl.Gold Worcester	I	0.52	B
1548	R.Bristol	B	5.00	E,F
1557	R.Lancashire	B	0.25	E,F
1566	SomersetSnd,Taunton	B	0.63	B,E
1584	R.Nottingham	B	1.00	C*
1584	R.Shropshire	B	0.50	B*
1602	R.Kent	B	0.25	C

Note: Entries marked * were logged during darkness. All other entries were logged during daylight or at dawn/dusk.

44444 at 0856 in Oxted; Voice of Turkey, Ankara **17.830** (Eng to Eur 1230-1325) 54544 at 1240 in Herstmonceux; BBC via Skelton?, UK **17.640** (Eng to C & E.Eur, M.East, Afghanistan, Iran 0700-1500) 33243 at 1320 by Peter Pollard in Rugby; R.Tashkent, Uzbekistan **17.775** (Eng to S/SE.Asia 1330-1400) 44333 at 1337 in Amsterdam; R.Ext, Espana via Noblejas **17.595** (Sp to C.America 1400-1500) 31222 at 1440 in Liverpool; Channel Africa via Meyerton **17.770** (Eng to E & C.Africa 1500-1530) 24333 at 1527 in Ebbw Vale; British Forces Broadcasting Service (BFBS) via ? **17.895** (Eng - relay of BBC R-2) 45554 at 1555 in Larnaca, Cyprus; Voice of America (VOA) via Botswana **17.895** (Eng to Africa 1900-2000) 34433 at 1900 in Seaton; VOA via Greenville **17.895** (Eng to W/C.Africa 2000-2200) 24343 at 2000 in Storrington; Israel R, Jerusalem **17.545** (Eng to Eur, N.America 1900-1925) 45444 at 1902 in E.Bristol; R.Nederlands via Bonaire, Ned.Antilles **17.605** (Eng to C/W.Africa 1830-2025) 24222 at 1957 in Newry; RCI via Sackville **17.870** (Eng to Eur, M.East, Africa 2000-2130) 55434 at 2030 in Morfa Nefyn; SIO 322 at 2037 by Francis Hearne in N.Bristol & 55555 at 2125 in Dreghorn; World Harvest R. (WHRA) via Greenbush, Maine, USA **17.650**

(Eng to Africa 16007-2300?) 22222 at 2215 in Truro.

In the **15MHz (19m)** band R.Australia reached the UK on two frequencies from Shepparton: **15.240** (Eng to Pacific, Western N.America 0700-0900), rated 33333 at 0845 in Truro; **15.415** (Eng to SE.Asia 2330-0900) 44433 at 0655 in Herstmonceux.

More stable conditons prevailed in this band and quite extensive logs were compiled by some listeners. Amongst the entries were the Voice of Greece via Kavala **15.630** (Gr, Eng to Eur 0600-1000), rated 35433 at 0730 in Seaton; Voice of Nigeria via Ikorodu **15.120** (Eng to N.Africa, Eur 0500-0800) 54433 at 0735 in Herstmonceux; Swiss R. Int (SRI) via Julich, Germany **15.445** (Fr, Ger, It, Eng to Nr.East, Africa 0600-0800) 54444 at 0745 in Stalbridge; China R.Int, Beijing **15.210** (Eng to Australia 0900-1100) 44444 at 0932 in Oxted; R.Ukraine, Kharkiv **15.415** (Eng to W.Eur 1100-1200) 34233 at 1109 in Ebbw Vale; HCJB Quito via Kununurra, Australia **15.480** (Eng to Asia 1230-1730) 34333 at 1230 in Morpeth & 45554 at 1406 in Larnaca, Cyprus; R.Nederlands via Sackville, Canada **15.220** (Eng to N.America 1430-1630) 33222 at 1430 in Newry; UAE R.Dubai **15.395** (Ar, Eng to Eur

Listeners:-

- (A) Francis Hearne, N.Bristol.
 (B) Simon Hockenhill, E.Bristol.
 (C) Sheila Hughes, Morden.
 (D) Richard Reynolds, Guildford.
 (E) Michael Wasley, while at Morfa Nefyn, Gwynedd.
 (F) Louisa & Michael Wasley, while at Braich-y-Pwll, Gwynedd.

DXers:-

- (A) Bernard Curtis, Stalbridge.
 (B) Jim Edwards, Wigan.
 (C) Ian Evans, Ebbw Vale, Gwent.
 (D) Stan Evans, Herstmonceux.
 (E) David Hall, Morpeth.
 (F) Simon Hockenhill, E.Bristol.
 (G) Robert Hughes, Liverpool.
 (H) Eddie McKeown, Newry.
 (I) Fred Pallant, Storrington.
 (J) Clare Pinder, Appleby.
 (K) Peter Pollard, Rugby.
 (L) Vic Prier, Seaton.
 (M) Richard Reynolds, Guildford.
 (N) Michael Wasley, while at Morfa Nefyn, Gwynedd.

Tropical Bands Chart

MHz	Station	Country	UTC	DXer	MHz	Station	Country	UTC	DXer
3.200	TWR Manzini	Swaziland	0310	B	4.790	AIR Itanagar	India	1730	B,H
3.240	TWR Manzini	Swaziland	0315	B	4.790	R.Atlantida	Peru	0315	B
3.255	BBC via Meyerton	S.Africa	1916	B,F,I,L	4.800	CPBS 2 Beijing	China	2143	B,H,L,M
3.279	La Voz del Napo	Ecuador	0505	B	4.800	AIR Hyderabad	India	1650	B
3.300	R.Cultural	Guatemala	0300	B	4.805	R.Nac.Amazonas	Brazil	0110	B
3.315	AIR Bhopal	India	1730	B	4.815	R.Difusora, Londrina	Brazil	0030	B
3.320	SABC (RSG) Meyerton	S.Africa	1915	B,H,I,L	4.820	R.Botswana, Gaborone	Botswana	1934	B,I,M
3.350	R.Ext.Espana	Costa Rica	0620	B	4.820	Xizang, Lhasa	China	2145	B,E,H,L,M
3.365	GBC R-2	Ghana	2244	B,M	4.820	AIR Calcutta	India	1655	B
3.365	AIR Delhi	India	1735	B	4.825	R.Cancao Nova	Brazil	0305	B
3.915	BBC via Kranji	Singapore	2110	A,E,F,H,L,M	4.830	R.Tachira	Venezuela	0330	B
3.950	Qinghai PBS, Xining	China	1745	B	4.832	R.Litoral, La Ceiba	Honduras	0351	C
3.955	R.Korea via Skelton	England	2100	C,D,F,H,J,N	4.835	RTM Bamako	Mali	2010	B,E,G,H,L,M
3.955	R.Taipei via Skelton	England	1800	A,C,D,F,G,J,K,L	4.840	AIR Bombay	India	1646	B,H,I
3.975	R.Budapest	Hungary	1940	C,F,G,H	4.845	R.Cultura Ondas,Trop	Brazil	0300	B
3.985	VOIRI	Iran	1927	L	4.845	ORTM Nouskchott	Mauritania	1934	B,E,F,H,I,L,M
3.985	China R.Int via SRI	Switzerland	2200	B	4.850	AIR Kohima	India	0025	B
3.990	RFE via ?	Germany	2100	H	4.860	AIR Delhi	India	1822	B,M
3.995	DW via Julich?	Germany	2007	C,F,H,L,N	4.865	R.Alvorada, Londrina	Brazil	0010	B
4.005	Vatican R.	Italy	2041	C,F,G,H,L	4.875	R.Roraima, Boa Vista	Brazil	0010	H
4.190	CNR Minority Sce	China	2205	B	4.880	AIR Lucknow	India	0030	B
4.330	Xinjiang BS, Urumqi	China	1740	B,L	4.885	R.Clube do Para	Brazil	2251	B,H,M
4.500	Xinjiang BS, Urumqi	China	1740	B,L	4.885	R.Difusora Acreana	Brazil	0310	B
4.750	Hulun Buir-Mo	China	2235	B	4.885	KBC East Sce Nairobi	Kenya	1932	I,L
4.755	R.Educ CP Grande	Brazil	0220	B	4.890	RFI Paris	via Gabon	0408	B,C,H,M
4.760	AIR Port Blair	India	0020	B,L	4.895	AIR Kurseong	India	1635	B
4.765	R.Rural, Santarem	Brazil	0235	B	4.905	Xizang-Tb, Lhasa	China	0005	B
4.765	RTV Brazzaville	Congo	1941	H,I	4.910	AIR Jaipur	India	2250	B,L
4.770	FRNC Kaduna	Nigeria	1924	B,H,I,L,M	4.915	R.Anhanguera	Brazil	0547	B,M
4.777	R.Gabon, Libreville	Gabon	1815	M	4.915	R.Difusora, Macapa	Brazil	0030	B,E
4.783	RTM Bamako	Mali	2045	H	4.915	GBC-1, Accra	Ghana	2005	B,E,H,I,L
					4.915	KBC Cent Sce Nairobi	Kenya	1919	E,I
					4.920	Xizang-Tb, Lhasa	China	2210	B,L
					4.920	R.Quito, Quito	Ecuador	0250	B,E,M
4.920	AIR Chennai	India	1645	B					
4.927	RRJ Jambi	Indonesia	2245	B					
4.930	R.Costena Ebenezer	Honduras	2130	L					
4.930	AIR Shimia	India	0011	H,L					
4.935	R.Capixaba, Vitoria	Brazil	0305	B,M					
4.940	AIR Guwahati	India	0020	B					
4.950	AIR Srinagar	India	1725	B,I					
4.950	VOA via Sao Tome	Sao Tome	1950	B,G,H,I,J,L,M,N					
4.960	AIR Ranchi	India	1730	B					
4.960	VOA via Sao Tome	Sao Tome	0408	B,C,E,M					
4.965	Christian Voice	Zambia	2200	L					
4.970	AIR Shillong	India	0040	B					
4.975	R.Uganda, Kampala	Uganda	1724	B,H,I,M					
4.980	PBS Xinjiang, Urumqi	China	1725	B					
4.985	R.Brazil Central	Brazil	0012	B,H,M					
4.990	AIR Itanagar	India	1720	B					
5.005	R.Nepal, Kathmandu	Nepal	1723	B,I					
5.009	R.TV Malagasy	Madagascar	1658	J					
5.010	AIR Thiru'puram	India	1730	B,H					
5.014	R.Pioneer, Teresina	Brazil	0305	B					
5.015	R.Brazil Tropical	Brazil	2254	M					
5.025	R.Parakou	Benin	1720	I,M					
5.025	R.Pakistan, Quetta	Pakistan	2005	B,L					
5.025	R.Uganda, Kampala	Uganda	2130	L					
5.030	R.Burkina	Burkina Faso	2053	B,H					
5.030	CNR-1, Beijing	China	2127	L,M					
5.030	AWR Latin America	Costa Rica	0608	M					
5.035	R.Aparecida	Brazil	0215	B					
5.040	Jeyapore	India	1725	B,L					
5.047	R.Togo, Lome	Togo	2025	B,L					
5.050	AIR Aizawl	India	0035	B					
5.050	R.Tanzania	Tanzania	1700	I,M					
5.060	PBS Xinjiang, Urumqi	China	2333	B,E					

GOING MOBILE

G. SCAN II MOBILE

Freq: 25-2000 Mhz Length: 620mm
Dual coil capacitor trapped vertical coils. 3.5" magnetic base with rubber protection. 4mtrs RG58 coax cable, terminated with a BNC. (Don't lose those signals while on the move, the G-Scan II is the answer for continued high performance reception where ever when ever).
Our Price £24.95 plus £6.00 p+p.



SKYSCAN MOBILE

Freq: 25-2000 Mhz Length: 650mm
4 tuned stainless steel vertical radials. 1.5" magnetic base with rubber protection. 4 mtrs RG58 coax terminated with a BNC. (With not just one but four vertical radials, take your scanner in the car & enjoy superior reception with this dedicated antenna).
Our Price £19.95 plus £6.00 p+p.



MINISCAN MOBILE

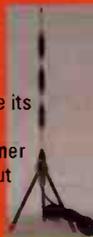
Freq TX: 144-146/430-440 Mhz
Freq RX: 130-1370 Mhz Length: 300mm
Spring loaded black stainless whip. 1" super strong magnetic mount. 4mtrs of mini hi-spec coax, terminated with a BNC. (Ideal for "low profile" scanning while for those with transceivers with wideband receive, its the perfect choice for dual band TX and combined large scale reception).
Our price just £14.95 plus £3.00 p+p.



PORTABLE ANTENNAS

TRI-SCAN III

Freq: 5-2000 Mhz Length: 900mm
This Desktop Indoor Antenna comes with 3 vertical capacitor loaded coils, mounted on a unique helically wound tri-pod, to give its own ground plane for smooth reception. Complete with 5 mtrs of RG58 coax, terminated with a BNC. (Get the most from your scanner with the Tri-Scan III Desktop and enjoy great performance without the hassle of erecting an external one).
Our Price £39.95 plus £6.00 p+p.



SKYSCAN DESKTOP

Freq: 25-2000 Mhz Length: 900mm
This disco style indoor antenna comes with 4 tuned stainless steel vertical whips, 8 ground plane 12" radials, plus 4 loaded horizontal 3" helical radials. Complete with heavy duty base 5 mtrs RG58 terminated with a BNC. (Don't lose those wanted signals while indoors. Use the SkyScan Desktop at your radio station, on the window seal or even in the loft for increased performance).
Our Price £49.95 plus £6.00 P+P.



SWP GLASS MOUNT ANTENNAS

These two superb universal antennas, one for VHF/UHF & one for HF have internal tuned wound coils encased in a fibreglass tube with black covering. Includes two suction cups for easy fitting to any smooth surface, complete with 5mtrs of mini hi-spec coax terminated with a BNC. (With these antennas, take your hobby mobile in the car, at home on the patio or bedroom window. A perfect solution for sometimes awkward antenna installations. Great results - No hassle)

SWP2000

Freq: 25-2000 Mhz Length: 515mm.
Our Price £29.95 PLUS £6.00 P+P.

SWPHF30

Freq: 0.05-30 Mhz Length: 770mm.
Our Price £39.95 PLUS £6.00 P+P.



MAX-5 ACTIVE

Freq: 25-1800 Mhz Length: 1400mm
This portable active antenna incorporates a easy fold away 300 Ohm receiving element joining to a matching coil, wideband pre-amplifier (9v batt not inc) 4mtrs RG58, terminated in a BNC. (Don't lose performance by not choosing an external antenna! Install the in the loft, hang by the window, or even from a tree while out and enjoy upto 14dB Gain with the MAX-5 pre-amplified Active Antenna).



Our Price £49.95 PLUS £6.00 P+P.

SHORT-WAVE WIRE ANTENNAS

MD37 SKYWIRE

Freq: 0-40 Mhz Length: 25mtrs
This complete HF wire antenna system comes with 25 mtrs of enamelled copper antenna wire, dog bone insulator, choke balun, & 10mtr RG58 patch lead terminated with a PL259.
Our Price £39.95 plus £6.00 P+P.



MWA-HFMKII

Freq: 0-40 Mhz Length: 25mtrs
This complete HF wire antenna system comes with 25 mtrs of high grade flexweave antenna wire, dog bone insulator, di-pole centre choke balun, guy rope, & 10mtr RG58 mil spec patch lead terminated with a PL259.
Our Price £49.95 plus £6.00 P+P.



(Both these wire antennas have our own ferrite wound baluns that give an extra 2 "S" points greater signal than some similar baluns. No ATU required as perfect 50 Ohm match is achieved over all 40 mhz).

Long Wire Balun

Balun only with SO239 socket and wing nut for wire connection.

Our Price Just £19.95 plus £2.00 P+P.



BASE VERTICALS

SUPERSCAN STICKS I & II

These two superb external antennas will receive on all frequencies unlike a mono base antennas. Both have capacitor loaded coils, (4 in the SuperScan Stick and 8 in the SuperScan Stick II) inside the vertical element to give maximum sensitivity to even the weakest of signals. Also the SuperScan Stick II has 3dB gain over standard SuperScan Stick !!!

(Perfect for every scanner, from the beginner starting out to the more experienced listener).

SUPERSCAN STICK

Freq: 0-2000 Mhz Length: 1000mm Socket: SO239
Our Price £29.95 PLUS £6.00 P+P.

SUPERSCAN STICK II

Freq: 0-2000 Mhz Length: 1500mm Gain: 3.00dB
Socket: SO239.
Our Price £39.95 PLUS £6.00 P+P.

(Both these antennas come complete with 3 ground plane radials 12" stub mast, v-bolts & clamps). ★ Also Available III Base Scan Sticks (as above) with Tx Capabilities III (for use with transceivers only) ★

MULTISCAN STICK I

Freq RX: 25-2000 Mhz TX 144-146/430-440 Gain 2.0/4.0dB
Length: 1000mm Socket: N-type.
Our Price £39.95

MULTISCAN STICK II

Freq RX: 25-2000 Mhz TX 144-146/430-440 Gain 4.0/6.0dB.
Length: 1500mm Socket: N-type.
Our Price £49.95

IVX2000

Freq RX: 25-2000 Mhz TX 50-52/144-146/430-440
Gain 2.5/5.0/7.0dB
Length: 2500mm Socket: N-Type. **Our Price £89.95**



AR-AIR BAND ANTENNAS

These dedicated civil & military fibreglass antennas are made pre-tuned & dual band trapped for both Air Band frequencies. Easy connection with an SO239 socket (With these antennas you can obtain high dual band gain which is not available on wideband antennas. Just don't miss take off !!!)



AR-30

Freq: Civil & Military Gain: 3.0/6.0 dB
Length: 1000mm.
Our Price £39.95 PLUS £6.00 P+P.

AR-50

Freq: Civil & Military Gain: 4.5/7.0 dB Length: 1500mm.
Our Price £59.95

(Both these antennas come complete with 3 ground plane radials 12" stub mast, v-bolts & clamps).

X1-HF VERTICAL

Freq: 1-50 Mhz Length: 2005mm
Socket: SO239

The X1 incorporates loaded helical traps, similar to that of a horizontal di-pole, encapsulated in a heavy duty high impact plastic tube, with a top tapered stainless steel whip. (The answer for those enthusiasts looking for short-wave reception but haven't the space for a long wire).

Our Price £49.95 PLUS £6.00 P+P.



DISCONE ANTENNAS

STANDARD DISCONE

Freq: 25-1300 Mhz Length: 1000mm
Socket: SO239

This antenna comes with heavy duty centre cone with 16 sturdy aluminium radials, no capacitor coils just pure elements, complete with mounting pole, clamps & v-bolts to mount upto a 2" mast. (The discone has been around for over 25 years and is generally recognised as the original and probably the best all round scanner antenna).

Our Price Just £29.95 plus £6.00 P+P.



SUPER DISCONE

Freq: 25-2000 Mhz Length: 1380mm Gain: 3.0dB Socket: SO239

The super discone has enhanced the original discone design with a vertical wire trapped fibreglass vertical element. Comes complete with mounting pole, clamps & v-bolts to mount upto a 2" mast. (Experience increase range and upto 3dB gain over standard conventional discone !!! Get more with the Super Discone !!!)

Our Price £39.95 plus £6.00 P+P.



HF DISCONE

Freq: 0.05-2000 Mhz Length: 1840mm
Socket: SO239

The HF Discone has the same spec as the Super Discone, but includes a 3ft heavily wire trapped vertical section, encapsulated in fibreglass. Thus enables to obtain a massive receive spectrum within the discone design. Come complete with mounting pole, clamps & v-bolts to mount upto a 2" mast. (Get the best of both worlds, use the HF discone for both scanner and HF receiver)

Our Price £49.95 plus £6.00 P+P.



ROYAL DISCONE 2000 (Stainless Steel)

Freq: RX 25-2000 Mhz TX: 50-52/144-146/430-430/900-986/1240-1325Mhz Length: 1550mm
Socket: N-type

The ultimate discone antenna !!! Highly polished centre cone, with 16 Stainless steel elements, loaded top coil & whip. Complete with mounting pole, clamps & v-bolts to mount upto a 2" mast. (With a WHOPPING 4.5dB Gain over standard discone, this highly sensitive, perfectly matched receiving and transmitting discone is the best there is !!!)

Our Price £49.95 plus £6.00 P+P.

★ Remember Discones can be placed in the loft with surprising results !!! ★



BE DEDICATED

TURNSTILE 137

Freq: 137.5 Length: 1000mm

This weather satellite antenna has two di-poles adjacent to each other mounted on a 1mtr fibreglass section. Both di-poles have been internally connected, for easy use. Complete with mounting section & clamp to mount up to a 2" mast. (Beam skyward and reach those weather images)

Our Price £39.95 plus £6.00 P+P.

★ For dedicated Air Band Antennas see AR-Air Band Antennas ★



BEAM ANTENNAS

MLP32

Freq: 100-1300 TX&RX
Gain: 11-13 dB
Length: 1400mm
Con: N-Type

Our Price £99.95
plus £6.00 P+P

MLP62

Freq: 50-1300 Mhz
Gain: 10-12 dB
Length: 3000mm
Con: N-Type

Our Price £169.95
plus £6.00 P&P.

These two professional quality antennas, come with aluminium booms, aluminium and stainless radial & stainless bolts & fittings. (Don't strain to hear those long distance signals, with near perfect matching of 2:1 SWR across the whole frequency spectrum, make your scanner come to life with the ultimate receiving antenna !!! Sold mainly to our commercial and military customers, you know your getting the best !!!) AR300XL Rotator for above beams **£49.95** plus £6.00 P+P.



HANDHELD ANTENNAS

SUPER GAINER RUBBER DUCKS

Freq: 25-1800 Mhz Length: 400mm

MRW-100 BNC fitting **Our Price £19.95** plus £2.00 P+P

MRW-210 SMA fitting **Our Price £22.95** plus £2.00 P+P

(Going Out ? Don't Miss Out! Replace your existing hand-held antenna with a Super Gainer one).



GETTING RIGGED UP

5' SWAGED POLES

Heavy Duty Ali (1.2mm wall)

SINGLE 1 1/4"£7.00
SET OF FOUR 1 1/4"£24.95
SINGLE 1 1/2"£10.00
SET OF FOUR 1 1/2"£34.95
SINGLE 2"£15.00
SET OF FOUR 2"£49.95

CONNECTORS

PL259/9£0.75 each
PL259/6£0.75 each
PL259/7 for mini 8£1.00 each
BNC (Screw Type)£1.00 each
BNC (Solder Type)£1.00 each
N TYPE for RG58£2.50 each
N TYPE for RG213£2.50 each
SO239 to BNC£1.50 each
PL259 to BNC£2.00 each
N TYPE to SO239£3.00 each

HI-SPEC COAX CABLE

RG58 6mm standard£0.35 per mtr RG213 9mm mil spec£0.85 per mtr
RG58 6mm mil spec£0.60 per mtr RH200 9mm mil spec£1.10 per mtr
RF mini 8 7mm mil spec£0.85 per mtr (Phone for 100 mtr discount price)

SOMETHING EXTRA

UK SCANNING DIRECTORY

8TH EDITION

The most comprehensive frequency list for the UK. It covers thousands of frequencies from 26Mhz to 1.8Ghz.

Our Price £19.50 PLUS £6.00 P+P.



MRP-2000 (pre-amplifier)

Freq: 25-2000 Mhz Pwr: 9-15v input (battery not included)

Gain: 14dB Complete with joining lead with BNC (For use with any passive antennas ie SuperScan Sticks/Discones and with upto 14dB gain, bring those lost signals to life !!!)

Our Price £49.95 plus £6.00 P+P



Open Monday to Friday 9-6pm

Callers welcome

Order 24hrs A Day Secure On-line at www.scannerantennas.com

Postage charges UK mainland only. All major credit cards accepted.

HAYDON

Communications

PRICES SUBJECT TO CHANGE WITHOUT PRIOR NOTICE. PLEASE VERIFY BEFORE ORDERING. E&OE.



Mail order: 01708 862524

All items sold subject to our terms & conditions - available on request

NEXT DAY DELIVERY TO MOST AREAS, £10.00.

gadgets

Q-TEK APOLLO 3000



A brilliant new compact indoor antenna that covers 0.1-3GHz and is just 24" when collapsed. Features "horizontal or vertical" adjustable elements. Ideal for table top mounting or by the window. Patch lead with BNC plug fitted. (Frequency range: 0.1-3GHz).

OUR PRICE **£59.95** P&P £6.00

M-75 SCANNER PRE-AMP



Superb BNC in-line amplifier to boost signals! Fits on top of your scanner and away you go. (Powered by PP-3 battery - not supplied). Freq: 24MHz-2.1GHz. Gain: -10dB to +20dB.

OUR PRICE **£79.95** P&P £5.00



NEW 8th EDITION THE UK SCANNING DIRECTORY

Britain's best selling scanner book now larger than ever. Nearly 700 pages packed full of frequencies from 25MHz-1.8GHz. Order yours today!

OUR PRICE **£19.75** P&P £4.00

STREET PILOT III DELUXE



Now with "voice prompts" as well as direction indication. Incl's: Map CD, 128 meg cart & data card, power lead & mount. The ultimate in talking GPS's.

OUR PRICE **£849.00** P&P £10.00

gizmos

MFJ-125 12/24HR CLOCK



24 hour quartz clock. Full 24 hour dial, separate day/month and 12 hour movement.

OUR PRICE **£37.95** P&P £5.00

MFJ-115



24 hour quartz clock. Major cities shown on rim. World map on face. "Know what time it is around the world"

OUR PRICE **£29.95** P&P £4.50

BA-888



ELECTRONIC BAROMETER/CLOCK. ● Temp/weather/forecast/pressure barometric trend ● 24hr bargraph ● 12/24hr clock & alarm ● Humidity ● Table/wall mount

OUR PRICE **£69.95** P&P £4.00

new SANGEAN QSR-1



Voice activated desktop recorder with quarter speed record. (Sold for more under Roberts name: C-9950).

Superb accessory for the radio enthusiast.

OUR PRICE **£69.95** Del £10.00

accessories

ALKALINE STARTER KIT



Starter kit includes charger & 4 x AA cells.

OUR PRICE **£9.99** + £3.00 P&P.

Please note that only the special cells can be recharged with this charger.

Extra cells available @ 8 x AA pack £10.99 £1 P&P. 4 x AA pack £5.99 £1 P&P. Rechargeable Alkaline. No memory effects. 1.5V cells. 3 x capacity of nicads.

SP-350 STATIC PROTECTOR



Designed to reduce static build-up during electrical storms. (Gas discharge fuse is replaceable).

DC-500MHz (SO-239 sockets). PWR up to 400W.

OUR PRICE **£24.95** P&P £2.50

LOW LOSS PATCH LEADS

Connectors	Length	Price
PL-259 - PL-259	0.6m	£5.99
PL-259 - PL-259	4m	£9.99
BNC - BNC	1m	£6.99
BNC - BNC	1.5m	£8.99



All patch leads use low loss coax

MAST HEAD PULLEY



A simple to fit but very handy mast pulley with rope guides to avoid tangling. (Fits up to 2" mast).

OUR PRICE **£8.99** + P&P £2.50

30m pack nylon guy rope£10.00
32m pack nylon guy rope£35.00

items of interest

SUPER-GAINER RH-9090

SMA 40cm flexible whip that is ideal as replacement.

SMA fitting

OUR PRICE **£26.95** P&P £1.50

SUPER-GAINER RH-9000

BNC 40cm flexible whip

for the ultimate in gain. (Rx:- 25MHz-2GHz).

OUR PRICE **£21.95** P&P £1.50

REGULAR-GAINER RH-770

"BNC" 21cm flexible whip that is ideal as replacement. (Rx:- 25MHz-2GHz) (TX:- 2m/70cms).

OUR PRICE **£16.95** P&P £1.50

RH-790 As above with SMA£21.95

WATSON HUNTER



Frequency counter covers 10MHz-3GHz. Incl's nicad, charger, antenna.

ONLY **£59.95**

P&P £6.00

Optional case £14.95£7.50

DB-2000

A superb "BNC" black telescopic whip. Ideal for scanners. Folds neatly away. (0.1-2GHz).

OUR PRICE **£14.99** P&P £1.50

DA-2000 SMAWith SMA adapter £19.99

QS-300



A fully adjustable desk top stand for use with all hand-helds. Fitted coaxial lead with BNC + SO239 connections.

OUR PRICE **£10.00** P&P £3.00

QS-200



Superb quick fit dash mount for hand-helds. £9.99.

OUR PRICE **£4.99** each P&P £2.00

3 for **£10.00** P&P £3.50

all important

EP-300



A high quality superb 'police style' earpiece that hangs over the ear. (3.5mm straight plug fitted).

OUR PRICE **£9.95** P&P £2.00

Accessory Items

New RF Grounding wire (10m pack)	£12.50
ER-1 4 foot earth rod	£13.99
CX-201 2-way (SO239) switch	£21.95
AA 700mAh nicads	£1.99
50m roll flexweave (heavy duty antenna wire)	£30.00
20m roll flexweave (heavy duty antenna wire)	£15.95
50m roll PVC coated (stranded wire)	£10.95
30m roll nylon guy rope (4.4mm)	£10.00
Nylon "Dog Bone" insulators	£1.00
Roll self-amalgamating tape (25mm x 10m)	£6.50
Ferrite rings	£2.00

TRX-200



New superb compact handie from Trident. 0.1-2.15GHz. AM/FM/WFM/USB/LSB/CW. Band scope, PC compatible (via interface). Includes batteries/charger.

OUR PRICE **£199.99**

UBC-278CLT



New base scanner with built-in clock radio. 25-956MHz (with gaps) 88-108MHz (WFM) 500kHz-1720kHz (AM). Fully programmable. Ideal for the bedroom.

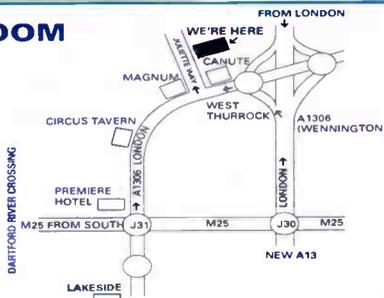
OUR PRICE **£139.99**

THURROCK, ESSEX SHOWROOM & MAIL ORDER:

Unit 1, Thurrock Commercial Centre,
Purfleet Industrial Park, Aveley,
South Ockendon, Essex RM15 4YA
TEL: 01708 862524
FAX: 01708 868441

5 mins from Lakeside

Open Mon - Fri 8.30am - 4.00pm.
Sat 8.30am - 12.00pm. E&OE



W. MIDLANDS SHOWROOM

Unit 1, Canal View Ind. Est.,

Brettel Lane,

Brierley Hill

W. Mids.

DY5 3LQ

Open Mon-Fri 9.30-5pm.

Sat 9.30-1pm

Tel: 01384 481681

NO MAIL ORDER TO MIDLANDS

BRANCH

NEW Q-TEK INTREPID 2000

TOP PERFORMANCE FOR SCANNERS

An amazing vertical (glass fibre) colinear antenna. Quality construction with incredible performance. For the serious scanner enthusiast.

Freq range: 0.5-2GHz. PL-259 fitting (not supplied). Length 3m. Mast clamps supplied. (Gain up to 9dB is easily obtained). SO-239 fitting. Requires PL-259 plug (not supplied).

ONLY **£89.95** P&P £11.00

Q-TEK D.C. 2000 DISCONE

OUR BEST SELLER

A high performance wideband discone offering superb performance from 0.2-2000MHz. Transmit range: 6m, 2m, 70cm, 32cm & 23cm (power handling 200W). Fitted with low loss 'N' type socket. Supplied with mounting brackets. (N-plug & coax not supplied).

OUR PRICE **£54.95** P&P £11.00

Comments from John Griffiths
Putting the DC-2000 up gave me a tremendous boost to all signals with the ancient AR-2000 coming alive! Signals were well received and I found that I wandered out of airband.

Q-TEK SS-2000

Compact - indoor/outdoor scanning antenna. (50MHz-2.6GHz). Superb glass fibre construction. Ideal in areas affected by "nosey neighbour syndrome". This antenna can be put in the loft or outside on the building. Initial tests show this to far outperform a discone at "VHF". SO-239 socket (PL-259 plug needed) 1.3m long (mast clamps supplied).

50MHz-2.6GHz and under 1.3m long **£49.95** DEL £11.00

Q-TEK DSL-2500



Superb directional antenna for the real scanner enthusiast. This antenna benefits from an extraordinary tight 'lobe' resulting in an incredibly high gain figure. Freq range: 60-2500MHz. T/radius: 1.4 mtrs.

Fitting: N-type. Gain: 12-16dB. 16 elements.

£129.99 DEL £10.00

ROYAL DISCONE

0.2-2000MHz

(Stainless steel)
Frequency range: receives 0.2-2000MHz, transmit 6/2/70/23cm, connector N type. High sensitivity with an amazing range of transmitting frequencies. Comes complete with mounting hardware & brackets. (N-plug & coax not supplied).

OUR PRICE **£44.95** P&P £11.00

AIR-44

(Airband base)

Prof quality base antenna for AIRBAND. (Civil & military). With SO-239 fitting (1.7m long). Gain 4.5/7dB.

PROFESSIONAL QUALITY **£79.95** P&P £11.00

AIR-44N As above "N-type" fitting£84.95

AIR-33 (As above) 1m long. Gain 3/6dB.
£49.95 P&P £8.50

DX-1 PRO (R.F. SYSTEMS)



This is a professional wide band receiving antenna with a very high intercept point that ensures a low noise level allowing even the weakest signals to be heard. Constructed of high-impact plastic and aluminium alloy - the amplifier is protected inside a waterproof stainless steel vessel. The unit is supplied complete with mounting hardware and an indoor controller with PSU (coax not supplied). Freq. 20kHz-54MHz. Gain: +6dB (ref dipole). Intercept points: ≥+75dBm (2nd ord), ≥+50dBm (3rd ord). (Static protection included). For the true professional.

£329.95 DEL £15.00

DX-10 (R.F. SYSTEMS)



A superb quality active antenna with a very high intercept point ideal for weak signal reception without increases in radiated noise. A truly amazing antenna! Freq: 100kHz-30MHz. Bomb-proof over loading figures, 90cm long, mains PSU + controller supplied (coax optional). Atmospheric-noise compensated sensitivity.

£169.95 DEL £11.00

Q-TEK STEALTH SR-60



Superb, ready assembled wire antenna system. Not only is this end fed for ease of installation, it is also constructed from extremely high quality components. New 'plyweave' PVC coated wire makes this virtually invisible. It comes ready assembled including a 'noise filter system'. A 10m down lead with PL-259 is also fitted (both antenna & down lead are adjustable in length). Overall length 20mtrs (adjustable down to 6m).

PROFESSIONAL QUALITY **£69.95** DEL £10.00

DPX-30 ANTENNA DUPLEXER/COMBINER

Allows two antennas to be connected to one receiver without interaction.

Can be used in reverse **£54.95** P&P £3.50

Ant A (0-30MHz)
Ant B (30-2000MHz)

To receiver low insertion loss

SP-1 TWO WAY COMBINER (PROFESSIONAL)



Very high quality combiner allows two short wave receivers to be connected to one antenna without interaction. 50kHz-30MHz (SO-239 fitting).

Can be used in reverse **£59.95** P&P £3.50

SP-3 (PROFESSIONAL)



Two way combiner. one antenna feeds two scanners (without mismatch). 10-2500MHz. High isolation (BNC sockets).

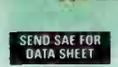
Can be used in reverse **£59.95** P&P £3.50

E.M.F. ANTENNA

A low cost, superb passive broadband (500kHz-30MHz) antenna useable down to 150kHz. Ideal for indoor or outdoor use and at only 4mtrs long you most certainly will find the space! Using magnetic transfer technology, interference & noise is minimised. Ready assembled + PL-259/coax.

ONLY **£62.95** P&P £4.00

MLB (R.F. SYSTEMS)



The MLB contains a special impedance matching transformer which converts any piece of wire between 6 and 20 metres long into a wide band receiving antenna. 100kHz-40MHz. Low noise - probably the best there is!

£42.95 POST £3.00

GLOBAL AT-2000



Deluxe SW ATU 0-30MHz. SO239 fittings.

ONLY **£89.00**

P&P £6.00
(Probably the best ATU around)
PL-259 to PL-259 patch lead (0.6m).....£5.99
PL-259 to PL-259 patch lead (4m long).....£9.99
BNC adaptors.....£3.95
BNC to PL-259 patch lead£9.99

Q-TEK PL-30



A superb hinged (rotary) telescopic antenna (0.2-2GHz). PL-259 fitting.

NOW **£24.95**

Hinged telescope

BNC adaptor£3.49
N-type adaptor.....£3.95

Q-TEK SKY-WIRE MkII

Ideal for any receiver. Receives all short wave bands (all mode). No ATU required. Built-in balun, PL-259 connection (0-52MHz). Ideal for flats/caravans/holiday homes/hotels.

ONLY **£32.95** P&P £3.00



WA-50 'AMPLIFIER'



Broadband amplifier for short wave, medium & long wave. 50kHz-50MHz. 10dB gain. Superb low noise amplifier. Ideal for short wave improvement. Requires 12V (150mA).

OUR PRICE **£99.95** P&P £7.50

Optional AC adapter.....£16.99

HAYDON

Communications

PRICES SUBJECT TO CHANGE WITHOUT PRIOR NOTICE. PLEASE VERIFY BEFORE ORDERING. E&OE.



Mail order: 01708 862524

All items sold subject to our terms & conditions - available on request

NEXT DAY DELIVERY TO MOST AREAS, £10.00.

desktop receivers

REALISTIC DX-394



★ Superb performance SW receiver ★ 0.2-30MHz (all mode)
★ Selectable tuning steps (down to 100Hz)

★ 240 or 12V ★ Digital S-meter ★ Attenuator ★ Key pad entry ★ 160 memories ★ Noise blanker.

OUR PRICE **£199.95** P&P £10

OUR BEST SELLING LOW PRICED RECEIVER

HD-1010 optional headphones£9.99

ICOM IC-R75



The short wave receiver for the true enthusiast. Includes free PSU.
● 0.03-60MHz (all mode)
● Synchronous AM detection
● PC control capability.

OUR BEST SELLING HF RECEIVER

OUR PRICE **£589.00**

R-75 PLUS "3"

R-75 + SP-21 + DSP + voice board . . . **£749.00**

JRC NRD-545 DSP



The ultimate short wave receiver with DSP - for the real perfectionist.

OUR PRICE **£1299.00** Del £10.00

NVA-319 Extension speaker£189.00
CHE-199 VHF/UHF converter.....£269.00

desktop scanners

YAESU VR-5000



0.1-2.6GHz all mode receiver with DSP (optional) plus bandscope/world clock and too much more to print.

OUR PRICE **£549.99** Del £10

Optional DSP£79.95
VR-5000 + 3 VR-5000+DSP+voice synth+ dig/rec...£715.00

AOR AR8600MkII



Extremely versatile all mode receiver (100kHz-3GHz). "Superb HF performance".

OUR PRICE **£599.00** Del £10

Optional power supply/8600£19.95
AR5000£1275

FAIRHAVEN RD-500VX+



Superb wideband receiver (all mode) with over 50,000 memories capable of holding text. 20kHz-1750MHz. Incl's remote control/PSU/PC lead and software. In-house tests makes this a top performer.

OUR PRICE **£745.00** Del £10

ICOM IC-R8500



Next generation wideband receiver. 0.1-2GHz. (All mode). Incl's PSU.

OUR PRICE **£1149.95** Del £10

SP-21 extension speaker£74.99
Voice synthesiser board£34.95

BEARCT UBC-780



New comprehensive scanner (25-1300MHz) Alpha Tag, PC cloning control. Smart scanner + trunk track facility.

Incl's PSU. OUR PRICE **£299.99** Del £10

Software 780XLT£34.99

COMMTEL 225



500 channel. 25-1300MHz. AM/FM/WFM.

OUR PRICE **£219.99** Del £10

hand-held scanners and more

ALINCO DJ-X3



Micro-handy scanner. 100kHz-1300MHz. 700 memories/stereo FM (earphones)/attenuator/bug detector. AM/FM/WFM/Selectable tuning steps (incl's 8.33kHz).

OUR PRICE **£99.95**

Soft case£15.99
Cigar power lead£19.99
Optional battery pack and drop in charger **£39.99**

ALINCO DJ-X10



Full-featured handy. 100kHz-2GHz all mode. Includes SSB/CW band scope, alphanumeric display plus loads more. (Includes battery/drop-in charger).

OUR PRICE **£269.95**

Optional case£15.00
Optional battery box£14.99
PC interface£42.95
Cigar power lead£19.99

ALINCO DJ-X2000



The intelligent scanner! 100kHz-2.15GHz. All mode incl's SSB, "Flash Tune" reads frequency of nearby of nearby signal & tunes the handle for you. Incl's battery, charger & loads more.

Includes 8.33kHz spacing **£449.95**

Optional case£15.00
Optional battery box£14.99
Cigar lead£19.99
PC interface£42.95

NEW ICOM IC-R5



New pocket hand-held scanner (0.1-1310MHz) AM/FM/WFM. Superb high-speed scanner featuring alpha tag and much more.

NEW LOW PRICE **£149.99**

P&P £10.00

Plus free EP-300 earpiece worth £9.95

BATTERIES AND CHARGER INCLUDED

ICOM IC-R3



'A first!' TV/video picture & sound! Certainly a gadget for the future - see things you didn't know existed! A wide-band scanner covering 0.5-2.3GHz (AM/FM/WFM) with "TFT" colour display.

FOR THE TRUE ENTHUSIAST

OUR PRICE **£329.00**

Soft case for IC-R3£17.99

ICOM PCR-1000



100kHz-1300MHz. AM, Fm, WFM, SSB, CW. Superb short wave performance. Real-time bandscope now "XP"

compatible. (Requires suitable PC).

OUR PRICE **£329.99**

Optional DSP unit£85.00

YUPITERU MVT-7100



Wideband hand-held scanner covers 500kHz-1650MHz. (All mode). Includes nicad/car charger/charger/antenna. Extremely user-friendly hand-held receiver with outstanding performance unmatched by its rivals.

OUR PRICE **£199.95**

Soft case for 7100EU/9000 - specify...£19.99
MVT-9000 MkIIOur price £325.00
MVT-7300EUOur price £219.00

MVT-7300EU



● Compact wideband hand-held receiver
● Covers 521kHz-1300MHz (all mode)
● 8.33kHz steps
● Includes nicads and car charger

£219.99

Optional mains adapter£14.99

AOR AR8200MkIII



Never before has one hand portable offered so much. ★ Covers 100kHz-3GHz (all mode) ★ Computer control capability ★ 8-33kHz steps for the new airband spacing ★ Reaction tune capability ★ Includes nicads/charger/antenna and car lead.

OUR PRICE **£385.00**

Optional case£19.99
CC-8200 PC interface£79.99



RADIO RECEIVERS FROM OUT OF THIS 'WORLD'



**SANGEAN
ATS-909**

A superb performance portable/base synthesized world receiver with true SSB and 40Hz tuning for ultra clean reception. The same radio is sold under the Roberts name at a far higher price. Other features include RDS facility, 306 memories and more. (88-108MHz / 0.15-30MHz).

£139.95 P&P £10

Optional PSU.....£16.95



**SANGEAN
ATS-505**

NEW! Wins Dutch "Automobile" award. Excellent small short wave receiver (digital). 0.15-30MHz (AM, USB, LSB, CW). 88-108MHz FM stereo. Includes carry case.

£79.95 P&P £10.00

Optional PSU.....£16.95



**SONY
SW-100E**

★ Miniature portable all mode SW receiver
★ Station presets for 50 frequencies
★ Single side band system ★ Synchronous detector ★ Tuning in 100Hz + 1kHz steps
★ Includes compact antenna/stereo earphones/carrying case.
(88-108MHz / 0.15-30MHz).

£159.95 Del £10

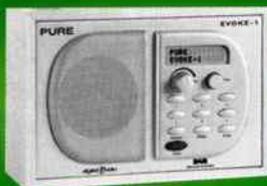
Optional PSU.....£26.99
AN-100 active antenna.....£64.99



**SONY
SW-30**

The ideal holiday partner!
★ Fully digital world receiver
★ FM/MW/SW ★ Covers all short wave broadcast/MW plus FM stereo (on h/phones) ★ Programmable memories
★ Sleep timer + alarm function ★ 1kHz tuning for short wave. RRP £79.95.

OUR PRICE **£39.95** P&P £8.50



EVOKE-1

Using the latest third-generation D.A.B. technology, Evoke-1 delivers outstanding digital sound quality at an affordable price. A stylish, mains powered receiver without the normal hiss, crackle and fade of old AM/FM broadcast. Transform your listening.

OUR PRICE **£99.95** P&P £10.00

Car DC lead£14.99 Optional spkr ..£29.99



EVOKE-2

PORTABLE DAB DIGITAL AND FM RADIO
Enjoy DAB digital indoors and out with the 'battery/mains powered' Evoke-2. High quality, interference-free DAB digital audio (stereo) without hiss, crackle or fade. (Subject to suitable area coverage).

OUR PRICE **£159.99**

**H
A
Y
D
O
N

C
O
M
M
U
N
I
C
A
T
I
O
N
S**



0600-2045) 44334 at 1630 in Rugby; Africa No.1, Gabon **15.475** (Fr to W.Africa 1600-2100) 34444 at 1634 in Storrington; R.Romania Int, Bucharest **15.380** (Eng to Eur 1700-1800) 44444 at 1700 in Morden; BBC via Meyerton, S.Africa 15.420 (Eng to E.Africa 1700-1900) 43433 at 1800 in Liverpool; BBC via Thailand **15.310** (Eng to M.East & Gulf 1400-2000) 35333 at 1807 in E.Bristol; VOIRI Tehran, Iran **15.084** (Farsi; also Bos, Russ, It, Ger, Fr to M.East, Eur) 44454 at 1820 in Liverpool; HCJB Quito, Ecuador **15.185** (Eng to Eur 2000-2200) 33233 at 2000 in Dudley; RCI via Sackville **15.325** (Fr, Eng to Eur, M.East, Africa 1900-2200) 44444 at 2000 by **Clare Pinder** in Appleby; Voice of Indonesia, Jakarta 15.150 (Eng to Eur, Africa 2000-2100) 33222 at 2010 in Amsterdam; R.Ext.Espana via Noblejas, Spain **15.290** (Eng to Eur 2000-2100) 55454 at 2020 by Ian Pakeman in Folkestone; BBC via Ascension Is 15.400 (Eng to W.Africa 1500-2300) 55545 at 2145 in Dregghorn; RAE Buenos Aires, Argentina **15.345** (Eng, It, Fr, Ger, Sp to Eur, N.Africa 1800-0000) 44434 at 2159 in Morfa Nefyn.

Good reception from some areas was evident in the **13MHz (22m)** band. Mentioned in the reports were R.Bulgaria, Plovdiv **13.600** (Eng to Eur 0630-0700), rated 44444 at 0631 in Ebbw Vale; R.Ext.Espana (REE) **13.720** (Sp to Eur 0700-1300) 44444 at 0951 in Oxted; Croatian R, Deanovec **13.830** (Cr to Eur) 44333 at 1009 in Oxted; R.Prague, Cech Rep **13.580** (Eng, Czech to N.Eur 1300-1357) 44444 at 1317 in Amsterdam & 43333 at 1345 in Truro; R.Austria Int via Moosbrunn **13.730** (Eng to Eur, M.East, Africa 1330-1400) 55544 at 1350 in Herstmonceux; BFBS via ? **13.860** (Eng - relay of BBC R-2) 45554 at 1420 in Larnaca, Cyprus; UAE R.Dubai **13.675** (Ar, Eng to Eur 0600-2045) 44423 at 1815 in Seaton; BFBS via Rampisham? **13.760** (Eng - relay of BBC R-5) 55445 at 1820 in Stalbridge; R.Nederlands via Flevo **13.700** (Eng to Africa 1830-2025) 42444 at 1830 in Liverpool; All India R. (AIR) via Bangalore

13.620 (Ar to M.East 1730-1945) 44454 at 1835 in Liverpool; China R.Int via Kunming? **13.790** (Eng to M.East, Africa 1900-2000) 33333 at 1910 in Rugby; Voice of Vietnam, Hanoi **13.740** (Fr, Eng to Eur 1800-2000) 33333 at 1925 in Folkestone; Swiss R.Int (SRI) via Julich, Germany **13.645** (It, Ar, Eng, Ger, Fr to N.East, Africa 1830-2130) 44444 at 1930 in Morden; R.Vlaanderen Int, Belgium **13.690** (Eng to Eur 1930-2000) 44444 at 1930 in Appleby; R.Damascus, Syria **13.610** (Eng to Eur 2005-2100) 34433 at 2117 in Morfa Nefyn; WVCR Nashville, USA **13.845** (Eng to Africa 1300-0100) 34433 at 2153 in Morfa Nefyn; R.Portugal Int, Lisbon **13.770** (Port to C.America?) 44333 at 2210 in Dregghorn; R.Australia via Darwin **13.620** (Eng to SE.Asia 2200-0000) 34233 at 2220 in Newry; RCI via Sackville **13.670** (Eng to N/C.America) 33433 at 2255 in E.Bristol.

Listeners in the UK who would like to receive direct transmissions from R.New Zealand may find the **11MHz (25m)** band a good choice. Their early morning broadcast to Pacific areas on **11.825** (Eng 0506-0705) was rated 45243 at 0643 in Newry & 43333 at 0700 in Herstmonceux. R.Australia may also be heard in this band. Their transmission to E/SE.Asia from Shepparton on **11.880** (Eng 0930-1330) was rated 22222 at 0935 in Truro. At 1330 they move to **11.660** (Eng to E/SE.Asia 1330-1700), rated 22222 at 1400 in Truro & 33422 at 1514 in E.Bristol.

Also mentioned in the reports were World Harvest R. (WHRI) via Maine, USA **11.730** (Eng to Africa 0500-1000), peaking 54445 at 0815 in Stalbridge; HCJB Quito via Kununurra, Australia **11.770** Eng to S.Pacific 0700-1200) was 34333 at 0930 in Morpeth; R.Japan via Singapore **11.920** (Jap to Australasia 0700-1000) 24322 at 0934 in Oxted; R.Japan via Skelton, UK **11.710** (Jap to Eur 0800-1000) 44344 at 0935 in Oxted; R.Nederlands via Petropavlovsk **12.065** (Eng to Asia, Far East, Pacific 0930-1125) 24332 at 0945 in

Listeners:-

- (A) Jim Brown, Dregghorn.
(B) Simon Hockenhill, E.Bristol.
(C) Sheila Hughes, Morden.
(D) Eddie McKeown, Newry.
(E) Clare Pinder, Appleby.
(F) Michael Wasley, while at Morfa Nefyn, Gwynedd.
(G) Louisa & Michael Wasley, while at Braich-y-Pwll, Gwynedd.

Medium Wave Chart

kHz	Station	Country	kW	Listener	kHz	Station	Country	kW	Listener
531	Ain Beida	Algeria	600/300	B*	1143	COPE via ?	Spain	2	D*
531	Akraberg	Faeroe Is	100	G	1179	SER via ?	Spain	?	B
531	RNE5 via ?	Spain	?	B*	1179	Salvesborg	Sweden	600	B,D*,F
531	Beromunster	Switzerland	500	D*	1188	Kuurne	Belgium	5	D*
540	Wavre-Overijse(VRT)	Belgium	150/50	B,D*,F*	1188	Marcali(VOA/RFE)	Hungary	500	D*,F*
558	Espoo	Finland	50	D*	1197	Munich(VOA)	Germany	300	B,D*
558	RNE5 via ?	Spain	?	B*,F*	1197	Virgin via ?	UK	?	D*,F*
567	Tullamore(RTE1)	Eire	500	B,C*,D,F,G	1206	Bordeaux	France	100	B,D*,F
576	Muhlacker(SDR)	Germany	500	D*,F*	1215	Virgin via ?	UK	?	D*,F
576	Barcelona(RNE5)	Spain	50	B*	1224	Lelystad(Othe beat)	Holland	50	D*
585	Paris(FIP)	France	8	B,C,D*	1224	Manningtree(V)	UK	0.5	D*
585	Madrid(RNE1)	Spain	200	B,D*,F*	1233	Nitra	Slovakia	40	D*
585	Dumfriess(BBC Scot)	UK	2	D*,F,G	1233	Virgin via ?	UK	?	D*,F*
594	Frankfurt(HR)	Germany	1000/400	D*	1242	Marseille	France	150	B,D*
594	Oujda-1	Morocco	100	B*	1242	Virgin via ?	UK	?	D*,F
603	Lyon	France	300	B*,F*	1251	Huisberg	Netherlands	10	D*
603	Sevilla(RNE5)	Spain	50	D*	1260	SER via ?	Spain	?	D*
603	Newcastle(BBC)	UK	2	D*	1269	Neumunster(DLF)	Germany	600	B,D*
612	Athlone(RTE2)	Eire	100	B,D,F,G	1278	Dublin(Cork/RTE2)	Eire	10	B,D*,F,G
621	Wavre (RTBF)	Belgium	80	A*,B,D*,F*	1287	Lerida(SER)	Spain	10	D*
621	Barcelona(OCR)	Spain	50	D*	1296	Orfordness(BBC)	UK	500	D*
630	Vigra	Norway	100	D*,F*	1305	RNE5 via ?	Spain	?	D*
630	Tunis-Djajda	Tunisia	600	B*	1314	Kvitsoy	Norway	1200	B,D*,F
639	Praha(Liblice)	Czech	1500	D*,F*,G	1323	W'brunn (VOR)	Germany	800/150	B*,D*
639	RNE1 via ?	Spain	?	B*,D*,F*	1332	Rome	Italy	300	D*
648	Orfordness(BBC)	UK	500	B,D*	1341	Lisnagarvey(BBC)	N.Ireland	100	B,C*,F,G
657	Madrid(RNE5)	Spain	20	B*,D*,F*	1359	Madrid(RNE-FS)	Spain	600	B*,D*,F*
657	Wrexham(BBC Wales)	UK	2	B,D*,F,G	1368	Foxdale(Manx R)	Is of Man	20	B*,D*,F,G
666	Messkirch(Rohrdt(SWF))	Germany	150	B*,F*	1377	Lille	France	300	B,C,D*,F
675	R10FM	Holland	120	B*,F*,G	1386	Bolshakov	Russia	1200	B,C,D*,F
675	Rist	Norway	20	A*,F*	1395	Flake	Albania	500	D*
684	Sevilla(RNE1)	Spain	500	B*,F*	1395	Loipic (Biz Nieuws)	Netherlands	120/40	B*
684	Availa(Beograd-1)	Yugoslavia	2000	B*,D*	1404	Brest	France	20	B,D*,F*
693	Tortosa(RNE1)	Spain	2	D*	1413	RNE5 via ?	Spain	?	D*
693	Droitwich(BBC)	UK	150	F,G	1422	Alger	Algeria	50/25	B*
702	TWR via Monte Carlo	Monaco	300	D*	1422	Husweiler(DLF)	Germany	1200/600	B*,D*,F*
702	Presov	Slovakia	200	B*	1440	Marnach(RTL)	Luxembourg	1200	D*,E*,F
711	Rennes (R Bleu)	France	300	B,C,D*,F,G	1440	Dammam	Saudi Arabia	1600	D*
711	Laayoune	Morocco	800	D*	1449	Squinzano (RAI)	Italy	50	D*
720	Lisnagarvey(BBC4)	N.Ireland	10	F,G	1449	Rednoss(BBC)	UK	2	B*,D*,F
720	Crystal Palace BBC4	UK	0.75	B	1467	Monte Carlo(TWR)	Monaco	1000/400	D*
729	Cork(RTE1)	Eire	10	D*,F,G	1476	Wien-Bisamberg	Austria	600	B*,D*
729	RNE1 via ?	Spain	?	B*,D*,F*	1485	SER via ?	Spain	?	B*
738	Paris	France	4	C	1494	Clermont-Ferrand	France	20	B,C,D*
738	Barcelona(RNE1)	Spain	500	B*,D*,F*	1494	Krasnyy Bor	Russia	1200	B,D*
747	Vielva(NOS-1)	Holland	400	A*,B,D*,F,G	1503	Bashehr	Iran	50	D*
756	Braunschweig(DLF)	Germany	800/200	B*,D*,F	1512	Wolvertem	Belgium	300	B*,C,D*,F
756	Bilbao(EI)	Spain	5	B*	1521	Kocice(Citazice)	Slovakia	600	D*
756	Redruth(BBC)	UK	2	B	1530	Vatican R	Italy	150/450	C*,D*
765	Sottens	Switzerland	500	B,D*,F	1539	Mainflingen(ERF)	Germany	3500/700	B*,D*,F*
774	Enniskillen(BBC)	N.Ireland	1	D*,G	1557	Nice	France	300	B*,D*,F*
774	RNE1 via ?	Spain	?	B*,D*,F*	1575	Genova	Italy	50	B,D*
783	Leipzig(MDR)	Germany	100	B*,D*	1575	SER via ?	Spain	5	D*
783	Barcelona (COPE)	Spain	50	F*	1602	SER via ?	Spain	?	D*
792	Limoges	France	300	B,D*,F	1602	Vitoria(EI)	Spain	10	D*
792	Lingen(NDR)	Germany	5	D*					
801	Munchen-Ismaning	Germany	300	B*,D*					
810	Madrid(SER)	Spain	20	B*					
810	Westerglen(BBC Scot)	UK	100	B,D,F,G					
819	Batra	Egypt	450	D*					
819	S. Sebastian(EI)	Spain	5	B,D*					
828	Heinencord(CI Rock)	Holland	20	B,D*					
837	Nancy	France	200	D*					
837	COPE via ?	Spain	?	D*					
846	Rome	Italy	1200	D*					
855	RNE1 via ?	Spain	?	D*,F					
864	Paris	France	300	B,C,D*,F*					
873	Frankfurt(AFN)	Germany	150	B,D*					
873	Zaragoza(SER)	Spain	20	B*,F*					
873	Enniskillen(R.U.I)	UK	1	D					
882	COPE via ?	Spain	?	D*					
882	Washford(BBC Wales)	UK	100	D,F,G					
891	Algiers	Algeria	600/300	B*					
891	Huisberg	Netherlands	20	B,D*					
900	Milan	Italy	600	B,D*					
909	Lisnagarvey(BBC5)	N.Ireland	10	F,G					
918	Domzale	Slovenia	600/100	D*					
918	Madrid(R.Int)	Spain	20	B,D*					
927	Wolvertem	Belgium	300	B,D*,F					
936	Bremen	Germany	100	D*					
945	Toulouse	France	300	B*,D*,F					
954	Brno (CRO2)	Czech Rep.	200	D*					
954	Madrid(CI)	Spain	20	B*,D*					
963	Pori	Finland	600	B,D*					
972	Hamburg(NDR)	Germany	100	B,D*,F					
981	Alger	Algeria	600/300	B*					
990	Berlin	Germany	100	B					
990	R.Bilbao(SER)	Spain	10	D*					
990	Iwynn(BBC)	UK	1	F,G					
999	Schwerin (RIAS)	Germany	20	D*					
999	Madrid(COPE)	Spain	50	B*,F					
1008	Flevo(NOS-5)	Holland	400	B,D*,F					
1017	Rheinsender(SWF)	Germany	600	B,D*,F					
1017	RNE5 via ?	Spain	?	D*					
1035	Lisbon	Portugal	120	B,D*					
1044	Dresden(MDR)	Germany	20	B,D*					
1044	Sebaa-Ajou	Morocco	300	B*					
1044	SER via ?	Spain	?	F					
1044	S. Sebastian(SER)	Spain	10	B*					
1053	Talk Sport via ?	UK	?	D*,F,G					
1062	Kalundborg	Denmark	250	B,D*,F					
1062	R.Uho via ?	Italy	?	D*					
1071	Bilbao(EI)	Spain	5	B,D*					
1071	Talk Sport via ?	UK	?	D*					
1080	SER via ?	Spain	?	D*					
1089	Talk Sport via ?	UK	?	D*,F,G					
1098	Nitra(Jarok)	Slovakia	1500	B*,D*,F*					
1107	AFN via ?	Germany	10	D*					
1107	RNE5 via ?	Spain	?	F					
1107	Talk Sport via ?	UK	?	B,D,G					
1116	Pontevadra(SER)	Spain	5	D*					
1125	La Louviere	Belgium	20	D*					
1125	Deanovec	Croatia	100	B*					
1125	Llandindod Wells	UK	1	B,G					
1134	Zadar(Croatian R)	Croatia	600/1200	B*,D*					
1134	COPE via ?	Spain	2	D*					
1143	AFN via ?	Germany	1	D*					

Note: Entries marked * were logged during darkness. All other entries were logged during daylight or at dawn/dusk.

Oxted; R.Prague, Czech.Rep **11.615** (Eng to NW.Eur 1030-1057) 45454 at 1052 in Newry.

Much later, R.Romania Int, Bucharest **11.940** (Eng to Eur 1700-1800) was 41333 at 1725 in Liverpool; R.Japan via Yamata, Japan **11.970** (Eng to Eur 1700-1800) 44233 at 1725 in Liverpool; BBC via Woofferton, UK **12.095** (Eng to Eur 0700?-1800?) 23222 at 1730 in Seaton; R.Kuwait via Kabd **11.990** (Eng to Eur, N.America 1800-2100) SIO 444 at 1834 in N.Bristol; R.Netherlands via Flevo **11.655** (Eng to Africa 1730-2025) 32333 at 1845 in Rugby; Israel R, Jerusalem **11.605** (Eng to Eur, N.America 1900-1930) 55555 at 1900 in Appleby; R.Budapest, Hungary **11.720** (Eng to Eur 1900-1928) 54444 at 1900 in Morden; DW via Trincomilee, Sri Lanka **11.965** (Eng to E/S.Africa 1900-2000) 33333 at 1900 in Dudley; Voice of the Mediterranean via Russia **12.060** (Eng to Eur, N.Africa 1900-2000) 44444 at 1939 in Ebbw Vale; Voice of Russia **12.070** (Eng to Eur 2000-2100) 55444 at 2010 in E.Bristol; VOA via Sao Tome **12.080** (Fr to C.Africa 1830-2030) 34443 at 2010 in Storrington; R.Prague, Czech Rep. **11.600** (Sp to SW.Eur 2030-2057) 55555 at 2030 in Morfa Nefyn; China R.Int via ? **11.790** (Eng to Eur 2000-2200) 43333 at 2030 in Folkestone; R.Damascus, Syria **12.085** (Eng to Eur 2005-2105) 33233 at 2040 in Amsterdam.

R.New Zealand may also reach the UK in the **9MHz (31m)** band. Their broadcast to Pacific areas on **9.885** (Eng 0706-1305) was rated 24332 at 0943 in Oxted. R.Australia has been heard here on two frequencies from Shepparton: **9.475** (Eng to Asia 1330-1858), rated 43334 at 1805 in Stalbridge; **9.500** (Eng to Asia 1900-2130), noted as 32323 at 2115 in Morfa Nefyn.

Other occupants of this band include R.Vilnius, Lithuania **9.710** (Lith, Eng to W.Eur 0800-0900), rated 43434 at 0803 in Ebbw Vale; R.Netherlands via Bonaire, Ned.Antilles **9.785** (Eng to Asia, Far East, Pacific 0930-1125) 32222 at 0930 in Truro; R.Netherlands via Wertachtal, Germany **9.860** (Eng to Eur 1030-1225) 45544 at 1118 in E.Bristol; R.Polonia, Warsaw **9.525** (Eng to W.Eur 1200-1255) 54433 at 1225 in Herstmonceux; DW via Nauen, Germany **9.545** (Ger to Eur, S.America 0600?-2000?) 55455 at 1419 in Rugby.

Later, the BBC via Cyprus **9.410** (Eng to W.Eur 1600-2200) was 44334 at 1700 in Dudley; Voice of Vietnam, Hanoi **9.725** (Eng to Eur 1700-1730) 54434 at 1700 in Seaton; R.Kuwait, Kabd **9.880** (Ar to M.East 1315-2130) 44444 at 1815 in Liverpool; VOA via Morocco **9.760** (Eng to N.Africa, M.East 1700-2100) 32333 at 1820 in Liverpool; AIR via Aligarh **9.445** (Eng to W.Africa? 1745-1945) 45454 at 1835 in Larnaca, Cyprus; Voice of Turkey, Ankara **9.785** (Eng to Eur 1830-1930) 44444 at 1840 in Morden; China R. Int, Beijing **9.440** (Eng to Africa 1900-2100) 43333 at 1915 in Amsterdam; Voice of Armenia **9.960** (Eng to Eur 1940-2000) 45444 at 1940 in Folkestone; Africa No.1 via Moyabi, Gabon **9.580** (Fr to C.Africa 0500?-2300?) 34343 at 2001 in Storrington; Voice of Russia **9.775** (Eng to Eur 1700-2100) SIO 444 at 2024 in N.Bristol; R.Ext. Espana via Noblejas, Spain **9.570** (Eng to N & W.Africa 2000-2059 Mon-Fri; 2100-2159 Sat/Sun) 43333 at 2042 in Morfa Nefyn; R.Cairo, Egypt **9.990** (Eng to Eur 2115-2245) 44344 at 2130 in Appleby; Swiss R. Int (SRI) via Sottens **9.885** (Fr, Ger, It, Eng to S.America 2200-0000) 34232 at 2330 in Newry.

Noted in the **7MHz (41m)** band were R.Japan via Woofferton, UK **7.230** (Eng 0500-0700), rated 44433 at 0645 in Herstmonceux; Family R. (WYFR) via Okeechobee FL, USA **7.355** (Eng to Eur 0600-0750?) 45343 at 0647 in Newry; R.For Peace Int, Costa Rica **7.445** (Eng to N.America, Eur 2200-0800) 34232 at 0650 in Newry; R.Slovakia Int, via Rimavsk Sobota **7.345** (Eng to W.Eur 1630-1700) 44444 at 1630 in Seaton; R.Polonia (Polish R), Warsaw **7.285** (Eng 1700-1800) 53333 at 1710 in Herstmonceux; All India R. (AIR) via Bangalore **7.410** (Hind, Eng to Eur 1745-2230) 54444 at 1755 in Stalbridge & 44434 at 2056 in Morfa Nefyn; R.Denmark via Sveio, Norway **7.490** (Dan to Eur, Canary Is 1830-1855) 44444 at 1830 in Rugby; R.Netherlands via Madagascar **7.120** (Eng to Africa 1730-2025) SIO 333 at 1846 in N.Bristol; Sudwestfunk via Rohrdorf **7.265** (Ger to Eur 24hrs) 43333 at 1855 in Liverpool; R.Ext.Espana (REE) via Noblejas, Spain **7.275** (Sp to Eur 1700-2300) 55555 at 1855 in Liverpool; R.Thailand, Udon Thani **7.155** (Eng to N.Eur 1900-2000) 33333 at 1915 in Rugby & 43333 at 1920 in Truro; Adventist World R. (AWR) via Slovakia **7.130** (Eng 1930-2000) 43433 at 1936 in Ebbw Vale; Vatican R, Italy **7.250** (Eng to Eur 1950-2010) 44434 at 1955 in Folkestone; R.Minsk, Belarus **7.105** (Eng to Eur 2030-2100, Tues/Thurs) 43443 at 2030 in Morden; R.Denmark via Sveio, Norway **7.490** (Dan to Eur, Canary Is 2030-

2055) 33323 at 2048 in Morfa Nefyn; R.Bulgaria, Sofia **7.500** (Various, Eng 2100-2200) 55534 at 2103 in E.Bristol; World Harvest Radio (WHRA) via Maine, USA **7.580** (Eng to Eur, M.East 2300-0500) 54444 at 2300 in Morpeth & 54445 at 2350 in Stalbridge.

There are many broadcasts to Europe in the **6MHz (49m)** band. Some come from R.Vlaanderen Int (Belgium) via Germany **5.985** (Eng 0700-0730), rated 55544 at 0710 in Herstmonceux; Sudwest Rundfunk, Germany **6.030** (Ger) 23322 at 0732 in Ebbw Vale; TWR Monaco via Germany **6.045** (Eng 0700-0815) 44434 at 0738 in Ebbw Vale; R.Netherlands via Julich, Germany **6.045** (Eng 1030-1225) 55544 at 1225 in Herstmonceux; Deutsch Welle (DW) via Julich **6.140** (Eng 0600?-1900?) 44444 at 0900 in Dudley; Croatian R, Deanovec **6.165** (Cro 0400?-2300?) 44223 at 1010 in Oxted; R.Netherlands via Julich, Germany **6.045** (Eng 1030-1225) 45333 at 1111 in Newry; Deutschland R, Berlin **6.005** (Ger 24hrs) 34433 at 1640 in Seaton; BBC via Rampisham, UK **6.195** (Eng 1700-2200) 54444 at 1725 in Stalbridge; R.Yugoslavia, Serbia **6.100** (Eng? 1830-1900) 44434 at 1832 in E.Bristol; R.Slovakia Int, Bratislava **6.055** (Eng 1830-1900) 33233 at 1835 in Rugby; R.Finland via Pori **6.120** (Fin, Sw 0500-2300) 55555 at 1910 in Liverpool; Bayerischer Rundfunk, Germany **6.085** (Ger 24hrs) 54555 at 1915 in Liverpool; R.Sweden Int via Horby **6.065** (Eng 1930-2000) 55544 at 1955 in Folkestone; R.Canada Int via Horby, Sweden **5.850** (Eng 2000-2130) 44444 at 2010 in Truro; R.Canada Int via Skelton, UK **5.995** (Eng 2000-2100) 45534 at 2016 in Morfa Nefyn; R.Ukraine Int, Kiev **5.905** (Eng 2100-2200) 54444 at 2100 in Appleby; R.Bulgaria, Sofia **5.800** (Eng 2100-2200) SIO 333 at 2102 in N.Bristol.

Some to other areas may also be received here. They include R.Netherlands via Bonaire, Ned.Antilles **6.165** (Eng to N.America 2330-0125), rated 34232 at 2332 in Newry; BBC via Antigua, W.Indies **5.975** (Eng to C & S.America 2100-0400) 35533 at 0032 in E.Bristol; R.Taipei Int via Okeechobee FL, USA **5.950** (Eng to N & C.USA 0300-0400) 31332 at 0312 in Ebbw Vale; Family R. (WYFR) Okeechobee FL, USA **6.065** (Eng to E.USA 0100-0445) 33333 at 0315 in Ebbw Vale; R.Havana, Cuba **6.000** (Eng to N.America 0100-0500) 33333 at 0319 in Morpeth; American Forces Network (AFN) via Puerto Rico **6.458** (Eng [u.s.b]) 44444 at 0520 in Morpeth; WEWN Birmingham, USA **5.825** (Eng to N.America 0000-1100, also to Eur), rated 44444 at 0605 in Morden.

If you have been wondering what a Digital Radio Mondiale (DRM) transmission will sound like and just how much it will spread, try the following frequencies where DRM tests were noted in Stalbridge during April: **5.875** (BBC via Rampisham, UK) at 1325; **5.975** (Julich, Germany) at 1325; **6.140** (Deutsch Welle via Julich, Germany) at 1810UTC.



The SINPO code is used for broadcast station reports, here is an explanation of the code.

Signal Strength	
5	excellent
4	good
3	fair
2	poor
1	barely audible
Interference	
5	nil
4	slight
3	moderate
2	severe
1	extreme
Noise	
5	nil
4	slight
3	moderate
2	severe
1	extreme
Propagation Disturbance	
5	nil
4	slight
3	moderate
2	severe
1	extreme
Overall Merit	
5	excellent
4	good
3	fair
2	poor
1	unusable

List of Equipment Used

LM&S for \$May, #June; *July 2003.

- S* * Jim Brown, Dreghorn, N.Ayrshire: Lowe HF225 + AT-1000 a.t.u. + 30m wire.
- S* * Bernard Curtis, Stalbridge: Realistic DX400 + rod or r.w. in loft.
- S* * Jim Edwards, Wigan: JRC NRD-535 or Drake RBE + 75m N/S wire on a block of flats.
- S* * Ian Evans, Ebbw Vale: Sangean ATS-818 + 11m indoor wire or Eddystone 888A + RF Systems EMF in loft.
- S* * Stan Evans, Herstmonceux: Kenwood R-2000 + Balun + 11m wire in loft.
- # Robert Frost, Felixstowe: Roberts RDS portable.
- S# Geraint Gill, Llanfairfechan: Grundig Yacht Boy 400 + indoor wire antenna.
- S* * Gerald Guest, Dudley: Roberts RC818 + r.w.
- S* * David Hall, Morpeth: AOR AR7030 or Ten-Tec RX350 + Global AT-2000 + 13m wire.
- S# Paul Hawkins, Cinderford: AOR AR7030 + Wellbrook ALA1530 loop.
- S* * Francis Heame, N.Bristol: Sharp WQT370 or Yaesu FRG-7 + r.w.
- S* * Simon Hockenbull, E.Bristol: Battery powered Roberts R617, R876 or Bush TR130 + built-in antennas or AKD HF3 + 4m wire in loft.
- S* * Robert Hughes, Liverpool: AOR AR7030 + 15m indoor wire or Drake RBE + RF Systems MTA on roof.
- S* * Sheila Hughes, Morden: Sony ICF-7600DS + home built loop or Panasonic DR48 + 16m inverted L.
- S* * Rhoderick Illman, Oxted: Kenwood R-5000 + r.w. or AN-1, Sony ICF-7600DS.
- S# Andrew Kirby, Bournemouth: JRC NRD535D + 25m outdoor wire.
- S* Johan Leidekker, Amsterdam: Sony ICF-2001D.
- S* * Eddie McKeown, Newry: Grundig Yacht Boy 400 or Sangean ATS-818.
- S* * Ian Pakeman, Folkestone: Sangean ATS-818 + 7m wire or Sony ICF-SW 7600GR.
- S* * Fred Pallant, Storrington: Trio R-2000 + Howes CTUB a.t.u. + r.w.
- S* * John Parry, Larnaca, Cyprus: Realistic DX 394 or Yaesu FT-767 or Realistic DX-400 + r.w.
- S# Peter Perkins, Hemel Hempstead: AOR AR7030 + BHI NES noise eliminator + ADR loops or Grundig Satellit 800 Millennium.
- S* * Clair Pinder, Appleby, JRC NRD525 + Yaesu FRT-7700 a.t.u. + r.w.
- S* * Clare Pinder, while in Glasgow. Sony SW55.
- S* * Peter Pollard, Rugby: Sony ICF-2001D + r.w.
- S* * Vic Prier, Seaton, Devon: Fairhaven RD500VX + Datong AD270 active dipole with helical elements erected east/west inside indoor balcony.
- S# Richard Reynolds, Guildford: Two Sangean ATS803A + loop or two helix antennas in loft.
- S# Harry Richards, Barton-upon-Humber: Grundig Satellit 700 + AD270 or r.w. or Grundig Yacht Boy 400 or Matsui MR4099.
- S# Ernie Strong, Ramsey, Cambs: AKD HF3 or Yaesu FRG-8800 + a.t.u. + 30m wire.
- S# Michael Wasley, while at Creetown: Grundig Yacht Boy 400.
- S# Louisa & Michael Wasley, while in Port William: Volvo car radio.
- S# Michael, Wasley, while in Morfa Nefyn: Grundig Yacht Boy 400.
- S# Louisa & Michael Wasley, while at Braich-y-Pwll: Volvo car radio.
- S* * Thomas Williams, Truro: Grundig Yacht Boy 400 or Yacht Boy 206 or Sharp 5454 + r.w.
- S# Fred Wilmshurst, Northampton: Icom IC-R70 + Global AT-1000 + r.w. in loft.

scanning special-

scottish ambulance

Police, Fire or (if you happen to reside near the coast) the Coastguard. Make your choice and you will be connected to the appropriate authority.

In the last few years, all these emergency services have

Centre (EMDC) in Inverness. Housed in a modern building on the outskirts of the city, the facility combines the regular administrative functions of an area office employing a large number of personnel with a

A few weeks ago, Dave Roberts was fortunate enough to be able to pay a visit to the Scottish Ambulance Service's Emergency Medical Dispatch Centre (EMDC) in Inverness - here's what he found out.

"Which service do you require?" is the first thing that anyone who dials "999" will hear as the BT operator picks up the 'phone call...

Then it can get a bit like that Millionaire quiz show with the contestant being offered up to four options. Just to remind you, these are Ambulance,

The sign board at the gate of the premises at Raigmore Gardens, Inverness.

undergone massive changes in the way in which they deal with emergency calls and the subsequent dispatch and deployment of resources. All have consolidated their command and control facilities and introduced radical new technologies that would have only existed in the minds of science fiction writers a few years ago.

In July last year, the *Scanning Scene Extra*

communications centre that interfaces that first contact with the public and the 'hands on' front line life savers.

First Come, First Served

Until recent times, ambulances throughout the UK were dispatched on a 'first come, first served' basis. This resulted in potentially life-threatening emergency occurrences often having to join a queue for ambulance attendance while less seriously ill people received attention more speedily, purely because their 'phone call for assistance was received earlier. This has now changed and all calls are now prioritised into one of three categories, A, B and (you've guessed it) C.

Category A - is classed a life-threatening situation that will receive attendance as a matter of utmost urgency. Category B - is categorised as serious, but not life-threatening and Category C is not classed as an emergency and should a unit attend a Category C call, the driver will fully comply with the Road Traffic Act. In any case, ambulance service vehicles will not be using their blue warning lights or sirens on the way to Category C calls.

Contrary to popular misconception, ambulance crews don't just drive flat out to incidents with lights flashing and sirens howling. Many hours of driver training are required prior to a paramedic being allowed behind the wheel of a very fast, expensive and potentially dangerous vehicle. In any case, drivers attending emergency deployments involving the use of lights and



Ambulance...what else can you say?

supplement in *Short Wave Magazine* carried an article on the work of HM Coastguard in the Watch Room at Stornoway in the Western Isles and their sophisticated communication and control systems were clearly evident.

A few weeks ago I was fortunate enough to be able to pay a visit to the Scottish Ambulance Service's Emergency Medical Dispatch



sirens can't just barrel through traffic and red lights. For instance, all red traffic lights and stop signs, etc. are treated as 'Give Way' signs when crews are on their way to an emergency call.

available with BN 2B-26 Islander aircraft being based at Kirkwall, Lerwick and Glasgow and a pressurised Beech King Air 2000 operating out of Aberdeen. Additionally, two EC135 Eurocopters are in

the command and control computer and is known as System Status Management. This software allows managers to predict where their resources are likely to be required thereby reducing incident response

the incident onto the computer system.

Slick Technology

The location is verified by a sophisticated mapping system that also indicates the location of the nearest ambulance service resource while the information is switched to the dispatcher's console. In the near future, the location of the caller's telephone will also be shown and should this happen to be a cellphone, the location will still be indicated having been established by the cell bases triangulating the signal source.

Now this combination of mapping and vehicle location is pretty slick technology. I've seen it in action and it's the kind of stuff that was on TV shows around twenty years ago. You look at the screen and see an Ordnance Survey map of the region, then you notice a little red box that shows where the ambulance is as well as the status of the unit (i.e. deployed, at scene, standing by or whatever).

As the ambulance travels down the road its position is

Emergency Service

Responsibility

The recently commissioned Emergency Medical Dispatch Centre at Inverness has responsibility for a vast area of Britain including the Highland Region, the Western Isles, Grampian and the Orkney and Shetland Isles. Population density is obviously greater in the town and city areas and can be described as sparse in rural areas. The nearest EMDC to Inverness is at Edinburgh and this centre has responsibility for the Tayside, Forth Valley, Fife and Lothian and Borders regions.

There is shortly to be another centre built at Paisley which should come on-line in 12/18 months. The Scottish Ambulance Service also has a 'Business Recovery Centre' at Dundee. Essentially an additional control facility with specific responsibility for managing large emergency situations and special events involving significant numbers of people, e.g. the Hogmanay Celebrations in Edinburgh which draws hundreds of thousands of revellers every new year.

Dundee BRC also acts as back-up to the main Emergency Medical Dispatch centres should they become inoperable for any reason. In this instance, the BRC is capable of taking over all functions of an EMDC within one hour. The BRC has responsibility for the air ambulances. The Scottish Ambulance Service has the only publicly funded air ambulance service in the UK operating 24 hours a day, every day.

Four fixed wing assets are



The rack stack in the ambulance, showing from the top: Yaesu VX-1000 MPT1327 set, then the VXR-2000 repeater set and finally at the base, the display unit.

service, one running from Glasgow and the other from Inverness.

Different Demands

Experience has shown that different demands are placed upon the ambulance service dependant on season, day of the week and even time of day.

The population of the Highland Region can double or even treble during holiday periods and vehicles and crews will be sent to locations in an area where their attendance may be required. In the Highlands, this may mean a crew waiting near a popular tourist route or accident 'black spot' and on a Saturday night it may well mean that staff are deployed to wait near the railway station in Inverness City centre.

These days, this experience has been stored in data form on

times and saving lives.

On an average day, the Dispatch Centre in Inverness will receive between around 250 and 320 calls for assistance. You'd think that with a work level of that magnitude the control room would be a scene of frenetic activity. It just ain't so.

A team of three call takers and three dispatchers handle the business on each shift, together with a supervisor. The call takers will engage the public and carefully question callers to establish the nature of the incident, casualty figures and medical symptoms. They can give advice and simultaneously enter the details of location and



The Dispatch Centre at Raigmore Gardens, showing a controller at her work station.

updated on the screen every few seconds by virtue of the Automatic Vehicle Locating System utilising GPS technology with each ambulance unit transmitting its position back to the Dispatch Centre. The computing capability of the EMDC is solely designed to ensure that ambulances reach patients as quickly as possible and to this end it also monitors performance levels in terms of call handling and response times.



Peter Clough at a work station, displaying the command and control on the left and mapping on the right VDU.

To illustrate the accuracy of the mapping and resourcing system, one of the units was shown as static on a main road. Peter Clough, an experienced EMDC manager, knew that traffic lights were operating at this location. He called up the ambulance, "Are you stuck at the traffic lights?"

"Yes", replied the crew. They didn't need to ask how he knew.

Equipment Installed

The Scottish Ambulance Service utilise an MPT1327 f.m. trunked system with base stations operating in the 166MHz region and mobiles in the 172MHz area. Looking at the photo of the system installed in a Mercedes vehicle, you first see the Yaesu VX-1000 trunked set nesting beneath the ambulance control panel. The radio has a couple of hook-ups, one is connected to the VXR-2000 repeater unit and the other to the display unit that sits at the bottom of the radio stack. The VX-1000 has a keypad that can be used to 'dial' into their system pretty much like a telephone.

An incoming radio call can be answered by removing the microphone from the cradle and crews can call their control by just hitting the push-to-talk switch. This then sends the ambulance's identification code to the Dispatch Centre and alerts the dispatcher. The set is programmed to operate in one particular control area (pretty large in the case of the Inverness EMDC) and all calls will default to the correct control DC. The VX-1000 has

two buttons for calling control, one for 'normal' calls and one for emergencies. The vehicle's status is sent via this unit to control by entering a double digit status code on the keypad.

The display unit is controlled from this radio with keys that scroll the text with most of the crew's commitments being sent via this method, known as MPT1327 SDM. The repeater unit, the VXR-2000, is the small box below the main VX-1000 radio and should you pull one of these apart (no - they didn't let me!) you'll see a couple of Yaesu hand-held sets hooked up to the vehicle's power via a printed circuit board that controls the logic.

On each side of the radio equipment there are charging cradles for the pair of Yaesu VX-10 hand-held sets that travel with the ambulance. When a VX-10 is removed from the charger, the repeater is automatically activated thereby rebroadcasting calls from the v.h.f. radio to the VX-10 u.h.f. handy and vice-versa, with a call to the centre being initiated by pushing one button on the hand-held VX-10. Just as with the main set, one is for normal calls and the other for emergencies.

The VXR-2000 can also be switched to allow calls just to be passed between vehicle and the VX-10 without activating the repeater. Three channels are used at u.h.f. for the repeater set, 459.875, 457.775 and 459.825, all are f.m. The ambulances have a v.h.f. antenna for the VX-1000 and two u.h.f. antennas for the

repeater which are kept as far apart as possible to minimise interference. A GPS antenna is also fitted to service the AVLS. All in all a sophisticated communications package installed in a vehicle stuffed with hi-tech life saving equipment.

Future planned

communications package and transmit details to the receiving hospital.

Monitoring the communication of any ambulance service is illegal, but those professionals who are tasked to do so run the *FTRUNK* scanner computer control program by Ian Wraith



Another view of work station displays.



General view of a section of the Emergency Medical Dispatch Centre (EMDC).

improvements include replacing the clipboard Patient Report Forms that detail a 'customers' personal details, where available, and their medical status that are currently completed by ball point pen, with an electronic version that will connect to the

that has a specific patch for the Scottish Ambulance Service communications system. This program was reviewed in *SWM* in 1998 and further details are available on the Internet from www.tbsa.com.au/trunk.html

Having dialled "999" and requested the ambulance service, any caller in the massive area serviced by the Inverness centre can be confident that the quietly efficient staff will ensure that the correct resource is dispatched right away. The whole life saving ethos is very much apparent at Inverness EMDC. Special thanks to Robert Colburn, General Manager Inverness EMDC, Peter Clough and the Dispatch Centre staff for letting me poke my nose in!



The Eddystone lighthouse shines again!

The Editor has been keen for some years for John Wilson to explore the innards of an up-to-date British classic receiver. This month, that wish becomes a reality as John reviews the Eddystone 6200 professional receiver.

It seems strange that in seven years of reviewing h.f. receivers I have not had the pleasure of checking out an Eddystone product. I had imagined that this was due to the changing market for receiver manufacturers, although I was one myself, and the last Eddystone model of which I had any knowledge was the 1650, but that was many years ago. It was with anticipation therefore that I unpacked the large box, containing an Eddystone 6200, which our editor had managed to extract from the manufacturer for this review. I confess to being less than knowledgeable about the intricacies of the recent history of Eddystone Radio, but a little digging around turned up the information that Eddystone was saved from extinction at the last minute by the

Megahertz Group which bought out Eddystone Radio Ltd. on the 14th of May 1999 just before final closure was threatened. However, a news letter from Cambridgeshire dated 1st April 2002 (no, it's not an April joke) revealed that Megahertz Communications of Coldhams Lane (happy memories for those of us who lived and worked in Cambridge in the early 1960s) had gone into

voluntary liquidation, and that the managing director, Ashley Coles, had formed a new company called Ring Communications based in Ely. Where does all this get us? It gets us to the point that Eddystone Radio is still a part of Ring Communications and it was they who kindly offered the Eddystone 6200 receiver for review. And that's what this article is all about.

Handsome Receiver

The 6200, as you can see from the photographs, is quite a handsome receiver and a far cry from the large and weighty lumps which Eddystone produced in those far-off days. The front panel is a mere 2U high (long live the Imperial measurement of "U") and is of course designed to fit into a standard 19-inch rack. The

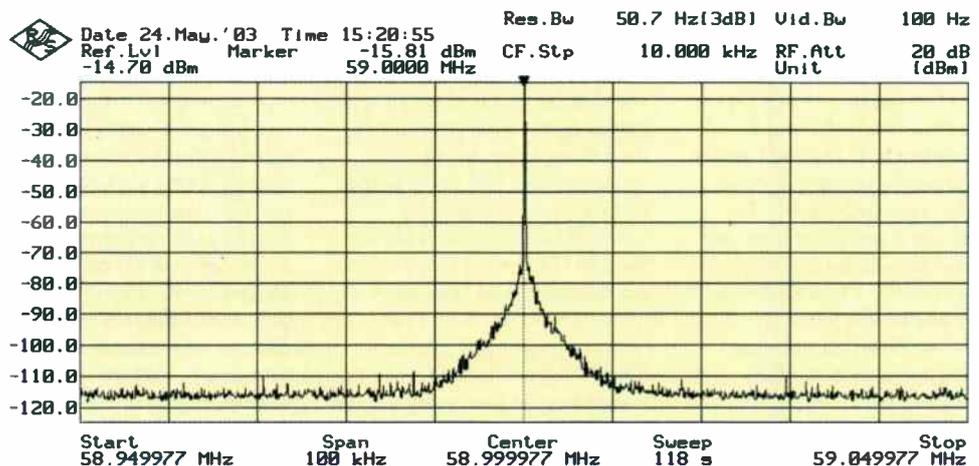


Fig. 1: The spectrum plot of the 6200 first conversion oscillator, radio tuned to 14MHz hence 59MHz local oscillator.

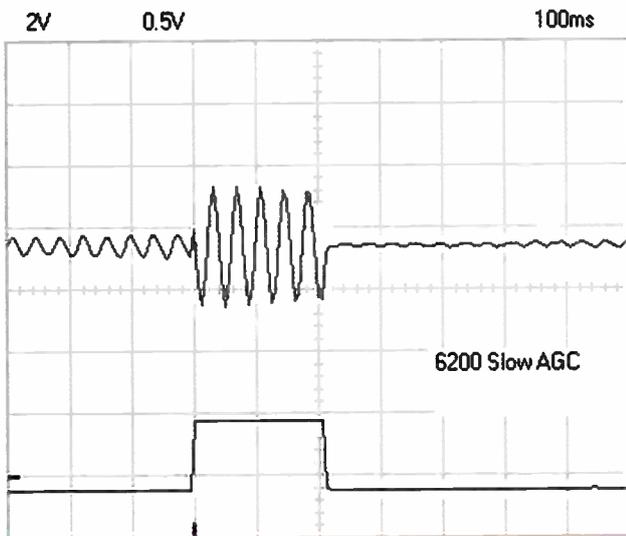


Fig. 2: The audio output from the 6200 with slow a.g.c. selected.

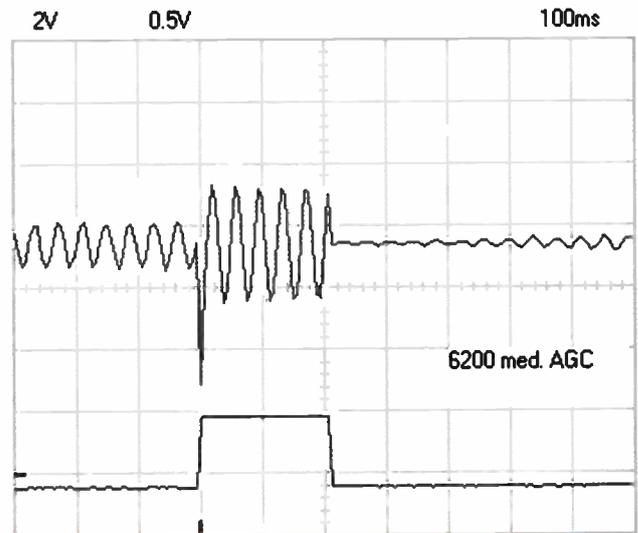


Fig. 3: The audio plot from the 6200 with medium a.g.c. set.

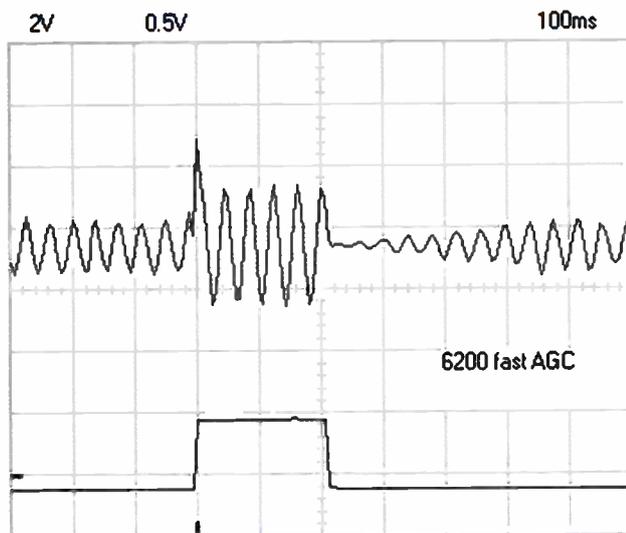


Fig. 4: The audio output with fast a.g.c. when hit by a signal increase of 50dB at the antenna.

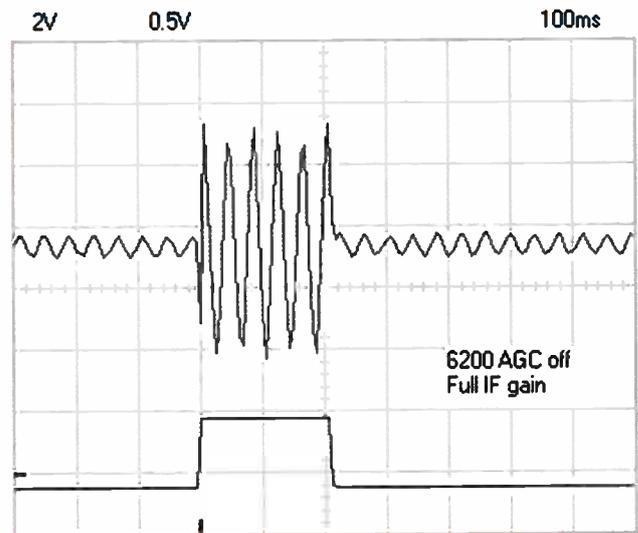


Fig. 5: The a.g.c. switched off, and even with the i.f. gain at maximum the 6200 behaved well.

receiver is quite deep (17 inches) and weighs in at about 11 kg, which is quite a lot to hang on the front panel support, so it would probably need a rack shelf inside the overall rack enclosure. No doubt the sub at *Short Wave Magazine* will convert all my Imperial measurements to metric equivalents, but a 19-inch rack will always be a 19-inch rack as far as I'm concerned! General construction is, as one might expect, to professional standard, and the interior is a pleasure to see. The front panel is well laid out and very easy to use, with the tuning knob being - hooray - a typically British heavyweight (well, perhaps middleweight) with a nice free-running feel to it which makes "tuning around" a pleasure. Of course, any receiver these days must also have direct frequency entry, in this case using a membrane keypad to the left of the main

display. The layout of the keypad is not the familiar telephone style and takes a little getting used to at first, but the pads are a decent size and the numbers easy to read. As with all membrane pads, the individual buttons take quite a firm push to operate, which is not a problem if the receiver is mounted in a rack, as intended, but on a desk top requires the use of your other hand to stop the receiver being pushed backwards each time you prod the buttons. By comparison, the individual keys of receivers like the Racal RA1792 are extremely easy to operate and take no effort at all.

All Digits Required

Keypad frequency entry requires the user to include leading zeros in the entered frequency, for example to enter 909kHz you have to enter 0,0,9,0,9, and then terminate the

entry to select the frequency. However, when I first looked for the 'enter' key I couldn't find it, so had to refer to the handbook (always a good idea) which told me that the 'enter' function was accomplished by lightly rotating the main tuning knob. Seemed a bit odd at first, but became second nature as I grew more accustomed to the receiver. This tuning knob 'enter' is also used to terminate many of the keypad functions on the 6200. Of course, you don't have to terminate the frequency entry at the kHz digit as in my example, but can carry on entering as long as there are digits to go at. Minimum frequency step is 10Hz, and this is the smallest increment in which the receiver tunes. A range of alternative tuning steps can be selected by pressing the 'Rate' key and rotating the tuning knob to select from a well chosen series from 10Hz to 100kHz,

including the all-important European 9kHz step for the broadcast bands. With the 'Rate' function in use you can also enter any step size in 10Hz increments from the numeric keypad, and finally, if you select '0' from the step table the receiver will then tune in 10Hz steps but with a variable tuning rate according to the speed of rotation of the main tuning knob. Some of you will know that I have a basic dislike for this type of tuning, but on this occasion I have to say that the speed-up happens so unobtrusively that it is really enjoyable to use, and I found myself leaving the speed-up system in operation most of the time.

The frequency display is easy to read, being the customary black on green/yellow l.c.d., and all receiver functions are monitored by the display including reception mode, a.g.c. mode, r.f. sensitivity, signal strength, squelch level/i.f. gain,

memory channel number and i.f. bandwidth. A very useful table in the handbook cross-correlates all the display functions used in different modes of use and tells you what the main tuning knob is doing in these modes. For example, in 'channel' mode the tuning knob selects the memory channels; in 'rate' mode the knob selects tuning rates; in 'BITE' mode it selects the BITE test numbers, and so on. For a quite complex receiver the designers of the 6200 have done a very good job in making operation very clear and logical, and have ensured that the regularly used functions remain in place and accessible at all times

rather than being 'buried' in layered menus. One indication of the well thought out integration is the fact that apart from the tuning knob, the only other rotary control on the panel is the a.f. gain, and yet the receiver is easy to operate at all times.

Generous Bite

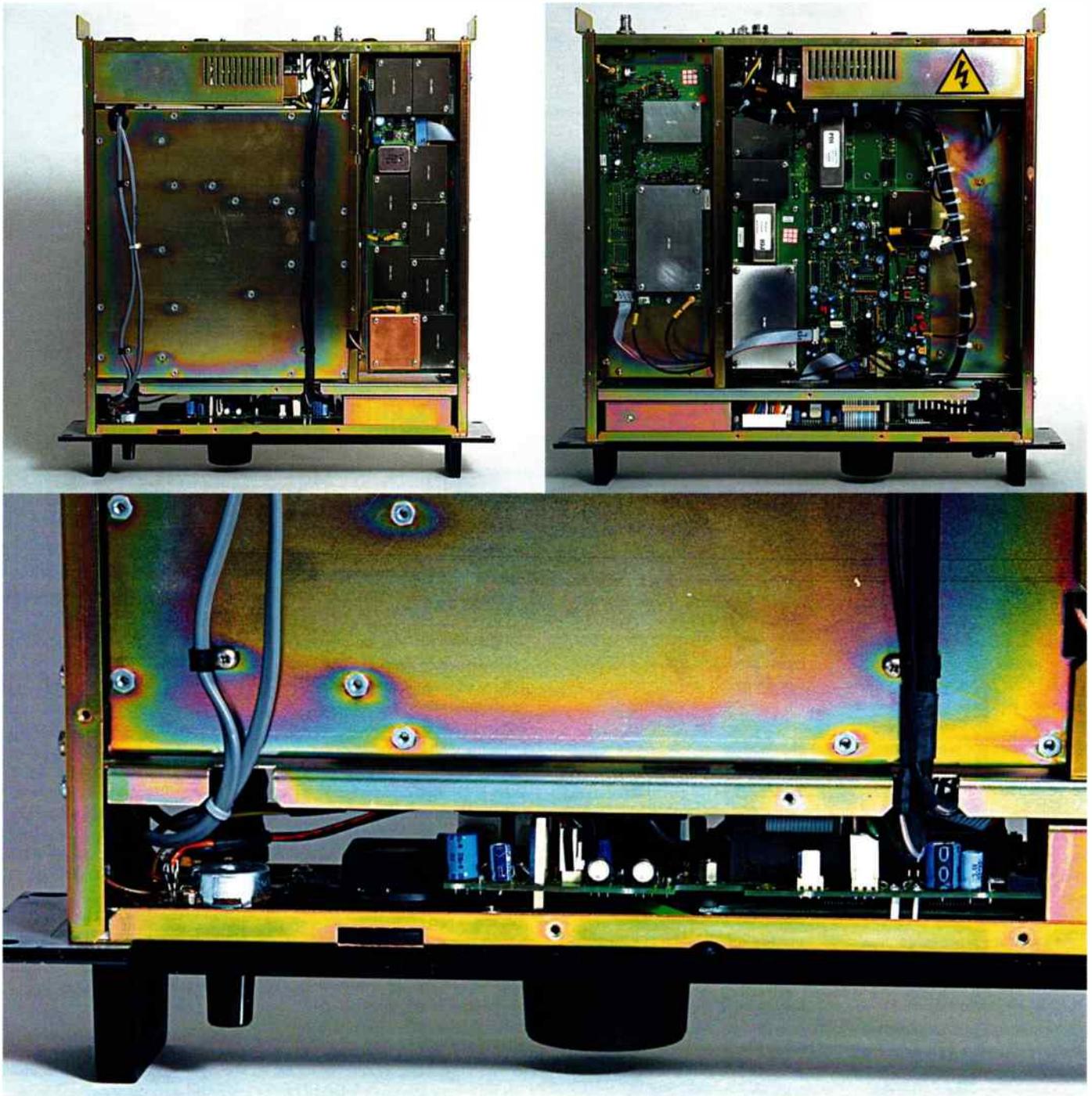
The built in test equipment 'BITE' is almost essential for commercial use but even for the hobby listener it's reassuring to know that the receiver is keeping an eye on itself and will tell you if and when something is not quite right. Apart from the

continuous 'passive' BITE mode, the user can step through a wide range of internal tests, with up to 52 individual tests being detailed in the user manual. If you can't find out where a fault is located using this system then you shouldn't go any further – call in an expert. The handbook is very helpful in this area, and in fact is well thought out and easy to follow in all its sections. However, despite several requests, we were unable to obtain any circuit information on the 6200 and any of my comments on receiver architecture are based on my own visual interpretation of the board layouts. Why so shy about

schematics? One caveat about 'BITE' is the remark in the manual that: "A fault producing 15-30dB or more of gain loss will be needed to produce FAIL. Thus, PASS is not necessarily an indication of full receiver performance". I think that I might notice a loss of 15 to 30dB in performance without the intervention of the BITE system!

Brain Storming

Further facilities of the 6200 include 99 memory channels, each storing all receiver parameters, memory scanning, and a sweep facility which allows the user to programme the





receiver to scan between frequencies stored in adjacent memories in steps selected by the 'Rate' function. Obviously, it is helpful if the scanning and sweeping functions also allow the receiver to stop on an active frequency and these facilities are provided by selectable 'dwell' and 'delay' settings, all under the control of the operator. Presumably some kind of brain storming sessions have been carried out at an early stage in this receiver design, because provision has clearly been made for most of the operating features needed today. Let's now take a look at the published specification.

The 6200 coverage is 10kHz to 30MHz, and it certainly works well right down to the 10kHz bottom limit, making this a 'proper' European receiver. Most reception modes are catered for, with the singular exception of synchronous

a.m., but in this quality of receiver the use of selectable sidebands and the inherent stability of the design rather eliminates the need for Sync. a.m. Does this seem an odd comment? Remember that synchronous a.m. removes the effects of selective fading by generating a local demodulation carrier within the receiver, but using the s.s.b. modes also uses a locally generated carrier, so the effect is (more or less) the same, allowing for the fact that the local carrier will not necessarily be in phase with the incoming a.m. carrier. Perhaps I should expand on this in a separate article! Variants of the 6200 give additional reception modes including f.s.k. and i.s.b., and there is a neat little f.s.k. tuning indicator already on the front panel which must be extremely helpful, although I couldn't verify this since the receiver I had did not include the f.s.k. function.

Filters

The standard receiver has only two selectable bandwidths at 6 and 2.4kHz although up to two more bandwidths can be provided by additional filters. There was not a single mention in the manual provided regarding what option filters are available, but it seems from the basic receiver architecture that bandwidths wider than 6kHz may not be possible - but I could well be wrong in this assumption. The reason for thinking this way is that inspection of the internals reveals that there is clearly a high quality roofing filter at 45MHz - and what a change to find a decent crystal filter in this position rather than a couple of ceramic two-pole devices as is so often the case - followed eventually by another super looking crystal filter at 1.4MHz which is clearly the 2.4kHz s.s.b.

filter, with empty slots for two more 1.4MHz filters. My assumption therefore is that the 6kHz bandwidth is achieved at 45MHz with the narrower bandwidths determined by filters at 1.4MHz. Thus, if the roofing filter is 6kHz wide, it follows that wider bandwidths than 6kHz cannot be provided unless this roofing filter is changed. The manual does not help on this point, so perhaps I could be forgiven for being wrong. r.f. bandwidth in the standard receiver is broadband, but an optional front-end filter can be obtained which provides sub-octave filtering above 1.6MHz (option /A for those who might buy a 6200).

AGC

The a.g.c. system has three fixed decay time constants as well as an 'off' position, these being selected

by repeated pressing of the appropriate keypad button, and an adjacent button selects three steps of r.f. sensitivity. Again, inspection of the physical internals suggests that there is a 10dB preamplifier used at 'MAX' gain setting, with this being bypassed in the 'MED' setting, and further attenuation in the 'MIN' setting. The 10dB difference was easily confirmed by measurement, but the 'MIN' setting made the receiver so insensitive that I can't help feeling that there was something amiss, although the manual does state that the 'MIN' setting introduces at least 30dB of attenuation, bringing the sensitivity for 10dB S/N ratio down to something like a standard S9. I guess if you were on board ship in close proximity to high power r.f. this may be a necessary feature, but for the enthusiast market I can't see that anyone would need the setting. On the subject of high power in close proximity, the 6200 in common with other professional receivers is well protected at the front-end by automatic disconnection at antenna levels in excess of 30V r.m.s. (that's 18W of r.f. in a 50Ω system).

A side-by-side vertical bar graph on the main display shows signal strength and squelch settings together, so that you can match the squelch level with wanted signal level, but the signal strength metering is very vague, with no attempt at calibration, either in absolute antenna levels or 'S' units, and this is probably the least satisfactory feature of such a good receiver. One would have imagined that professional users would have wanted some measured indication of input signal level when setting up an h.f. system, but this is not provided by the 6200. And so to measured performance:

On The Bench

Sensitivity, measured using an H-P 8657A or Rohde & Schwarz SMY-01 signal generator, and H-P 8903B audio analyser. Levels are given for 12dB SINAD, a.m. modulation at 1kHz, 60% s.s.b. for 1kHz equivalent audio input. These figures are taken with r.f. sensitivity set to maximum. On the

MHz	Mode	Bandwidth (kHz)	Sensitivity (dBm)
28.500	u.s.b.	2.4	-114.5
14.200	u.s.b.	2.4	-114.5
10.200	u.s.b.	2.4	-116
6.200	l.s.b.	2.4	-116
2.200	l.s.b.	2.4	-116
0.900	l.s.b.	2.4	-117
0.100	l.s.b.	2.4	-114.5
0.060	l.s.b.	2.4	-112
0.010	l.s.b.	2.4	-110
28.500	a.m.	6	-106
14.200	a.m.	6	-107
10.200	a.m.	6	-107
6.200	a.m.	6	-107.5
2.200	a.m.	6	-108
0.900	a.m.	6	-108
0.100	a.m.	6	-106
0.060	a.m.	6	-103
0.010	a.m.	6	-100

medium setting the sensitivity is reduced by 10dB.

The third order intercept point measured at 20kHz spacing came out at +13dBm with a dynamic range of 98dB, whilst the second order intercept point using my out-of-band test signals of 6.5 and 7MHz, resolving the second order product at 13.5MHz came out at +38dBm. This is lower than I have seen in other professional receivers but matches the figures given in the 6200 handbook. As the handbook also states, the second order performance is increased when the preselector is fitted, but it does not say by how much. On the plus side, the reciprocal mixing figures are very good, indicating that the 6200 synthesiser is very clean:

Spacing from carrier	dBc/Hz
5kHz	-109
10kHz	-127
20kHz	-136
50kHz	-144
100kHz	-147

As you can see, the phase noise at 50 and 100kHz approaches the levels expected from a good crystal oscillator, and only at very close spacings does the presence of a synthesiser become apparent. Fig. 1 shows the spectrum plot of the 6200 first conversion oscillator, and if you compare this with plots in previous articles reviewing other receivers you can see that the 6200 is very good in this department.

Regular readers will know of my continued interest in the way receivers behave in real life when faced with typical sharp increases in

signal levels, such as those at the beginning of a strong s.s.b. transmission. It puzzled me for a long time why some very well respected receivers sounded uncomfortable under these conditions, and it was not until I devised my simple test procedures that I began to see the effects of signal overload at the start of such transmissions. It has to be said that receivers using d.s.p. derived a.g.c., unless they also have some form of analogue a.g.c. system, overload quite badly because of the time interval caused by the d.s.p. processing time which delays the application of gain control to the already present input signal. The worst case of this was demonstrated by the Collins 95S-1 which gave out such a 'squawk' at the start of each speech syllable that it sounded like a demented cockerel with a hot poker up it's tail-end. I expected that the all analogue 6200 would perform quite well in this test, and I was not disappointed. The audio output from the 6200 in slow, medium and fast a.g.c. settings when hit by a signal increase of 50dB at the antenna can be seen in Fig. 2, Fig. 3 and Fig 4. There is, to be accurate, a sign of a spike in fast and medium a.g.c. settings, but none at all in the slow setting, and the spike was virtually unnoticeable to the ear. Best performance of all was with the a.g.c. switched off and the i.f. gain reduced, and even with the i.f. gain at maximum the 6200 behaved well as you may see in Fig. 5.

Overall Feelings

The Eddystone 6200 is an interesting receiver in that it comes from a company with a long history of involvement in h.f. receivers, and yet it represents a different approach to that previously used by Eddystone. It would be interesting to know some of the development story, and I have no doubt that out there are people who know a great deal about this and may be prompted to tell me. In many ways the 6200 shows the best of design prior to the introduction of d.s.p. technology in h.f. receivers and as a result it performs extremely well indeed. Much of the instruction manual carries dates in the mid to late 1990s and this seems to ring true with the design techniques incorporated in it. As an h.f. receiver for the enthusiastic listener it performs very well indeed, and anyone reading this magazine would

be delighted to have it in front of them. The recovered audio is extremely pleasant to the ear, all the controls work as they should, the firmware is well integrated with the overall operation and the remote control facilities, although I haven't covered them in this brief review, are very comprehensive and well explained in the manual. Anyone accustomed to using RS-232 protocols would find software writing easy, and the results would be very satisfactory.

Proud Heritage

For someone in my fortunate position of having had my hands on many of the top flight receivers of the last three decades, it becomes quite difficult to give a definitive answer to the question "which one was the best?" because I would have to define "best for who?" There are listeners for whom f.s.k. facilities would be of paramount importance, whilst others would want to resolve narrow band a.m. for beacon listening - actually, I forgot to mention that recovery of low frequency NDBs was a dream with this receiver. It has a very low noise background level and the r.f. performance is maintained right down to its bottom frequency limit so for l.f. and m.f. DXing this would be perfect, and a great step forward for those who currently use rather older l.f. receivers for this purpose. My reviews have tended to reflect my own particular tastes and needs, and have therefore concentrated on that mythical creature 'The general listener', for that is what I am. There have been receivers which gave me an overall pleasurable feeling, and the top of that list would be the RA1792 The Eddystone 6200 comes into that top bracket as far as I am concerned, and I would be delighted to have one for my own use. I do not know the selling price, but it will be out of reach for most of the readers of these pages, but like the best of car magazines, it does no harm to find out what an Aston Martin feels like to drive, even if the reader may never own one. The 6200 and the RA1792 make me feel that there is much of which to be proud in our English engineering heritage.

Now I suppose someone will write and say that they were both designed elsewhere!

Happy listening.

SWM

MAIN STORE 22 MAIN RD, HOCKLEY, ESSEX, SS5 4QS

ENQUIRIES: TEL: 01702 206835/204965 • FAX: 01702 205843

• E-MAIL: soles@wsplc.com • WEB: www.wsplc.com

MIDLANDS STORE W&S @ LOWE BENTLEY BRIDGE, CHESTERFIELD RD, MATLOCK, DERBYSHIRE, DE4 5LE.

ENQUIRIES: • TEL: 01629 580800 • FAX: 01629 580020

• E-MAIL: info@lowe.co.uk • WEB: www.lowe.co.uk

SCOTTISH STORE W&S @ JAYCEE 20 WOODSIDE WAY, GLENROTHES, FIFE, KY7 5DF.

ENQUIRIES: • TEL: 01592 756962 • FAX: 01592 610451

• E-MAIL: jayceecomms@aol.com • WEB: www.jayceecomms.com



CARRIAGE CHARGES: A=£2.75, B=£6, C=£10

GLOBAL AT-2000 RECEIVER ATU



- 100kHz - 30MHz
- SO-239 socket
- Size: 150 x 67 x 146mm
- Weight 300g

£89.95 B

The AT-2000 one of the most popular receiver ATU's on the market. It covers 100kHz to 30MHz more than enough for most SW receivers. A deluxe feature is the 'Q' switch which adjusts the front-end selectivity to match the band and QRM conditions. The unit is passive, no power supply is necessary. Matches long wires, and coax systems.

MFJ 8100K SW REGEN RX KIT



£75.95 B

Build your own SW receiver. Kit includes PCB, components, and metal case. Covers SW bands with gaps from 3.5MHz to 22MHz. Includes 80, 40, 30, 20, 17 & 15m amateur bands.

* Frequency range: A: 3.5-4.32, B: 5.95-7.4, C: 9.56-12.05, D: 13.21-16.5, E: 17.6-22MHz * Modes: AM, CW, SSB * Audio o/p 200mW into 8 Ohms * Supply: 9V DC (PP3, not included) * Size 180 x 60 x 150mm * Weight 710g

MFJ-1022 ACTIVE ANTENNA



- 300kHz 200MHz
- Pwr: 9V batt / ext 9-18V DC
- Inc Telescopic whip
- SO-239 connector
- Size: 76 x 32 x 102mm

£55.95 B

The MFJ-1022 Active Antenna covers the HF to VHF bands. It easily plugs into your general coverage receiver or scanner. Handles strong signals and reduces intermod with low noise reception. Provided with a detachable telescopic antenna.

MFJ-1026 NOISE CANCELLER



£189.95 B

• Frequency range: 1.8 - 30MHz • Active Antenna • Whip Ant • RF sensed/control • Supply: Ext. 13.8V • Size: 210 x 60 x 150mm All mode QRM eliminator including active antenna. Eliminates local electrical noise even before it reaches the antenna socket. This is achieved by a phasing technique which cancels noise, but lets the wanted signal through.

WATSON HP 200 & HP-100



HP-200



HP-100

Superb headphones with tailored response for radio comms. Excellent sound proofing, can pull in the weak DX.

- Mono 8 Ohm 200-10,000Hz
- Padded ear pieces
- 3.5mm stereo plug
- 1/4" stereo adaptor

£22.95 B

Excellent lightweight comm headphones with tailored response for the modern transceiver or receiver.

- 8 Ohms 200-9,000Hz adjustable headband
- 3.5mm stereo plug
- 1/4" stereo adaptor

£19.95 B

RAMSEY HR RECEIVER KIT SERIES

SPECIAL OFFER



- Models: 20m, 40m, 80m
- NE-602 IC
- Output: 8 Ohms headphones
- Supply: 9V DC PP3 Batt.
- Case & knob set (CHR): Optional

These single band radios use direct conversion with varicap tuning and have amazing sensitivity. They offer reception of SSB, CW and AM and are ideal as part of a QRP station.

Models:

HR-20, HR-40, HR-80 all



£19.95 A

CHR (optional case & knob set)



£9.95 A

YUPITERU MVT-7100 "THE ONE & ONLY"



- 100kHz 1650MHz Displayed
- NFM WFM USB LSB, CW, AM
- 1000 memories
- 500 Pass channels
- 12 tuning steps
- 4xAA Ni-Cds / AC charger
- 12V DC cigar lead
- Telescopic Antenna
- Earpiece

£229 B

YUPITERU MVT-7300 "COMPACT SIZE"



- 521kHz - 1320MHz
- NFB, WFM, NAM, WAM, USB, LSB, CW
- 1000 memories
- 500 Pass channels
- 16 tuning steps
- 8.33kHz airband spacing
- 3xAA Ni-Cds
- 12V DC/230V AC mains
- Telescopic Antenna

£239 B

YUPITERU MVT-9000 mk2



- 530kHz - 2039MHz
- NFB, WFM, NAM, WAM, USB, LSB, CW
- 1000 memories
- 500 Pass channels
- 25 tuning steps
- Voice-reversed scrambled decoder
- 4xAA Ni-Cds
- 12V DC/230V AC mains
- Telescopic Antenna

£369 B

AOR AR-8200 mk3



- 530kHz 3000MHz
- WFM, NFM, SFM, WAM, AM, NAM, USB, LSB, CW
- 1000 memories
- 50 select scan channels
- Tuning steps programmable
- 8.33kHz airband spacing
- 4xAA Ni-MH
- Detachable MW bar antenna
- Telescopic Antenna

£379 B

ALINCO DJ-X3

"SUPER VALUE"



- 100kHz - 1300MHz
- AM, FM, WFM
- 700 memories
- 11 tuning steps
- 8.33kHz airband spacing
- Stereo FM (with headphones)
- Audio descrambler
- 3xAA dry cell battery case
- SMA Antenna

£109 B

UNIDEN-BEARCAT UBC-3000XL



- 25 1300MHz with gaps
- NFM, WFM, AM (Airband)
- 400 memories
- 10 Priority channels
- Twin Turbo scan & Search
- 6V 600mAh Ni-Cd pack + AC charger
- BNC Flexible Antenna
- Leatherette case
- Earphone

£189 B

UNIDEN-BEARCAT UBC-280XL



- 25 956MHz with gaps
- NFM AM (Airband)
- 200 memories
- 10 Priority channels
- 5/12.5kHz channel steps
- 4.8V 800mAh Ni-Cd power pack
- AC Charger
- BNC Flexible Antenna
- Earphone

£179.95 B

UNIDEN-BEARCAT UBC-220XL



- 66 - 956MHz with gaps
- NFM, AM (Airband)
- 200 memories
- 10 band coverage
- 100 Ch/sec scan speed
- Priority channel
- 4.8V 600mAh Ni-Cd int.
- AC Charger
- BNC Flexible Antenna

£119 B

UNIDEN-BEARCAT UBC-120XL



- 66 - 512MHz with gaps
- NFM, AM (Airband)
- 100 memories
- 10 Priority channels
- 5/12.5kHz channel steps
- Data skip (lockout channels)
- 4.8V DC Int. battery
- BNC Flexible Antenna
- Earphone

£99 B

UNIDEN-BEARCAT UBC-60XL-2



- 66 - 512MHz with gaps
- NFM
- 80 memories
- 1 Priority channel
- 5/12.5kHz channel steps
- Data skip (lockout channels)
- 4x AA cells (not provided)
- BNC Flexible Antenna
- Earphone

£69 B



GENERAL ENQUIRIES:
01702 206835/204965
FREEPHONE ORDERLINE:
08000 73 73 88



ALINCO DJ-X2000 "FABULOUS FEATURES"



- 100kHz - 2150MHz
- AM, NFM, SSB, CW
- 2000 memories
- 23 tuning steps
- Channel scope
- Fully programmable
- 4.8V Ni-Cd battery pack
- 15V DC ext
- Telescopic Antenna

£449 B

UNIDEN-BEARCAT UBC-780XLT



- 25-1300MHz with gaps
- NFM, WFM, AM
- 500 memories
- Analogue Trunk Tracking
- Alphanumeric display
- Automatic Tape recorder option
- Antenna BNC
- 13.8V DC 700mA

£349.95 C

AOR AR-8600 II



- 530kHz - 2040MHz
- FM, AM, SSB, CW
- 1000 memories
- Tuning steps programmable
- 8.33kHz airband spacing
- RS232 PC interface fitted
- Power 10.8-16V DC
- Telescopic Antenna
- Optional slot card sockets

£599 C

YAESU VR-5000



- 100kHz - 2599MHz
- FM, AM, SSB, CW
- 2000 memories
- Large digital display
- Real-time band scope
- DSP Noise & notch filters (Opt)
- Super HF performance
- Automatic Tape recorder option

£599 C

YAESU VR-500 YAESU 2 YR WARRANTY



- 100kHz - 1300MHz
- NFM, AM
- 1000 memories
- 100 Skip channels
- Smart search feature
- 8 character Alphanumeric display
- Band scope
- PC programmable
- Flexible Antenna

£199 B

YAESU VR-1200



- 100kHz - 1300MHz
- AM FM WFM
- Adjustable steps
- Over 600 memories
- Skip channels
- Smart Search
- Alpha Numeric Tags
- Requires 2 x AA cells

£119 B

bhi NEIM1031 NEW



NOISE ELIMINATING IN-LINE MODULE
 * Noise attn -20dB (typical) * Noise Atn levels 8
 * Audio output power 2.5W RMS max (8 Ohms)
 * Audio connections: Line level in/out (RCA Phono),
 Audio in/out 3.5mm mono jack * Line in impedance
 10K * Line out impedance 100 Ohms * Line in
 sensitivity 300mV -2V RMS *
 Headphone socket 3.5mm mono
 jack * Power 12-24V DC 500mA

£129.95 B

bhi NES10-2 & NES-5 FORMALLY NESCB



NES10-2 Speaker with built-in DSP noise filters * Dip switches for 8 filter settings (NES10-2) * DSP settings preset, no user adjustment (NES-5) * Plugs directly into 3.5mm speaker socket * Handles up to 5 Watts input * Max 2.5 Watts output * Requires 12V at 0.4 Amps max * Use mobile with cigar adaptor

£99.95 B

£79.95 B

ICOM IC-R5 NEW



- 150kHz - 1310MHz
- AM, FM, WFM
- 1250 memories
- Built-in ferrite rod antenna
- CTCSS & DTCS tone squelch
- Cloning capability
- 2xAA Ni-Cds + AC Charger
- Flexible Antenna

£159 B

ICOM IC-R3 SCANNER & TELEVISION



- 495kHz - 2450MHz
- AM, FM, WFM, AM-TV, FM-TV
- TV mode PAL (UK)
- 450 memories
- 50.8mm (2in) TFT colour display
- Simple bandscope
- BP-206 Lithium-ion battery
- Telescopic Antenna

£339.95 B

ICOM IC-R10 "ICOM QUALITY SCANNER"



- 500kHz - 1300MHz
- AM, FM, WFM, SSB, CW
- 1000 memories
- 14 tuning steps
- Real-time bandscope function
- CI-V compatibility (option)
- 4.8V DC Ni-Cds
- Flexible Antenna

£259 C

ICOM IC-R75 "BARGAIN S/W RECEIVER"



- 300kHz - 60MHz
- USB, LSB, CW, AM, FM
- 101 memories
- Automatic Notch filter
- RF Gain/Squelch
- Synchronous AM detection
- DSP (with optional UT-106)
- Clock

£599 C

ICOM IC-PCR1000IS



- 100kHz - 1300MHz
- USB, LSB, CW, AM, FM, WFM
- Unlimited memories
- Synchronous AM detection
- RS-232 interface D-sub 9-pin
- BNC Antenna connector
- New Icom version 2 software
- Requires PC (Not included)

£309 B

WINRADIO G303i NEW



HF PC RECEIVER
 9 kHz to 30 MHz
 See Review in February Short Wave Magazine
 * Tuning resolution: 1Hz
 * Modes: AM, AMN, AMS, CW, FM3, FM6, FMN, (ISB & DSB, Pro Demodulator Option only) * Antenna: 50ohm (SMA) * Dynamic Range: 95dB * IP3: +8dBm

£440 C

ROBERTS R9914



- 153kHz-30MHz, 87.5-108MHz
- AM, SSB/CW, FM (Stereo)
- 45 Station preset memories
- Stereo through earphones
- Dual time
- Clock/Alarm
- 4 x AA cells (Alkaline)
- 230V AC adaptor

£99.95 B

bhi 1042 SWITCH BOX NEW



The bhi 1042 Switch Box - No more swapping of wires. Allows up to six pieces of equipment to be connected to one bhi noise eliminating module/speaker or even a standard extension speaker.

£29.95 A

MFJ-784B DSP FILTER



£259.95 B

The MFJ-784B Tunable DSP filter automatically eliminates all heterodynes, random noise, white noise, impulse noise, static, ignition noise, power line interference, atmospheric noise etc. There are 16 factory pre-set filters to match all the popular modes which can be re-programmed by the user and saved.

OREGON SCIENTIFIC BAA 898 HG NEW



The BAA898HG Wireless Weather Station offers more info than ever! Weather, temperature, pressure trends as well as pressure readings, history and max and min readings. Operates with up to 3 remote thermo-hydro sensors, one supplied. *Wireless freq. 433MHz *Main unit 195x105x77mm, 4xAA cells *Remote unit 92x60x20mm, 2xAA cells. Optional Thermo-Hydro Sensor: THGR228N

£79.95 B

WS-2300 WEATHER STATION NEW



This professional wireless weather station is a high quality system that measures the indoor surrounding area and receives weather data from 3 outdoor sensors through 433MHz signal. *Base receiver station *3 Outdoor sensors- Thermo-hydro transmitter, Wind sensor, Rain Sensor *PC program on CD-ROM *RS-232 serial data transfer *AC/DC power adaptor

£199.95 C

GARMIN GPS-V DELUXE NEW



Compact Handheld GPS with detailed street-level maps provided from MapSource City Select CD. Will automatically calculate a route and guide you to your destination with turn-by-turn directions and audible beeps to alert you to approaching turns. *Size: 127x59x41mm *Weight: 255g

£445 B

MFJ-461 "INGENIOUS ACCESSORY"



The MFJ-461 is a stand-alone pocket sized Morse code reader. Similar in size to the MFJ Morse tutors, all you do is hold it close to your receiver, and it instantly displays CW on the 32 character high contrast LCD. It has automatic speed tracking and a serial port. Truly pocket sized at 57 x 82.5 x 25.5mm and 158g.

£84.95 B

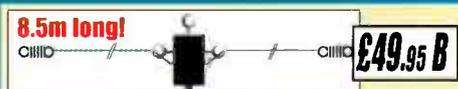
WATSON HUNTER "FREQUENCY COUNTER & FREQUENCY FINDER"



- 10MHz-3GHz
- LCD readout
- 8-digit display
- Black anodised case
- BNC socket
- Whip antenna provided
- Internal Ni-Cds
- AC charger
- 9V DC 300mA

£59.95 B

WDP-30 Short Wave Dipole



8.5m long!

£49.95 B

This new design from Watson gives you dipole performance across the entire short-wave bands. Unlike random wires, it reduces the background noise and pulls in the signals. And its small size means it will fit most gardens. Absolutely no adjustment required. 10m coax feeder included

W&S 2003 CATALOGUE !!

336 PAGES
PACKED WITH PRODUCTS
TIPS & INFORMATION

£2.95 B

carriage £1.25



YUPITERU MVT 7100

- 530kHz-1650MHz
- 1000 memories
- AM/FM/WFM/SSB/CW
- C/w NiCads, mains charger, 12VDC cigar lead, belt clip, carry strap

£229 P&P £10

PAY BY CHEQUES/PAYD INTEREST FREE! £199.00

YUPITERU MVT 3300

- 66 - 88MHz, 108 - 170MHz, 300 - 470MHz, 806 - 1000MHz
- Modes: AM/NFM
- Memories: 200

SPECIAL OFFER

£129 P&P £10

PAY BY CHEQUES/PAYD INTEREST FREE! £96.33

YUPITERU MVT 7300

- 520kHz - 1.32GHz
- 1000 Memories
- 8.83kHz Airband
- Duplex reception
- Descramble function
- C/w Mains adaptor, NiCads, Belt clip

NEW LOW PRICE

£239 P&P £10

PAY BY CHEQUES/PAYD INTEREST FREE! £193.00

YUPITERU MVT 9000EU

- 531kHz - 2039MHz
- 1000 memories
- W-FM, FM, N-AM, AM, LSB, USB, CW

OP90 SOFT CASE

£26.95 P&P £2.75

£369 P&P £10

PAY BY CHEQUES/PAYD INTEREST FREE! £316.33

YAESU FRG-100

FREE MAINS PSU

This receiver provides solid coverage from 50kHz - 30MHz with all mode reception of AM, SSB and CW.

£399.00 P&P £10

PAY BY CHEQUES/PAYD INTEREST FREE! £316.33

MORE YAESU
www.nevada.co.uk

SCANMASTER LP1300
WIDEBAND BEAM ANTENNA
16 EL LOG PERIODIC DESIGN

- 105 - 1300MHz
- Gain 11-13dBi
- 'N' type connector
- 500W

£129.00 £10 P&P

SEE OUR MASSIVE RANGE OF ANTENNAS ON OUR WEBSITE

NEW ICOM IC-R5

- 495 kHz-1309.995MHz
- AM, FM, WFM modes
- PC programmable
- 1250 memory channels
- Dynamic Memory Scan
- CTCSS & DTCS Decoder
- Auto Squelch

£179.00 P&P £10

PAY BY CHEQUES/PAYD INTEREST FREE! £156.33

PRICE MATCH ICOM IC-R8500

This receiver is everything we hoped it would be, covering 100kHz - 2GHz and lots of features including computer control.

IN STOCK! £1299 P&P £10

PAY BY CHEQUES/PAYD INTEREST FREE! £116.33

PRICE MATCH ICOM IC-7R5

- 0.03 - 60MHz
- Twin PBT built-in
- HF control capability
- Synchronous AM detection

IN STOCK! £699.00 P&P £10

PAY BY CHEQUES/PAYD INTEREST FREE! £576.33

MORE ICOM
www.nevada.co.uk

NEW! MARK III AR 8200 Mk III

- 530kHz-204MHz
- All Mode including 8.33kHz AM
- 1000 Memories
- We carry full range of accessories!

SPECIAL OFFER

£399 P&P £10

PAY BY CHEQUES/PAYD INTEREST FREE! £316.33

MORE AOR
www.nevada.co.uk

USED EQUIPMENT
ALL SAFETY TESTED & GUARANTEED FOR 3 MONTHS

ALINCO DJX-10E	HANDHELD SCANNER	199.00
ALINCO DJX-2	HANDHELD SCANNER	133.00
ALINCO DJ-X3 + ACC.	H/H SCANNER + NIC/CHG/RX5	169.00
BEARCAT UBC120XLT	SCANNER H/HELD	99.00
DRAKE RRE	+VHF CONVERTER + SPEAKER	498.00
GLOBAL AT1000	RECEIVE ATU	69.00
JRC NR0345	HF RECEIVER	350.00
KENWOOD R5000	+VHF CONVERTER BASE RX	499.00
MAYCOM AR108	AIRBAND RECEIVER	55.00
MEJ 971	ANTENNA TUNER	79.00
YAESU VR120	WIDEBAND H/HELD RECEIVER	99.00
YAESU FRG-9600	BASE SCANNING RECEIVER	299.00
YAESU VR-5000	WIDEBAND RECEIVER	499.00
DATONE FL2	AUDIO FILTER	55.00
EURO-CB EF100C-7	0.4-1000 MHz FRQ COUNTER	59.00
HITACHI KH-YG1	WORLDSPACE YAGI KIT	39.00
MFJ-956	RX ANTENNA TUNER	29.00
TONO Q.550	DATA TERMINAL	99.00

GRUNDIG

GRUNDIG YB400
High Performance Portable SW Radio

- 144kHz - 30MHz
- SW: 1.711-26.1MHz
- FM Stereo: 87.5-108MHz
- MW/LW
- SSB reception (both USB/LSB)
- 40 station preset
- Fine tuning
- Dual alarm clock
- Narrow/Wide bandwidth DX/Local sensitivity
- Auto Search
- Sleep timer
- Snooze timer
- Mains or Battery (with optional mains adaptor)

£99.00 P&P £10

PAY BY CHEQUES/PAYD INTEREST FREE! £86.33

PORSCHE G-2000

- FM Stereo, AM/FM/MW
- 13 SW bands, 2.3-26.1MHz
- 20 station presets
- Clock, alarm, sleep function, world times
- Mains/Battery (optional ac adaptor)
- Supplied c/w leather cover & in-ear stereo headphones

£89.95 P&P £10

MORE GRUNDIG
www.nevada.co.uk

BEARCAT UBC 780XLT
A MUST HAVE for enthusiasts

- 500 channels
- 25-1300 MHz (with gaps)
- AM, FM, WFM
- 5/7.5/10/12.5/20/25/50/100Hz
- Trunktracker- includes Motorola/EDACS/
- LTR VHF/400/500/800/900
- Smartscanner™ interface
- Alpha tagging
- PC + VFD control
- Clone feature
- CTCSS/DCS
- Record functions

£349.00 P&P £8

PAY BY CHEQUES/PAYD INTEREST FREE! £299.00

PERSTEL DR-101
Personal DAB Radio

- Two Band Coverage: DAB digital Radio Band, FM Radio Band
- Large full graphic 4 line display with backlight Shows programmes and programme info
- Stereo Headphone output
- Audio Output Power: 5mW @ 16 KHz
- C/w 2 x AA size alkaline batteries
- Size: 69 x 88 x 22 mm
- Weight: 40g (without battery)
- Carrying case, User Manual

£169.00 P&P £8

PAY BY CHEQUES/PAYD INTEREST FREE! £156.33

BEARCAT UBC 3000XLT
AM/FM/WFM + 400 Memories!

- 25-550, 760-1300 MHz
- AM/FM/WFM
- 400 memory channels
- TURBO SCAN/SEARCH
- Automatic Freq Storage
- Selectable Attenuator
- Automatic Freq Sorting
- Supplied c/w earphone, case, belt clip, charger, rubber duck antenna

£199.95 P&P £10

PAY BY CHEQUES/PAYD INTEREST FREE! £179.95

PERSTEL DR-201
Digital Audio Centre

- DAB Digital Radio
- FM Analogue Radio
- MP3 Audio Player
- Removable 64Mb PC disk
- Supplied c/w: Personal Stereo Headphones, 2 x AA Batteries
- 60 x 84 x 24 mm

£229.00 P&P £8

PAY BY CHEQUES/PAYD INTEREST FREE! £199.00

BEARCAT UBC 60XLT-2
Low Cost Scanner

A brand new low cost scanner that covers MARINE, LAND MOBILE and more!

- 66-512 MHz (with gaps)
- 80 memories
- Channel or Freq display
- Priority Channel
- Channel Lockout
- Scan Delay

£79.95 P&P £8

NEW UPGRADED MODEL - now with 80 memories for the SAME PRICE!

GOODMANS GPS280 DAB
Digital Radio/Stereo system

- DAB Digital Radio 10 presets, Autotune, & select up/down
- FM/AM Analogue radio
- Top Loading CD player with LCD Display
- 20 Track Programmable CD

£129.00 P&P £8

PAY BY CHEQUES/PAYD INTEREST FREE! £116.33

NEW DAB DIGITAL RADIOS!

how to find us

USED EQUIPMENT

ALL SAFETY TESTED & GUARANTEED FOR 3 MONTHS

ALINCO DJX-10E	HANDHELD SCANNER	199.00
ALINCO DJX-2	HANDHELD SCANNER	133.00
ALINCO DJ-X3 + ACC.	H/H SCANNER + NIC/CHG/RX5	169.00
BEARCAT UBC120XLT	SCANNER H/HELD	99.00
DRAKE RRE	+VHF CONVERTER + SPEAKER	498.00
GLOBAL AT1000	RECEIVE ATU	69.00
JRC NR0345	HF RECEIVER	350.00
KENWOOD R5000	+VHF CONVERTER BASE RX	499.00
MAYCOM AR108	AIRBAND RECEIVER	55.00
MEJ 971	ANTENNA TUNER	79.00
YAESU VR120	WIDEBAND H/HELD RECEIVER	99.00
YAESU FRG-9600	BASE SCANNING RECEIVER	299.00
YAESU VR-5000	WIDEBAND RECEIVER	499.00
DATONE FL2	AUDIO FILTER	55.00
EURO-CB EF100C-7	0.4-1000 MHz FRQ COUNTER	59.00
HITACHI KH-YG1	WORLDSPACE YAGI KIT	39.00
MFJ-956	RX ANTENNA TUNER	29.00
TONO Q.550	DATA TERMINAL	99.00

Easy to pay & GENUINE INTEREST FREE with CHEQUES/PAYD

- Simply divide the price (including carriage) into 3 equal payments.
- Write 3 cheques dated in consecutive months starting with today's date.
- Write your telephone number, cheque card number and expiry date on the back of each cheque.
- Post them to us, enclosing your name & address & we will (subject to status) send your goods immediately.

- Pay by three post dated cheques
- No forms to fill in!
- No hidden charges!
- No hassle!
- No catch!
- No problem!



ORDER HOTLINE

www.nevada.co.uk **023 9231 3090**

BPL CELESTE Mk II WordSpace Digital Satellite Radio



- FM / AM reception
- 10 Preset memories
- Dataport provision
- Stereo Line output socket

WORLDSPACE - CRYSTAL CLEAR DIGITAL RADIO, ALMOST ANYWHERE IN THE WORLD

£139.00 P&P £8 PAY BY CHEQUES/PAYDENT INTEREST FREE! 3 CHEQUES OF £49.66

GRUNDIG SATELIT 800
B Grade Mail Order Returns. As New Factory re-furbished Sold with full 1 Year Warranty

"B" GRADE
~~£549~~ **£399**

- 100-30,000kHz (0.1-30MHz) for AM Broadcast and Shortwave
- 87-108MHz for FM Broadcast
- 118-137MHz for Aircraft Band
- AM, USB, LSB modes (0.1-30MHz)
- AM mode only for 118-137MHz
- WFM mode only for 87-108MHz
- Three built-in bandwidths for SW
- C/W Deluxe Stereo Headphones



~~£549~~ **£399.00**

P&P £10

PAY BY CHEQUES/PAYDENT INTEREST FREE! 3 CHEQUES OF ~~£136.33~~

nevada radio

- why are they named after a State?

'Dunno, reckon they really meant Nirvana Radio'

'Get to Nirvana through Nevada? Wow! Didn't know life could be so simple'



Digital Audio Broadcasting

SPECIALS

PURE DRX-601EX

Have crystal clear digital radio anywhere in the house with this deluxe DAB digital radio

~~£399.00~~ **£399.00**

P&P £10

PAY BY CHEQUES/PAYDENT INTEREST FREE! 3 CHEQUES OF ~~£136.33~~



PURE EVOKE 1 ELGAR

Evoke 1- Elgar is a special edition version of the best selling DAB Digital Radio, the EVOKE-1. This incredibly stylish version offers all the features and functions of the EVOKE-1 but with an exclusively elegance design using a high-lacquer cherry-wood finish and a very cool white-on-blue display. Crystal clear DAB Sound without the hiss, crackle and fading of AM/FM broadcasts.

~~£119.99~~ **£119.99**

P&P £10

PAY BY CHEQUES/PAYDENT INTEREST FREE! 3 CHEQUES OF ~~£43.00~~



SPECIAL EDITION DAB DIGITAL RADIO

W.R.T.H HANDBOOK

Best HF Design 2002

5 RATING OVERALL



PALSTAR R30

Portable Communications Receiver

- 100kHz - 30MHz AM, SSB SW
- 100 memory chan.
- Internal batteries (not supplied) or 12V
- 8" w x 2.5" h x 9" d
- 4-pole crystal filter at 45MHz
- Switchable 7 pole input filter.
- Ceramic filters fitted
- 5W low distortion full fidelity audio amp
- Analog S-Meter
- +15dBm 3rd order intercept



~~£449.00~~ **£449.00**

P&P £10

PAY BY CHEQUES/PAYDENT INTEREST FREE! 3 CHEQUES OF ~~£153.00~~

NEW

ROBERTS C9950

Programmable Cassette Recorder

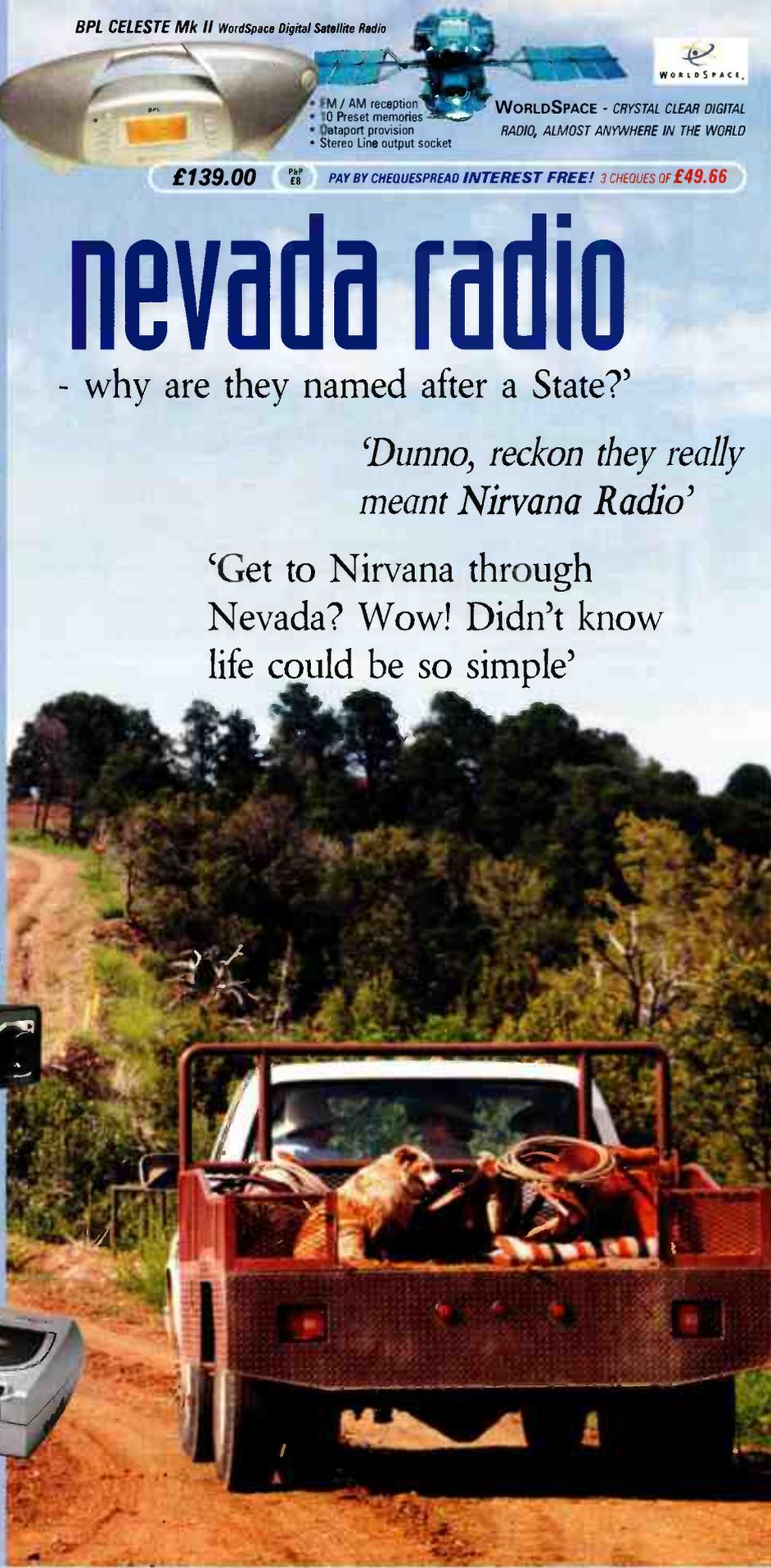
- Dual record speed,
- 6 separate timed recordings
- 6 hr recording, C90 cassette
- Voice activated recording, timed voice activated recording, remote switching of other equipment



IDEAL FOR THE RADIO ENTHUSIAST

~~£80.00~~ **£80.00**

P&P £10



nevada

We carry everything the radio enthusiast could possibly want at what we believe are the keenest prices in the UK. If you find something cheaper - tell us!

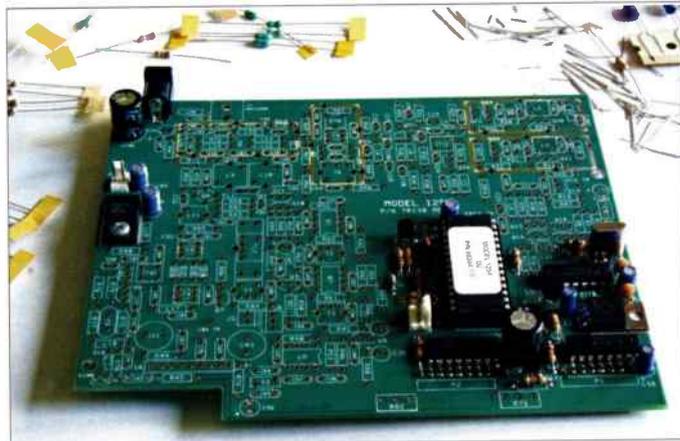
Now shop 24/7 on our secure website but we always look forward to meeting our customers so come and visit us at our showrooms. As major distributors you get to see the very latest kit, we also have the specialised knowledge to advise you.

Here's to Nirvana Radio - but call us Nevada

World Radio History



You only need the dining table and some basic tools to build this set.



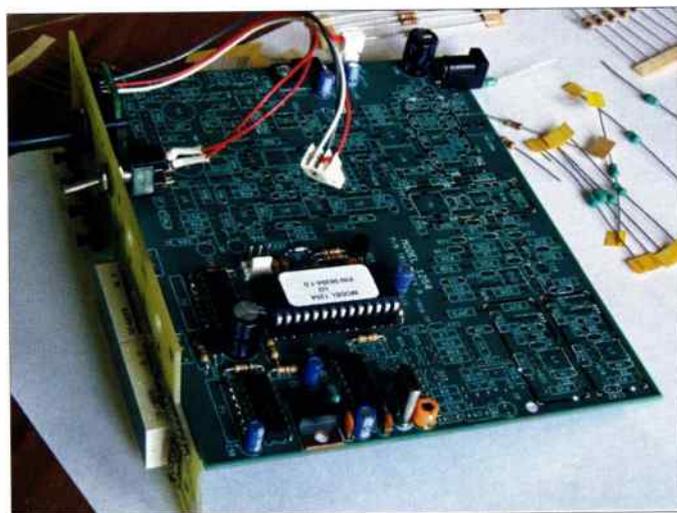
The first main board stage complete, time for a progress test.

It must be getting quicker! Either that or my watch is playing up. You're probably wondering what I'm talking about - well the Ten-Tec synthesised 0.100 to 30MHz, digital displayed receiver that I started to tell you about last month, is very similar, in terms of build complexity, to the TT1340 c.w. transceiver which I built earlier in the year. So similar in fact, that I would have expected a very similar amount of time to be required for its assembly, test and set-up.

In practice this is not the case, in fact I've managed to complete all the phases in an astonishing nine hours, which compare very favourably with the 20 hours to build the

transceiver. The only major difference is the lack of self-wind coils required for this latest build. But since the case is more complicated, there are two boards and there are more steps involved in the construction process, even the manual is twice the size, then I guess I must have honed my assembly skills. It does seem the logical answer to the conundrum.

I'd like to have a quick check of the 1340, but I lent it to *PW* Editor Rob, who liked it so much he's ordered one to build himself, in the mean time though, he won't let me have mine back as he's enjoying using it so much. Listen out on 40m - you might hear him on air.



The front panel must be fitted and removed every time any testing is performed.

In the Ed's Shack

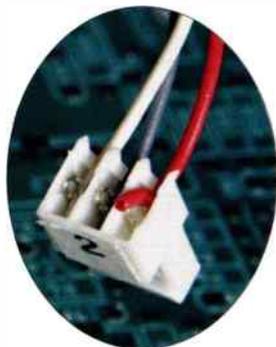
Last month Kevin started the Ten-Tec 1254 receiver build, this month we see how the process went.

Most Complicated

As with previous kits from Ten-Tec, and this, the most complicated they produce, is the third offering that I've assembled, every component is carefully packed and described. Even where changes have been required, due no doubt to unavailability of the originally designed-in component, Ten-Tec ensure that there is a loose leaf note explaining the change. For example, this TT1254 kit was supplied with two equivalent types of diode, whose markings bore no resemblance to those described in the build manual. Instead there was an addendum sheet provided with all the appropriate information to ensure unambiguous selection of the correct part. I have to say these kits really are both excellent value for money, a joy to build and superbly documented. Not only does the manual provide you with precise build instruction, it also explains how the radio works as you progress through the logical flow.

Again, as with the two previous kits from the range that I've already built, I'm left with a feeling of immense satisfaction. There really is nothing quite as rewarding as taking a collection of raw parts implementing a set of easy to follow steps and ending up with a fully working radio. Though I have to admit, that in this case, I did encounter a little problem. I'd best come clean and state that it was entirely my fault. I blame the snag on my fingers having lost their memory! Well, their sensitivity anyway. You see, when it came to adjusting the v.c.o. (voltage controlled oscillator) cores to achieve the correct spread, I was rather too enthusiastic in turning the core of L3. The manual gives a specific warning about using the correct tool and states that the cores are delicate, using the wrong shaped adjusting tool will crack the cores and render them useless. So, armed with my trusty and correct profiled RS trimmer I'd be fine! Excepting one thing. As I had my volt

The pre-made rotary tuning encoder lead has a problem with the insulation displacement connector. The red wire wasn't located in the plug correctly. Soon fixed with a small probe.

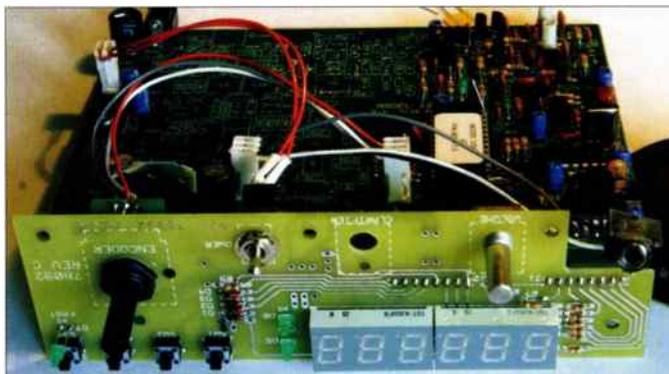
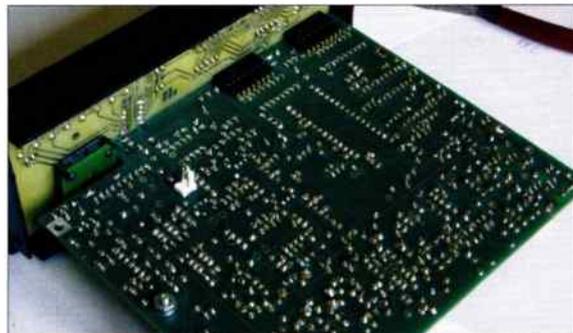


meter probe connected to the wrong test point on the p.c.b., I saw no significant change in voltage as I ran the core up and down inside the coil former. The annoying thing is, as I felt a little resistance to my turning force at the top end of the travel, I didn't catch on that the core wasn't intended to wind out that far. Later when I realised my error I was unable to return it to the correct, lower position. You see in my exuberance, I'd managed to grind off the slotted section provided for adjustment purposes and was left with a coil no longer up to the job. Ten-Tec Direct were happy to provide me with a replacement, but since it was my



More progress, here I've just completed phase three of the seven required for the build.

There's a lot of joints!



The display and main boards assembled.

fault, I did expect to pay.

In the event, since the set uses two v.c.o.s, one for the bottom half of the set's frequency coverage and a

second for the upper, my vandalism of L3 only effected the lower of the two. I could complete the set and replace the damaged inductor later. So I pressed on regardless with the build and alignment.

In common with the other Ten-Tec kits I've already covered, this one doesn't require any complicated test equipment to set-up. Previously, I've mentioned the similarity between Ten-Tec's excellent instruction manuals and those of the famous Heathkit company. I noticed in the introduction section of the manual for this kit, that the Ten-Tec founder, some 50 years ago, was indirectly responsible for the formation of the Heathkit company as he gave a significant quantity of war surplus to some friends who went on to utilise the gift and form Heathkit. No surprise there's a similarity!

Final Thoughts

Nine hours on, I have a working, synthesised, digital display, dual conversion superhet capable of resolving a.m., s.s.b. and c.w. It certainly performs well and once I've replaced my destroyed L3, the TT1254 will perform properly throughout all of its specified 0.100 to 30MHz range. I'm glad to report that this set utilises a somewhat superior coaxial power connector to provide volts for the set. Though the p.s.u. supplied with the kit is a 110V item. Ten-Tec direct supply a power lead so you've got to provide your own p.s.u.

Sadly the antenna connector is a phono socket in true USA style, as its a p.c.b. mounted affair, it's not going to be straightforward to substitute. However, I prefer BNC, so it will happen.

If you'd like to turn your hand to building one of these fine sets, you'll need to contact **Ten-Tec Direct, 4E East Mill, Bridgefoot, Belper, Derbyshire DE56 2UA. Tel: (01773) 880788. Web: www.aoruk.com/tentec/** The TT1254 costs **£169 + £8 P&P (UK)**. My thanks to Ten-Tec Direct for allowing me to play.



The completed radio waiting to be cased.



The completed display p.c.b.



Here it is - all built and ready for use.

On Air G3S

Kevin Nice reflects on the recently passed amateur

As you'll already know, the magazine callsign was given a rare airing in support of the first ever *Short Wave Magazine* 12 hour listening Contest.

The day's activity, which apart from the wall of Italian QRM, ran like clock work. The success was a result of many months planning

"What an amazing day". I found myself repeating that phrase for quite a while following the G3SWM event day which took place on Sunday 4 May.

Like most of life's successes, the whole activity that culminated in the on-air day for the magazine's call G3SWM was a result of excellent planning. Now before you jump to the conclusion that I'm blowing my own trumpet here, stop right there. The work done to prepare

for the day and on May 4 was mainly that of others, my part was pretty minimal. The success of the exercise was pretty much due to the very willing help of the Dorset Police Amateur Radio Society, a band of well rounded and keen local amateurs with a will to get things done.

IN THE BEGINNING

The activities of the on-air day all started at the end of October 2002. I'd learned of a plan by SPARC - Swanage & Purbeck Amateur Radio Club, to operate from the rare WAB square SY87. This square - like the one we ended up operating from - is considered rare due to the high proportion of the area that is made up of coastal water.

I was invited by Peter Wakefield,

secretary of SPARC, to meet some of the key players in the proposed activity over a very pleasant pint at one of their local hostelrys.

The SPARC plan was to operate a station close to the cliffs located by Tyneham on MOD land. The main station would have been v.h.f. After some discussion and some logistical problems, it was apparent that an alternative location would serve the needs of a station to support the first *SWM* Listening Contest rather better than the SPARC site.

At this juncture, some discussion with Clive G4SLU, over a lunch time or two, produced the possibility of setting up the station on the Isle of Portland. Clive, who happens to be a member of DPARS, floated the whole idea with his fellow club members, the rest is history. The concept was met with much

enthusiasm and very quickly plans were established. By pure coincidence, a few weeks later the event accommodation happened to be donated to DPARS in the form of a spacious caravan, no longer needed by its previous owner. Saved from the scrap yard, this magnificent mobile radio room, will, I'm sure serve the club well for many a year to come.

STUNNING LOCATION

The final location was chosen after scrutinising the map and a couple of site visits. We established that the once MOD owned land was now in the hands of the Portland Port Authorities. Moves were made to make contact and permission sought to establish the



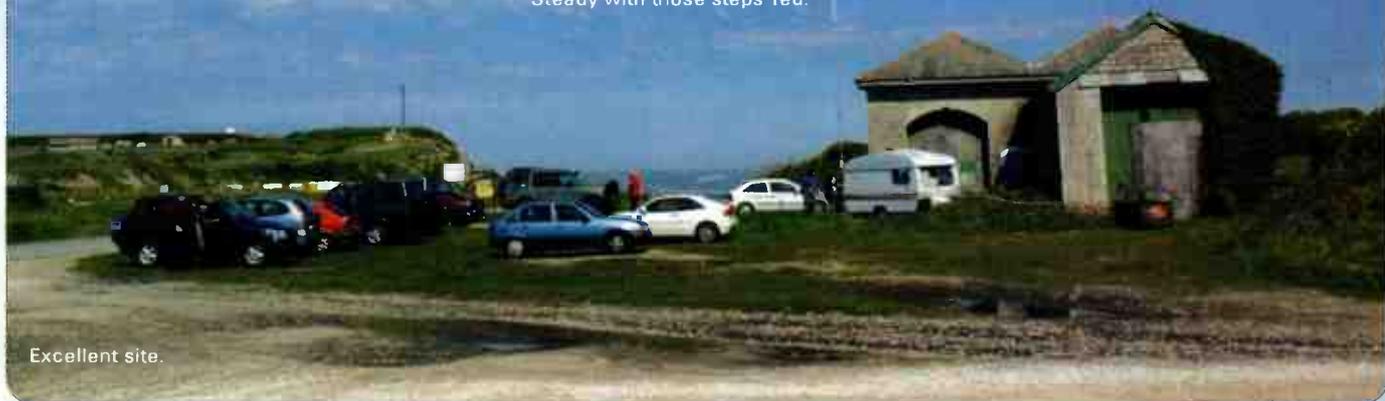
Martin attempts to break in at the YO! The antenna is there somewhere.



Steady with those steps Ted.



Tea's Brewed.



Excellent site.

WJM On Air

radio on-air event for the magazine's call G3SWM.



The well sheltered 'radio room'.



All this preparation really is hard work.



Where do we want this mast?



Up at last.



The APRS antenna, staked and tied to the caravan.



The lavish visitor centre, including flushing loo.



The station from afar.

station for the day. As you can see in the pictures, the site provided cover from the elements by way of the rather substantial old quarry railway engine shed. There was also good scope for antennas which rather obviously was an important consideration of the whole activity. On reflection, it would have been difficult to better the location from any perspective.

FINAL PREPARATION

The day before we launched into frantic activity, the final effort required to ready the station for working the world was to assemble the equipment and antennas on-site. This last phase commenced at around 1400 on Saturday the third. The caravan was positioned in the optimum

space, with care being taken to ensure it was the correct side of the grid square and hence actually in the SY77 WAB square, the site was you see, right on the edge.

Antennas were next on the schedule. We opted for two end-fed quarter wave wires. One running east-west, the other north-south so as to provide some diversity. The erection of

the N-S wire proved simplest as we were fortunate to have two ideally sited mounting points, that provided a relatively low but acceptable altitude of around 4m a.g.l. The other wire shared the engine shed as its feed-end mount but used a portable telescopic mast provided by Ted for the far end support. After a couple of hour's fun and frolics, Martin M3JBS and son Sean 2E1SPS,

ML&S £179.00 WITH FREE NICADS, CHARGER AND PROTECTIVE CASE!

ICOM IC-R5



This little handy scanner is very simple to operate and is very popular among our commercial customers. The new IC-R5, complete with NiCads & charger.

NOW IN STOCK!
Call for more details

KENWOOD TH-F7E



The Scanner that transmits! Covering 100kHz - 1300MHz AM/FM/WFM plus SSB (100kHz - 470MHz) with Lithium Ion battery and Charger plus Transmit (6 Watts) on 2 metres and 70cms. An ideal scanner for radio amateurs! All this for only £289.00
PC Programmable. Requires PG-4P at £31.95

NEW - call for more details NOW!

ML&S £289 ZERO DEPOSIT! 24 x £14.48



ICOM
We are :
excellen
Coverage
Featurin
memory
and man

ML&S PRICE: £6995 £995
DEPOSIT 60 x £134.00

AOR 8600 MKII new Mk II v



With many of the this is an exceptio receiver with FRE

ML&S £699.00 Z

KENWOOD TS-570GERX



Our best modified an excell Program ML&S / ZERO C

ICOM R-75



Icom's Late With all mode Options availa

• Voice synth
ML&S £599
ZERO DEPC

ICOM ICR-8500



Icom's Flag: covering 10 AM/FM/WF is as good : receivers bu where this i Complete v software (A ML&S PR ZERO DEI

BEARCAT UBC 780XLT



ML&S PRICE: £329 ZERO

AOR 5000



This is the finest comm produced and has all th users and Scanning en version with extra enh: recep-tion as well as e FREE PSU. PC Contro

ML&S £1599.00
ZERO DEPOSIT!



FREE PSU!
YAESU VR500

This amazing desktop scanner is the only scanner to offer true c receive. Coverage is from kilohertz to gigahertz offering all mode has optional DSP for enhanced shortwave reception. Complete v FREE PSU at only £599.99. PC Programmable.
ML&S £599.99 ZERO DEPOSIT! 48 x

ML&S £159.95 SPECIAL OFFER

YAESU VR-120D



Pocket Mini Scanner. 500kHz-1300MHz AM/FM and WFM. Ideal Go Anywhere pocket scanner. 12V DC! Now with NiCads and Charger.

NEW LOW PRICE

ML&S £349.95 ZERO DEPOSIT! 36 x £15.99

ICOM IC-R3E



The Scanner with TV built-in that picks up a bit more than Coronation Street! Complete with Lithium Ion battery and charger, all ready to go!
PC Programmable. Requires PC-R3 at £39.95

NEW LOW PRICE

ML&S £319.99 ZERO DEPOSIT! 24 x £16.40

ICOM IC-R10



Covering 100kHz to 1300MHz with AM/FM/WFM and SSB. Complete with Nicads, Charger and rubber helical wide band antenna all for only £319.99. Add the Super Searcher (£99.95) and RT-R10 (£109.99) for reaction tuning to nearby transmitters. PC Programmable. Requires PC-R10 at £39.95

ML&S £199.95

YUPITERU MVT-7100



This scanner is very old in design and lacks a few features but offers good scanning facilities. Covering 100kHz-1300MHz AM-FM/WFM/USB/LSB. Complete with NiCads, Charger & Telescopic Antenna.

PC Controllable



FREE PSU!

ML&S £899 ZERO DEPOSIT! 48 x £36.60

SDU 5500

See what is happening on the air with this add on spectrum scope. Not only will it work with the AR5000 and AOR3000a - it will also work with Icom ICR8500, ICR9000, ICR7100 and TS-870. (A good alternative to the SM-230)

YAESU VR-500



100kHz-1300MHz AM/FM/WFM/LSB/USB/CW. This amazing little scanner is an ideal pocket communications receiver with keypad entry!
PC Programmable Requires ADMS-3 at £39.95 ML&S £199.95



GRUNDIG YACHT BOY 400

This popular portable shortwave Receiver is in stock now.

ML&S £99.95

New DAB Radios in stock now.

Perstel DR101 Portable DAB receiver. Only £169.95.

Goodmans GPS280 DAB digital radio & CD player. Only £129.95!
Call for details!



garmin e map

Handheld version of the Street Pilot and comes with Data Lead, 16Mb Ram Card and UK Metro Guide on CD Rom.

ML&S £329 ZERO DEPOSIT! 24 x £14.49



NEW GPS V Deluxe NOW IN STOCK!

GPS V Deluxe has announced a hand held GPS looking similar to the established GPS3 range again with built in route calculator and 24Mb of RAM.

ML&S £499 ZERO DEPOSIT! 36 x £18.14



garmin street pilot 3 deluxe

The first portable GPS to talk directions to you. This unit looks similar to the Colour Street Pilot but has the inbuilt ability to calculate your route for you. It will then speak directions to you in a clear female voice. The Street Pilot 3 Deluxe uses a faster processor than previous versions and is much faster at relocating. Supplied with all you need to mount the unit in the car, plus 128Mb memory module, plus European City Street Map CD ROM with keys & you get a FREE USB Memory Programmer

ML&S SPECIAL PRICE £899 ZERO DEPOSIT! 36 x £32.68

The BEST RADIO EQUIPMENT at the BEST PR



martin lynch & sons
Supplier of Communications Equipment

CALL US 6 DAYS A WEEK, MON-SAT 9.30-5.30
0208 566 1120

128, 140-142 Northfield Avenue • Ealing • London W13 9SB
email: sales@hamradio.co.uk fax: 0208 566 1207

C-R9000L

able to offer the last few of these radios at £6995.
Q.1-1999.8MHz with all modes. a spectrum scope, 1000 channels advanced scanning facilities.

ersion!

atures of the AR8200 Mk2 al desktop communications **PSU. PC Programmable**

ZERO DEPOSIT! 48 x £20.68

elling HF Transceiver or Receive only makes this ant DSP Receiver. **PC able**
949.00
POSIT! 48 x £28.08

Shortwave Receiver coverage from 30Hz to 60MHz. le are:
siser • UT106 DSP Module.
00
SIT! 36 x £22.26

hip Communications receiver kHz-2000MHz /SSB & CW. SW performance many short wave only the VHF/UHF performance is radio comes into its own. th **Free PSU and Control** ut suitable for XP or Macs)

CE: £1349
OSIT 48 x £39.91

This is our fastest selling scanner for a long time - we just cannot get them in fast enough! Covering 25-510MHz and 800-1300MHz AM/FM - plus it is the only CE approved desktop to offer the Trunk Tracker facility. Complete with DC lead, FREE PSU and Whip Antenna.

POSIT 36 x £11.60

ications receiver AOR have features needed for Commercial usiasts. There is also The plus cements. Offering good short wave cent VHF/UHF performance. With ble.

48 x £47.31

Also Available
The New Yaesu
VR-5000 plus 3. This
unit has the DSP
module, Digital Voice
Storage Unit and
Voice Synthesiser
fitted and is available
for £729.00.

£17.72

bhi Ltd. Instrumentation Products

A British company producing probably the worlds best DSP noise reduction speakers and modules. ML&S stock the whole range of BHI products offering excellent technical engineering, quality and reliability. You just wouldn't believe how much noise these units remove - SSB transmissions almost sound FM quality!

NES-5 Only £79.95
Entry Level DSP Noise Cancelling Speaker for AM & FM Reception

NES10-2 Only £99.95
Adjustable Noise Eliminating Speaker

NEIM-1031 Only £129.95
Noise Eliminating In-Line Module

The same as the NES-10 but an in-line module for you to place between your receiver/rig and own speaker.

Six Way Switch Box
Only £29.95
Need to Connect more than one piece of equipment to your bhi Noise Eliminating Speaker or In-Line Module? The 1042 Switch box is the answer...

Just when you thought that there is nothing in shortwave that can surprise you anymore, here comes the new WINRADIO G303i shortwave receiver.

This new low-cost receiver (intended for experimenting and hobby use) continues in the fine tradition established by WINRADIO's successful range of wide-band PC-based receivers.

The WINRADIO G303i:
A ground-breaking shortwave receiver that will surely amaze you.

Only £439
call now for the full spec.

grundig satellit 800 Millennium

Covers Shortwave, Airband and FM Broadcast. An ideal shortwave broadcast radio - suitable both the experienced or novice listener.

ML&S £549 ZERO DEPOSIT! 24 x £27.52

AOR AR-7030



FREE PSU!

ML&S £799 ZERO DEPOSIT! 36 x £29.05

This strange looking radio has stunning audio and a very lively receiver. It is one of the best broadcast band receivers available and an ideal radio for Broadcast DX chasers but is equally at home on SSB and CW. Even old Lynchy uses one of these! The Plus version is an enhanced version of 7030.

The AOR 8600mk2 Plus is the fully loaded scanner from AOR. Coverage is 100kHz-3000MHz all mode. The "AOR8600mk2 Plus" comes supplied with the following:

- EM-8200 Memory Card
- VI-8200 Voice Inverter
- RU-8200 Record Unit
- CT-8200 CTCSS Card
- TE-8200 Tone Eliminator
- MF-2.5 Collins SSB Filter
- MF-6 Collins AM Filter
- PSU-8600



ML&S are pleased to announce their recent appointment for the full range of Oregon Scientific Products.

With innovation and attention to style always at the forefront of its state-of-the-art design and development, the company brings world class consumer electronic products with the very latest LCD and microprocessor technology to consumers throughout the world.

- WNR982N Professional Weather Station.....Only £289.99
- BAA88RHG Long Range Weather Forecaster.....Only £79.99
- PDA188 PC Link Touch Screen Organiser.....Only £19.99
- VR339 Digital Voice Recorder.....Only £69.99
- Digital Camera DS6818 Card Cam.....Only £59.99
- Digital Camera DS6888 D Shot.....Only £49.99
- Digital Camera DS683000 3.3megapixel.....Only £199.99
- RM888PU Radio Controlled Compact Projection Clock.....Only £29.99
- BAR338PU Radio Controlled Projection Clock & Barometer.....Only £79.99
- WD338 Weather Station & DECT Cordless telephone.....Only £149.99
- BWR102U Body Weight monitor with BMI & Remote Header Display £59.99

This is just a very short listing of the Oregon Range. Call now to place your order!

They have a huge range of different products including:
Clocks - Radio Controlled and Projection;
Environmental Monitoring - Weather stations and Barometers;
Sport and Fitness - Heart and Pulse Monitors, Pedometers, Scales etc;
Personal Information Products - Organisers, Voice Recorders, Digital Cameras etc; and Educational Learning - utilising the latest educational techniques in a multitude of fun ways ('mini' PCs, laptops etc.) to introduce young people to information technology skills.

DS6618 WMR982N WEATHER STATION



Not only is ML&S able to offer the entire range but we can ship anywhere in the world. Call the sales desk on 020 8566 1120 or email: Oregon@hamradio.co.uk

MIRACLE WHIP

This Amazing Antenna at only 55 inches long is an ideal companion for any receiver covering 600kHz - 460MHz. **PRICED £129.99**

“Miracle whip received with thanks, had a test run on receive with an Icom 71E and Yaesu 7700 found it very good indeed reception was as good as with the outside long wire”



AOR 8600mk2 PLUS

ML&S £1139 ZERO DEPOSIT! 36 x £41.41

Icom ICR8500

ML&S £1349
ZERO DEPOSIT! 48 x £39.91

We have many accessories for the SWL including:

- MFJ-461 Pocket Morse Decoder.....£84.95
- Global AT-2000 Antenna Tuner.....£89.95

NEW! dresser active antennas

This outstanding range is ideal for use with all base station receivers, ICR-8500, AR 5000, PCR 1000, NRD 545, FRG 100 & MORE!
Beautifully designed and manufactured in Germany.



- ARA 100 HDX £349
- ARA 2000 HDX £349
- ARA 60 £189.95
- ARA 2000 £189.95

Micro PSU

Ideal for scanners and shortwave receivers. This Mini switch mode 2.5 amp PSU will power many scanners and SW receivers. About the size of 20 cigarettes and very light. Ideal for popping in your brief case or suitcase! (State make and model of receiver when ordering) **Only £29.95**

New Maldol Handheld Discone

Maldol HDX30.
New discone to clip on top of any hnc scanner
Only £38.95

Maldol GDH-30 General Discone£49.95

mydel

MiniMag Scanning Antenna available with BNC fitting.....£32.95
SMA fitting£34.95
Will also work on 2M & 70cms TX (50 W)

Magnetic Long Wire Balun.....£19.95
Skywire Antenna Kit.....only £39.95

UK Scanning Directory

The 8th edition of this excellent frequency guide.
PRICED £19.75 plus £5.00 P&P
it's BIGGER than ever!

ES at ML&S - where else!

FINANCE EXAMPLE

YAESU VR5000	APR.....19.9%
	PRICE.....£599.00
	Deposit.....£00.00
	48 Payments of.....£17.72
	Total purchase price.....£850.56



Martin Lynch can offer finance terms up to 48 months with no deposit. We welcome your part exchange against any new (or used) product provided it is clean and in good working order; call the Sales Desk today! Usual APR: 19.9%. Payment protection is also available up to 48 months. All units are brand new and boxed and offered with full manufacturers RTB warranty. All prices quoted for cash/ cheque or Switch/ Delta card. No add-tional charges for credit cards. Martin Lynch is a licenced credit broker. Full written details are available on request. Finance is subject to status. £10 p&p on all major terms. E&OE

SAVE £££s!

Check out our

NEW SHOPPING BASKET

on our website: **www.hamradio.co.uk**



HOT NEWS!
New Radio from AOR!
CALL FOR DETAILS

Richard, Ted, Colin and Clive had both the h.f. antennas aloft to the satisfaction of all. Not bad when you consider there was only one tea break to interrupt the activity, courtesy of Shirley 2E1FTA. The catering wagon, was in fact husband John GOSKR's tardis like trailer, which seems to contain most things you could ever need - really! Even down to a spare generator should the main one fail.

With the wires in the sky, next activity was to locate the generator away from the caravan in an attempt to keep the noise level down. Once again the engine shed provided a solution and the harsh sounds of the single cylinder workhorse which proved to be a totally reliable source

of power excepting the occasion when we forgot to fuel it!

By 1800 it was time for the few of us who were staying on site overnight, to contemplate what to eat. The station was now ready to begin operation at 0500 the next day, the internal work had been completed including the configuration of an APRS node and a 2m talk-in set-up.



Prime mover Ted 2E1EJC.

Steve G1YNY busy on 6m.



gratitude to everyone who made the event possible, but a special thanks go to Colin, Richard and John who between them were responsible for the majority of the contacts. Our set-up, was I'm sure, similar to most contest or event stations.

We were running a computer logging system with the logging operator sharing audio via a splitter box made specifically for the event, with the radio op and shack speakers. This allowed the logger and the op to pay close attention via headphones, whilst



John and Kevin working hard.



Richard making contacts, Clive logging away.

visitors could hear what was happening via the speakers.

The logger's role was two-fold, as there was a second screen visible for whoever was on the microphone. There were several times when the logger caught details from the midst of the great wall of Italy which whoever was operating the radio had missed, only to find the information on the screen in front of them. A slick trick indeed.

By the time close down arrived, it seemed a real shame to dismantle the station, but all good things come to an end. Everyone had enjoyed the day's activity on air, in spite of the conditions. A really pleasant atmosphere surrounded the caravan all day. I know I'm not alone in looking forward to the next time G3SWM goes on air. **SWM**

SLICK OPERATION

The half light of 0430 on the day we'd all been preparing for, saw the regrouping of the participants for the day's fun. Richard GORSN and John GOSKR had returned home for the night and had obviously got up rather early. Clive G4SLU and Chris M3SHE had stayed locally with relatives and so benefited from a longer period of sleep, Colin G3XAS and Ted 2E1EJC enjoyed the 'comforts' of the radio room. Personally, I had intended sleeping in my Land Rover, but faced with the superior offer of Toby M3CGX's floor, down the road in Portland, what choice was there?

A hurried cup of tea later we were on air and calling CQ amongst a wall of over modulated Italian stations. Many of the later reports indicated that there was mostly a pile-up of amateurs calling G3SWM, but it took us three operator changes and 38 minutes to make the first contact of the day. At this point there was definitely an air of apprehension - was this going to be the what we were to expect for the whole day?

Fortunately, this improved quite considerably. In spite of, at times, extreme difficulty, the spirit of team never wavered. I must express my deep

All packed up and ready to go.



Enthusiasts familiar with the mechanics of satellite broadcasts will know that the system has evolved based upon the principles put forward by Arthur C. Clarke (now Sir Arthur) in 1945. Clarke didn't invent the geostationary orbit, as he will freely admit, however, he was one of the first to come up with the idea of how to use this particular region in space. His theory was based on just three satellites, giving near Global coverage. How that idea has blossomed!

Today there are hundreds of craft out there, some of which have given their all and are slowly drifting into graveyard orbit. Over the years, one of the main tasks detailed to satellite designers has been to make them as efficient as possible. When you are spending hundreds of millions of dollars building

this type of spacecraft, you need to see a return on your money!

Initially, satellites could only stay on station for a few years, limited as they were by the amount of fuel on board. Remember fuel means weight, and weight means expense when it comes to launch time. It was a fine balance between the cost and the predicted longevity of the bird.

Gradually lighter satellites became the norm, and more fuel was placed on board. The latest generation are now using Ion motors to help keep them in position, but what of those ageing birds, still hanging on, but running out of fuel...where are they, and who uses them?

Mature Satellites

Spread out through our portion of the arc, there are a handful of satellites now

reaching maturity, but still usable. Keeping station in that 100km imaginary box in space does become more difficult for ground controllers as fuel runs low, and rather than carrying out constant adjusting burns, the satellites are allowed to 'wander' a little.

Intelsat recognised this problem in the early days and developed something called the 'Comsat Manoeuvre' - a series of short bursts from the hydrazine motors which puts the craft into a controlled, figure of eight like oscillation, above and below the equatorial plane. This usually follows the movement of the satellite to its final slot.

By doing this the craft becomes 'inclined', a moving target when viewed from the ground. At first its position



Rare catch via inclined Eutelsat 2F2 at 12°W.

will only vary slightly throughout a 24-hour period. However, as time goes by, the rate of oscillation increases, until the position changes by as much as 4° above or below the arc in a cycle taking just under a day. This procedure can however extend the usable life of a satellite by a number of years.

Once a 'bird' is put into an inclined orbit, it becomes a cheaper alternative for occasional use, cable

TROCKING THE WRINKLIES

John Locker explains just what happens to aged satellites once they've come to the end of their planned life. Even though their fuel supply is almost exhausted, they still offer commercial use and fun is to be had for the microwave enthusiast.

broadcasters and more recently Internet via Satellite companies, after all it is of little use for Direct to Home purposes. Transponder rates are usually cheaper, and the likes of SiSLink, SoloSat.com etc. take advantage of these reduced cost uplink charges in what has become a very competitive field. To us of course it means we can usually find a clutch of newsfeeds, OBs, etc. in one place. The downside is that we will also experience fading signals as the bird wanders above and below the arc.

Prime Example

Until a few months ago, the 26°E slot was a prime example. *Eutelsat 1F4* had been moved there some years before, and was heavily used for feeds by a number of companies. It could be frustrating to find a feed at 26°E, then see it fade before your eyes.

As digital became the standard, it was even harder to find those illusive transmissions. The saving grace with *1F4* was that it had a high band transponder around 12.5GHz which put out a constant carrier. This could be used as a beacon, but would only be seen when the satellite was near to the equatorial plane. In other words, in sight of your dish.

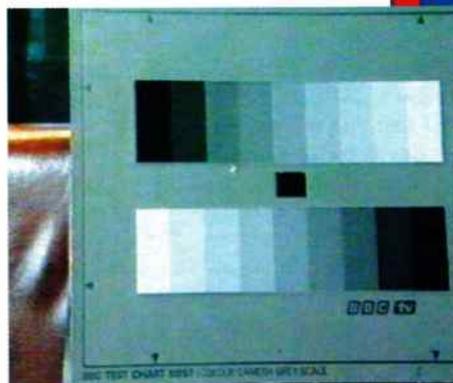
The answer? Well you could either go to the expense of adding inclined orbit tracking to your dish, or you could calculate the position of the satellite, and only search it when in view. The latter process saves a lot of wasted time and energy looking for signals that simply aren't there. But inclined orbit tracking gives the best of both worlds,

because not only can you calculate the position of the bird, but you can also then move your dish up, or down, to lock onto the signal.

Final Resting Place

Eutelsat 1F4 has now moved on to what must surely be its final resting place, just off 32°E. It is 5.5° in inclination and fading fast. Many of the signals you would have found a few years ago on *1F4* are now lurking close to the *Astra 1* birds - on *2F3* at 21.5°E. Formerly considered a higher powered Eutelsat platform, *2F3* spent some time at the 16°E slot. Now in its maturity it has

towards the outer edges of the footprint, and due to the use of similar frequencies by the Astra group it has



Timewarp TV...old BBC caption used as a test ident by GMTV outside broadcast.

become noticeable that there seems to be some sort of correlation between reduction in signal strength, and the relative position of *Astra 1C*, which is also a bit wobbly.

You could be forgiven for wondering why all the fuss, why not just stick to the satellites that behave themselves and stay in their correct position. The fact is, that these birds are fast becoming the most interesting from the viewpoint of the enthusiast. Sky, GMTV, Channel 4 (The Priory) and BBC feeds are all present at some time or other on *2F3*.

Prone To Interference

BBC and Channel 4 tend to use the higher frequency range, which is less prone to *Astra 1c* interference and slightly higher powered. The others tend to pop up at the lower end of the band. The clash between co-satellite interference and slight inclination, together with slightly lower output power

developed a very slight wobble, which can only deteriorate.

Although slight, the inclination is enough to vary signal strength, especially



Image of Europe*Star test card at 47.5°E.

can only mean one thing...fading pictures.

During September/October a group of satellite observers (Feed-Hunters - see note) noticed that not only were they experiencing picture break-up themselves, using

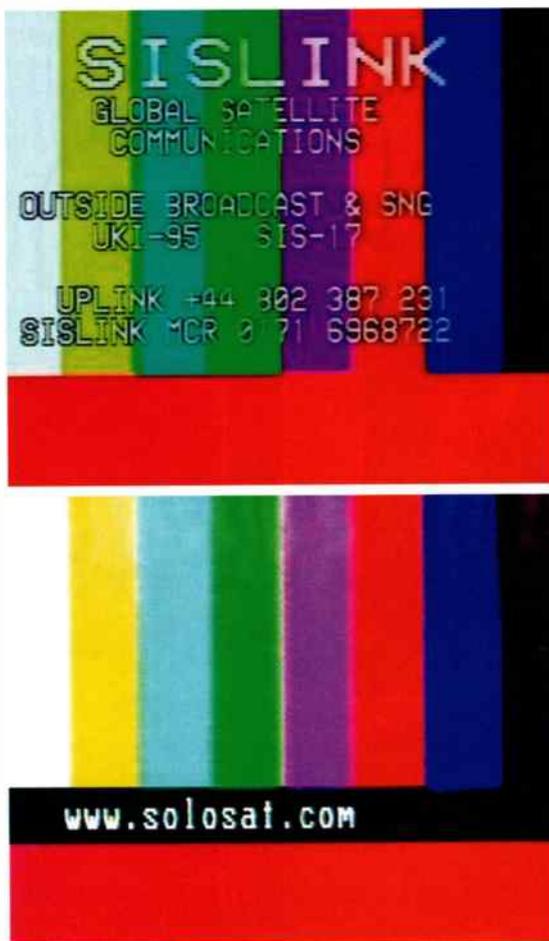


dishes between 1.0 and 1.8m, but that the broadcasters too seemed to be suffering problems with near threshold reception. A good example here is Sky News Active on *Astra 2a*. Very often the feeds for their active channels come off *2F3*. Look closely at those active screens and you start to notice occasional break-up, which is also evident on the direct signal received from 21.5°E.

Track It Yourself

To optimise your reception from this bird and the others in inclination, download one of the many satellite tracking programmes from the Internet and track the satellite yourself. That way you'll know when the bird is passing through the arc, and you'll be able to get optimum picture quality. One of the best tracking programmes available is STS Orbit.

Another, slightly easier to use, Home Planet. Most are Freeware or Shareware. There are a number of commercial programmes available too. I



use LogSat which can track multiple targets in different windows. Check out www.logsat.com

All the programmes rely on data from NASA and NORAD to calculate up-to-date satellite positions. These elements (Keplerian Elements) are constantly updated, and again available via the Internet.

As a starting point take a look at Dr. T.S. Kelso's site. Here you'll find not only the elements, but also access to a range of tracking software. <http://celestrak.com/index.shtml> Alternatively, the exact position of a bird can be obtained from the tracking section of the LyngSat satellite information pages, see www.lyngsat.com/tracker/europe.shtml

Newcomer From Asia

2F3 isn't the only interesting inclined satellite. Over at 47.5°E, a newcomer has arrived from Asia. Formerly *Korea Sat 2*, and now christened *Europe*Star B*. Showing an inclination of about 1°. This bird has great potential as a source of transfers between the Far east and Europe.

In C-band, *Gorizont 31* at 40°E is also inclined, so too the following.

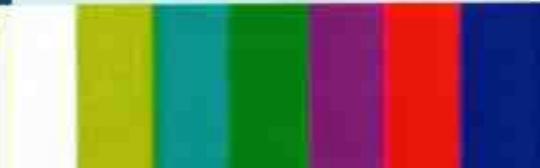
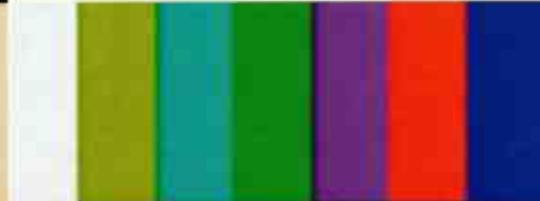
Satellite	Position	Band
<i>Eutelsat 2F1</i>	48°E	Ku
<i>Eutelsat 2F2</i>	12.5°W	Ku
<i>Sirius West</i>	13°W	Ku
<i>Intelsat 511</i>	29.5°W	C/Ku
<i>Columbia</i>		
(Intelsat) 503	37.5°W	C/Ku

With satellite operators trying to squeeze every last drop from their fleet, inclined birds may well become more prevalent over the next few years, so no harm in getting a bit of tracking practice in now, ready for the return of the 'winklies'!



```

Date UTC
10/1300 17:45:53
Azimuth Elevation
149.97 18.77
Range Height
38870km 35771km
Dopp (khz) Mode
N/A N/A
Swamp Phase
N/A 27
UMD Eclipse
5.65 Towards
Panel # Sun angle
N/A N/A
Orbit # Solar elev
3409 -11.8°
Latitude Longitude
5°52' S 32°41' W
    
```



Feed Hunters is an Internet based group of like minded satellite TV enthusiasts. Real-time feed information is available to members. To subscribe send a blank E-mail to feedhunters-subscribe@egroups.com

■ GRAHAM TANNER, 64 ATTLEE ROAD, HAYES, MIDDLESEX UB4 9JE

■ E-MAIL: ssb.utils@pwpublishing.ltd.uk

SSB Utilities

More B-52s

Last month I wrote about the US Air Force B-52H missions launched from the UK against Iraq. Very soon after I sent that column off to the Editorial Offices the war came to an end, almost as abruptly as it had started. For about a week there was a distinct down-turn in the number of B-52H flights from RAF Fairford, instead of aircraft departing every few hours, there were just a few flights per day.

On Wednesday 23rd April I noticed a brief mention on the BBC Teletext pages that said that the USAF had announced the B-52Hs would be departing from RAF Fairford 'during the following two day'. Realising that this would be an ideal opportunity to hear these aircraft as they crossed the Atlantic, I sent a message to the 'SWM Readers' group on the Internet, to alert them to the flights. At that time I did not realise the a pair of the B-52Hs had departed from RAF Fairford that day, and flown down to Diego Garcia in the Indian Ocean - these were 'Ripper 81' and '82'.

On the morning of 24th April ten B-52Hs departed in pairs, all using 'Victory' callsigns. The first flight was 'Victory 11/12', the second flight was 'Victory 21/22' and so on. They flew north over the UK and entered oceanic airspace off the west coast of Scotland. While crossing the Atlantic they were all heard on **5.616** and **8.891MHz**.

This was all fairly routine, however just before 1700 that evening **11.175MHz** was active with 'Victory 52' making a 'phone-patch to the Pentagon in Washington, USA. The 'phone-patch was set-up so that somebody on the aircraft using the callsign 'Ironman 1' could do a live interview with the members of the Press who were assembled in the Press Room. The whole interview took about 20 minutes and included questions from a number of local US TV and radio stations, and even questions from the BBC.

For those of you who have the suitable satellite equipment, the video from the Pentagon was relayed to Europe and the UK via the *Eutelsat 10°E* satellite. The whole broadcast lasted about 20 minutes, and there were at least 10 minutes spent setting-up the link at the beginning. During the 'interview' there were a number of EAM broadcasts and 'Mainsail' calls which could be heard, and I am sure that these must have been picked up in the Press Room.

Going back slightly further in time, an E-mail from **Andrew Hopwood** has confirmed all the callsigns used by the B-52Hs during their training flights in the UK prior to the commencement of the bombing flights to Iraq. I mentioned a few dates and callsigns in the May 2003 issue, but Andrew's list is as follows:

- 13th March - Choir callsigns
- 14th March - Ranty callsigns
- 15th March - Tenor callsigns
- 17th March - Prim callsigns
- 18th March - Chose callsigns

Some more information has also become available about the many B-2A 'Stealth' flights involved in the Iraq war. It seems that most of the flights were operated non-stop to and from their base at Whiteman AFB in Missouri. These flights crossed the North Atlantic, possibly the northern UK, then Germany and eastern Europe. It would seem logical that the aircraft would have been refuelled over the North Atlantic (by aircraft operating from the north-

eastern USA?) and Europe (probably by aircraft operating from RAF Mildenhall).

After their missions the aircraft then flew westwards along the Mediterranean Sea where they were refuelled by KC-135s operating from RAF Akrotiri in Cyprus, Moron AB in Spain or Sigonella AB in Italy. All flights were either pairs of aircraft or flights of four aircraft. A further refuelling took place over the Atlantic with aircraft operating from Lajes AB in the Azores. All the B-2A flights were using 'Raccoon' callsigns, while the KC-135s providing fuel were using 'Fueller' callsigns.

Personally, I only heard one pair of aircraft late one evening as they passed position reports as they crossed the Atlantic on their way home. I wonder if anyone heard any more flights?

To MHz Or Not To MHz

Going back to earlier this year I received an E-mail from **Rab Thomson** asking about the way that I present frequencies in this column. He says that when he was involved in radio communications in the Merchant Navy they always used kHz for l.f./m.f./h.f. frequencies and MHz for v.h.f. and u.h.f. frequencies. This was in their own publications and their own written records. Rab wants to know why I use MHz rather than kHz.

Well Rab, when I sent in my first column to the Editorial Offices over 10 years ago it contained frequencies listed in kHz, but they were all changed by the Editor. Since that time I have stuck to the convention of using MHz for all frequencies. Personally, I am not too bothered either way, but what I think is important is to find a convention to use, and to stick with it. Changing the way the frequencies are presented just causes confusion.

Many years ago I used to receive a regular letter from somebody who always listed frequencies as 'mega-cycles' - I knew exactly what he meant, and knew which frequencies he was talking about, so it does not really matter which method you use to list frequencies.

Ship's Callsign Search

A few months back I mentioned a web-page which contained a form that allowed you to enter a ships callsign and to get some further information about the vessel concerned. **John Jones** from Spain sent an E-mail to say that he was having problems accessing the web page. I have tried twice since I received John's E-mail, once I was successful, and once I wasn't. Is it just me, or my computer, or have other readers had any problems with the web page listed on page 52 of the May 2003 issue?

Have any other readers found any more web sources of ships callsign information? This is an area which I know very little about, most of the reports I see about maritime signals and shipping relate to digital communications, and I never seem to find any busy maritime voice frequencies.



Courtesy of Northrop Grummen.

■ JERRY GLENWRIGHT c/o EDITORIAL OFFICES, BROADSTONE

■ E-MAIL: shackweb@pwpublishing.ltd.uk

ShackWeb

Hello and welcome to the second in the newly devised (and exotically named!) 'ShackWeb', the column devoted to bringing you a bi-monthly peek at the best of the web as it relates to our hobby.

Despite my years of writing about computers for *SWM*, I think anyone who reads my column knows that it's the older stuff that I'm interested in - the micros (and minis and mainframes) of the late 1970s and early 1980s. The same holds true of radios. Though I adore my pocket-sized go-anywhere Sony with its short wave capabilities, my big old '60s Heathkit with its clunky knobs, sticky tuning indicator, stickier bandspread control and mains hum is lovely once it's warmed up - check out the Heathkit Virtual Museum at www.heathkit-museum.com

But top of my oldies list are the various models from Eddystone - there really is nothing quite like them. The incredible engineering is awe-inspiring and, as you might expect, there are many, many websites devoted to praising these sets to the skies.

One of the best and packed with Eddystone goodies can be found at www.qsl.net/eddystone/welcome.htm Created by Alan Clayton G7HZZ, the homepage is a clickable map of links to model names and numbers, technical details, hints and tips on using Eddystone sets, details of the Eddystone User Group (EUG), spares and service and even (if you're still at the drooling stage) a for sale/wanted page. Alan's 'hints & tips' page is truly excellent - sensible pointers to help you choose a viable receiver or walk away from a bad one. But my favourite area of the site is his potted (actually very detailed) history of Eddystone receivers complete with chapters on 'Eddystone at War' and Cold War sets - highly enjoyable.

An excellent example of a general radio site with some interesting Eddystone stuff is www.dxing.com - a self-styled E-magazine featuring all kinds of stuff devoted to radio (listening, ham, scanners, numbers stations, TV DXing and so on) as well as information and pictures relating to Eddystone receivers including my own particular favourite, the 940 (a general purpose communications receiver covering 480kHz to 30MHz).

Talk Time

Anyone interested in PMR446 - listening, transmitting or even DXing - should beat a path to Delboy's PMR446 pages at www.delboy-enterprises.co.uk/pmr_446mhz.htm I acquired my first sets operating on this band about two and half years ago after listening for a while with my AOR AR1500 scanner. There wasn't much traffic at that time, but it was quite interesting. The next logical step was a search on the web for others interested in the new short-range licence-free band and I wasn't disappointed.

Of these though, one of the best is definitely the above-mentioned Delboy's site. Packed with information for experts and those new to the band, it's easy to navigate too. Heading the main page is news and important dates and announcements currently with links to a DX weekend in August (500mW maybe, but these little sets are pushed to

the limit!) and details of a rally in Harrogate as well as news of an Internet repeater and a review of the Kenwood FunKey radio. Scrolling down the page provides access to comprehensive specifications about PMR446 including channel usage, frequencies, CTCSS codes (which helps make PMR446 so usable), terrific tips about the best battery types and what to expect from each, and lots of links to other PMR446 sites.

If you're in the market for a radio there are lots of unbiased reviews and those of us who like to tinker can click on the link to Delboy's 'mods' page which offers instructions for expanding the possibilities of many popular sets including radios from Telcom, Binatone, Alinco and Goodmans.

Overall then a fantastic site and well worth a visit... the only thing about it I don't like is the irritating javascript which causes the word 'delboy' to follow your mouse pointer wherever it travels on screen! Worth putting up with though for the marvellous information and sheer enthusiasm for PMR446 provided by Delboy.

Less colourful perhaps, but of equal interest (especially to the technically minded) is www.446user.co.uk home of the PMR446 Internet-based repeater network for the band. Established at the end of March, the PMR446 repeater service has tacit approval from the Radiocommunications Agency (at least, they said it didn't contravene licensing restrictions). Now you can power up your licence-free hand-held and talk to the world! The guys behind the site firmly believe that if doing so encourages greater take up of amateur licences (and a consequent rise in interest in all things radio) then so much the better...

Linking Up

The whole idea of the web (even the reason for its name) is the concept of 'hyperlinks' or just 'links' as they're now known - clickable tags that take you to related information within the same site or elsewhere on the web. Few are the websites without a link or two, but some sites are simply giant collections of links which act as a kind of index to useful information. Such is the site of Geoff Brown GJ4ICD, an enormous and readily navigable collection of links to radio-oriented information of every kind - packet to QSLing, home-brew kit building to commercial receiver modifications to service and operating manuals to solar data and software. Well worth a visit at www.btinternet.com/~geoffrey.brown3

And Finally

That's it for this time. If you spot a website you think should be shared with others, then do send me an E-mail so I can pass on the URL. And don't forget to check our *SWM*'s own website at www.pwpublishing.ltd.uk/swm/index.html where you can find details of the latest and coming issues, an index of past articles and much more. Until next time, good listening.



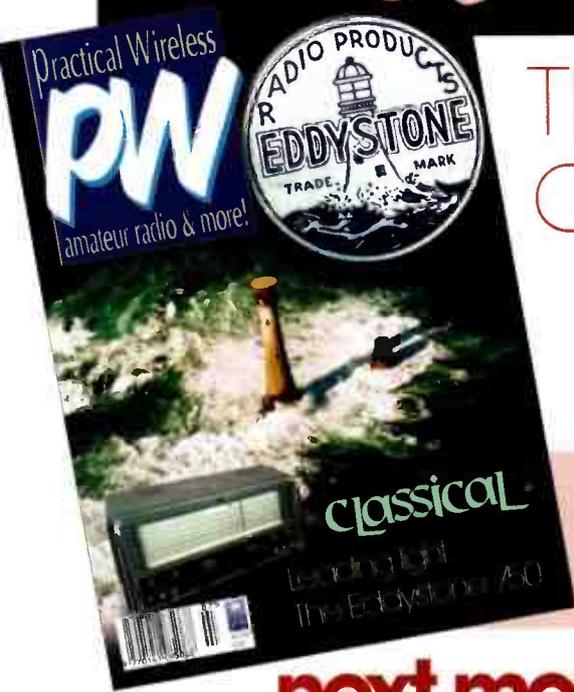
Silicon Heaven

Where would 'ShackWeb' be without at least one sneaky mention of a website devoted to interesting old computers? A recent and very kind offer of some old Tandy machines had me searching the web for details and one of the better offerings (and there were many good examples) is Ira Goldklang's pages devoted to everything silicon and Tandy www.tr80.com

The TRS80 computers marketed by Tandy were among the first real machines to be made available. Though others came before, few had quite the capabilities or the tremendous support (software and books) provided by high street Tandy shops (and am I the only one who laments their passing even though you couldn't buy discrete components in quantities less than 10!).

The TRS80 was also a family of computers - everything from micros to desktop business machines, a portable notebook and various pocket computers. Each has its place at Ira's site. There's comprehensive technical specifications, software to download and lots of reminiscing - ahh!

practical wireless



THE UK'S BEST AND ONLY INDEPENDENT AMATEUR RADIO MAGAZINE

ON SALE NOW!

next month in Practical Wireless...

FEATURE

Who and what are the Band Police? **Chris Carrington G0IYZ** describes The Good, The Bad & The Ugly!

BUILD

Ian Macdonald MM5WIG shares his design for a 14MHz antenna.

NOSTALGIA

A Lifetime With Amateur Radio is how **Bert Knott G3CU** describes his interest in the hobby.

HINTS & TIPS

More of your handy hints and radio tips are presented by **Tex Swann G1TEX/M3NGS** in his bi-monthly column.

REVIEW

Roger Cooke G3LDi gets to grips with the Yaesu FT-897 multi-band transceiver.

Plus all your regular favourites including:

• Amateur Radio Waves • Bargain Basement • Club News • Keylines • Radio Scene • Valve & Vintage • News

**CAN YOU AFFORD TO MISS IT? AUGUST 2003 ISSUE ON SALE 10 JULY...
PLACE YOUR ORDER TODAY!**

■ DAVE ROBERTS c/o SWM EDITORIAL OFFICES, BROADSTONE

■ E-MAIL: scanning@pwpublishing.ltd.uk

Scanning Scene

The folks who used to run Iraq weren't daft you know. Early in the military campaign in Iraq, Coalition forces came across a Surveillance Control Room crammed full of Sony equipment. Located in one of the many palaces that the ex-president of Iraq used to possess, the office had been established mainly to operate against UN weapons inspectors with a particular regard to audio surveillance (bugging the blighters!). Nothing more was heard of the place until following the conflict an ITN news reporter visited the site.

Like everything in the entire country, the place had been subject to a thorough looting, but the reporter, Tim Marshall, found some paperwork on the floor. The first column of figures indicated the bug frequency and the adjacent numbers indicated the five figure code required to initiate each device. I am told that all the frequencies were in the 408MHz band. Now that isn't too big an area to search and they won't have only been made for the Iraqis you know.

Those people who are Internet equipped will have heard of the Scan North website. Based in the Northumberland region, the pages have been a depository for communications related information for that area. The site used to include frequency details of the v.h.f. and u.h.f. radio systems used by Northumbria Police. But no longer!

The web hosting company, who are legally the publishers of any material displayed on sites hosted by themselves, received a letter from solicitors acting for Northumbria Police. The screed stated that publishing the frequencies on Internet was inciting people to commit offences of monitoring police transmissions. The hosting company contacted the Scan North owner and gave him the opportunity to remove the frequencies, a request with which he immediately complied. As a direct result of this communication from Northumbria Police, their frequencies are no longer on the site.

Perhaps the solicitors should now pen a quick little note to Mr GW Bush, 1600, Pennsylvania Ave, Washington. USA - (sorry chaps I don't know the zipper off hand). You see, George W, or Mr. President, to his close friends, is nominally the boss of the Smithsonian Museum

(same town), and the Smithsonian are closely involved with a project run by The Presidio of San Francisco (look up the address yourselves Mr Brief - I'm not doing all your work for you).

What relevance has all this to the Scan North site? Well, the two above noble organisations have archived most web pages since 1996. So if anyone would like to have a peek at the original Scan North website, complete with all frequencies, then go to <http://web.archive.org> You will be presented with a form in which to enter the website address, in this case

www.northumberlandstreet.com Hit the 'Take Me Back' button. Hey presto - there's the original unaltered page complete with links to Northumberland Police v.h.f. and u.h.f. frequencies.

The Northumbria Police should perhaps save the cash that they are spending on their switched on legal eagles and stash it in the shift tea fund or even put it all on a horse.

Civil Action

It seems that a number of Lancashire Police officers are reporting a variety of ailments including severe deafness, migraine and nausea that they attribute to using the new TETRA Airwave mm02 radio system. It seems likely that the affected officers will take civil action against the force claiming that using the equipment has made them ill. Talking from a personal perspective here, like many people I experience a headache when using a mobile 'phone. I now only use one when absolutely necessary and in any case only for short periods. The rest of the time it is left switched off. When it comes to TETRA, I have used different TETRA equipment and I discovered that hand-held sets caused me the same difficulty as a mobile 'phone. TETRA sets in vehicles don't seem to bother me at all.

With all UK police forces set to adopt this system in the next two years, there will no doubt be an increasing number of civil actions taken against Chief Constables by their staff.

The European Union bureaucrats are also concerned that too much European reliance on US technology in general and Motorola in particular could compromise EU security. The word on the plush carpets of the many EU office blocks is that the Americans will be able to

monitor TETRA communications of police using Motorola kit. The EU does appear to suffer a high paranoia quotient when it comes to the USA. If the National Security Agency want to hear officers being sent to sudden deaths and domestic disputes then they must have a high boredom threshold - good luck to 'em.

Personally I have found the EU extremely useful, they let me in their HQ in Brussels once to use the lav.

Racal Cougar

As o2 rolls out, it seems likely that some specialist police and military squads will be disposing of their Racal Cougar radio sets. Some are currently on offer on an Internet auction site and are set to fetch big bucks. Up for grabs at the moment are some hand-held units operating at around 370MHz and a hand-held radio in a docking booster in the 170MHz region. All these items are being sold without the 'fill guns' required for entering the encryption codes into the sets.

This action - sometimes known as 'squirting the fill' - enables the Cougar sets to operate under digital encryption. Some MDD equipment was used 'in the clear' around 75MHz and I guess that some of these units will also find their way onto the market. With more of this gear becoming available to the general public it will, inevitably, lead to more unregulated and illegal use and therefore much, much more traffic to monitor. In any case, I always found encrypted Cougar quite difficult to decipher, perhaps it's just me!

Neat Little Amp

I've come across a neat little preamplifier being sold by Waters & Stanton. It's a wide-band unit built into a small box and running from a PP3 type battery. They call it a Watson WRP1300. The manufacturers claim 13dB gain (??) with the gadget covering frequencies from 25 to 1300MHz. Just the thing for the AR2002 scanner! It has BNC connections top and bottom and comes supplied with a suitable patch lead. Well worth considering for around £34.

Also noticed by a pal of mine was a Scanner HF/VHF Converter.

Again powered by a 9V battery, when turned on the thing receives frequencies between 8 and 74MHz and outputs them to a BNC connector in the 108-174MHz range. This means that if you only have a receiver that picks up the higher frequencies but you do have £37, your radio can be made to receive on the lower frequencies simply by plugging this little box in between the set and the antenna. The little thingy is sold by CPC of Preston, Lancs, who also knock out some extremely useful 'see through' waterproof carry cases for hand-held sets. Called Aquapac, they are available in right or left hand side antenna versions and go for about thirteen quid apiece.

Radio Mods

PMR446 seems to grow apace. It is, of course, illegal (there's that word again!) to modify these radios, but one set on the market and available in a major electronic retail store near you (not near me - I live up a mountain) is the Telcom TE-150. A bit like distillers of illegal whisky, there are folks who in secret places and at dead of night dive into these radios and make them do extraordinary things. Those with a keen eye and steady hand can modify the TE-150 to achieve quite a lot in addition to the eight PMR446 channels permitted.

It seems that they will also operate on six channels in 444MHz, 69 channels in the 70cm amateur band (actually useful), 20 channels at 421MHz, 14 channels in the 462 to 467 region and 40 channels at 447MHz. Now there are legitimate users in these frequency bands and it may well be that they will have some company soon, but as a sure fire way of getting in trouble it takes some beating.

G3SWM Success

Nothing at all to do with scanning, but on 4 May I worked G3SWM on 7.070MHz for the *Short Wave Magazine* Listener Contest. Operator Richard gave me a 5/5 report which wasn't too bad, considering there was almost a hurricane blowing here and the rain on the roof was so loud that it was like being inside Keith Moon's drum kit!



■ KEITH HAMER & GARRY SMITH, 17 COLLINGHAM GARDENS, DERBY DE22 4FS

■ E-MAIL: dxtv@pwwpublishing.ltd.uk ■ WEB: www.test-cards.fsnet.co.uk

DX Television

April will be remembered for its summer-like weather and early Sporadic-E activity which produced several days of sustained openings into Italy and the Iberian Peninsula.

Sporadic-E Reports

While enjoying a short break on April 14th, **Simon Hockenull** (Bristol) discovered strong Spanish pictures with distorted sound on Channel E2 from 1645 onwards. **Peter Barber** (Coventry) captured Italian signals on Channels A and B around noon on the 16th with the opening lasting for around two hours.

The 17th was even better with another Italian opening producing RAI UNO on A and B from 1028, and a telesales channel, possibly TELE A, just below E2. At 1120, Peter discovered weak video on Channel C at 82.25MHz. At 1354, Canal Plus L2 made its debut from the Corsican outlet at Bastia. Italy appeared again on the 19th from 1123, but this time it was logged by Simon Hockenull.

On the 23rd at around 1430, a weak video carrier was noted from the south on E2, possibly from Equatorial Guinea (TVGE). A sustained Sporadic-E opening followed and by 1530, Spain occupied channels E2, E3 and E4. For a while there was another station co-channelling on E2, possibly Portugal. While tuning through the band, an Italian private station was discovered just below Channel A - TVA perhaps?

By 1800, Peter Barber identified TELE A just below E2. Simon Hockenull suspects there is a new Italian station operating on E2. One was spotted here in Derby sporting a 'tgA' logo in the top-right of the picture.

Spain E2 appeared at 1420 on the 24th with adverts followed by a feature film. Peter noted Spain again the following morning on E2, E3 and E4, with Portugal E3 co-channelling at 1004. Encrypted Canal Plus signals were evident from Corsica and France on Channels L2, L3 and L4 from 1000, but the encryption was removed during the news bulletin at 1030.

Peter noted weak R2 signals at 1246 the following day with a rectangular logo or symbol in the top-right of the picture. On the 29th, there was Spain E3 from 1246 and also Italy on A (RAI UNO) and E2 (TELE A). The opening was still in progress at 1500.

Tropospheric Reception

Stephen Michie (Bristol) encountered a tropospheric opening on the 16th with NED-2 E27 (Lopik), E32 (Goes) and NED-3 E30 (Lopik). On the same day **George Garden** (Edinburgh) discovered foreign text superimposed over the pictures from Black Hill.

Tuning up to E44 at 1550 revealed TV2 Norway with good colour and sound. By 2307, NRK-2 on E41 was present, but over on E35 NRK-1 was overriding Channel Five from Darvel. On the 17th at 1204, TV Norge was strong on E45. Other signals noted included NRK-2 E41, TV NORGE E51 and E52 and TV2 on E47. At times, Black Hill was completely swamped with a perfect NRK-2 signal on E50 and TV2 on E43. Strangely, no f.m. radio signals were heard during the opening.

Rob (via E-mail) advises that the Norwegian NORGESHUS 'caption' featured in the May edition is not actually a station identifier, but seems to be the name of a

house or cabin building company which seemingly sponsors a great many TV programmes. The logo comes up fairly regularly before, after and during the programmes, usually accompanied by a joint sponsor's logo called 'Odin'. Unfortunately, Rob could never quite figure out what it was advertising!

Iraq Activity

Several US TV and radio stations were established in Iraq towards the end of the conflict. There was even a rumour that one station had been established on E3, an unusual choice considering that officially the Iraq TV network uses only Band III and u.h.f.

Band I Expansion

Within the past two decades, the Middle East has been the growth-sector for Band I transmitters. This is good news for DXers and also an indicator that these transmitters may still be active long after Europe abandons analogue TV. Band I is extensively used throughout Iran and many transmitters have been commissioned within the past ten years. The following Band I transmitters of at least 100kW e.r.p. are known to be operating:-

Bahmanshir E2 100kW, Kuh e Nuh E2 200kW, Pishin E2 316kW, Jask E3 100kW, Ahwaz E3 100kW, Noabad E3 100kW, Jonah E4 100kW, Nakhjir 100kW and Sardasht E4 100kW.

There are dozens of transmitters with lower e.r.p.s.

Ian Charles Beckett

We recently received the sad news that veteran DXTV enthusiast Ian Beckett (Chackmore, Buckingham) passed away peacefully while resting on April 28th. Ian was 62 and had been involved with long-distance TV reception for over 40 years beginning in those pioneering days when many countries were just introducing TV. Ian was also a keen experimenter and ran his own TV and antenna installation business. We have been privileged to know Ian and his family for over 30 years. Ian leaves his wife Jennifer and sons Colin and James. Ian was a real gentleman and he will be sadly missed.

Keep On Writing!

Please send your DXTV, slow-scan TV and f.m. reception reports, news, off-screen photographs and information to arrive by the first of the month to:- **Garry Smith, 17 Collingham Gardens, Derby DE22 4FS**. We can also use off-air pictures stored as JPG files on PC discs and good-quality video recordings.

Our DXTV and Archive TV website can be found at: www.test-cards.fsnet.co.uk



Fig. 1: BBC weather forecast apologising for disrupted TV pictures due to atmospheric conditions. Photo: George Garden (Edinburgh).



Fig. 2: Norwegian weather forecast from NRK showing the high-pressure responsible for disrupted TV reception. Photo: George Garden (Edinburgh).



Fig. 3: Another of the latest BBC-1 Identification Symbols. This was introduced on 4 October 2002 and is officially called 'Music Video'.

■ CLIVE HARDY G4SLU, SWM, ARROWSMITH COURT, STATION APPROACH, BROADSTONE, DORSET BH18 8PW
 ■ E-MAIL: clive@pwpublishing.ltd.uk.

Amateur Bands

Islands On The Air

Contest time again, with all sorts of remote islands being activated for the event, which means that it's a good opportunity to get some more obscure calls into the logbook. The contest runs for 24 hours from 1200 Saturday 26th July and a good place to start listening is the main IOTA frequency of 14.260MHz, but there'll be plenty of activity elsewhere.



IOTA is organised by the RSGB to promote activity from island locations by offering awards for working or hearing stations operating from islands. I know the contest is over a month away from this magazine's sale date, but it's so close to the on-sale date for next month's SWM, I decided this issue would be the best time to mention it.

To give you a flavour for the sort of islands that are activated for the contest, a handful are listed below:-

Prvic Island, Croatia - Feco will be using the call 9A/HA8KW and operate in the 12 hour category on c.w. only. He'll use s.s.b. as well when he's on air for the couple of days either side of the contest. Daito Island in the eastern Pacific Ocean close to the Tropic of Cancer, JM1PXG/6 will also be on air for a while before and after the event. The famous 'Minkieboys' from Belgium will again be on Sein Island off the western tip of Brittany using the call TM3ON before, during and after the contest. We're being invaded by the Danes again! Marc & Jose ON5FP and ON4CJK are landing on Lundy in the Bristol Channel for the contest.

A group of German operators will participate as DL0KWH from Peenemunde on Usedom Island in the delta of the River Oder. Peenemunde is famous as the site of German military rocket research, development and testing. The rather long call of VE2/VE9MY/P will be used from Quebec's Iles de La Madeleine in the Gulf of St. Lawrence. Again there will be activity before the contest proper. There will be plenty of other islands activated, so if you want to look for more, try www.ng3k.com/Misc/iota2003.html which has many of the announced activations listed.

Heard On The Air

At last some space for listeners' logs this month. Down in the lower h.f. frequencies on 3.5MHz during the 4th and 5th weeks of the new year, **Philip Davies** heard 9H1EU in Malta and in the Americas HK5MQZ in Columbia, KK5PL in New Mexico and W6BH in California, all in the small hours on the morning. Late afternoon and early evening produced Australians VK2APZ and VK3ATN. During the CQ 160m Contest down on 1.8MHz along with 146 other prefixes, Philip picked up D4B in the Cape Verde Islands of west Africa and on the other side of the Atlantic at roughly the same latitude KV4FZ in the US Virgin Islands.

A net to listen for if you've got SSTV capabilities is that of the Weather Boys (my title) on 3.730MHz from about 0800 clock time Sunday (and possibly other) mornings. At 0830 they re-transmit satellite weather images that they've recently received. Good strong signals from all concerned ensures clean images most of the time.

Beacons Again

Following on from the mention of the IARU (International Amateur Radio Union) beacon project in the April column,

I was pointed to the web site of Tabersoft at www.tabersoft.com by SWM reader **Dennis Ellison**. The company produces a range of software for the radio amateur including Beacon Wizard which displays a map of the world in a choice of projections overlaid with the IARU beacons. The transmitting beacon and a bearing line from the listener's location to the beacon is indicated. The clock is synchronised by accessing the web site. If you've got a PC, it's a good option for helping with monitoring beacons, but for the downloadable program to work beyond 30 days, there's a \$25 registration fee.

Ozzy Rules

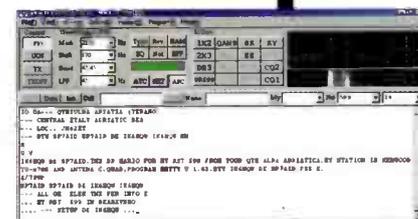
The Foundation licence idea has caught on Down Under where they currently have two levels of exam, the Novice and AOC (Amateur Operators Certificate of Proficiency), which combined with a regulations exam and different speed Morse tests allow for five categories of licence. Rather than have another category, and with the Morse test probably going, it looks as if the AOC might be dropped so that a pass at the Novice level will suffice for a full licence. Before you start moaning about the wallabies getting an easy ride, have a look at some sample Novice and AOC papers. I'd say that their current Novice exam is somewhere between our Intermediate and current RAE in difficulty, and with our RAE becoming less complex next year, it seems there's likely to be a fair degree of similarity between our systems by the end of the year.

Remember RTTY?

Radio TeleType. Usually pronounced RTTY for short, this data transmission system uses audio tones to differentiate between noughts and ones and has been around a good few years now. Despite its age, RTTY still gets an airing on the amateur bands and a useful piece of demodulating software is available from the MM stable at www.qsl.net/mmhamsoft/ for free.

Tuning is easily carried out by aligning the waterfall spectrum display with cursers indicating the 'mark' and 'space' tones. Regardless of the frequency band, i.s.b. is used. To find RTTY signals listen around 14.090MHz, which is where I found the transmissions shown on the screen shot from the MMTTY program. The QSO is between Italian Mario IK6HQW and SP7AID, a Pole who happens to be using the same program. Mentioning RTTY in front of old hands does tend to make them want to reminisce about clattering oily ex GPO teletype machines made by Creed.

From an era before error correction, the ASCII based mode has a charm which appeals to this day. If you want to know more look at www.bartg.demon.co.uk which is the site for the British Amateur Radio Teledata Group. For lots of RTTY action listen in to the German DL-DX-RTTY contest running for 24 hours from 1100 on July 5th, or the Japanese Amateur Radio Teleprinter Society contest running for 48 hours starting at 0000 on the 18th October.



■ PETER BOND, c/o EDITORIAL OFFICES, BROADSTONE

■ E-MAIL: skyhigh@pwpublishing.ltd.uk

Sky High

This month I bring you a round-up of Iraq conflict callsigns and a quick look at portable power to satisfy the need for electricity whilst listening away from a mains supply for extended periods. Also an update on Scottish Control frequencies.

Iraqi Freedom

Well, we waited a long time for the build up and the political arguing to finish and in the end the air war was all over in four weeks. I have already covered the Fairford movements fairly comprehensively so we will also look at some of the more interesting movements through other airfields, including a number of rarely heard or new callsigns. But first, some additional information for Fairford. One thing that I forgot to mention previously is that the combined B-52 unit based at Fairford was the 457th Air Expeditionary Group. In Mays' *SWM* I listed the first operational B-52 mission as Saturday 22nd March it should have read Friday 21st March, this was corrected in the June column. Answering my questions in the May 'SkyHigh', it has been confirmed that there was no fifth U-2 on the 3/4th

March. Also that **139.9** is used by the U-2s for communications with the 'airboss' which is 'Dragon Mobile' in the chase car. This is the Beale AFB Safety Of Flight frequency which has a u.h.f. equivalent of **240.225** which was also noted in March. On their return trip from the Gulf at the end of April the U-2s were also heard using **337.575** for communications with the chase vehicle. My correspondent also noted that a U-2 used **303.0** as an interplane frequency back in January. My thanks to Bob, Andrew and Jonathan for the Fairford information.

Throughout February, March and April, Mildenhall continued to have its plethora of Transport, Tanker and other movements. This including some unusual civil movements. Shown in the table on the left are some callsigns of note, those I have marked in bold are new callsigns, according to my records.

Europe

Having seen my comments regarding the transport movements through Frankfurt, I am grateful to Frank and Kurt from Germany who have kindly sent me some very extensive movement information for Rhein Main for March and April. The lists are far too large to include in this column and do not include many callsigns, (apart from REACH), but I will give you a run down including information from other sources. In March they noted 68 different C-17s visiting Rhein Main making a total of 654 movements, (that they noted), which works out at around 21 C-17 movements per day - approximate figures, but still very impressive! Apart from C-17s their list contains just 36 other movements for March, so apart from C-17s Mildenhall had a pretty good list of visitors.

Ramstein also saw a lot of various REACH transport flights plus a number of KC/RC -135 and C-130 movements. A couple of callsigns of note, some 52 FW F-16s were noted on the 3rd March calling as ANGER 1 to 4, plus an RC-135W passed through on the 5th March as HAWG 95, which I believe is the 55th Wing training callsign.

Gordon T reports that there were at least 40 C-17 movements through Aviano in Italy between the 26th and 28th March. They were carrying the US 173rd Airborne Brigade who were making a series of parachute raids on Iraq, believed to be in the north. The C-17s used the callsign SONIC with the number ranges 10 - 14 and 21 - 30. One other item of note from Aviano was a quantity of 12 A-10s from the 104th FW Massachusetts ANG and the 103rd FW, Connecticut ANG passed through on the 6th March using the deployment callsign CUBE 31 - 36 and 41 - 46.

Power On The Move

My thanks go to Keith T who sent me an E-mail on a subject that I don't recall having covered before in this column. He asks me the following question; "As my shift system is four on, four off, several times a year I like to go on aviation trips for three or four

Mildenhall Movements

February	Call	Aircraft	Owner
5	GIANT 8723	B-747	ATLAS AIR
9	SWEET 71	C-130H	95th AS
10	VIKING 47	C-130E	96th AS
12	TOIL 37	C-130H	357th AS
12	PITT 14	C-130H	758th AS
15	TAHOE 91	KC-135E	314 ARS
16	ROCK 83	C-130E	913th AW
28	QUIST 55	RC-135V	55th WING
March	Call	Aircraft	Owner
1	GORDY 57	RC-135W	55th WING
2	VADER 08	C-130H	757th AS
5	BISCAYNE 519	B-727	MIAMI AIR
4	LANDY 01	E-3B	552nd ACW
5	BIRD 43	EC-130H	43rd ECS
5	STORE 17	EC-130H	43rd ECS
5	DOPEY 43	EC-130H	43rd ECS
5	MUNGO 15	EC-130H	43rd ECS
5	SLOPE 65	EC-130H	43rd ECS
5	JEDI 500	C-141C	452nd AMW
6	WAIST 13	EC-130H	43rd ECS
6	RAZOR 93/94	E-8C	116th ACW
7	CONNIE 423	B-747	KALITTA AIR
12	WINCH 13	EC-130H	43rd ECS
13	BERT 43	EC-130H	43rd ECS
13	BOBBY 66	KC-135R	153rd ARS
16	AGAR 32	NKC-135E	412th TW
18	TROM 43	EC-130H	43rd ECS
19	MOVER	KC-135E	171st ARW
22	COBRA 72	OC-135B	55th WING
29	RSAF 815	E-3A	R SAUDI AF



days, sometimes more. I use an AOR AR8200 for military airband listening and have two sets of rechargeable batteries but these will not generally last beyond a day and a half's listening. Quite often because of the photographic location it is not possible to use power from the car and if I am camping, a recharge for the batteries from the mains may not be possible. It can be very annoying losing radio capability in the middle of a trip as it can often lead to missed photographic opportunities. So, apart from buying loads more rechargeable batteries, could you or you readers suggest any other mobile power sources?"

Well first of all Keith, I would suggest you consider what type of rechargeable batteries you are currently using. The older type of size AA Nickel Cadmium batteries, (Ni-Cads), would typically have a capacity of about 600-750mAh, (milliAmp hours), with the more modern variants of Ni-Cads having been extended to 1000mAh capacity. The first thing I would suggest is to move on to the admittedly more expensive Nickel Metal Hydride batteries, (Ni-MH), which will instantly extend the time you can use your hand-held. I have three sets of Ni-MH rechargeables the older set has a capacity of 1300 mAh, my most recent acquisition is a 1800mAh set which is almost three times the capacity of the older Ni-Cads. With a hand-held such as my MVT-7100 having a rated consumption of 140mA you can see the capacity advantage that Ni-MH batteries give. Plus of course they do not suffer from the memory effect that plagues Ni-Cads and consequently, they can be topped up at any state of charge. A quick check in my catalogue shows that a set of four 1800mAh Ni-MH would be about £8, so it is up to you to decide whether the extra expense is worth the extra capacity, in my opinion it is.

The second part of my answer is yes, there are other forms of power and I have used one of these for around 12 years. I have regularly used a sealed lead-acid 12V rechargeable battery whilst on the move - see picture. These batteries are typically used for such things as the backup power in household alarm systems and the power for heavy duty commercial torches. They come in various sizes and capacities. The one I use measures 134 x 64x 67mm (LxWxH) and weighs about 1.15kg, (about 2.5lbs) and is rated at 2.8Ah. As mentioned earlier, AA size Ni-MH batteries now offer up to 1800mAh capacity so this type of lead-acid battery is now partially redundant for use with hand-held radios, but if like me you sometimes take a small radio such as the AOR AR3000 or AOR AR8600 on the road, it is very useful. It is a simple matter to get a spare power lead, crimp on a red and black female spade connector, (don't forget to check your radio's polarity), and away you go. The AOR AR8600 power consumption is about 350mA, so the lead acid battery gives me up to eight hours extra listening time in addition to the internal battery pack. With all the other equipment enthusiasts tend to carry with

them such as cameras, radios, binoculars, etc, it depends on whether you want another kilo of weight to carry around? This size of lead acid battery costs about £12.50.

Frequency Guides

I am often asked in my post which are the best frequencies to monitor in a specific area and I usually send people in the direction of one of the published frequency guides - Bob F and Charlie have both asked me this very question in the past month. News has recently reached me that two such books are no longer to be published in the future. A Dutch guide which included UK military airfields as well as European was published by a military airband group in Holland called SC-MAC, this ceased to exist at the end of 2002 after eleven editions. Also, the UK frequency guide and Newsletter *Military Air Scan*, (Network News), has also folded in February 2003 after several editions. I tried to E-mail the publishers to find out if there was a specific reason for the demise but no reply was received and their web site has disappeared.

As far as I am aware, that just leaves three hobby frequency guides published in the UK. *Airwaves 2003*, an annual frequency directory which covers everything for the civil and military listener. *The Airband Radio Guide* plus the *Airband Radio Handbook* are published every two or three years and both include some frequencies but also go into the workings of Air Traffic Control, scanning radios and other airband topics in some detail. All three are available from the *SWM Book Store*. If you know of any other airband frequency guides please let me know.

Scottish Control

After the March UK airspace changes in April, Jim C from Glasgow has kindly sent me an revised list of the Scottish Control frequencies and I thought I would present them in full for 'Sky High' readers.

119.875	Flight Information Service - Low
121.325	Humber Sector - All Levels
123.775	Antrim Sector - West Low
124.500	Tay Sector - East Low
124.825	Galloway Sector - West Low
125.675	Southwest Sector - High
126.300	Talla Sector - Central Low
126.925	Montrose Sector - High
127.275	West Coast Sector - Low
129.225	Deancross South Sector - High
132.725	Central Sector - High
133.675	Hebrides Sector - All Levels
133.875	Moray Sector - All Levels
134.775	Tyne Sector - All Levels
135.850	Deancross North Sector - High

Due to our coverage of operations in the Gulf I have once again held over my look at *AirNav Live*, I will hopefully be able to include a report next month. Lastly, I must repeat a regular request, all replies to E-mails and letters whenever possible will be done via the 'Sky High' column. Please do not ask me to reply in person or send an SAE as direct replies are not possible - Thanks.

Sound Engineering Solutions from **bhi**

Say goodbye to unwanted noise and interference with bhi noise eliminating speakers and modules

- Dramatically reduce interference and unwanted background noise
- Listen clearly on SSB, UHF, VHF and FM
- No more squelch!
- Enables you to upgrade your existing equipment to DSP
- Significantly reduced heterodyne tones



NES10-2 & NES5

- Speaker with superb built-in DSP noise cancellation
- 8 filter settings and input sensitivity control (NES10-2)
- Preset DSP filter setting for "plug and go" operation (NES5)
- Earphone socket (NES10-2)
- Plugs directly into 3.5mm speaker socket
- Handles up to 5 watts input and 2.5 watts max output
- Requires 12-24 V DC 500mA

NEIM1031

- Flexible in-line unit
- Fully adaptive noise cancelling - typ20dB
- 8 filter levels
- Input sensitivity control with LEDs
- Audio output 2.5W RMS max (8 ohms)
- On/off switch with bypass facility
- Audio connections: Line level in/out (RCA Phono), Audio in/out 3.5mm mono jack
- Headphone socket
- Power 12-24 V DC 500mA
- Supplied with a fused DC power lead and a 3.5mm - 3.5mm audio lead for immediate operation



NES10-2

Noise eliminating speaker£99.95

NES5

Basic (plug and go) noise eliminating speaker.....£79.95

NEW 1042 Switch Box

Allows connection of up to 6 pieces of equipment to one extension speaker£29.95 + £2.75 P&P

NEW - NEIM1031 Noise eliminating in-line module.....£129.95

1030-UKPA UK mains power adapter.....£9.95

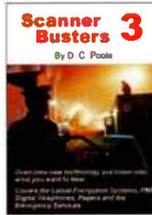
Postage & packing £6.95 on all orders that include speakers or modules otherwise £2.75.

Also available from our approved dealers, telephone us or see our website for details.

bhi Ltd, Blake House, 35 Collington Avenue, Bexhill-on-Sea, East Sussex TN39 3PX

Tel: 0870 240 7258 Fax: 0870 240 7259

E-mail: sales@bhinstrumentation.co.uk Website: www.bhinstrumentation.co.uk



Scanner Busters 3

How to Tune into More Frequencies and Beat New Technology

New Edition Completely Updated

New

The Police have introduced trunking systems and scramble more frequencies, other radio systems are making it harder to eavesdrop on communications, and there are more and more strange noises heard on the bands. To overcome these new technologies the new edition of Scanner Busters 3 guides you through the maze, showing you how to deal with these systems, and to tune into things you really want to hear. Without baffling the reader with technical jargon or maths the book explains in simple terms the workings of new radio systems, PMR, digital telephones, encryption, paging and Tetra the new communication system for the Police and other emergency services. It also includes the decoding transmissions with a PC from pagers and SmartZone used by the London Metropolitan Police. Scanner Busters 3 explains how to get more from your scanner, includes detailed frequency lists showing where to tune, and will be of great help to both new scanner owners and veterans.

Price: £5 plus £1 UK postage. Airmail to Europe add £2 or £3 to other countries.



The UK Scanning Directory

This 8th edition is packed full of VHF/UHF frequencies from 26MHz to 1.8GHz covering everything from covert drug squads to refuse collection. This is the largest edition produced, has been completely updated and thousands of new frequencies added. The vast frequency list continues to amaze everybody. Included are civil and military aviation, army, navy, the largest police list ever published, DSS snoopers, GCHQ, eye-in-the-sky links, bailiffs, prisons, outside broadcasting, motor racing, universities, railways, telephones, couriers and more we dare not mention. There is more! Articles on scanning for beginners, monitoring aviation, PMR, European frequencies and a scanning log.

Price: £19.75 + £5.00 UK post.

Airmail to Europe add £6.00, elsewhere £13.00



INTERPRODUCTS (SW73)

8 Abbot Street, Perth PH2 0EB, Scotland

Tel: 01738 441199 Fax: 01738 626953

E-mail: interproducts@ukf.net www.interproducts.ukf.net

PHOTAVIA PRESS

AIRWAVES 2003

11 NEW !! PUBLISHED APRIL 2003

THE NEW 10th ANNIVERSARY EDITION OF THE UK'S MOST COMPREHENSIVE HF / VHF / UHF CIVIL & MILITARY AVIATION FREQUENCY DIRECTORY A5 / WIRE SPIRAL BOUND - FULLY UPDATED FOR 2003

- TOWER - APPROACH - RADAR - GROUND - AIR TO AIR - RANGES - ATIS
- GCI - SQUADRON OPS - AIR REFUELLING - VOLMET - AIRLINE OPS - AWACS
- AIR DEFENCE RADAR (UK & EUROPE) - AEROBATIC TEAMS - SEARCH & RESCUE
- UK/EUROPEAN CIVIL & MILITARY AREA RADAR - MILITARY AIRFIELD STUDS
- 4 LETTER AIRFIELD CODES - RUNWAYS - SSR CODES - UK BASED MILITARY UNITS
- MAPS - UK TRANSMITTER SITES AND FREQUENCIES - MILITARY TACAN ROUTES
- LOW ALTITUDE, AWACS & AIR REFUELING AREAS - UK RADAR SECTORS 7 FREQS
- UK PRIMARY AIRWAYS AND REPORTING POINTS - UK SUPERSONIC ROUTES
- UK OCEANIC ROUTES & FEQUENCIES - MAJOR WORLD AIR ROUTE HF AREAS

MILITARY AND CIVIL HF DIRECTORY - (INCLUDES MANY DISCRETE FREQUENCIES AND CHANNEL DESIGNATORS) - RAF/ROYAL NAVY - WORLD/NATO MILITARY AIR-ARMS
US MILITARY GLOBAL HF NET - MYSTIC STAR - US NAVY - US COAST GUARD
VOLMET - SEARCH & RESCUE - SPACE SHUTTLE - MAJOR WORLD AIR ROUTES
AIRLINE OPERATIONS - LONG DISTANCE OPERATIONS CONTROL (LDOC) - DOMESTIC HF

PRICE £9.95 INCLUDING FREE POSTAGE & PACKING

11 NEW !! PUBLISHED MARCH 2003

CALLSIGN 2003

THE NEW 9th EDITION OF OUR CIVIL AND MILITARY AVIATION CALLSIGN DIRECTORY - FULLY UPDATED - OVER 2600 CHANGES A5 / WIRE SPIRAL BOUND - THOUSANDS OF AVIATION CALLSIGNS

- MILITARY DIRECTORY** - CALLSIGNS ARE LISTED ALPHABETICALLY AND ALSO BY AIRARM / SQUADRON - INFORMATION INCLUDES : CALLSIGN AIRCRAFT TYPE - CODE - UNIT / SQUADRON - HOME BASE - REMARKS
- CIVIL DIRECTORY** - CIVIL CALLSIGNS FROM OVER 185 COUNTRIES ARE LISTED ALPHABETICALLY AND ALSO BY 3 LETTER AIR TRAFFIC PREFIX INFORMATION INCLUDES : CALLSIGN - 3 LETTER ATC PREFIX AIRLINE OR OPERATOR - COUNTRY OF ORIGIN - REGISTRATION PREFIX

PRICE £9.95 INCLUDING FREE POSTAGE & PACKING

(SORRY - NO CREDIT CARDS) CHEQUES/POSTAL ORDERS/STERLING IMO'S/PAYABLE TO:

PHOTAVIA PRESS (DEPT SW) - SUNRISE BREAK CHISELDON FARM - SOUTHDOWN HILL - BRIXHAM DEVON - TQ5 0AE - UK Tel: 01803 855599 VISIT OUR WEB SITE AT: www.photav.demon.co.uk

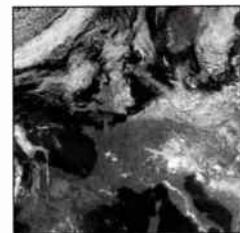


RIG
Remote Imaging Group

Weather satellites are passing overhead daily and geostationary satellites image 24 hours per day.

With fairly simple equipment, you could be receiving images from these weather satellites in your own home.

The Remote Imaging Group is an international organisation of over 2000 enthusiasts who are interested in receiving weather satellite transmissions from all over the World. RIG publishes a quarterly 100-page Journal containing articles and information related to the radio reception and display of image data from meteorological weather satellites. There are regular articles on meteorology, receiving, creating and enhancing satellite images, construction articles which allow you to build your own reception hardware, plus lots of images, many in full colour.



RIG operates a shareware library from which you may order all the software needed to create weather satellite images, and a Shop from which you can purchase much of the necessary reception hardware.

The benefits of membership are too good to miss. Join RIG now. The annual membership rate is £14 (UK), £17 (EU) and £21 elsewhere in the World (US \$30).

For full information and a subscription form visit our website at:

<http://www.rig.org.uk>

For a free information pack send a large SAE to:

RIG - S4G, 34 Ellerton Road, Surbiton, Surrey KT6 7TX, England, UK

■ ROGER BUNNEY, 35 GRAYLING MEAD, FISHLAKE, ROMSEY, HANTS SO51 7RU

Satellite TV News

My last column was written against a blacked out Baghdad, the coalition forces were entering the city and soon the immediate hostilities would likely cease - now writing early May this is indeed the case. The return to a civilian administered Baghdad and country is now creating problems, but the military battles have ended and many troops and related support structure are slowly being withdrawn.

The main broadcasters and news providers, e.g. APTN still maintain their presence and satellite uplink capacity, though the broadcast networks have withdrawn most of their reporting staff - check my previous two articles for frequencies of APTN, etc. For example, 'APTN BAGHDAD PATH 1' at 10.958GHz-V (4167+5/6) was busy night of April 24th with a 2-way report with South America identifying as 'TVN CHILE-BAGHDAD' at 2100.

Edmund Spicer (Littlehampton) notes 'REUTERS BAGHDAD No 2' over *Europe*Star-1*, 45°E at 12.646GHz-V (5632+3/4) as 'very strong' on his 800mm dish, though this terminal airs very intermittently. Another rarely reported satellite is the *Thor/Intelsat 707* slot at 1°W, but in late April, both 11.638GHz and 11.665GHz-V slots were in use with ABC-TV feeds back to the 'States though interestingly with differing symbol rates of 4500+3/4 and 4300+3/4 respectively.

Within the week, the same feeder is relaying live pictures from KGMB-TV (channel 9 Honolulu) of a giant aircraft carrier just docking in Pearl Harbour and the crew leaving ship - April 26th. The carrier a few days later is 'boarded at sea' by President Bush where he makes a speech about World and Middle East peace, also carried live.

I'm monitoring feeds over *Telecom 2D* at 8°W April 18th and checking the regional 'French end' of the *Telecom* band find at 12.741GHz-H (6117+3/4) a taped report on a Globecast lease identifying 'GCP OCC4'. The reporter's voice over is describing pictures of chemical storage tanks, drums, open 'ponds' of liquid, factory equipment - clearly this is a chemical processing or production plant.

The picture cuts to the garden of a local resident, he is expressing loudly (in French) of problems with his garden, pointing at rather unenthusiastic plants and indicating the distant factory - shot widens at this point to reveal factory back of shot. Clearly the plants aren't growing due to suspected pollution. A pollution scientist then expresses his views and concerns. The similarity between this French location and the 'Erin Brokovich' film is frightening!

On a nearby frequency, there's 'dsngv.ANVES' at 12.719GHz-H (6117+3/4). A few days later 12.721GHz-H (unusual for French TV SR 4218+7/8) is carrying a feature on racing bikes at Rennes with ident 'F3 OUEST-6MB'. The late afternoon activity on *Telecom 2D* seems to be with the Granada TV regionals between 12.560-12.600GHz-H (low end) and the French regionals at the high end 12.700-12.730GHz-H.

Intelsat 801, 31.5°W is still used by French regionals. The 27th for example also carried 'OUEST INFO BREST' at 11.025GHz-V (5632+3/4), this a sports round up of local football action. Weekend of April 21st the 'MSA British Touring Car Championships' was fed over 31.5°W by TES-38 downlinking at 10.999GHz-V (5632+3/4) - the event sponsored by 'Green Flag Motoring Assistance'.

Who wants to be a Millionaire is the name of the game and earlier in April the publicity surrounding 'The major, his wife and a coughing colleague' hit the headlines. Live coverage was provided by various sat trucks, *Eutelsat 2F3* at 21.5°E provided reports at 11.080GHz-H (5632+3/4), a difficult satellite to find at times due to its 3° inclined orbit.

One of our readers - **Roger Shaw** (Lincs) - has fitted an elevation jack onto his polar mount tracking dish that allows his polar mount to search above and below the normally fixed azimuth tracking arc with great success on inclined orbit satellites. On a personal note, over the Easter break I replaced the '0.6dB' noise LNB with a '0.3dB' LNB with very noticeable improvements in signal levels. Advertised LNB noise figures sell LNBs, similar perhaps to antenna gain and one is often sceptical of

such figures - at least it worked for me!

Curiously, *Atlantic Bird-1* at 12.5°W on their Globecast bouquet 11.014GHz-H (20145+3/4) carried the Moscow RTV-1 TV channel late April into early May on a full time basis though carriage had ceased by May 5th, why and for whom has never been established!

Very early May and an earthquake shook SE Turkey and nearby Kurdistan. The 'Bilge News Agency' was found evening of May 3rd downlinking rescue operations at 10.987GHz-V (4167+3/4), large diggers moving slabs of concrete under floodlights to locate disaster victims.

Alan Richards (Nottingham) suggested that here in central South UK that we should stand a good chance at 'Ukraina I Mir' which is downlinking from the 40°E slot (*Express ATR*) - this is a strong signal up in the North Midlands - I'm 320km closer so signal levels should be higher. Previous attempts at finding this elusive bird have proved unlucky, so I'll have another look!

The regular signal seen over 36°E is the 'Fox News' feeder normally airing through the 24 hours with a locked off shot of Tel Aviv city or Jerusalem - very occasionally Amman. Check on 10.960GHz-V (3258+5/6).

Life before digital continues and **Edmund Spicer** comments on a weak analogue (PAL) promotion trailer seen over the *Sirius 5°E* slot on a Scandinavian beam, this at 12.473GHz-V (audio 6.50MHz) and visible on a reduced i.f. bandwidth at 13MHz. Still in an analogue mood, Edmund notes that the *EurasiaSat-1* slot at 42°E is running a test transmission for 'Turk Telecom' - 11.766GHz-V. Scrolling text at the bottom of the screen details all changes both analogue and digital at the 42°E slot on the *EurasiaSat* and *TurkSat* satellites.

Dave Dyson (Accrington) found that both the 10°E *W1* and 1°W *Thor* slots most productive for Iraq war feeds in recent weeks. He notes that much content is edited out between the raw material fed to the studio and what eventually appears in the on-air news bulletins. He writes on May 5th of an American find of a chemical weapons dump last week of April. Soldiers speaking on the 'chemical analysers' in use showed that their find included a mix of blister agent with Sarin nerve gas. This chemical find hasn't been disclosed on subsequent news broadcasts apparently.

Dave now has a 2.6GHz computer with TV card installed taking the i.f. feed ex Echostar receiver and using the computer screen as a satellite image display. The next addition is a SkyStar-2 board, his friend have successfully made this work after some effort with different programs - see below! A final tip is that the APTN news distributor on *Eutelsat W1*, 10°E carries many news feeds during the day. Dave recently viewed the May 4th return to earth of the stranded space crew from the *ISS* on board a Soyuz module and later interviews in Star City - the Russian Cosmonaut training facility.

SkyStar-2 MPEG 4:2:2 Card

Last month I detailed sources for the SkyStar card that when fitted to a computer would resolve MPEG 2, 4, 4:2:2. Two enthusiasts have now purchased the card - **Roger Shaw** (Lincs) and **Hugh Cocks** (Algarve) and at this stage there would appear to be problems! The card certainly resolves MPEG-2 OK, it features auto search in SR and FEC and a sweep search of the 10.7-12.75GHz spectrum takes about an hour.

Roger found that *Windows 98* when confronted with MPEG 4:2:2 advised 'the content does not match the extension' and displayed a blank screen. Media Player version 9 cannot handle the card. Hugh found similar reluctance on 4:2:2, but his research suggested that an Israeli sourced program 'DVB program' may be required, commenting that the SkyStar card was conceived by a Russian enthusiast. It seems that the SkyStar-2 card does have the basics for a useful digital receiver, but more software work or expert computer advice is needed to crack the MPEG-4:2:2 problem and that an additional program may be required.

I'd advise readers therefore not to purchase the SkyStar-2 computer card until we can report that the difficulties have been resolved satisfactorily.



Police stand-off, one of at least nine cars involved in the abduction case, armed cops take cover behind car - live helipix via *NSS-7*, 21.5°W.



The abductor's car, moments later he steps out and confronts the police, the child is in the back of the van.



'CNN ATLANTA' test card over the 'CNN NEWSOURCE' feeder on 21.5°W.



Southampton's 'Saints' are in the FA Cup Final, a Meridian reporter contemplates his report prior to the semi-final match, via *Telecom 2D* @ 8°W.



Saddam bids farewell to Baghdad minutes before the status is pulled to the ground, via APTN over *Eutelsat 10°E*.



Seen at night on the Palestine Hotel front lawn in central Baghdad, a 2.5GHz terrestrial link reflector aerial leans - it was guyed! via *Fox News* over 10°E.



Test card showing broadcasters sharing sat uplink facilities, via 10°E.



The final day of the 'Iraq Satellite Channel'. The army presenter sits in front of kitchen (?) curtains, possibly at the uplink site, via *Arabsat* @ 26°E.

■ MIKE RICHARDS G4WNC, 49 CLOUGHS ROAD, RINGWOOD, HANTS BH24 1UU

■ E-MAIL: decode@pwpublishing.ltd.uk ■ Web: <http://www.mikespage.btinternet.co.uk>

Decode

One of the real bugbears of the Internet is the huge quantities of junk mail that you end up with if you download lots of software. I think I've found the answer - *MailWasher*. This wonderful program is available in two versions - one of which is free! To clean-up your mail you access using *MailWasher* and mark all the ones that are junk. The program then bounces them all back to the originator as if your account was closed. Not only does it stop the junk getting in your inbox, but it also reduces the amount of junk mail you get. I've been using it for about two weeks now and it really is working.

JVComm32 dealing with a noisy NAVTEX signal.



Antenna Advice

This is an old chestnut, but always worth revisiting. **Edmund** has just returned to h.f. listening following a break from the hobby. The only snag being he doesn't have much room for antennas - who does? Fortunately, the answer is simple - get yourself a magnetic loop antenna. I use one all the time, even though I've got room for a reasonable wire antenna.

The magnetic loop remains attractive, not so much because of its compact size, but more for its excellent noise rejection properties. There are a number of different suppliers, but my personal favourite is **Wellbrook Communication** and their ALA1530 antenna. As well as producing an excellent antenna, they offer top notch after sales service. For prices and more details, take a look on their web site www.wellbrook.uk.com or call them on (01591) 620316.

Back Again

Seems this is the time of year for people to return to the hobby. **Paul Vanderstay** has written following a break of ten years from h.f. utilities. Last time around he tried using a PK-232 stand-alone decoder, but without much success. On his

return he finds the PK-232 all but gone and wonders where to start!

Whilst there are a few stand alone systems around, most are pretty expensive specialist items as most of the hobby end of the market has migrated to software based systems. As Paul didn't have much luck last time, I think it's worth going for one of the simpler software packages to get started. In this case, one of the simplest also happens to be one of the best - *JVComm32*.

This program has a long pedigree, having started life many years ago as the popular *JVFAX* program. The result of this pedigree is a very capable package with some of the best decoding routines around. In addition to handling FAX images, the program does an excellent job with slow scan TV, RTTY and NAVTEX.

One of its real strengths is the built-in SYNOP decoder. This takes the SYNOP coded RTTY broadcasts and automatically converts them into plain text. As an added bonus, *JVComm32* is available for download as a demo, so you can try it without parting with any hard earned cash. To get a trial copy, pay a visit to Pervisell's web site at www.pervisell.com

Web Link Update

I've been a bit tardy in the upkeep of the web site and hadn't noticed that the *MMTTY* link was out-of-date. Sorry about that, but it's now been corrected. For information, the correct address is www.qsl.net/mmhamsoft/ I'm also working on a complete update of the site - that should be complete by the time you get to read this, so just follow the link at the head of the page and take a look.

Software Comparisons

John Jones has written asking if it's safe to load more than one decoding system on his PC. John quite rightly wants to try a few different systems to find the one that's best suited to his interests. Well, I'm pleased to say there's not usually any problems installing multiple programs - I've usually got about half a dozen or more on my machine. The snag comes when you try to run two or more programs at the same time. It's all to do with inputs and outputs.

There are basically two families of PC based decoding programs. The first are those that use the serial port and a hardware interface to link to the receiver. Because these programs use the serial port in a non-standard way, they usually claim exclusive rights to the serial port and are often limited to just one or two ports. If you try and run two of these programs you usually run into an

immediate conflict as both programs try to get access to the same port. The result is fairly unpredictable and you could end up with neither of the programs running.

Much the same happens with the later PC packages that use the soundcard for input, though you could get around that if you have two soundcards installed. Even if you do manage to get the inputs sorted, the next obstacle is processor time. Decoding programs can be processor hungry, thus resulting in a struggle for power between the two running applications. Even if they appear to work properly you could end up with one package being short-changed and thus apparently giving poor performance.

You've probably twigged that comparing decoding systems on the same computer at the same time is not as simple as it might sound. The only way to do it is to run each one separately and see how they perform on a wide range of signals. You will soon find the one that works best for you.

Whilst on the subject of comparisons, do remember you really need to be very careful not to overload your soundcard by feeding-in too high an audio signal. This is one of the most common sources of disappointment for new listeners. The nature of digital signal processing in a typical soundcard means that any overload causes immediate and severe distortion of the signal. The net result is that the decoding software can't make any sense of the incoming data and prints gibberish!

If you find you're having problems getting a new decoder running, just check the audio level and try turning it down a bit - you may be surprised at the results. Writing this prompted me to take a look on the web as I was sure I'd seen some software level meters around that you could use to check the audio levels. I'm glad I did because I came across a great little Audio Level Meter from Paul Marshall - see

www.darkwood.demon.co.uk/PC/meter.html It's a free download and really works a treat - I've shown a screenshot on the page.

The program comes ready to run - you don't have to run an installer. Just create a folder, pop the program in it and run it. You should do this before you run your decoding program or you may run into the conflicts I described earlier. With the level meter running and the receiver tuned to a suitable signal, you should find the display dancing around in line with the signal. You will soon see that the display is very responsive - much more so than a traditional analogue level meter.



Handy level meter for decoder set-up.

To help capture the signal peaks you will then see a marker shown on the display - this gets pushed along the display by the incoming signal and gives a clear indication of the signal peaks. You may be surprised to see how easy it is to overload the soundcard.

With the level meter running, you need to adjust the record level control on your PC to keep the peaks as high as possible whilst not hitting the red area. When you've adjusted the level you just need to click the grey button to reset the peak indicator. Once the ideal level has been set, you can go back to your decoding package where you may well find you get much lower error rates.

Soundlevel Recal

If you've read through the last section on level setting, you may end up being disappointed when you discover that some programs may alter your level settings and not return them when the program exits. If you do encounter this problem - don't worry - help is at hand in the shape of *QuickMix*.

This is a wonderful little package that lets you store and recall the sound mixer settings. All you have to do is get the levels right as described earlier, then run *Quickmix* and save the current settings. Next time you want to decode just run *Quickmix* first and restore your controls to your carefully calibrated settings. You can store an infinite number of settings so this really is a little gem. The author's web site is www.msaxon.com/quickmix/

At the time of writing, there appeared to be a problem with the author's site. If it's not fixed by the time you read this, you can find alternative copies of the program by running a 'Google' search for *Quickmix*.



Quickmix managing your record settings.

■ LAWRENCE HARRIS, 55 RICHVILLE ROAD, SHIRLEY, SOUTHAMPTON SO16 4GH

■ E-MAIL: info.orbit@pwpublishing.ltd.uk ■ WEB SITE: www.astronomer.plus.com

Info in Orbit

I can recall few more exciting instances than when the first data from *MSG-1* (METEOSAT Second Generation - the new European weather satellite) finally landed on my hard drive on the morning of 1 May. Tests had started the previous day, but I only received the essential software that morning, and despite careful attention to the instructions issued by T-Systems (who wrote the software) and EUMETSAT (who are controlling the satellite), I could not get the flow of data to save.

After hours of checking and re-checking, I mentioned my plight to **Douglas Deans** who suggested a few checks. Although I had meticulously done these, I re-did each one regardless, and to my



Fig. 1: *MSG-1* (copyright EUMETSAT 2003) synthetic colour image 4 May at 1014 from Arne van Belle.

disbelief, the data started saving instead of taunting me by passing me by! This month I am covering these historic tests of *MSG-1* and also the Leicester meeting of the Remote Imaging Group's AGM that was held back on Saturday 3 May.

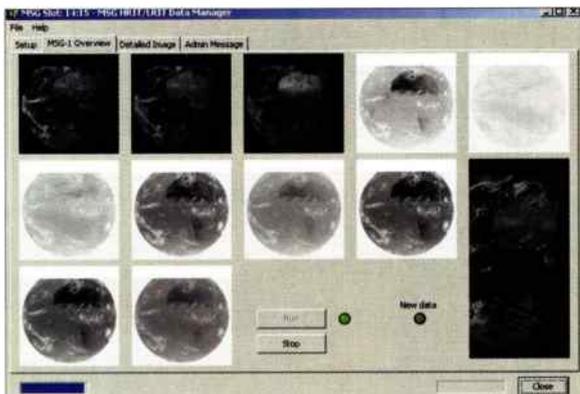


Fig. 2: David Taylor's *MSG Data Manager* tests.

Amateurs & Professionals Test *MSG-1* Data Flow

David Taylor E-mailed his new beta-test software *MSG Data Manager*, used to decode the files flowing from Hotbird that are produced by the T-systems software. So we have a new HotBird satellite receiving system feeding a new DVB card in the new computer, running two new programs in order to test a new satellite!

As one enthusiastic member of the WXSAT mailing groups put it: "We will remember this day!" It started with an E-mail received on 29 April from EUMETSAT: "Following the announcement made on 16 April 2003 of forthcoming *MSG-1/METEOSAT-8* Dissemination Trial, EUMETSAT is pleased to confirm that the trial is scheduled to start tomorrow, Wednesday 30 April 2003.

Those users who have already acknowledged their interest in participating in the trial and have fulfilled the access conditions given in the first announcement (including being in possession of a username and password), will be added to the trial

on 30 April 2003. All other potential trial participants will be added individually upon completion of the access conditions".

Those who were on the 'rig-I' and other mailing lists were ready. To receive the data, you have to set up a satellite receiving system for *HotBird-6* to receive the data flow. You have to apply to EUMETSAT for approval to decode the data, and you require a DVB (direct video broadcast) card for your computer. When EUMETSAT approve your application

they inform T-systems, a German firm that provides the essential software that converts the data stream from the Hotbird transponder into files that can be saved on your computer. Well, possibly!

As described last month, the T-systems' software has to be carefully installed and configured. Although it is not difficult, one instruction - to edit in the PIDs (packet identifiers) - proved ambiguous to me. I had not edited in the PIDs for the data for which I was not licensed, and I spent several hours watching the data flow by my computer on 30 April, with not a single byte saved on the hard drive! Discussions with Douglas resolved the problem.

At the present time, I am not aware of any software other than David Taylor's program *MSG Data Manager* - see Fig. 2 - for decoding the *MSG* data files produced by T-systems' program. Fortunately for the testers, David has been ready to devote considerable time to this project, getting sample data and information from EUMETSAT in readiness for the tests. Consequently, on the morning of the 30 April, many were up and running, ready for the data flow.

At about 1115 on 1 May, I received the data. A short time later, David's software arrived, and within minutes, beautiful images were appearing on the screen. Using the main 1.3GHz computer, I subsequently let data files accumulate in peace without interruption, rather than risk data loss that some were reporting. EUMETSAT has published minimum specifications for the computer to be used for data recording/analysis - as given last month.

EUMETSAT used the admin message facility to update testers on transmission plans. They were providing two scans per hour, starting at about 18 minutes and 48 minutes past the hour, and lasting about 20 minutes. The data comes in small packets (folders), each being a small portion of the individual channel. Processing them can be done either instantly, using a high specification computer, or via a network connection, using a second computer.

You can also let the files build up, and at some time later, decode them by clicking 'run'. If possible, leave it in automatic. It automatically brings in the files, decodes, saves images and discards the used files, according to your setup preferences. The tests are continuing, apart from a few incomplete images that I have received, they are excellent.



Fig. 3: Early test image *MSG-1* (courtesy EUMETSAT 2003) 1215 30 April from David Taylor.

Remote Imaging Group Meeting

I was pleased to be able to attend the meeting of RIG that was held at the Leicester Space Centre on Saturday 3 May. Being car-less, I was grateful to committee member

Clive Finnis for his kind offer of a lift. We started our journey early that morning, arriving at the venue some time after 1000. **Vickie Brightman** was presenting her talk about the Space Centre and its origins, as we discreetly found seats. Within a minute, I had begun to recognise many familiar faces.

I asked **Gordon Bridge** of EUMETSAT to tell me something about his background. He explained that he was "Formerly Head of EUMETSAT User Service, currently providing consultancy services with particular emphasis on user training activities. Gordon started his career in the early 1960s with the UK Met Office as a flight/experiment observer, assisting with aircraft experiments in piston-engined and jet research aircraft". Following a few years as a weather forecaster, he transferred to the High Altitude Research Branch responsible for carrying out various SKUA sounding-rocket experiments in the UK and overseas. Gordon subsequently became deputy project manager for the UK Met Office's TIROS-N Stratospheric Sounder Unit programme. The SSU, provided by the UK Met Office, still flies on several NOAA polar orbiting satellites.

In the late 1970s and early 1980s Gordon worked for the European Space Agency at the Operations Centre (ESOC), Germany, as a meteorologist assisting with the development and extraction of products from METEOSAT satellite imagery. In 1984 he became the first technical officer of the EUMETSAT Interim Unit, based in Paris. Comprising three people, this Unit was responsible for preparations for the setting up of EUMETSAT in 1986.

Gordon transferred to EUMETSAT where he became METEOSAT Mission Manager, responsible for developing services and the user interface, and subsequently, METEOSAT Programme Manager, responsible for all aspects of the system, including funding and liaison with the European Space Agency and Industry. In 1996 he became Head of a newly created EUMETSAT User Service designed to develop interactivity with EUMETSAT's rapidly expanding user communities.

In his RIG presentation, Gordon described the background to *MSG-1* and the way in which plans had been changed following the on-board hardware failure of an amplifier. I noted the apparent hint that EUMETSAT may follow a similar downlink transmission method for later spacecraft in the *MSG* series. I asked Gordon about the possibility of EUMETSAT providing software comparable



to David Taylor's decoding program. He told me "EUMETSAT does not yet have or distribute image decoding software like David's, but there is a lot of user interest in such a development. Indeed, at a EUMETSAT

high level technical meeting last week there was a recommendation for the establishment of a web-based 'user forum' where such software and tools could be exchanged and user feedback monitored and acted upon. We will be looking into the feasibility of setting this up in the coming weeks and months". I hope to provide more of Gordon's presentation in a later column.

David Taylor gave a detailed presentation about his software and the challenges facing anyone who wishes to receive and decode data from the satellite. The data flow carries (or will carry) the images from *MSG-1*, containing HRIT and LRIT - the high and low resolution images. These can be compared to current PDUS and WEFAX images from *METEOSAT-7*. The new images have better resolution (more pixels) and are (or will be) transmitted more frequently.

With so much more information to be transmitted, new hardware and software was essential. The image formats comprise both loss-less and lossy compression, and in a data stream in packets, with the channels transmitted simultaneously, rather than in sequence. David explained how the data was built up, and noted that at full rate, we might expect 2Gb per hour. This requires careful consideration by every user about how they should deal with the data flow.

Professionals might save every image as part of an archive, but this would not be feasible for amateurs; the amount of storage would limit most computers to a few days of data. A typical DVB (digital video broadcast) reception system comprises:

- * A dish of about 0.85m diameter to receive the transmission on 11GHz. This requires accurate pointing.
- * The low-noise-block (LNB) that transforms the signal down to 1GHz to transport as an i.f. (intermediate frequency).
- * A DVB PC card to control the LNB and receive the data.
- * The Tellique software to acknowledge the data stream and produce the packets of data

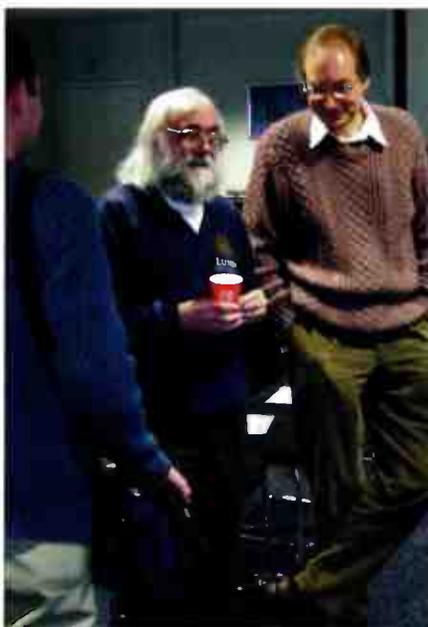


Fig. 4: HRPT image 0958 NOAA-1711 May - for comparison with Fig. 31

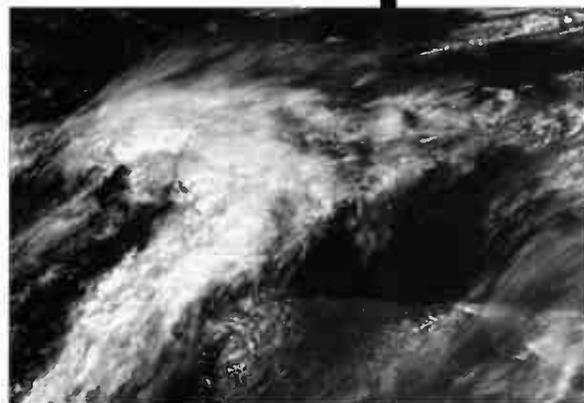


Fig. 5: Early *MSG-1* image (courtesy EUMETSAT) 1115 1 May 2003 from Douglas Deans.

Fig. 6: David Taylor (the one holding the coffee) chats with delegates.



Fig. 7: RIG AGM.

* Further software (such as David's) to decode the packets and construct the images, or other data.

David then explained the two computer configurations that were possible. Using a powerful machine, the data stream could be received and decoded on one computer. A possibly better configuration was to receive the data on one networked machine and decode it on another. David suggested that this second option was currently probably the better method. A specification of 2GHz processor and 1GB RAM, plus a large hard disk, was required.

David quoted several figures for consideration: the full resolution, visible-light image comprised 62M pixels, amounting to 186MB in 24-bit colour! He had tested his own software on a 1GHz computer with 512MB RAM (somewhat lower specification than recommended by EUMETSAT), and found that it took 180 seconds to read and de-compress the data for all channels, and 15 seconds to save the images. This involved 64MB of source files being converted to 12 images occupying about 35MB. My thanks to David for providing a summary of his presentation.

The RIG Annual General Meeting was set for late afternoon and was very well attended. After the various committee member reports were presented, a vote of thanks was recorded and discussions held regarding future Rule changes. A further meeting was to be arranged to allow an increase in the number of committee members, and the establishment of a new company.

With RIG having presentations organised for much of the day, I found only limited time available to look at the exhibits and chat to fellow members. The venue - Leicester Space Centre - was perfect, and I was able to check out most of the exhibits. The Centre is well worth a day trip, with its excellent range of display stands, models of many space vehicles and a Space Theatre Show on offer.

Correspondence

Paul Nicholson G3VJF produced **Fig. 10**, a NOAA-12 pass. Paul described his equipment: "an Icom PCR100 receiver fed by one of Paul Hayes' QFHs and a Timestep 'enhanced polar pre-amp'. The latter has a noise figure of 0.7dB and a gain of about 18dB. The QFH is mounted on the top of a 13m tower. I have a



Fig. 8: Sam Elsdon (on right) and Dave Cawley (of Timestep) discussing PC cards during the interval.



Fig. 9: John Tellick discussing the Hotbird dish reception system.

very clear path to the north, over the sea, and a reasonable path to the south - but by no means totally clear". Paul uses the registered version of *WXTOIMG* that offers extra facilities, including the precipitation option. Paul noted the acquisition angle above the northern horizon was 0.3° to the north and 1.0° to the south.

Jean-Louis Querton lives in Costa Blanca (Spain) and has been setting up new h.r.p.t. (high resolution pictures) equipment. He reported success, but - he explained - only after much work with the dish, the rotator and the pointing interface. On 9 May "I finally got the attached nice picture **Fig. 11** of NOAA-16 pass at 1411". Using David Taylor's *ReadHRPT*, Jean-Louis is practising the use of this software "and trying to discover all its secrets".

Apologies To The Two Mikes!

Last month I received E-mails from **Mike Scrimgeour** of Truro and **Mike Long** of Suffolk. By chance, two arrived from each - together - and appeared to be from the same person. In my write-up, I inadvertently combined the equipment descriptions, and should have attributed the roof-top QFH and the picture of Newfoundland to Mike Scrimgeour. Sorry guys - I shall check more carefully next time!

Frequencies

a.p.t.

NOAA-12 and NOAA-15 transmit a.p.t. on 137.50MHz.

NOAA-17 transmits a.p.t. on 137.62MHz.

METEOR 3-5 failed.

WEFAX: METEOSAT-7 (geostationary) transmits WEFAX on 1691 and 1694.5MHz and Primary Data on 1691.0MHz.

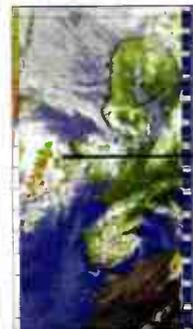


Fig. 10: NOAA-12 0530 on 7 May 2003 from Paul Nicholson.

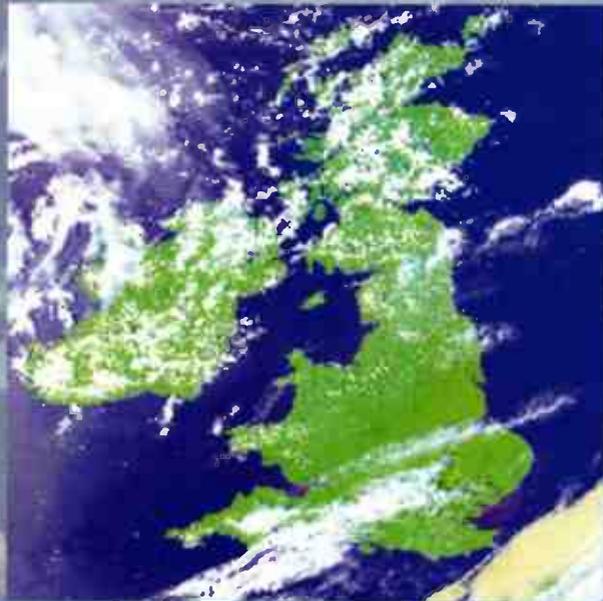


Fig. 11: NOAA-16 h.r.p.t. 9 May from Jean-Louis Querton.



Fig. 12: NOAA-12 a.p.t. 1557 1 May from Kevin Hughes.

Timestep



PROsat for Windows is used by most leading weather satellite enthusiasts. They have grown up using Timestep products and now rely on the superior image quality and ease of use provided by PROsat for Windows. Features such as real time reception, auto-scheduling, temperature readout, totally automatic reception of all NOAA's and Soviet satellites and automatic animation have made PROsat the preferred package. For weather satellite systems contact :

Timestep PO Box 2001 Dartmouth TQ6 9QN England
Tel: 01803 833366 Fax: 01803 839498
www.time-step.com email information@time-step.com

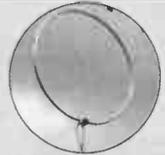
The SHORTWAVE Shop

18 FAIRMILE ROAD, CHRISTCHURCH, DORSET BH23 2LJ TEL: (01202) 490099

THE COMMUNICATION SPECIALISTS

Receivers - Scanners - Transceivers
Call & discuss which part of the radio spectrum you wish to operate and we will advise you on the most cost effective way achieving it.

- Full range of new & secondhand equipment available.
- We stock all leading brands:- Airband Amateur CB, Marine Shortwave Licence-Free Family Radio
- Business and security radios



WORLDWIDE DISTRIBUTORS FOR WELLBROOK ANTENNAS

SHORTWAVE ADVISE LINE 01202 490099

Now in stock



AOR AR8200 Mk3
£CALL



Icom IC-8500
£CALL



Kenwood TS-2000
£CALL



Icom IC-706 MkII
£CALL



AOR AR8600 Mk2
£CALL



AOR AR7030
£CALL



Bearcat UBC-780
£CALL



Alinco DX-77
£CALL



Yaesu VR-5000
£CALL



Yaesu FT-897
£CALL

Call for latest second-hand list or visit our website <http://www.shortwave.co.uk>

5000S FROM JOHN BIRD INTERNATIONAL AIRPORT IN BS073 300 YARDS FROM CHRISTCHURCH RAILWAY STATION, 1000S FREE PARKING FOR DISABLED



24 PAGE CATALOGUE!

Available Free

High Quality Accessories For:

- SCANNING Rx (Airband, etc)
- AMATEUR RADIO
- SHORTWAVE LISTENERS
- PMR, etc

- Plus
- SURPLUS STOCK
 - COMPONENTS
 - SOLDERING IRONS (Weller & Metcal)

Contact SSE as below for your FREE copy!

NEW AND IMPROVED FROM MAY 2003 - NOW WITH EXTRA BNC OUTPUT SOCKET UNIQUE adjustable passive audio filter for noise reduction - NFM, SSB, AM, CW.

- Improve intelligibility with less fatigue
- Connects between spk-socket and ex spk and phones
- Low internal attenuation. Special power inductors allow up to 5W of audio power
- Fully isolated 2 pole by-pass switch
- Choice of filter combinations

PRICE: £24.00

Limited period from May 2003 offer includes loudspeaker!
(NB. Postage for AAF2002B and loudspeaker is £4.50)

Now with extra BNC output socket for easy connection to OSCILLOSCOPE, DECODER UNIT, TAPE RECORDER, Etc

Payment by POSTAL ORDER or CHEQUE. Standard postage is (PLUS) £3.50 per order within the UK. For FREE information contact: Solid State Electronics (UK) SWM, 6 The Orchard, Bassett Green Village, Southampton SO16 3NA. Tel: 023 8076 9598 • Email: solidstate@ssejim.co.uk • Web: www.ssejim.co.uk

The Jim logo is a registered trade mark of Solid State Electronics (UK)

Jim AAF-2002B

NEW & IMPROVED!
FROM MAY 2003



QSL COMMUNICATIONS

TELEPHONE 01934 512757
E-mail: jayne@qslcomms.f9.co.uk

QSL CARDS

FOR SAMPLES AND PRICES SEND LARGE STAMP ADDRESSED ENVELOPE

Address: _____
 To: Radio: _____
 Country: _____
 QSL: _____
 UK BROADCASTING Reg. No. NET: _____
 Frequency: _____
 Mode: _____
 P/B: _____
 TX: _____

Pack of 100 DIY SWL matt cards.
£4.50 P&P £1.50
Pack of 100 DIY SWL gloss cards.
£5.50 P&P £1.50

We can also print a card to your design please contact us for further information.



YAESU VR-5000
100kHz-2GHz incl.
PSU. £575.00

FERRITE RINGS
PACK OF 10
£10.00
Inc P&P



YAESU VR-500



£199.00
P&P £6.00

ICOM IC-R5

0.150-1309MHz.
AM, FM, WFM.
£159.00

ICOM IC-R73

0.3-60MHz
£569.00



AOR AR8200 Mk3
£379.00

SECONDHAND LIST

AOR AR7030.....£560.00
AOR AR3030.....£300.00
Bearcat 9000XLT.....£179.00
Yupiter MVT-7300.....£199.00

COAX CABLE

RG58CU 100m roll.....£22.00
RG213U 100m roll.....£62.00

Carriage charge dependent on items

UNIT 6, WORLE INDUSTRIAL CENTRE, COKER ROAD,
WORLE, WESTON-SUPER-MARE BS22 6BX

Propagation Forecasts

How to use the Propagation Charts

The charts contain three plots. The lower dashed line represents the lowest usable frequency (LUF), or ALF (Absorption Limiting Frequency). The chances of success below this frequency are very slim.

The middle line indicates the optimum working frequency (OWF) with a 90% probability of success for the particular path and time.

Lastly, the upper dashed line represents the maximum usable frequency (MUF), a 50%

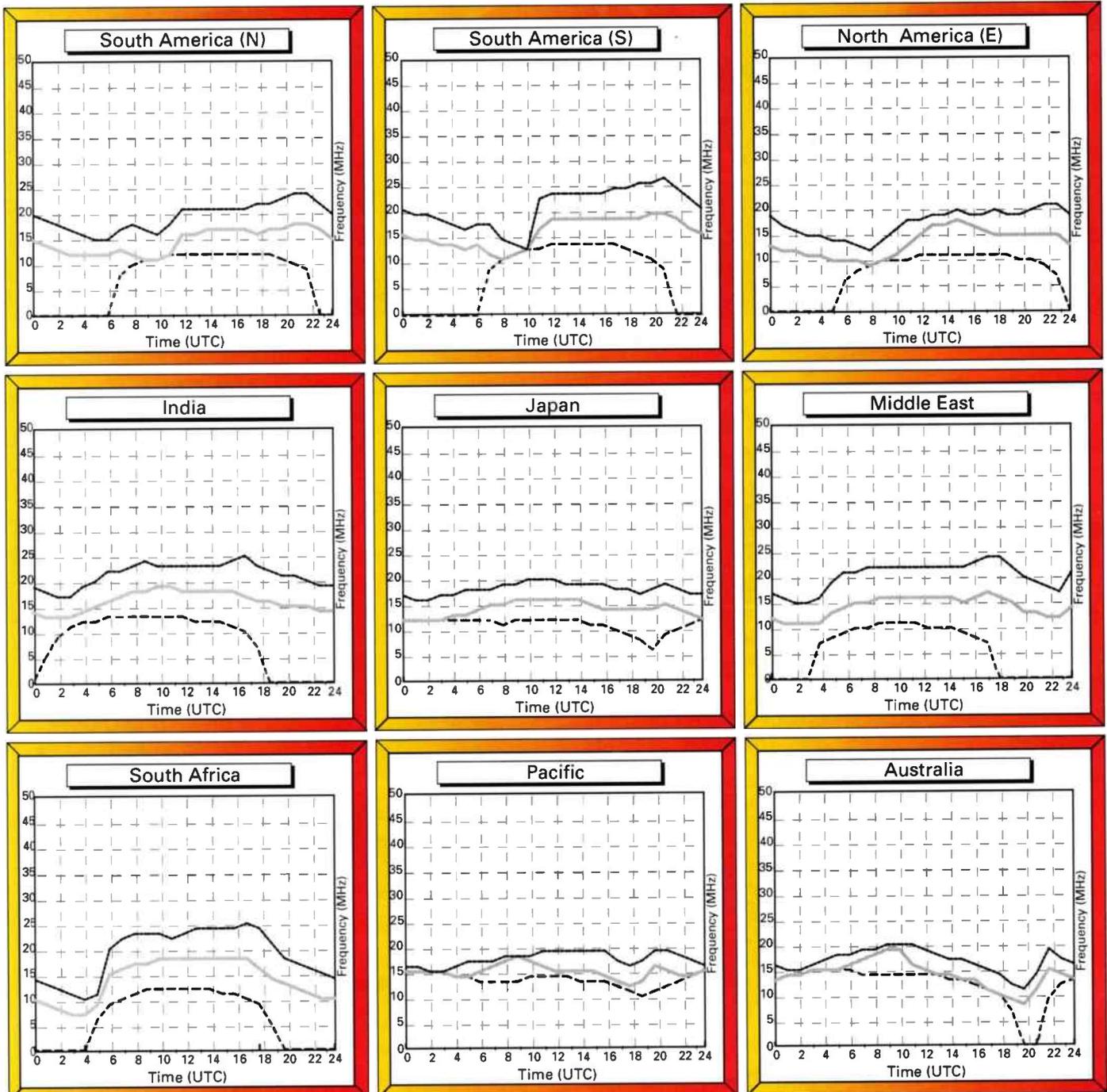
probability of success for the path and time.

To make use of the charts you must select the chart most closely located to the region containing the station that you wish to hear. By selecting the time chosen for listening on the horizontal axis, the best frequencies for listening can be determined by the values of the intersections of the plots against frequency.

Good luck and happy listening.

July 2003

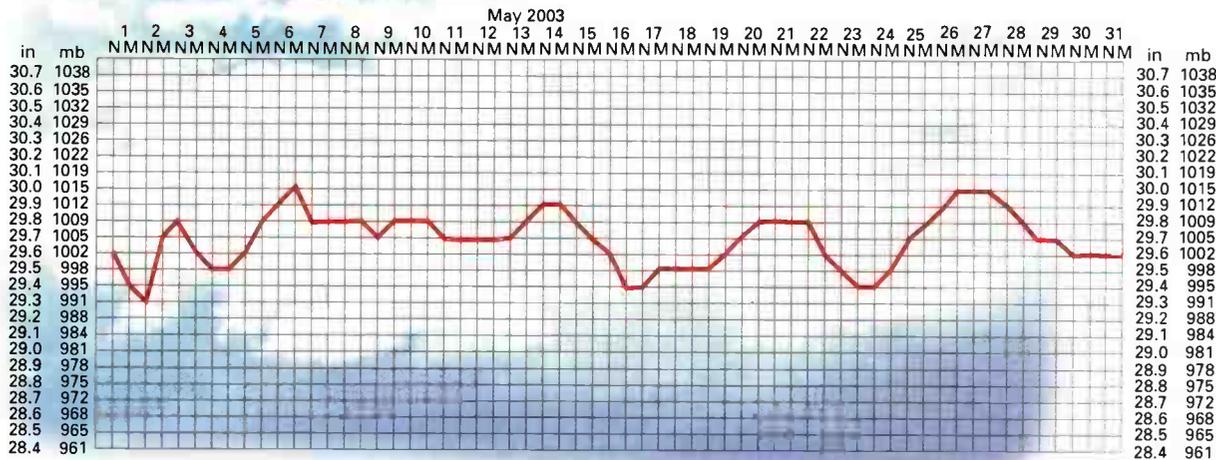
Circuits to London



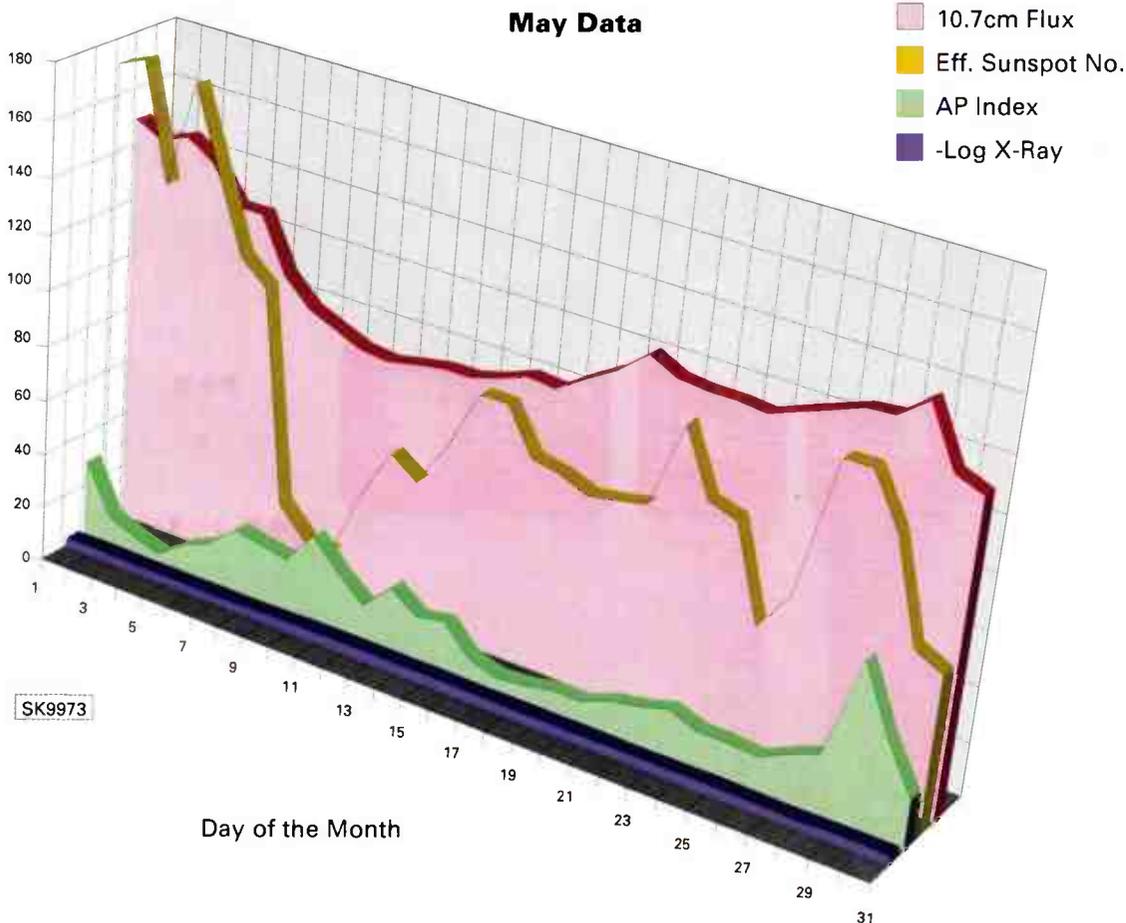
SK9972

Propagation Extra

Ron Ham's barometric pressure chart, taken at Storrington, W. Sussex, May 2003.



May Data



guide to the chart

The 10.7cm solar radio flux is used as an indicator of the general level of solar activity.

The K and AP indices are measures of geomagnetic activity.

The K index ranges from zero (very quiet) to nine (severely disturbed).

K values of five or greater correspond to geomagnetic storm conditions that can relate to poor propagation conditions.

The AP index ranges from 0 to 400. An AP of 30 is the threshold for geomagnetic storm conditions.

SK9973

RADIOWORLD

Model Description £ RRP inc VAT



AR5000

AR5000 High performance full featured wide band all mode base receiver 10kHz - 2600 Mhz. IF selection as standard 220kHz, 110kHz, 30kHz, 15kHz, 6kHz, 3kHz (500Hz optional). Supplied with mains power supply. **£1295.00**



AR3000A

AR5000+3 High performance base receiver with three enhanced options factory fitted: noise blanker, synchronous AM, automatic frequency control. **£1449.00**

AR3000A Unique all mode extremely wide band base-mobile receiver 100kHz - 2036mhz with no gaps. RS232 port fitted. **£699.00**

AR3000A + (plus) Customised AR3000A with switchable narrow SM & SAT filters, Tape relay, SDU ready and discriminator output. **£799.00**

AR8200 MkIII 3 New advanced wide band all mode hand-held receiver with enhanced microprocessor facilities, slot card options available, multi-function display. **£365.00**



AR8000 The New Concept. Wide band all mode hand-held receiver with many microprocessor facilities, dot matrix display and computer compatibility. **£296.00**



PCR1000

ICOM R5 0.1300mhz Handie. Fits in the palm of your hand. AM/FM, FM Narrow - 450 memory channels. Comes with nicads & charger. **£159.00**

IC R8500 100kHz - 2GHz Continuous. All mode no gaps. 1000 Memories. 4IF band widths. Excellent all round for the professional listener **£1179.00**

IC-R75E 0-60MHz. High Stability receiver circuit 100 DB Dynamic range. Twin bandpass Tuning. Optional digital processor. Best selling receiver **£599.00**



£549.00

IC-PCR1000 & PCR 100 ICOM PCR1000 - 0-1300mhz. All modes. Computer driven. On screen programming. Band scope. Instant band scope access via mouse. List of features, call for brochure.

PCR 1000 £329.00 + XP software inclusive
PCR 100 £229.00 (SAME SPEC WITHOUT SSB)

UNIDEN

66-88, 137-144, 144-148, 148-174, 406-420, 420-450, 450-470, 470-512MHz



UBC-60-2XLT

66-88, 108-174, 406-512MHz



UBC-120-XLT

66-88, 108-174, 406-512, 806-906MHz



UBC-220-XLT

25-88, 108-174, 406-512, 806-906MHz



UBC-280-XLT

25-550MHz and 760-1300MHz



UBC-3000-XLT

25-88, 108-137, 137-174, 406-512, 806-906MHz



UBC-278-CLT

25-1300MHz

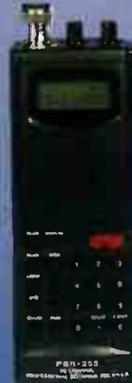


UBC-780-XLT

- UBC-60-2XLT £74.95
- UBC-120-XLT £119.00
- UBC-220-XLT £145.00
- UBC-280-XLT £169.00
- UBC-3000-XLT £179.00
- UBC-278-CLT £149.00
- UBC-780-XLT £299.00

GRE

PSR-255
20-54, 66-88, 137-174, 360-512MHz
£84.95



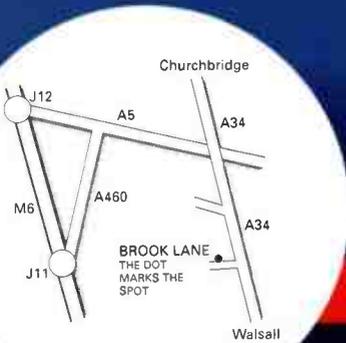
PSR-216
66-88, 108-174, 406-512MHz
£119.95



PSR-214
66-88, 108-174, 406-512MHz
£84.95



PSR-225
66-88, 108-174, 406-512MHz
£249.95



MAYCOM

66-174MHz and 420-47MHz
FR-100 £99.95

TRIDENT

100kHz-2149MHz
TRX-200 £199.95



We accept all major plastic!!!



World Radio History

42 Brook Lane, Great Wyrley, Walsall, West Midlands WS6 6BQ

Phone: 01922 414796 Fax: 01922 417829

E-mail: sales@radioworld.co.uk Web: www.radioworld.co.uk

E&OE

YUPITERU

YUPITERU MVT 9000 EU

Yupiteru's flagship model, with a range exceeding 2000mhz, a real time bandscope.



£329.00

- 531 kHz - 2039 Mhz
- 1000 memory channels
- All modes: W-FM, FM, N-AM, AM, LSB, USB, CW
- Multiple scanning steps 50Hz - 125kHz
- Alpha numeric display
- Band scope with marker function for direct access to displayed frequencies
- Duplex receive capability - hear split frequency signals easily with VFOs
- 20 search bands
- Fast tune facility gives 10 times function for quick tuning
- Built-in ferrite rod antenna for AM broadcast reception
- OP90 Soft Case

YUPITERU MVT 3300EU

An exciting new handheld packed with features - but at a price you can afford! The receiver has "breathtaking performance" ensuring this set is destined to be a number one seller



£159.95

- FREQUENCY
 - 66 - 88MHz
 - 108 - 170MHz
 - 300 - 470MHz
 - 806 - 1000MHz
- MODES: AM/NFM
- STEPS: 5, 6.25, 10, 12.5, 25kHz
- MEMORIES: 200
- BAND MEMORIES: 10 (user re-programmable)
- PRIORITY CHANNELS: 10
- SCAN/SEARCH SPEED: 30 per sec
- POWER: Requires 4 x AA batteries
- SUPPLIED WITH: Antenna, Earpiece, Carrying Strap and built-in Desk Stand

YUPITERU MVT 7100 EU

Probably the most popular high end scanner. It's easy to use and can receive just about anything going!



£209.00

- 530kHz - 1650mhz
- AM/FM/WFM/SSB/CW
- 1000 Memories
- C/W N/Cads & charger
- OP51 Soft Case £17.95 + £2 p&p

GARMIN GPS11

RWP £325.00



Moving map features basemap, built-in European, African and Middle East to 20mi; includes lakes, rivers, cities, railways, coastlines, motorways and roads. Uploadable CD ROM, detailed map data available from MapSource CDs.

GARMIN STREET PILOT 12113



£849.00

Built-in international map contains motorways, major roads, lakes, rivers, streams, airports, cities, towns, coastlines, motorway exits plus waypoints.



£149.00

The Garmin GPS12 series products are as rugged as GPS gets. Military-tough construction and waterproof cases make these units ideal companions for any outdoor adventure. All feature a 12 channel receiver that locks onto satellites fast and stays locked on, even under extreme conditions. These units may be tough on the outside, but their operations are easy and logical.

BEARCAT UBC-780XLT TRUNKTRACKER



£299.00

Freq 25 - 1300MHz
500 Channels
Modes AM, FM, WFM Trunktracker
Alpha Tagging
With UK mains adapter, Telescopic aerial.

BEARCAT UBC-9000XLT



£249.00

Desktop scanner with TURBO SCAN
Freq 25 - 1300MHz
AM,FM,WFM



AOR AR8600 MKII



All mode, wideband desktop scanner
530KHz - 2040MHz. Additional slot cards
PC Control. 1000 memories

£649.00

Excluding power supply

ICOM £449.00

ICOM IC-R3

The only scanner with built-in TV!

- PACKED FULL OF FEATURES
- Excellent for surveillance

Grandly satellite
800 memories

- -0.30MHz
- HF receiver
- Airband
- VHF
- Large easy to use base/portable
- Suitable for all ages



£549.00



ROBERTS

ROBERTS R-800

Multi-band digital PLL
preset stereo world radio.

- High specification, easy to use
- 54 preset stations
- 5 tuning methods
- LCD display for all important functions
- Dual time display
- Standby function
- Clock/alarm
- Snooze function
- Adjustable 59 minute sleep timer
- Power supply battery (6V power)
- FM stereo on external socket
- 3.5mm stereo headphone socket
- AM wide-narrow filter
- MW switched tuning steps



£79.99

USED EQUIPMENT

MAKE	MODEL	PRICE
ALINCO	DJ-X10 WIDE BAND RECEIVER.....	£275
ALINCO	DJ-X2000 SCANNER.....	£375
ALINCO	DJ-X3 SCANNER.....	£99
ALINCO	DJ-X2 HANDHELD SCANNER.....	£99
AOR	AR-2800 SCANNER.....	£140
AOR	AR-3000 WIDE RECEIVER.....	£450
AOR	AR-3000A WIDE RECEIVER.....	£475
AOR	AR-3030 HF RECEIVER.....	£399
AOR	AR-5000 TOP CLASS RECEIVER.....	£999
AOR	AR-7030 TOP RECEIVER.....	£550
AOR	AR-8000 WIDE BAND RECEIVER.....	£199
AOR	AR-8200 WIDE BAND RECEIVER.....	£230
AOR	AR-8200mkII WIDE BAND SCANNER.....	£275
DRAKE	SW-2 RECEIVER.....	£275
DRAKE	SW-8 WORLD BAND RECEIVER.....	£375
FAIRHAVEN	RD-500 WIDE BAND RECEIVER.....	£575
GRUNDIG	SAT-800 SATELITE 800 MILLENIUM.....	£400
ICOM	IC-R9000 TOP CLASS COMMUNICATIONS RECEIVER.....	£2,995
ICOM	IC-PCR100 COMPUTER SCANNER.....	£175
ICOM	IC-R2 HANDY SCANNER.....	£99
ICOM	IC-R7000 RECEIVER MINT! CONDITION.....	£550
ICOM	IC-R71E RECEIVER.....	£325
ICOM	IC-R72 RECEIVER.....	£399
ICOM	IC-R75 HF / 6m RECEIVER.....	£475
ICOM	IC-R8500 WIDEBAND RECEIVER.....	£899
JRC	NRD-345 RECEIVER.....	£299
JRC	NRD-535 HF RECEIVER.....	£600
KENWOOD	R-2000 RECEIVER.....	£225
KENWOOD	R-5000 RECEIVER.....	£499
KENWOOD	R-5000 RECEIVER + CONVERTER.....	£600
KENWOOD	R-600 RECEIVER.....	£175
REALISTIC	PRO 2042 1000 CHANNEL SCANNER.....	£175
SANGAEN	ATS-909 WORLD BAND RECEIVER.....	£130
TARGET	HF-3S RECEIVER.....	£99
TRIO	R-2000 RECEIVER + CONVERTER.....	£300
TRIO	R-1000 AC HF RECEIVER.....	£120
YAESU	FRG-100 HF RECEIVER.....	£300
YAESU	FRG-7700 HF RECEIVER.....	£220
YAESU	FRG-8800 RECEIVER.....	£285
YAESU	FRG-8800 RECEIVER INCLUDES CONVERTER.....	£399
YAESU	FRG-9600 RECEIVER.....	£200
YAESU	VR-120 RECEIVER FM/WFM/AM.....	£99
YAESU	VR-5000 TOP RANGE SCANNER RECEIVER.....	£450
YAESU	VR-500 HANDHELD SCANNER.....	£149
YUPITERU	MVT-225 AIRBAND SCANNER.....	£150
YUPITERU	MVT-7300 MULTIBAND HANDHELD SCANNER.....	£199
YUPITERU	MVT-8000 SCANNER.....	£225
YUPITERU	MVT-9000mkII MULTIBAND HANDHELD RECEIVER.....	£275
YUPITERU	VT-125 AIRBAND SCANNER.....	£120
YUPITERU	MVT-7100 HANDHELD SCANNER 500KHZ - 1650 MHZ.....	£140

SWM UK Radio Club Listing

If you want to meet with others with a radio passion, then please use this guide...

NORTH WEST

CHESHIRE

CHESTER & DRS, G3GZ. Meets at the Burley Hall, Waverton, Chester. Details from Bob Campbell G4CMI. Tel: (01244) 378699.

HALTON RADIO CLUB, M0BZK. Meets at the Play Centre, Norton Hill, Windmill Hill, Runcorn. Details from Alan Parker 2E LDFS. Tel: (01928) 790228.

MACCLESFIELD WIRELESS SOCIETY, G4MWS. Meets at the Pack House Bowling Club, Abbey Road, Macclesfield. Details from Mrs Hazel Parrott.

MID CHESHIRE ARS, G3ZTT. Meets at the Cotebrook Village Hall, Cotebrook Nr. Tarporley, Cheshire. Details from Niall Reilly G0VOK.

NORTH CHESHIRE RC, G0BAA. Meets at the Morley Green Club, Moberley Road, Wilmslow, Cheshire. Details from Jill Gourley G0OZJ. Tel: 0161-485 5036.

RADIO OFFICERS ARS, M0RQA. Details from Mr J. Bell G0CMM.

UKFM GROUP WESTERN, GB3MP. Meets at the Morley Green Club, Moberley Road, Wilmslow, Cheshire. Details from Gordon Adams G3LEQ. Tel: (01565) 652652, FAX: (01565) 634560.

WARRINGTON & DARS, G0WRS. Meets at the Grappenhall Community Centre, Bellhouse Lane, Grappenhall, Warrington, Cheshire. Details from John Riley G0RPG. Tel: (01925) 762722.

WIDNES & RUNCORN ARC, G0FWR. Meets at the Scout Hut, Castle Road, Halton Castle, Runcorn, Cheshire. Details from Martin Tust G4LUQ. Tel: (01928) 714843.

CUMBRIA

CARLISLE & DARS, G4ARS. Meets at the Morton Community Centre, Wigton Road, Carlisle. Details from Mr J.A. Ennis G3XWA. Tel: (01228) 27463.

EDEN VALLEY RS, G0ANT. Meets at the BBC Club, Penlth, Details from John Roze G0VMP. Tel: (01931) 716421.

FURNESS ARS, G4ARF. Meets at the Farmers Arms Hotel, Newton-in-Furness. Details from Mr K. Moore M1BWA. Tel: (01229) 465691.

WHITEHAVEN ARC, M0BEE. Details from Mr N. Williams M0CRM.

GREATER MANCHESTER

BURY RS, G3BRS. Meets at the Mosses Centre, Cecil Street, Bury, Lancs BL9 0SB. Details from Steve Gilbert G3OAG. Tel: 0161-881 1850.

DOUGLAS VALLEY ARS, G3BPK. Meets at the Wigan Sea Cadet HQ, Training Ship Sceptre, Brookhouse Terrace, off Warrington Lane, Wigan. Details from Mr D. Snape G4WVG. Tel: (01942) 211397.

ECCLIS & DARS, G3XNI. Meets at the Eccles Liberal Club, Wellington Road, Eccles, Manchester. Details from Chris Hamson G8KRG. Tel: 0161-773 7899.

THE MANCHESTER WIRELESS SOCIETY, G5MS. Meets at the Simpson Memorial Community Hall, Moston Lane, Moston, Manchester. Details from Ian M0IPR. Tel: 0161-288 730 or visit www.g5ms.com

OLDHAM ARC, G4ORC, G1ORC. Meets at the Royston Air Training Corps, Park Lane, Royston, Oldham. Details from Michael Crossley M1CVL. Tel: (01706) 367454.

QUILDER HILLS ARS, G0QUA. Meets at the Quilder Community School, Hudsons Walk, Quilder Hill, Rochdale. Details from Carolyn Hope G7WFF. Tel: (01706) 522687.

ROCHDALE & DARS (RADARS), G0ROC. Meets at the Barnfield & Fieldhouse, Cricket Club, Barnfield Village. Details from John Cannell G7DAJ. Tel: (01706) 376204.

SOUTH MANCHESTER RAD & COMP CL, G3FVA. Meets at the Sale Cricket Club, Dave Road, Sale, Cheshire. Details from Chris Ward G4HON. Tel: 0161-483 5174.

STOCKPORT RS, G6UQ, G8RSR. Meets at the T.S. Hawkins, Stockport Sea Cadets HQ, Pearnill Ind. Est., Stockport Road, West Howe, Lower Breckbury, Stockport. Details from David Simcock M1ANT. Tel: 0161-456 7832.

TRAFFORD ARC, G0TRC, G1TRC. Meets at the Watch House, Cruising Club, Canal Bank, Stretford, Manchester M32 3WE. Details from Roger May G4YLQ. Tel: (01457) 8666575.

TRAFFORD RADIO GROUP, G0TRG. Meets at 17th Stretford Scouts HQ, Barton Road, Stretford, Manchester. Details from Jon Mossman G7JKK. Tel: 0161-865 5609.

WEST MANCHESTER RC, G4MWC. Meets at the Astley & Tydesley Miners Welfare Club, Meanly Road, Astley, Tydesley, Manchester. Details from Jeffrey Moran M0BGU. Tel: (01204) 497694.

WIGAN & DARC, G0HRW. Details from Mr D.H. Barkley G0DPI. Tel: (01942) 237162.

ISLE OF MAN

ISLE OF MAN ARS, G03FLH. Meets in the Sea Cadets Hall, Tromode Road, Tromode, Douglas. Details from Dave Walton M0BXX. Tel: (01824) 816308.

LANCASHIRE

BURNLEY & DARS, RS87674. Meets at Barden High School, Barden Lane, Burnley, Lancashire. Details from Bill Scovener G0BQC.

CENTRAL LANCS ARC, G0FDX. Meets at the Phony Club, Broadfield Drive, Leyland, Lancs. Details from Steve Shearing M1ACJ.

DARVEN ARC, G4JS. Meets at the Darven Catholic Club, Wellington Fold, Darven, Lancashire. Details from Len Jackson G0NPI.

FISTS CW CLUB, G0IPX. Details from Mr E. Longden G3ZQS. Tel: (01254) 703948.

FLDE ARS, RS53939. Meets at the A.N.T. Flying

Clubhouse, Blackpool Airport. Details from Ken Randall G3RFH. Tel: (01253) 407952.

MORECAMBE BAY ARS, G4YBS. Meets at the Trimpell Sports & Social Club, Outmosse Lane, Morecambe, Lancs. Details from Brian Watson G0RHD. Tel: (01524) 424522.

PRESTON ARS, G3KUE. Meets at the Lonsdale Club, Fulwood Hall Lane, Fulwood, Preston. Details from Eric Eastwood G1WCQ. Tel: (01772) 686708.

ROLLS-ROYCE ARC, G3RR. Meets at the Club Room, Rolls-Royce Sports Ground, Barnoldswick. Details from Mr J.A. York G3KYJ.

ROSSENDALE ARS, G1RRS. Meets at the Old Fire Station, Burnley Road, Rawtenstall, Rossendale, Lancs BB4 6EW. Details from Ken Slaughter. Tel: (01706) 830306.

THORNTON CLEVELYS ARS, G4ATH. Meets at the Frank Townsend Centre, Beach Road, Thornton Clevelys, Lancs. Details from Mr J.E. Duddington G4BFH. Tel: (01253) 853554.

WIRRAL & DARC, G4MGR. Meets at the Irbly Cricket Club, Mill Hill Road, Wirral. Details from Brian Black.

WIRRAL ARS, G3MNR, M0CLARC. Meets at the Club Room, Farm, Arrow Park Road, Wirral L49 5LW. Details from Alan Upton G3UZU. Tel: 0151-677 3266.

SOUTH WIRRAL CONTEST GROUP, G3CSA. Details from Mr T.B. Saggerson G4WSE. Tel: 0151-339 0842.

SOUTHPORT & DARC, G20A. Meets at St. Marks Church Hall, Scansbnck, Lancs. Details from Don Atkins M1BLU.

WIRRAL & DARC, G4MGR. Meets at the Irbly Cricket Club, Mill Hill Road, Wirral. Details from Brian Black.

WIRRAL ARS, G3MNR, M0CLARC. Meets at the Club Room, Farm, Arrow Park Road, Wirral L49 5LW. Details from Alan Upton G3UZU. Tel: 0151-677 3266.

NORTH EAST

CLEVELAND

EAST CLEVELAND ARC, G4CRD. Meets at the Committee Room of The New, New Marske Institute Club, Gurney Street, Cleveland TS11 8EG. Details from Malcolm Brass G4YMB. Tel: (01287) 638119.

STOCKTON & DARC, G4X0G. Meets at the Billingham Community Centre, Billingham, Cleveland. Details from David J. London G0VGB. Tel: (01642) 896395.

CO DURHAM

BISHOP AUCKLAND RC, G4TTF. Meets at the Stanley Village Hall, Rear High Road, Stanley, Crook, Co. Durham. Details from Mark Hill G0GFG. Tel: (01388) 745353.

DERWENTSIDE ARC, G4PFQ. Meets at the Steel Club, 36 Medomsley Road, Consett, Co. Durham. Details from Mr G. Darby G7GUJ. Tel: 0191-370 2032.

GREAT LUMLEY AR & ES, G4ELZ. Meets at the Community Centre, Great Lumley, Chester-le-Street, Co. Durham. Details from Mr D.J. Barclay M0BPM. Tel: 0191-388 8113.

PETERLEE RADIO CLUB, G0KVK. Details from Andrew Pennell G0NSK.

HUMBERSIDE

EAST YORKSHIRE ARS, G0EQR. Meets at the Northern Foods Sports & Social Club, Millhouse Woods Lane, Cottingham, E. Yorks. Details from David Taylor G4EBT. Tel: (01482) 876702.

GOOLE R & ES, G0OLE. Meets at the West Park Pavilion, Goole, South Humberside.

GRIMSBY ARS, G3CNX. Meets at Cromwell Social Club, Cromwell Road, Grimsby, South Humberside. Details from Mr G.J. Smith G4EBK. Tel: (01472) 887720.

HORNSEA ARS, G4EKT. Meets at The Mill, Ailwick Road, Hornsea, North Humberside. Details from Jeff Southwell G4IGY. Tel: (01964) 533331.

HULL & DARS, G3AMW. Meets at the SWL Centre, Club Room, Gothland Close, Walton Street, Hull. Details from Mr R. Hatton.

RAYWELL PARK SCOUTS ARS, G4CMT. Details from Mr A.D. Russell M0AXU.

SCUNTHORPE STEEL ARC, G4FUH. Details from Alistair Butler M1ECF.

NORTH YORKSHIRE

DARLEY ARC, G0FOS.

HAMBLETON ARS, G0JQA. Meets at the Mencep Centre, Northallerton, N. Yorks. Details from Ian Binkwood G0JQA. Tel: (01609) 775598.

QUEEN MARY ARC, G6QM. Meets at Blazefield, Pateley Bridge, Harrogate, North Yorks HG3 5DZ. Details from Frank Hams G4IEY. Tel: (01242) 236715.

RIPON & DARS, G4SJM. Meets at The Bunker, rear of Ripon Town Hall, North Yorkshire. Details from Nigel Drumm M1BDZ. Tel: (01423) 884733.

ROYAL SIGNALS SCARBOROUGH ARC, G0RCS. Details from Mr A.W.W. Timme G3CWW. Tel: (01484) 842330.

SCARBOROUGH ARS, G4BP. Meets at the Scarborough Cricket Club, Pavilion, North Marine Road, Scarborough, North Yorks YO12 2TJ. Details from Mr D.P. Tipper G3JBR. Tel: (01723) 377296.

SCARBOROUGH SE GRP, G0X000. Details from Roy Clayton G4SSH. Tel: (01723) 882924.

THE VINTAGE & MILITARY ARS, RS183536. Details from H.A. Aspinall.

YORK ARS, G3HVV. Meets at the Guppy's Enterprise Club, 17 Nunney Lane, York. Details from Keith Cass G3WVO. Tel: (01904) 422084.

YORK RADIO CLUB (AMATEUR) G4YRC. Meets at the Bishopthorpe Social Club, Bishopthorpe Main Street, York. Details from Gareth Foster G1DRG. Tel: (01904) 421392.

NORTHUMBERLAND

NORTHUMBRIA ARC, G4AAX. Meets at the Old Telephone Exchange, Cresswell Road, Ellington, Morpeth, Northumberland. Details from Mr D. Stansfield G0EVV. Tel: (01670) 513026.

SOUTH YORKSHIRE

FINNINGLEY ARS, G7HAH. Details from John Fennell G4HOY. Tel: (01427) 872522.

MALBY & DARS, G4SKM. Meets at the Centenary Hall, Clifford Road, Hellaby, Rotherham. Details from Keith Johnson G1PQW. Tel: (01709) 798098.

MEXBOROUGH & DARS, G4BTS. Meets at the Harrop Hall, Mexborough, South Yorks. Details from Mr R.T. Sheppard G0KSK. Tel: (01709) 586329.

SHEFFIELD ARC, G0INF, NRAE/RAE (airton) provided. Meets at the Sheffield University Staff Club, 197 Brook Hill, Sheffield. Details from Mrs Irene Glossop G0SFI.

TYNE & WEAR

HUGHTON-LE-SPRING ARC, G3NMD. Meets at the Dumbrie Royal British Legion, Dumbrie, Fencehouses, Tyne & Wear DH4 6LJ. Details from Foster Aungles G0A8F. Tel: (0191-584 4673).

SOUTH TYNESIDE ARS, G0W0KQ. Meets at the Boldon Scout Hut, Grey House Car Park, Front Street, Boldon. Details from William Wilson M0BWB. Tel: 0191-421 9921.

TYNEMOUTH ARC G0NWM. Meets at the Linskill Centre, Linskill Terrace, North Shields, Tyne & Wear. Details from Mr G.N. Thompson G0SBN.

TYNESIDE ARS, G3ZQM. Meets at the St Teresa's Club, 200b Heaton Road, Newcastle-upon-Tyne NE6 5HP. Details from Mr J. Pickersgill G0DZG. Tel: 0191-265 1718.

WEST YORKSHIRE

DENBY DALE & DARS, G4CDD, G8KMK. Meets at the Pie Hall, Denby Dale, West Yorkshire. Details from Mr J.P. Morley G4FSQ.

HALIFAX & DARS, G2UG. Details from Mr S.P. Ortmeyer G4RAW. Tel: (01422) 203062.

KEIGHLEY ARS, G0KRS. Meets at the Cricket Club, Ingrow, Keighley, West Yorkshire. Details from Mr I. Tomson M1BGY. Tel: (01274) 723951.

LEEDS & DARS, G4LAD. Meets at The Radio Shack, Yarmbur (Horsforth), RUF Grounds, Brownberrie Lane, Horsforth, Leeds LS18 5HB. Details from Mr E. Howden G0BU.

NORTH WAKEFIELD RC, G4NOK. Meets at the East Ardsley Cricket Club, Nr. Wakefield. Details from Mrs Olga Parker 2E1ASV. Tel: 0113-253 9087.

OTLEY ARS, G3XNO. Meets at The RAOB Club, Westgate, Otley, West Yorkshire. Details from Jack Worsnop G0SNV. Tel: (01274) 636197.

PONTEFRACT & DARC, G3FYQ. Meets at the Carleton Community Centre, Pontefract, West Yorkshire. Details from Colin Wilkinson G0NQE. Tel: (01977) 677006.

SPEN VALLEY ARS, G3SVC. Meets at the Old Bank WMC, Mirfield, West Yorkshire. Details from Mr J.R. Wilde G0FOI. Tel: (01274) 875038.

WAKEFIELD & DARS, G3WRS. Meets at the Ossett Community Centre, Prospect Road, Ossett, W. Yorks. Details from Ian Roberts. Tel: (01924) 218502.

WAKEFIELD RPTR GP, G0KNR. Details from Mike Charlton G6OZ.

WHITE ROSE ARS, G3XEP. Meets at the Moortown RUF, Moss Valley, Kings Lane, Leeds LS17 7NT. Details from Mr M. Wilson G7SDW. Tel: 0113-273 6039.

MOLANDS

BEAFORDSHIRE

DUNSTABLE DOWNRS RC, G4DDC. Meets at the Chevys House, 77 High Street South, Dunstable, Beds LU6 3SF. Details from Phil Seaford G8XTW. Tel: (01525) 384419.

SHEFFOLD & DARS, G3FJE. Meets at the Church Hall, Amphill, Shefford, Beds. Details from John West. Tel: (01462) 812739.

ST SWITHUN'S ARC, M0AUV. Meets at St. Swithun's Church, Rectory Rooms, Sandy, Beds. Details from Kehy Darton G0WOD. Tel: (01767) 883179.

CAMBRIDGESHIRE

CAMBRIDGE & DARC, G2XV. Meets at the Coleridge Community College, Radesgund Road, Cambridge. Details from Ron Huntsman G3KBR. Tel: (01223) 501712.

DUKFOUR ARS, G82MW. Meets at Building 177, Imperial War Museum, Duxford Airfield, Cambs. Details from Mrs B.I. Pope. Tel: (01279) 656149.

GTR PETERBOROUGH ARC, G4EHW. Meets at the 6th Form Building, Stanground College, Farcot Road, Fletton, Peterborough. Details from Alan D. Ralph G8XLH.

HUNTINGDONSHIRE ARS, G0HSR. Meets at the Medway Centre, Medway Road, Huntingdon. Details from David Leech G7DUJ. Tel: (01480) 431333.

MARCH & DRAS, G3PMH. Meets at the British Legion Club, Rookwood Road, March, Cambs PE15 8DP. Details from Mr J. Braithwaite G3PWK. Tel: (01353) 696885.

PETERBOROUGH R & ES, G3DQW. Details from Mr V. Edwards G8NGZ.

WISBECH AR & ELEC. CLUB, M5ARC, G4POL, G8NED. Meets at RAFA Club, Old Market, Wisbech. Details from Alan Bridgeland M0DUJ. www.warec.org.uk

DERBYSHIRE

BOLSOVER ARS, G4RSB. Meets at the Blue Bell, High Street, Bolsover, Derbys. Details from Colin Morris G0RKT. Tel: (01246) 822856.

BUXTON RA, G4SPA. Meets at the Leewood Hotel,

Buxton. Details from Derek Carson G4IHO. Tel: (01298) 25506.

DERBY & DARS, G2DJ. Meets at Carlton Road United Reform Church, Carlton Road, Littleover, Derby. Details from Martin Shardlow G3SZJ. Tel: (01332) 556875.

EREWASH VALLEY ARC, G0PCX. Meets at The Sitwell Arms Public House (between Horsley Woodhouse and Woodside). Details from Peter Russell M0AQI.

MOUNT ST. MARY'S ARC, G4MSM. Meets at the College, Spinikhil, Sheffield. Details from Rev. P. McArdie G0DAG. Tel: (01246) 812230.

NOTTS & DERBY BORDER ARC, G4NID. Meets at Marpool United Reform Church, Chapel Street, Marpool, Ilkeston. Details from Graham Bromley G4UTN. Tel: (01773) 834308.

NUNSFIELD HOUSE ARC, G3EEQ. Meets at the Nunsfield House, Bouton Lane, Avaston, Derby. Details from William F. Smith G7PJJ.

STH DERBYS & ASHBY W ARG, G0SRC. Meets at the Moira Replian Centre, 17 Ashby Road, Moira, Swadincote, Derbyshire DE12 6DJ. Details from Mrs B. Walley. Tel: (01283) 768222.

STH NORMANTON, ALFRETON & DARC, G0CPO. Meets at the New St. Community Centre, New Street, South Normanton, Derbyshire. Details from Peter Gething M0CJQ. Tel: 0115-955 5766.

GLoucestershire

CHELTENHAM AR ASSN, G5BK. Meets at the Prestbury Library, Prestbury, Cheltenham. Details from Ian Wilson G4BGW. Tel: (01452) 731956.

CHELTENHAM CLUSTER SUPP GP, G87DXC. Details from Mr A.M. Davies G0HDB. Tel: (01684) 72178.

GLoucester AR & ES, G4AYM. Meets at the Churchdown School, Churchdown. Details from Mr A.J. Martin. Tel: (01452) 618930.

SMITHS INDUSTRIES RS, G4MEN. Meets at the Sports & Social Club, Evesham Road, Bishops Cleeve, Cheltenham GL52 4SF. Details from A.J. Hooper G1JMF.

STROUD RS, G4SRS. Meets at the Minchampton Youth Centre, Nr. Stroud. Details from Mr S.G. Spencer G3CLO.

WHITE NOISE LISTENING G0WNL. Details from Adrian Deane G7KOG.

HEREFORD & WORCESTER

BROMSGROVE & DARC, G3VGG. Meets at the Avoncroft Arts Centre, Bromsgrove, Worcs. Details from Mr J.F. Burford G4OAZ.

BROMSGROVE ARS, G4TUI. Meets at the Liky End WMC, Bromsgrove, Worcs. Details from Barry Taylor G0TPG. Tel: (01527) 542266.

DROITWICH ARC, G4PYO. Meets in the Community Hall, Droitwich Spa, Worcs. Details from Hector Wragg M1BIV. Tel: (01905) 794399.

HEREFORD ARS, G3YDD. Meets at the Civil Defence HQ, Magistrates Court, Gaoi Street, Hereford. Details from Tim Bridgand-Taylor G0JWJ. Tel: (01432) 279435.

KIDDERMINSTER & DARS, G0KRC. Meets at the Sutton Arms, Sutton Park Road, Kidderminster, Worcs. Details from Mr A.W. Saunders G0OZB. Tel: (01299) 400172.

MALVERN HILLS ARC, G4MHC. Meets at the Red Lion Inn, St. Anne's Road, Malvern, Worcs. Details from Dave Hobro G4IDF. Tel: (01905) 351568.

REDDITCH RC, G4ACZ. Meets at the WRFVS Centre, Ludlow Road, Redditch, Worcs. Details from Mr R.J. Mutton G3EVI. Tel: (01789) 782041.

VALE OF EVESHAM RAC, G0ERA. Meets at the BBC Club, High Street, Evesham, Worcs. Details from Mr A.C. Lindsay G4NRD. Tel: (01386) 41508.

LEICESTERSHIRE

1F ATC, G7MCD. Details from Sqn. Cmdr. Adnan Utting G1WZQ.

BEAUMONOR ARC, G3BMR

DEMONTFORT UNIVERSITY, G3SD

RAF CONINGSBY ARC, G3LQS. Meets at Essex Block, RAF Coningsby. Details from Peter Hanson G0NYY.

RAF WADDINGTON ARC, G0RAF. Meets at Pyewee Inn, Fossebank, Saxilby Road, Lincoln. Details from Robert Pickles G3VCA. Tel: (01522) 528708.

SPALDING & DARS, G4DSP. Meets at The Old Fire Station, Spalding, Lincs. Details from Raymond Pearson G8ELV. Tel: (01775) 711953. Web: www.stars.org.uk

SPILSBY ARS, RS91468. Details from Clive Ironmonger G6HYF. Tel: (01790) 752712.

NORTHANTS

KETTERING & DARS, G5KN. Meets at The Lilacs Public House, 39 Church Street, Isham, Kettering, Northants NN14 1HD. Details from Fay Barwell G6AKS. Tel: (01536) 390954.

MID NORTHANTS AR EXP, G0ING. Details from Lonel Parker G5LP.

NORTHAMPTON RC, G3GMB. Meets at the British Timken, Social & Athletic Club, Cotswold Avenue, Duston, Northampton. Details from Norman Miller G0GBZ. Tel: (01327) 349188.

NORTHAMPTON SCOUT ARG, G6NDS. Meets at Overstone Scout Activity Centre, Northampton. Details from Ian Rivett G3WPU.

PARALLEL UNES CG, GAUP. Details from Mr P.S. Lidsay G4CLA.

NOTTINGHAMSHIRE

ARC OF NOTTINGHAM, G3EHW. Meets at the Haywood Road Community Association, Haywood Road, Mapperley Road, Nottingham NG3 6AD. Details from Ron Hague G4KOU. Tel: 0115-919 9177.

DUKERIES ARS, G4XLT. Meets at Ambleside Community Centre, Ambleside, New Olterton, Notts. Details from Colin Foster G7DX.

HUCKNALL ROLLS ROYCE ARC, G5RR. Meets at the Hucknall Rolls Royce Sports & Social Club, Watnall Road, Hucknall, Nottingham. Details from Mr P. Hart G4JSM.

MANSFIELD ARS, G3GQC. Meets at the Debdale Park Sports & Recreation Club, Debdale Lane, Mansfield Woodhouse, Notts. Details from David Peat G0RDP. Tel: (01623) 631931.

NORTH NOTTS DATA GROUP, G0WNN. Details from Tony Jenkins G8TBF.

SIEMENS ARC, G8ZK, G8GQ. Meets at the GPT Sports Ground, Beeston, Nottinghamshire. Details from Chris Archer G4VFK. Tel: 0115-943 3387.

SOUTH NOTTS ARC, G0OAJ. Meets at the Fairham Community College, Farnborough Road, Clifton, Nottingham NG11 9AE. Details from Gary Bishop G0WUG. Tel: (01509) 672846.

WORKSOP ARS, G3RCW. Meets at the Club House, 59-61 West Street, Worksop, Nottingham S80 1JP. Details from Terry Calvert G4GBS. Tel: (01302) 743130.

SHROPSHIRE

OSWESTRY & DARC, G4TTO, G1ORA. Meets at the Sweeney Hall Hotel, Sweeney, Oswestry. Details from Ant Asley G4WJA. Tel: (01691) 860545.

SALOP ARS, G3SRT, M1AXW. Meets at the Telecom Club, Railway Lane, Abbey Forge, Shrewsbury. Details from John Burnford G0GTM.

TELFORD & DARS, G3ZME. Meets at the Dawley Bank Community Centre, Dawley, Telford, Shropshire. Details from Mr M. Vincent G4YUK. Tel: (01952) 255416.

STAFFORDSHIRE

BURTON-ON-TRENT & DARS, G3NFC. Meets at the Stapehill Institute, Main Street, Stapehill, Burton-on-Trent, Staffs. Details from Mr M.W. Cotton G4HBY.

CANNOCK CHASE ARS, G8SW. Meets at the Four Crosses Inn, Watling Street, Hatherton, Cannock, Details from Arnold Matthews G3FZV. Tel: (01543) 262495.

CHAD RC, G4CAR. Meets at the Swinfen Officer's Club, Swinfen, Lichfield, Staffs. Details from Bernard Jayne G8BFL. Tel: (01543) 268569.

LICHFIELD ARS, G3WAS. Meets at the Queens Head, Sandford Street, Lichfield. Details from Roger Smeeths G3NLY. Tel: (01543) 672762.

MOORLANDS & DARS, G4NHT, G1MAD. Meets at the Crea Works, Blythe Bridge, Stoke-on-Trent, Staffs ST11 9JL. Details from Mr B.J. Butcher G4HKG. Tel: (01782) 395793.

NEWCASTLE-U-LYME SCOUT AR COM GR, G7UQG

STOKE-ON-TRENT ARS, G3GBU. Meets at the '45' Club, 92 Lancaster Road, Newcastle-under-Lyme, Staffs. Details from Albert Allen G4DHO. Tel: (01782) 638801.

SUTTON COLDFIELD RS, G3RSC. Meets at the Rugby Club, Walmley Road, Sutton Coldfield, West Midlands. Details from Paul G. Turner G7MWD. Tel: 0121-350 4263.

WARWICKSHIRE

AVON VALLEY ARC, MORAD. Details from Mr Peter Brachon G0WJK. Tel: (01905) 724531.

MID WARWICKSHIRE ARS, G3UDN. Meets at the St. John Ambulance HQ, 61 Emmscotte Road, Warwick, Details from Bernard Pittaway. Tel: (01926) 420913.

RUGBY ATS, G4APD. Details from Tony Humphnes G0OLS. Tel: (01455) 552683.

STRATFORD-UPON-AVON & DRS, G0SDA. Meets at the Home Guard Club, Tiddington, Stratford-upon-Avon, Warks. Details from Ron Horsley G0MRH. Tel: (07970) 148204.

WEST MIDLANDS

ALDRIDGE & BARR BEACON ARC, G0NEQ. Meets at the Aldridge Central Hall Community Centre, Middlemore Lane, Aldridge WS9 5AN. Details from Mr C.J. Baker G0NOL. Tel: (01922) 636162.

COVENTRY ARS, G2ASF. Meets at the Binley Church Hall, Brinklow Road, Coventry. Details from John Beech G8SEQ. Tel: (01203) 673999.

DUDLEY ARC, G4DAR. Meets at the Community Centre, Sedgely, Central Library, St. James Road, Dudley. Details from Tony Lucas G4LVA. Tel: (01384) 277925.

HILLCREST ARS, G0SPM. Meets at The College, Simms Lane, Netherpton, Dudley, West Midlands. Details from Stuart Viney. Tel: (01384) 232457.

KYNOCH R & TVS, G3HPP. Meets at the Club Workshop, IMI Ltd., Sportsfield, Perry Bar, Birmingham. Details from Mr G. Nicholls. Tel: (01922) 635376.

MIDLAND ARS, G3MAR. Meets at Unit 22, 60 Regent Place, Hockley, Birmingham (jewelry quarter). Details from John A. Crane G0LAL. Tel: 0121-628 7632.

SANDWELL AMATEUR RADIO CLUB, G0CWC. Meets at Sandwell ARC, Broadway, Oldbury, Warley, West Midlands B68 9DF. Details from Stuart Collins M0BTO. Tel: 0121-561 4663.

SIERRA HOTEL ARCC, G0OBS. Details from Warwick M. Hall G4WMH.

SOUHLI ARS, G3GEE. Meets at The Shirley Centre, 274 Stratford Road, Shirley, Solihull, West Midlands. Details from Paul Gaskin G8AYY. Tel: 0121-783 2996.

SOUTH BIRMINGHAM RS, G3OHM. Meets at Hampstead House, Fairfax Road, West Heath, Birmingham. Details from The SBR5 Secretary.

STOURBRIDGE & DRS, G6OI, G0SRS. Meets at the Old Swinford Hospital/School, Stourbridge, West Midlands. Details from Tom Edwards.

WEST BROMWICH CENTRAL RC, G4WBC. Meets at the Sandwell Public House, High Street, West Bromwich, West Midlands. Details from Ian Leitch G0PAL. Tel: 0121-561 2884.

WEST MIDLANDS POLICE ARC, G0COP, G1WMP. Details from Steven Jones G6LR.

WILLENHALL & DARS, G4ETW. Meets at The Liberal Club, Villiers Street, Willenhall, West Midlands. Details from Dave Bradbury. Tel: (01902) 411252.

WOLVERHAMPTON ARS, G8TA. Meets at the Electricity Board Sports Club, St. Marks Road, Chapel Ash, Wolverhampton. Details from Mrs J. Smith. Tel: (01902) 751938.

WORDSLEY RC, G4WRA. Meets at the Brick Maker's Arms, Mount Pleasant, Bentley Hill, West Midlands. Details from Andy Evans G1PKY.

LONDON & CENTRAL

BERKSHIRE

ARBORFIELD ARC, G3IHH. Details from Mrs E.W. Harding 2E1AUQ.

BRACKNELL AEC, G4BRA. Meets at the Coopers Hill Community Centre, Bagshot Road, Bracknell, Berks. Details from John Elerton G3NCN.

BURNHAM BEECHES RC, G3WR. Meets at the Farnham Common Village Hall, Victoria Road, Farnham Common, Bucks. Details from Mrs Eileen Chislett G8EIL. Tel: (01628) 825720.

MAIDENHEAD & DARC, G3WOL. Meets at the Red Cross Hall, The Crescent, Maidenhead, Berkshire. Details from Neil Savin G0SVN. Tel: (01628) 826210.

NEWBURY & DARS, G5AV. Meets at the Rugby Club, Monk's Lane, Newbury. Details from Mark Slade M0CUK. Tel: (01488) 639885.

READING ARC, G3ULT. Meets at the Woodley Pavilion, Woodford Park, Haddon Drive, Woodley, Reading. Details from Marnoch Standen G0JMS. Tel: 0118-972 3504.

BUCKINGHAMSHIRE

AYLESBURY VALE RS, G4VRS. Meets at the Harwick Village Hall, Aylesbury, Bucks. Details from Mr L.L. Cropley G0DFC.

CHESHAM & DARS, G3MDG, G1JMD. Meets at the White Hill Centre, Chesham, Bucks. Details from Mr T.J. Thirwell G0LTV. Tel: (01492) 832169.

CHILTERN ARC, G3CAR. Details from Roy Page G4YAN. Tel: (01494) 534216.

MILTON KEYNES ARS, G3MHU. Meets at Blechley Park Museum (The Green Room, B Block Annex), Wilton Avenue, Vlechley, Milton Keynes. Details from Mrs J. Battersby M1EPL (Secretary) on (01908) 565636 or Frank Collins M0RPM (Chairman) on (01234) 713148

MILTON KEYNES SCOUT ARS, G0SMA. Meets at The Quarries, M.K. Scout Campsite, Cosgrove. Details from Mr P.A. Orchard G0RYZ. Tel: (01908) 648186.

GREATER LONDON

ADDISCOMBE ARC, G4ALE. Meets at the Lion Inn, Pawsons Road, Croydon. Details from Mr Q.G. Collier G3WRR. Tel: 0208-653 6948.

BARKING R & ES, G3XBF. Meets at the Parkside Community Centre, Details from Bill Chewter G0IQK. Tel: (01708) 474443.

BROMLEY & DARS, RS98030. Meets at the Victory Social Club, Kechill Gardens, Hayes, Bromley. Details from Alan G. Messenger G0TLK.

CLIFTON ARS, G3GHN. Meets at the Kidbrooke House, Community Centre, 90 Mycenae Road, London SE3 7SE. Details from Mr J. Veaney G7BHH.

CRYSTAL PALACE & DRC, G3VCP. Meets at the All Saints Church, Parish Rooms, Buiyah Hill, London. Details from Bob Burns G30OU. Tel: (01737) 552170.

DARENTH VALLEY RADIO, G0KDV. Meets at the Crooknail Village Hall, Swanley, Kent. Details from Mr K.V. Halls G8VJG. Tel: (01322) 663022.

ECHOLFORD ARS, G3UES. Meets at The Community Centre, St. Martin's Court, Kingston Crescent, Ashford, Middlesex. Details from Robin Hewes G3TDR. Tel: (01784) 456513.

EDGWARE & DRS, G3ASR. Meets at the Watling Community Centre, 145 Orange Hill Road, Burnt Oak, Edgware, Middlesex. Details from Stephen Stair G0PQ8. Tel: 0208-953 2164.

HAVERING & DARS, G4HRC. Meets at the Fairfyttes Arts Centre, 51 Billet Lane, Hornchurch, Essex.

RS OF HARROW, G3EFC. Meets at the Harrow Arts Centre, Uxbridge Road, Hatch End, Middlesex. Details from Mr C. Fiel G4AUF. Tel: (01895) 621310.

SILVERTHORNE RC, G3SRA, G2HR, G8CSA. Meets at the Chingford Adult Education and Community Centre, Friday Hill House, Simmons Lane, Chingford, London E4 6JH.

Details from Dave Chnsty G0KHC. Tel: 0208-504 2831.

MITCHAM & DISTRICT ARS. Meets at the ATC Hut, Commodore West, Mitcham, Surrey CR4 4HB. Details from Mr M. Knott G0WCR.

SOUTHGATE RC, G3SFG. Meets at the Winchmore Hill Cricket Club, Firs Lane, London N21 3ER. Details from Mr D.F. Berry G4DFB.

ST. DUNSTONS COLLEGE ARS, G4SDC. Details from Sam Kennard G4OHC. Tel: 0181-890 1274.

SURREY RADIO CONTACT CLUB, G3SRC. Meets at the T.S. Terra Nova, 34 The Waltons, Croydon, Surrey. Details from Micauna Fagg G4DDY. Tel: 0208-669 1480.

WEST LONDON ARS, RS95599. Details from Robin Clay G0VJI.

WHITTON ARC, G0MIN. Meets at the Whitton Community Centre, Percy Road, Whitton. Details from Ian Clabon G0OFN. Tel: 0208-894 9131.

HERTFORDSHIRE

BISHOPS STORTFORD ARS, G5ZG. Meets at the Royal British Legion Club, Windhill, Bishop's Stortford, Herts. Details from Tony Judge G0PQF. Tel: (01279) 508933.

DACORUM ARTS, G7RH, G0WH. Meets at the Guide Meeting Rooms (next to the Royal British Legion), Queensway, Hemel Hempstead. Details from Ian Hamilton G0TCD. Tel: (01442) 211925.

HODDESDON RADIO CLUB, G0TSN. Meets at the Rye Park Conservative Club, Rye Road, Hoddesdon, Herts. Details from Don Platt G3JNJ. Tel: 0208-292 3678.

MIMRAM CONTEST GP, M0ACB. Details from Alan Holdsworth G00U. Tel: (01707) 392950.

RADIO SCOUTING TEAM, G8ZST. Meets at Tolmers Scout Camp, Tolmers Road, Cuffley, Herts EN6 4JS. Details from Mill Levens G2KCB. Tel: (01992) 558493.

STEVENAGE & DARS, G3SAD. Meets at the Stevenage Day Centre, Chells Way, Stevenage, Herts SG2 0LT. Details from Peter Bell 2E1CRK. Tel: (01462) 874505.

VERULAM ARC, G3VER, G5VER. Meets at the RAF Association HQ, New Kent Road, St. Albans, Herts. Details from Walter Crane G3PFT. Tel: (01923) 262180.

WELWYN & HATFIELD ARC, G3WGC. Meets at the Royal Naval Association, Black Fan Road, Welwyn Garden City, Herts. Details from Dean Jackson G7PWF. Tel: (01937) 560649.

SURREY

BENTLEY ARC, G0VZS. Details from Derek Gilbert G0NFA.

CATERHAM RG, G0SCR. Details from Mr P.N. Lewis G4PAL.

COULSDON AMATEUR TRANS. SOC., G4FUR. Meets at St. Thomas Church Hall, Grovelands Road, Purley, Surrey. Details from Andy Bners G0KZT. Tel: (01737) 552139.

DORKING & DRS, G3CZU, G7DOR. Details from John Greenwell G3AEZ. Tel: (01306) 631236.

FARNBOROUGH & DRS, G4FRS. Meets at The Community Centre, Meudon Avenue, Farnborough, Hants. Details from Mr M. Hearsey G8ATK. Tel: (01252) 715765.

GUILDFORD & DRS, G6GS. Meets at the Guildford Model Engineers HQ, Stoke Park, Guildford, Surrey. Details from Stella Whitburn G0SWE.

KINGSTON & DARS, G3KIN. Details from Mrs Mary Ashdown G0BQV.

REIGATE ATS, G5LX, G7RAT. Details from Mr A.C. Embling G1LNT. Tel: (01883) 344723.

SUTTON & CHEAM RS, G2XP, G7SAC. Meets at the Sutton United Football Club, Borough Sports Ground, Gander Green Lane, Sutton, Surrey. Details from John Futtock G0BWH. Tel: 0208-644 9945.

THAMES VALLEY ARTS, G3TVS. Meets at the Thames Ditton Library, Watts Road, Gigg's Hill, Thames Ditton, Surrey. Details from Cdr. J. Pegler G3ENI. Tel: (01483) 284279.

WIMBLEDON & DARS, G3WMM. Meets at St. Andrews Church Hall, Herbert Road, Wimbledon, London. Details from Mr Reg Blackwell M1EEK. Tel: 0208-696 9857.

SOUTH & SOUTH EAST

EAST SUSSEX

BRIGHTON & DRS, G4GQR. Meets at the Roast Beef Bar, Brighton Racecourse, Elm Grove, Brighton. Details from Mr P.J. Fellingham.

CROWBOROUGH DARS, G0CWR. Meets at the Plough & Horses, Walshe Road, Jarvis Brook. Details from Mrs M. Clark. Tel: (01892) 663666.

EAST SUSSEX AMATEUR TV GROUP, RS178475 was G83VX. Details from Keith Ellis G8HGM. Tel: (01323) 720220.

SOUTHDOWN ARS, G3WQK. Details from Jim Hams G4DRV. Tel: (01323) 728479.

THE QRZ ARC OF SUSSEX, G83VX. Meets at the Coach Station, Worthing Road, Eastbourne. Details from Stuart Constable M0CWH. Tel: (01435) 863020.

HAMPSHIRE

ANDOVER ARC, G0ARC. Meets at the Village Hall, Withern, Andover, Hants. Details from Mr R.S. Coleman G0WVD.

BASINGSTOKE ARC, G3TCR, G8UYN. Meets at the GEMS Social Club, Lister Road, Basingstoke, Hants. Details from Bob Brown M0CJJ.

FAREHAM & DARC, G3VEF. Meets at the Portchester Community Centre, Westlands Grove, Portchester, Hants. Details from Andrew Sinclair G0AMS. Tel: (01329) 235397.

HIGHFIELD PARK RC, G4WD. Meets at Highfield Park RC, National Air Traffic Service, Highfield Park, Heckfield, Hants RG27 0LD. Tel: (01734) 225019.

HORNDLEAN & DARC, G4FRS. Meets at Lovedean Village Hall, Lovedean Lane, Lovedean, Hants. Details from Stuart Swain G0PFX. Tel: (01705) 472846.

ITCHEN VALLEY ARC, G0VIR. Meets at the Scout Hut, Brickfield Lane, Chandlers Ford, Eastleigh, Hants. Details from Sheila Williams G0VNI. Tel: (01703) 813827.

SONY BROADCAST ARC, G4SZC. Accredited C&G RAE centre. Meets at Sony Sports & Social Club, Priestley Road, Basingstoke. Details from Stephen Harding G4JGS. Tel: (01256) 55011.

SOUTH HAMPSHIRE INT. TELE SOC., G3DIT. Meets at G3JZV's QTH, space is limited. Details from Rev. T.R. Mortimer G3JZV. Tel: (02392) 44854.

SUBMARINE ARC, G3BUZ. Meets at HMS Collingwood, Newgate Lane, Fareham, Hants PO14 1AS. Details from Mr W.S. Blyth G0PPH. Tel: (01243) 232386.

THREE COUNTIES ARC, G4WWR. Meets at the Bramshott Parish Inst. at Cud, Headley Road, Liphook, Hants. Details from Damian Kamm G7RFV. Tel: (01428) 724456.

WATERSIDE ARS, G4JYN. Meets at the Applemore Scout HQ, Applemore, Hythe, Southampton. Details from Tony Horton G0LKG. Tel: (01703) 841794.

ISLE OF WIGHT

BRICKFIELDS ARS, G0BAR. Meets at Brickfields Horse Country Cent, Newnham Road, Binstead, Isle of Wight. Details from Mr Pebody.

ISLE OF WIGHT RS, G3SKY. Meets at The Old Cafe, Whiteciff Bay, Holiday Park, Bembridge. Details from Alan Reeves G4ZQF. Tel: (01983) 294309.

OXFORDSHIRE

BANBURY ARS, G0BRA. Meets at St. John's Church Social Club, South Bar, Banbury, Oxon. Details from Mr R.S. Marsden G1YSY. Tel/FAX: (01295) 253509.

HARWELL ARS, G3PIA. Meets at the Social Club, Harwell Laboratory, Didcot, Oxon. Tel: (01235) 223250.

OXFORD & DARS, G5LO. Meets at the Grove House Club, George Street, Summertown, Oxford. Details from Mr D. Walker G3BLS. Tel: (01865) 247311.

VALE OF WHITE HORSE ARS, G5RP, G4VWH, G6VWH. Meets at The Fox, Steventon. Details from Ian White G3SEK. Tel: (01235) 531559.

WEST SUSSEX

CHICHESTER ARC, G2NIM. Meets at the St. Pancras Hall, Chichester. Details from Graham Swann G0WSD.

CRAWLEY ARC, G3WSC. Meets at the Tilgate Forest Rec. Centre, Hut 18, Tilgate Forest, Crawley, West Sussex. Details from Mr J.S. Spence G0PPI.

HORSHAM ARC, G4HRS. Meets at the Guide Hall, Denne Road, Horsham, West Sussex. Details from Alistair Watt G3ZBU. Tel: (01403) 253432.

MID SUSSEX ARS, G3ZMS. Meets at Marie Place, Leylands Road, Burgess Hill, West Sussex. Details from Mr C. Chids 2E1DCP. Tel: (01444) 244689.

T.S. VINDICATRIX ASN, G0WVB. Details from Don Still G000C.</

AXE VALE ARC, G8CA, G7AKE. Meets at the George Hotel, Axminster, Devon. Details from Pat Cross G0GHH. Tel: (01297) 33756.

DARTMOOR RADIO CLUB, G1RCD, G0DRC. Meets at the Yelverton War Memorial Village Hall, Meavy Lane, Yelverton, Devon. Details from Ron Middleton G7LLG. Tel: (01822) 852586.

EXETER ARS, G4ARE. Meets at the Moose Centre, Spinning Path Lane, Blackboy Road, Exeter. Details from Ray Donno G3YBK.

EXMOUTH ARC, G0XRC. Meets at The Scout Hut, Marpool Hill, Exmouth.

NORMAN LOCKYER OBSERVATORY ARG, G0AXC. Meets at the Norman Lockyer Observatory, Salcombe Hill, Sidmouth. Details from Ron Hanson G0NOC. Tel: (01395) 515349.

NTE (PAIGNTON) ARS, G0OSH. Meets at Paignton Community College, Upper School, Waterheat Road, Paignton. Details from Rod Maude G0SWM. Tel: (01803) 251066.

SOUTH DEVON ARC, G4SSD. Meets at the Hillhead, Kingswear, Devon. Details from John May G0CDB. Tel: (01803) 502299.

TORBAY ARS, G3NJA. Meets at the Highweek Family & Social Club, Highweek, Newton Abbot, Devon. Details from John Dway G3RMA. Tel: (01803) 556425.

UNIVERSITY OF PLYMOUTH ARS, G0OUP. Details from Alan Santillo G0XAW.

DORSET

BLACKMORE VALE ARS, G4RBV. Meets at Shaftesbury Club for Young People, Coppice Street, Shaftesbury, Dorset SP7 8PF. Details from Mr A. Marrott G0GFL. Tel: (01258) 860741.

BOURNEMOUTH RS, G2BRS. Meets at the Kinson Community Centre, Kinson, Bournemouth, Dorset. Details from Chns R. Ellis M5AG6. Broken Ridge, Fir Tree Close, St. Leonards, Ringwood, Hants BH24 2QW. Tel: (01202) 893126.

CHRISTCHURCH ARS, G0MUD. Meets at the Siemens Plessey Sports & Social Club, Grange Road, Somerford, Christchurch, Dorset. Details from Mr K.P. Harris G7WSN. Tel: (01202) 484892.

FLIGHT REFUELLING ARS, G4RRF. Meets at the Flight Refuelling Social Club, Merley, Wimborne, Dorset. Details from Martin Axon 2E1DFZ. Tel: (01202) 693334.

POOLE RS, G4RPS. Meets at the Bournemouth & Poole CFE, Constitution Hill Site, Poole, Dorset. Details from Phil Mayer G0KKL. Tel: (01202) 700903.

PORTLAND ARC, G0VOP/G7VQP. Meets at Clifton Hotel, Grove Road, Portland. Details from Kerry Morns G1WIK. Tel: (01305) 788591.

SOUTH DORSET RS, G3SDS. Meets at the Church Hall, Chickereil, Weymouth, Dorset. Details from John Rose M0BQO. Tel: (01305) 832057.

SWANAGE & PURBECK ARC, M0BLJ. Meets at Kings Arms, Langton Matravers, Dorset. Details from Peter Wakefield M1WCH/M3WCH. Tel: (01929) 424413.

WESSEX AMATEUR WIRELESS CLUB, G1WAW. Details from Ken Powell G1NCG. Tel: (01202) 549376.

JERSEY

JERSEY ARS, GJ3DVC. Meets at the German Signal Station, Rue Baal, La Moye, St. Brelade. Details from Mrs Anne Mourant MJOBJU. Tel: (01534) 734948.

SOMERSET

PRESTON COMMUNITY SCHOOL ARC, G0PCS. Details from Craig Douglas G0HJD. Tel: (01935) 71131.

TAUNTON & DARS, G3XZW. Meets at The Memorial Hall, Trull, Taunton. Details from David Rosewar M0CIF.

WEST SOMERSET ARC, G00MX. Meets at the West Somerset Community College, Minehead, Somerset. Details from Alan Elliott G7RSU. Tel: (01643) 707207.

WINCANTON ARC, G0WRA. Meets at King Arthur's Community School, West Hill, Wincanton. Details from Mr G.A. Fingerhut G0ENW. Tel: (01963) 370506.

YEovil & DARC, G3CMH, G5YED. Meets at the British Red Cross HQ, 72 Grove Avenue, Yeovil, Somerset. Details from George Davs G3ICD. Tel: (01935) 425669.

ESSEX

BRAINTREE & DISTRICT AMATEUR RADIO SOCIETY, G4JGJ. Meets at the Braitree Hockey Club, Church Street, Bocking, Braintree. Details from Keith Farthing 2E0ARS. Tel: (01376) 347736.

CHELMSFORD ARS, G0MWT. Meets at the Marconi Social Club, Beehive Lane, Chelmsford, Essex. Details from David Bradley M0BQC. Tel: (01245) 602838. E-mail: cars@g0mwt.org.uk

CLACTON RADIO CLUB, G3CRC. Details from Mr D. Fitzpatrick M0CHL.

COLCHESTER ARS, G3VCD. Meets at the Colchester Institute, Sheepen Road, Colchester. Details from Frank R. Howe G3FUJ. Tel: (01206) 851189.

DENGIE HUNDRED ARS, G0LIT, G7SDH. Meets at the Henry Samuel Hall, Maryland, Essex. Details from Mrs Christine Wade. Tel: (01621) 772986.

HARLOW & DARS, G6UT. Meets at the Mark Hall Barn, First Avenue, Harlow, Essex. Details from Len Brackstone G7UHF. Tel: (01279) 832700. FAX: (01279) 864973.

HARWICH ARS, G0GRH. Meets at the Park Pavilion, Barrack Lane, Harwich. Details from Eugene Kraft G4FTF.

LAUGHTON & EPPING FOREST ARS, G4ONP. Details from Marc Litchman G0TQC. Tel: 0208-502 1645/(07803) 023501.

SOUTH ESSEX ARS, G4RSE. Meets at the Paddocks, Long Road, Canvey Island, Essex. Details from Mrs Betty Maynard G6LUD. Tel: (01268) 695474.

SOUTHEND & DRC, G5QK. Meets at the Alexandra Yacht Club, Clifton Parade, Southend-on-Sea, Essex. Details from Alan Radley G0TMM. Tel: (01268) 741229.

STANFORD-LE-HOPE & DARC, G4SLH. Meets at the St Joseph Parish Rooms, Scrutton Road, Stanford-le-Hope, Essex. Details from Ken Thompson

G4PAD. Tel: (01375) 671238

VANCE ARS, G3YCW. Meets at the Barnstable Community Centre, Basildon, Essex. Details from Mrs D. Thompson. Tel: (01268) 552606.

KENT

8REDHURST RX & TX SOC., G0BRC. Meets at Rock Avenue Working Mens Club, Rock Avenue, Gillingham, Kent. Details from Mr T.M. Wheeler G7MIM.

CRAY VALLEY RS, G3RCV, G1RCV. Meets at the Progress Hall, Admiral Seymour Road, Etham, London SE9. Details from Richard Perzyna G8ITB. Tel: (01689) 602948.

DOVER RADIO CLUB, G3YMD. Meets at the Dover Grammar School for Boys, Astor Avenue, Dover. Jim Cairns M18H. Tel: (01304) 852773.

EAST KENT RADIO SOCIETY, G0EKR. Meets at St. Bartholomew's Church Hall, Heme Bay, Details from Paul Nicholson G3VJF. Tel: (01227) 743070. FAX: (01227) 742288.

HASTINGS ELEC. & RC, G6HH, G1HH, G6LL. Meets at West Hill Community Centre, Croft Road, Hastings, East Sussex. Details from Mr J. Boothroyd G0MTJ. Tel: (01233) 732656.

HILDERSTONE ARS, G0HRS. Meets at Hilderstone A.E.C., Broadstairs, Kent. Details from Mr G. Shaw M0AQA.

HOME COUNTIES ATV GRP, G6HCT. Meets at the Binfield Club, Binfield (near M4/J10). Details from Mr A. Brooker G4WQZ.

MAIDSTONE YMCA ARS, G3TRF. Meets at YMCA Sports Centre, Melrose Close, Maidstone, Kent. Details from Colin Wilson G0VAR. Tel: (01622) 736636.

MEDWAY ARTS, G5MM, G8MMA. Meets at Thurby Hall, Catkin Close, Tunbury Avenue, Walderslade, Canthury. Details from Mr J. Hale G3TFH.

NORTH KENT RS, G4COW. Meets at The Pop-in-Parlour, Graham Road, Bexleyheath, Kent. Details from Mr A.V. Fribbens G8MLQ. Tel: (01474) 365694.

SWALE ARX, G4SRC, G6SRC. Meets at the Ivy Leaf Club, Dover Street, Sittingbourne, Kent. Details from Gordon Powell M0AKA. Tel: (01795) 665559.

THE MORSE CLUB, GX00XE. Details from Mr K. Churchill M1CZA. Tel: 0208-301 5067.

WEST KENT ARS, G3WKS. Meets at the St. Marks School Hall, Tunbridge Wells, Kent. Details from Malcolm Sheppard G4FWG. Tel: (01892) 652272.

NORFOLK

ANGLIA TELEVISION ARS, G0TVX. Meets at Anglia TV, Norwich NR1 3JG. Details from Jim Bacon G3YLA. Tel: (01603) 615151.

GREAT YARMOUTH RS, G3YRC. Meets at the Bradwell Community Centre, Bradwell, Great Yarmouth, Norfolk. Details from Mr A.D. Besford G3NHU.

GRESHAM'S SCHOOL ARC, G3PXX. Details from Rev. R.N. Myerscough G3PXC.

KINGS LYNN ARC, G3XYZ. Details from Derek Franklin G0MQL.

NORFOLK ARS, G4ARN. Meets at Norwich Aviation Centre, Norwich Airport. Details from John Wadman G0VZD. Tel: (01953) 604769.

NORTH NORFOLK ARG, G8ZMC. Details from Keith J. Martin G0GFQ. Tel: (01263) 588506.

SUFFOLK

BURY ST. EDMUNDS ARS, G2TO. Meets at the Culford School Culford, Bury St. Edmunds, Suffolk. Details from George Woods G3LPT.

FELIXSTOWE & DARS, G4ZFR. Meets at the Drwell Park School, Nacton, Near Ipswich. Details from Paul Whiting G4YQC. Tel: (01473) 642595.

FRAMLINGHAM COLLEGE ARC, M0CBB. Tel: (01728) 727232.

IPSWICH RADIO CLUB, G4IRC. Meets at the Golden Hind, Nacton Road (3rd Wednesdays at The Hollies, Bucklesham Straight Road), Ipswich. Details from Keith Gaunt G7CY. Tel: (01394) 420226.

LEISTON ARC, G0TUQ. Meets at Leiston Town Athletic Assn., Victory Road, Leiston, Suffolk. Details from Sam Lydgate G4IFD. Tel: (01728) 832999.

LOWESTOFT DRS, G3JRM. Meets at The George Barrow Hotel, Oulton Road, Lowestoft. Details from Phil Holden G0JSG. Tel: (01502) 585448.

MARTLESHAM RS, G4MRS. Meets at the 8T Laboratories, Martlesham Heath, Ipswich, Suffolk. Details from Darren Hatcher. Tel: (01473) 644475.

SADBURY & DRA, G0SMV, G7SRA. Meets at the Old School, Wells Hall Road, Great Comard, Suburby, Suffolk. Details from Bryan Pantom G1WTV.

SUFFOLK DATA GROUP, G87MDM. Details from Peter Pyke G8HUE. Tel: (01473) 631313.

NORTH WALES

CLWYO

CONWAY VALLEY ARC, G6W6M. Meets at the Studio, Penrhos Road, Colwyn Bay, Cwyd. Details from Mr R.W. Evans G6W6PMC. Tel: (01745) 855068.

HALKYN & DARS, G6W3HRG. Details from Mr D. Austin G6W1XHG.

NORTH WALES RS, G6W6NR. Meets at the Did YMCA, Queen's Drive, Colwyn Bay, Cwyd. Details from Ted Sington G6WDSJ. Tel: (01745) 336939.

WREXHAM ARS, G6W4XW. Meets at the Community Centre, Maesgwyn Road, Wrexham. Details from Mr P. Moran G6W0WER.

GWYNEDO

MEIRION ARS, G6W4LZP. Meets at the Royal Ship Hotel, Ddellgellau, Gwynedd. Details from Genave Chavasse G6W4URJ. Tel: (01341) 421028.

PORTHMADOG & DARS, G6W6M. Meets at The Yacht Club, The Harbour, Porthmadog, Gwynedd, Details from Mr G. Cadwaladr MW1DFN.

THE DRAGON ARC, G6W4TTA. Meets at the Ebenezer Church Hall, Lon Foel Graig, Llanfapwll, Isle of Anglesey.

Details from Stewart Rolfe G6OETF. Tel: (01248) 362229.

POWYS

POWYS ARC, G6W4HVN. Meets at the ATC HQ, Park Lane, Newtown, Powys. Details from Mrs Jean Brown 2W1CEZ. Tel: (01686) 640814.

SOUTH WALES

OYFED

ABERPORTH YMCA, G6W4SZV. Meets at the Hut 817, The Aiferyd, Aberporth. Details from Mr G. Carruther G6W4HGJ. Tel: (01239) 811205.

ABERYSTWYTH & DARS, G6W0ARA. Meets at the Scout Hut, Plasrugg Avenue, Aberyystwyth. Details from John Woodward G6W6IDK. Tel: (01970) 890657.

CARMARTHEN ARS, G6W4YCT. Meets at The Aelwyd Care Home, Carmarthenshire County Council, Tregymr Road, Ungunnon, Carmarthen SA31 3BS. Details from Mr W.D. Hughes G6W4ZLQ. Tel: (01267) 231359.

CLEDDAU ARS, G6W5YG. Details from Trevor Perry G6W4QK. Tel: (01646) 600725.

LLANELLU ARS, G6W0EQZ. Meets in the Furnace Community Hall, Furnace Square, Llanelli. Details from Roy Jones G6W0KZK. Tel: (01554) 820207.

PEMBROKESHIRE RS, G6W0EJ. Meets at Furzy Park Community Centre, Furzy Park, Haverfordwest, Pembrokeshire. Details from Ian M. Jones M6W0CAB. Tel: (01437) 763028.

GWENT

ABERGAVENNY RS, G6W4GFL. Meets at the Hill Residential College, Pen-y-Pound, Abergavenny, Gwent. Details from Glyn Hughes G6W0DQY. Tel: (01633) 483186.

BLACKWOOD & DARS, G6W6GW. Meets at the Oakdale Comprehensive School, Oakdale, Blackwood, Gwent. Details from John Evans G6W8IT. Tel: (01495) 225178.

EBBW VALE COLLEGE RS, G6W0IWW. Meets at the Gwent Terrestrial College, Ebbw Vale Campus, College Road, Ebbw Vale, Gwent. Details from Mr T. Hayden G6W0HCN. Tel: (01495) 305192.

NEWPORT ARS, G6W4EZW. Meets at the Bryniglas Community Centre, Bryniglas Road, Newport, Gwent. Details from Paul Nicholas.

PONTPOOL ARS, G6W3RNH. Meets at the Settlement, Rockhill Road, Pontypool, Gwent. Details from Graham Smith G6W0OOLZ.

MID-GLAMORGAN

BRIDGEND & DARC, G6W4LNP. Meets at the Club Brynmynny, Brynmynny, Bridgend. Details from Alun Hulmes. Tel: (01656) 721574.

HOOPER (MERTHYR) ARC, G6W3RDB. Meets at the Hoover Sports Pavilion, Hoover Ltd., Pentrebach, Merthyr Tydfil, Mid Glamorgan. Details Robert Cummings G6W0RVG.

MID GLAMORGAN ARG, M6W0CNA. Meets at Aberkenfig Sports & Social Club. Details from Mervyn Carey G6W4VSE. Tel: (01656) 734668.

SOUTH GLAMORGAN

BARRY ARS, G6W3VKL. Meets at Sully Sports & Leisure Club, South Road, Sully, S. Glamorgan. Details from Richard Mortmore G6W48VJ. Tel: (01446) 738756.

HIGHFIELDS ARC, G6W4LFO. Meets at the Highfields Physically Handicapped Centre, Allensbank Road, Cardiff. Tel: (01222) 561542.

WEST GLAMORGAN

FORT TALBOT (BS PLC) ARS, G6W3EDP. Meets at the British Sports PLC Sports & Social Club, Margam, Port Talbot, West Glamorgan. Details from Mr J. Chinnock M6W0AEG.

SWANSEA ARS, G6W4CC. Meets at the Applied Sciences Building, Swansea University. Details from David Williams G6W48NJ. Tel: (01792) 513046.

SCOTLAND WEST & WESTERN ISLES

CENTRAL REGION

FALKIRK & DARS, G6M0FRC. Details from Scott Waterall G6M0K8U.

STIRLING & DARS, G6M6NC. Meets at Bandede Industrial Estate, Throsk, N. Stirling. Details from John Shery G6M0AZC. Tel: (01324) 824709.

QUIMRIES & GALLOWAY

WIGTOWNSHIRE ARC, G6M4RV. Meets at the Aird Unit, Stranraer Academy, Stranraer, (entrance from Cairnpot Road). Details from Neil Macdonald G6M4LQS.

STRATHCLYOE

AYR ARC, G6M0AYR. Meets at the Citidal Leisure Centre, Ayr. Details from Peter Sturgeon M6M0BQP.

CENTRAL SCOTLAND FM GROUP, RS3872B. Details from Thomas Stalker G6M7TJU. Tel: (01698) 816793.

DALRY ARG, M6M0ARG. Meets at The Turf, In Dalry Court, Hill Street, Dalry. Details from Alex McKeenan M6M0ABM. Tel: (01294) 823295.

DUNOON & DARS, G6M0CDD. Meets at the Edward Street Community Centre, Edward Street, Dunoon. Details from A.B. Horton G6M0BUL. Tel: (01369) 840217.

HELENSBURGH ARC, G6MAHEL. Details from G. Capstick G6M7DAF. Tel: (01436) 675922.

INVERCLYDE ARG, G6M0GNK. Meets at the Cardwell Bar, Cardwell Road, Gourcock, Strathclyde. Details from Andrew Givens G6M3TJU. Tel: (01475) 638226.

KILMARNOCK & LONDOUN ARC, G6M0ADQ. Meets at the Hurford Community Centre, Cessnock Road, Hurford. Details from Steve Campbell G6M4OSS. Tel: (01560) 483800.

LARGS & DARS, G6M0WVG. Details from Mr J. Clough G6M0IDD. Tel: (01475) 968584.

LORN ARS, G6M0LRA. Details from T. Dlsen G6M0EQW. Tel: (01866) 2580.

MID LANARK ARS, G6M3PKK. Meets at the Newarthill Community Ed. Cent., High Street, Newarthill,

Motherwell, Lanarkshire ML1 5GU. Details from John Neary G6M0XFK. Tel: (01698) 822860.

MILTON OF CAMPSIE ARS, G6M0MOC. Meets at The Red Cross Hall, Kirkintilloch. Details from John MacKenzie G6M0HJU. Tel: (01360) 312954.

PAISLEY ARC, G6M0PYY. Meets at the Paisley YMCA Hall, 5 New Street, Paisley PA1 1JU. Details from John Gough G6M0TQA. Tel: 0141-889 6860.

SCOTTISH DIGITAL COMMS, GRP, G6M7VSR. Details from Stuart Clink G6M1VBE. Tel: (01698) 884803.

WEST OF SCOTLAND ARS, G6S4AGG. Meets at the Multi Cultural Centre, 21 Rose Street, Glasgow. Details from Hon. Sec.

SCOTLAND EAST & HIGHLAND BORDERS

BORDERS ARS, G6M0BRS. Meets at the St. John Ambulance Hall, Berwick-upon-Tweed. Details from A.M. McCreadie G6M0BPP. Tel: (018907) 50492.

GALASHIELS & DARS, G6M4YEQ. Meets at the Focus Centre, Galashiels. Details from Jim Keddie G6M7LUN.

KELSO ARS, G6M4KHS. Meets at the Abbey Row Community Centre, Kelso. Details from Margaret Chalmers G6M0ALX. Tel: (01573) 226372.

FIFE

GLENROTHES & DARC, G6M4RCG. Meets at the Football Pavilion, Station Road, Thornton, Fife. Details from Alexander Adam G6M0FVD. Tel: (01592) 874374.

GRAMPIAN

ABERDEEN ARS, G6M3BSQ. Meets at the Red Cross HQ, 22 Queens Road, Aberdeen. Details from Robert Duncan. Tel: (01542) 896142.

BANFF & DARC, G6M0PYC. Meets at the Princess Royal Park Football Ground, Conference Room (Deveronvale F.C.). Banff. Details from Steve Roberts G6M4HWS. Tel: (01888) 551377.

MORAY FIRTH ARS, G6M3TKV. Meets at the Grant Arms Hotel, Fochabers. Details from Geoff Crowley G6M7SJC. Tel: (01542) 852818.

HIGHLAND REGION

FORT WILLIAM ARG, G6M0FRG. Details from R. Johnston G6M1YGV. Tel: (01397) 703046.

INVERNESS ARC, G6M4TFP. Meets at The Emergency Operations Centre, Inverness (except July and August). Details from R.F. Goodall G6M0OQZ. Tel: (01463) 811701.

International Radio Clubs

If you want to meet with others with a radio passion, then please use this guide...

AMSAT-UK (GOAUK)

Information from Jim Heck G3WGM, Badgers, Letton Close, Blandford, Dorset BH11 7SS. E-mail: g3wgm@amsat.org or visit www.uk.amsat.org

British Amateur Radio Teledata Group (BARTG - G4ATG, GB2ATG)

Contact Membership Secretary Andrew Thomas G8GNI, M5AEX, Dame School House, 103 High Street, Stony Stratford, Buckinghamshire MK11 1AT, E-mail: members@bartg.demon.co.uk or visit www.bartg.demon.co.uk

British Amateur Television Club (BATC - RS38114)

Enquiries to Dave Lawton GOANO, 'Grenehurst', Pinewood Road, High Wycombe, Bucks HP12 4DD. Tel:

(01494) 528899. E-mail: memsec@batc.org.uk or visit www.batc.org.uk

Danish Shortwave Club

Information from Treasurer Bent Nielsen, Egekrogen 14, DK-3500 Vaerloese, Denmark or visit www.dswci.org

International Listeners' Association (RS88763)

Details from Trevor Morgan GW4OXB, 1 Jersey Street, Haford, Swansea SA1 2HF. E-mail: gw4oxb@net.ntl.com

International Short Wave League (ISWL - G4BJC)

Information from Honorary Secretary

John Raynes, G16436/GOBWG, 267 Pelham Road, Immingham, Lincs DN40 1JU. E-mail: iswl@ntlworld.com or visit www.iswl.org.uk

Military Wireless Amateur Radio Society (GOPTZ)
Further details from John Taylor-Cram, 7 Hart Plain Avenue, Cowplain, Waterlooville, Hampshire PO8 8RP. Tel: 0239-225 0463.

Radio Amateurs Invalid and Blind Club (RAIBC - G4IBC, GB0IBC, GB1IBC)

Enquiries to Honorary Treasurer/Membership Secretary Mrs Shelagh Chambers, 78 Durlay Avenue, Pinner, Middlesex HA5 1JH. Tel: 0208-868 2516.

Remote Imaging Group (RS88803)

Further details from the Membership Secretary John Din, 59 Woodend Road, Coalpit Heath, Bristol BS36 2LH. FAX: (01454) 887880. E-

mail: membership@rig.org.uk

Royal Air Force Amateur Radio Society (RAFARS - G8FC, G8RAF)

Details from the Administrator, HQ RAFARS, RAF Cosford, Wolverhampton WV7 3EX. Tel: (01902) 372722, E-mail: administrator@rafars.org



Royal Navy Amateur Radio Society (RNARS - GB3RN, G3CRS, G1BZU)

Enquiries to Secretary Philip Manning G1LKJ/M3LKJ, 1 Waverley Gardens, Ash Vale, Surrey GU12 5JP. Tel: (01252) 334929, E-mail: g1lkj@amsat.org or visit www.mars.org.uk

Royal Signals Amateur Radio Society (RSARS - G4RS)

More information from General Secretary, HQ RSARS, Cole Block, Blandford Camp, Dorset DT1 8RH. Tel: (01258) 482814, E-mail: gensec@rsars.org.uk or visit www.rsars.org.uk



The Medium Wave Circle

Details from c/o C. Rooms, 59 Moat Lane, Luton LU3 1UU. E-mail: contact@mwcircle.org



airband
basics

backchat

on the
road

satellite
monitoring

amateur
airwaves

software
spot

world of
cb

scanners

In Next Month's

radio ACTIVE



- **Atlantic Challenge** - Icom (UK) Ltd., sponsor David Hempleman-Adams on his solo balloon flight
- **Have Radio Will Travel!** - Take your hobby wherever you go
- **Tried & Tested** - PURE DRX-601ex deluxe DAB digital radio
- **Martime Coastguard Agency** - Patrolling the coastline, discover the vital role they play in maritime safety

RADIO ACTIVE JULY ISSUE ON SALE 20 JUNE

Radio Active is published on the third Friday of each month available from all good newsagents or direct by calling (01202) 659930, priced at only £2.60

Plus all the usual features packed with information for the radio enthusiast...

Wireless Waves around Bletchley

16-17 August 2003

This event celebrates the importance of the Y Service in relation to Bletchley Park during the Second World War. Bletchley Park was provided with information by a number of wireless receiving operations whose prime role it was to intercept the enemy's radio communications. "Wireless Waves around Bletchley" will commemorate the significance of the Y Stations and explain their contribution to the war effort.

This special event will feature:

A special display of Y stations and spy sets in the Mansion which will explain the use of the information supplied from Y Stations. Vintage radios and communications equipment will also be on display dating from wartime to the present day.

A TEMPORARY RADIO STATION WILL BE IN OPERATION OUTSIDE

Special lectures on both days: John Pether will speak on "The History of the Y Service from WWI" and David White, curator of the Diplomatic Wireless Hut, will talk about the "Secret Intelligence Service and their communications". A German Field radio station will be set up on Faulkner Green by Bletchley Park's German re-enactment group.

The Diplomatic Wireless Service Museum in Hut 1 will open for viewing. You can see original wireless and landline communications equipment as used at Bletchley Park during World War II. The wireless stations received and transmitted secret Bletchley Park ULTRA and DIPLOMATIC messages to our overseas outposts and bases.

The GB4FUN from the Radio Society of Great Britain will be on site that day. With the aid of the specially equipped Mobile Radio Shack called GB4FUN, Milton Keynes Amateur Radio Society will be able to put on a practical demonstration of the hobby of Amateur Radio whatever the weather.

For full details (prices, openings times) please see **HYPERLINK** <http://www.bletchleypark.org.uk>

or telephone us at

01908 64 04 04

WIRELESS AND ELECTRONIC SURPLUS

VHF MARINE BAND TRANSCEIVER Nesco type WR1025. 20 watts Tx. Uses Maxon radio PCB. Strong case size: 10 x 10 x 5". Separate marine control unit with digital display set for 12, 14, 16 and 20 channels. Size 12 x 6 x 3". Used condition radio very clean due to second casing. Headset operation. Provision for speaker. Recently out of service. Needs 13.5V DC power supply and DC power lead. Price \$42.50 carriage \$12.50.

DOUBLE GANG 365+365 PF TUNING CAPACITOR Plessey size 1 1/2" x 1 1/4" with slow motion drive. 1 1/2" long spindle. \$5.00 each, P&P \$1.00. Two for \$10.00 post free.

A DIGITAL HAND-HELD LCR METER Measuring inductance, capacitance and resistance. 3.5 digit, 1999 count. I.c.d. display, inductance range 2mH to 20H, capacitance range 2000pF to 200µF, resistance range 2000Ω to 20MΩ. Brand new and boxed with test alligator clip leads and user manual. \$44.00 + \$4.00 P&P.

VALVE BASES Octal 87G B9A. All 50p each. B9G bases for EF50, etc. \$1.00 each.

HIGH VOLTAGE CAPACITORS 0.1 1000V wkg mixed dielectric axial. .05 600V wkg axial. 0.68 800V wkg mylar dipped axial. All 60p each. 1µF 250V wkg axial type. 10 for \$2.00.

HIGH VOLTAGE ELECTROLYTICS 10µF +00V wkg axial. 22µF 250V wkg axial. 47µF 385V wkg radial. All 50p each.

HIGH VOLTAGE ELECTROLYTICS 32µF 350V wkg CAN type. 2 for \$4.00. 32µF + 32µF 450V wkg \$5.00 each, P&P 75p. 2 for \$10.00 including postage.

VINTAGE CARBON ONE WATT RESISTORS Useful values. Pack of 50 \$3.00

VINTAGE CARBON 1/2 WATT RESISTORS Pack of 50 \$2.25

VALVE OUTPUT TRANSFORMERS Single ended, 4W. \$4.00 P&P \$1.00

FILAMENT TRANSFORMERS 6.3V 1.5amp. Mains input, \$5.95 P&P \$2.00. 6.3V 1 amp \$4.95 P&P \$2.00.

MAINS TRANSFORMERS Type A mains input, output 230V at 45mA, 6.3V at 1 1/2 amp. \$7.50 P&P \$3.50. Type B mains input, output 215V at 100mA, 6.3V at 2 amp. \$9.50 P&P \$4.50.

ACORN VALVES Type 954. Brand new and boxed. \$4.50 each. 2 for \$8.00.

BOOKS AND MANUALS

R1155 RECEIVER DATA 47 pages \$12.50 including P&P.

EDDYSTONE COMMUNICATIONS RECEIVER DATA 1950-1970 A facsimile reprint of the circuit diagrams, general description and some service notes. 50 pages. \$11.50 including postage.

JANES MILITARY COMMUNICATION 12th EDITION 1991-1992 Over 800 pages. contains much recently released military wireless equipment. \$25.00 P&P \$8.50.

POWER VACUUM HANDBOOK by J. C. Whitaker. Published 1999. 710 pages of info on power vacuum tube applications including designing circuits. Microwave power tubes. The generation of RF in the HF regions and above includes research for power grid tubes (triode, tetrodes, pentodes, klystrons, magnetrons, etc.). Published at over £50. Our price \$25.00 P&P \$6.50.

THE WINNING EDGE 1939-1945 NAVAL TECHNOLOGY This book presents descriptions of WW2 technical developments of numerous devices including ASDIC, SONAR, RADAR and HF/DF. Includes details of sensitive listening stations relaying enemy messages to cryptographers. 235 pages. \$11.50 P&P \$2.75.

PGP £2.00 UNDER £12.00. OVER FREE UNLESS OTHERWISE STATED

(Dept SW) CHEVET BOOK SUPPLIES

157 Dickson Road, BLACKPOOL FY1 2EU

Tel: (01253) 751858. Fax: (01253) 302979.

E-mail: chevet@globalnet.co.uk Telephone orders accepted.

WANTED

Valve communication receivers. Government surplus wireless equipment. Valves, radio books and magazines. Cash paid. We can collect anywhere in the UK.

DEDICATED TO THE SCANNING
AND SHORTWAVE ENTHUSIAST.
WE'RE MORE THAN JUST SOFTWARE!

NOW
SUPPORTS
UBC250 &
UBC785

SCANCAT® GOLD for Windows

Since 1989, The Recognized Leader in Computer Control

Once you use SCANCAT with YOUR radio, you'll NEVER
use your radio again WITHOUT SCANCAT

SCANCAT supports almost ALL computer controlled radios by: AOR, DRAKE, KENWOOD, ICOM, YAESU and JRC (NRD). Plus, PRO-2005/6/35/42 (with OS456/535), Lowe HF-150 and Watkins-Johnson.

Announcing Scancat-Gold for Windows Ver. 8.25

We've added a lot of new features to our latest Scancat.
AND... We have made it EASIER than EVER! Scancat-Gold
for Windows - New features for VER. 8.25.

Completely redesigned Graphical
Interface

● Two Scanning modules:
- A simple basic module for
beginners

Plus

● An advanced scanning system for
the "experts"
● New "Folder Tabbed" GUI put
everything at your fingertips

● Faster scanning speeds

● Extensive on screen help

● Completely revised printed
manual - over 180 pages

● EXPANDED trunking support for
BC790, BC895 and Pro2052

● Supports all radios in ONE
program - share files with all
radios

● Monitor and log all Talk Group
activity - export to other files

● Completely revised trunking
database management with
expanded capabilities. Make
programming your radio a breeze!

● Expanded import from databases
such as EXCEL

● NO ONE supports your "Trunk
Tracker" with more features

Scancat-Gold for Windows-SE - Improved features for Ver. 8.25

All the features of our 'Standard Scancat' plus these additional functions:

● Long term logging of frequencies to your hard
drive
● Record audio to hard drive using your computer's
soundcard

● NEW - Records audio when "Trunktracking" or
conventional scanning

● Improved spectrum analysis with several great
graphical analysis screens

Limited offer

Grove Hot HF 1000
frequencies FREE with
software

Scancat-Gold for Windows\$99.95 USD

Scancat-Gold for Windows - SE\$159.95 USD

SHIPPING \$10.00

NOW- ORDER ON-LINE FROM OUR WEBSITE

WEBSITE - www.scancat.com E-mail: info@scancat.com

TAKE A LOOK NOW FOR FREE DOWNLOADABLE FREQUENCIES & DEMOS

COMPUTER AIDED TECHNOLOGIES

P.O. Box 18285 Shreveport, LA 71138

Phone: (318) 687-5555 FAX: (318) 686-0449

Info/Tech Support: (318) 687-2555 (9 a.m. - 1 p.m. Central M-F)



RCQ COMMUNICATIONS

GRAND RECEIVER SALE - WE TAKE P/EX

AOR AR-7030 THE ROLLS ROYCE OF RECEIVERS	£500
LOWE HF-150 WITH REMOTE AS NEW 1 OWNER.....	£195
ALINCO DJ-X1 SCANNING RECEIVER	£150
ARMY SET RADIO RECEIVER 328 WITH ANT.....	£150
YAESU FRG-7000 RECEIVER.....	£175
ERA RS-232 LARGE READOUT DISPLAY	£85
YUPI TERU MVT-3300 SCANNER	£90
ANC-4 NOISE & INTERFERENCE CANCELLING.....	£125
MFJ-1026 NOISE CANCEL SIGNAL ENHANCER.....	£125
YUPI TERU MVT-7000 SCANNER	£125
YAESU FRG-100 HF RECEIVER	£295
AOR AR-2800 .5-600 & 800-1300 BASE SCANNER	£125
STANDARD AX-700 BANDSCOPE SCANNER.....	£295
AOR AR-1000 WIDE RANGE SCANNER BOXED.....	£125
MFJ 1026 ALL MODE QRM ELIM + ACTIVE ANT.....	£135
YAESU FRA-7700 ACTIVE ANTENNA.....	£50

WE BUY/SELL/P/EX AMATEUR RADIOS

www.cqhamradio.net

E-mail g3rcq@supanet.com

Telephone 07940-837408

We open 5pm -9pm every evening and all weekend

RCQ COMMUNICATIONS IS RUN BY G3RCQ LICENCED 1962

new additions

Scanner Busters 3

ORDER TODAY & SAVE 10%!

Now in its third edition, *Scanner Busters* has matured into a useful guide to what is and isn't possible with a scanning receiver. Topics covered are Analogue Trunked radio, Digital Radio system including TETRA and others, Pagers, Digital telephone systems, both national networks and

home systems and v.h.f./u.h.f. data modes. The book concludes with an optimistic take on the future of scanning. This informative guide, which also includes some frequency tables and simple theory as to how some systems work, deserves a place on your book shelf. **92 pages, £5 + P&P**

Scanner Busters 3

by D. C. Poole



Overcome new technology and listen into what you want to hear
Covers the Latest Encryption Systems, PMR, Digital Telephones, Pagers and the Emergency Services

LISTENING

Airband

	pages		
AIRWAVES 2003 (Photavia)	144	£9.95	AIR23
AIRBAND RADIO GUIDE (abc)			
5th Edition	112	£8.99	ABRG5
AIRBAND RADIO HANDBOOK (Haynes)	190	£12.99	ABRHB
AIR TRAFFIC CONTROL (abc) 8th Edition	112	£9.99	ATC8
CALLSIGN 2003 (Photavia)	144	£9.95	CAL23
CIVIL AIRCRAFT MARKINGS (abc)	384	£7.99	CIVAIR
DIRECTORY OF AIRCRAFT SELCALLS (Seldec)	234	£13.95	DASC
FLIGHT ROUTINGS 2003 Williams	180	£8.95	FR23
MILITARY AIRCRAFT MARKINGS 2003 (abc)	224	£7.99	MILAIR
MILITARY AIR SCAN 2002 (MGT)	348	£15.99	MILSCN
NORTH ATLANTIC ROUTE CHART (US Dept.Transport FAA)	.740 x 520mm	£9.00	NAROUT
WORLD AIRLINE FLEET & SELCAL DIRECTORY + UPDATE	300	£16.00	WAFSEL

Frequency Guides

FERRELL'S CONFIDENTIAL FREQUENCY GUIDE 13th Edition	540	£21.50	FERR13
GLOBAL BROADCAST GUIDE (January 2003 Issue)	32	£2.75	GBGJA3
KLINGENFUSS GUIDE TO UTILITY STATIONS 2003	576	£26.50	KFUTIL
KLINGENFUSS SHORTWAVE FREQUENCY GUIDE 2003	528	£23.50	KFSWFG
KLINGENFUSS SHORTWAVE CD 2003	-	£16.50	KFSWCD
PASSPORT TO WORLD BAND RADIO 2003	592	£15.50	PASS23
RADIO LISTENERS GUIDE 2003	128	£5.45	RLG23
THE SHORTWAVE GUIDE (WRTH)	208	£12.99	WRSWG
UK SCANNING DIRECTORY 8th Edition	700	£19.75	UK8TH
WORLD RADIO TV HANDBOOK 2003 (WRTH)	672	£19.95	WRTH23

Scanning & Short Wave

BUYING A USED SHORT WAVE RECEIVER - 4th Edition F. Osterman	78	£5.95	BUSWRX
RECEIVING (VALUE) STATION LOGBOOK (RSGB)	80	£4.95	RXLOG
SCANNER BUSTERS 3 D.C. Poole (Interproducts) NEW	92	£5.00	SCANB3
SCANNERS 4 SCANNING INTO THE FUTURE Bill Robertson	245	£9.95	SCAN4
SHORT WAVE COMMUNICATIONS Peter Rouse GUIDKD (PWP)	187	£4.50	SWCOM
SHORTWAVE RECEIVERS PAST & PRESENT 3rd Edition F. Osterman	450	£25.95	SWRXPP
THE SUPERHET RADIO HANDBOOK I.D. Poole (Babani)	104	£4.95	BP370

Weather

FAX & RTTY WEATHER REPORTS Philip Mitchell	88	£11.50	FXTWR
WEATHER SATELLITE HANDBOOK 5th Edition. Dr Ralph E. Taggart WB8DQT	192	£15.50	WSATHB

store

AMATEUR RADIO

Amateur Television

AN INTRODUCTION TO AMATEUR TELEVISION.

	pages	price	code
Mike Wooding G6IQM & Trevor Brown G8CJS	156	£5.00	INTATV
THE AMATEUR TV COMPENDIUM. Mike Wooding G6IQM	104	£3.50	ATVCOM

Antennas/Transmission Lines/Propagation

25 SIMPLE AMATEUR BAND AERIALS E.M. Noll (Babani) .....	.63	£1.95	BP125
25 SIMPLE INDOOR AND WINDOW AERIALS E.M. Noll (Babani) .....	.50	£1.75	BP136
25 SIMPLE TROPICAL AND MW BAND AERIALS E.M. Noll (Babani) .....	.54	£1.75	BP145
ANTENNA FILE (RSGB)	285	£18.99	ANTFIL
AN INTRODUCTION TO RADIO WAVE PROPAGATION J.G. Lee (Babani)	116	£3.95	BP293
ANTENNA TOOLKIT (inc. CD-ROM) Joseph J. Carr	214	£25.00	ANTOOL
ARRL ANTENNA BOOK 19th Edition	732	£24.00	RRAB19
BACKYARD ANTENNAS Peter Dodd G3LDO (RSGB)	200	£18.99	BYANTS
BEAM ANTENNA HANDBOOK W.I. Orr W6SAI & S.D. Cowan W2LX	268	£8.95	BMANHB
BUILDING & USING BALUNS Jerry Sevic	125	£18.95	BUBALS
EXPERIMENTAL ANTENNA TOPICS H.C. Wright .....	.70	£3.50	BP278
HF ANTENNA COLLECTION Edited by Erwin David G4LQI (RSGB)	233	£9.99	HFANTC
HF ANTENNAS FOR ALL LOCATIONS Les Moxon G6XN (RSGB)	322	£19.99	HFAFAL
MORE OUT OF THIN AIR (PWP)	112	£6.95	MOOTA
WIRE ANTENNA CLASSICS (ARRL)	200	£10.50	WANTC
MORE WIRE ANTENNA CLASSICS (ARRL)	200	£10.50	MWANTC
PHYSICAL DESIGN OF YAGI ANTENNAS (Hardback) D.B. Leeson W6QHS (ARRL)	200	£15.50	PDYAGI
RECEIVING ANTENNA HANDBOOK Joe Carr	189	£17.50	RXANHB
VERTICAL ANTENNAS W.I. Orr W6SAI & S.D. Cowan W2LX	192	£8.95	VERANT
VHF UHF ANTENNAS I.D. Poole (RSGB)	128	£13.99	VUANTS

Beginners/Novice/RAE

AMATEUR RADIO EXPLAINED. Ian Poole (RSGB)	150	£9.90	AREXPL
AN INTRODUCTION TO AMATEUR RADIO Ian Poole G3YWV (RSGB)	150	£4.99	BP257
AN RAE STUDENTS NOTEBOOK Bob Griffiths G7NHB .....	.76	£6.95	RAESNB
FOUNDATION LICENCE NOW! R. Betts (RSGB) .....	.32	£3.95	FLNOW
HF AMATEUR RADIO. Ian Poole (RSGB)	120	£13.99	HFAR
INTERMEDIATE LICENCE - BUILDING ON THE FOUNDATION .....	.76	£5.75	INTLIC
RADIO AMATEURS EXAMINATION/END OF COURSE TEST PAPERS Ray Petri GOOAT (RSGB)	104	£13.95	RAECTP
RAE MANUAL (RSGB) 16th Edition	127	£15.00	RAEMAN
RAE REVISION NOTES (RSGB) .....	.92	£5.00	RAERVN
SECRET OF LEARNING MORSE CODE Mark Francis (Spa) .....	.84	£6.95	SOLMC
THE NOVICE LICENCE STUDENT'S NOTEBOOK John Case GW4HWR (WSL)	124	£4.00	NOVSTU
THE NOVICE RADIO AMATEURS EXAMINATION HANDBOOK Ian Poole G3YWV (WSL)	150	£4.00	BP375
THE RADIO AMATEURS' QUESTION & ANSWER REFERENCE MANUAL. 5th Edition Ray Petri GOOAT	208	£13.95	RAQARM
TRAINING FOR THE NOVICE LICENCE A MANUAL FOR THE INSTRUCTOR (RSGB) John Case GW4HWR	101	£6.75	TNOVIM

Call Directories

PW UK/EIRE CALLSIGN CD 2001/2 (PW)	462	£4.75	PWCALL
RSGB YEARBOOK. 2003 Edition	462	£15.95	RSYB23

Design & Construction

COIL DESIGN & CONSTRUCTION MANUAL (Babani)	106	£3.95	BP160
LF EXPERIMENTERS HANDBOOK (RSGB)	112	£18.99	LFEXHB
PRACTICAL PROJECTS G. Brown (RSGB)	208	£13.95	PRPROJ
PRACTICAL RECEIVERS FOR BEGINNERS John Case GW4HWR (RSGB)	165	£14.99	PRRXFB
PRACTICAL TRANSMITTERS FOR NOVICES John Case GW4HWR (RSGB)	126	£12.50	PTXNOV
PROJECTS FOR RADIO AMATEURS & SWL. R.A. Penfold (Babani) .....	.92	£3.95	BP304
RADIO & ELECTRONICS COOKBOOK (RSGB)	319	£16.99	RECOOK
RADIO RECEIVER PROJECTS YOU CAN BUILD	312	£20.95	RRPYCB
RF COMPONENTS & CIRCUITS Joe Carr (RSGB-Newnes)	398	£22.50	RFCOMP
SOLID STATE DESIGN FOR THE RADIO AMATEUR (WSL)	256	£10.00	SSDRA
TECHNICAL COMPENDIUM (RSGB)	288	£17.99	RSTECO
TECHNICAL TOPICS SCRAPBOOK. 1995-99 Pat Hawker (RSGB)	310	£14.99	TT9599
THE ART OF SOLDERING R. Brewster (Babani) .....	.84	£3.99	BP324
UNDERSTANDING BASIC ELECTRONICS (ARRL)	314	£15.50	UNDBEL

Short Wave Magazine bookstore

Shack Essentials

AMATEUR RADIO MOBILE HB. P. Dodd. (RSGB) .....	.114	£14.99	MOBHB
AMATEUR RADIO OPERATING MANUAL (RSGB) .....	.257	£24.99	AROPM
ARRL OPERATING MANUAL 7th Edition .....	.420	£18.50	RROPM
ARRL HANDBOOK 2003 .....	.1216	£28.00	RRHB23
AMATEUR RADIO (VALUE) LOGBOOK (RSGB) .....	.80	£4.95	TXLOG
AMATEUR RADIO WORLD ATLAS (A4 size) (DARC) .....	.20	£8.00	ARWAT
DIGITAL MODES FOR ALL OCCASIONS M. Greenman. (RSGB) .....	.208	£16.95	DMFAO
GREAT CIRCLE MAP (PWP) .....	.400 x 400mm	£1.50	GCMAP
IOTA DIRECTORY 11th Edition (RSGB) .....	.128	£9.95	IOTA11
LOW BAND DXING (ARRL) (WSL) .....	.586	£12.00	LBDXNG
RADIO AMATEURS MAP OF THE WORLD 2002 (Traxel) .....	.980 x 680mm	£7.00	RAMAPW
RADIO COMMUNICATIONS HANDBOOK 7th Edition. Dick Biddulph/Chris Lorek (RSGB) .....	.580	£29.99	RCOMHB
RSGB PREFIX GUIDE .....	.34	£8.95	PFXGDE

Microwaves

AN INTRODUCTION TO MICROWAVES F.A. Wilson (Babani) .....	.134	£3.95	BP312
INTERNATIONAL MICROWAVE HANDBOOK A. Barter (RSGB-ARRL) .....	.474	£24.95	IMWHB
MICROWAVE HANDBOOK - CONSTRUCTION & TESTING VOL 2 (RSGB) (WSL) .....	.120	£15.00	MWHBV2
MICROWAVE HANDBOOK - BANDS & EQUIPMENT VOL 3 (RSGB) (WSL) .....	.140	£15.00	MWHBV3

QRP

LOW POWER SCRAPBOOK (RSGB) .....	.320	£12.99	LPCRA
QRP POWER (ARRL) .....	.188	£11.50	QRPPWR
INTRODUCING QRP Dick Pascoe G0BPS .....	.48	£4.95	INTQRP

VHF & Higher

ALL ABOUT VHF AMATEUR RADIO W. I. Orr W6SAI. ....	.163	£8.95	AAVHF
GUIDE TO VHF/UHF AMATEUR RADIO Ian Poole G3YWYX (RSGB) .....	.180	£8.99	GTVUHF
NOS INTRO: TCP/IP OVER PACKET RADIO Ian Wade G3NRW .....	.356	£11.50	NOSINT
VHF/UHF HANDBOOK (RSGB) .....	.180	£22.00	VUHFHB

VINTAGE & WIRELESS

Crystal Sets

THE XTAL SET SOCIETY NEWSLETTER Volume 1 & 2 Combined. Phil Anderson W0XI .....	.96	£14.00	XTNL12
THE CRYSTAL SET HANDBOOK & VOL. 3 XTAL SET SOCIETY NEWSLETTER. Phil Anderson W0XI .....	.134	£8.00	XTNL3
THE XTAL SET SOCIETY NEWSLETTER Volume 4. Phil Anderson W0XI .....	.88	£7.00	XTNL4
CRYSTAL RECEIVING SETS & HOW TO MAKE THEM (Lindsay) .....	.124	£7.95	XTHTM
CRYSTAL SETS. The Xtal Set Society Newsletter, Volume 5. Phil Anderson W0XI .....	.88	£7.00	XTNL5
CRYSTAL SET BONANZA Vol 9, 10 & 11 Xtal Set Society Newsletter .....	.226	£15.00	XTBONZ
CRYSTAL SET BUILDING & MORE - Xtal Set Society .....	.168	£10.50	XTNL67
CRYSTAL SET PROJECTS .....	.160	£10.00	XTPROJ
CRYSTAL RADIO HISTORY, FUNDAMENTALS AND DESIGN P.A. Kinzie .....	.122	£8.00	XTHIST
CRYSTAL SET LOOPERS, A THREE TUBER & MORE Volume 8 Xtal Set Society Newsletter .....	.128	£10.50	XTLOOP

Historical

100 RADIO HOOK UPS 2nd Edition (reprinted) .....	.48	£3.35	100RHU
1934 OFFICIAL SHORT WAVE RADIO MANUAL Edited by Hugo Gernsback .....	.260	£11.85	1934SW
AMATEUR RADIO - A BEGINNERS GUIDE (1940 REPRINT) Douglas Fortune W9UVC .....	.156	£7.70	ARABG
COMMUNICATIONS RECEIVERS - THE VACUUM TUBE ERA R.S. Moore .....	.141	£17.95	COMRXV
MARCONI'S ATLANTIC LEAP (H/B) .....	.96	£6.99	MALEAP
POP WENT THE PIRATES Keith Skues .....	.568	£14.99	POPPIR
SAGA OF MARCONI OSRAM VALVE (Paperback) B Vyse .....	.346	£25.00	SMOV
THOSE GREAT OLD HANDBOOK RECEIVERS (1929 & 1934) .....	.94	£6.95	TG0HRX

Valves

HENLEYS 222 RADIO CIRCUIT DIAGRAMS (1924) .....	.271	£9.95	222RAD
HOW TO BUILD THE TWINPLEX REGENERATIVE RECEIVER Lindsay .....	.63	£6.75	HTBTRR
HOW TO BUILD YOUR FIRST VACUUM TUBE REGENERATIVE RECEIVER T.J. Lindsay .....	.127	£8.25	HTBFVA
HOW TO BUILD YOUR RADIO RECEIVER (A4) (Popular Radio Handbook No. 1) .....	.100	£6.70	HTBYRR
HOW TO MAKE A NEUTRODYNE RECEIVER Webb .....	.63	£5.95	HTMNRX
SECRETS OF HOMEBUILT REGENERATIVE RECEIVERS (Rockey) .....	.127	£8.75	SHBRRX

ELECTRONICS

BASIC RADIO PRINCIPLES & TECHNOLOGY Ian Poole G3YWYX .....	.262	£15.99	BRPRIN
ELECTRONIC PROJECT BUILDING FOR BEGINNERS R. Penfold (Babani) .....	.110	£4.95	BP392
GETTING THE MOST FROM YOUR MULTIMETER (Babani) .....	.102	£3.99	BP239
MORE ADVANCED USES OF THE MULTIMETER (Babani) .....	.86	£2.95	BP265
SCROGGIES - FOUNDATIONS OF WIRELESS & ELECTRONICS 11th Edition .....	.292	£20.99	SCROGY
TEST EQUIPMENT FOR THE RADIO AMATEUR Clive Smith G4FZH (RSGB) .....	.170	£12.99	TESTEQ

HOW TO ORDER

Here's how to order any book or back issue from the SWM Book Store - the biggest and best selection of Short Wave Listening and Amateur Radio publications anywhere!

You can place your order in one of the following ways:

By Post: Write to the Book Store, remembering to include your name, address, daytime telephone number and payment details (Sterling, cash not accepted), at:

Book Store, PW Publishing Ltd., Broadstone, Dorset BH18 8PW. Alternatively, use the Order Form on page 75 of this issue.

By Telephone: Call Clive G4SLU in the Book Store, Monday to Friday 9am to 4pm. Outside these hours your order will be recorded on an answerphone. Call: (01202) 659930

By Fax: If you wish to FAX your order to us please mark it for the attention of the Book Store and send it to: Fax: (01202) 659950

By E-mail: You can e-mail your order direct to: clive@pwpublishing.ltd.uk

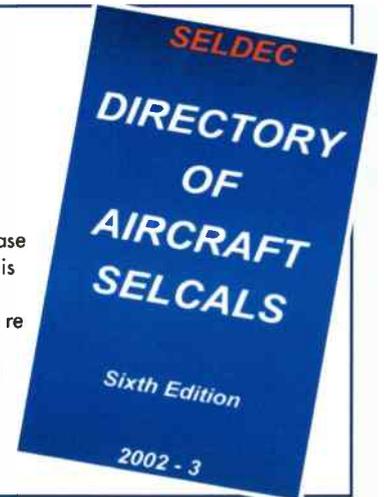
Postage Charges: Please remember to add postage to your order. Please add £1.50 P&P for one item, £2.75 for two or more (UK), For overseas surface add £2.75 for one, £4.25 for two, for three or more add and extra 75p per item. Airmail prices on application.

new additions

Directory of Aircraft Selcalls

For the crew of a long haul aircraft Selcalls are a god-send. They reduce the fatigue in the cabin by reducing the unwanted radio traffic. This coded squelch system is fitted to all commercial aircraft which use h.f. channels and many military planes too. To the h.f. air band listener Selcalls provide yet another fascinating aspect to the hobby by allowing the listener to determine the aircraft that corresponds to the captured Selcall.

The *Directory of Aircraft Selcalls* provides the database required to pin down what you've heard. The book is sorted by three criteria; Selcall, Carrier and Registration thus simplifying the aircraft search. The two further sections that provide, Three Letter Carrier Codes and International prefixes. This stand alone guide is a must for the Selcall enthusiast and a very useful reference for those with any slight interest. **234 pages, £13.95 + P&P**



Telephone Orders Taken On (01202) 659930 between the hours of 9am-4pm. Outside these hours your order will be recorded on an answerphone. FAX Orders can be sent to (01202) 659950

book store order form

Please send me the following books:

..... Code	Price (£)
..... Code	Price (£)
..... Code	Price (£)
..... Code	Price (£)
..... Code	Price (£)
..... Code	Price (£)
..... Code	Price (£)

Total cost of Books Ordered: Price (£)

Postage Charges
Please remember to add postage to your order.

UK
£1.50 P&P for one item,
£2.75 for two or more (UK)

Overseas Surface
£2.75 P&P or one, £4.25 for two,
75p extra per item for three or more
Airmail prices on application.

Total cost of Order including postage: Price (£)

Alternatively send this completed form to:

PW Publishing Ltd., Arrowsmith Court, Station Approach, Broadstone, Dorset BH18 8PW

Payment Details

Name

Address.....

Telephone (Daytime)

Postcode.....

I enclose my Cheque/Postal Order (made payable to PW Publishing Ltd) for £

or please debit my Access/Visa/Amex Card No:

--	--	--	--	--	--	--	--	--	--

Expiry Date



or please debit my Switch Card No:

--	--	--	--	--	--	--	--	--	--

Switch start date Switch Issue No (if on card).....

Switch Expiry Date

Signature.....

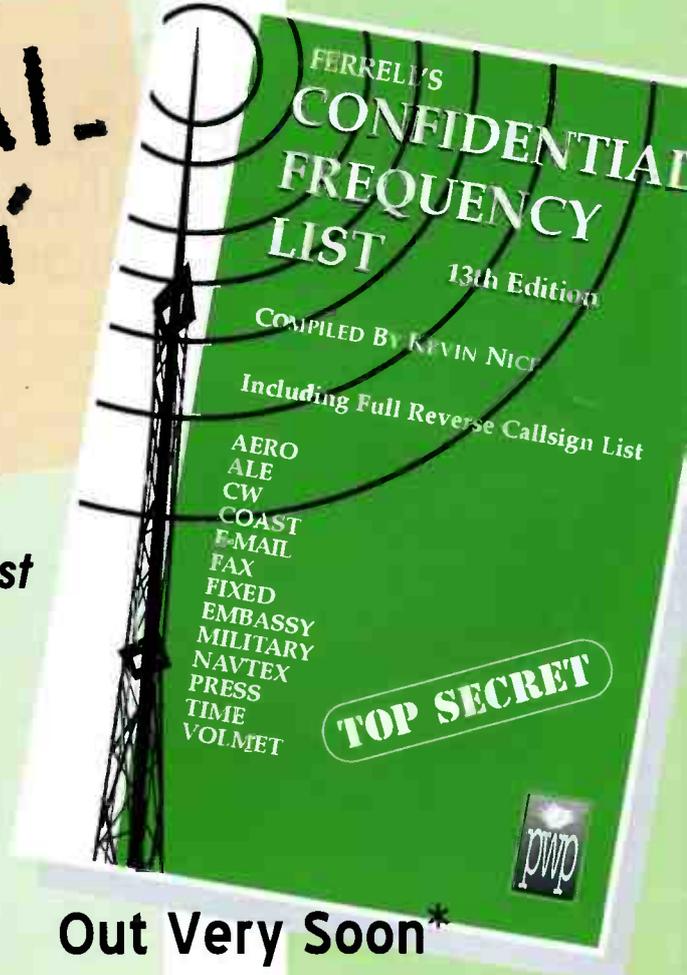
Orders are normally despatched by return of post but please allow 28 days for delivery. Prices correct at the time of going to press. Please note: all payments must be made in Sterling, cash not accepted.

The brand new *Ferrell's*

13th Edition!

**CONFIDENTIAL
FREQUENCY
LIST**

- Massive Updated HF Frequency List
- Features MIL-STD PSK Modes
- High Speed HF E-Mail Services
- Extensive Callsign Listing
- International Call Allocations
- Essential Utility Abbreviations



Out Very Soon*

Please send me [] copies of Ferrell's CFL 13th Ed.
@ £21.50 + £1.50 P&P UK, 2 or more copies P&P £2.75
(overseas P&P £2.75, 2+copies please call for rate)

Fill in the form or contact Clive
Tel: (01202) 659930
E-mail: clive@pwpublishing.ltd.uk

*CFL13 is due to ship 7 July 2003.

Name:

Address:

.....

.....

.....

.....

Postcode:

TELEPHONE ORDERS TAKEN ON (01202) 659930
between the hours of 9.00am - 4.30pm. Outside these
hours your order will be recorded on an answerphone

FAX ORDERS TAKEN ON (01202) 659950
Or please fill in the details ticking the relevant boxes-

To: PW Publishing Ltd., Arrowsmith Court, Station
Approach, Broadstone, Dorset BH18 8PW.

I enclose cheque/PO (Payable to PW Publishing Ltd.) £.....

Or charge to my MasterCard/Visa/Switch/AMEX Card £.....

Card No.

--	--	--	--	--	--	--	--	--	--



Valid fromTo

Issue No (Switch):Tel:

Signature

Orders are normally despatched by return of post but please allow 28 days for
delivery. Prices correct at time of going to press. Please note: all payments must be
made in Sterling. Cash not accepted.

TELEPHONE ORDERS TAKEN ON (01202) 659930
FAX ORDERS TAKEN ON (01202) 659950

DEMODULATORS AND PC PROGRAMMES

All Demods have 25 way female 'D' type - ORIGINAL RECEIVE ONLY £16.99
 RECEIVE ONLY with SoundCard Cable (saves cable swapping) £19.99
 POCsAG RECEIVE version (as Rx only with variable hysteresis) £19.99
 POCsAG RECEIVE with SoundCard Cable (saves cable swapping) £24.99
 Original TRANSMIT version (Pocsag Rx + Fax/SSTV/HamComm Tx) £24.99
 JVCComm/PSK31 Tx (Pocsag Rx + Fax/SSTV/HamComm/JVC32/PSK31 Tx) £29.99
 Adaptors 25m/9f £3.00 25m/9f Cable (ATX/Laptop) £6.00 25m/25m £3.00 9m/9m £3.00
 4-way 'D' switch Boxes 25 way £17.50 9 way £16.00 Stereo 3.5mm x 2.5m lead £3.50
 CD with JVFax7 + Log Analyser + PD2.05 + Wxgraph + RadioRaft V3.21 + Pktmon12 +
 JVCComm32 version 1.28 + SkySweeper V2.10 + Freqs + Aircraft info etc. £6.99
 For CWType & CWGet NEW Morse Interface (25-pin Male) £18.99

NEW SKYSWEEPER PROFESSIONAL NEW

See Mike Richards' Decode Column for reviews. SkySweeper V2.10 £59.99
 Log Analyser V1.7.2 £30.00 SkySpy V2.50 £24.99 RadioRaft V3.21 £24.99
 JVCComm32 version 1.28 £49.99 Pocsag (PO2.05) £19.99
 All prices UK/Eire inc VAT + P&P. Phone for FREE INFO PACK.
 All products (except software) carry a full money back guarantee.
 Minimum Credit Card order £15.00. Outside British Isles add £3.00.

Pervisell Ltd, 8 Temple End, High Wycombe Bucks HP13 5DR
 Tel: (01494) 443033 Fax: (01494) 448236
 www.pervisell.com e-mail: hamsales@pervisell.com

Sycom

Toroids are our speciality

Try us for:

- Resistors
- Capacitors
- Switches
- Semiconductors
- Cable connectors
- and much more

P. O. Box 148, Leatherhead
 Surrey KT22 9YW

Phone 01372 372587
 Fax 01372 361421

Robin G3NFV
 Geoff G4ECF

COMPONENTS AND AMATEUR
 RADIO EQUIPMENT PURCHASED

E-mail: robin@sycomcomp.co.uk
 Web: www.sycomcomp.co.uk

ElectroValue B.S.I. Regd. stockist
 ISO 9002 RS33906

We supply *Epcos (formerly Siemens) franchised distributor*

Capacitors	Diodes & rectifiers	Books
Resistors	Transistors	Boxes & Cases
Thermistors	Integrated Circuits	Breadboards
EMC filters	Semiconductors	Connectors
Inductors	Lamps & LEDs	Cable
Suppressors	Power supplies	Fans
Varistors	Regulators	Switches
Potentiometers	Thyristors	Relays
Knobs	Sensors	Transformers
Ferrites	Crystals	Hardware
Fuses	Panel meters	Headphones
Spark gaps	Test gear	Soldering equip
Batteries	Valves	PCB materials
Terminals	Flash tubes	Service aids

Electrovalue Ltd. See us at web site: www.electrovalue.co.uk
 Mail order: Tel: 01784 433604. Fax: 01784 433605. E-mail: sales@electrovalue.co.uk
 Unit 5, Beta Way, Thorpe Industrial Park, Egham, Surrey TW20 8RE

Please mention
Short Wave Magazine
 when replying to
 advertisements.

Albion-Design-Works Limited
 Radio Engineers and Manufacturers
 www.albion-design-works.co.uk
 +44 (0)1442 890098

DEALERS PANELS

Buckinghamshire

dontpayretail.co.uk
 E-mail: info@dontpayretail.co.uk
 www.dontpayretail.co.uk

Dorset

THE SHORTWAVE SHOP
Radio Communications Centre
 Amateur / C.B. / Shortwave
 Scanners / Marine / Airband
 Full range of used equipment
 www.shortwave.co.uk
 18 Fairmile Road, Christchurch, Dorset BH23 2LJ
 Tel/ Fax: 01202 490099

Kent

R. G. ELECTRONICS

SCANNERS
 Walkie Talkies, CB Radio
 Satellite Radio, GPS, Metal Detectors.
 COM & NEVADA DEALER.
 RadioShack STOCKISTS
 www.rgelectronics.co.uk
 66 Oxford St., Whitstable, Kent CT5 1DG
 01227 262319

Kent

KITS! KITS! KITS
 For full details send S.A.E. to
 Kit Radio Company
 Unit 11, Marlborough Court
 Westerham, Kent TN16 1EU
 or visit our web-site
 http://hometown.aol.co.uk/kitradioco/uk.htm

Mersyside

ARC Ltd.
*Everything for the radio amateur
 under one roof!*
 38 Bridge Street, Earlestown,
 Newton-le-Willows,
 Merseyside WA12 9BA
 Tel: 01925 229881 Fax: 01925 229882

Scotland

**Everything you need for C.B.,
 Scanners & Amateur Radio...**

JAYCEE ELECTRONICS LTD
 20 Woodside Way
 Glenrothes, Fife KY7 5DF
 Tel: 01592 756962
 Tues-Fri 9am-5pm • Sat 9am-4pm
 Closed Sunday & Monday

Somerset and South West

QSL COMMUNICATIONS
 ● For all amateur radio and listener needs.
 ● New and secondhand equipment.
 ● Part exchange welcome.

Unit 6, Worle Industrial Centre, Coker Road,
 Worle, Weston-Super-Mare BS22 6BX
 Tel/Fax: (01934) 512757

West Midlands

SRP TRADING
 1175 Bristol Road South, Northfield,
 Birmingham B31 2SL
 Telephone: 0121 475 9898
 or
 0121 475 6969
 Fax: 0121 475 3355

**TO AVERTISE HERE
 CALL
 EILEEN SAUNDERS
 ON 01202 659920**

Subscribe Here

to Short Wave Magazine / Practical Wireless / Radio Active

- Never miss an issue
- Have it delivered to your door
- Subscribers get their copies before they reach the shops
- SWM- The UK's authoritative magazine dedicated to all types of radio spectrum monitoring
- PW is Britain's best selling amateur radio magazine
- RA covers all aspects of radio communications, scanners, cb, amateur, 446, sw listening, and more - it's all here!

**CREDIT CARD ORDERS
TAKEN ON (01202) 659930**
between the hours of 9.00am - 5.00pm.

Outside these hours your order will be recorded on an answering machine.

**FAX ORDERS TAKEN ON
(01202) 659950** or please fill in the details ticking the relevant boxes, a photocopy will be acceptable to save you cutting your beloved copy!

To: **PW Publishing Ltd., Arrowsmith Court,
Station Approach, Broadstone,
Dorset BH18 8PW**



Subscription Rates

(Please tick appropriate box)

		PW	SWM	PW+ SWM	RA	RA+ PW	RA+ SWM	PW+ RA+ SWM
1 YEAR	UK	£31 <input type="checkbox"/>	£36 <input type="checkbox"/>	£61 <input type="checkbox"/>	£26 <input type="checkbox"/>	£52 <input type="checkbox"/>	£56 <input type="checkbox"/>	£84 <input type="checkbox"/>
	Europe Airmail	£39 <input type="checkbox"/>	£43 <input type="checkbox"/>	£74 <input type="checkbox"/>	£33 <input type="checkbox"/>	£65 <input type="checkbox"/>	£69 <input type="checkbox"/>	£104 <input type="checkbox"/>
	ROW Airmail	£50 <input type="checkbox"/>	£54 <input type="checkbox"/>	£94 <input type="checkbox"/>	£38 <input type="checkbox"/>	£79 <input type="checkbox"/>	£83 <input type="checkbox"/>	£128 <input type="checkbox"/>
3 YEARS	UK	£83 <input type="checkbox"/>	£95 <input type="checkbox"/>	£163 <input type="checkbox"/>	£71 <input type="checkbox"/>	£141 <input type="checkbox"/>	£152 <input type="checkbox"/>	£225 <input type="checkbox"/>
	Europe Airmail	£108 <input type="checkbox"/>	£115 <input type="checkbox"/>	£213 <input type="checkbox"/>	£90 <input type="checkbox"/>	£181 <input type="checkbox"/>	£187 <input type="checkbox"/>	£283 <input type="checkbox"/>
	ROW Airmail	£145 <input type="checkbox"/>	£155 <input type="checkbox"/>	£263 <input type="checkbox"/>	£108 <input type="checkbox"/>	£214 <input type="checkbox"/>	£223 <input type="checkbox"/>	£368 <input type="checkbox"/>

I wish to order a 1/3 year* subscription to SWM/RA/PW* starting with the issue.

Payment Details

I enclose my Cheque/Postal Order* for £.....

made payable to PW Publishing Ltd.

or please debit my Access/Visa/Amex card No.

Expiry Date

or please debit my Switch card No.

Start Date.....Switch Issue Number (if on card)

Switch Expiry Date.....

Signature

Name

Address

.....

.....

..... Postcode

Daytime Tel. No.....

Orders are normally despatched by return of post but please allow 28 days for delivery. Prices correct at time of going to press.

Please note: all payments must be made in Sterling. Cash not accepted.

(*Delete as necessary)

Photocopies of this page are acceptable

Index to advertisers

Albion Design	77	Martin Lynch & Sons.....	40, 41	Remote Imaging Group.....	54
AOR	79	Moonraker.....	16, 17	Roberts Radio.....	80
bhi.....	54	Nevada.....	2, 3, 34, 35	Solid State Electronics.....	61
Bletchley Park.....	71	Pervisell Ltd.....	77	Sycom.....	77
Chevet Book Supplies.....	71	Photavia Press.....	54	Ten-Tec.....	8
Computer Aided Technology.....	71	Practical Wireless.....	48	The Shortwave Shop.....	61
Electrovalue.....	77	QSL Communications.....	61	Timestep Weather Systems.....	61
Ferrells Confidential Frequency List.....	76	Radio Active.....	69	Waters & Stanton.....	32, 33
Haydon Communications.....	18, 19, 20, 21	Radioworld.....	64, 65	Winradio.....	8
Interproducts.....	54	RCQ Communications.....	71		

Evolution in Action



☆☆☆ AR5000+3 awarded four stars by both the authoritative Passport To World Band Radio and WRTH

NEW MODEL AR5000A / AR5000A+3

Now offering continuous coverage all mode receive from 10kHz to 3GHz in 1Hz steps

The AR5000A provides amazing sensitivity and strong signal handing across an unprecedented wide frequency coverage with all mode receive tuneable down to 1Hz steps... all this in a compact cabinet weighing just 3.5kg. No wonder this receiver has been adopted as the definitive receiver for professional operators, top-end hobbyists, government departments and armed forces throughout the world. The short wave performance is so good that separate receivers need not be considered.

Whether sitting on the desktop monitoring short wave transmissions or connected to aerial farms for wide band VHF-UHF monitoring (via the optional AS5000 4-way aerial switch with automatic bandplan switching), operators have been astonished how the seemingly impossible has been achieved... unparalleled high performance, an amazingly flexible operating system, high build quality featuring a metal cabinet - yet still remaining very compact.

Multiple units have been interconnected at airports for communication monitoring, others have been ported via RS232 into dial-up or LAN monitoring applications. The receiver has even been combined with the optional spectrum display unit and located in distant concrete bunkers controlled via a laptop computer and dial-up connection. There is little competition for comparison, 'the rest of the pack' are significantly larger, heavier or many times more expensive!

Price is T.B.A. The original AR5000 & AR5000+3 are still available while stock last. Full details available from the web site www.aoruk.com

AR8600 Mark2 RECEIVER

TRANSPORTABLE RADIO - GO ANYWHERE

The **AR8600 Mark2** is an amazingly versatile receiver which can be used mobile, base or trans-portable... powered from an external 12V d.c. power supply, 12V vehicle or from an optional internally fitted NiCad battery pack.

The upper frequency range has been extended to 3000MHz

(3.0GHz), lower band sensitivity has been increased (now officially covering to 100kHz) with an **enhancement to short wave performance** by the addition of further bandpass filters and revision to IF filters. Generating enthusiastic reports by the day, just ask any owner. **£719.00 inc VAT**



AR8200 Mark3 RECEIVER

EVOLUTION PRODUCES THE VERY BEST



Evolution had led to the **NEW AR8200 MK3** and provides excellent full coverage all mode receive including USB, LSB, AM, NFM, WFM with multiple IF bandwidths. Frequency coverage is **530kHz - 3GHz** with minimum acceptable input of 100kHz. Supplied with NiMH rechargeable batteries, charger, car lead, whip aerial, MW aerial and comprehensive illustrated operating manual.

Many options are available including SLOT CARDS for CTCSS, analogue voice inverting, external memory, recording / playback, tone eliminator, computer interface lead, reaction tune lead, soft case, free PC software from the AOR web site.

£439.00 inc VAT



AOR DIRECT AERIALS

Items in this column are available directly from AOR UK LTD:

WL500: Following on from the success of the LA350 loop aerial, the WL500 provides a solution to those operators who need a good compact aerial for travelling around. The loop is constructed of flexible cable braced by a centre pole which splits in to two sections so that it can be easily stored away.

SEE THE DETAILED REVIEW IN THE APRIL 2003 SWM.

When setup, the loop forms a diamond shape with an approximate diameter of 60cm. The loop covers 3.5 to 30MHz with a range switch mounted at the termination point of the loop (switching at 10MHz). A length of screened cable is supplied which is terminated in PHONO plugs to connect the loop to the control box. The control unit provides preselection and amplification terminated in a BNC socket for connection to the receiver. Excellent strong signal characteristics are achieved, typically 16dB gain with an IP₃ of +14.5dBm. The control unit can be powered from an internal 9V PP3 battery (current consumption is around 16mA), alternatively external 12V DC may be used. While the WL500 will operate below 3.5MHz, performance on the lower bands can be enhanced by the addition of the **optional 500LM bar element**. The bar has a selector switch for LW or MW operation and connects to the control box in place of the short wave loop. **£149.00 carriage £5.00**



• **500LM** Optional LW/MW element **£49.00 carriage on 500LM £5.00 if ordered separately**

DA3000 16 element discone aerial. Usable coverage is 25 MHz to 2,000 MHz (2GHz). Supplied with 15m of coaxial cable and terminated in a BNC plug. **£69.00 carriage £5.00**

SA7000 Twin element 'passive' ultra wide band receive aerial 30 kHz to 2,000 MHz (2 GHz). Supplied with 15m of coaxial cable and terminated in a BNC plug. **£99.00 carriage £5.00**

AOR (UK) LTD 4E East Mill, Bridgefoot, Belper, Derbyshire, DE56 2UA England



Tel: 01773 880788 Fax: 01773 880780
info@aoruk.com www.aoruk.com E&OE



BY APPOINTMENT TO
HER MAJESTY THE QUEEN
SUPPLIERS & MANUFACTURERS
OF RADIO AND TELEVISION
ROBERTS RADIO LIMITED



BY APPOINTMENT TO
HER MAJESTY THE QUEEN MOTHER
RADIO MANUFACTURERS & SUPPLIERS
ROBERTS RADIO LIMITED



BY APPOINTMENT TO
HIS MAJESTY THE PRINCE OF WALES
MANUFACTURERS & SUPPLIERS
OF RADIO RECEIVERS
ROBERTS RADIO LIMITED

ROBERTS

'Six hours recording!'



Six hours recording on a C90 cassette

C9950 'Long Play' cassette recorder with multi event timer

- Six hour record time using standard C90 cassettes
- Multi event timer
- Telephone record facility
- Voice activated record function
- Built in microphone
- Stereo record/playback
- Line input socket
- Microphone socket
- Digital timer with LCD display
- Tape counter
- Headphone socket
- AC adaptor
- Size 260w x 67h x 180d

Pull-out Handle



Ideal for recording:

