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The SHORT WAVE Magazine contents

Scanning Special...Scanning Special...Sca

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Cover Subject: *The old, the new and the free. Single valved receiver, two scanner reviews and an invaluable airband enthusiasts aid with the compliments of* SWM.

Check out the *SWM* web site www.pwpublishing.ltd.uk/swm

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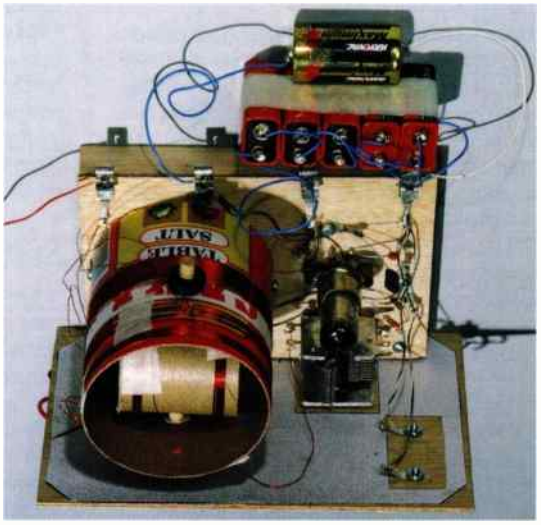

regular columns

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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 P&P for one binder, £2 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.

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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

Welcome to our 'Scanning Special'. This month sees much of the 'feature section' of *SWM* dedicated to scanners and scanning. We have two new scanning receivers reviewed, both a hand-held from Alinco and a base receiver from Yaesu, with coverage all the way up to 2.6GHz. Next month will see yet another hand-held from Alinco. It seems to me that new receivers are a bit like buses - none for ages - then they all arrive at once.

David Holdsworth writes on the facing page, one of the points which David raises is that I have shifted the emphasis of *SWM* over to scanning topic, on the whole I don't agree, though examination of this issue would perhaps lead you to believe the contrary. Well it is our scanning special. If your interest is not in this area of the hobby then please forgive the increased coverage otherwise - enjoy!

You can't have failed to notice our **free** Airband Data card, which is packed with runway and frequency data for the UK's 18 busiest airfields.

VLF

There seems to be much by way of v.l.f. activity of late. The Royal Navy, to celebrate 100 years of submarine service and 75 years of GBR, recently transmitted a special c.w. broadcast from Rugby on 16.0kHz on Tuesday 29 May. The following was sent at 1200UTC :

"Attention all ships and submarines this is a special transmission to mark the centenary of submarine operation by Her Majesty's Royal Navy to celebrate the achievements of the submarine service and the security it has brought to the United Kingdom tribute is paid to the dedication and professionalism of submariners both past and present and particularly to those who have given their lives in the service of the nation this transmission also celebrates the 75 years of radio broadcasts to ships and submarines from the GBR transmitter. GBR has maintained an almost unbroken service since January 1926 providing a vital link to the Royal Navy across the globe, tribute is also paid to those responsible for the operation and technology that has maintained this service. Her Majesty's Royal Navy is pleased to welcome the submarines and their crews from the naval services of overseas nations to share in this unique submarine centenary celebration taking place in the River Clyde de GBR AR - this message will be repeated at 1330GMT".

There's more v.l.f. special activity coming up very soon - three days after this magazine is on sale, the Swedish v.l.f. station, SAQ, will be on the air on July 1st on 17.2kHz c.w. SAQ is the only station left which uses an Alexanderson alternator to generate the r.f. and is only rarely on air. Transmission times are 0830, 0845, 1230 and 1245UTC.

It seems, from reading the posts on the SWM_Readers Internet mail list, that many members don't realise that there is any activity in this part of the spectrum. They, and perhaps you, should read the three part series by the late Joe Carr which we published in November, December 1994 and January 1995. For those of you without a low enough frequency coverage on your h.f. set, there is a receiver design featured that would provide a very useful addition to the shack.

If you require copies of the series, they are available from the *SWM* Book Store at the normal rates - see panel on the left.

Survey Time

A timely point is raised by a correspondent in 'QSL' on the next page, regarding the content of *SWM*. Timely because it happens to correspond with my preparation of a questionnaire to feature in a forthcoming issue so that we can assess accurately what our readers require from *SWM*.

This process does require some effort on the part of as many readers as possible. I urge you all to complete the survey form and return it to us. All names and address will be entered into a prize draw with a fantastic Fairhaven RD500 wide-band receiver as first prize and 10 runner up prizes of one year's subscription to *SWM*. I very much look forward to reading your views.

Ferrell's CFL 12th Edition

I mentioned a couple of issues ago that I was busy working on the latest issue of *Ferrell's CFL*. I am how pleased to say that after a six week delay, it's finished. If you've been waiting to order your copy of the world's best utility station listing, then wait no longer you can use the form below to get you copy now. For those of you that have been patiently waiting, having already ordered your volume, I must apologise for the delay.

Until next time,

vy 73 Kevin

Dear Sir
With regard to the Watkins Johnson HF-1000 review undertaken by John Wilson, I find I cannot agree with his assessment of the receiver. I have been using one here for the past five years, (mostly manually), sometimes using ERGO computer control.

His conclusion that the receiver is virtually useless above 4MHz is in my humble opinion, quite ridiculous. I have never had to contend with the levels of interference he talks about, and I have tried manual tuning as he described in his article.

I have found no such interference from my HF-1000. Everybody has some sort of noise, atmospheric or otherwise to contend with, myself included, but to make a statement as sweeping as he has there, is I believe quite irresponsible. If that is the case, according to John Wilson, all of the people who invested their hard earned cash in one of these radios, have in actual fact wasted their money. (Gee, thanks for telling us that John, you are a real mate.).

As far as I am concerned, he can make as many pretty little graphs as he likes, showing interference levels, etc., but I will stick by my WJ HF-1000. It is a superb radio, and works exceedingly well, regardless of what John Wilson and his review say.

Eddy Waters
via E-mail

Eddy, thanks for your comments. It is an interesting point that you raise. I am very glad that you find your HF-1000 doesn't suffer from the problem discovered by JW during his measurements at the EMC test lab. It may well be that the encoder bush, that John discussed in the June SWM *feature, is made not an insulator in your receiver. We have discovered, since that issue went to press, that many HF-1000 owners are well aware of the interference issue. -* ***Ed****.*

Dear Sir
Referring to the letter from T. Taylor in the June issue I'd like to paint a picture that may be familiar to many. I have been interested in radio since the day when as a young lad I plugged my dad's Bush valve radio into the mains and blew the main fuse in the house. Dad was not amused, incidentally I still have that radio 35 years later, but to get on with it...

Over those years I have possessed scanners, short wave radios and CBs, until in the end I purchased an Alinco DX-70 and started to transmit on the 11m band (you can leave that bit out if you wish). Incidentally I failed the RAE three times! So what has made me a happy chappy?

I got rid of the lot and after reading Peter Bond's comments in a back issue, 'cause I keep them all, I purchased the Icom R8500. Wow, now the question is, what shall I listen to, brilliant receiver, easy to use, my enjoyment is back. So, man (sorry to be sexist) with many radios may be happier with one that does the lot.

Keep up the good work, my sticker's in the back window, but unfortunately in the 40,000 miles a year I drive you haven't spotted me - if you do, stop me 'cause it would be nice to meet the Editor in person and finally can you start the beginners' guide to short wave radio - there's loads of info I've missed. Cheers!

Colin Ashman
Northants

Dear Sir
I have just read the Icom IC-R3 review by Alan Gardener. He writes about a video sender using the 2.4GHz band. This is the same frequency as used by the domestic microwave oven. This has been allocated to a range of products being marketed under the trade name 'Blue Tooth'.

It should be pointed out to those not familiar with this name that these devices are there to provide a short range r.f. connection between such items as a computer, and, say, a printer, or a modem, or any other item that needs to be controlled at a distance. Evan LANs (Local Area Networks). Even a cordless earpiece for your mobile 'phone. Think on that - if mobile 'phones are so dangerous, how much more so a 2.45GHz link would be! I would caution anyone who contemplates using any such device to think very long and hard before doing so.

I am sure that this has been rushed through for financial reasons, not for your good. There may be a hidden agenda here. (Population control by radio waves). Up to a 100mW is permissible in some areas. I would be very concerned about this.

It is not just the power level that matters, but also for how long you are exposed to the r.f. field as well. Low power for a long time is a bad thing at this frequency. So, now you can be wise as to the folly of this equipment. I hope you live long and prosper.

Ian Johnson
W. Midlands

Dear Sir
Following the letter from Richard Cooper concerning the new logo, March 2001 edition, I feel I must add my two pence worth. While the colours do not give me any problem, I must say that the *SWM* logo looks as if it was made out of 1960s Perspex, in my opinion making the cover look both a bit tacky and dated.

I am a director of three local community based companies, and one of them was recently considering changing its logo and stationary styles. At the Board meeting, which discussed this, one of my fellow directors, who is the Managing Director of a large local glass company which deals with many businesses world-wide pointed out that according to latest research, logos were rapidly going out of fashion. Perhaps *SWM* should bear this in mind.

I also note that this month the wording 'Short Wave Magazine' which appeared along the left margin of the cover page has disappeared. As my local newsagent, with whom I have a regular order for my copy of *SWM*, stated the other day when I went for my latest copy, "they keep changing the cover and it makes it very hard to find among the order copies of publications. The cover only seems to stay the same for a couple of months and then when you get used to it, they change it!".

Briefly, another couple of points concerning the March issue. In 'Ed's Comments', the registrations of cars sporting the *SWM* sticker were not at the bottom of page 4 as stated, but on page 5 instead. Also, the first line of the paragraph about Yahoo contained the word 'away' instead of 'aware'. Kevin has perhaps either forgot to switch on his grammar checker, or maybe has spent too much time out in the cold on his motorbike before writing this.

Keep up the good work and remember, you can please some of the people some of the time, but not all the people all of the time!

Robert Connolly
N. Ireland

Robert, the logo is actually a 2001 metal! The art guys have tweaked it a little since the one you're commenting on. I did ask for feedback, and I welcome everyone's view on the appearance of said logo. Perhaps we need a 'design a logo' competition. What do you think?

I do recall that March was a cold month...you may have a point. - ***Ed****.*

TOP QSL

Dear Sir
I have just read the letter in the March issue from Richard Cooper and I must say how correct he is. Do you ever think about what the readers want, because I don't think you do. To my knowledge you didn't ask if we wanted the logo changing and when you look at the combination of black, red and white, my opinion is that its not very pleasing.

After all, its our magazine, we buy it every month as I have done for 15 years and the logo has changed a few times, but I do believe we weren't asked how we wanted it to look. You always say how important the readers are because without them the magazine would not exist. Richard Cooper's opinion seems very sensible, especially the bright colours, very similar to the colours before the change in the last couple of months. So, my advice to you is ask the readers what they want, their opinion does count for something, doesn't it, or am I wrong? Rethink urgently needed.

P.S. It also seems to me that scanning is taking over from *The Short Wave Magazine*, please don't let that happen.

P.P.S. I have a sticker in my bedroom window, and I haven't seen you drive past as yet. Maybe if some people don't own a car, then they are not as important as these that do, so why bother with a sticker?

David Holdsworth
Norfolk

David, I always listen to criticism from readers both good and bad. In my opinion, it is essential that there is a two-way dialogue with the most important people of all, you the SWM *buying public and the Editorial team. This is why, that when I took over as* SWM *Editor, over three years ago, I organised a survey to enable the correct balance of the magazine. See 'Ed's Comments' opposite. Regarding your comment about scanning taking over the magazine, I'm not sure how you come to this conclusion as there is much more editorial coverage of subjects other than scanning. I have, in the past, been accused of turning the magazine over to television, and satellites, none of these is true in my view. It is and always has been to keep* SWM *as well balanced as is possible with the limited number of pages available.*

Finally, regarding the February sticker, you are free to fix it to a window if you are fortunate enough not to need a car - I believe I suggested this back in the February SWM. *-* ***Ed****.*

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.

Communiqué

News and Products

Special Event Station

On 5, 6, 7 and 8th of July 2001 the **Cutty Sark Tall Ships Race** will call at Antwerp. During these days, the club station of the Antwerp section (OSA) of the Royal Union Of Belgian Amateurradios (UBA) will be operating under the special callsign OS4OSA.

With this event the city of Antwerp will host more than 1,500,000 visitors, 4,000 sailors, 400 officers and more than 100 tall ships amongst which beautiful training ships of 40 different nationalities. Large festivities will be held in the old port of Antwerp near 'Het Steen' and 'Het Eilandje'.

The club station OS4OSA will be active from 1st till 12th July 2001. Activities are planned on h.f. ('phone and c.w.) as well as on v.h.f. ('phone). During the weekend of 7th of July, the club station will operate from a location in the old port at a place called 'Entrepotkade'.

One of the goals of this special event station is to get in touch with some of the larger sailing ships which participate to the race. One condition though - they ought to have a licensed amateur on board. Furthermore, contacts with the world-wide community of radio amateurs are looked for.

On h.f., activities are planned around 14.165 and 18.165MHz. People who are interested in radio can, under supervision of one of our licensed amateurs, enjoy the taste of a world-wide radio-contact.

A special QSL post-card is developed and will be sent to confirm each contact and short wave listeners' report. For more information, please contact, **Gaetan De Bruyn**, President of OSA-Antwerp, on **on4cdv@qsl.net**

Special Offer

Buy a copy of ***Shortwave Eavesdropper CD-ROM*** from the *SWM* Book Store now for the special price of **just £5** (plus P&P) - while stocks last. (Usual price is £16.50!). *Shortwave Eavesdropper* contains over 100 MB of frequencies and callsigns, the largest list of world-wide utility stations and much more. Call **(01202) 659930** and place your order today.

Worldspace At Nevada

Worldspace - the satellite broadcasting company - have appointed Nevada as an official UK distributor for their Portable Satellite radio range. Worldspace own and operate three geostationary satellites transmitting over 40 direct digital audio broadcast programmes to a large part of the world.

Commenting on the appointment, Mike Devereux, Managing Director of Nevada, said "Worldspace have ambitious plans for future satellite broadcasting and want to rapidly increase sales of their satellite receivers in the UK. Our success in distributing portable radios for Grundig, Roberts and the BBC World Service, made Nevada an ideal partner".

For more information on the Worldspace system visit **www.worldspace.com** or contact Nevada distribution on **(02392) 313095** for details of the Worldspace radio range and your nearest stockist.

L-R: Atef Awad, Worldspace Corporate Development Director, concluding the distribution deal with Mike Devereux, MD of Nevada.

Aviation Enthusiasts Fair

Although East Midlands International Airport is a thriving and growing airport it still manages to find time and space to host an annual fair for aviation enthusiasts. Even the car park gets into the act and charges only £1 for the day's parking.

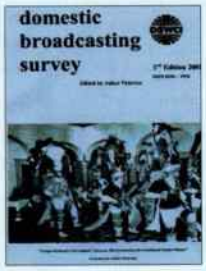
This year's fair was held on Sunday 1st April and trade stands occupied much of the Departures hall and Arrivals area. On sale was a very wide range of books, radios, model kits, aircraft and airline memorabilia, software, telescopes, binoculars, photographs, drawings and just about everything else which would appeal to an aviation enthusiast. Well-known *SWM* advertiser Air Supply had a well-stocked stand including scanners, binoculars and pilot training books.

If you are any sort of aviation enthusiast, then you really ought to visit this fair - we will publish details of next year's fair just as soon as we get them.

Order Secured

The Melbourne based Australian receiver company, **WiNRADiO**, recently secured an order worth over $2.0m US into India. The order, for a large quantity of PC cards fitted into industrial computers, along with data decoding software, marks the culmination of several months negotiation user of WiNRADiO surveillance products, India has now invested heavily in the with the customer. Already a significant user of WiNRADIO surveillance products, India has now invested heavily in the concept of integration of the computer and the radio and demonstrates that cost efficient solutions are gaining a major foothold with professional users. WiNRADiO can be contacted at **www.winradio.co.uk** or in the UK at **Falcon Systems** on**(01684)295807** or visit their web site at **www.sda-falcon.co.uk**

Summer Edition



The summer 2001 edition of ***Broadcasts In English*** is now available from the **British DX Club**. It was compiled by BDXC-UK Editor Tony Rogers and lists international broadcasts in English on short wave and medium wave for the summer 2001 (A-01) schedule period. It is in time order throughout and covers all target areas. Transmitter sites and a comprehensive Guide to DX and Media Programmes are also included.

Copies of this 40-page booklet are available to non-members at the following prices (postage included) - UK - £2 (cheques/POs payable to BDXC), Europe - Five International Reply Coupons or $3 US, Rest of the World - Six International Reply Coupons or $4 US.

Order yours from the **British DX Club, 126 Bargery Road, Catford, London SE6 2LR.** Full details about the club is also available on the BDXC-UK web site at **http://www.bdxc.org.uk** or address E-mail enquiries to **secretary@bdxc.org.uk**

Expo DX 2001

The Brazilian Radio-listeners Committee are holding their Annual Meeting of DXers - entitled Expo DX 2001 - at The Penthouse of the Hotel Comodoro - Av. Duque de Caxias, 525, Downtown São Paulo city, on Saturday 14 July, starting at 0800 to 2000. Expo DX 2001 will promote several lectures on DXing in a variety of topics, audio-visual presentations and a lot more!

Expo DX 2001 is a joint accomplishment of the Brazilian Committee of Radiolisteners, counts with the support of *Amigos do Radio* (Radio Transmundial) and *Encontro DX* (Radio Aparecida) programmes, DX Club of Brazil, Politron Eletronica, TecnoData Telecom and several broadcasting companies. For further information, please visit **http://ondascurtas.cjb.net** or E-mail **info.cbr@usa.net**

Partnership Renewed

After a phenomenally successful first two years on air, **fm 101 POWER** - Malawi's leading independent radio station - has renewed its agreement with **World Radio Network** to continue providing an overnight international news service. Since going on-air in September 1998, the station has extended its coverage from Blantyre initially, to the capital Lilongwe a year later and now to the whole of Malawi, attracting a dedicated listenership across all age groups from 15 to 60 year olds.

WRN, the London-based international broadcaster, has been a key factor in the successful programming that has enabled **fm 101 POWER** to expand so rapidly. Speaking after signing a new rebroadcasting contract at WRN's headquarters, Oscar Thomson, founding partner and Managing Director of the station, said "we are happy to continue airing WRN1, bringing the best of the world's international broadcasters to our listeners throughout Malawi".

fm 101 POWER broadcasts the WRN1 English language Africa/Middle East service from midnight to 0600 hours Sunday to Thursday and from 0200 to 0600 hours on Fridays and Saturdays. Malawi's decision makers can hear a rich cultural mix of news, views and current affairs from the most respected international stations world-wide appearing on WRN1.

Oscar Thomson (left), managing director of fm 101 POWER in Malawi, and Karl Miosga, managing director of London-based World Radio Network, have reached agreement for fm 101 to continue broadcasting an overnight international news service provided by WRN.

New Arrivals

News in from **Waters & Stanton** - they now have in stock -

The **W4RT OTT-1.**

- Heil HS-706 headset and boom microphone for the Icom IC-706. Primarily designed for mobile operation, this comprises a single earpiece headset with adjustable boom microphone, p.t.t. button and mic plug.
  The unit incorporates an f.e.t. amplifier for correct drive to the IC-706 and the audio is fed directly through so that VOX operation is also possible for true hands-free operation. The retail price is £59.95.
- The new W4RT OTT-1 'One Touch Tune' module that plugs into the back of the FT-817. This enables the generation of a steady carrier for setting a.t.u.s or checking v.s.w.r., no matter what mode is selected on the FT-817.

The accessory draws very little current in operation and when at rest it is virtually open circuit. One fly lead plugs into the accessory socket and the other fly lead provides a feed through socket so that the FT-817 accessory features are still available. The tune function is achieved by shorting the 3.5mm fly socket accross. This enables the unit to be connected to auto a.t.u.s, etc. Also supplied is a short p.t.t. lead with 3.5mm plug to enable the user to initiate the function remotely.

W&S advise us that shortly they will be able to supply the necessary lead so that the OTT-1 can be remotely operated with their new LDG Auto Tuner, also designed for the FT-817. The retail price of the OTT-1 is £59.95, inclusive of VAT. Contact **W&S** for more details at **22 Main Road, Hockley, Essex SS5 4QS, Tel: (01702) 206835/204965, FAX: (01702) 205843**.

New Kenwood Dual-Band

Visitors to the recent Dayton show will have been lucky enough to have already viewed the first Kenwood amateur v.h.f./u.h.f. hand-held transceiver to feature a built-in full range scanner. The Dayton sample was a prototype of the American version, which includes the 220MHz band, which is not available in Europe. The UK/European version will be called the **TH-F7E**.

Brief Specifications

- Dual-band TX 144/430MHz.
- Receives two frequencies simultaneously, even on the same band.
- 0.1-1300MHz RX (on 'B' band).
- s.s.b./c.w. receive.
- Internal VOX.
- Internal bar antenna for a.m. broadcast RX.
- 1200/9600 packet ready (with external TNC).
- 434 memory channels.
- 16-key pad plus multi-scroll key.
- 5W TX with 7.4V, 1.55Ah standard L-Ion battery.
- Special simultaneous charging/operating.
- MIL-STD 810 C/D/E for vibration, shock, humidity and light rain.
- Automatic Simplex Checker.
- *Windows* Memory Management software.

The price is not yet fixed, but is expected to be under £300. Deliveries commence in the Autumn. More information from Kenwood direct at **Kenwood House, Dwight Road, Watford, Hertfordshire WD1 8EB, Tel: (01923) 655284** or **FAX: (01923) 655297.**

rallies

July 1: The York Radio Rally is to be held at The Knavesmire Building, York Racecourse, York. Doors open 1030. There will be all the usual traders and free parking. Entrance fee £2, children under 14 free. Pat **Trask G0DRF** on **(01904) 628036** for further information or E-mail: **pat.trask@linone.net**

July 8: The Sussex Amateur Radio & Computer Fair is celebrating its 21st Annual Rally with refurbished facilities at Brighton Racecourse, where the new owners have spent over three million pounds on improving the Grandstand and Exhibition halls, including the refreshment and bar areas. Doors open 1030-1600. There will be the usual traders and club stands, with the very popular Bring & Buy hall. Entrance fee is £2.50 with free on-site parking. Call **(01424) 428064**.

July 14: The Cornish Radio Amateur Radio Club will be holding there 38th Annual Mobile Rally and Electronics fair on Saturday 14th of July at Penair School, Truro. Doors open at 1030. Admission is £1.50. Many trade stands, demonstrations, Bring and Buy, refreshments and Talk-In. For details contact P.R.O. **G4LJY**, E-mail: **g4ljy@qsl.net**

July 15: The McMichael Amateur Radio Rally & Car Boot Sale is taking place at a **new venue** - this is the Reading Rugby Football Club, Sonning Lane (B4446), just off the A4 near Reading, Berkshire. The key benefits for this larger site is a better parking and car boot area, better catering services, bigger fully licensed bar, easier access, first aid and a talk-in station on v.h.f. This will be Berkshire's Premier event with many traders present and the ever popular car boot sale makes it a good rally to visit. Various local clubs and organisations also have stands at the rally. General queries from **Dave Chislett G4XDU** on **(01628) 625720**, E-mail: **g4xdu@amsat.org** Or find out more from the McMichael 2001 web site at **http://come.to/mcmichaelrally**

New Venue

The **Milton Keynes Amateur Radio Society** are holding their rally on the 26th August 2001, but at a **new venue** - this being at **St Paul's School, Leadenhall, Milton Keynes**. Doors open at 0800 for traders, 1000 for buyers. For booking information, contact **Dave G3ZPA** on **(01908) 501310**.

International Weekend

The **International Lighthouse/Lightship Weekend** will take place from 0001 on Saturday 18 August 2001 until 2359UTC on Sunday 19 August 2001. Already over 100 stations have confirmed their participation from either a lighthouse, lightship or maritime beacon.

You can find the list of stations at **www.vk2ce.com/ILLW/2001** Comments to **Mike GM4SUC** at **gm4suc@compuserve.com** or if you have any questions.

Additional Catalogue

Lake Electronics now have an additional catalogue, listing a wide range of vintage wireless books, magazines and ephemera. These are genuine originals, not facsimile publications. Please note that the books are available by **mail order only**. For your **free** copy of the vintage book listing and/or a copy of the latest Lake Electronics catalogue, please send an s.a.e. to Lake Electronics at **7 Middleton Close, Nuthall, Nottingham NG16 1BX, Tel: 0115-938 2509, E-mail: g4dvw@cs.com** or visit their web site at **www.lake-electronics.co.uk**

■ BRIAN ODDY G3FEX, THREE CORNERS, MERRYFIELD WAY, STORRINGTON, WEST SUSSEX RH20 4NS

LM&S

At this time of the year 'Getting away from it all' will be dominating the minds of many listeners! When packing your bags with the essentials to ensure that your stay at your chosen/favourite holiday location will be an enjoyable one, be sure to include a small portable radio plus spare batteries because searching the bands while there could well be an interesting experience.

Wherever you are going in the world the times quoted in the short wave section of 'LM&S' will still be applicable because they are in Universal Time Co-ordinated (UTC), which is equal to Greenwich Mean Time (GMT), but one hour behind British Summer Time (BST). To avoid confusion, set a watch/clock to UTC (=GMT) and pack it with your portable and don't forget your copy of the most recent *SWM*!

Upon returning home, 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.

Whilst searching the band during the late evening of April 22 **Sheila Hughes** (Morden) picked up a weak transmission under Donebach, Germany on **153kHz**. By 2150UTC it was peaking SINPO 22212 and a woman and a man could be heard talking in a foreign language which Sheila felt sure was Romanian. This was followed by a ballad type song at 2220. Sheila says "It was good to hear Bod again".

The increasing hours of daylight during April may have affected l.w. propagation from Iceland around midnight because there were no reports this time of the broadcasts from Rikisutvarpid (RUV) in Reykjavik having reached the UK from their outlets at Gufuskalar, W.Iceland on **189** or Eidar, E.Iceland **207kHz**.

At the end of April/beginning of May the Droitwich 500kW transmitter on **198kHz**, which radiates the BBC R4 programme, was 'off air' during daylight hours, presumably for maintenance to the antenna system. This provided some listeners with an opportunity to discover just how well the 50kW co-channel outlets in Scotland at Burghhead and Westerglen could be received outside their normal service area. Down in Dorset, **Bernard Curtis** (Stalbridge) found he could receive both transmissions surprisingly well when he connected a random wire antenna to his Realistic DX-400 receiver. Hopefully there will be further reports on this topic in 'LM&S' next month.

Long Wave Chart

Freq (kHz)	Station	Country	Power (kW)	Listener
153	Bechar	Algeria	1000	G
153	Donebach DLF	Germany	500	B,C*,D,E*
153	Bod	Romania	1200	C*
162	Allouis	France	2000	D,E*,F*,G
171	Nador Medi-1	Morocco	2000	E*
177	Oranienburg	Germany	500	B,C*,E*,G
183	Saarlouis	Germany	2000	D,E*,G
198	Droitwich BBC	UK	500	C,D,G
198	Burghead BBC	UK	50	A
198	WesterglenBBC	UK	50	A
207	Munich DLF	Germany	500	B,C,D,E*,G
216	Roumoules RMC	S.France	1400	B,D,E*,G*
225	Polskie R-1	Poland	?	B*,C*,E*,G*
234	Beidweiler	Luxembourg	2000	D,E*,F*,G*
243	Kalundborg	Denmark	300	B,C,D,E*,G*
252	Atlantic 252	Eire	500	D,E*,G*
261	Burg(R.Ropa)	Germany	85	B,E*
261	Taldom Moscow	Russia	2500	E*
270	Topolna	Czech Rep	1500	C*,D,E*,G*
279	Sasnovy	Belarus	500	E*,G*

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 Hockenhull, E.Bristol.
(C) Sheila Hughes, Morden.
(D) George Millmore, Wootton, IoW.
(E) Fred Pallant, Storrington.
(F) Thomas Williams, Truro.
(G) Fred Wilmshurst, Northampton.

Medium Wave Reports

The band was searched at night by several listeners in the UK for broadcasts from m.w. stations in E.Canada and E.USA, but none were heard. This was not unexpected because the increasing hours of daylight during April and the five hour difference in time results in the path over the Atlantic being in darkness along its entire length for a relatively short period.

The longer hours of daylight also discouraged some listeners from searching the band after dark for the sky waves from m.w. stations in the Middle East, N.Africa, Europe and Scandinavia. However, those who did so compiled some interesting logs - see chart.

By taking advantage of the directional properties of a home-built loop **Brian Keyte** (Gt.Bookham) was able to separate some of the local radio stations which operate on shared channels. He searched the band both during daylight and after dark and logged seventy-two stations - see chart. He says "The Essex Breeze has now also joined the Classic Gold Digital network and uses 'Classic Gold Digital (Breeze)' as its full ident on **1359** and **1431kHz**".

Short Wave Reports

During the first two weeks of April the effects of solar activity disturbed propagation in the short wave bands. At times the conditions were so poor that very little could be received! Fortunately some improvement then followed, but further periods of disturbed conditions can be expected.

Daily checks were made in the **25MHz (11m)** band by some UK listeners, but the only broadcaster they heard was Radio France International (RFI). Their transmission is beamed to E/C.Africa on **25.820** (Fr 0900-1300) and reception in the UK is via back scatter and other unreliable modes. The SINPO ratings quoted in the reports were 55434 at 0900 in Stalbridge; 45523 at 0907 by **Vic Prier** in Colyton; 34222 at 1000 by **Thomas Williams** in Truro; 35232 at 1010 by **Eddie McKeown** in Newry; 44333 at 1048 by **Rhoderick Illman** in Oxted; 25522 at 1150 by **Simon Hockenhull** in E.Bristol; 23332 at 1205 by **Robert Connolly** in Kilkeel; 35343 at 1222 by **Fred Wilmshurst** in Northampton.

In contrast, many broadcasters are active in the **21MHz (13m)** band. During some mornings R.Australia's transmission to Pacific areas from Shepparton on **21.725** (Eng 0200-0900) has reached the UK. It was rated 33323 at 0700 by **Martin Venner** in St.Austell. From 0900 they beam to Asia from Shepparton on **21.820** (Eng 0900-1400) and that transmission has also reached the UK during some mornings. In Northampton it peaked 35343 at 1247.

Other broadcasters that may be heard in this band when conditions permit include R.Japan via Gabon? **21.755** (Eng to Oceania? 0600-?), rated 24532 at 0602 by **David Edwardson** in Wallsend; R.Pakistan **21.465** (Ur, Eng to Eur) 44444 at 0845 in Truro; VOIRI Tehran **21.470** (Eng to Australia 1100?-1230) 23332 at 1127 in Oxted; HCJB Quito, Ecuador **21.455** (Eng [u.s.b.]) 44334 at 1130 by **David Hall** in Morpeth & 44444 at 1330 by **Martin Cowin** in Kirkby Stephen; BBC via Cyprus **21.660** (Eng to E/S.Africa 1400-1700) 44444 at 1430 by **Stan Evans** in Herstmonceux; BBC via Ascension Is **21.470** (Eng to E/S.Africa 1300-1900) 34443 at 1457 in Kilkeel; BBC via Ascension Is **21.490** (Eng to W/C.Africa 1500-1530) 45554 at 1512 by **John Parry** in Larnaca, Cyprus; UAER, Dubai **21.605** (Eng to Eur 1600-1640) 44333 at 1610 in Morden; Swiss R.Int via Sottens **21.720** (It, Ar, Eng, Fr to Near East, Africa 1630-1815) 35522 at 1735 in E.Bristol; Voz Christiana, Chile **21.500** (Sp) 23322 at 1815 in Colyton; also on **21.550**, rated 24232 at 1919 in Newry; R.Nederlands via Bonaire, Ned.Antilles **21.590** (Eng to C/W.Africa 1830-2025) 22212 at 1909 in Newry; R.Canada Int via Sackville **21.570** (Fr, Eng to Eur 1900-2100) 44344 at 2000 by **Clare Pinder** in Appleby; WYFR via Okeechobee, USA **21.525** (Eng, Fr to Eur, Africa 1600-?) 55444 at 2025 in Stalbridge; HCJB Quito, Ecuador **21.455** (Eng [u.s.b.]) 55544 at 2108 by **Richard Reynolds** in Guildford.

A few broadcasters are active in the narrow **18MHz (15m)** band, which is allocated to single sideband (s.s.b.) broadcasting in the future. At present, amplitude modulated (a.m.) transmitters are being used to reach listeners in selected areas by R.Norway Int on **18.950** (Norw to N.America 1200-1229), rated 54343 at 1200 in Kirkby Stephen; R.Sweden **18.960** (Eng, Sw to N.America, Lat.America 1230-1430) 33333 at 1240 in Herstmonceux & 44433 at 1340 in Truro; WYFR Okeechobee, USA **18.980** (Eng to Africa, Eur 1600-2200?) 34333 at 1833 by **Vera Brindley** in Woodhall Spa; Christian Science BC via WSHB Cypress Creek

Tropical Bands Chart

Freq MHz	Station	Country	UTC	DXer
3.210	REE via Costa Rica	Costa Rica	0345	E,K
3.230	SABC Meyerton	S.Africa	1858	G,J
3.255	BBC via Meyerton	S.Africa	1856	E,G,J,K,M
3.270	Namibian BC,Windhoek	Namibia	1856	A,E,G,J
3.300	R.Cultural	Guatemala	0450	A,K
3.315	AIR Bhopal	India	0030	A
3.316	SLBS Goderich	Sierra Leone	2200	K
3.320	SABC (RSG) Meyerton	S.Africa	1956	A,G,K
3.365	GBC R-2	Ghana	2043	A,K
3.390	BBC via Meyerton	S.Africa	2037	K
3.915	BBC via Kranji	Singapore	2138	A,D,K
3.955	R.Korea via Skelton	England	2045	B
3.955	R.Taipei via Skelton	England	1810	C,I,L
3.975	R.Budapest	Hungary	2130	A,F,H
3.975	R.Korea via Skelton	England	2100	B,H
3.995	DW via Meyerton	S.Africa	2312	A,M
4.760	AIR Port Blair	India	0458	A
4.760	ELWA Monrovia	Liberia	2038	K
4.765	R.Rural, Santarem	Brazil	0003	A
4.770	FRCN Kaduna	Nigeria	0430	A,D,E,K
4.783	RTM Bamako	Mali	1932	A,G,K
4.790	Azad Kashmir R.	Pakistan	1800	G
4.800	CPBS 2 Beijing	China	0018	A
4.800	LNBS Maseru	Lesotho	1936	K
4.820	R.Botswana, Gaberone	Botswana	1939	E,K
4.825	R.Cancao Nova	Brazil	0330	E
4.835	RTM Bamako	Mali	2132	A,G,J,K
4.845	RTM Kuala Lumpur	Malaysia	1748	G
4.845	ORTM Nouakchott	Mauritania	2035	A,F,G,K
4.850	R.Yaounde	Cameroon	0008	A
4.860	AIR Delhi	India	1852	G
4.865	R.Alvorada, Londrina	Brazil	0006	A
4.885	R.Clube do Para	Brazil	0413	A,E,K
4.885	R. Difusora Acreana	Brazil	0012	A
4.885	KBC East Sce Nairobi	Kenya	1840	A,G
4.890	RFI Paris	via Gabon	0435	E
4.890	R.Port Moresby	Pap.N. Guinea	1952	G
4.895	Pakistan BC	Pakistan	1858	G
4.905	Anhanguera	Brazil	0417	E
4.905	R.Nat.N'djamena	Chad	0503	A
4.910	AIR Jaipur	India	1730	D
4.915	R.Difusora, Macapa	Brazil	0438	E,K
4.915	GBC-1, Accra	Ghana	1946	A,F,G,K
4.915	KBC Cent Sce Nairobi	Kenya	1754	G,K
4.920	R.Quito, Quito	Ecuador	0531	K
4.920	AIR Chennai	India	0031	A
4.935	KBC Gen Sce Nairobi	Kenya	0506	A
4.945	R.Illimani, La Paz	Bolivia	0016	A
4.950	VOA via Sao Tome	Sao Tome	2030	F,G,H,K
4.960	VOA via Sao Tome	Sao Tome	0420	A,E,K
4.965	Christian Voice	Zambia	1842	A,G,K
4.975	R.Uganda, Kampala	Uganda	1949	G,K
4.980	Ecos del Torbes	Venezuela	0018	A
4.985	R.Brazil Central	Brazil	2252	K
5.010	R.Garoua	Cameroon	0515	A
5.010	AIR Thiru'puram	India	0021	A
5.020	La V du Sahel,Niamey	Niger	0518	A,K
5.025	R.Parakou	Benin	2153	A,K
5.025	R.Rebelde, Habana	Cuba	0534	K
5.025	R.Uganda, Kampala	Uganda	1846	G
5.050	Haixia 1,V of Strait	China	2139	K
5.050	R.Tanzania	Tanzania	1903	D,G,K
5.055	Faro del Caribe	Costa Rica	0527	K

DXers:-
(A) Robert Connolly, Kilkeel.
(B) Bernard Curtis, Stalbridge.
(C) Stan Evans, Herstmonceux.
(D) Bill Griffith, W.London.
(E) David Hall, Morpeth.
(F) Simon Hockenhull, E.Bristol.
(G) Fred Pallant, Storrington.
(H) Clare Pinder, while in Appleby.
(I) Peter Pollard, Rugby.
(J) Vic Prier, Colyton.
(K) Richard Reynolds, Guildford.
(L) Martin Venner, St. Austell.
(M) Thomas Williams, Truro.

18.910 (Fr, Eng to E/C.Africa 1600-2200?) 23422 at 1720 in Colyton, 45544 at 2045 in Northampton & 55334 at 2150 in Stalbridge.

Except during periods of high solar activity broadcasts from many areas have reached the UK in the **17MHz (16m)** band. Mentioned in the reports were the BBC via Oman **17.790** (Eng to S.Asia 0600-0800), rated 33443 at 0606 in Kilkeel; R.Australia via Shepparton **17.750** (Eng to Asia 0000-0500, 0600-1100) 34433 at 0607 in Wallsend & 43333 at 0835 in Truro; BBC via Seychelles **17.885** (Eng to E/S.Africa 0800-1400) 44434 at 0836 in Oxted; China National R, China **17.700** (Chin [CNR-2] to China 0000-1200) 43343 at 1130 in Morpeth; DW via Rwanda? **17.650** (Ger to Africa? 1100-?) 54444 at 1137 in Kirkby Stephen; R.Finland via Pori **17.670** (Eng to W.Eur, N.America 1230-1300) 44533 at 1240 in E.Bristol; BBC via Skelton & Woofferton, UK **17.640** (Eng to E/SE.Eur, M.East, E/S.Africa 0700-1500) 44444 at 1400 by **Gerald Guest** in Dudley; Swiss R.Int via **17.680** (Eng, Ger, Fr to Asia 1400-1600) 33332 at 1430 in Herstmonceux; RCI via Sackville? **17.720** (Eng to ? 1500-1600) 44434 at 1509 in Woodhall Spa.

Later, Vatican R, Italy **17.515** (Eng to Africa 1730-1800?) was rated 44444 at 1735 by **Tony Hall** in Freshwater Bay, IoW; R.Canada Int via Sackville **17.820** (Eng to Eur, Africa 1800-1900?) 44233 at 1800 in Appleby; BBC via Ascension Is **17.830** (Eng to W.Africa 0800-2100) 34323 at 1810 in Colyton; Channel Africa via Meyerton **17.870** (Eng to W.Africa 1800-1830) 44343 at 1820 in Northampton; Israel R, Jerusalem **17.545** (Eng to Eur, N.America 1900-1930) 32323 at 1900 by **Peter Pollard** in Rugby; R.Nederlands via Bonaire, Ned.Antilles **17.605** (Eng to C/W.Africa 1830-2025, Dut 2025-2125) 34243 at 1907 in Newry; HCJB Quito, Ecuador **17.660** (Eng to Eur 1900-2200) 44333 at 2000 in Morden; R.New Zealand Int **17.675** (Eng to Pacific areas 2100-0500) 33433 at 2126 in Guildford; HCJB via ? **17.660** (Eng to India) 55545 at 0010 in Stalbridge.

During some mornings R.New Zealand has reached the UK in the **15MHz (19m)** band. Their broadcast to Pacific areas on **15.120** (Eng 0500-0700) was rated 35444 at 0520 in Guildford. Later, their transmission to troops in

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

Listeners:-
(A) Robert Connolly, Kilkeel.
(B) Simon Hockenhull, E.Bristol.
(C) Sheila Hughes, Morden.
(D) Brian Keyte, Bookham.
(E) George Millmore, Wootton, IoW.
(F) Fred Wilmshurst, Northampton.

Local Radio Chart

Freq (kHz)	Station	ILR BBC	e.m.r.p (kW)	Listener
558	Spectrum, London	I	0.80	B,D,E,F
585	R.Solway	B	2.00	A
603	C.G,Litt'brne	I	0.10	C,D,E,F
630	R.Bedfordshire(3CR)	B	0.20	B,C,D,E,F
630	R.Cornwall	B	2.00	A,E
657	R.Clwyd	B	2.00	A,E,F
657	R.Cornwall	B	0.50	A,E
666	Cl.Gold 666, Exeter	I	0.34	A,B,D,E,F
666	R.York	B	0.80	A,D
729	BBC Essex	B	0.20	C,D,E,F
738	Hereford/Worcester	B	0.037	B,E,F
756	R.Cumbria	B	1.00	A
756	The Magic 756,Powys	I	0.63	A,D,E,F
765	BBC Essex	B	0.50	B,C,D,E,F
774	R.Kent	B	0.70	C,D,E,F
774	R.Leeds	B	0.50	A
774	Cl.Gold 774, Glos	I	0.14	B,E,F
792	Cl.Gold 792,Bedford	I	0.27	D,F
792	R.Foyle	B	1.00	A
801	R.Devon	B	2.00	B,D,E
828	Cl.Gold 828, Luton	I	0.20	D,F
828	Magic 828, Leeds	I	0.12	A
828	2CR Cl.G Bournem'th	I	0.27	E
837	R.Cumbria/Furness	B	1.50	A
837	Asian Netwk Leics	B	0.45	A,B,C,D,E,F
855	R.Devon	B	1.00	E
855	R.Lancashire	B	1.50	A
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	C,D,E,F
936	Brunel CG, W.Wilts	I	0.18	C,D,E,F
936	Fresh AM, Hawes	I	1.00	A,D
945	Cl.Gold GEM, Derby	I	0.20	A,D,F
945	Capital G, Bexhill	I	0.75	A,D,E
954	Cl.Gold 954,Torquay	I	0.32	D,E
954	Cl.Gold 954, H'ford	I	0.16	A,B,D,F
963	Asian Sd, E.Lancs	I	0.80	A
963	Liberty R, Hackney	I	1.00	D,E,F
972	Liberty R, Southall	I	1.00	A,B,D,E,F
990	R.Devon, E.Devon	B	1.00	A,B,D,E
990	Cl.G, Wolverhampton	I	0.09	D,F
999	C.Gold GEM Nott'ham	I	0.25	D,F
999	Magic 9-99 P'stn	I	0.80	A
999	R.Solent	B	1.00	D,E
1017	Cl.G,WABC,Shr'shire	I	0.70	A,D,F
1026	R.Cambridgeshire	B	0.50	C,D
1026	Downtown R, Belfast	I	1.70	A
1026	R.Jersey	B	1.00	A,B,E
1035	RTL C'try(Ritz)1035	I	1.00	D,E,F
1035	N.Sound 2, Aberdeen	I	0.78	A,D*
1116	R.Derby	B	1.20	A,D,F
1116	R.Guernsey	B	0.50	A,D,E
1116	Valley R, Ebbw Vale	I	0.50	B
1152	LBC 1152 AM	I	23.50	D,E,F
1152	Pic'ly 1152,Manch'r	I	1.50	A
1152	Cl.G, Birmingham	I	3.00	B,F
1161	R.Bedfordshire(3CR)	B	0.10	C,D,F
1161	Brunel Cl.G,Swindon	I	0.16	A,D
1161	Magic 1161, Goxhill	I	0.35	A
1161	Southern Counties R	B	1.00	C,D,E
1170	Magic 1170,Stockton	I	0.32	A
1170	Capital G,Portsm'th	I	0.50	A,D,E
1170	1170AM,High Wycombe	I	0.25	D,F
1242	Capital G,Maidstone	I	0.32	D,E
1251	C.G Amber,Bury StEd	I	0.76	D
1260	Brunel CG, Bristol	I	1.60	E
1260	Marcher G, Wrexham	I	0.64	A
1260	SabrasSnd,Leicester	I	0.29	D,F
1296	Radio XL,Birmingham	I	5.00	A,D,E,F
1305	Magic AM,Barnsley	I	0.15	A
1305	Premier via ?	I	0.50	D,E,F
1305	Touch AM, Newport	I	0.20	B,E
1323	Capital G,Southwick	I	0.50	D,E,F
1323	SomersetSnd,Bristol	B	0.63	A,B,D
1332	Premier, Battersea	I	1.00	D
1332	Cl.Gold 1332,Pt'bo	I	0.60	A,F
1332	Wiltshire Sound	B	0.30	D,E
1359	Breeze, Chelmsford	I	0.28	D
1359	Cl.Gold 1359, C'try	I	0.27	A,D,F
1359	R.Solent,Bournem'th	B	0.85	D,E
1368	R.Lincolnshire	B	2.00	F
1368	Southern Counties R	B	0.50	C,D,E
1368	Wiltshire Sound	B	0.10	E
1377	Asian Sd, Rochdale	I	0.10	A
1413	R.Gloucester via ?	B	?	F
1413	Premier via ?	I	0.50	D,E
1413	Fresh AM, Skipton	I	0.10	A
1431	Breeze,Southend	I	0.35	B*,D
1431	Cl.Gold, Reading	I	0.14	D,E,F
1449	R.Peterboro/Cambs	B	0.15	A,D,F
1458	R.Cumbria	B	0.50	A
1458	R.Devon	B	2.00	A,B,E
1458	Sunrise, London	I	50.00	D,E,F
1458	Asian Netwk Langley	B	5.00	F
1485	Cl.Gold, Newbury	I	1.00	B,D,F
1485	R.Merseyside	B	1.20	A,B*,E
1485	Southern Counties R	B	1.00	D,E
1503	R.Stoke-on-Trent	B	1.00	A,B*,C*,D,F
1521	Breeze, Reigate	I	0.64	D*,E,F
1530	R.Essex, Southend	B	0.15	D
1530	Cl.Gold W.Yorks	I	0.74	A
1530	Cl.Gold Worcester	I	0.52	D,E,F
1548	R.Bristol	B	5.00	E
1548	Capital G, London	I	97.50	D,E
1548	Magic1548,Liverpool	I	4.40	A
1557	R.Lancashire	B	0.25	A
1557	Cl.Gold B7,N.hant	I	0.76	D,F
1557	Capital G, So'ton	I	0.50	D,E
1566	CountySnd,Guildford	I	0.50	B*,C,D,E
1584	London Turkish R	I	0.20	D
1584	R.Nottingham	B	1.00	D,F
1584	R.Shropshire	B	0.50	A,D
1602	R.Kent	B	0.25	D,E,F

E.Timor on **15.175** (Eng 1100-1300) was 32322 at 1200 in Truro. During the evening they may be heard on **15.160** (Eng 1850-2100), rated 34232 at 2004 in Wallsend.

R.Australia may also be heard in the UK in this band. Two frequencies from Shepparton were noted in the reports: **15.240** (Eng to Pacific areas 0000-0900), rated 45534 at 0740 in Colyton & **15.415** (Eng to Asia 0100-0400, 0600-0900) 35433 at 0830 in E.Bristol.

Also mentioned in the reports were the BBC via Cyprus **15.575** (Eng to M.East, Iran, C.Asia 0500-0730), rated 43443 at 0555 in Kilkeel; BBC via Skelton, UK **15.485** (Eng to W/SW.Eur, N.Africa 0600-1800) 35553 at 0615 in Wallsend; R.France Int via Gabon **15.605** (Fr, Eng to Nigeria 0700-0800 Mon-Fri) 34333 at 0758 in Oxted; BBC via Rampisham, UK **15.565** (Eng to CIS & E/SE.Eur 0700-1700) 34333 at 0810 in Morden; Voice of Armenia, Yerevan **15.270** (Eng to Eur, M.East 0810-0830 Sun) 55544 at 0815 in Herstmonceux; BBC via Singapore **15.360** (Eng to E/SE.Asia, Australia. New Zealand, Pacific 0500-1030) 43333 at 0925 in Morpeth; Swiss R.Int via Julich, Germany **15.315** (Eng, Ger, Fr, It, Eng to Eur 1000-1230) 23233 at 1203 in St.Austell; WWCR , Nashville, USA **15.685** (Eng to N.America, Eur 1100?-2100) 34333 at 1455 in Woodhall Spa; LBC via Ekala, Sri Lanka **15.425** (Eng to Asia 1230?-1630?) 32222 at 1515 in Stalbridge; Africa No.1, Gabon **15.475** (Fr to W.Africa 1600-2100) 34333 at 1613 by **Fred Pallant** in Storrington.

Later, VOA via Philippines? **15.410** (Eng to Asia? 1700-?) was 25542 at 1910 in Cyprus; R.Canada Int via Sackville? **15.325** (Eng, Fr to Eur 2000-2200?) 45544 at 2035 in Northampton; R.Taipei Int via WYFR **15.600** (Eng to Eur 2200-2300) 33233 at 2200 in Appleby.

R.Havana Cuba broadcasts to Europe in the **13MHz (22m)** band. Their transmission on **13.750** (Eng 2030-2130) was rated 24222 at 2036 in Newry. Other occupants of this band include Radio Australia via Shepparton **13.605** (Eng to Pacific areas 0800-1200), noted as 22222 at 0800 in Colyton; R.Kuwait via Kabd **13.620** (Ar to Eur, N.America 0930-1605) 23332 at 1126 in Oxted; R.Austria Int via Moosbrunn **13.730** (Various to Eur, Africa) 34433 at 1330 in Dudley; VOA via Sao Tome **13.600** (Special Eng to Africa 1600-1700) 44344 at 1610 in Freshwater Bay, IoW; China R.Int via ? **13.790** (Eng to N.Africa, W.Asia 1900-2000) 44333 at 1900 in Appleby; VOA via ? **13.690** (Eng to Africa 1900?-2000) 33333 at 1900 in Rugby; DW via ? **13.790** (Eng to W.Africa 1900-1945) 44444 at 1931 in Kilkeel; R.Denmark via R.Norway Int **13.800** (Da to ? 1930-2000) 33333 at 1945 in Truro; Swiss R.Int via Sottens **13.770** (It, Ar, Eng, Ger, Fr to Near East, Africa 1830-2130) 33333 at 1948 in St.Austell; R.Nederlands via Flevo **13.700** (Eng to Africa 1830-2025) 35333 at 2009 in E.Bristol; Vietnam, Hanoi **13.740** (Eng, Fr to Eur 2030-2130, Sun) 44344 at 2035 in Stalbridge; R.Damascus, Syria **13.610** (Eng to Eur 2005-2105; Eng to America, Pacific 2105-2205) 54444 at 2105 in Northampton; WEWN Vandiver, USA **13.615** (Eng to N.America 2000?-0000) 54444 at 2300 in Morden.

During some mornings R.New Zealand has reached the UK in the **11MHz (25m)** band. Their transmission from Rangitaiki, N.Island is now on **11.675** (Eng 0700-1100). It was rated 42333 at 1001 in Truro. R.Australia's broadcasts to Asia have also been received here. Their transmission on **11.880** from Shepparton (Eng? 1230?-1330) was rated 33233 at 1305 in Stalbridge. Later, **11.660** from Shepparton (Eng 1430-1700) was 35543 at 1508 in Wallsend & 44434 1535 in Freshwater Bay, IoW.

Many broadcasts to other areas may be received in this band during the day. Some come from HCJB in Quito via ? **11.680** (Eng to Eur? 0600-0800), rated 54444 at 0705 in Morpeth; BBC via Woofferton, UK **12.095** (Eng to Eur, M.East 0600-2100) 54444 at 1209 in Kirkby Stephen; R.France Int. **11.610** (Eng to M.East, India 1400-1500) 23332 at 1400 in Dudley; R.Jordan via Al Karanah **11.690** (Eng to W.Eur, E.USA 1400-1730?) 43433 at 1405 in Herstmonceux; R.Nederlands via Flevo **11.655** (Eng to Africa 1730-2025) 43554 at 1830 in Colyton; R.Kuwait via Kabd **11.990** (Eng to Eur, N.America 1800-2100) 44444 at 1839 in Woodhall Spa; Israel R, Jerusalem **11.605** (Eng to Eur, N.America 1700-1730) 55555 at 1900 in Appleby; American Forces Network (AFN) via Sicily **10.942** (Eng [u.s.b.] 24hrs?) 54554 at 1900 by **Bill Griffith** in W.London; DW via ? **11.965** (Eng to Africa 1900-1945) 44444 at 1930 in Morden; V of Russia **11.675** (Eng [WS]) 33223 at 1910 in Rugby & 45544 at 2014 in Storrington; V of Mediterranean, Malta via Russia? **12.060** (Eng to Eur, N.Africa 1900-2000) 55444 at 1930 in E.Bristol; R.Damascus, Syria **12.085** (Ger, Fr, Eng to Eur 1900-2105) 24322 at 2009 in Newry; China R.Int via ? **11.790** (Eng to Eur 2100-2200) 44444 at 2100 in Dudley; R.Bulgaria, Sofia **11.900** (Eng to Eur 2100-2200) SIO 333 at 2153 by **Francis Hearne** in N.Bristol; R.Taipei Int via WYFR? **11.565** (Eng to Eur 2200-2300) 44554 at 2210 in Northampton; R.Anhanguera, Brazil **11.830** (Port 0900-0300) 54534 at 2243 in Guildford; BBC via Kranji, Singapore **11.955** (Eng to SE.Asia, E.Asia, Australia, New Zealand 2200-0000) 34433 at 2320 in Kilkeel; Swiss R.Int via Montsinery, Fr.Guiana

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

Listeners:-
(A) Martin Cowin, Kirkby Stephen.
(B) Simon Hockenhull, E.Bristol.
(C) Sheila Hughes, Morden.
(D) Brian Keyte, Gt.Bookham.
(E) George Millmore, Wootton IoW.
(F) Clare Pinder, while in Appleby.
(G) Harry Richards, Barton-on-Humber.
(H) Thomas Williams, Truro.
(I) Fred Wilmshurst, Northampton.

Medium Wave Chart

Freq (kHz)	Station	Country	Power (kW)	Listener
531	Ain Beida	Algeria	600/300	B*
531	RNE5 via ?	Spain	?	E
531	Beromunster	Switzerland	500	I*
540	Wavre	Belgium	150/50	B,C,E,I
540	Sidi Bennour	Morocco	600	B*
549	Thurnau (DLF)	Germany	200	E,I
567	Tullamore(RTE1)	Eire	500	B,D,E,I
576	Muhlacker(SDR)	Germany	500	I*
585	Paris(FIP)	France	8	E
585	Madrid(RNE1)	Spain	200	B*,I*
585	Dumfries(BBCScot)	UK	2	F
594	Frankfurt(HR)	Germany	1000/400	I*
594	Muge	Portugal	100	B*
603	Lyon	France	300	B,E
603	Newcastle(BBC)	UK	2	D
612	Athlone(RTE2)	Eire	100	B,C*,D,E
621	Wavre	Belgium	80	E,I
630	Tunis-Djedeida	Tunisia	600	B*
639	Praha(Liblice)	Czech	1500	I*
648	Orfordness(BBC)	UK	500	B,C*,D,E,I
657	Wrexham(BBCWales)	UK	2	B,D,I
666	MesskirchRohrd(SWF)	Germany	150	I*
675	R10 FM	Holland	120	B,E,I*
684	Sevilla(RNE1)	Spain	500	B*
693	Droitwich(BBC)	UK	150	C,I*
711	Rennes 1	France	300	B,E,I*
720	Lots Rd,Ldn(BBC4)	UK	0.5	C,D,E,I
729	Cork(RTE1)	Eire	10	B,E
729	RNE1 via ?	Spain	?	I*
738	Paris	France	4	E
747	Flevo(Hilv2)	Holland	400	B,C,E,I*
756	Braunschweig(DLF)	Germany	800/200	I
765	Sottens	Switzerland	500	I*
774	RNE1 via ?	Spain	?	I*
783	Leipzig(MDR)	Germany	100	B*
810	Westerglen(BBCScot)	UK	100	B*,D
846	Rome	Italy	1200	B*,C*
873	Frankfurt(AFN)	Germany	150	B*
882	Washford(BBCWales)	UK	100	D,E
891	Algiers	Algeria	600/300	B
891	Hulsberg	Netherlands	20	B*
900	Milan	Italy	600	B*
909	B'mans Pk(BBC5)	UK	140	E
918	Domzale	Slovenia	600/100	C*
918	Madrid(R Int)	Spain	20	C*
927	Wolvertem	Belgium	300	B,E
945	Toulouse	France	300	B*
963	Pori	Finland	600	B*
981	Alger	Algeria	600/300	B
990	Tywyn(BBC)	UK	1	D
1008	Flevo(Hilv-5)	Holland	400	E
1044	Dresden(MDR)	Germany	20	B
1053	Talk Sport via ?	UK	?	E
1062	Kalundborg	Denmark	250	B
1089	Talk Sport via ?	UK	?	E
1107	AFN via ?	Germany	10	B
1107	Talk Sport via ?	UK	?	E
1125	La Louviere	Belgium	20	E
1125	Deanovec	Croatia	100	B
1134	Zadar(Croatian R)	Croatia	600/1200	B
1179	Solvesborg	Sweden	600	A,B,C*,I*
1197	Munich(VOA)	Germany	300	I*
1197	Virgin via ?	UK	?	E,I
1206	Bordeaux	France	100	B
1215	Virgin via ?	UK	?	E,I
1215	Hull(V)	UK	0.3	G
1215	Moorside Ed(V)	UK	100	G
1233	Virgin via ?	UK	?	I
1242	Marseille	France	150	B*
1269	Neumunster(DLF)	Germany	600	B,I*
1278	Dublin/Cork(RTE2)	Eire	10	B,D,I
1296	Orfordness(BBC)	UK	500	D*
1314	Kvitsoy	Norway	1200	B,C*,E,I*
1323	W'brunn (V.Russia)	Germany	1000/150	I
1341	Lisnagarvey(BBC)	N.Ireland	100	D,I*
1368	Foxdale(Manx R)	Is of Man	20	C*
1377	Lille	France	300	B,E,I*
1386	Bolshakovo	Russia	2500	B,C*,I*
1404	Brest	France	20	B,E,I*
1422	Heusweiler(DLF)	Germany	1200/600	B*,I*
1440	Marnach(RTL)	Luxembourg	1200	E,I*
1449	Redmoss(BBC)	UK	2	B*
1476	Wien-Bisamberg	Austria	600	H*
1485	SER via ?	Spain	?	B
1494	Clermont-Ferrand	France	20	B,I*
1494	St.Petersburg	Russia	1200	B
1512	Wolvertem	Belgium	300	C*,E,I*
1521	Kosice(Cizatice)	Slovakia	600	I*
1530	Vatican R	Italy	150/450	B,I*
1539	Mainflingen(ERF)	Germany	350(700)	B,I*
1557	Nice	France	300	B
1575	Genova	Italy	50	B,I*
1575	SER via ?	Spain	5	I*
1584	Mostar	Bosnia	1	B*
1602	Vitoria(EI)	Spain	10	I*
1611	Vatican R	Italy	15	B,D,I*

11.905 (Fr, Ger, It, Eng to S.America 2200-0000) 44444 at 2346 in St.Austell.

In the **9MHz (31m)** band R.Havana Cuba **9.830** (Eng [u.s.b.] to Eur 0500-0600) was 32222 at 0500 in Appleby: WTJC Newport, USA **9.370** (Eng 24hrs) 54444 at 0530 in Morpeth & 43333 at 2325 in Morden; TWR Monte Carlo, Monaco **9.870** (Eng to Eur 0755-0920) 34333 at 0730 in Woodhall Spa; Christian Science BC via WSHB Cypress Creek, USA **9.860** (Sp, Eng to Eur 0800-1000) 54445 at 0820 in Stalbridge; R.Vilnius, Lithuania **9.710** (Eng to Eur 0930-1000) 45544 at 0946 in E.Bristol; R.Nederlands via Wertachtal **9.860** (Eng to Eur 1030-1225) 55555 at 1115 in Herstmonceux; R.Vlaanderen Int via Wavre, Belgium **9.925** (Eng to Eur 1130-1200) 34332 at 1134 in Oxted; BBC via Kranji, Singapore **9.740** (Eng to Australia, New Zealand, Pacific 1100-1600) 34443 at 1550 in Kilkeel.

Later, R.Pyongyang, Korea **9.335** (Sp to W.Eur, N.America 1800-1900) was 32433 [better on l.s.b.] at 1800 in Colyton; R.Nederlands via Flevoland **9.895** (Eng to Africa 1830-2025) 44444 at 1900 in Rugby; R.Bulgaria **9.400** (Eng to Eur 1900-2000) 44333 at 1930 in Truro; RAI Rome, Italy **9.750** (Eng to Eur 1935-1955) SIO 333 at 1936 in N.Bristol; R.Australia via Shepparton **9.500** (Eng to Asia? 2000-?) 34443 at 2000 in Storrington; R.Cairo, Egypt **9.990** (Eng to Eur 2115-2245) 54444 at 2135 in Freshwater Bay, IoW; R.Ext.Espana **9.595** (Eng to Eur 2100-2200, Sun) 44434 at 2140 in St.Austell; All India R. (AIR) via Bangalore **9.950** (Eng to Eur 2045-2230) 44544 at 2205 in Northampton; R.Nederlands via Bonaire, Ned.Antilles **9.845** (Eng to N.America 2330-0125) 34343 at 2334 in Newry.

Some of the broadcasts in the **7MHz (41m)** band are beamed to areas outside Europe but they have been received quite well in the UK. They include the BBC via Ascension Is **7.160** (Eng to W.Africa 0300-0700), rated 44444 at 0533 in Kilkeel; KTBN via Salt Lake City, USA **7.510** (Eng to N.America 0000-1600) 34333 at 0558 in Morpeth; Voice of Nigeria, Ikorodu **7.255** (Eng to W.Africa) 54544 at 0605 in Guildford; WJCR Upton, KY, USA **7.490** (Eng to N.America) 24432 at 1022 in Oxted; VOA via Botswana **7.415** (Eng to Africa 1800-2200) 33333 at 1825 in Rugby; R.Nederlands via Madagascar **7.120** (Eng to Africa 1730-2025) 42232 at 1830 in Colyton; World Harvest Radio (WHRI) via Maine, USA **7.580** (Eng to N.America) 34433 at 2210 in Northampton.

Also mentioned in the reports were a few intended for listeners in Europe. They came from R.Japan via Woofferton, UK **7.230** (Eng, Jap 0500-0700), rated 44544 at 0550 in Wallsend & 54445 at 0610 in Stalbridge; R.Minsk, Belarus **7.265** (Eng 1930?-2000?) 22222 at 1930 in Truro; AIR via Bangalore **7.410** (Hi, Eng 1745-2230) 44434 at 1842 in Woodhall Spa & 42333 at 2130 in Freshwater Bay, IoW; DW via Sines? **7.130** (Eng 2000-2045) 55555 at 2011 in St.Austell; R.Tirana, Albania **7.130** (Eng 2130-2200) 44333 at 2130 in Morden; Voice of Turkey **7.190** (Eng 2200-2300?) 44444 at 2200 in Newry.

Many of the broadcasts in the **6MHz (49m)** band are for European listeners. Those noted came from R.Japan via Skelton, UK **5.975** (Eng 0500-0600), rated 45554 at 0550 in Wallsend; R.Vlaanderen Int via Julich, Germany **5.985** (Eng 0700-0730) 44434 at 0714 in Oxted; Deutsch Welle (DW) via Julich? **6.140** (Eng Service) 55445 at 0845 in Stalbridge; R.Nederlands via Julich, Germany **6.045** (Eng 1030-1225) 44433 at 1125 in Herstmonceux; R.Polonia [Polish R] Warsaw **5.995** Eng 1700-1800) 43333 at 1705 in Morden; R.Prague, Czech Rep. **5.930** (Eng, Cz 1700-1758) 55454 at 1725 in Newry; Bayerischer Rundfunk, Germany **6.085** (Ger 24hrs) 34433 at 1843 in Colyton; R.Budapest, Hungary **6.025** (Eng 1900-1930) 43433 at 1902 in E.Bristol; R.Pyongyang, Korea **6.575** (Eng 1900-2000) 45544 at 1925 in Northampton; Swiss R.Int via Julich, Germany **6.110** (Ger, Fr, It, Eng 1730-1930) 43434 at 1930 in Rugby; Sri Lanka BC via Skelton, UK **6.010** (Eng 1900-2000 Sun) 44444 at 1935 in St.Austell; R.Sweden **6.065** (Eng 1930-1956) 54444 at 1944 in Kirkby Stephen; R.Canada Int via Skelton, UK **5.995** (Eng 2000-2100) 55555 at 2000 in Dudley; R.Ukraine Int **5.905** (Eng 2100-2200) 44344 at 2100 in Appleby; R.Japan via ? **6.055** (Eng 2100-2200) 22222 at 2105 in Truro; R.Sweden **6.065** (Eng 2130-2200) SIO 333 at 2139 in N.Bristol; WHRI South Bend, USA **5.745** (Eng to N.America 2100?-1000) 54444 at 0200 in Morpeth.

Also heard in this band were R.Corp of Singapore (RCS) **6.150** (Eng 2300-1100), rated 54534 at 2300 in Guildford; R.Nederlands via Bonaire, Ned.Antilles **6.165** (Eng to N.America 2330-0125) 44444 at 2350 in Kilkeel; R.Japan via Sackville, Canada **6.110** (Eng to C.America 0500-0600) 44444 at 0558 in Newry.

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 2001.

$ # *	Vera Brindley, Woodhall Spa: Roberts R867 or Sangean ATS-803A + r.w.
$	Alvin Challen, Ashtead, Surrey: Icom IC-746 or RCA AR88D + Carolina Windom or a.t.u. + 44m wire.
$ # *	Robert Connolly, Kilkeel: JRC NRD-525 + Timewave DSP9+ filter
+	Datong AD-370 or Sangean ATS-803A.
*	Martin Cowin, Kirkby Stephen: Roberts R881 + built-in whip.
$ # *	Bernard Curtis, Stalbridge: Realistic DX-400 + r.w. or rod or loop.
$ # *	David Edwardson, Wallsend: Trio R-600 + 22m long trap dipole.
$ # *	Stan Evans, Herstmonceux: Kenwood R-2000 + Balun + 11m wire in loft.
$ # *	Bill Griffith, W.London: JRC NRD-535 + Global AT-2000 a.t.u. 20m wire.
#	Bill Griffith (W.London), while in Barcelona: Sony ICF-SW55 + 5m wire.
$ # *	Gerald Guest, Dudley: Roberts RC-818 + r.w.
$ # *	David Hall, Morpeth: AOR AR7030 + Global AT-2000 + 13m wire.
$ # *	Tony Hall, Freshwater Bay, IoW: Yaesu FRG-7 + 13m wire or RF.B45
$ # *	Francis Hearne, N.Bristol: Sharp WQT370 + r.w.
$ # *	Simon Hockenhull, E.Bristol: Roberts R-617, R-876, ITT Colt or AKD HF-3 + 10m wire.
$	Simon Hockenhull, while in Coverack, Cornwall: Roberts R-617.
$ #	Robert Hughes, Liverpool: AOR AR7030 + 15m indoor wire or Drake R8E + RF Systems MTA on roof.
$ # *	Sheila Hughes, Morden: Sony ICF-7600DS + loop or Panasonic DR48 + 16m invert L.
$ # *	Rhoderick Illman, Oxted: Kenwood R-5000 + r.w. or AN-1, Sony ICF-7600DS.
*	Brian Keyte, Gt.Bookham: AOR AR7030 + loop or a.t.u. + r.w.
$	Brian Keyte, while in Messingham, N.Lincs: AOR AR7030 + loop.
$ # *	Eddie McKeown, Newry: Grundig Yacht Boy 400 or Sangean ATS-818.
$	Philip Miller Tate, Walton on Thames: Home-built advanced crystal set + r.w.
$ # *	George Millmore, Wootton, IoW: Racal RA-17L + v.l.f. converter + loop or Sangean ATS-803A + loop.
$ # *	Fred Pallant, Storrington: Trio R-2000 + Howes CTU8 a.t.u. + r.w.
$ # *	John Parry, Larnaca, Cyprus: Realistic DX-394 or Yaesu FT-767 or Realistic DX-400 + r.w.
$ # *	Clair Pinder, while in Appleby: JRC NRD-525 + Yaesu FRT-7700 a.t.u. + r.w or Sony ICF SW55.
$ # *	Peter Pollard, Rugby: Sony ICF-2001D + r.w.
$ # *	Vic Prier, Colyton: Redifon R551N + a.t.u. + r.w. or loop in loft.
$ # *	Richard Reynolds, Guildford: Sangean ATS-803A + a.t.u. + 10m 'T' antenna or 60m loaded dipole or 11m dipole (all in loft) or loop.
# *	Harry Richards, Barton-upon-Humber: Grundig Satellit 700 + AD-270 or r.w. or Grundig Yacht Boy 400 or Matsui MR4099.
#	Michael Stonebridge, St.Isidore, Alberta, Canada: Drake R-7 + 50m EWE antenna.
$ #	Ernie Strong, Ramsey (Cambs): AKD HF3 or Yaesu FRG-8800 + a.t.u. + 30m wire.
# *	Martin Venner, St.Austell: Yaesu FRG-7700 + FRT-7700 a.t.u + 30m wire; Realistic DX-394 or Sangean ATS-818 + Global AT-1000 + 30m wire.
$ # *	Thomas Williams, Truro: Gundig Yacht Boy 400 or Yacht Boy 206 or Sharp 5454 + r.w.
$ # *	Fred Wilmshurst, Northampton: Icom IC-R70 + Global AT-1000 + r.w. in loft.

Martin Peters, c/o *SWM* EDITORIAL OFFICES, ARROWSMITH COURT, STATION APPROACH, BROADSTONE, DORSET BH18 8PW
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Bandscan Europe

By the time you read this life will be back to normal. The battle for hearts and minds that had the nation in its grip amidst a frenzy of media hype, is but a fading memory. The result, of course, a foregone conclusion. How anyone thought an entry like that could ever win the Eurovision Song Contest, I'll never know.

Audience Research

First, two items of news from the BBC on the domestic front. Recently published figures from RAJAR (that's the people who carry out audience research) show that in the first quarter of 2001, for the first time ever, Radio 2 bagged more listeners than Radio 1 with 10.9 and 10.3 million respectively. 10.9 million is 14.4% of UK listeners. It seems that overhauling the schedules, along with a recent publicity drive, has paid dividends. And before you ask, yes, I listen from time to time and, yes, I am starting to feel old.

To counter this, those upstairs in the Department of 'Good Ideas' have decided to ditch the BBC 1 balloon as its on-screen ident. Less than four years after its introduction, station controller Lorraine Heggessay deems the balloon, floating over various parts of the UK, as 'irrelevant'. At a cost of 500,000 for the filming alone and initial resistance from the public, the craft has now become quite popular with viewers.

ONdigital is to be rebranded ITV Digital under new proposals laid out in a press release from joint owners Granada and Carlton TV. In parallel with the revamp, coverage will be improved with a significant increase in output power from many of the key transmitter sites serving urban areas. Fill in transmitters will assist in covering 70% of the UK within the next couple of months. Subscribers recently topped the one million mark.

As well as free-to-air and subscription channels, plans include the creation of **ITV.com** - a one-stop site integrating **itv.co.uk** - with Carlton and Granada's web presence. The opportunity to play online versions of Millionaire, celebrity chat rooms, audio and video streaming, E-mail, SMS messaging and a whole lot more, will, say its supporters, make it a UK top ten website.

New Home

Our old friend Radio Caroline has found a new home on board the *Astra 1G* craft at 19.2°E, 11.876GHz horizontal on a digital stream with a symbol rate of 27500 and an FEC of 3/4. Caroline are in negotiations for an outlet at 28.2°E as well as with the WorldSpace organisation.

Irish Broadcaster RTE has also just made the switch to digital. Catch them either on *Astra 2A* at 28.2°E on 12.344GHz, horizontal or on *Hotbird* 13°E on 12.597GHz vertical.

In Dublin two new local radio licences have been awarded. The first goes to music station Star FM whilst the area's a.m. licence was won by Solas AM - frequencies to be confirmed.

Transmissions Axed

BBC World Service announced that it plans to axe its English short wave transmissions to the United States, Canada and Australia on July 1st. A press statement, penned by Mike Gardner, Head of Media Relations at World Service, confirms the move, citing alternative methods of delivery as the way forward. The statement continues -

"Audiences in these particular regions have already voted with their dials by migrating to higher-quality f.m. broadcasts in their areas while the growth of online listening to World Service, particularly in America, is outstripping comparable Internet growth rates. In the US for example, over 200 public radio stations carry BBC programs in America, three times as many people listen to us on f.m. as on short wave and one and a half million users access online each month. In Australia, listening to short wave has dropped by two-thirds over the last eight years, as listeners migrate to f.m. rebroadcasts via ABC. We recognise that short wave will be the major way most of our audiences listen to our services for a considerable time to come and it would be wrong to portray this as a retreat from short wave broadcasting".

So there you have it. The beginning of the end? Maybe not quite yet, but as if to underline the point, Swiss Radio International have just announced intention to withdraw from broadcasting on short wave.

Station News

Radio Nederlands Media Network carries a report from Italy where it was announced that analogue TV is to be switched off on 31 December 2006. This is the earliest date yet set in Europe for switch off and the Italian government hope to overcome the public's resistance by subsidising the purchase of equipment suitable for digital reception.

Vatican Radio's high power transmitters have been subject to scrutiny by the locals, concerned that cases of Leukaemia in the area are connected with electromagnetic radiation from the Santa Maria di Galeria site near Rome. Law suits and public demonstrations have culminated in the radio station taking steps to reduce the possible risk - namely a halving in medium wave transmitter power whilst investigations are carried out.

In a similar vein, the 1593kHz facility at Holzkirchen, Germany, was closed down on April 8th amid fears of health risks to the local population. The transmitter, running around 150kW, carried Radio Free Europe and the Voice of America. These services are now being relayed via a leased medium wave outlet on 1188kHz from Marcali, Hungary.

Finally, following an absense of almost a year, Radio Yugoslavia's short wave service relaunced May 14th. English to Europe goes out between 1830 and 1900 and again between 2100 and 2130 on 6100kHz. Visit **www.radioyu.org** for the entire schedule.

Here in Europe spring is in the air and a young man's thoughts turn to antenna maintenance. Don't forget yours. Have a great summer.

Yaesu VR-5000 Communications Receiver

The latest base scanner to hit the streets. Does the VR-5000 hit the mark? Alan Gardener doesn't think so. Here are his findings...

Its not that often that manufacturers produce a new model of scanning receiver designed for base station operation. So when Yaesu, who are renowned for producing high quality amateur equipment, announced their new VR-5000, I'm sure I wasn't the only person who thought, I wouldn't mind trying one of those when they become available!

So whilst I was waiting for the Editor to obtain one for me, I spent my time re-reading the adverts to see just what I was letting myself in for. The specification is very impressive, frequency coverage from 100kHz to just under 2.6GHz, reception of l.s.b., u.s.b., c.w., a.m. (wide and narrow filtering), n.b.f.m. and w.b.f.m., tuning steps down to 20Hz, a second v.f.o. permitting simultaneous reception of two frequencies, big bright liquid crystal display with band-scope function, a large tuning knob and options for d.s.p. signal processing and audio recording, this was going to be fun.

Initial Impressions

The box arrived and I eagerly unpacked the receiver. The front panel looked great and had a real quality feel to it. The l.c.d. takes up most of the front panel with two sets of concentric knobs to the left for adjustment of the main volume, sub volume, squelch and audio tone, a headphone jack sits just below the knobs. The tuning knob occupies the bottom right of the panel with a small numerical keypad above it for direct frequency entry. There are more keys just to the right of the display and another set underneath, making a total of thirty push buttons on the front panel.

Turning the VR-5000 around I had my first surprise, the antenna socket was an SO-239 rather than the more usual BNC or N-type, not the sort of connector you would expect to find on a high quality v.h.f./u.h.f. receiver. Other connectors on the rear panel are, looking from left to right, the d.c. power connector, a phono socket providing a mute function, a pair of spring loaded terminals for a long wire short wave antenna, a small antenna switch, the main antenna connector, and then underneath a 3.5mm external speaker jack, a 3.5mm tape recorder jack, a phono socket providing an +8V supply, a phono providing a 10.7MHz i.f. output and finally a 9-way male D-type connector providing an RS-232 computer interface. To my mind the provision of a mute facility and the choice of SO-239 connector strongly indicated the Yaesu h.f. transceiver heritage, but I thought that the design and layout of the rear panel detracted from the good initial impression given by the styling at the front.

Powering up

Next I powered the receiver up to see what I could hear. My first problem was in finding an SO-239 adapter, which I eventually found at the bottom of my box of test leads. Pressing the power button kicked the display back-light into action which nearly blinded me! I don't think I have ever seen such a bright display, even with the dimmer control set to minimum, you may still need to wear sunglasses if you sit close to it.

Driving the VR-5000 is relatively straightforward and I was able to perform most of the basic functions before having to finally get around to reading the handbook.

"Pressing the power button kicked the display back-light into action which nearly blinded me!"

The range of memory functions is good, especially the ability to set-up hold, delay and resume times, which is very useful if you like monitoring lots of different sorts of communications, each of which

is likely to have its own particular style of operation, requiring a different time before the scan continues. I also liked the various methods available for editing banks and the ability to alphanumerically tag entries. The user interface is also good with all the buttons in the right places. However, I think that Yaesu could have made more use of the display and the row of buttons immediately below it to provide soft key functions. This is where the purpose of a button is indicated on the display, its function changing depending upon the current operating mode of the receiver. The only control which did seem a bit out of place was the very large mauve

PS button which is used to select a special range of quick access memories. It occupies a large area of the front panel and is the only control which has a back-light, to my mind it is far too prominent for the purpose it serves. One other feature, which I thought highlighted the receiver's heritage, was the pre-programmed memory bank of short wave broadcast stations. To my mind this nicely demonstrated the market area Yaesu were aiming at when they designed the VR-5000. Navigating my way around the other controls proved to be relatively straightforward, but once or twice I found that I managed to get into some strange mode of operation which wasn't documented in the user handbook, and which seemed to resist nearly all button presses to get me back to where I started from.

On The Air

Having familiarised myself with the basics it was time to connect an antenna, listen to some signals and try out the features. First of all a quick tune around the amateur bands. Type in 145MHz and press enter, the mode and step size initially being set automatically by the auto function and the pre-programmed band plan. Narrow band f.m. is selected with a step size of 20kHz to suit the American market. OK no problem, just press the step size key and change it to something more suitable like 25kHz. Hang on, you can't do it. You have got to press the mode key a few times first to manually select the correct mode, and then you can change the step size.

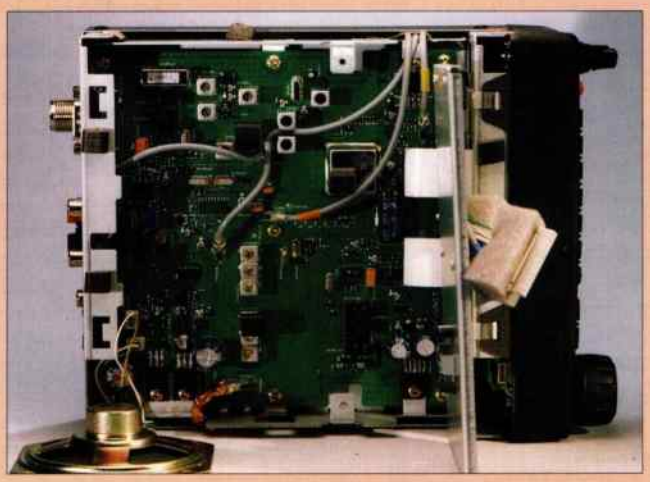
Next I tried tuning down to the lower end of the band and listening for some s.s.b. signals. I turned the squelch off and set the step size to 1kHz. Tuning the dial produced a very distinctive plop every 5kHz as one of the v.c.o.s glitches slightly when it resets to the other end of its tuning range. Change the mode to u.s.b. and the step size changes too, superb in theory, but actually its a bit of a pain because there are only a limited number of step sizes available in each mode and you can't change them.

So if you wish to listen to a.m. signals and tune in 6.25, 8.33 or 12.5kHz steps you can't. Not only that, but if you try to fool the selection by tuning in 12.5kHz steps in one mode and then switch to another it will round the frequency up to the nearest step size for the new mode. So you can't tune in 12.5kHz steps with a 6.25kHz offset for example, you have to tune in 6.25kHz steps. These problems indicate to me that the unit has been primarily designed for the American market and I consider it to be a serious shortcoming if you intend to use the unit in the UK, where many services still use a.m. or have offset frequencies.

Staying on 145MHz I next set the sub v.f.o. to track the tuning of the main v.f.o. but set it 600kHz lower in frequency so that I could simultaneously listen to signals on the input and output of amateur repeaters. This is a great feature and really comes into its own when stations are using duplex or split frequencies. Then the fun really started, tuning around the two metre amateur band I came across an a.m. aircraft signal. At first I thought I must have left the sub v.f.o. volume turned up, but no, it was on the main v.f.o. Tuning lower in frequency I could hear London Volmet South on 142.255MHz which was 13.65MHz higher in frequency than it should have been, the actual frequency being 128.6MHz.

So what is going on? A quick investigation with the signal generator revealed a consistent image 13.65MHz above the wanted signal frequency, which was present over most of the receiver's frequency range, but only about 30dB lower in level than

Compact and 'bijou'. The VR-5000 is 180x70x200mm in size.



"Tuning lower in frequency I could hear London Volmet South on 142.255MHz which was 13.65MHz higher in frequency than it should have been, the actual frequency being 128.6MHz."

the desired signal. I suspect the sub v.f.o. also suffered from this problem but with a slightly different frequency offset, due to the use of alternative i.f. and local oscillator frequencies, but I didn't have time to test it. This image response is a fairly major problem as it results in Band II f.m. broadcast stations appearing in the bottom half of the v.h.f. airband, v.h.f. airband signals in the 2m amateur band, 153MHz paging signals in the 166MHz p.m.r. band and 423MHz dolphin TETRA signals in the 70cm amateur band.

Performance

Whilst I had the signal generator connected I measured the receive sensitivity which was quite respectable at 450MHz giving 12dB SINAD for -120dBm signal level. However this reduced to -118dBm at 150MHz and -114dBm at 250MHz which is quite deaf by modern standards. By using the r.f. tune function I could improve this slightly, but I found that the sensitivity varied considerably throughout the frequency coverage, and so I didn't bother taking measurements for any of the other modes. The next test was to measure the intermodulation free dynamic range of the receiver, which I did with two signals spaced at various frequencies around 150MHz, this produced figures in the region of 50-60dB which is a typical figure for hand-held scanning receiver, but not really good enough for a base station which is likely to be connected to a roof top antenna and used in urban environments where lots of strong signals are likely to be present.

Leaving the rather disappointing measurements behind, I reconnected the antenna and played with some of the special features. I tried out the bandscope function, which is superb, it's the first time I've actually used one to find new signals, making it more than just a toy. The main receiver continues to operate whilst the bandscope is running but the sub receiver doesn't. I suspect this is because the sub receiver circuit is pressed into service to provide the bandscope function. The resolution is reasonably good providing you don't mind waiting for the display to update if a wide sweep range and small step size are selected together. The marker function is great, making it easy to find a signal once it is seen on the display, just turn the dial to see the marker move across the updated display and you are tuned in.

Chessboard

I liked a lot of the other features on the receiver as well, including the rather strange PMR board. This is a graphical matrix display which shows by means of a chess board type pattern the squelch state of up to 50 individual channels. The example Yaesu give is for monitoring the channel usage for remote control models, but I'm sure lots of other uses could also be found for the function. Another strange feature was the signal strength comparison mode, which allows you to compare current signal strength readings against a preset reference level. I'm not quite sure what this is intended to be used for, but at least it provides a reasonable resolution S meter display, rather than the rather limited five step bargraph which is normally present on the display in the dual v.f.o. mode. Unfortunately, the review model didn't have the optional recorder or d.s.p. modules fitted, so I was not able to test their performance. However I would imagine that both these options would be worth considering, if you were thinking of buying a VR-5000.

Summary

The Yaesu VR-5000 is a great looking receiver, with a useful range of features, especially the dual receive function, and a fairly intuitive user interface resulting from years of experience in producing high quality amateur radio equipment. However, I would consider the receive performance of the review model to be disappointing especially considering the price and competition in the target market. My thanks to **Yaesu (UK) Ltd, Unit 12, Sun Valley Business Park, Winnall Close, Winchester, Hampshire SO23 0LB. Tel: (01962) 866667. Web: www.yaesu.co.uk** for providing the review model. ***SWM***

Price: approx £700

Paul Bigwood *of Yaesu UK comments on Alan's findings...*

Thank you for giving us the opportunity to comment on the review of the VR-5000 receiver. We are disappointed that Alan Gardener was not impressed with the receiver.

We believe that the review has been written from the perspective of a v.h.f./u.h.f. monitoring/scanning enthusiast, whereas our target market for the receiver is the general short wave/world band listener to whom the major criticisms, like the linking of mode to agreed international channel spacing would not be significant, since short wave broadcasters adhere to international channel spacing standards.

Our internal view of the VR-5000 is that it is an h.f. receiver with v.h.f./u.h.f. capabilities rather than a v.h.f./u.h.f. scanning receiver with h.f. There is a difference! Features like the optional d.s.p. unit, tape recorder output socket, PL-259 antenna socket, mute facilities and the inclusion of the frequencies of the major short wave broadcasters with associated name tags pre-programmed into the memories testifies to this.

The VR-5000 is selling and performing well for many satisfied listeners around the world.

Best Regards

Paul Bigwood

Sales Manager, Yaesu UK Ltd.

HAYDON Communications

Mail order: 01708 862524 For main product lines see over

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2 YR G'EE

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2 YR G'EE

The short wave receiver for the true enthusiast.

- 0.03-60MHz (all mode)
- Synchronous AM detection
- PC control capability.

★★★★ *WRTH* gave it 4 star rating.

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Techtoyz micro counter.....£69.95

Opto Cub frequency counter £99.95

Opto Mini Scout 10MHz- 1.4GHz.....£139.00

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OPTO CD-100

SAVE £160.00

10MHz-16Hz multicounter. Unit combines an RF frequency counter and an off-the-air decoder in one unit. Decodes: CTCSS, DCS, LTR & DTMR on a 16 character LCD display. Also features "reaction tune" for AOR/Icom scanners. Was £369.95.

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Palm sized dedicated airband scanning receiver. Covers airband 108-136.975MHz VHF 136-180MHz with 99 memories (AM/FM). Was £69.95.

NOW ONLY

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Optional batteries + charger £16.99.

SECONDHAND SELECTION

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UBC-220XLT as new £89.95

Signal R-535 (VHF-UHF) airband.....£249.00

FRG-100 SW receiver as new.....£299.00

IC-R2 VGC.....£99.95

IC-R10 as new £229.00

AR8000 as new £199.00

ARD-2 ACARS decoder £199.95

MVT-7100 as new £149.00

MVT-3300 boxed as new £99.95

Looking Back

If you have a dashboard the size of HMS Invincible then this Pye Ranger would suit you perfectly.

For as long as there have been radio transmissions of any type, there have been people that listen in as a hobby. Dave Roberts travels back in time to earlier days of mobile radio.

When you first started monitoring v.h.f./u.h.f. comms, what sort of set did you have? Was it an old war time receiver like an old Hallicrafters S27 that covered up to about 145MHz? Did you have one of those proper scanners like the Bearcat that cost about a month's salary in the UK in those days? Was it an old Regency hand-held with slider controls for squelch and volume? Or did you have an SX200 or even better an SX400?

For as long as there have been radio transmissions of any type, there have been people that listen in as a hobby. From the lad who monitored the police on v.h.f. on his old 'tranny' in the 90MHz section of the broadcast band years ago to the man with the most expensive kit money could buy - there was always someone listening.

But what of the radios - the radios out there that were earning their living in use with the police, fire, ambulance and utilities. As time went on, the sets became more sophisticated, but they were still the basic analogue radio transmitter/receiver that we can all listen to.

Nowadays, digital signals have potential for driving the hobbyist out of the picture or rather the speaker grille. For the time being we are still able to monitor, but remember what it was like when analogue was king and radios...well radios were **big**.

The radiotelephone controller. Many people have spent hours of their lives looking at one of these on a desk. They have been used by Police, prisons, the military and practically everyone else. The metalwork was usually a tasteful pale green.

Early Days

There were a number of manufacturers supplying the UK in earlier days, but if you were sat in your fire engine or ambulance, say in 1961, you could well have been looking at the very imposing front of the dashmounted Pye Ranger. What a machine. Weighing in at a sturdy 10kg or 22lbs (that's pounds, OK - it's a British thing) it was listed as a dash mounted set.

Just think of the kind of dashboard you would require to hang a block that weighed as much as that and was nearly 240mm wide and over 130mm high. Not to mention the fact that your dash would have to be over 380mm deep just to fit the thing in. Not to fear, if you needed to have a two way radio in your vehicle and you didn't own a Foden Lorry or Dennis fire appliance and maybe you just owned a Morris Minor, then there was a boot mounted version of the same set just for you.

The dashmount

These radios were available for frequencies pretty much anywhere between 25 and 168MHz and were a.m. or f.m. sets. They came with transmit power of between four and six watts or a twenty watt model was available.

Running slightly more power were f.m. sets. These were valve transmitters, so if you used the radio without the engine running or you would have to push the Minor to get it started again! At the office end there would either be a base station set of the remote control unit to grace the

desk, perhaps next to the bakelite telephone and the Imperial typewriter.

Moving On

Moving on four years - radio equipment had become much more sophisticated. Of course the old Rangers and Pye Reporters were still up and running, but another generation of kit was now being installed in public service vehicles, motor fleets and even milk floats.

Other companies had started muscling in on the market, such as STC, who manufactured fine quality equipment with low and high band v.h.f. mobile sets being made. Their bootmounted sets were bought by several police forces and gave sterling service for many years. Does anyone remember them?

I have seen some STC sets in some local authority vehicles and they had remote control heads with either small oblong push buttons or a set of three rather strange levers. Channel and volume selectors were very robust indeed.

Murphy were also making an equivalent set of radios. Pye had also introduced the Cambridge mobile radio. Available in v.h.f. and u.h.f. versions and boot or dash mount options, this was the mainstay of many mobile operations for years.

I had a dashmounted version fitted in a Hillman Hunter. These sets were large items, yet the Cambridge was just lost on the shelf under the dash of the Hunter. Masses of radio space in cars those days. My car was fitted with a fibreglass whip antenna and looked somewhat obvious.

One afternoon I was driving on the outskirts of a small county town and was flagged down by a large fellow in a donkey jacket. It became obvious as I stopped that he was wonderfully drunk. He thought that I was a taxi. I let him in the back and charged him three quid for a trip to the Red Lion in the town. I didn't want to argue.

/essie'.

Pye 'Westminster' Front Mounted Radiotelephone

PYE 'CAMBRIDGE'

Transistor
Dash-Mounting
A.M. Radiotelephone
(Type AM 10 D)

The Pye AM 10 D is the AM dash-mounting version of the 'Cambridge' Transistor Mobile Radiotelephone. This outstanding equipment is specially made to fit under the vehicle dashboard and its modern styling harmonises with contemporary facia panels.

An outstanding feature common to the 'Cambridge' range of mobile radiotelephones is the all-transistor receiver which meets the stringent performance requirements previously possible only by using valves. Battery drain is negligible and allows the receiver to be switched on for long periods without discharging the vehicle battery.

The 'Cambridge' is available for single frequency or two-frequency simplex operation in the v.h.f. band from 25 – 174 Mc/s. It provides a choice of channel spacing by change of block filter and single or up to 6-channel operation. The equipment may be connected to the 12 volt d.c. supply of vehicles with either positive or negative earth systems. 'Cambridge' equipments are available for other supply voltages.

An electronic squelch is fitted as standard and the fist microphone and loudspeaker are specially designed to give clear and distinct speech particularly when vehicle noise is high.

This versatile equipment is supplied packaged in a shock tested container suitable for land, sea or air transportation together with a whip aerial specially designed for mobile use.

- Fully transistorised receiver.
- Receiver battery drain — 100mA.
- 7 watts R.F. output.
- Sealed I.F. block filters.
- Dust-proof and splash-proof.
- Electronic Squelch.
- 25 or 50 kc/s channelling by change of block filter.
- 1 to 6 channels as required.
- Printed circuit sub-assemblies.
- Designed to meet British, American and European specifications.

The Cambridge certainly fits under the dash of this motor which may be a Ford Classic.

Pye Bantam Portable V.H.F. Radiotelephone

TYPE HP 1 FM

The Pye **Bantam** portable v.h.f. equipment Type HP 1 FM is an all-transistor pocket size radiotelephone for operation in the v.h.f. band from 25–174 Mc/s. It meets the British Post Office specification No. W6346 for frequency modulated portable equipment.

With an r.f. output of approximately 1 watt, the Bantam can achieve reliable communication with a base station up to 15 miles distant or 2–3 miles between two Bantams, depending on terrain and frequency. A slight reduction in power output is to be expected at the higher frequencies. The built-in loudspeaker may be switched in or out of circuit as required. When the speaker is switched off the weatherproof hand microphone serves as a transmitter microphone and receiving earphone.

The Bantam is available for channel spacings of 25 or 30 kc/s and 40 or 60 kc/s. A fully noise-compensated squelch is included and up to three switch-selected channels may be provided in standard equipment.

The Bantam is very compact and weighs less than 4½ lb. with batteries. The set can be operated in the leather case shown or a splash-proof canvas case, both of which have shoulder straps.

The Bantam will operate from either standard torch cells or rechargeable batteries. It is normally supplied with a cassette for torch cells and the rechargeable nickel cadmium battery is available as an optional extra.

A constant current charger, type BC 1 is available and is recommended for use with the nickel cadmium storage battery. The charger operates from the a.c. supply and will charge up to three batteries simultaneously.

FEATURES

- Fully transistorised Transmitter and Receiver
- Very high performance Receiver
- Crystal Filter selectivity
- 1·0 watt Transmitter Output
- Operates from Rechargeable or Dry Batteries
- 250mW of audio power
- Provision for external antenna when longer range is required
- Weatherproof

TYPE MHP1FM

The Pye MHP 1 FM is the marine version of this equipment. It is type approved to the British Post Office specification TSC 79 but retains the features of the HP 1 FM.

Pye Bantam and carry case. A whole watt output! Securicor had loads of these.

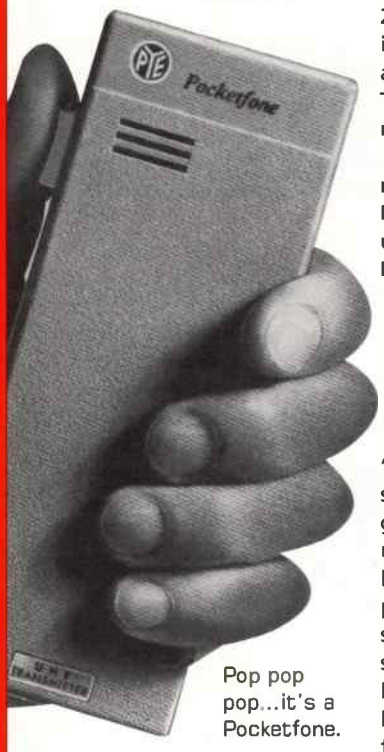
He was very big. He gave me a pound tip - most generous.

If you wanted more power output then the Vanguard would be your choice. At this time portable radios had been developed to the point where they were actually...well portable. The Pye Bantam was such a set - a.m. or f.m., these radios ran about 1W depending on type and could be single or multi channel sets. Very popular with Securicor as I remember.

Back at base - by this time your office would probably be graced with a teak finish Radio Telephone Controller. These things controlled the transmitters by land lines and I expect some are in use today - they were built to last.

Jolly Popping

Popopopopopopopop...sound familiar? Then you have used a Pye Pocketfone on u.h.f. These small sets came in two, yes two, parts. A separate transmitter and receiver. The receiver's speaker would make this jolly popping sound when no signal was being received. It was a battery economiser circuit which actually worked. The receiver's antenna was in fact the speaker grille. Clever stuff this.



Pop pop pop...it's a Pocketfone.

The only control was an on/off volume wheel. The transmitter had a power output of 150mW and the only control on this was the push to talk switch. So push the little white button, the antenna automatically pops out and just talk. It was that simple. Well, it was simple once you had removed the antenna from your eye or nostril as the little white button on the end of the antenna usually fell off within a month.

Transmitter and receiver were each about the same size at about just over 150 x 50 x 25mm and each unit weighed an easily portable 275g. These were little marvels of miniaturisation. A mate of mine who used to fix them blames working on them for the decline in his eyesight.

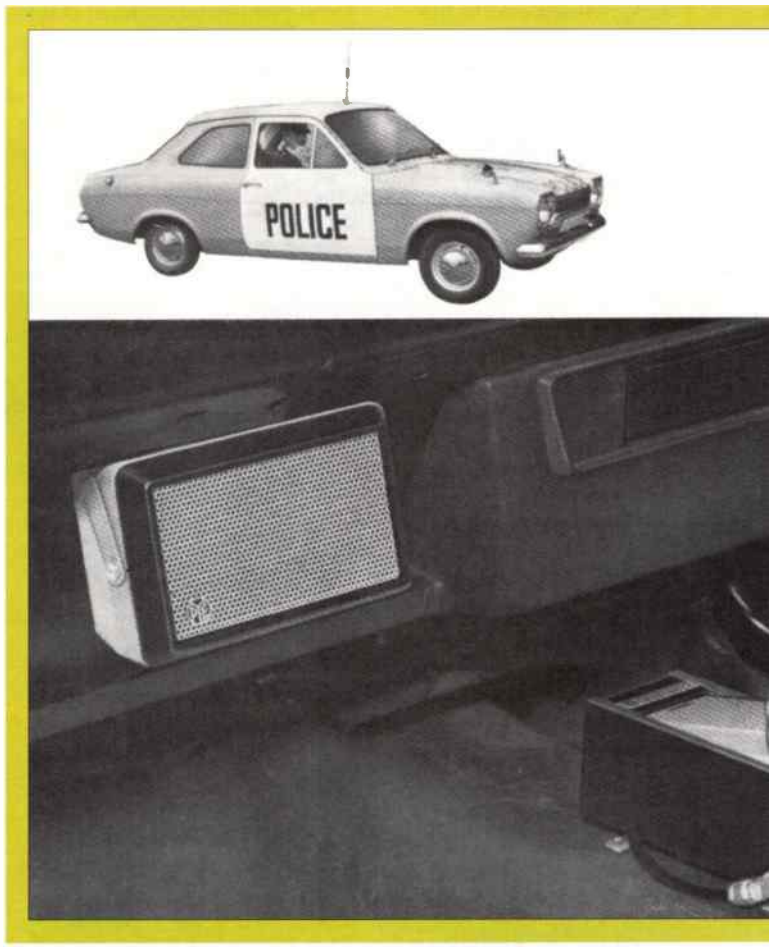
Accessories could be fun. There was a mobile adapter for the receiver. Largely made of wood this thingy could be mounted in a vehicle and the Pocketfone receiver slotted into it. The adapter included a battery charger for the NiCad battery in the set, an antenna mounted on the vehicle and a 2.5W audio amplifier. They said it was 2.5W, but I reckon it was a darn sight more than that. These units made a PF receiver really shout!

There were, of course, many Pye Pocketfone variants. Pocketfone 70 was a single unit u.h.f. transceiver as was the PF8, but PF9 was back to separate transmitter and receiver units.

More Sets

You may have even had a 'Starphone'. A u.h.f. hand-held set which were used by several government departments. I remember on one occasion having to deploy a complete portable Starphone base station and system. The base station was housed in a briefcase which had a built in battery supply or could run from the mains power. A small whip antenna would clip on the edge of the briefcase lid and could be used until a more efficient antenna could be installed.

Another identical case carried the battery charging unit for the Starphones which were being carried by the blokes. I plugged the whole lot in at the apartment that we were deployed to and had a small radio system, covering about three blocks, running in about three minutes.



At about this time, the Storno company were manufacturing the 'Viscount' bootmounted set and they got the contract to supply the Metropolitan Police with portable v.h.f. sets for the personal radio system. Cossor were making the Commander set too. If you opened up one of these radios and compared them to the workmanship and build quality of Pye gear, there was no contest. Pye won hands down.

Again into the realms of portability, at this time came the 'Mitre' radio by Rank Bush Murphy. These were adapted by agencies and police forces to provide covert portable communications. A very strange battery they had too. A long metal box containing the Nickel Cadmium cells. Crystal controlled in those days of course. No synthesisers then.

Westminster - mother of parliaments and arguably the most well known British mobile two way radio. Available in nearly every guise - v.h.f. (all bands), u.h.f., single channel, multi channel, boot mount, dash mount and motorcycle mounted versions. Low power and the 30W sets too. This set had so many variants and control options. Everyone used 'em.

Military (I have an old military set here), commercial users, utilities and businesses. The Westminster was a tough all transistor workhorse. The police used them in many versions. The u.h.f. talkthrough set was often seen at county fairs and special events in a little van acting as a temporary radio control and the basic u.h.f. 'Wessie' was hooked up via a special control box, to a Whitehall (yes another Pye set) and became a cross band repeater fitted in police and government vehicles, also providing u.h.f. talkthrough for units operating within range of the motor.

For more commercial markets sets like the Olympic and Europa were in production. By now the concept of telephones in the car was catching on amongst the nation's movers, shakers

Here's the mobile adapter, which is made of wood. Goes well with the Panda Car.

and plutocrats. Equipment was being made for this market and the first system was operated years ago through the base stations of the Automobile Association.

System 3

Eventually the GPO wanted a slice of this action and set up their own system. Operating in and around the major conurbations it became popular, but was by no means secure. Was it called System 3? System 3 had no dialler. You picked up the 'phone and were connected to a mobile operator, you stated what number you wanted and they put you through. Ooh!

Don't you cuss 'cos they'll cut you off. My mate spent more time disconnected than on air. This stuff operated in the 160MHz range. Then along came System 4. Still easily audible in 160MHz, System 4 meant self dialling from a keypad on the handset. Government and ministers official vehicles were fitted with this system. (By the way we are now in the eighties).

One such minister was the then Secretary of State for Trade, one Norman, later Lord, Tebbitt. One rainy night after a busy day at Westminster he was riding in the back of the white Rover 3500 SD1 (remember them - a wedge shaped thing) with his driver Ossie at the helm. Driving along the Embankment they both heard the sound of tyres sliding on a wet road, then a bang. Looking back it was obvious that a motocyclist had been hit by a van. Ossie moved the car to try and protect the biker and got on the car 'phone to call the police.

Lord Tebbitt went up to the injured rider to see what he could do to help. The injured man was lying in the road and it looked as though his leg was broken. He was in considerable pain. He looked up and saw Secretary of State Tebbitt. "You're Norman Tebbitt, aren't you?". "Yes" replied the Minister. "Well, just don't tell me to get back on my @%**! bike", said the casualty. Lord T told me that story a short time after it occurred. He thought it was wiser not to put that over the radio 'phone. Well he knew I had a scanner.

Philips.

More Sophisticated

By this time mobile radios were becoming more sophisticated with data being transmitted and trunking was introduced to promote frequency efficiency.

Burndept had got into the government contracts with their BE range. Some sets were made intrinsically safe for gas boards and the like. Most, as used by police and fire services, were the three channel BE470 hand-helds. On u.h.f. they were specifically designed for emergency services and looked rather strange with a speaker/mic right on the top.

Pye took over with the PFX and PF85 series hand-helds being marketed, by now, as Philips sets. The PFX had 99 channels and the PF85 had switched channels which were crystal controlled, unlike the PFX with it's synthesiser.

Expensive & Big

Then what...well then cellphones became popular, firstly very expensive to buy with portables very big to carry. All very audible though with 800 and 900MHz on air and the analogue system being used.

The f.m. analogue cell system was a scannist's dream. Always something on the bands to hear. Illicit drug dealers, Members of Parliament and those in the media spotlight were always being overheard. To their credit, the hobbyists who listened into this stuff rarely spoke of what they monitored. A few indiscreet conversations were reported publicly, but this was this exception rather than the rule. It was a good job that monitors didn't let on what they listened to otherwise the authorities would have been all over them like a rash.

It's pretty much the same these days. Except that there is not too much to hear with digital traffic becoming more prevalent. Look around next time you take walk down any High Street. Almost everyone has a 'phone jammed to their ear. It seems the whole of the UK is connected. Looking at a photograph of that old Pye Ranger is like looking into the distant past, but it was just thirty years ago. Has time gone by that quickly for you? ***SWM***

Rank 2.

Burndept.

Alinco DJ-X2000 Review

We've seen this case moulding before.

Dave Roberts finally gets his hands on the DJ-X2000 and puts it through its paces. Was he impressed? Read on and see.

You know how it is. Most of the communications manufacturers advertise an item of equipment for a few months and by doing so, they generate quite a lot of interest and speculation about the product. Then a retailer advertises the thing and offers to reserve a set on consideration of a deposit. Weeks later the radio becomes available to the punters.

Occasionally though, a set seems to just slide into the magazine pages without much hype. It seems that this is what has happened with the new hand-held mega-scanner from Alinco, the DJ-X2000. It sort of slipped into sales adverts.

And There's More

Looking very nearly the same as the DJ-X10 receiver and the DJG-5EY scanner/transceiver from the same stable, the DJ-X2000 (may I just call you the 'X2000? - thank you) is advertised as doing what the X10 does...plus more!

The 'X2000 comes in a well presented package which outlines the capabilities of the unit - 100kHz - 2150MHz reception without the 800 and 900MHz segments being blocked as they are on versions intended for the US market. So, what do you get for your money? 2000 memory channels with alphanumeric tagging, a help screen function, a frequency counter, digital recording of 160 seconds, instant frequency search, f.m. stereo reception, CTCSS decoder and tone scan and wide and narrow f.m. plus u.s.b., l.s.b. and c.w. modes.

The package also notes that the set has audio inversion descrambling and an attenuator. Amongst other things the obverse of the box also informs us of the 'X2000's "two mode bug detector".

If this isn't enough, we are also told that the radio has a transceiver function to send 'low power' transmissions to others. There is a frequency counter built in plus a host of other features that are usual on scanners these days.

On The Inside

Well that's enough looking at the outside of the package. Opening it up reveals a desk charger and 13A plug, belt clip and carry strap, battery, antenna and the set itself. Oh...and the handbook.

Boring old so and so that I am, I always check any mains plugs that are fitted to equipment. It is now mandatory for new mains powered equipment to have a 13A plug fitted. Let me tell you from a safety point of view it's always worth diving in the plug for a peek. I recently purchased an item of equipment that had a mains plug fitted. Fitted certainly, but this low current unit was fitted with a 13A fuse and the wiring was all over the place, earth wired to the negative post, etc. So like I said, I always check.

In the case of the 'X2000's charger plug, it was wired correctly and fitted with a 3A fuse. The Nickel Cadmium battery supplied with the unit is a 4.8V 700mAH unit.

I don't know about you, but when I get any new piece of gear the first thing that I always do is, well, just turn it on. The temptation is just too great to do otherwise. Take a hold of this radio and you can feel that it is a well made piece of gear. The power switch is a nice big orange button. Fortunately, there was some power in the battery pack which allowed me to have a largely unsuccessful attempt at driving the radio before it played a little tune and shut down, a subtle way of telling me that the battery was 'flat'. Time to try out that charger.

While the set was on charge and out of circulation I did what I should have done in the beginning. I opened up the manual and started by reading a full list of what the European version of the radio will do. Diving further into the manual would not prove too enlightening until the 'X2000's battery pack was up again.

The battery charger's l.e.d. changes from red (charging) to green (charged) when the battery is ready. From totally flat to charged took seventy seven minutes. On powering up the unit there is an audible notification and the display shows 'Alinco Intelligent Receiver'.

This message can be changed by the user, which is a useful feature in these days of high crime. It could be altered to read 'stolen from Dave Roberts' or whatever. The serial

number of this radio is T000516 and this could have been entered in case a thief removed the ID plate from the rear of the set.

Assuming that the set has no memories entered and it is turned on in the v.f.o. mode, then the settings of the 'X2000's two v.f.o.s can be read. Not surprisingly, the v.f.o.s are marked 'A' and 'B'. The v.f.o. being monitored is always shown at the top of the display with the second v.f.o. display shown just below and identified with a lower case letter 'a' or 'b'.

Pushing the v.f.o. button cycles from one v.f.o. to the other. Returning to the manual we are told that the 'X2000 has 2000 memories which can be loaded into 50 banks of 40 channels each. This should be enough for anyone. Each channel can be stored with a separate mode, frequency step, CTCSS and attenuator setting. In addition, all the channels can be tagged with an alpha numeric label.

Swift Operation

Have you ever been introduced to someone, say from Japan, and after having a conversation with him for a minute you realise that he doesn't quite speak English. I mean he can get by in the pub and in polite conversation, but when he tries to explain anything, he gets it about eighty five per cent right and confuses you with the other fifteen per cent of what he says.

Well, after having a couple more drinks in the bar, this guy went right back and started writing the book of words for the Alinco DJ-X2000. Trust me - you really need the manual for a radio of this complexity and the handbook points you well and truly in the right direction, but operation of the set could be more simply and concisely explained than it is.

The best thing to do is to dive into the book and try things out with radio in hand. After a while you will suddenly realise just how the logic of this radio is arranged. Then, all of a sudden, like riding a bike for the first time, you'll know what to do and operation will become instinctive. Once I was used to it, operation was really swift.

I loaded up some local frequencies of interest and tagged them with labels. I could spend a lot of time, and ink, writing about the memory management capability of this set, and about how you can move memories channels around, assign priority channels, link banks together and all sorts of other fancy stuff, but space is limited. You can only specify up to 200 of the 2000 memories for scanning at any one time and it is possible to inadvertently enter the same frequency into more than one memory as no warning of this occurrence is given.

In practical terms, 200 channels are about as many as you can realistically scan without losing out on action on other frequencies anyhow. I do find that to have warning that a frequency has already been entered is of great use to me, but I keep forgetting this is a pretty small hand-held set.

Comparing The Signal

I then set about comparing the signal on designated channels with the quality received on a number of different receivers here. I ensured that the playing field was even by hooking up several sets in turn to the same antenna.

Firstly for v.h.f. and u.h.f. bands the 'X2000 consistently performed better than other modern receivers here when hooked up to the same antenna. The signal received was stronger and audio clarity was excellent, thanks partly to audio tone being switchable to either high or low. These tests were on 'bread and butter' frequencies at v.h.f. and u.h.f. There are some internally generated signals present, but these can be locked out of the scan.

Time to try the 'X2000 out on other bands. Tuning the radio to lower frequencies is not a great success if you only use the supplied 'rubber ducky' antenna. The only stations audible were powerful broadcast stations and these were only audible at night. But plug the 'X2000 into a wire antenna and it's a very different story.

I tried it with two different antennas. The first was a (not very) long wire of about 35m and the other a full size G5RV. In both instances reception was really very good indeed with the dipole bringing in less noise.

Then I changed the setting from a.m. to the l.s.b. mode and trolled around the 40m amateur band. Attenuator set to high and sure enough I was copying as many amateur stations on the 'X2000 as I could when I switched in the FT-920 transceiver. Of course the selectivity of the little Alinco is nowhere near that of the FT-920, but on all amateur bands I could easily copy amateur traffic. Many s.s.b. utility stations also boomed in on the 'X2000.

I then tuned up to 29.620 on f.m. As the Boston repeater W1OJ was a strong signal, activating most of the 9-meter bars on the display, I searched further up the band and found the usual crop of Russian and US signals with fire and police department traffic from the east coast of the USA rattling in. By this time I was alternating between a roof mounted collinear antenna and the G5RV antenna in the top field.

Moving on up through the 'X2000's frequency range I found some signals at the higher end of 1500MHz were also easily copied. In short, the receiver seems a most competent unit.

Unusual Abilities

Now to more unusual abilities of the radio. Firstly, do not believe all you read on the box. It seems that for the European market there is **no** transmit capability on this radio. It seems that the transmit capability available in the US is on a u.h.f. frequency. I reckon that this could be on the Family Radio

Lots of work for your thumb.

DJ-X2000 Review

Service band, which is the US equivalent of PMR446. It is not available for use in Europe, so the 'X2000 does not transmit as supplied here.

I did have occasion to try out the audio 'descrambler' which sorts out inverted audio. It does work, that's all I can say. I tried it out on a PMR446 frequency and it decoded the audio just fine. Bear in mind this gadget will not descramble anything other than simple inverted audio. Don't think for a second that you are going to buy one of these and hear scrambled police transmissions, or the like, in the clear. You will not decode anything other than n.b.f.m. signals that are scrambled in a fairly simple way.

Make no mistake this function worked just fine on the unit I had on test, but be aware of its limitations. Among other features that are listed in the handbook is a field strength meter with an audio warning function which beeps happily in the proximity of a transmission. There is also a function which, according to the bumpf, detects the presence of a radio bug.

Don't get yourself a job conducting security sweeps as a result of buying this radio. The bug detector does not work. It's as effective as a chocolate teapot and is not worth mentioning again.

Useful & Effective

Just forget that function and move on to one that does work, like the flash tune and frequency counter. Most useful. After being eyed suspiciously by taxi drivers in the nearest village some 40km away, I can tell you that for the flash tune to work you must be within 4-5m from your chosen Vauxhall Vectra cab and that the radio tunes perfectly and produces clear audio from the speaker if you have it set to do so. This is one useful function and it is very effective indeed. No more separate units hooked up to your scanning radio. Now it's all in one box.

Another interesting item that the 'X2000 has is the recording function. This set will record 160 seconds of audio 'off air' or the same timespan via the internal microphone. When the recording is set to take place off air, then the screen shows the legend 'RECORDING' and nothing else. The scanning function seemed to stop and therefore it seems that the record function only operates in conjunction with one selected frequency.

The other difficulty with off air recording is that once set, the recording starts when the squelch is broken, but it doesn't stop recording when the receiver is quietened by the squelch. Therefore you set the single frequency and then the record function. Then, should a short burst of noise start the recorder running, it won't stop recording until the 160 seconds recording time is up, unless you stop the recording manually.

On many occasions I found that I had recorded one transmission followed by 150 seconds of silence. The microphone operated record function worked well, but again only one session of up to 160 seconds can be saved.

The DJ-X2000 features a 'Help' facility which could get you by and point you in the right operational direction if you had left the manual at home by mistake. The functions are simply listed on the display. There is also a 'sound pickup' option. To enable this, plug in an earphone, press a few buttons and the internal microphone will pick up sounds and the amplified audio is fed out through the earphone. I listened to my tum rumbling before tea and heard a distant starling struggling with a dirty worm. Other than that I couldn't find a use for it.

Par for the course.

Finally there's a language option which allows you to choose the lingo in which the display operates. I reckon that the English section was written by the same guy that wrote the manual!

When fully charged the battery pack will run the set for about five and a half hours before flattening, so for serious use, an extra NiCad pack should be considered as should a carry case which is not supplied despite a current price tag of nearly £500! If you can afford a pair of them, you can clone all the settings from one to the other. I could find no reference to programming the set from a computer, apart from the fact that it says it can be done on the box the set came in.

"This is no doubt a fine receiver for its size. It performs well on all of its bands"...

A Fine Receiver

This is no doubt a fine receiver for it's size. It performs well on all of its bands. The flash tune and frequency count functions are effective and really useful. Memory management is exceptionally comprehensive and you can play with the other functions when there's a thunderstorm raging, but otherwise you may as well leave them alone.

The only real difficulty I experienced was occasionally if I made an error while punching the buttons the screen would display a mass of Japanese characters and then lock up. No controls would then work and the only way to reset the 'X2000 was to remove the battery pack. On reconnecting the supply, the set became most well behaved again and let me carry on from where I left off.

The Alinco DJ-X2000 is available from **Nevada** at **Unit 1, Fitzherbert Spur, Farlington, Portsmouth, Hants PO6 1TT, Tel: 023 9231 3095, FAX: 023 9231 3091, E-mail: info@nevada.co.uk** who kindly loaned me this set for review. Honestly chaps, I have looked after it..! ***SWM***

Police National Computer

Midway through 1974 the massive Police National Computer was installed in a specially built facility at Hendon, near London, adjacent to the Metropolitan Police Training School and the first of the indices were ready to go on-line. Dave Roberts explains all.

Do you ever watch that TV programme called *Heartbeat* on a Sunday? Cosy coppers in a pretty Yorkshire setting. You never see them check with New Scotland Yard on the telephone to see whether a car is stolen. The reason behind this is that the programme only lasts an hour.

In the sixties, if the police wanted to check outside their own police area to see whether a motor was pinched, they had to make a 'phone call to London. The call would be answered after about a hundred rings by a harassed male voice. The poor chap would dispense with the niceties of conversation and would normally start the conversation by shouting, "What?".

National Card System

You see in those days there was a national card system for stolen vehicles in England and Wales. The cards were indexed by registration number. New cards were added if a vehicle was reported stolen and they could then be checked by an army of clerks. If a car was recovered, they would be notified and the card would be removed.

Then, if the police wanted to find out who owned a car, they would 'phone the Motor Tax office for the area where it had been taxed, this was shown on the Vehicle Excise Licence. If the tax disc had not been seen, then the registration number would give the area of initial taxation and then that office would be called.

Imagine the time taken if a vehicle's owner had to be identified at night. In that scenario, the local police would have to unlock the local Motor Tax Office and go into the files themselves. This whole business was, to say the least, time consuming. If you had been listening on a radio receiver to a police channel at that time, you may have heard an officer asking for a stolen vehicle check. The reply to the query would have taken about 20 minutes to get back down the radio to him. It was therefore decided by the Government of the day that something should be done.

Central Database

They decided that there should be a National Police Computer, a central database of stolen vehicles, that could be accessed by those new fangled computer terminals from police forces' headquarters. Hang on though, Britain doesn't have a national police force. So it was decided that the system would be known as the Police ' National Computer. A much less politically controversial name!

Midway through 1974 the massive computer had been installed in a specially built facility at Hendon, near London, adjacent to the Metropolitan Police Training School and the first of the indices were ready to go on-line. Therefore, in 1974, the stolen vehicle index was made available to the police.

Stolen vehicle details were notified to the varying police headquarters by telephone and teleprinter (yes teleprinter - this is nearly thirty years ago), the details would then be entered into the PNC database from terminals at that location. All of a sudden officers found that they had stolen vehicle information at the end of the radio and checks on vehicles increased massively. So did the recovery rate of those stolen.

The development of the

CONTINUED ON PAGE 34

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* Size 65 x 159 x 40mm
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WR-5001 £99.95 **WR-5002 £159.95**

£99.95 Plus £6.00 Carr.

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Yaesu's exciting new scanner.
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The FRG-100 has stood the test of time. It offers full coverage of the short wave bands plus long wave and medium wave. It features, * USB, LSB, AM, CW, * 50 memories * 2 stage attenuator * Noise Blanker * Band Scanning * Memory Scanning * Dual Speed AGC * High and low impedance antenna inputs * Programmable steps from 10Hz - 1kHz * Optional Narrow Filters, PSU and FM board * BFO reverse for CW * Twin Clocks. Ask for leaflet.

0kHz - 32MHz AOR-7030 RECEIVER

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WS-DESKTOP

The answer to those who want to improve the scanner performance using an indoor antenna. Covers 25 - 1300MHz and includes coax cable terminated with BNC plug. **£49.95** Plus £6.00 Carr.

WS-MOBILE ANTENNA

Just 0.9m high with magnetic base and 4m cable terminated with BNC plug. Covers 25 - 1300MHz and is the ideal choice for scanner users. **£24.95** Plus £6.00 Carr.

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UBC - 220XLT HANDHELD SCANNER

Ideal for general listening, this scanner covers all the major bands from 66MHz - 956MHz AM and FM. 200 memories and a very fast scanning speed make this a very attractive buy. You also get the flexible short antenna, AC charger and batteries. Very popular with Airband listeners.

£119 Plus £6.00 Carr.

YUPITERU MVT-7100EX

100kHz - 1.656Hz

Probably the best value for money, it has stood the test of time and is very sensitive. Offers USB, LSB, CW, AM, FM, WFM, * 1,000 memories * 500 Pass channels * 12 Tuning steps * Fast scan speed * Rechargeable batteries, AC charger and telescopic antenna.

Phone Plus £6.00 Carr.

SWL OX-1 HF Ant.

Covers 1.5 - 30Mhz and is 50m long. With 10m feeder wire back to receiver. An ideal general purpose antenna. **£25.95** Plus £6.00 Carr.

UBC - 120XLT HANDHELD SCANNER

The Uniden UBC120XLT Handheld Scanner is ideal for the listener who does not want to have the expense of one of the more complex scanners. It covers with some gaps from 66 to 512MHz, AM and NFM preselected for the band in use.

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WATSON CAPTURE THAT FREQUENCY!

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Hunts down Frequencies

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AOR-8200 SERIES 2

500KHZ - 2040MHZ

This wide range scanner is fitted with a data port for computer control. Features include USB. LSB, CW, FM, WFM * Programmable steps * 1000 memories in 20 banks * Alphanumeric display * Built-in AM antenna * 8.33kHz steps for air band * Rechargeable ni-cads, AC charger and helical antenna.

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IC-R10E

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USB, LSB, CW, AM, FM, WFM * 1,000 Memories * Bandscope * Noise Blanker * Wide range of tuning steps * alphanumeric Display * Real Time Band Scope * Voice scan feature * Data output port * Programmable scanning * Ni-cad pack, AC charger and helical antenna.

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This lovely little scanner from Yaesu offers superb performance.

* 100kHz - 1300MHz
* 1000 Memories
* 100 Skip channels 10 Search bands
* 8 Character alphanumeric display
* Band scope Priority monitoring
* PC programmable
* Smart search feature
* Alpha numeric recall
* Size 58 x 95 x 24mm 220g

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* Size 55 x 145 x 36mm
* Weight 200g approx

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* Memory load store
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* Size 280x200x70mm
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EURO-8000 80Ch UK/CEPT

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* 80 UK/CEPT channels
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* Weight 310g
* Accessories Supplied: Telescopic antenna, Belt clip, Carry Strap

£249

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* 100kHz -1650MHz Displayed
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* 1,000 Memories
* 500 PASS Channels
* 12 Steps
* Scan speed 30 Ch per sec.
* Sensitivity AM 0.5 µV 10dB S/N
* Current 140mA
* Current (standby) 100mA
* Save Mode <10mA
* Size 64 x 155 x 39mm
* Weight 320g
* Accessories Supplied: 4xAA Ni-Cads, AC charger, 12V DC cigar lead, Telescopic antenna, Earpiece , Belt clip, Carry Strap

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MVT-9000MKII

* 0.5310-2039MHz Guaranteed
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* 18 Frequency steps
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* 1,000 memories (20 banks)
* 500 Search Pass memories
* 20 memory bands
* 10 Priority channels
* 30 Ch/sec. scan speed
* 30 steps/sec. search speed
* Voice scrambled decoder
* 100mW Audio (4.8V 8 ohms)
* 220mA at max. output
* 140mA at standby
* Size 66 x 155 x 40mm
* Accessories Supplied: Helical antenna, Hand strap, Earphone 4xAA Ni-Cads, 12V DC cigar lead, AC adaptor/charger, Belt clip, Owners Manual

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Police National Computer

CONTINUED FROM PAGE 29

system was at that time partly the responsibility of the Police Scientific Development Branch, which was then the organisation that made science and technology available to the force. The intention was always that other files would be made available to the police via PNC as soon as possible. High on their list of priorities was to get information from force to force as quickly as possible. The existing message transfer system within the police was via telephone, with 'phone messages later confirmed by telex.

Imagine if the cops were after a wanted person in a vehicle who was likely to travel north to hide up with friends or relations, or a person who was likely to leave the country. Under those circumstances, a telex would be typed and the tape would have to be sent and resent to all the police forces that the offender was likely to travel through or visit, or to forces that had air or sea ports where our wanted bod could leave the UK. Again time consuming.

Broadcast Facility

A priority for planners at the PNC was accordingly a broadcast facility that would enable a message to be typed and sent to pre-programmed police destinations at the press of a 'send' key on the terminal. Thus the broadcast facility came on-line in 1975 with pre-programmed destination addresses for all forces and with group addresses for forces, for example on the M1 motorway, or for all forces that had air or seaports that dealt with traffic to specific locations, e.g. Ireland. Now one message can be sent to all forces, individual forces, police force groups or pre-specified groups.

Then the boffins turned to fingerprints and in 1976 the fingerprint index was operational. This doesn't mean that fingerprints are actually held on computer. Fingerprints are entered onto the computer as a set of codes corresponding to identifying features of each print. Therefore people arrested and fingerprinted have a set of codes, which identify their dabs, entered onto PNC and fingerprints recovered at the scenes of crimes can be loaded and the PNC can search for matching sets which are then examined visually by fingerprint specialists who may then identify a single set and therefore the offender. Now called the National Fingerprints Identification Service this system is also sometimes useful in identifying human remains and folks who suffer serious amnesia.

Vehicle Check

In the same year, the vehicle owners index was enabled. This allows a vehicle check to be done simultaneously on the stolen/suspect vehicle index and the record of who owns it. Provided with information from DVLC at Swansea, the index includes make, model and colour of vehicle, year and month of first registration, engine and frame/chassis number, an indication as to whether it has ever been written off, whether it is currently taxed and if it has been involved in a registration number change.

In July 2001 the database of all individually insured vehicles will be added so that a check will automatically include whether a vehicle is currently insured, an identical check for MOT test will be included thereafter. Oh and it also has the name and address of the current keeper and how long it has been owned by that person or organisation.

Nowadays searching on the computer can also be made by inputting the engine or frame/chassis number, particularly handy when a car has no number plates, is on false plates or has been burned out. Additionally, a search is now available which allows the database to be interrogated on partial vehicle details.

For instance, a part registration number, colour, make and vehicle body type (e.g. saloon, estate, lorry, etc.) can be entered and a list of matching hits is displayed. This is called VODS, the Vehicle On-line Descriptive Search, got it? Generally this search would be restricted by post code to limit the number of results.

Criminal Names Index

Not content with all this and not resting on their laurels, the people at PNC then added the criminal names index, followed in 1978 by the wanted/missing file. History gives all her clients a number.

Anyone arrested and charged with a criminal offence has their full details taken including full names, aliases, date and place of birth and a full descriptive form is filled in which includes full details of how the offence was committed. They are also fingerprinted and photographed. Should they not be convicted of the offence, then the fingerprints and photographs are destroyed and a non conviction result added to the file if the person already

has convictions. If they don't, then the file is erased.

Checks are done on a format called. N.A.S.C.H. Name (surname first, then forenames, Age (date of birth), Sex (not how often but which one - there should be only two although the letter U can be entered for those whose sex can't be determined without getting too close), Colour (of skin) and Height. Warning signals flash on the PNC terminal when a person is likely to be violent to police, uses drugs illegally, carries weapons or firearms or has an infectious disease.

There are other warnings which can be added to the file as well. It obviously gives details of whether a person is wanted or is reported missing. As part of the names application the details of all disqualified drivers were added to the database in 1980. This record, which is searched as a part of a general names enquiry, includes the date and court of disqualification and date of the expiry of the disqualification. Details of disqualified drivers are put on PNC as notified by the courts in the differing areas on the day of disqualification and later are verified by DVLC.

A name check on the PNC will check the disqualified drivers index, wanted/missing and criminal names indices in one go if required. Since 1985 the details of a criminal's convictions are also held on the computer. Since 1995 there has been a massive enhancement to the names index with the advent of the PHOENIX database.

PHOENIX enables detailed information on criminals to be entered onto the PNC. A detailed description is inputted, including marks, scars and tattoos, personal characteristics and even shoe size. Known addresses and associates and places frequented, any occupation or skills and membership of any organisation. Additionally, a full *Modus Operandi* ('MO', i.e. how our criminal committed his offences) can be entered and this is most relevant when

it comes to searching for people who have committed crimes.

This is all possible by using the QUEST facility which has been in use for the last couple of years. Basically QUEST allows the details held on PHOENIX to be reverse searched. So, if the police have an offender known as Kev, who frequents the Poole area and is bearded and rides a motorcycle and steals Land Rovers, then all these details will be entered and a list of matching criminals will be displayed. *(Hang on a minute, this chap sounds kind of familiar!* ***- Ed.****).*

Comparative Case Analysis

There's still more because in 1983 Crime Pattern Analysis was added to the system. Now known as Comparative Case Analysis, it enables police forces to enter details of serious unsolved crimes so that they can be looked at, compared and details retrieved by other areas. CCA allows patterns of serious crimes to be recognised across regional and national boundaries. It cuts down on paperwork, makes it much easier for police in different areas to operate in concert to detect serious crime.

For instance, it was used to link 18 murders, rapes and abductions which had occurred during a five year period in Devon, Kent, Norfolk and Cheshire. An offender, who had originally committed crime in North Wales, was charged with some of these offences and he has received six life sentences in all. So it does work!

The Cameras

Details of stolen firearms and stolen marine craft are also held on the computer, but one of the most innovative developments has been Automatic Number Plate Recognition (ANPR). This means exactly what it says. Cameras have been established on major routes around the UK and as vehicles pass through their field of vision the numberplate is read by the camera and is instantly fed into the PNC which automatically does a vehicle check.

Any registration numbers that have reports on the PNC are then alerted to terminals at the police control room covering that area with details of time location and direction of travel of the vehicle. So vehicles that are of police interest can be tracked through parts of the UK without any overt police attention. This has been particularly useful to the police when illegal drugs have been moved around the country in vehicles that have already been identified as being used by those involved with the trade.

Some police forces have found that having an ANPR camera on a busy road can be expensive. These cameras get so many results that in some cases a police car and crew have to be on permanent standby to stop motors that have set it off. There are also mobile units that can be installed to give coverage for specific events or areas as and when needed.

System Check

Now to some results. In the City of London the ANPR system has checked over 75 million vehicle registration marks since February 1997 leading to over 1200 arrests. In one week in March 2000 there were 29 arrests, including four in connection with murder.

In Kent, a VODS check identified a Mazda van that was being used by a drugs suspect from Folkestone (were you paying attention? VODS was described a few paragraphs ago) and it was later noted leaving the UK. An ANPR camera in Kent noted the vehicle's return and police stopped and searched it. They found 12 kilograms of cannabis hidden inside. That's over 26 pounds weight in real money, which is a whole lot of gear. Most UK police forces now use ANPR cameras.

Physical Security

In addition to all of these transactions, there are other jobs that can be done on the PNC of an administrative nature including a check on the transactions done on the

CONTINUED ON PAGE 36

Police National Computer

CONTINUED FROM PAGE 35

machine which can indicate whether several police forces have an interest or have checked the same vehicle or person.

Physical security of the system is intense. The PNC at Hendon is sited within a specially secure area with many sophisticated security measures in force and uniformed security staff monitoring access to the site. Communications security is also of the highest order.

Sadly, breaches of the system have only come from the users end with information having been leaked from the system by authorised users themselves. If the offenders have been identified, then retribution has been swift and severe, but it just goes to show that the very best system is only as secure as the people who are allowed access to it. This was considered from the beginning and a comprehensive logging system is in place.

When a check is done on the PNC the terminal operator has been identified by virtue of his or her codeword (changed frequently) having been entered at the time of log in. In addition the operator records on the computer, the unique number of staff member requesting the check and a 'reason code' for each transaction.

These codes are as follows:

1) Vehicle, person or property being checked as a result of a street stop.
2) Moving vehicle check where at the time of the check the vehicle has not been stopped.
3) Abandoned vehicle or property check.
4) Vehicle involved in a road accident.
5) Person check on someone in custody or being reported for an offence.
6) Administration or non operational check including vetting complaints or intelligence.
7) Child abuse enquiries.
8) A check on behalf of an authorised agency
9) Update/confirm or broadcast - basically any transaction that varies information already on the computer
10) Check on transactions or an audit check.

Should you overhear a police officer making a check on the PNC he should usually quote one or other of these codes to the operator.

Efficient Technology

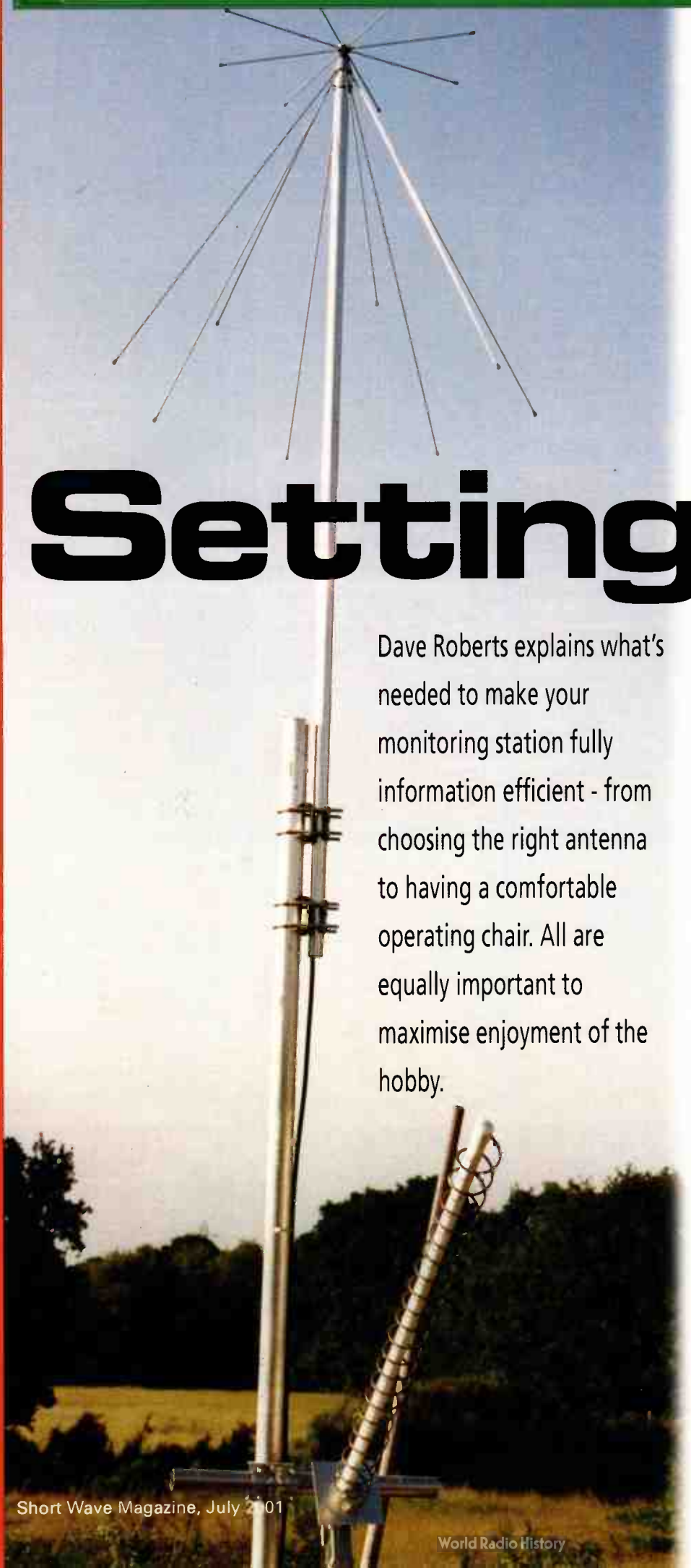
Believe me, this is a short summary of the Police National Computer's functions and abilities.

I know that many folks reading this could become concerned about the mass of information held and perhaps especially the ANPR camera facility. All that I know is that the PNC has turned out to be the most efficient item of technology that has been made available to the police since they were given their first two radio sets. Wanted people are arrested, stolen cars recovered and crimes detected as a result of this one national computer system.

Absolutely anything can be misused by corrupt individuals or governments and computers of any sophistication are no exception. PNC and its databases are a powerful tool, but so far I am convinced, it's use has been positive.

There will always be people who will protest about anything and falsely claim to speak for us all. The PNC helps police to catch criminals and stop anti social behaviour, that suits me just fine.

SWM



Setting Up

Dave Roberts explains what's needed to make your monitoring station fully information efficient - from choosing the right antenna to having a comfortable operating chair. All are equally important to maximise enjoyment of the hobby.

Everyone involved in hobby radio has differing hopes and goals for their pastime. Scanninsts by nature just have to be nosey parkers. If we weren't then we would be doing other things with the radio gear! Even if your main activity is listening to the DX v.h.f. communications on low band, you are listening into other folks lives and you surely qualify as a fully fledged participant in the nosey stakes.

We all desire to maximise the enjoyment and knowledge gained from our scanning and monitoring and to this end it pays to look further than the scanner's speaker grille. What is needed to make your monitoring station fully information efficient? Well, the first thing that has to be addressed are the bits that generally we don't spend time looking at. You don't need me to tell you that this means antennas.

Choose Your Antenna

Assuming that the station is going to be an all round listening post capable of picking up a wide range of signal sources, then the antennas must fit the bill. If an antenna is to be anything other than a single frequency item then it is, by definition, going to be a compromise. This means that you may decide to install a vertical antenna on the house just for monitoring the coastguard channel 0 (156.000 n.b.f.m.). You can obtain the unit cut for that particular frequency and

CONTINUED ON PAGE 40

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Bearcat UBC 3000XLT

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- AM/FM/WFM
- 400 memory ch
- TURBO SCAN 100 Ch/Second
- TURBO SEARCH 300 St/Second
- Automatic Freq Storage
- Selectable Attenuator
- Automatic Freq Sorting
- Data Skip
- Delay Key
- Channel Count Key
- Supplied complete with earphone, case, belt clip, charger and rubber duck antenna

NEVADA PRICE- £199.95

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CHEQUE SPREAD

- 66 - 956 MHz (with gaps)
- AM/FM
- 200 memories
- TURBO SCAN 100 Ch/Second
- TURBO SEARCH 300 St/Second
- Data Skip facility
- 10 Priority Channels
- Memory Backup
- Supplied c/w earphone, belt clip, charger and rubber duck antenna

NEVADA PRICE- £149.95

UBC 120XLT

CHEQUE SPREAD

- 66 - 512 MHz (with gaps)
- AM/FM/WFM
- 100 memory channels
- TURBO SCAN 100 Channel/Second
- TURBO SEARCH 300 St/Second
- Data Skip facility
- 10 Priority Channels
- Programmable Search
- Channel Lockout Key

NEVADA PRICE- £129.95

UBC 60XLT

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

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

NEVADA PRICE- £79.95

YAESU VR120

PROFESSIONAL GRADE WIDEBAND POCKET SCANNING RECEIVER

- 100kHz - 1299.995MHz
- AM/FM/WIDE-FM
- 640 Memory channels
- Preset 'Quick Tune' mode
- Selection of scanning modes
- 'Channel Counter' feature measures frequency of local signal
- Clone capability

NEVADA PRICE- £159

YAESU VR500

SPECIAL!

ULTRA COMPACT RADIO

- 100kHz - 1300MHz
- FM, Wide FM, USB, LSB, CW, AM
- 1091 Memory channels
- Weight 220g
- Comes complete with Antenna, carrystrap, Belt clip
- Optional Charger: NC60

Optional Accessories

- FNB-59 NiCad battery pk
- NC-60 AC adaptor
- CSC-72 Soft case
- EDC-5B DC cable with cigar lighter plug
- EDC-6 DC cable
- CT-35 Cloning cable

NEVADA PRICE- ~~£244~~ £199

Bearcat UBC 860XLT

AIRBAND Base Scanner

CHEQUE SPREAD

A stylish low profile base scanner with TWIN TURBO scan and search facility. Covers civil airband, marine, police, cellular plus more!

- 66-88, 108-174, 406-512, 806-956MHz
- 100 mems • Turbo Scan - 300 steps/sec

NEVADA PRICE- £139

UBC 9000XLT

- 25 - 1300 MHz (with Gaps)
- 500 memory channels I VFO Control
- Selectable Attenuator I Selectable Delay
- Selectable Mode AM/WFM/NFM •
- TURBO SCAN 100 Ch/Sec
- TURBO SEARCH 300 St/Second
- Alpha Numeric Display
- Automatic Store I Frequency Transfer
- Auto Tape Record I Data Skip facility
- Programmable Search

NEVADA PRICE- £269

ICOM R3

NEW!

REVOLUTIONARY NEW HANDHELD!

- 495kHz - 2451MHz
- 450 memories
- Modes: FM, AM, WFM, AM-TV, FM-TV
- Alpha tagging
- CTCSS with tone scan
- 2" colour TFT display
- Video audio output

SUPPLIED C/W

- *telescopic antenna*
- *belt clip*
- *charger*
- *LI/ION battery pack*

NEVADA PRICE- £449

ICOM IC-R2

SPECIAL!

PRICE MATCH

One of the smallest radios we have ever seen, Palm size wide band size is not everything. Packed in this receiver's small package are some pretty big features.

- 500kHz -1310MHz
- AM/FM/WFM
- 400 memories plus 25 band edge memories for easy scanning between specified frequency

NEVADA PRICE- ~~£154~~ £139

MAYCOM AR108

Palm sized Airband & VHF Scanner

Mains Charger £8.95 £2.75 p&p

- Airband: 108 - 136.975MHz VHF: 136 - 180MHz
- Selective Channel Steps: 5, 10, 12.5, 15, 25, 1MHz
- Modes: AM or FM
- Memories: 99
- Dual Watch Function
- Key Lock
- Battery Save Function
- Battery Voltage Indicator
- Supplied C/W Belt Clip, Carrying Strap

NEVADA PRICE- £69.95

AR 8200 MkII

SPECIAL!

LATEST model!

- 530kHz-204MHz
- All Mode inc. 8.33kHz AM
- 1000 Memories
- Plus LOTS MORE!

WE CARRY THE FULL RANGE OF ACCESSORIES here's just a few!

CT8200 ...CTCSS £69.90
EM8200 ..External memory ..£59.90
RU8200....Record/Play Back ..£59.90
TE8200 ...Tone eliminator....£39.90
VI8200....Voice inverter.....£59.90
SC8200P..Padded soft case £19.95

NEVADA PRICE- ~~£434~~ £399.95

YUPITERU MVT 3300

- 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/ second
- Requires 4 x AA batteries
- SUPPLIED WITH: Antenna, Earpiece, Carrying Strap and built-in Desk Stand

NEVADA PRICE- ~~£154~~ £149

YUPITERU MVT 7100

PRICE MATCH

Probably the most popular high end Scanner. It's easy to use and can receive just about anything!

- 530kHz-1650MHz
- AM/FM/WFM/SSB/CW
- 1000 memories
- Steps 50Hz, 100Hz for tuning LSB & USB
- 155H x 64.4W x 32Dmm
- Weight - 320g
- Supplied with NiCads, mains charger, 12VDC cigar lead, belt clip, carry strap

NEVADA PRICE- ~~£244~~ 229

YUPITERU MVT 7300

- 520kHz -1.32GHz
- 1000 Memories
- 8.83kHz Airband
- Duplex reception
- Descramble function
- Clock timer
- Signal strength meter
- Auto memory write
- Supplied c/w Antenna, Belt clip and earphone

NEVADA PRICE- £289

YUPITERU MVT9000EU

FLAGSHIP MODEL, with a range exceeding 2000MHz, a real time bandscope.

OP90 Soft Case £26.95 £2.75 p&p

- 531kHz - 2039MHz
- 1000 memory channels
- W-FM, FM, N-AM, AM, LSB, USB, CW
- Scanning steps 50Hz-125kHz
- Duplex receive capability
- Fast tune facility
- Built-in ferrite rod antenna for AM broadcast reception

NEVADA PRICE- £369

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GRUNDIG SATELIT 800

The ultimate in features, performance, convenience, and sound. It's incredibly powerful, technologically sophisticated, yet easy and intuitive to use. Whether you're an experienced Shortwave listener or a newcomer to the world of international broadcasting, this is the radio to get.

Frequency Range:
- 100-30,000kHz (0.1-30MHz) for AM Broadcast and Shortwave
- 87-108MHz for FM Broadcast
- 118-137MHz for Aircraft Band

Modes:
- AM, USB, LSB modes (0.1-30MHz)
- AM mode only for 118-137MHz
- WFM mode only for 87-108MHz

Tuning:
- Direct Input digital key pad combined with manual tuning
- Synchronous detection
- Excellent sensitivity and selectivity
- Three built-in bandwidths for shortwave
- You aren't limited to SW signals.
- Sure direct keypad digital tuning
- 70 user memory presets
- Two timer clocks keep track of time

EU version features
- 240V AC mains adaptor & Deluxe Headphones included
- Full UK warranty
- CE Approved

NEVADA PRICE- ~~£544~~ £549

SANYO WORLDSPACE
DIGITAL SATELLITE RADIO

Awaken to WordSpace and receive over 40 channels of FADE FREE DIGITAL PROGRAMS direct from satellite to this radio - *from almost anywhere in the world!*

SANYO RADIO FEATURES:-
- WorldSpace satellite PLUS FM/MW/SW
- Portable, battery powered (2 D and 2 AA batteries) with 240V AC adapter
- Built-in monaural speaker (0.7 Watt output)
- Stereo headphone socket; stereo line out connectors
- Built-in easy-to-aim antenna
- Decryption and narrowcast capability
- Program selection by language and category
- 32 presets and last station memory
- 2-line, 8-character LC display to show station, category and other information
- Remote control unit
- Port for multimedia services
- Easy to set up and operate
- Remote control unit

The WorldSpace network consists of three geostationary satellites. AFRISTAR™, ASIASTAR™ and AMERISTAR™

NEW! COMING SOON!

Optional KH-YG1 Hi-Gain OUTDOOR ANTENNA Inc 20m cable ..£49.95

NEVADA PRICE- £149

ICOM IC-R8500

PRICE MATCH

Yes, we've got them in stock! This receiver is everything we hoped it would be, coverlng 100kHz - 2GHz and lots of features including computer control. Pay by 3 post dated cheques!

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PALSTAR R30
PORTABLE COMMUNICATIONS RECEIVER

Compact high performance radio capable of receiving multimode signals in the 100kHz-30 MHz spectrum. Excellent strong signal handling, high sensitivity & dynamic range to eliminate annoying intermodulation interference.

- 100kHz - 30MHz AM, SSB SW
- Completely portable with internal batteries (not supplied) or 12V operation
- 4-pole crystal filter at 45MHz
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- Ceramic filters fitted as standard
- Collins mech. filter optional
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- 6-digit LCD display
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- Line Audio output
- 100 memory channels
- +15dBm 3rd order intercept
- Miniature size. 8"W x 2.5"H x 9"D

NEVADA PRICE £399.95

YAESU VR 5000

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NEW!

NEW!

100kHz - 2,599MHz WIDEBAND RECEIVER
- Multi mode
- Real time band scope
- Optional DSP bandpass, notch & noise reduction
- Optional filters

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AOR AR-8600

NEW!

NOW IN STOCK!

All mode wideband base RX
- 530kHz-2040MHz
- 8.33kHz airband steps
- Optional slot cards

OPTIONAL PSU AVAILABLE

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ICOM IC-R75

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The LATEST HOT Receiver from ICOM

PRICE MATCH

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

NEVADA PRICE £699

YAESU FRG-100

PRICE MATCH

This receiver provides solid coverage from 50kHz to 30MHz with all mode reception of AM, SSB and CW. Supplied c/w AC mains supply

NEVADA PRICE ~~£444~~ £399

AOR AR 5000

PRICE MATCH

SHIPPED TODAY!

•10kH - 2.6GHz All mode top class receiver & scanner packed with features

AR 5000+3 **£1799**

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ICOM PCR 1000
COMPUTER RADIO SYSTEM

PRICE MATCH

- 100kHz - 1300MHz
- ALL MODE RECEPTION
- Plus Lots More!

PCR OPTION DSP UNIT UT 106 £82.00 £2.75 p&p

NEVADA PRICE £319

ROBERTS R861
DIGITAL WORLD BAND RADIO WITH R·D·S

- Covers MW/LW/FM/SW
- Receives SSB short wave
- 307 presets
- Clock/alarm facilities

Supplied with dual voltage AC supply, sw antenna, earphone, carrying case

NEVADA PRICE ~~£200~~ £179

ROBERTS R9914
DIGITAL WORLD RADIO

- Covers MW/LW/SW/FM
- SSB & CW reception
- Ideal for BBC World Service
- Clock/alarm facilities

Supplied c/w AC adaptor, earphone, carrying case

NEVADA PRICE £99.95

GRUNDIG YB400
PORTABLE SW RADIO

PRICE MATCH

- General coverage RX (144kHz - 30MHz)
- SW: 1.711-26.1MHz
- FM Stereo• MW/LW
- SSB reception
- 40 station preset
- Narrow/Wide bandwidth
- Mains or Battery powered (with optional mains adaptor)
- Supplied c/w SW Handbook, Carrying case, External Wire Antenna, Carry Strap

NEVADA PRICE £99

SCANMASTER LP1300
WIDEBAND BEAM ANTENNA
16 ELEMENT LOG PERIODIC DESIGN

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

NEVADA PRICE £129

SCANMASTER DESKTOP

A complete desktop antenna covering 25 -1300 Mhz, just 36" high with 4 metres of cable, fitted BNC plug with a magnetic base.

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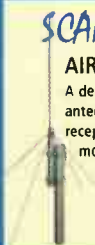
SCANMASTER DD 1300
DOUBLE DISCONE

A high performance wideband antenna

- 25-1300MHz
- Ultra wideband TX capability

NEVADA PRICE £59.95

SCANMASTER B128
AIRBAND BASE SCANNER



A dedicated CIVIL AIRBAND base antenna designed to give long distance reception on 117-140MHz. Supplied c/w mounting tube & mast clamps.
- 'N' Type connector
- length: 1mtr

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- Write your telephone No, cheque card No & 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.

Setting Up

CONTINUED FROM PAGE 37

manufactured as a colinear antenna to give maximum gain on that one channel.

Should you decide to scan the entire marine band using this antenna, then the performance drops off as you move on up the band. This is an extreme example, but indicative of the difficulties that could be encountered should you decide to use the same antenna to listen for, say, the u.h.f. marine segment on 457MHz.

The u.h.f. signal would be very attenuated and listening on a straightforward stainless steel whip mounted outside would probably result in better reception than the fancy single band item mounted on a chimney stack. What then should be stuck up in the air to make sure that the best compromise is achieved.

Also consider that if you have, or are thinking of obtaining, an amateur licence then you may want to use one antenna for scanning and transmitting. Conclusion?

Well, assuming that you can't afford the roof space to have a separate antenna for each band, you could do worse than consider a discone antenna.

The Discone

These days you can purchase discones that have transmit capabilities on various amateur v.h.f. and u.h.f. bands as well as good general (broad band) performance and one of these may well be just the ticket for you. I like the capabilities of discones. Omni directional antennas for listening are ideal for general use, but they do have some problems.

"If you want to shout that you are monitoring radio traffic, then get a discone"

Firstly, they are about as discrete as a hippo in a taxi. Almost anyone who knows even the slightest little thing about radio will spot a discone from a hundred yards and know...just know that at the other end of the coaxial cable there will be a scanner chugging it's way around the bands. If you want to shout that you are monitoring radio traffic, then get a discone.

If you live in an area that is subject to high wind speeds, it pays to be aware that wind loading can be more distressing to a discone than to other antennas as the discone has a large number of elements to become damaged or go out of shape. I live in a very remote part of the UK where the wind speeds peaked at well over a hundred miles per hour last year with one gust measured at 140mph.

I should very much like a discone, but I just don't know how long it would last me. In a town or suburban locality, the discone would probably not be subject to such wind strain, but would be more noticeable. It's quite a difficult choice.

The Log Periodic

The other antenna that may be thought of as a suitable purchase for monitoring v.h.f./u.h.f. is the log periodic. These things are directional and are extremely efficient over a wide range of frequencies, **but** think of polarity here.

As a scannist you will probably spend much of your time monitoring fixed/mobile or airmobile units. The log periodic will need to be mounted so as to be vertically polarised. When you pop it in the air in the horizontal plane and the signals you want to hear are not horizontally polarised then the cross polarisation losses will be massive.

Should you decide to mount the antenna in the vertical plane, then the mounting pole must be made of a non metallic or r.f. reflective material otherwise the pole will in effect become part of the antenna and will take it way out of specification in terms of frequency coverage and lobe pattern, i.e. the directional configuration of the antenna.

As the log periodic is a directional unit it will either have to be set to monitor signals from a specific direction or be capable of being turned around and for roof mounted units this will generally mean purchasing and installing a rotator. All more expense and don't forget - this metalwork is

Setting-up 'shack'

pretty large, so it will collect wind like a mainsail. Great antennas though, if properly installed and used.

What About Me?

So what do I use? For general scanning and 2m and 70cm chatting I use a wide band 'white stick' multi band colinear. For scanning only I have a stainless steel whip antenna mounted on the edge of the roof. Living in a remote area I have a vertically polarised u.h.f. beam fixed and pointing towards a town across a sea path about 64km away.

For monitoring the v.h.f. marine band there is the v.h.f. steel rod, cut to marine band, and mounted on a different bit of roof. I also have two wire antennas for monitoring m.f. comms and for h.f. monitoring and for h.f. amateur bands. The first is a straightforward long wire about 40m long and the other is a full size G5RV - both of which are connected to an MFJ tuner.

On The Inside

Don't want to look outside again? OK, now to the inside. I spend a fair few hours a day in the radio room and I am therefore in a position to monitor the goings on most of the time. But the radios are by no means the only resources that have to live in the shack to get the most out of time spent here.

Call me old fashioned....I have books in my radio room, yes **books**. A wide range of published material from the English speaking world which give me details of callsigns, frequency information and other tomes regarding equipment types that may sometimes be referred to in the course of an overheard radio transmission.

So among the many titles on the shelves here are *The UK Scanning Directory* (many editions), *The International Callsign Handbook*, *Short Wave International Frequency Handbook*, *Civil Aircraft Markings*, *Janes Infantry Weapons* (not just weapons in this one), *Janes Military Communications*, *Eavesdropping on the British Military*, various titles relating to intelligence matters and a splendid book called *Ragnar's Guide to Home and Recreational Use of High Explosives* which has no relation to radio at all, but what a fantastic title!

There are numerous other publications dealing with radio monitoring and while not all my library is up-to-date, (in fact a book entitled *Latest Intelligence* must be ten years old by now), I consult it hourly. I also have a large number of files containing equipment information and prints from computer files, some of which are of the PROMA material. It is essential to have a good UK Atlas and, of course, a World Atlas. That is the bare bones of the written material!

Power Requirement

Next - power requirement! All my radios can run from 13.8V d.c. Therefore two power supplies provide the volts for the sets. One is a Diamond capable of 30A continuous and the other is a Palstar which can run at 25A. They have both performed faultlessly so far, but I prefer the Diamond. Why? You see the Palstar has a noisy fan. Simple.

The Diamond's cooling fan is really quiet, but the windmill on the Palstar makes a fair old din. So much so that it has to live out of the way under the desk. If it was on top near the radio gear some signals wouldn't be heard through the noise of the fan motor. Between them, these two units supply one scanner, three scanner transceivers and three h.f. radios, a marine band v.h.f. receiver and a TNC plus providing charging power for two hand-held scanners. There's a fair bit of kit to run, but between them, the two units manage just fine.

Adequate power is essential for any monitoring post. You can bet your bottom dollar that if you only have a low current p.s.u. to drive the gear, then at some time you'll want to plug something else in and the power supply will become overloaded or go faulty. Regarding the volts, I also have a stand-by battery pack capable of running a scanner/transceiver at lower power if the lights go out here.

"For general scanning and 2m and 70cm chatting I use a wide band 'white stick' multi band colinear"

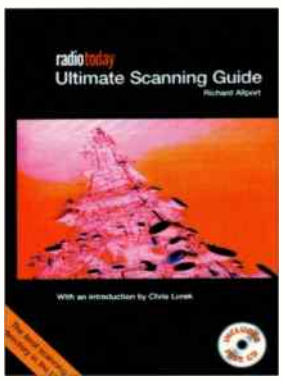
Run Several

Radio equipment is only any good if it is switched on and being monitored. Also to get the most information from monitoring, it's necessary to run several radios at any one time, I'm afraid. For instance, at this location there is always a marine band scanner running on coastguard channels in

Setting Up

addition to this unit, my Standard C5900DA scanner/transceiver is always live. The problem is that this unit keeps developing faults. This radio covers from 40MHz upwards on receive and will transmit on 2m, 70cm and 6m amateur bands (when it works).

My other main scanner is a basic Commtel 215, 200 channel machine which is loaded with 'bread and butter' frequencies of interest including airband and military stuff. To run an integrated station, h.f. general coverage receive is required and this is taken care of by a Yaesu FT-920 that has receive capability from a few kilohertz up to 30MHz. As a standby, there is a general coverage ex-military Yaesu FT-70G radio.



It certainly is necessary to monitor more than one frequency simultaneously and here I can monitor a maximum of four at any one time plus any marine v.h.f. frequency. So when a sea rescue is underway, I will be monitoring the coastguard channel 0 plus scanning for any other marine or air channel involved with the case while listening to the Rescue Co-ordination Centre frequency in use (usually 5.680MHz u.s.b.) at the same time.

Should there be a military exercise in operation, then the scanners will be copying the milair and naval frequencies while listening to one of the h.f. control frequencies at the same time (for instance 9.013 u.s.b.). If I can manage to borrow one of the more sophisticated scanners available that have computer control, then the data banks can be managed more efficiently and more detail gained by using one of the scanner control programmes available and a computer. These systems can enhance the use of a receiver immensely. Hooked up to the right radio they can provide full control of the receiver including, on some rigs, channel specific squelch control.

The C-Word

Full database management and logging and audio both recorded on the computer's hard drive are common with these programs. I must apologise to some folks for using the C-word. Computers can be one of the most useful tools available to any hobbyist, but radio people can really make 'em jump.

There are two machines here. One is a prehistoric 286 IBM clone wired to an AOR AR1000 receiver of about the same vintage which is used for pager monitoring. Ticking on about this aspect of scanning can make a significant number of readers doze off there and then. The point has to be made that pager decoding can keep you up-to-date with news items, weather and travel news plus a host of other gossip. Used in conjunction with a computer running a reverse telephone number search program it can be a source of great entertainment.

My other car is a Porsche...well not really, but my other computer is a 486. Another little bit of history, but it runs several data decoders and the excellent Scanner Recorder program which is available free from the Internet URL (use google to search), or send me a disk. For those of us who don't have the most expensive scanner or computer, this little program can make all the difference to your day. It records what it hears on to the hard drive of the old machine and makes a nice little log as well.

Oh...and the old 486. I'm typing this offering on it too. When thinking of a database I tend to use written records more than any computer storage. The main reason being ease of access. For many people the computer is the ideal mode, but as I have said, my machines are in use for most of the time and in any case the power outages here are fairly frequent and although I can run the radio gear on battery stand-by, it would be extravagant on power to fire up the computer. So when I have identified a frequency of interest they generally get logged in a file for future reference.

How many times has your radio stopped on a channel with

CONTINUED ON PAGE 46

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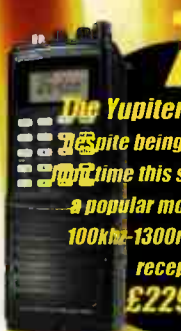
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Setting Up

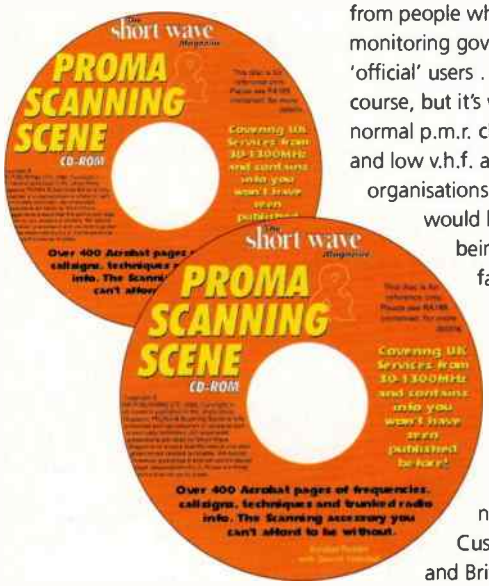
CONTINUED FROM PAGE 42

some interesting traffic and you stand there looking at the display and thinking, 'Just who the hell is that?' It's happened to me many times, now I can look up the numbers in a file and have a reasonable chance of identifying the user.

"Just to hear daily life progressing in a part of the world thousands of miles away is a thrill to me"

General Monitoring

Just a quick mention of general monitoring here. I get many mails from people who are interested in monitoring government and 'official' users . All good stuff of course, but it's worth mentioning normal p.m.r. channels - both high and low v.h.f. and u.h.f. Some organisations that perhaps would be thought of as being official are in fact allocated normal commercial p.m.r. channels. Some very sensitive sites indeed come within this category to say nothing of the Customs and Excise and British Transport Police.



Clearly what is loaded into your receiver depends entirely on where your interest lies. I love to listen to the v.h.f. DX coming in from the United States and Canada. Just to hear daily life progressing in a part of the world thousands of miles away is a thrill to me (sad isn't it) and occasionally to hear traffic from areas where once I have lived takes me back there somehow.

Other people like to monitor activity nearer to home and take a particular interest in more exciting stuff closer to hand. It is inappropriate to list frequencies that may appeal to one or more special interest group. I can only suggest that you contact **PROMA at 2 Icknield Way, Baldock SU7 5AJ** and pay the fee of £5 to Paul who will send you enough frequencies to fill a dozen scanners. PROMA were the contributors of the info. included on the *SWM* cover mounted CD featured in the January 2001 *SWM*. The Editor informs me that there are still a limited number available from the *SWM* Book Store. If you don't find anything of use to you there, then I'd consider flogging the set.

My System

I am not an organised person so I can only extol the virtues of a tidy desk and a neat database of frequencies loaded into the set. My filing system consists of leaving everything on the desk and stuff that is referred to often remains towards the centre of the desk. Anything that is less current tends to get shoved to the back edge from where, without further consultation, it falls on to the floor. It's a system that works - but not for everyone.

I have to admit that my radios suffer from the same kind of laxness. Frequencies are loaded in as and when heard on a search and will be overwritten when I hear something else. If something is received on a frequency that I am not immediately familiar with, then I have to dive into paperwork to find out what it is I am hearing.

For organised folk, channels are loaded into the radio depending on their user or groups of users. For example, they will have a bank or two which relate only to emergency services. The next bank would be stacked with civil air frequencies and if near an airport, some ground use stuff too. Military air and ground frequencies in the next and so on. For those that operate mobile, different banks contain frequencies for differing areas of the UK. I know people for whom this actually works well. Not for me.

Get Comfortable

One most important thing to look at in the monitoring post is furniture. You need desks for the kit and a good chair to sit on. It sounds daft I know, but can make all the difference because if you aren't comfortable at the radio, you'll be less inclined to sit there listening to it. There are two office desks here placed side to side and between them they cost me twenty pounds from a second-hand office equipment place. A swivel chair was fifteen quid.

I have since splashed out on a discount high back chair for about sixty pounds, but you get the drift. If you are operating the gear from a confined space or even in a cupboard, then you will still need an upright chair of some sort. I'm not going to bleat on about furniture, but sitting for periods in the wrong position can mess up your back, so be warned!

One final small accessory I have found to be invaluable. A shredding machine. You can bin all your old notes and any frequency lists and more importantly you can shred all those old credit and charge slips. I mean you don't want someone going through your dustbin and ordering stuff on your account do you?

SWM

■ DAVE ROBERTS *c/o SWM* EDITORIAL OFFICES, BROADSTONE
■ E-MAIL: scanning@pwpublishing.ltd.uk

Scanning Scene
the column

Two months ago the census forms should have been submitted. What did you put in the religion field? Some varying ideas have been mooted. Some were suggesting 'Church of Electromagnetic Detection', but I prefer something more mystic with which no one could find fault. How about 'Yupiteru' or 'Alinco'. They sound like pretty good religions to me, possessing a certain eastern mysticism don't you think.

Covert Listening

Back to reality and I got in touch with the Tardis communications people that were mentioned in last month's column. If you remember, they are the people that make the covert earpieces. They told me that the reason that their unit is priced at £75, which is somewhat lower than other manufacturer's units, is that they wanted to encourage individual police officers to purchase them. They tell me that they have sold a number of these units to police forces including the Thames Valley Police. I shall buy one of these gadgets and let you know how it measures up to covert scanning.

With the top people in UK scanning often putting themselves literally in the firing line when it comes to monitoring, covert listening could well be the way that the hobby will have to go in certain situations. For instance, **Paul Wey** of the **PROMA** group attends many demonstrations and events where civil disorder is likely. He doesn't do this to change society or whatever. His interest is purely to discover which frequencies are in use by all sides.

In these situations, it's always possible that anyone with a radio could be perceived as a member of a security unit and subsequently experience hostile behaviour from those present, i.e. receive a hefty beating! The same goes for vehicles with communications type antennas on them. You could unwittingly become a target for damage or assault, just because you are in possession of a radio. I know that Paul operates in a most discrete manner when circumstances require it, but what about the rest of us.

With 'direct action' being taken by more pressure groups these days, it seems that radio users may wish to consider keeping a very low profile. This has certainly been the case in Northern Ireland where hobbyists have to be very careful when out and about.

Interior Antenna

If you are in your car or vehicle, then the first thing that can be seen is the antenna. It may pay to consider an interior antenna for the car. Either a length of piano wire (available from model shops) cut to about 380mm or so and set in the core of an SO-239 or BNC socket with the outer earthed and the whole thing mounted in the vehicle, say, on the rear parcel shelf. This will give very good results indeed.

Spare wax guards and tool

Similarly, a mate of mine built a half wave folded dipole out of very thin wire and taped it to the side edge of the passenger seat of his car. It was almost invisible and as cars are mostly glass above their centre line, it worked very well.

Installing radio equipment inside a glovebox or somewhere out of sight within the vehicle is also a good idea. A cheap extension speaker can be mounted somewhere convenient and a mute button or remote switch in the power line can be used to quieten the radio if necessary.

The other option is to buy one of those cassette adapter units and wire a suitable plug to the lead and use the car's own stereo speakers. This kind of installation in a vehicle is beneficial as a crime prevention measure and also will not draw undue attention from the authorities. It also works.

Interesting Sighting

John from Northumbria contacted me with details of an interesting sighting. In mid May he had seen two Northumbria police cars on the A1 Not very unusual so far, but John says that the cars, which appeared to be traffic vehicles, both had what appeared to be long whip antennas mounted at the rear. He estimated that the length of the antennas was around 2m.

Has anyone got any ideas what these may have been for? As far as I knew the only UK police force that had h.f. capability was the MOD police who had some Range Rovers (blue in colour) fitted with Racal h.f. gear. So what are Northumbria at?

When searching for MOD police transmissions, it's well to bear in mind that their u.h.f. channels need not necessarily be spaced at 12.5kHz or 25kHz. Their frequencies are issued by the MOD and they don't need to adhere to established channel spacings. The MOD police now have u.h.f. sets that will operate on Home Office police force channels as well. They seem to be Cleartone radios and are also fitted with the MOD escort group frequency.

Generally the 'Mod Plod' use callsigns that are related to the establishment at which they are based, so working out just who and where they are is not a major intelligence exercise. The escort channel and many other MOD police frequencies are listed in the PROMA database. If you search in the 400MHz band you may inadvertently come across them. It is of course illegal to monitor them and also rather tedious.

Emergency Voice Network

Does anyone know what the old Royal Observer Corps frequencies are being used for? In Scotland they have become the property of the Scottish Office (or Executive or whatever it's called) and are used by the local authorities and are now part of what is called the Emergency Voice Network. Use is very sporadic and to hear anything on their simplex frequency of 77.3MHz f.m. would be a very rare catch indeed. What are these frequencies used for now?

Should you be searching between 80.00 and 81.250MHz in 12.5kHz steps you may come across these output frequencies with inputs at 9.775MHz lower. A few channels in this range are used by some Fire Brigades, but by no means all of them.

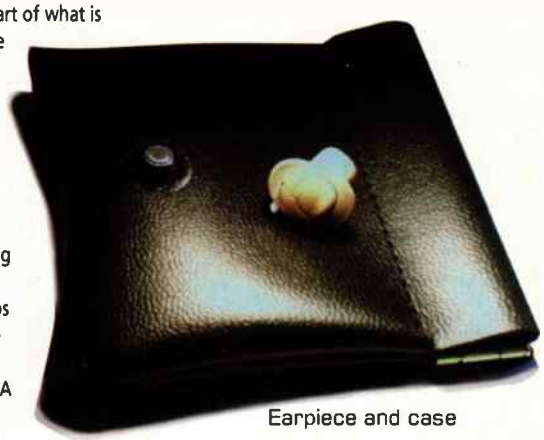
Hand-Helds

As I write this Ronnie Biggs, the ageing train robber, is back in custody at Belmarsh Prison (callsign M2MB) having had a high old time in Brazil for the last thirty odd years. It's worth remembering that Biggs, and the other criminals involved in the train robbery, used ex military radios to talk to each other when waiting for the train that they were going to attack.

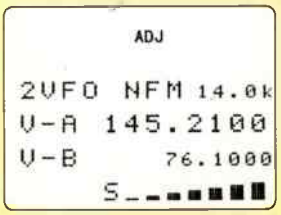
Similarly when the Irish criminal Sean Bourke assisted in springing the spy George Blake from jail that he used a US specification CB hand-held radio to talk with Blake in his cell. Both these instances were many years ago, but on both occasions the frequencies were not in wide use at the time. At least one listener heard Bourke and Blake talking on the CB, but the authorities could not trace the transmissions as they had stopped by the time they knew about it.

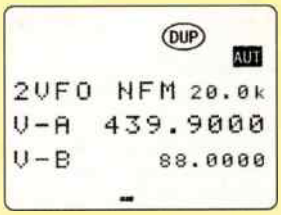
These days there is even more radio gear about that will operate on little used frequencies and I often wonder just how much illegal use there is around. As an illustration, I have recently seen a pair of current specification military radios for sale on the Internet. The bloke flogging them is after just over a thousand pounds for the pair. They are encrypted frequency hopping sets operating in low band and I reckon if you had a use for them, they represent a bargain. Someone will buy these radios and you don't pay that kind of dough just to put them in a glass case and leer at them. They'll be in use somewhere.

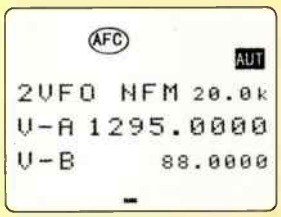
'Til next month then...

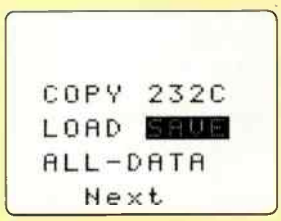


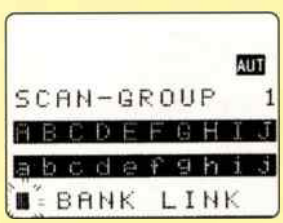
Earpiece and case

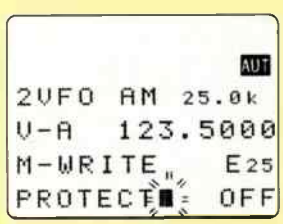


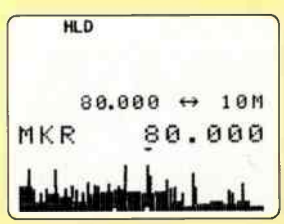












NEW AR8600

MOBILE - BASE - TRANS-PORTABLE

*High sensitivity design

The AR8600 is an extremely versatile **all mode** receiver (**530kHz - 2040MHz**) which can be used virtually anywhere, mobile, base or trans-portable... powered from an external 12V d.c. power supply, optional d.c. lead from a 12V vehicle or from an optional internally fitted NiCad battery pack. A strong twin metal case with die cast front panel characterises the multi-purpose role. All mode receive capability is provided including Single Side Band with programmable tuning steps down to a resolution of 50Hz with the frequency established by a highly accurate Temperature Compensated Crystal Oscillator (TCXO). An RS232 port further extends the capabilities with free supporting control software available from the AOR web sites.

Although many microprocessor features have been adopted from the trendsetting AR8200 Series-2 hand portable receiver, **the AR8600 RF front-end is an all new (*high sensitivity) design with a first rate switched attenuator and preselection around VHF to ensure the highest levels of adjacent channel rejection with software spurii cancellation**. In addition to a hinged telescopic whip aerial, the AR8600 is supplied with a **detachable plug in medium wave bar aerial** which locates on the rear chassis of the receiver for localised medium wave monitoring. An additional BNC socket is mounted on the rear chassis so that **10.7MHz i.f. output** may be extracted for use with external spectrum display and vector analyser units such as the AOR SDU5500. The TCXO ensures **high stability** with **minimal internal spurii** and is usually only seen in top of the range (more expensive) models such as the AR5000 and AR7030.

The chassis is manufactured from two metal compartments, effectively a **metal chassis inside a metal cabinet...** this provides excellent screening characteristics and great robustness highlighting its multi application role. The **front panel** is also manufactured from **die-cast aluminium**. Size is 155(W) x 57(H) x 195(D) excl. projections, weight less than 2kg.

The all important **8.33 kHz airband channel step is *correctly implemented*. Computer control** is available via a standard 9-pin RS232 D-type connector on the rear chassis, just a standard RS232 cable is required for connection to a PC, the extensive RS232 command list is printed in the operating manual. In addition, **'optional internal SLOT CARDS'** (which fit into the rear chassis of the AR8600) extend the capabilities even further, five cards may be fitted with two operational simultaneously. **Supplied with:** Swivel base telescopic whip aerial, MW bar, comprehensive illustrated operating manual with RS232 listing, d.c. lead.

AR8200 SERIES-2

NEVER BEFORE HAS ONE HAND PORTABLE OFFERED SO MUCH

The AR8200 represented a beacon when first released, technology marches forward with the NEW AR8200 SERIES-2 keeping the innovative concept and forward thinking alive and bright. It has not been easy improving on what many thought to be the ultimate, however the NEW AR8200 SERIES-2 does provide even more with nothing taken away.

A Temperature Compensated Crystal Oscillator **(TCXO)** now forms the heart of the AR8200 SERIES-2, this ensures **high stability** with **minimal internal spurii**. Performance too has seen the AOR R&D team fine tuning the design for **best sensitivity and strong signal handling** over the extremely wide coverage of 530kHz to 2040MHz (all mode receive without gaps). The aerial has also been replaced by a **telescopic whip** on a swivel base, this ensures the best results, a medium wave bar aerial is also provided as standard. The design team have certainly been taking account of customers wishes, the keyboard ZERO key has been swapped in position with the DECIMAL to match the telephone layout, LCD illumination has been increased (for improved visibility) and following requests for longer operation between charges, the **4 x AA size NiCads have been increased in capacity**, again reflecting improvements in modern technology. The obvious change has been left for last... the **cabinet colour** has been changed from green to **black!**

The list of features is vast, tuning step sizes are programmable in all modes down to 50Hz with comprehensive step adjust and correctly implemented **8.33kHz** for the new VHF airband spacing. Connection to a computer is possible with the optional CC8200 lead/interface with free PC software available from the AOR web site. Unique optional slot cards further enhance features (CTCSS, tone eliminator, record / playback, external memories, voice inversion).

'REAL' SHORT WAVE LISTENING

We have now completed the commercial overseas orders for the AR7030 so it is available again from stock. Despite being over five years old, the AR7030 is tremendously popular **still beating off the competition.** AR7030, **the professional choice**.

Excellent strong signal handling, low noise local oscillator (producing extremely low reciprocal mixing figures) and excellent audio fidelity demonstrates the attention to detail carried through design and into manufacture... the analogue circuits of the AR7030 exhibit none of the strange AGC and poor audio characteristics found in other 'higher priced' DSP competitors. Many feel that the AR7030 is the best short wave analogue receiver ever. Receiver of the Year 1996/97 WRTH, 5-star award and editors choice Passport to World Band Radio for several successive years. Designed and built in the UK as a collaborative project between internationally acclaimed designer John Thorpe and AOR.

AIRSHOW SEASON HAS ARRIVED

ARD-2 - ACARS & NAVTEX DECODER

If you think that data reception of aircraft ACARS and marine NAVTEX is only for experienced professional commercial operators, the ARD-2 may cause you to think again. This decoder & display unit has been designed with both the newcomer and experienced "go anywhere and everywhere" operators in mind.

The ARD-2 provides portable operation from internal batteries or external 12V d.c. without the need for a computer. The built-in LCD provides two lines of text with up to 32 characters of text per line and a scroll back buffer of 512 characters. Free software is available from the AOR UK web site.

★★★★☆ **AR5000+3 awarded four stars by both the authoritative Passport To World Band Radio and World Radio & TV Handbook**

AR5000
True base receivers are few and far between, some have simply evolved from the hand held equivalents with little tangible improvement in performance or facilities over their smaller counterparts - *the AR5000 is not like this!* High performance, top quality build and true wide coverage all mode receive. The "+3" version offers even more with synchronous AM, AFC and Noise Blanker. Popular with government agencies throughout the world. **AR5000c** frequency cherent version for commercial applications, special order.

Commercial & government operators have selected the AR5000, AR5000+3 and AR5000c in great numbers over recent years resulting in the model being recognised within their organisations in the same manner as many household brand names & products. For counterintelligence surveillance, the AR5000 (often partnered with the SDU5500) forms the cornerstone of modern day monitoring. System training often revolves around the AR5000 which leads to even wider implementation across departments. Transform ***your*** hobby to a commercial grade listening post with the AR5000, **the professional choice**.

AR5000+3 - Sync AM, AFC, NB

The "+3" version offers even more with synchronous AM (upper side band, lower side band and double side band with excellent lock range), AFC (Automatic Frequency Control for accurately tracking moving transmissions or unusual band plans) and Noise Blanker.

AR5000+3
- ✓ Wide frequency coverage 10 kHz - 2600 MHz
- ✓ All mode reception: USB, LSB, CW, AM, Synchronous AM, NFM, WFM with automode tuning (any mode and bandwidth on any frequency is possible)
- ✓ Automatic Frequency Control
- ✓ Noise blanker
- ✓ High stability TCXO reference, 1 Hz NCO tuning
- ✓ 1,000 memories, 10 memory banks, 20 search banks, 5 VFOs (all twice!), alpha tag, EEPROM chip storage
- ✓ Multiple IF bandwidth 3 kHz, 6 kHz, 15 kHz, 30 kHz, 110 kHz, 220 kHz with an option position for 500 Hz CW. (30 kHz is ideal for WEFAX).
- ✓ High sensitivity and excellent strong signal handling assisted by a preselected front end from 500 kHz - 1 GHz
- ✓ Extensive RS232 control list
- ✓ SDU ready with IF output for spectrum display unit

SDU5500 - SPECTRUM DISPLAY UNIT

The SDU5500 is a Spectrum Display Unit providing practical and cost effective spectral monitoring for band occupancy and identification of new transmissions. Coupled to the AR5000 receiver, it provides a spectrum display of 10MHz bandwidth anywhere between 10kHz and 2600MHz.

Modifications

Have you got some old equipment stashed away? If so, Dave Roberts says it may be time to have a rummage around and haul out that old radio that you forgot you ever owned, and see if you can charge it up.

How long have you had that scanner or scanner/transceiver? If you are like me there is a whole lot of kit in the radio room that you've had for years and hardly ever use. I keep all this gear because, well, it may come in handy one day or someone may want to borrow it to listen to the marine band weather forecast or something.

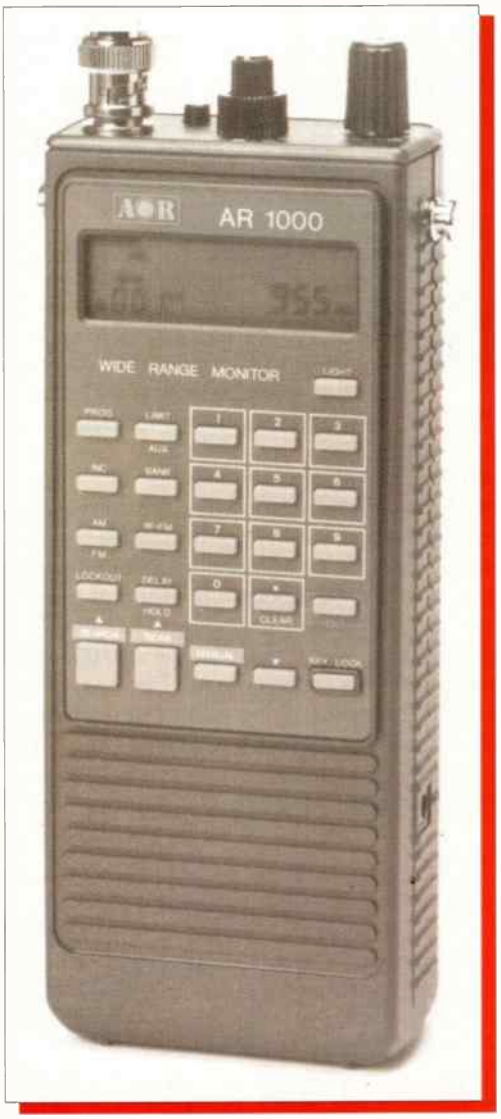
By the time you actually dig the thing out of the bottom of the drawer the NiCad battery pack is generally knackered anyhow. Why did it fall into disuse in the first place? Usually, it's because you purchased another item which has more memories, performs better or is easier to use. Maybe you put it in the cupboard because it didn't cover some frequencies that you felt were essential to have at hand.

It may be time now to rummage around in the bottom of that filing cabinet and haul out that old radio that you forgot you ever owned. Like I said, the battery pack may well have expired by now. Obviously it pays to try and charge it up, but if the set has been hanging around with the battery pack discharged for a year or so, you are going to need a new one.

Some sets are easy to sort in this respect as they have battery trays which take individual batteries (usually AA size) and these can be either rechargeable or normal disposable cells. If this is the case, then you just replace the cells and away you go. But if your scanner or transceiver has a purpose built pack, then you will need a replacement.

It may be that for an older set the original equipment manufacturer no longer stocks replacement units due to lack of demand and in addition to this, NiCad batteries don't like sitting on a shelf for too long. It may be that the radio's manufacturer can advise you as to where a pack may be purchased, but if not, a trawl through *Yellow Pages* for Battery Remanufacturers may be necessary.

In the past, I have experienced this problem and I used the company that AOR recommended to me. The firm is **E.S.P Batteries, 585 Uppingham Road, Leicester LE5 6QA, Tel: 0116-241 3796.** They will remanufacture or supply from stock batteries for any make of radio. As time has marched on, they can now also supply NiMh batteries as well as NiCad units. The average price for a replacement battery pack will be about £30 including postage, etc. with NiMh packs costing slightly more. Contact them and have a chat about what you need, members of staff there are involved in hobby radio and understand our requirements.



AOR's AR1000.

What Can It Do?

Right, having got some power into the radio the next thing to think about is what use you can make of it these days. Surely that old set can give some service. It was consigned to the bottom of the junk pile because it wouldn't do what you wanted it to at the time. But now it's quite likely that some keen owner of an identical unit has played around with the thing for years and has found a way to make it do things that the company that built it didn't intend it to.

The largest scanner market in the world is the USA and it therefore follows that most of the modifications that have been figured out for different sets have been made with the American user in mind. Scanners made for the USA generally are required by law to have frequencies used by cellular 'phones blocked so as to make the radio unable to receive them.

Now the manufacturers don't want to build a set separately for each country or continent. Generally they build a radio that will serve a world-wide market and then modify it to suit local legislation in different countries. Therefore the radios that have 800 and 900MHz cellular frequencies blocked in the USA are the same sets that are for sale elsewhere in the world. The thing is that they have been modified so as not to hear the offending channels.

Armed with this knowledge many American hobbyists immediately set to work to de-modify their radios so as to

hear the forbidden bands. The reason...well there isn't really one, other than a desire to get the best value from the equipment. Most published mods are involved with restoring operation of radios on these bands. But these are by no means the only things that can be done to your set.

I started off by intimating that I would only do a hardware modification to an old set. The main reason being that any hardware mod will invalidate any warranty you have on the radio. No doubt!

The second thing is that the modification may not work or will work fine on some units, but not on seemingly identical models. The reason being that not all models of the same radio necessarily possess the same boards or processors. They may look the same from the outside and have the same model number, but can have components of different values. Although they will work as per the handbook, when you push them to the limits you'll no doubt expose any weaknesses.

A prime example of this was the old AOR AR1000 receiver. A really good radio for its time. Four of us bought identical sets within a few months of each other. Four years later we decided that it would be a good thing to modify the receiver to receive from 500kHz.

The set originally started to receive at 8MHz so a conversion would obviously be of use and a bit of fun to do. Armed with our radios we converged on Roger's workshop and made a start. The mod. involved a small soldering job to reset the AR1000 and then a keyboard reprogram.

After reassembling the radios, we found that although they all displayed the lower frequency ranges, only two of them were actually receiving below 8MHz. Resetting the offending pair and re-entering the information made no difference at all, thus proving that not all radios that appear the same are in fact identical.

Software Mods

The easiest and safest mods to perform on your scanner or scanner/transceiver are those that involve software modification. The so called 'push button' mods. Some radios are more amenable to this sort of work than others. The old C520s by Standard are a case in point whereby just punching a button sequence on the panels you can wideband the transmitter and receiver, put the radio into crossband repeat, double the number of available memories and perform many other odd jobs.

Similarly for the Alinco DJG5-EY radio there are two methods to arrive at extended a.m. and f.m. receive and transmit coverage. One is a 'cut the wire' mod and the other the 'push button' variety. Many other transceivers can be worked on so as to become wide range receivers. Some of the sets require hardware work, some software and some require the EEPROM to be reprogrammed.

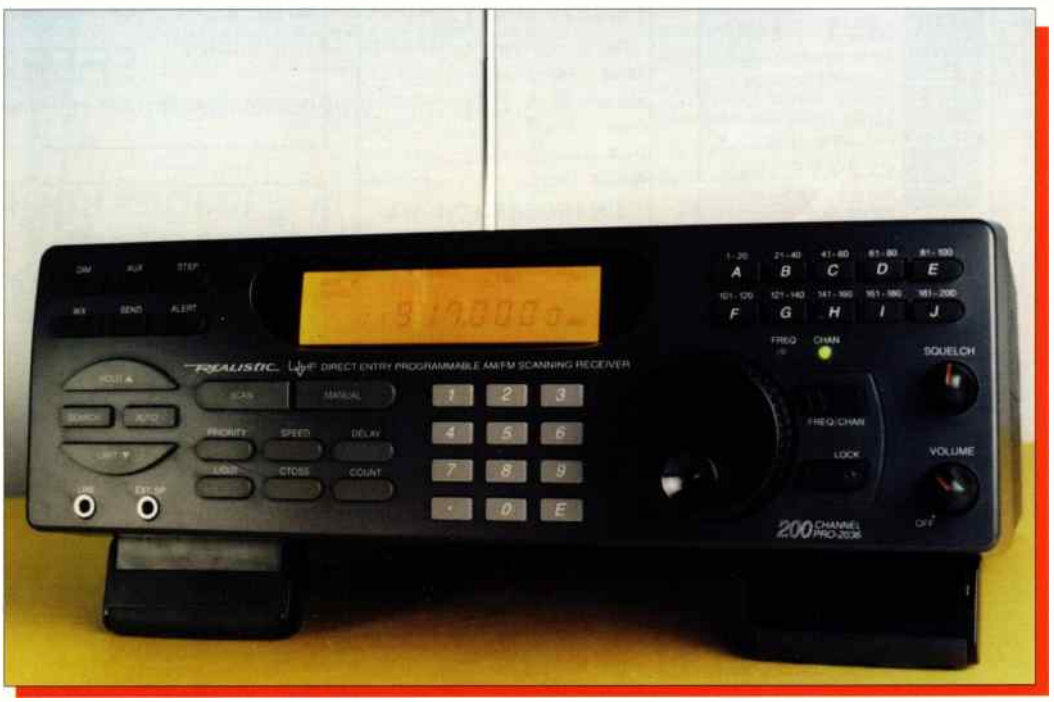
For receive only equipment nearly all the sets that have been made have at least one modification that can be made. The Realistic PRO-2021 has a modification that will speed up the scan rate to around 11 channels per second. The PRO-2022 can have the scan rate upped to about 60 channels per second.

Other enhancements to this set include manual a.m./f.m. switching and even fitting a switch to disable the panel light or make the key press beep optional. The popular UBC 9000XLT (a very good set) has a number of mods published for it including one that performs a total memory reset and another which plays a demonstration which is left in the set's memory following the Consumer Electronics Show in Las Vegas in 1995.

A *Short Wave Magazine* survey carried out a couple of years ago indicated that only ten per cent of the readership had Internet access at that time. I'm sure that figure has now increased, but I believe that most readers still don't have the Internet available to them. Folks, I'm sorry to say this, but all the mods you are ever going to need for your radios are available on the Internet. There are literally many hundreds of modifications available through that medium. Whatever set you have it is likely that if it is not a crystal controlled 10 channel set then there will be some enhancements listed on the 'net. If you can get to a friend's computer and search the web under 'scanner mods' or just go to **http://www.mods.dk/** you'll find them.

Don't forget that any modification will invalidate the warranty and none of the modifications are guaranteed to work on your particular unit. The one set that I have not found a single item of information on is the PRO-2036, also marketed as the Com215. You've guessed it, I have one of those...anyone got any ideas? ***SWM***

"All the mods you are ever going to need for your radios are available on the Internet"



Here's the Realistic version of the UBC-9000XLT.

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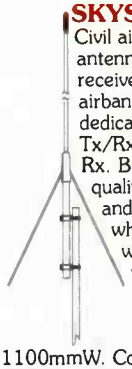

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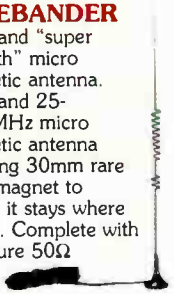

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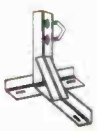

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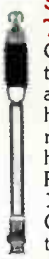

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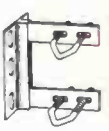

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  5, 6.25, 10, 12.5, 25kHz
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Single Valve Kit

This month John Wilson takes you back to where he and most of his contemporaries began in the hobby - by reviewing a one valve regenerative receiver.

One of my aims in writing for *Short Wave Magazine* was to make people aware that it's not necessary to spend thousands of pounds on equipment in the pursuit of the hobby of short wave listening. As in all pursuits a law of diminishing returns applies, and achieving that last pinch of performance involves costs out of all proportion to the performance gained.

Just look at Formula 1 motor racing as an example, or perhaps competitive horse riding, or even closer to home take the Hi-Fi market where the difference in audio quality gained by moving from a sub-£200 amplifier to one costing £10,000 to £15,000 is simply not worth the outlay, unless money is no object.

I call it the 'Emperor's New Clothes' syndrome. "Look at me; I've just spent £10,000 on new equipment so it must be better than yours", which is all very well until someone like me comes along and points out that the new gear is not at all better, and indeed when it comes to demodulating a.m. on a receiver using back-end d.s.p., the returns on investment may actually be negative. Think about it...

Back In Time

Over the last few years I have been privileged to review some expensive receivers, and most have been a delight to use. I have also, I hope, introduced you to some low cost surprises and made you question the need to rush out and buy the latest whizzo wonder just because it's new. This month I'm going to take you back to where I and most of my contemporaries began in the hobby by reviewing a one valve regenerative receiver kindly loaned to me by a *Short Wave Magazine* reader. The technology comes from the 1920s, but the performance? Let's take a look.

"Over the last few years I have been privileg expensive receivers, and most have been a g

This type of receiver comes from the period immediately after the crystal set and uses a single valve as a detector, in a mode usually described as 'leaky grid'. When introduced, there were few broadcast stations on the air, so selectivity, i.e. the ability to discriminate between adjacent signals, was not of any great concern.

What selectivity there was came from a single tuned circuit between the antenna and the detector, although the design of tuned circuits had reached a high level of complexity and performance using high *Q* coils and low loss construction methods, the knowledge of which is now lost to most engineers. One method of increasing circuit *Q* and hence selectivity is to introduce positive feedback around an active stage including the tuned circuit, and this was employed in these early receivers by applying feedback from the anode to the grid of the detector, using variable coupling to bring the detector stage close to full scale oscillation.

The variable coupling technique was known as 'Reaction' or 'Regeneration', and if applied too enthusiastically would cause the stage to oscillate at a frequency determined by the input tuned circuit(s). Because this oscillation takes place at the frequency to which the receiver is tuned, and because the oscillating detector is coupled directly to the antenna, continued operation of a receiver in this 'howling' stage usually resulted in a visit from the next door neighbour demanding to know why you had ruined his attempts to listen to the BBC. Further transgressions could result in a visit from the authorities and some serious consequences.

However, running a detector into oscillation does mean that a receiver of this type can be used to

demodulate c.w. and/or s.s.b., so at some point during my tests I will certainly have to 'oscillate'.

Added Advantage

One way of minimising radiation from an oscillating regenerative detector is to use another valve as an r.f. amplifier between the antenna and the detector stage, and this of course has the added advantage that it introduces another stage of r.f. selectivity. A further development in receiver design adds audio amplification after the detector so as to raise the rather feeble signals to headphone or loudspeaker level, so development took place ahead of and after the humble detector.

To illustrate just how many stages a receiver of this type had, a system was used which designated the detector stage as 'V', with a digit before it

...ed to review some ...light to use"...

indicating the number of r.f. amplifiers and a digit after it indicating the number of a.f. amplifiers. Using this system, a 1-V-1 would consist of an r.f. amplifier, followed by a detector, followed by a single a.f. amplifier stage. The receiver I am testing for you is therefore an 0-V-0, so now you know.

Getting Started

The receiver under test was purchased from America, where a group known as the Crystal Set Society is busily dedicated to re-learning those forgotten techniques I mentioned earlier, and obviously having a lot of fun at the same time. If you take a look at **www.midnightscience.com** you will find fascinating things you didn't know about tuned circuits and detectors. Also from the same group comes this design and basic kit for a one tube (valve) a.m. short wave receiver, selling for $29.95 plus $2.95 for the 1T4a valve. It translates into about £25 sterling, so it won't break the bank.

In addition to the kit, you need a Saxa salt drum, as seen in the photographs, to provide the coil former for the single tuned circuit. If you want to make it look a bit sturdier, a section of plastic soil and vent pipe from your nearest B&Q store or friendly plumber should work well.

Construction is on a wooden 'bread board' with connections being made by simple and effective spring steel clips. The tuning scale is completely uncalibrated apart from a 0 to 100 scale, and the band switch is of a high quality low loss design known as two crocodile clips and five screws - don't giggle, it really is a good idea.

Circuit Design

The circuit design is not quite 1920 because at that time only triode valves were available, whereas this receiver uses a 1T4 pentode. This has its advantages in that there is greater gain available, even at the suggested 45Vd.c. h.t. supply, and also gives smoother regeneration control. The regenerative feedback is achieved in the good old way by taking the anode of the detector back to a coupling winding on the input coil in the correct phase to make the feedback positive.

Many English designs of the 1920s used a variable capacitor in series with a fixed feedback coil in order to control the amount of regeneration, but this particular design uses a variometer type of construction with the feedback coil rotating inside the input coil which gives smooth control and removes the difficulties sometimes experienced with dirty contacts on a variable capacitor.

Basic Rules

Construction of such a kit of parts does necessitate the use of a soldering instrument and demands a knowledge of how to solder correctly. Like the design of high *Q* coils, this seems to be a dying art and I can foresee the time when the esoteric knowledge of correct soldering practice will be communicated to initiates by a suitably qualified high priest accompanied by the smell of incense generated by the burning of resin flux on a hot iron.

This used to be known as an apprenticeship. Several basic rules apply:
1) Always pick up the soldering iron by the cold end, known as the handle, 2) Always carry out soldering in a carpeted room so as to decorate the floor with melted-in blobs of tin/lead alloy, 3) Always clean the tip of the iron by a quick wipe across the front of one's trousers, being careful to avoid sensitive areas of the anatomy and 4) Try to avoid the use of alternative techniques such as the use of a glue gun to join wires together.

These, and many other helpful hints are derived from an article written by an employee of the Heathkit company in which he described the state of some of their kit projects returned for service with the comment 'built it but it doesn't work'.

However, this particular kit was completed by the kind reader who loaned it to me and certainly does work. Connecting the 1.5V cell for the filament supply and the five PP3 batteries in series for the 45V h.t. supply was easy, and away I went with a 15m length of wire as an antenna.

Frequency Coverage

First thing however was to check the actual frequency coverage on the various ranges. Broadcast band covered 553kHz to 1.9MHz which seemed ideal.

Using the tag marked 1 gave a short wave coverage of 1.9 to 5.6MHz, whilst using tag 2 gave 2.8MHz to 8.5MHz. There was some 'pulling' of the tuned frequency depending on the position of the regeneration control, but I

..."I have also, I hope, introduced you to some low cost surprises and made you question the need to rush out and buy the latest whizzo wonder just because it's new".

tried to keep the detector just below the point of oscillation which is point of maximum sensitivity. Actual sensitivity using a.m. at 60% modulation depth gave 12dB SINAD results as -79dBm (25µV) at 900kHz, -77dBm (32µV) at 3.5MHz, -73dBm (50µV) at 6MHz and -68dBm (90µV) at 7.5MHz.

Now, compared to the figures for a modern superhet receiver, these don't look very exciting, but for short wave listening there are loads of stations much stronger than -68dBm with an average wire

Single Valve Kit

antenna, and regular readers may remember plots I did for the short wave spectrum showing signals as high as -20dBm at night, any of which would sound very loud on this simple receiver.

Lack Of Audio Gain

A drawback with this type of single valve detector is the lack of audio gain, and even with a sensitive crystal earpiece the audio isn't very loud - dependent of course on the strength of incoming signals, so for the actual measurements I cheated and used an outboard audio amplifier so as to get enough audio into the SINAD meter to give accurate readings. Nevertheless, to get a single stage detector to work with input levels of 25 to 90µV is surprising.

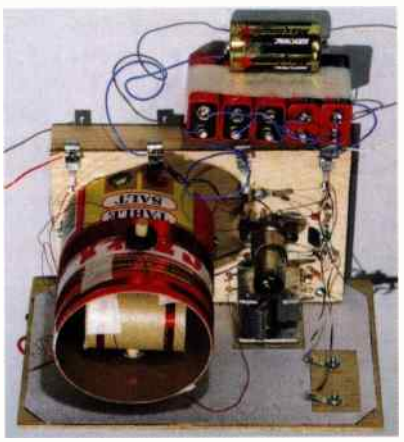
The main reason for the receiver producing good results is that unlike a superhet which has several stages of frequency conversion, each one involving the use of a local oscillator, the t.r.f. receiver has no noise sources within it apart from the valve and components, so there are no worries about phase noise - there isn't any. Listening with an antenna connected is a pleasure because of the totally quiet background, although you have to be careful with your ears - there's no a.g.c. on a t.r.f. receiver and strong signals are **loud**.

Sensitive Fingers

Tuning at the higher frequencies is razor sharp, and you need sensitive fingers to get it right, but this is partly caused by the use of a tuning capacitor having a straight line capacitance characteristic. This simply means that the capacitance increases linearly with each degree of shaft rotation.

In the good old days you could buy tuning capacitors with 'SLF' or 'SLW' plates which gave straight line frequency or straight line wavelength characteristics, but you will only find these nowadays in vintage component sales. These capacitors are recognisable by the long tapering plates which give a roughly logarithmic capacitance change for a linear angle of rotation. A slow motion reduction drive would help as well, but this is supposed to be a simple receiver so you just have to live with the rapid tuning rate at the h.f. end of the bands.

To give you some idea of the rapidity of tuning, let's assume a straight line capacitance swing of 100pF with a minimum capacitance of 10pF. This gives an angular rotation of 20° for a 10pF change. With a 5µH inductor, the first 20° rotation from maximum capacitance will result in a resonant frequency change from 7.2 to 7.6MHz, whereas the last 20° rotation from 20pF down to 10pF will result in a frequency change from 16 to 23MHz. There is a terminal marked 'N' which places a fixed capacitor in series with the tuning capacitor and hence reduces its total capacitance swing, and this helps in the short wave tuning rate, but it's still tricky.



Very Effective

All in all this was a refreshing review to carry out, and I recommend anyone interested in the development of h.f. receivers to get one of these or a similar kit and just see how effective these early designs could be. You won't be able to listen to s.s.b. utilities, but all the medium and short wave broadcast stations come romping in, even though you have little idea of the frequency to which you have the receiver tuned. Even that can be overcome fairly simply, and here I digress a little, by purchasing one or two packaged clock oscillator modules from a supplier such as Farnell, RS Components or Maplin. These oscillators are crystal controlled and a wide range of standard frequency units is available.

I made up a unit containing a 1MHz oscillator (costing about £2.50), a three terminal 5V regulator (£1) powered by a PP3 battery. This produces a 5V 1MHz square wave which has harmonics reaching well above 30MHz and can easily be heard at 1MHz points across the coverage of any receiver, including the 0-V-0 under review. Add another oscillator at 5MHz and you have a perfect, easy to use marker system, and all for a few pounds and an hour or two of assembly time. If you try this, remember to couple the oscillators quite loosely to the receiver antenna because 5V of square wave at 1MHz directly connected can cause you a few problems!

Simple Radio Projects

Looking around the market place for simple radio projects leads us of course to sources in the UK such as Lake Electronics and Howes Kits, both of whom advertise in this magazine. Another company offering kits and bits is Greenweld, but trying to contact them by the telephone number given on their web site resulted in many conversations with an answering machine, none of which resulted in communication with a human being, so I don't know what one would do to obtain information, let alone buy anything.

Having now gone as far down the road to receiver simplicity as it is possible to travel, I'm tempted to build my HAC one valve receiver kits, but they are so nice to admire still packed in their original cartons and are probably worth more as collectables if I leave them as they are.

Final Notes

I have still not made any progress on the Collins 75A-1, being diverted by a local lady I met at a Sunday lunch bash at which I foolishly expressed an interest in vintage radio receivers. "Oh wonderful!" she said, "I've been hoping I might find someone who could repair my portable radio on which I heard of the assassination of President Kennedy". Well, that should tell you something of the vintage of the radio and the lady, but when the radio (and owner) arrived at my house unannounced, the radio turned out to be a Zenith Trans-Oceanic from about 1955.

I finally got around to extracting it from its case and have replaced the 3V4 output valve which had an open circuit filament, and I intend to continue restoration as and when time permits, but it did make me look at the Trans-Oceanic receivers and I might just start a collection, because they seem quite interesting, and at least were properly designed and manufactured.

The man leading the Zenith organisation was known as 'The Commander' and stamped his own authority on the entire organisation. Reminded me very much of Bill Lowe who made customer service and fair dealing the watchword for the company which bore his name until 1991 when it passed into other hands.

Thanks

My thanks to Ian Fleming who bravely let me have his one valve receiver, and also to the many and various correspondents who keep me up-to-date with history and happenings. I'll keep writing as long as you keep reading.

Happy listening. ***SWM***

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

SSB Utilities

JMC

David Holdsworth from Norfolk wrote to ask if I could identify some utility signals that he heard at the start of March this year.

On 2nd March he was listening on his RACAL RA17L to 5.177MHz when he heard a number of stations passing messages to each other. The stations involved were 'Buchan' and two with tri-graph callsigns - '2VD' and 'N0U'. They were talking about 'Spider Formation' and also mentioned 'KJ25' and 'Magic'. David would like an explanation, as he had trouble making sense of what he heard.

Well David, what you heard were communications involving aircraft, ships and ground stations taking part in one of the regular *Joint Maritime Conference* (JMC) exercises. The JMCs are large-scale exercises with combined naval/air operations in which aircraft attack naval vessels operating in the waters around Scotland. Usually involved are various aircraft and vessels from NATO countries as well as British ships, usually including an aircraft carrier.

The JMCs usually occur three times a year, and David heard signals from the first one of 2001, hence it was known as 'JMC 01/1'. The exercise took place between 26th February and 8th March - the first week is the 'work-up' phase, and the second week is the full exercise. Buchan, near Aberdeen, is one of the RAF air-defence radar stations along the east coast; the others are at Boulmer in Northumberland, Staxton Wold in Yorkshire (now closed) and Neatishead in Norfolk. These stations form part of the UKADGE - the UK Air Defence Ground Environment.

The other stations with the tri-graph callsigns could be submarines, surface ships or aircraft. These callsigns change on a daily basis, and I have never seen a convincing explanation of how to work out which callsign is which. It is sometimes possible to work out which might be aircraft based upon their speed, but to find their speed you need to be able decipher their coded position reports, not an easy task! They usually pass their 'PCS' (Position, Course, Speed) in a coded format, and it is sometimes possible to tell if a tri-graph callsign is an aircraft if its coded 'speed' is three-digits, or conversely if it is a submarine or surface vessel if the speed is only two-digits.

'Magic' is an easy callsign to explain, it is the 'back end' callsign for a RAF or NATO E-3 AWACS aircraft. These provide extended range radar cover from high in the sky, and they pass their radar 'picture' to other radar units using their 'Link 11' communications on h.f. and u.h.f. frequencies. The crew flying the E-3 uses a 'NATO' callsign, while the radar and radio operators in the rest of the aircraft use 'Magic' as their callsign. 'Spider Formation' is another aviation asset involved in JMC. On this occasion it was a flight of Royal Navy Sea Harriers operating from a RN carrier to the west of Scotland. This particular flight was mentioned several times on various Internet groups at the time.

The final code that David heard is 'KJ25'. This is a designator for one of the JMC frequencies. There are a whole series of h.f. and u.h.f. frequencies used by the JMC, and they each have a designator. When aircraft or vessels change frequency or mention other frequencies, they always give the designator rather than the frequency. With careful and patient analysis it is possible to work out which frequency ties-up to which designator, but with the tie-ups changing for each JMC it hardly seems worth the effort.

The first JMC of 2001 was at the end of March/start of February, but I have not seen any dates for the other two to be held later in 2001. The second JMC is usually held in the June/July time, and with this column appearing at about that time it will maybe prompt you to listen for JMC traffic. I can't offer you any frequencies, other than to start with the Architect H+00 and H+30 broadcasts, to see if they mention any other h.f. frequencies in use.

Letters

The first letter this month is from **David Hall** in Northumberland, who writes to say that he has been hearing signals from Australia on 8.867MHz at about 0500UTC.

Well David, what you have been hearing is indeed Australian ATC - it is part of the SP (South Pacific) Network covering a vast part of the Pacific Ocean between Honolulu (Hawaii), the south-eastern coast of Australia and as far east as Easter Island. The Australian station that David has been hearing is Brisbane ATC, but there are a number of other stations active on that frequency. David says that he uses an AOR AR7030 h.f. receiver, a Global AT-2000 a.t.u. and a simple 14m wire antenna in the garden. David says that he has a particular interest in hearing signals from Australia, as he lived there during the 1960s and 1970s.

Maybe I can suggest some other frequencies that will bring back pleasant memories of Australia. Try listening to Australian VOLMET on 11.387MHz, which is active throughout the day. There is a broadcast at H+00 and H+30 which includes weather details for a number of Australian airports. Listening to these broadcasts will remind you of the wonderful weather that they have 'down under', especially when you compare it to the often awful weather that we have in the UK. If you are feeling particularly ambitious, you could also try listening to the parallel broadcasts on 6.676 or 2.965MHz, but you need to have just the right conditions to hear the signals on these lower frequencies.

The South Pacific Network frequencies:

Freq (MHz)	Station
3.467	Auckland, Brisbane, Honolulu, Nandi, Tahiti.
5.643	Auckland, Brisbane, Honolulu, Nandi, Pascua/Easter Is.,Tahiti.
8.867	Auckland, Brisbane, Honolulu, Nandi, Pascua/Easter Is., Tahiti.
13.261	Auckland, Brisbane, Honolulu, Nandi, Tahiti.
13.300	Pascua/Easter Is.
17.904	Auckland, Brisbane, Honolulu, Nandi, Tahiti.

Web Watch

UKADGE -
http://www.raf.mod.uk/stations/ukadge.html

This Month

This month I have been spending all my listening time tuned to the AFI-3 Network frequency of 11.300MHz. During April I was contacted by the BBC who were making a program about the state of the ATC service in Africa, and they wanted some recordings of aircraft communicating with the various ATC agencies in Africa. I was not completely sure how much they wanted to film, and how much they wanted to record, so I took the opportunity to spend many hours listening to 11.300MHz and tracking flights using *AirNav*, so that I was aware of the general flow of traffic, where all the reporting points were, and what were the busiest times. One of the biggest problems turned out to be difficulty in understanding the various accents when trying to note the flight routings. The various reporting points were very unfamiliar, but I was fortunate enough to have some RACAL/Aeradio maps covering the region, so I was able to check the various points on the map before entering the flight details into *AirNav*.

As it turned out, the filing and recording was made in central London during May, so I had to record a few hours of signals onto my lap-top, and that was used during the recording session. If and when the program gets transmitted remains to be seen, but maybe after it has been aired I will do a small write-up and let you into a few secrets of the recording!

■ PAUL ESSERY GW3KFE, PO BOX 4, NEWTOWN, POWYS SY16 1ZZ

Amateur Bands

Aurora

As far as we radio listeners are concerned, there are two kinds of aurora. The first is the visual aurora, usually seen in the far north of Scotland. Charlie Newton G2FKZ contributed an admirable tape/slide lecture - the slides came from Boulder

Perhaps of more interest is the 'radio' aurora. Here we are into much higher electron levels implying activity as low as the E-layer. Thus we tend to see an 'afternoon aurora' between about 1500 and 1900UTC and an 'evening phase' between about 2200 and 0300UTC (though an educated ear may indicate activity at other times).

Now, the spiralling rain of electrons are the same as the streams that back-scatter our radio signals, giving rise to the 'band-saw' effect. That effect may be almost inaudible on 28MHz and as much as 500Hz on 144MHz. In the latter case, s.s.b. can be - and usually is - all but unreadable while c.w. shows the 'rusty saw' effect but remains copiable. Usually the beam needs to look somewhere around north. However, I have myself heard a clean T9x signal with beams 'looking' at each other turn into an auroral sound as the antennas were turned north.

And of course any auroral reception needs to be noted - RSGB's Propagation Studies Group have done much good work over the years on a topic that amateurs in general have neglected.

Events

As ever, calibrated ears plus the invaluable *The Weekly DX* from Bernie McClenny W3UR.

Svalbard activity is promised in the early part of June. Details from **http://www.dxpedition.org** Look for JW0PK.

The KH1 activity now looks good for either September-October this year or February-March 2002.

Baptist missionary Veronica Bowers KD4CKM and her infant daughter Charity were both killed, and the pilot KA5YIG shot in the leg. Our condolences to husband Jim and son Cory. Doesn't seem a very safe place, South America.

Letters

Ian Johnson (Kidderminster) writes about sealing coaxial cable connectors. Avoid the silicon rubber compounds that smell of acetic acid. Self-amalgamating tape is useful, provided it is pulled as tight as possible so it does self-amalgamate and so becomes waterproof. It doesn't like hot sun though.

For a dipole, Ian recommends Heatshrink on the inner, then solder to the braid followed by a lapping of tape and then a couple of layers of heatshrink. Ian sent me some very useful sketches, and doubtless if you sent him an A4 s.a.e. he would pass on his knowledge.

Now to the **Goodhalls** - Peter's eye has had thirty stitches removed, and every time it is checked there is measurable improvement. Let us all hope the improvement is sustained. Mind, Peter must be fairly well known at the local hospital by now! After deleting the 'common-or-garden' stuff, we see RI0B (AS-156), a fine assortment of VKs including lots of VK7s, mainland VKs, XT2PT, ZL3JU, RW1ZM/MM, CO6IQ, ZLs, SU/ZS6WPX, ZD7s, ER0ND, A61AJ, 7X4AN, 7J4AAL and 3D2DI.

From Barnsley, **Colin Dean** writes regularly - I've often thought of going there to see if there are any other locals - certainly Colin's letter is regular as clockwork! On 7MHz he offers JAs, RW9UMT, YC3OX, 3V8SM and 4L2SM. 18MHz showed A41LZ, A41MD, A71MA, AP2JZB, AP2JZB, BV5BG, RX2X, JA1JRK, KL7QK, P49MR, S79FO, VK2CPC, VP2VF, YB0A, 4L1DA, 5N2BHF and 9M6CT.

On 21MHz we see AP2IA, AP2JZB, BA4RF, BV4VE, CO2LY, DU1EIB, DU1IVT, DU1LKY, DU1SXW, DU8DJ, DU9RG, ET3AA, EX2X, FP5BZ, HL1JV, HS1NGR, HS0/G3UUM, various JAs, JW2PA, JW0HR, JX3EX, OD5IU, WA0VOM/SU, S21IAR, TA0/IT9YRE, TR8CX, UN9LFF, VK4HFZ, V5/ZS4NS, YB1A, Z22JE, 3V8DJ, 3V8SM, 4K4KL, 5H3OG and 7Q7KZ. That leaves 28MHz for AP2IA, AP2JZB, CP6XE, CW1U, C6ASM, EP3SMH, EZ8CQ, FS5FT, HS0/G3UUM, HZ1AB, OD5YJ, PZ5RA, SU/ZS6WPX, TG9NX, TI2KI/8, TU2KC, VK3EW, V44NE, V51AS, XT2DE, YB0A, Z21KF, 3B8FG, 3V8DJ, 5A1A, 5Z4NU, 6W4RK and 9K2ZZ.

Someone, who shall be nameless, has noticed that my name never appears in the listings - why should I bore readers with my meagre pickings? Seriously, since I became BRS19385 fifty years ago I've picked a few out, whether deliberate or accidental. The prime difficulty over the years has been confusion between number 1 and letter I when contributors use a straight vertical line for both - a problem compounded when they are adjacent. In my own logs, I always underline a number 1 - saves thinking!

As for my receivers, I started with a home-brew, then came an Eddystone 640 lent by the late G3LXP, an HRO, SX28, before going transceive with the present TS-440S and TS-520S, both of which I have had for many years. I've always hankered after an AR88D - the nearest I got was an RA17. If only someone would invent a receiver with the stability of a phase-lock loop and the clean oscillator of an HRO or AR88D.

Charlie-Whisky

Far and away the best and easiest mode for the s.w.l. - 'phone stations so often go into waffle mode for twenty minutes even in the middle of a pile-up, where a nice snappy contact on the key is so much cleaner and more rewarding. Those who claim c.w. is 'outdated' have never learnt it. For example, I had it hammered into my thick skull and hated every minute - but my attitude rapidly changed when I listened to the 'phone end of the amateur bands.

That seems to be the case with **Ted Trowell** on the Isle of Sheppey - I can't recall the last time Ted's log contained any sideband loggings. Top Band yielded 4X4DK and Eighty PY6ML, while 10MHz KP2/DL1DA, JY9NX, 8Q7KK, ZL2AGY, PY2FZ and 3V8DJ were note. Switching to 14MHz showed 9V1GA, VU2TS, VP8SGK, JA0CVO, 9J2CA, VK3EGN. Next, 18MHz for DS5USH, FR5FD, XV3TAA, SU7ZZ, PT2/KC4BAA, 9Q5BQ, VR2PX, 9J2BO, VU2TS, VK9KCP, KP2J and TF8SM.

Not so many on 21MHz where Ted noted DS1CCU, 8Q7KK, HL1CG, VQ9IO, BN0W, PJ2/WI9WI, JA8LDC, V73E, VQ9VK, JX8XM. Even fewer on 18MHz with VQ9IO, 9H1SL, 4Z5FC and N4CD/TI2. We're left with 28MHz for JT1DA, YC1WAE, HL2AVS, 4S7NE, FR5FD, J88DR, LU4AT, CE2LZR, DH2DAM, CX4GL, HI3LFE, HC5AI, G3MRC/C9 and J3/W1HEO. To fill his letter, Ted adds QSL addresses: PY0FZ to PY7ZZ, XV3TAA to JA1TAA, YC1WAE to K5ZE and BN0W to BV2KI.

A few odd comments to finish with. Firstly, most of you hand write your letters and it's a great help if you could make things as readable as possible for the next few pieces while my eyes are sorted out after the diabetes. Secondly, if you can get your letter in a bit early it'll help, 'cos my typing speed is also temporarily down.

Finale

That's it for now. Deadline as usual the first of the month, but if you can get your letters in early this time I'd appreciate it. **Box 4, Newtown SY16 1ZZ** is the address as always. 'Bye now!

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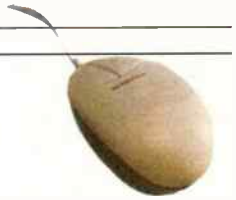

Hello and welcome to 'ShackWare'. The rain has abated somewhat and I've been up to my usual tricks rummaging around at car boot sales, though my most recent acquisition was in fact a radio rather than a computer. A CB radio to be precise. I sold one of my Land Rovers before moving to Norfolk and my good old MAX1E went with it. I've been looking for a replacement to put in my other Land Rover ever since.

The new set, a Pama GX-25, cost £12 and came boxed and complete with an extra power mic, a PA horn and all cables. A bargain! Now all I have to do is try to fight my way past cement mixers, stacks of bricks and all the other paraphernalia that makes our garden and garage resemble a builder's yard to get to my beloved Land Rover!

Mailbag

Les Borthwick of Hawick up on the Scottish borders (a truly lovely part of the world) writes with a problem he's having with the popular *Radioraft* decoder software. Take it away, Les... "My computer is a Pentium machine with 7Gb of hard disk space and 32Mb of RAM running *Windows 98*. I can get *Radioraft* to appear on screen, but I can't seem to get a signal onto the screen and when I try to open the various option boxes the computer sometimes locks up and then I have to do a restart. I've also tried to run it from *DOS* using a shortcut from the desktop but still nothing.

"The computer runs DL4SAW SSTV okay and also *Hamcomm* (though I do have trouble setting *Hamcomm*'s parameters). *Radioraft* runs well on my son's *Windows* Millennium 800MHz PC".

I have to say at the outset Les, that solving this one without actually sitting in front of the machine and twiddling is very difficult. There are so many factors which could be adversely affecting the performance of *Radioraft* or stopping it from running altogether. Though your machine ought to have more than enough power to deal with the software, there could be some little software snippet installed which is operating in the background and stealing processor cycles, thereby spoiling any chance of *Radioraft* properly synching.

It could be that other software has a memory conflict with *Radioraft* (both fighting for the same memory space) even though there's plenty of free memory. Or it could be that what's needed is to access your computer's CMOS settings at boot-up time and tweak the port options to enhance them for *Radioraft*. None of which I can try without sitting at the machine.

One thing to note is that attempting to run a program in *DOS* from within *Windows* often fails. The only way to properly enter *DOS* and ensure you have complete (ish!) control over the system is to hold down F8 at start-up and select a command line only option from the displayed menu. From there, navigate to the *Radioraft* directory and try running the program.

Are you absolutely sure that your interface is working correctly? Does *Radioraft* know where to look to find it? Try using the interface on your son's machine and see if it works.

Outwardly similar machines can operate in weirdly different ways. For example, an interest of mine is emulator software - programs which turn one computer into another. As you might imagine given my interest in Atari 8-bit machines, my favourite emulator program is one which emulates Atari's home computers. This program worked splendidly on my earlier computer, a super-fast (for the time) PC equipped with an AMD K200MHz processor and 32Mb or RAM. Emulation was faster than the real thing and features such as sound reproduced perfectly. Then I upgraded to a 350MHz Intel Pentium II computer with 64Mb RAM and the emulator is now virtually useless if sound emulation is switched on. A machine almost twice as fast and with twice the memory quotient and yet not half as good at running my favourite emulator.

Ernest Wray of Bournemouth helped to clear out the basement at his place of work recently (an insurance broker's office) and located a "...huge old portable computer with a built-in 5 or 6in monitor screen, two disk drives of the 5.25in variety and a keyboard that doubles as the lid. That is, when you unclip the lid the keyboard is on the other side of it attached by a curly lead. The name tag says Kaypro (I think, it's very scratched and faded). It appears to work because when I switch it on, the monitor lights up and the drives are accessed, but I don't have a boot disk. Can you help shed any light?"

Sound to me like you've just acquired one of the computer world's earliest attempts at an affordable, luggable and useable machine, Ernest. Kaypro made CP/M computers (Z80-based and running Gary Kildall's CP/M operating system, a forerunner of MSDOS) among others. Though unwieldy to say the least, the machines could be moved off a desktop and carried from office to office providing portability of sorts.

First thing to do is to locate a suitable start-up CP/M disk which, if you have access to the internet and a PC with a 5.25in disk (admittedly rare now) is easy. Simply use your favourite search engine and look for sites devoted to CP/M (there are many!). Without Internet access you can contact one of the PD libraries which advertise in the computer press (have a free read for a suitable one in Smiths!) which still supports CP/M shareware. And when you've booted the machine, you'll be able to tap into a small planet's worth of interesting business-oriented software written for the CP/M OS. There's even radio software, but making use of it will depend largely on what ports the machine is equipped with.

Finally, check out **www.seasip.demon.co.uk/cpm/index.html** which features lots of CP/M systems and applications software plus many useful links. Happy hunting!

And Finally...

That's it for this instalment. The next column I write will be from the comfort of my newly-built shack - the builders assure me that two weeks ought to see the job finished! Until next time, good listening.

Buyer Beware?

Whereas searching out interesting old silicon usually involves boot and jumble sales, second-hand shops and the like, there is a high-tech method of locating obsolete computers suitable for use about the shack. Anyone with Internet access can point their browser at **www.ebay.co.uk**

For those who don't know, Ebay is an on-line auction house that web users can access to bid for items which others have put up for auction. The process is essentially automated in that you register on-line and then browse the available categories for the stuff you're interested in. If you find something (and there's usually a picture or two to help you decide) you can make a bid. You can also elect to set a maximum bid and Ebay will then happily increment your bid by a small amount if you're outbid by another bidder, up to the level of your maximum bid.

Auction lasts several days during which popular items might enjoy spirited bidding before being knocked down to the winning bidder. But what makes Ebay of interest to us of course is that it features hundreds of auctions of computer equipment, both old and new, and seeking it out is as easy as typing an appropriate word or phrase into Ebay's search facility.

All well and good, but there is a small downside. Computers sold on Ebay tend to fetch (in my opinion at least) ludicrous prices. For example, an Oric 1, boxed admittedly, but nevertheless a plain-vanilla Oric 1, went for almost £50 recently! An insane amount of money to pay for something that dilligent boot sale searchers will turn up sooner or later for not more than a pound or two (I know, my own Oric 1 was a boot sale find and cost a pound and there were two to choose from on the stall).

On the other hand, Ebay does provide the opportunity to find machines which you might never otherwise come across. A recent example was an Atari Stacy - a portable (luggable!) ST - which went for several hundred pounds. Over-priced in my opinion, but desirable if you've been searching for one for years.

Do have a good look around Ebay and do bid for interesting items but watch out for those high prices!

■ GODFREY MANNING G4GLM, C/O THE GODFREY MANNING AIRCRAFT MUSEUM, 63 THE DRIVE, EDGWARE, MIDDLESEX HA8 8PS

Airband

An event this month is the British Grand Prix, which will attract intense helicopter flying in the Silverstone (121.075) and Turweston (122.175MHz) areas on July 13-15 (*AIC* 36/2001 from the CAA refers).

Then there are jet formation aerobatic team displays (mainly by *Red Arrows*), listed in *AIC* 40/2001. On publication day (June 28) they're at Tain, then Waddington on 30th and July 1. Also in July (dates in parenthesis) displays are at: Rencombe (1), Elvington & Goodwood (8), Cranwell (12), Chichester (13), East Fortune & Wirral (14), Blackpool & Silverstone (15), Culdrose (18), Cranwell again (19), Hornsea (20), Inverness (21), Brands Hatch & Kemble (22), Lyme Regis (25), Lowestoft (26 & 27), Llanidloes (27), Cottesmore & Kelso (28) and Cottesmore & Sunderland (29). These are schedules, appearances are not guaranteed. After 1900 local the night before, ring the free recorded message on **(0500) 354802** for anticipated airspace restrictions where the teams will display the next day.

Let's hope the outbreak of foot and mouth disease is a non-event by the time you read this. This particular picornavirus seems easily transported by just about anything, not just on your boots and tyres, but even aerially. That's why various airspace restrictions are in force to prevent low-flying aircraft stirring up clouds of the virus in affected areas because this would otherwise worsen the spread.

I heard of a helicopter actually flying through such an area and they decided to disinfect it on landing. In fact, the downwash from the rotors is likely to protect the helicopter. It's the effect of the disturbed air in spreading the virus elsewhere that has to be avoided.

Information Sources

Various suppliers (even the RAF) sell basic aeronautical information to the public by mail order and I list such sources on my *Airband Factsheet*. This is available for the asking from the Editorial Offices at Broadstone (**not** from me!) if you send them a self-addressed envelope with sufficient postage for two A4 sheets.

One item of interest to **John Fraser** (Southport) is the Polar Chart, sold by Racal Aerad and Jeppesen. John's friend often flies Heathrow to San Francisco by B.747 and overflies Iceland *en route*. The world seems strange when projected on a flat map, but the shortest route between two points on the globe is a geometrical construct called a great circle. Plot the route on a globe instead of a map and you will find that the shortest path comes close to the North Pole and is not on the North Atlantic Organised Track System. Perhaps a friendly enquiry of the crew will confirm this on the next flight, John. Let me know!

Another problem is the new 8.33kHz channels. I have prepared a lookup table of all these which you can have (Acrobat or web browser formats for the IBM PC) if you send me a floppy disc, with return mailing facilities, at my Museum address (see above). Or, you can look at the same thing on the web site **www.pwpublishing.ltd.uk/swm/frequencyinfo/channel833.html** which is fine if you have access.

If, like **R.C. Fleet** (Ely), you don't have a computer, please write in with your particular frequency requirements and I'll provide the answer here. What I can't do is to send the lookup table on paper as it is simply too large, sorry.

Just a reminder why all this is necessary. Actual 8.33kHz-spaced frequencies, which have to be entered into a receiver in order to hear them, work out to give some strange numbers. Controllers only state a rounded approximate frequency which is not correct for tuning a scanner. You need to convert from one to the other.

Military Procedures

In the May 'Airband' I mentioned how Pennine Radar guides commercial flights to certain aerodromes outside controlled airspace. Co-ordination with military activity is sometimes necessary. I can tell you about one incident that demonstrates this as it was published in *AAIB Bulletin* 2/2001 ref. EW/G2000/03/07 on page 13.

In the early evening of 20 March 2000, a Shorts SD3 was approaching Newcastle from Aberdeen. In the same area were three RAF Tornado F3s on AIREX TLT 1/00, a Tactical Leadership Training night exercise, planned by Air Warfare Centre. Out of Leuchars, their callsign was FOZZY. If you want up-to-date information on such exercises - they are NOTAMed - if you have the Internet access, should appear on **www.ais.org.uk**

Further military participation was by E3D Airborne Early Warning aircraft, callsign MAGIC 95, air refuelling tankers and Falcon electronic warfare aircraft. The Tornados routed to the Spadeadam range then turned east to pass Newcastle well to the north on the way to air-to-air refuelling over the North Sea.

Meanwhile, MAGIC 95 was preparing its equipment on the way to its assigned station. Although able to perform radio checks, the Tactical Director had not declared that the aircraft was on station - it was not fully operational yet. This was made clear when the Tornados (FOZZY 2, 3 and 4) contacted the Weapons Controller on MAGIC 95. No radar information was yet available from MAGIC 95, nor was it required to be prior to the on-station time.

Passing north of Newcastle, FOZZY 3 broke from formation to simulate an attack on another aircraft, following tactical radar information passed by the Weapons Controller on MAGIC 95. Although radar was now available, MAGIC 95 was still not yet on station, so such information was non-standard.

As FOZZY 3 rejoined its formation, it conflicted with the SD3. Newcastle Radar was able to alert the latter. The Tornado has its own radar, operated by the navigator, which also picked up the confliction.

After the event, the Weapons Controller was able to see the SD3 on radar and, when MAGIC 95 came on station, commenced a Flight Information Service (FIS) for the Tornados. Now, FIS is the same whether offered by military or civilian units. MAGIC 95 had radar, but was expecting it to be jammed by the simulated enemy. This is why FIS, a non-radar service, was offered, leaving the Tornado pilots to avoid other traffic by visual lookout.

Just as in civilian practice, the fact that radar-derived data are available does not mean that a radar service is being provided unless the controller expressly states that it is.

Abbreviations

AAIB	Air Accidents Investigation Branch
AIC	*Aeronautical Information Circular*
AIP	*Aeronautical Information Publication*
ATIS	Automatic Terminal Information Service
B.	Boeing
CAA	Civil Aviation Authority
d.m.e.	distance measuring equipment
FL	flight level
GASIL	*General Aviation Safety Information Leaflet*
IBM	International Business Machines
i.l.s.	instrument landing system
kHz	kilohertz
LARS	Lower Airspace Radar Service
MHz	megahertz
N	north
n.d.b.	non-directional beacon
NOTAM	NOTice to AirMen (includes AirWomen)
PC	Personal Computer
STAR	Standard Terminal Arrival Route
v.h.f.	very high frequency

PA-28 Cherokee 180.
Christine Mlynek.

Continued on page 64

MAGIC 95 provided tactical information, only when the radar was not being jammed, but could not guarantee enough cover to offer a traffic avoidance radar service.

Frequency & Operational News

Information from the CAA via *GASIL* 2 of 2001 and *AIP* amendments courtesy of **Martin Sutton**. Belfast Radar 120.0MHz is withdrawn. Jersey has amended STAR 3C (was 2C). Manchester's i.l.s./d.m.e. 06R now identifies as IMC instead of IRR. Stansted's Delivery is back on 121.95 after a spell on 125.55MHz. Wick's ATIS is not on v.h.f. but can be heard over the 'phone on **(01955) 605428**. New microlight and glider sites are at Kingston Seymour and Llantysilio. Great Yarmouth/North Denes heliport closes.

LARS is now available from Bournemouth 119.625MHz. It's also at Humberside where the frequency changes to 119.125 (was 124.675MHz).

Maritime Rescue Centres are no longer at Oban and Pentland. If you have a copy of the *Rescue* book, the amendment goes on page 164. New offshore platforms are Brigantine Bravo Golf, Brigantine Bravo Romeo, Jade, Millom West and Skiff Papa Sierra.

Airway changes in the south-west are complicated and are a continuation of those that I reported last month. They are to expedite traffic between UK and France. I now list all airways changes including the ones just mentioned.

(U)B321 Honiley-Compton are withdrawn and the next sections south are controlled on 132.45 below FL310, 135.425MHz above. Old B321 Honiley-KIDLI and old R25 Compton-SITET now become N859, one-way southbound only. Old UB321 Honiley-Compton and old UR25 Goodwood-SITET become UN859 with new point VAPID at intersection with UB39. New airway T71 runs COWLY to VAPID eastbound only and UY8 runs eastbound only Southampton-Goodwood.

Elsewhere, BADIM is a new point on G1 close to the Bristol Channel and DOGAN is on UP6 on the north coast of Man. LANLO is a new point between Scillies and Land's End, the *Amendment* has the wrong latitude which should presumably be 495927N.

(U)H53 HEMEL-Detling and UG106 with its points BAGIN and CRABE are withdrawn. Points ALWYN, EIDER, FLAME, FLARE and NORSE are withdrawn.

Yet more n.d.b.s are lost, this time at Fife (GO, 402) and Round Island in the Scillies (RR, 298.5kHz). If you write in for more details about any of the above, please state which edition of *SWM* you read it in!

All letters received up to May 9 have been answered.

Cessna Skyhawk II.
Christine Mlynek.

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DX Television

An increase in Meteor-Shower activity was evident during April, culminating in two minor Sporadic-E openings at the end of the month. An Auroral event on the 22nd affected Band I and the f.m. band.

Reports

Simon Hockenhull (Bristol) detected an increase in F2 activity on the 14th with 'foreign' p.m.r. up to P3 on 30.090 and 34.250MHz. Unfortunately this was not high enough to affect Band I TV.

The Sporadic-E season began unceremoniously on the 29th with a brief opening to Norway at 0730 encountered by **Peter Chalkley** (Luton). The following day **Peter Barber** (Coventry) discovered Spanish (TVE-1) programmes from the Channel E2 Madrid outlet between 1412 and 1413.

Meteor Shower DX had its moments. Peter identified the Italian RAI UNO network by its distinctive butterfly logo on Channel B at 1318 on the 20th and again on the 26th at 1318. **Stephen Michie** (Bristol) saw the Danish PM5534 test pattern flutter up at 0732 on the 21st. A small tropospheric lift produced Canal Plus (France) on Channel L5 from Lille on the 2nd.

FM Reports

From 2200 on the 20th, the *Lyrids* Meteor Shower event rewarded **George Garden** (Edinburgh) with a deluge of strong 'pings' on 87.9MHz. At 2330 a French station was heard, possibly 'France Inter' from Toulouse (Pic du Midi) located close to the Spanish border. George used a four-element array with amplifier feeding a NAD hi-fi tuner.

On the 22nd at around 0900UTC, **Tim Bucknall** (Congleton) noticed a predominance of meteor activity from the south rather than the more usual easterly direction. Tropospheric lift conditions on the 24th and 28th brought in strong North German stations.

The *European FM Handbook 2001* is now available via the Internet home page of **Ab FM Media Plaze Ltd.** at **www.fmdx.com** The publication runs to 450-500 pages with information on around 30,000 f.m. radio transmitters in Europe, Russia, CIS countries, the Middle East and North Africa. Information will include frequencies, e.r.p.s, local stations, transmitter sites, networks, addresses, telephone and FAX numbers, E-mail, website addresses, maps and RDS information, etc.

Peter Barber (Coventry) mentions the switch-off of DAB (digital radio) in some parts of Sweden and The Netherlands, due to lack of public interest. **Roger Bunney** (Romsey) comments that the British Government still insists on closing analogue f.m. transmissions by 2015, leaving the public with redundant equipment and a replacement service with inherent reception difficulties.

SSTV

Cliff Dowding (Birmingham) complains that the 10m band has been dead for the past few months with only mediocre reception on 20m. Conditions can only improve!

Paul Crankshaw GM7VXR (Troon, Ayrshire) has submitted a selection of good quality SSTV pictures. His pride and joy is F05QB from Tahiti, French Polynesia on 15m. An Hawaii station has also been captured.

Attention All TV Graphics Fans!

Godfrey Manning G4GLM (*SWM* 'Airband' Column) asks if we have space in our column for the following offer. He is willing to supply graphics on disk, which include colour bars and two grey scales (progressing linearly and logarithmically). To obtain copies please send a blank formatted disk and return mailing facilities to the address given in his column on page 63.

George Hersee

Fig. 1: The BBC Test Card 'F', designed by the late George Hersee. This photograph shows the original version which was first officially transmitted on July 1st, 1967.

Until relatively recently, virtually every television service in the World transmitted a test card during the day. The Icelandic TV service even transmitted theirs throughout the night. But with the introduction of 24-hour wall-to-wall rubbish filling our screens, it is very rare to see a test card nowadays!

The pioneer of all the well-known BBC test cards radiated throughout the past five decades, or so, was George Hersee. Perhaps the best known test card is the BBC Test Card 'F' featuring George's daughter, Carole. Test Card 'F' has been used in several countries including Norway, Australia, New Zealand and Bahrain plus, of course, the United Kingdom ever since July 1st, 1967. Most test cards used throughout the World have incorporated many of the design features originally developed at the BBC by George Hersee and his team. Sadly, George died on April 11th, aged 76.

Service Information

Fig. 2: Slow-Scan TV (SSTV) from Tahiti in French Polynesia. *Photo: Paul Crankshaw (Troon, Ayrshire).*

Austria: The Jauerling/St. Pölten ORF-1 outlet on Channel E2a (49.75MHz) is to close in 2002. For more than a decade there has been a 100kW E38 transmitter operating in parallel. The Band I outlet has survived so long because of several dependent relays in the area.

The private cable station 'ATV' (Austria TV) plans to broadcast terrestrially throughout the country.

Denmark: There are a few Second Network Band III stations (all vertically polarised) which may be possible to receive via tropospheric enhancement. These are:- Gladsaxe E8 5kW, Slagelse E9 (e.r.p. not known), Nakskov E10 1kW, Kalundbourg E10 (e.r.p. not known) and Esbjerg E11 1kW.

Algeria: A second terrestrial TV network is planned.

Italy: RAI NEWS 24 will be aired terrestrially in Rome.

France: French TV (TF1, France-2, France-3, La Cinquieme, etc.) will launch four digital terrestrial free-to-air TV channels in September 2002. Eight channels were originally planned.

Fig. 3: The Swedish PM5534 test card. *Photo: David Bocca Corsico Piccolino (Italy).*

France 3 will launch seven regional channels, known as France-3 Region. A teenage channel will also be introduced. In addition, other channels will include France Television Info (news channel) and France Television Sports.

La Cinquieme will broadcast 24 hours a day when digital TV commences. News channel La Chaine Info is planned for terrestrial digital in December 2002. RTL9 is a candidate for a terrestrial digital frequency and will broadcast unencrypted from 2002. La Chain Parlementaire (Parliament TV) will also be free-to-air. Other services include C' la vie (talk shows) and Arte (non-stop). TF6, a joint venture by TF1 and M6, will also be present in digital.

Belgium: RTBF-1 and RTBF-2 are planning a digital terrestrial news channel.

Spain: The two digital terrestrial networks 'Onda Digital' and 'Net TV' will commence next year.

Fig. 4: This month's trip 'Down Memory Lane'. The BBC 'Bat's Wings' Identification Symbol transmitted during the Fifties.

This month's Service Information was kindly supplied by **Lionel Michelland** (France) and **Gösta van der Linden** (Netherlands).

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 disks and good-quality video recordings. The E-mail address is **GarrySmith@dx-tv.fsnet.co.uk** and our website address is **www.test-cards.fsnet.co.uk**

■ LAWRENCE HARRIS, 5 BURNHAM PARK ROAD, PEVERELL, PLYMOUTH, DEVON PL3 5QB
■ E-MAIL: info.orbit@pwpublishing.ltd.uk ■ WEB SITE: http://www.itchycoo-park.freeserve.co.uk

Info in Orbit

Several people responded to my comments about the faulty hard drive and deleting files - thank you. My reluctance to delete my precious WXSAT images (expressed in the form of a quip about not having acquired the skills to delete so many files at once) was slightly misinterpreted!

Meanwhile, I hold my breath while waiting for our house conveyancing to proceed. Marion and I decided to leave Plymouth and move eastwards, trying to escape Plymouth's unemployment problems that have affected me for ten years. With son Timothy in Cambridge, and daughter Cathy (with grandson Joseph) in London, we decided that a move was inevitable.

Southampton offers the best compromise. My main requirement is a garden offering plenty of room for my telescope, WXSAT dishes and antennas. I may soon have a new address to display above! The house under consideration has a considerably improved horizon for both my telescope and tracking dish, though no obvious place to set up my computers and cable runs.

WXSATs & *OKEAN-O*

The Russian/Ukranian oceanographic satellite *OKEAN-O* transmitted an image on 29 April at 0848UTC that even I received! Living (currently!) in the south-west of Britain, and shaded from the north-east by a hill, I rarely capture more than a few minutes of indifferent telemetry from OKEAN and SICH. The image received on 29 April was too short to reproduce here, but one from **Ian Deans** received on 2 May was of good quality - see **Fig. 1**. I understand from those who are able to monitor significant lengths of such passes that many images consist of just the visible-light scan.

Ian comments: "I have most of the *OKEAN-O* passes it has transmitted this year, but being in Scotland some of them are extremely marginal and over the last three months or so it has transmitted only very rarely. As you will know, the satellite uses four different formats when it transmits, and only the white bar format gives a sharp, clear visible image. However I have a very interesting four minute transmission from 2 May which, unusually for me (given its low elevation), is noise free. It is in the narrow stripe format, which usually gives a very whitish appearance, but I found it interesting as it was the first time I had seen land and sea in that format".

Volodymyr Astapenko invited me to visit the official web-site of Dniprokosmos - see **http://www.dniprokosmos.dp.ua/okean-o/images/** - "which displays examples of space images of the Earth collected by the *OKEAN-O* Ukrainian and Russian remote sensing satellite".

From the collection of eight available in mid-May, I have included **Fig. 2**. This was taken by the *MSU-V* (multi-spectral high resolution) scanning radiometer and demonstrates that the satellite is (or was) obtaining some good quality data.

Fig. 1: *OKEAN-O* 0837UTC 2 May from Ian Deans.

METEORs & RESURS

As anticipated, *METEOR 3-5* was de-activated around 26 April when its orbit precessed into the region where, although experiencing continuous sunlight, was at a low angle of illumination to the solar panels, and therefore causing power problems. *METEOR 2-21* was then heard during the 0950UTC pass over Britain, though again - as expected - the transmitted signal continued to be of limited strength.

Two days later, monitors reported *METEOR 2-21* was not operating, then I recorded a short burst of a.p.t. on 10 May. *METEOR 3-5*'s orbit precesses quickly, so its absence is usually for only a few weeks. Images from *RESURS 01-N4* are sometimes good, but often have line faults. **Figure 3** is a small section showing Britain.

Fig. 2: *OKEAN-O* - Fragment of south-west Crimea imaged on 13 June 2000. *Image courtesy DniproCosmos State Company (Dnipropetrovsk, Ukraine).*

The NOAA Fleet

It has not escaped the attention of WXSAT monitors that *NOAA-14* has slowly drifted from its original 'afternoon' orbit to pass later in the day - and that the 'morning/evening' WXSAT *NOAA-12* has slowly drifted to pass earlier in the day - and the two now overlap! *NOAA-14* orbits at a higher altitude - and therefore at a lower velocity - than *NOAA-12*, so the latter periodically catches up and overtakes the former. Images from each may appear similar at such times - see **Fig. 4** and **Fig. 5**.

NOAA-15 and *NOAA-16* have problems. The *NOAA-15* data stream is re-synchronised daily at 0740UTC to try to achieve proper imagery and data, but frequently fails later in the day. Some images - see **Fig. 6** from Kevin Hughes - remain of high quality. The a.p.t. from *NOAA-16* appears non-transmittable.

Fig. 3: RESURS 1119UTC 10 May image-enhanced close-up of Britain.

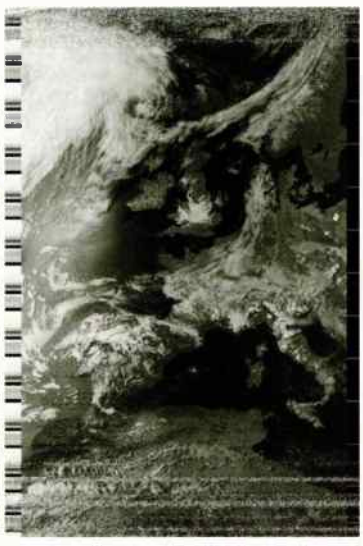

Fig. 4: *NOAA-12* 1621UTC 8 May.

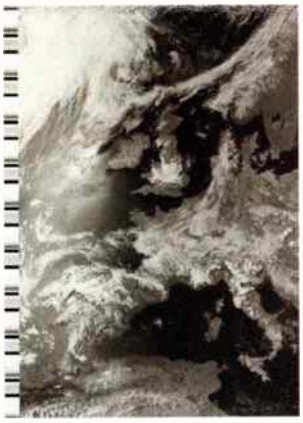

Fig. 5: *NOAA-14* 1602UTC 8 May.

Fig. 6: *NOAA-15* 0739UTC 7 May (Bank Holiday Monday) from Kevin Hughes.

Fig. 7: Cedric's h.r.p.t. dish.

Fig. 8: *NOAA-15* h.r.p.t. 0750utc 15 March from Cedric Roberts.

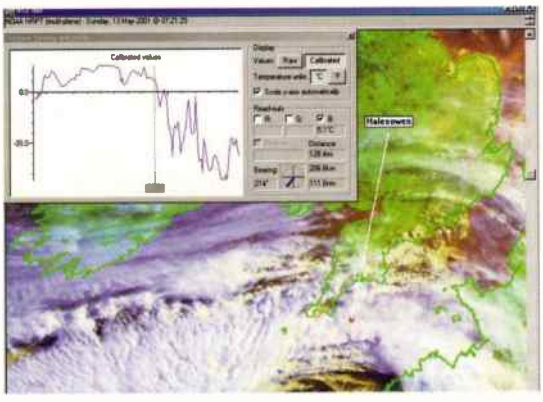

Fig. 9: *NOAA-12* h.r.p.t. image 13 May from Cedric Roberts.

Readers' Stations

The outlay for a complete system capable of receiving high resolution picture telemetry (h.r.p.t.) signals from the NOAA WXSATs is fairly high, no matter how substantial your resources. Unlike setting up an a.p.t. (low resolution) system, there is generally very little that can be built by the average amateur. **Cedric Roberts** recently told me about his own experiences, in a mail accompanied by **Fig. 7**.

Cedric's delving into h.r.p.t. was not without its drawbacks. He began with a German system, but after a short while, started to experience problems. These were partly due to ingress of water into the feed-horn, which carried an electronics board added as a cure for one of the problems. There were also difficulties with one of the cards used in the computer for controlling the rotator/elevator. Some backlash in the rotator led to the dropout of data when the satellite is near overhead.

The problems were tackled with varying degrees of success, including a complete overhaul of the feed-horn and the supply of a new card which gave some very good images when the system worked as a unit. Cedric was not entirely satisfied with the inconsistencies in imaging, and in the end, decided to go for a piecemeal setup.

He is currently using the rotator/elevator cards from **Orbit Electronics** with *Nova for Windows* software as the dish driver. The dish is from **Timestep**, and has had an additional strengthening bar fitted across the 'U' supports to give extra rigidity. The receiver is from **Dartcom** and is also able to support CHRPT. The rotator/elevator is being changed in April to eliminate backlash which currently causes the dish to drop by several degrees as the satellite passes near overhead. This leaves black lines across the image where data dropout occurs.

Image processing is via Dartcom's *Siamiv* which allows for extensive manipulation of the final image for such things as temperature readings, cross section profiling and geometric correction of the image. Though the final system is not from one supplier, it does give some excellent images. My thanks to Cedric for providing the information and pictures.

Registering Your Ground-Station

It is all too easy to set up your own satellite receiving station and remain isolated from others also participating in the hobby. Over the years, reception problems gradually encroach and before long, your images have deteriorated for reasons that may not be apparent. The important part is telling the world that you are there!

The **Remote Imaging Group** was started during the 1980s as a hobbyist club for those interested in receiving images from weather satellites. This is a specialist hobby that requires specialist equipment, and if we are not careful, commercial interests are all too ready to jump in and buy the frequency band(s) currently allocated for satellite imagery. **John Tellick** of the Remote Imaging Group has been actively involved in discussions with Eumetsat on behalf of British amateur WXSAT hobbyists.

John comments: "In 1992 I received a copy of a letter from EUMETSAT to the UK Met. Office. It pointed out that WARC 92 (World Administrative Radio Conference - 1992) had agreed 700kHz bandwidth allocation on a primary basis to MSS in the 137-138MHz band, and the rest of the band on a secondary basis. It urged that because the band was used for the direct read-out services of meteorological satellites - APT - and was foreseen to be used for the new LRPT - "it is necessary to register all existing operational APT stations with the responsible national frequency authority" in order to defend the band against expected 'little LEO' allocations (ORBCOMM).

"We, at RIG, knew of 1000+ APT stations operating in the UK, but were unable to register them. Our national PTT - the Radiocommunications Agency was not interested. The UK Met. Office were also unable to help. I tried to register the stations directly with the ITU in Geneva but they said it could only be done through your national PTT.

"Some time later I got the WMO to accept our members stations and we - Remote Imaging Group members - are now registered with them. We keep that registration updated annually. The WMO were amazed when I contacted them because their total number of registered stations went from eight in Europe to over 1000 overnight. RIG now has 2,500 members in over 45 countries, most operating ground stations.

"Despite the agreed international ITU (3 region) spectrum allocation tables, national PTT's are apparently allowed to make 'other' allocations in a specified band, as long as a neighbouring country does not suffer interference. This has happened in the UK with the 137-138MHz band. Wide Area Paging was allocated on 137.975MHz. There are also further channels between 138.00 and 138.20MHz. These are 100W transmitters, spaced at 18km intervals - two operators with two channels each. "I am 1.2km from one transmitter and 5km from another", says John; "these channels are firing almost continuously. Trying to receive a METEOR satellite on 137.85MHz, for me and many of us in the UK, can be somewhat challenging".

John notes that on EUMETSAT's web site - **www.eumetsat.de** - WEFAX users, though not obliged to do so, were requested to notify EUMETSAT of their receiving station so they had

Fig. 10: GMS PDUS whole-disc, visible-light image of 12 May showing Australia and Far east (re-transmission from *METEOSAT-7*).

Fig. 11: Shuttle image of Plymouth - courtesy NASA.

some idea of number of users. John suggests that if you receive METEOSAT you should register. As someone said "It's time to stand up and be counted".

On the home/index page - select Data Products and Services, select Image Data Dissemination Services. In the WEFAX section near the bottom of the page you will find the request. Similarly, you can register on the NOAA site:
http://140.90.207.25:8080/EBB/ml/survey.html

METEOSAT Shows The Seasons

One of the series of high resolution (PDUS) images transmitted by *METEOSAT-7* without encryption is that from the Japanese geostationary WXSAT *GMS-5*. The visible-light images are particularly interesting because they include Australia and the Far East. I received **Fig. 10** while completing this column two days before the deadline. Tropical cyclone Cimaron is seen over the South China Sea, moving northwards.

Encryption - Russian & Chinese Views

In the last two editions, I published comments from **Wayne G. Winston**, the Direct Readout Co-ordinator from America's National Oceanographic and Atmospheric Administration, concerning their commitment to providing free-to-ground transmissions of data. This month the theme continues with comments provided for me by representatives from Russia and China.

ScanEx - A Russian Perspective

Ippolitov Vitaly is an engineer at the Research & Development Centre (ScanEx) in Russia, and told me about their *Transparent World* Project. "We offer a new satellite series that can transmit 50m spatial resolution images free of charge, and non-stop (continuously) like NOAA. It does this by the conception 'Open sky' of World Meteorological Organisation. To receive images, you only need the receiving station. The main idea of this project is democratisation of access to Earth remote sensing data of higher spatial resolution - up to 50m on the first stages and more further. It is known that such data always had very big prices, distributed from centralised data reception centres, and the use of this data was accessible only for narrow circle of users. Now in the period of fast development of computer technologies the use of such data is becoming accessible for wide range of users, for example, for a student on his own personal computer".

A more detailed description of this project was included in a recent edition of this column. It is clear that Russia does not plan to encrypt satellite imagery, and is looking to making it easier and cheaper to access.

China - FENGYUN Data

The National Satellite Meteorological Centre has a home page on the web - **http://nsmc.cma.gov.cn/** - that includes the following invitation:

"Free transmission of stretched VISSR data and WEFAX images are open to all users within the *FY-2B* transmission coverage".

China operates a geostationary and polar series of weather satellites and data can be routinely received several times each day from *FY-1C*. The geostationary satellite *FY-2B* transmits unencrypted data.

NASA Images On The Web

NASA provides a large number of sites for disseminating images from virtually all of the space missions. The following sites are excellent starting points for specialist images:
http://science.ksc.nasa.gov/shuttle/photos/ - **http://nssdc.gsfc.nasa.gov/photo_gallery/** and **http://eol.jsc.nasa.gov/sseop/clickmap/**

The last site provides images of earth features taken by Shuttle astronauts, and is in the form of a map of the earth. Clicking a mouse to select a region brings up a list of possible images, though not all are available for download.

Next month I hope to be including details about the new Russian oceanographic satellites scheduled for launch next year and after.

Fig. 12: Shuttle image of western Britain - courtesy NASA.

Shuttle Launch Schedule

- STS-104 *Atlantis* is scheduled for launch no earlier than 14 June on the 10th flight to the *International Space Station* with the airlock payload
- STS-105 *Discovery* is scheduled for launch no earlier than 12 July on the 11th flight to the *ISS*.

Frequencies

NOAA-12 and *NOAA-15* transmit a.p.t. on 137.50MHz.
NOAA-14 transmits a.p.t. on 137.62MHz.
NOAA-16 has unresolved faults with a.p.t. transmission.
NOAAs transmit beacon data on 137.77 or 136.77MHz.
METEOR 3-5 normally transmits on 137.30MHz in sunlight.
OKEAN-O, *OKEAN-4* and *SICH-1* use 137.40MHz for brief transmissions.
RESURS 01#4 transmits a.p.t. on 137.85MHz.
METEOSAT-7 (geostationary) uses 1691 and 1694.5MHz for WEFAX.

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MilAir

Better Outlook

At present there is just ten days to go to Mildenhall Air Fete and in addition to some interesting participants listed on their web site, I have just heard that the US Navy are hopefully going to be present with five or six aircraft from a Aircraft Carrier - good news as the USN has always been one of my favourite photographic subjects. (I just wish they would repaint more of the Navy aircraft back into some of the colourful squadron markings of the past).

With the Foot and Mouth outbreak apparently on the decline, the gloom of a month or two ago has now been replaced by a much brighter outlook, (apart from the prospect of a General Election, preceded by a month of spin). Hopefully, we can now anticipate some sunny weather and a selection of interesting Military Airshows, with Cottesmore, Mildenhall and Waddington probably being top of the MilAir league table.

I am off on the long trek to Mildenhall next week for a couple of days, so hopefully a report and some pictures next month. (Please, please don't let me be rained on as much as last year!). Don't forget to send in those airshow frequency and callsign reports.

The Future

Mike Reynolds writes to me with reference to my comments in a recent column regarding the digitalisation and scrambling of the Ground Operations frequencies at Mildenhall and Lakenheath, (406-420MHz). His basic question is, "With TV and radio heading down the digital path, is it likely that some or all of the airbands could follow this route and could scrambling or encoding of signals be used more extensively in the future?". Well, they're tricky questions to answer, and subjects I could only give an informed opinion on because as far as I am aware, there are no plans for changing to digital transmissions in the near future.

There is in theory no technical reason why the current airbands could not be changed to digital - the main problem would be cost, (with, I am sure, a bit of politics thrown in). Digital transmissions would enable many more usable frequencies/channels, but not necessarily with any increase in quality or transmission distance, the old line of sight rules would still apply.

Whilst I am certain that digital airband frequencies will most certainly be with us sometime in the future, how far into the future is another matter. It would presumably have to be a co-ordinated event world-wide, the logistics of which would be mind boggling, I cannot imagine that we would enter a situation where aircraft would be equipped with both analogue and digital radios!

Another minor point is that there must be several million radio equipped aircraft, from Cessna 172s to Boeing 747s, all of which would have to be converted - quite a task. We have only recently seen the introduction of 8.33kHz spacing in Europe and not without a few problems, and that only affects aircraft that use upper airspace. We are still awaiting the theoretical introduction of 8.33kHz spacing into the UK next year, presumably with the opening of the new Swanwick On-route Centre.

With all this in mind, it is my personal opinion that the introduction of digital frequencies on the airbands would be at least ten years away. I would think that those people in the echelons of power will think long and hard before entering an expensive transition and potential logistical nightmare by introducing digital radio - as ever, time will tell!

Relating to the scrambling aspect of transmissions, this already happens to an extent with certain tactical military transmissions, (see my comments on 'Have Quick' in the January *Short Wave Magazine*). For most general Air Traffic at Airfields and Control Centres I would suggest that it is highly unlikely, nay impossible, that any form of scrambling would be introduced purely on the grounds of safety. However, I am sure that if a reliable, efficient and cost effective scrambling system were to be invented, then the military would certainly consider using it for a wider range of discrete operations.

But, (and it's a fairly big but), in the modern era with defence budgets being cut with regular monotony, the most pertinent comment that I have just made is 'cost effective'! In the end, the bottom line is money and the availability of funding for any such new equipment balanced against its effectiveness and tactical protection it would give our pilots.

Frequency Updates

A few frequency updates have been sent to me by a variety of sources over the past weeks, so here is a quick rundown of the latest information. **Alan M**, reports that he has heard a new Scottish Military frequency in use which is 124.05. I first had two reports of this frequency back in May and July 2000, but then it went quiet.

It was then reported once during September and then once again there were no reports until it was noted in February. The lack of use indicates that it may be a rarely used standby, one correspondent suggests that it may be linked to 252.475, any comments anyone? At Lakenheath, 365.975 appears to have taken over from 264.675 as the primary Military Zone transit frequency.

Thanks to **Dave L** who reports that Scampton has gained a new Ground frequency of 258.5 which was noted in use in early April. This presumably has been introduced to give the Red Arrows a bit more flexibility with available frequencies at Scampton. Lastly, Valley has gained a new v.h.f., Automatic Terminal Information Service, (ATIS), frequency on 120.7.

Hopefully, by the time you read this the US Navy may have brought some aircraft with coloured markings to Mildenhall Air Fete, but in case they didn't, our photograph this month is an F-14A Tomcat of VF-84, (The Jolly Rogers), on the flight deck of the USS *Nimitz* in 1980. (The squadron is now disbanded and this aircraft is now sadly stored at Davis Monthan).

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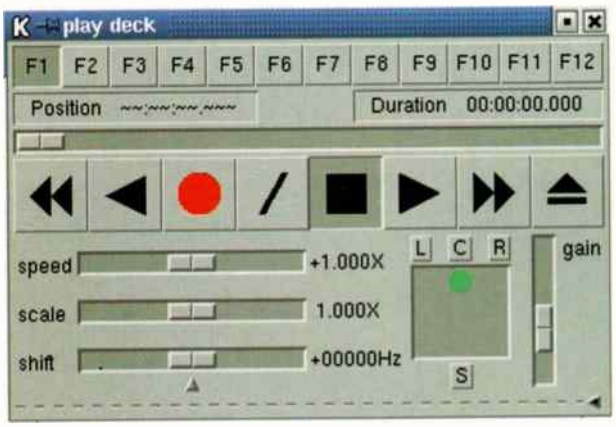
Decode



Powerful signal control with *Baudline*'s Playdeck.

Northwood News

Some of you may have been disappointed recently when the popular Northwood FAX station went off-air. Fortunately, this was just for a few days and the station is now back with a wider range of weather FAX charts available. As a reminder, the current active frequencies for this station are: 2.6168, 4.6083 and 8.0382MHz. If you want to see what's available throughout the day, a full schedule is sent at 1436UTC (sometimes this goes out at 1430, so you need to start receiving on the early side).

If you don't want to wait for the schedule, I can tell you that Surface Analysis charts are sent at: 0300, 0400, 0500, 0900, 1100, 1200, 1500, 1800, 2100 and 2300. For a Surface Prognosis you need to catch the charts at: 0524, 0800, 1000, 1300, 1736 and 2200. My thanks to **Len Woolley** for supplying the Northwood data.

Fancy Windows with Linux.

Now For Something Completely Different!

Just for a change, I thought I'd spend a little time looking at a more advanced view of the link between decoding and computing. With so many PCs now getting consumed by Microsoft with huge software packages that demand ever faster processors, more memory and larger hard disks, its time for a change. The answer, possibly, comes in the form of the Linux operating system.

You can be forgiven for not having heard of it, but if you go into any of the large book stores you will see that there's a huge commercial interest in this operating system. One of the many attractions of the Linux operating system is that it has been written and distributed under the GNU General Public Licence, which means that the software and its source code is freely-distributed and available to the general public.

The Linux operating system was initially created as a hobby project by a young student, Linus Torvalds, at the University of Helsinki in Finland. Linus had an interest in Minix, a small version of the UNIX system, and decided to develop a better system. Development has continued from its early beginnings back in 1991 through to the version 2.4 of the Linux Kernel.

Although the Kernel of the operating system was really good, some application was required to really bring the operating systems to life. Although the growth of interest in this system was small at first, it is now a fully developed clone of the UNIX operating system and has a huge following.

The power and efficiency of the operating system is being utilised to run network servers, web servers and a host of business applications. What's more, the advent of the X-windows system has turned Linux into a relatively user friendly desktop operating system. It is certainly a very stable and highly customisable operating system, which due to its better use of the processor capacity can even run successfully on a 486-based PC.

So there you have it, a potted background to Linux. So what about 'Decode'? Well some of the very latest versions of Linux are remarkably easy to install and well worth experimenting with. For this article I was attracted by the latest release of *LINUX-MANDRAKE 8.0*. This comes as a set of five CDs with the full operating system and a huge range of applications.

The installation routine is very well thought-out and guides you safely to a fully installed system, complete with boot disks and a dual-boot start-up for those with *Windows* already installed. I was really impressed with the way in which the installation routine detected all my hardware right down to my BT Speedway ISDN PCI card.

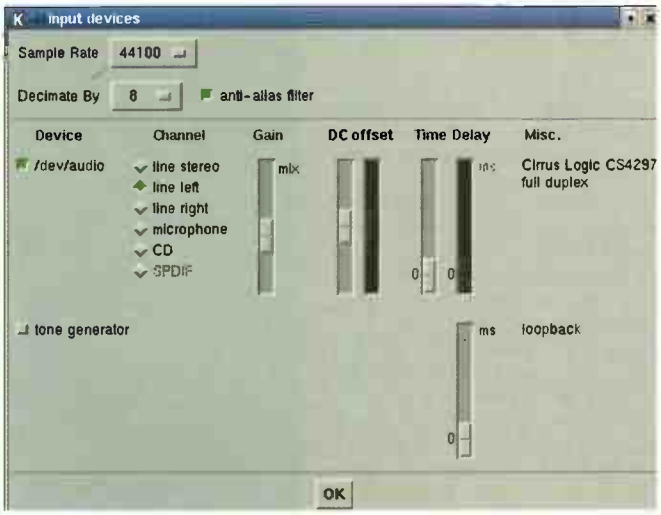
The documentation files included are massive and cover everything from basic set-up problems through to the source code for the operating system! The price - just £10 from **http://www.linux123.co.uk** - thanks to the GNU General Public Licence distribution system. I was able to order the disks through their web site and they arrived safely in a couple of days.

Now - a few words of warning. Whilst the Linux system is very well developed, **don't** try loading this system unless you're confident in what you're doing and have backed-up any valuable data. If you're installing Linux on a *Windows* PC, the installation routine will allow you to set-up new partitions on your hard disk for the new operating system and re-write the boot sector of your hard disk to enable you to choose the operating system you want to use.

If this goes wrong, you could lose access to the *Windows* data on your hard drive! Having said this, I took the risk and all went smoothly. If you want to install Linux on your main PC, the best way is to load it onto a spare hard disk, if you have one. That way you don't have to alter the boot sector of your *Windows* drive and avoid that particular risk.

Of course, the best and safest way to experiment is to drag out that old 486 or early Pentium PC and load it up with Linux - you'll be amazed at the new

RTTY Signal analysis with *Baudline*.



Baudline's comprehensive Input control.

Easy identification of shifts with signal averaging

Extensive processing options.

lease of life! If you have any problems, the support available from Linux-Mandrake at **http://www.linux-mandrake.com/en/** is excellent and there's a huge amount of support available on the web.

Once you're up and running you will immediately be impressed with the fast and effective X-Windows environment. To start you off with some interesting new software, take a look at **http://www.baudline.com** This is a very impressive audio analysis tool that really lets you tear signals apart.

Once you start the program, you are presented with a very fast scrolling spectrum and spectrogram display. You will probably find that there's no signal showing when you start. To put this right, place the mouse over the display and right-click. Choose 'Input' from the options and you will get a screen where you can fully configure the input.

Not only can you choose the input and channel to use, but also set the sample rate and audio levels. With this set and your receiver output connected to your soundcard, you should see something sensible appearing on the screen.

If you've chosen a 44kHz sample rate, the display will be extended to cover right up to 20kHz. Changing the sample rate down to 8kHz focuses the display on the 0-4kHz range that's of particular interest for data signals. An alternative that works well is to choose a 44kHz sample rate, but decimate by 8.

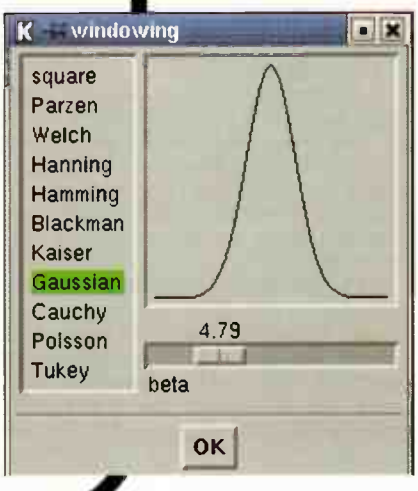
If you want to be really impressed, right-click again and choose 'Output Playdeck'. Here you will be presented with an on-screen set of playback controls that will allow you to run the sample forwards/backwards at any speed from 0 to about 8x.

What makes *Baudline* such a powerful analysis system is the way it uses a circular buffer and minimal pre-processing. This is rather like making a raw recording onto a tape loop. Once its recorded, you can change the settings at your leisure to get the clearest display for the signal you're analysing.

I've only scratched the surface of this program so far, but if there's enough interest, I'll put together more info. If you come across any interesting software, please drop me a line.

Active Press Frequency

There's not many of these left, but try monitoring 16.8MHz with your decoder set to FEC and you will spot an occasional weak transmission with assorted news items from the Philippines. The station hasn't been logged for long enough to make a positive ID or to work out the schedule. However, I managed to catch it at around 2000UTC. Thanks to **Alan Pudsey** for supplying the logging. If you know of any other active press broadcasts, please E-mail or write and let me know.



FFT windowing fully configurable.

■ ROGER BUNNEY, 35 GRAYLING MEAD, FISHLAKE, ROMSEY, HANTS SO51 7RU

Satellite TV News

A loud bang echoed around the Humber on Easter Monday, April 16th. This originated from within the Conoco refinery at Immingham and high above the site rose flame and smoke, the gasoline manufacturing equipment destroyed. Apart from the emergency services racing to the scene, so several SISLink uplink trucks also hurried to a Bank Holiday breaking news story!

I swung the dish to 21.5°E and two trucks were found operational - SIS-35 @ 11.042GHz-H and SIS-38 @ 11.073GHz - both using SR 5632 + FEC 3/4 parameters - as usual. SIS-35 however hit the encryption button and pictures blanked to show a 'Signal Encrypted' caption, though SIS-38 remained in the clear.

Checking across *NSS-K*, 21.5°W later and the Reuters Moscow bureau were feeding back the local 'PTP' channel network news (at 2100 their time) which also featured the exploding refinery - perhaps happy to show that environmental problems occur elsewhere!

Having found the mysterious *Anatolia* satellite at 50°E recently, I've been looking further down the SE horizon with my new dish for 'other signals' and actually found unidentified activity around 56-58°. At this slot were flashing horizontal lines at 11.124GHz-V, similar to previously seen flashing from Gorizont 14°W, plus a 'signal' at 12.952GHz circular - the signal producing a blank screen. No TV pictures analogue or digital were present, but I suspected this was a Russian sat.

Checking on the **SatcoDX.com** site and section three (covers 41-99.9°E sky) I found the *MOST-1* Russian satellite active which downlinks mainly in the BSS part of the band with TV programming spotted into the Moscow region and with no other downlink activity reported. I'm sure that the Russians would utilise any of their satellites for 'other use' and the 12.952GHz resemblance to Gorizont activity endorses that the mystery signal was *MOST-1*. A little excitement on a damp and chilly April day!

Dean Rogers (London SE2) has been an avid PGA (golf) follower with the various tournaments held in the USA and usually linked into Europe via the Globecast bouquet on *NSS-K*, 11.590GHz-V, (20145+3/4). Unfortunately, Globecast also hit an encryption button a few weeks back and now most of their sporting feeds are black.

Salvation however is at hand with PGA action re-appearing on several of the *NSS-K* 'BT-Washington' leases. April 21st gave the 'Twelve Bridges Golf Club' event at 11.556GHz-H (5632+3/4) in clear NTSC. May 5th was perhaps more interesting with the 'LPGA' (Ladies Professional Golf Association!)

Chick-Fil A Charity Championships relayed to Europe with ESPN production captions - 'Chick-Fil' is a convenience food that was part sponsor for this event! Very early May in fact proved interesting with Globecast relaying several horse races from the Kentucky Derby week, the 4th May action included the famous *Kentucky Oaks* race, again this a production format/presentation for ESPN - Globecast ch.3 in the above *NSS-K* bouquet.

I was pleased to hear from Dean after some months, though saddened to learn of his father's sudden death - we wish Dean well at this time. I'm expecting Dean to resume satellite action this summer as a new balcony sited 800mm tracking dish, 0.7dB noise Cambridge LNB plus a new Echostar receiver is now in operation and although living in an upstairs flat, his dish just clears the roof and can see a 45°E to 45°W arc.

On a more domestic level, Meridian TV at Maidstone has been using the BT truck TES-9 and was entrenched in a Hastings pub on April 30th - check out the local news action in Kent at 10.974GHz-V, 5632+3/4 on *Intelsat 801*, 31.5°W. It's usual to see the TES-42 (Anglia) and TES-43 (Meridian-South) truck in action most afternoons on *801*, they usually 'line-up' and check levels prior to 1700 local with the item live into their respective programmes just after 1700 and they're off back home by 1710!

TES-43 the Meridian-South (BT) truck spends week one with three days into the Southampton studio, two days Newbury studio; the following week reverses with two days Southampton, three days Newbury - unless there's hard breaking news within the region.

Our *Hot Bird* 13°E specialist **Edmund Spicer** (Littlehampton) has seen the *Telecom 2A*, 8°W sat with flashing on-screen captions advising that the Canal+ SECAM analogue service - 12.648GHz-V - will soon be closing and encouraging their analogue subscribers to move onto *Telecom 2B/D* 5°W - or even better into digital via *Astra* 19.2°E capacity. They'll even give you a free dish if you digitise plus a scattering of free pay-tv channels for four months, but the box plus install costs around 1000FF - £100 to us. Edmund also suggests checking out Astra analogue since SFB-1 Berlin has appeared in clear PAL - (11.568GHz-V with audio 7.02/7.20MHz) - there's still life after digital!

Whilst a new analogue service opens, another is shortly closing, that of the TV4 Sweden on the *Sirius* 5°E craft, this at 11.937GHz-V, by publishing time TV4 will be dark.

Heard from **Roy Carman** (Dorking) and I will quote from his letter, this refers to a sighting of April 15 on *Eutelsat 2F3* @ 21.5°E, 11.046GHz-H (5632+3/4)...

"The scene is a control room, map table in the middle, soldiers all around it (both male and female). Some civilians sat at tables around the outside and more military, computers, people moving around with bits of paper. This is the 'war' against foot and mouth in Carlisle. The Army is being very cunning and say that they will take instructions from MAFF and do as they wish. Evidently they had killed and burned within hours, not days, of an outbreak that occurred yesterday" - a *Sky News*, Carlisle news feed over 'SIS-13 UKI-417'.

A couple of reports after the flight of the *Endeavour* Shuttle up to the *International Space Station* (*ISS*). Roy Carman noted *NSS-K* on the Globecast bouquet (see above) with the unloading of the Shuttle into the *ISS*. All the main computers are now inside and Houston is waiting for the crews to awake and start trouble shooting the whole system with their laptops checking for problems (April 26 at 0630).

A few days earlier, April 22nd, **Nick** in Sutton noted the Reuters 11.462GHz-V (5632+3/4) feed with more *ISS* action. The crew are seen live bolting together a large swinging arm type crane, this will lift a large cabin section into place on the main *ISS* frame. But problems are experienced with the bolting which has to be repeated to achieve the correct torque settings.

One of the Astronauts suffers a vision problem and has to 'flush his helmet', though the shots from the 'suit-cam' are very over-exposed. Nick also caught a Globecast item in an American lethal injection death cell, the prisoner called Bridges had accused his defence lawyer of causing his [Bridges] death.

A satellite rarely mentioned here is *Nilesat-1* @ 7°W, it carries lots of Arabic programming, though perhaps less prolific than *Arabsat*. Check out 12.128GHz-V with SR 27500 + 3/4, one reader did and clocked up a mass of programme channels including Iraq, Oman, ANN, PSC, Bahrain, Kuwait, Andalus, Syria, MBC and others including 'Test', another 'Test', P12128V 01 thru to P12128V 12. In total 24 channels were found though not all programme active.

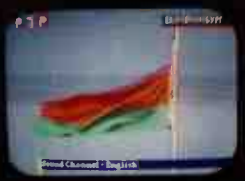
As a final thought, SESAT @ 36°E, 11.668GHz-V clonked up late April with a signal that downloaded with unusual parameters SR 2355, FEC @ 1/2and called the 'Harmonic Channel'!

Television Nimrooz' appeared on *Sirius*, 5°E @ 12.108GHz-H digital.

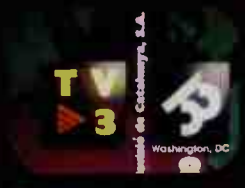
'News Chopper' in flight to cover a high school shooting, the underslung camera is already operating showing the downlink microwave transmitting antenna within its fibreglass shroud. Live via Reuters on *NSS-K*.

'Women.Future' was an international corporate hookup, seen during technical tests with colour bars incoming from London and Detroit onto the New York studio hub, *NSS-K*.

"Well, it's like this..." a Pentagon statement for the media troops during the Chinese/USA spy plane event.



The PTP Moscow TV channel often pops up on the Reuters circuit.



VTR countdown 'clock' for a VTR package ex Washington for Catalan TV - the clock shows +8 seconds on the countdown...

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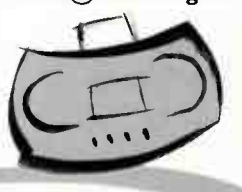
British Wireless for the Blind Fund



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■ JACQUES D'AVIGNON VE3VIA ■ E-MAIL: jacques@pwpublishing.ltd.uk

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.

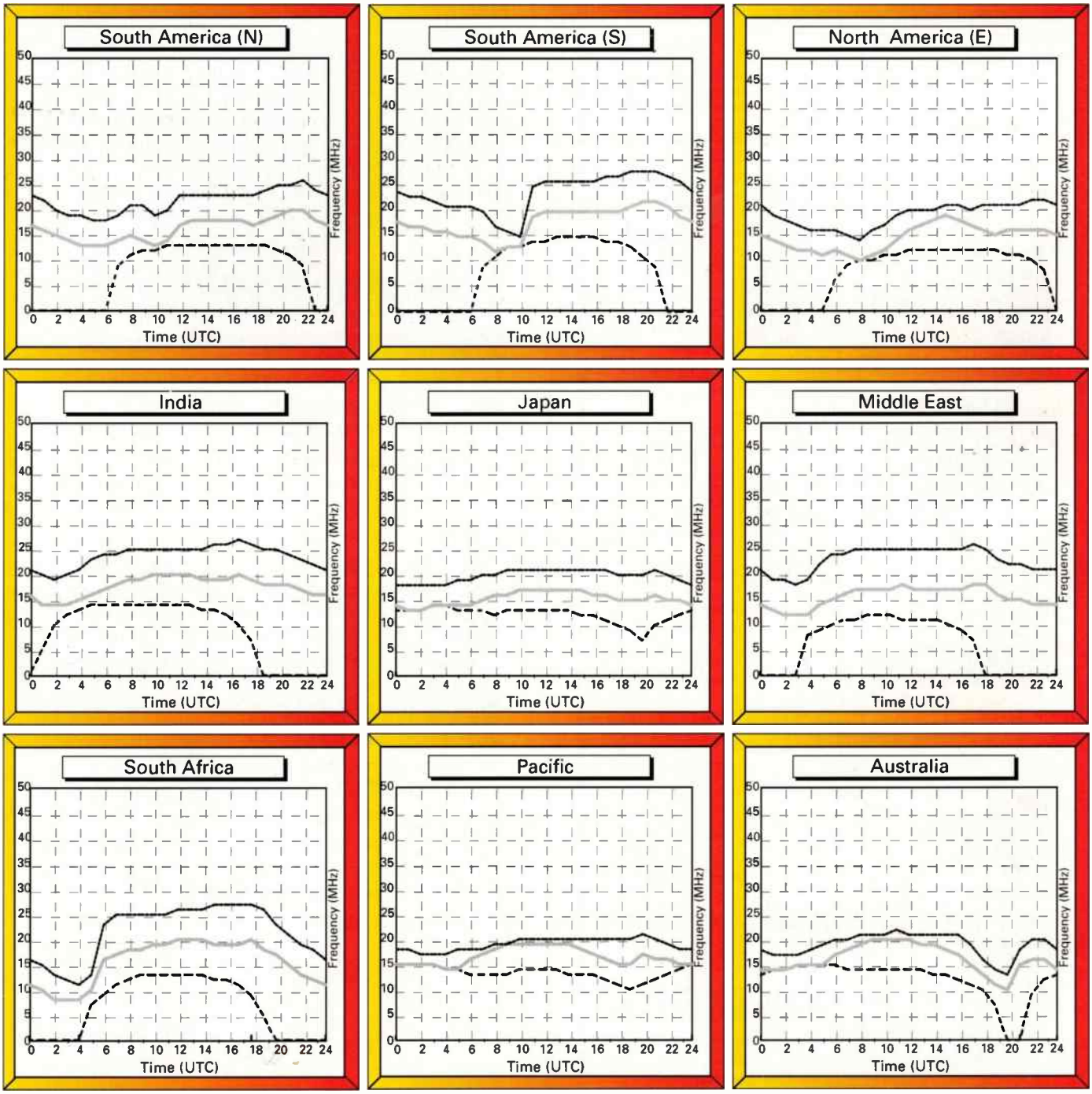
The middle line indicates the optimum working frequency (OWF) with a 90% probability of success for the particular path and time.

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 2001
Circuits to London

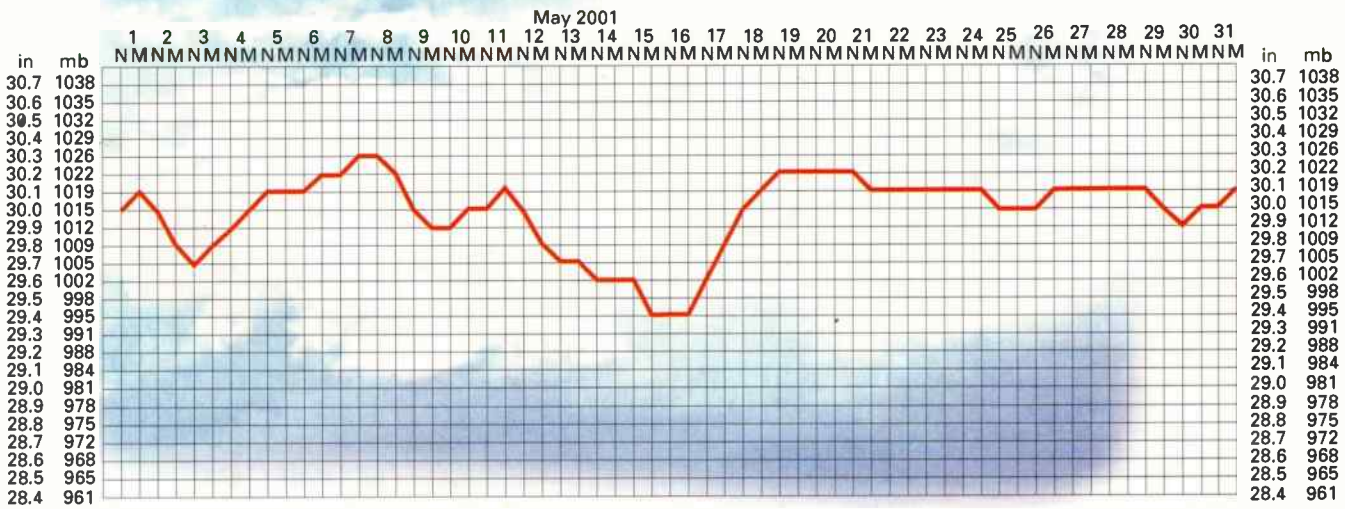


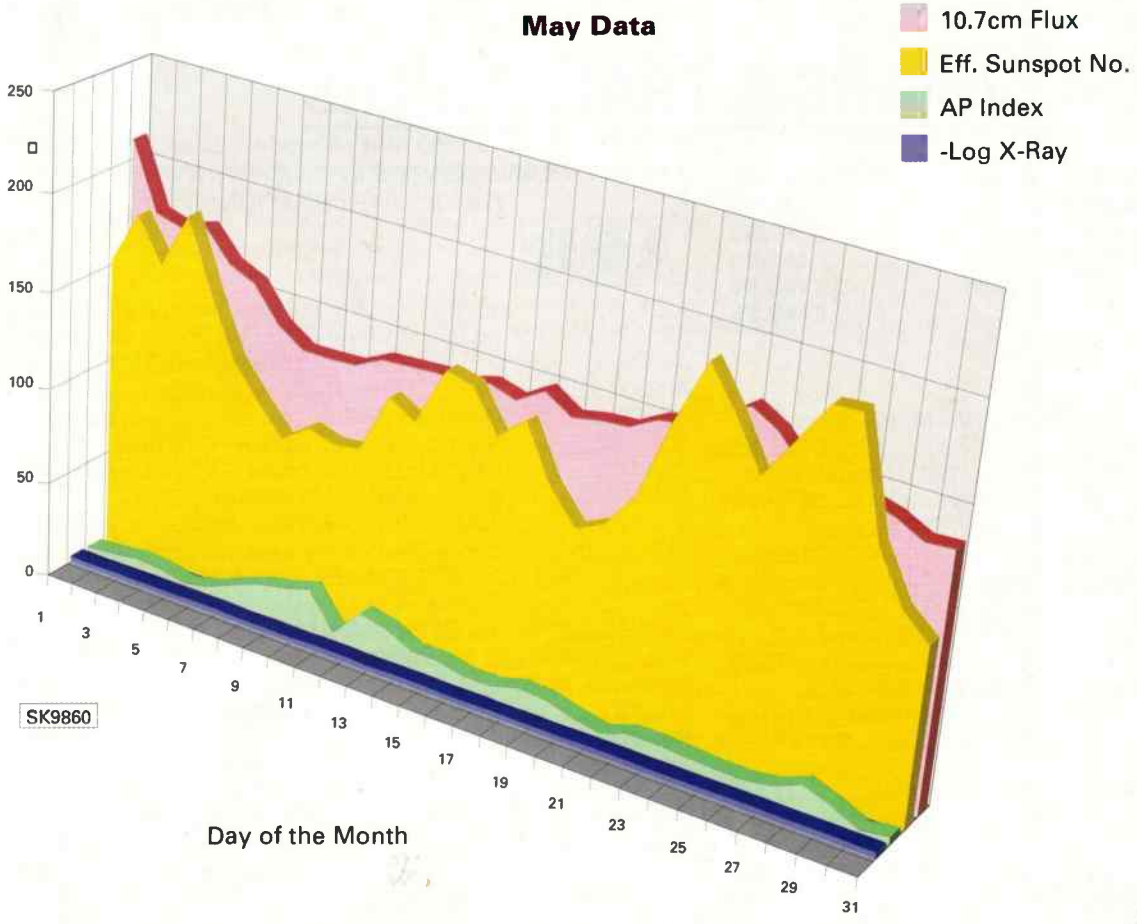
SK9859

■ KEVIN NICE G7TZC, SWM EDITORIAL OFFICES, BROADSTONE ■ E-MAIL: kevin@pwpublishing.ltd.uk

Propagation Extra

Ron Ham's barometric pressure chart, taken at Storrington, W. Sussex, May 2001.





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.

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Callsign 2001

This latest 7th edition of *Callsign 2001* has many changes, in fact, almost 3000 changes have been made to the book since last year, including a significant number of additions and deletions. For the first time since its inception, *Callsign* has not increased in size this year, not because of a lack of new information, but because parts of the Military database have been extensively reviewed and obsolete information has been deleted. **£9.95.**

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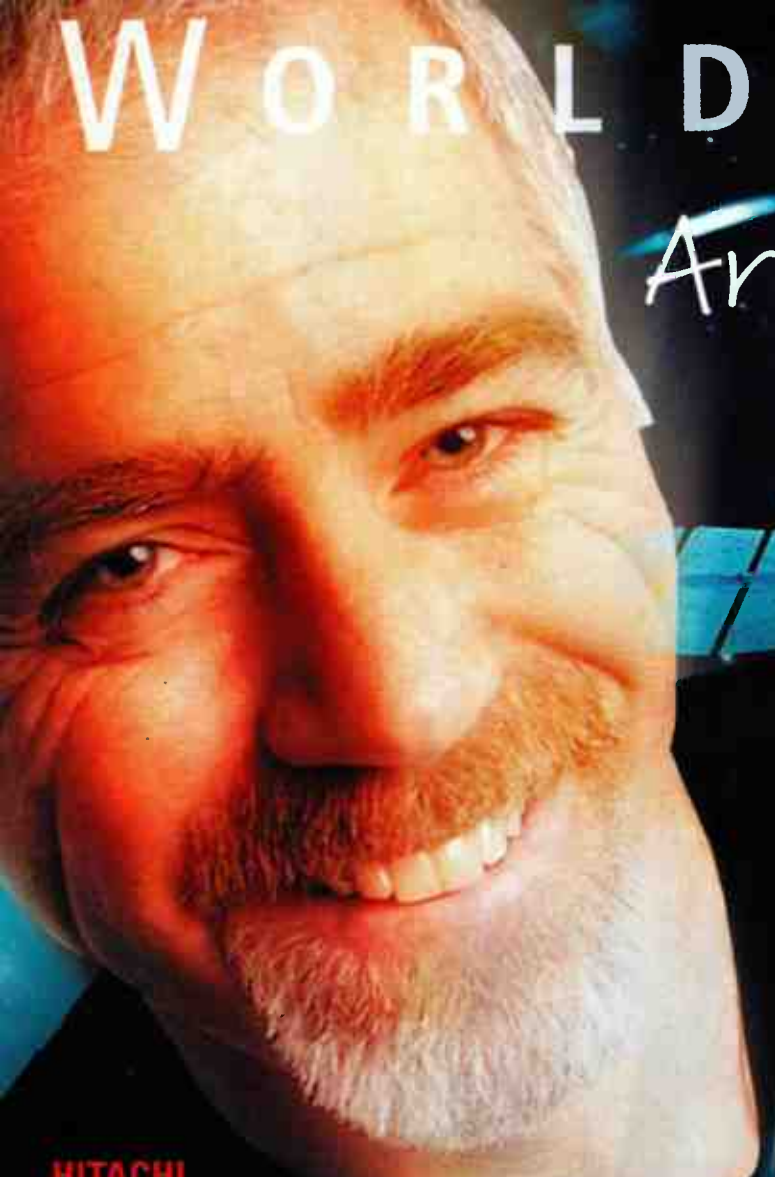

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