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World Radio History

The SHORT WAVE Magazine contents

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Are you alone with your radio interest? If you want to meet others with a radio passion, then look no further - use our comprehensive guide - which now includes International Radio Clubs on page 63.



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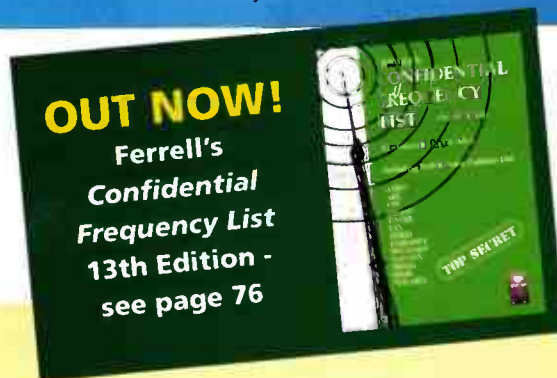
Sky High SPECIAL

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Peter Bond presents another 'Sky High Special' - this time a comprehensive article covering the history, plus some recent information, of one of the most photographed and listened to aircraft to grace our skies.



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- More fascinating features
- Keep on top of the world of monitoring with SWM
- and much more...

**contents subject to change*

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Share your thoughts

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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.

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 inc P&P.

Binders are also available (each binder takes one volume) for £6.50 plus £1.50 P&P for one binder, £2.75 P&P for two or more, UK or overseas. Prices include VAT where appropriate.

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

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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

Progress and change are to some, interchangeable words. The evolution of all aspect of our lives is something which we all, for the most part have little control of - even if we are happier in the self-deluded state that we can influence the path along which we travel.

There are two changes you should be aware of which I can report this month. Firstly, the recently held World Radio Conference - WRC03 has left the requirement for the need for c.w. competence to obtain access to amateur h.f. bands in the hands of the local radio regulatory authorities, in the case of the UK the RadioCommunications Agency, soon to be replaced (more change) by Ofcom.

The upshot of this is that the current full amateur radio licensees will be considered equivalent. Both the former A and B classes will merge to become one and B classes will merge to become full amateur radio licence with access to the entire UK amateur spectrum. A good result in my opinion. There are those who see this individual change as the beginning of the end. Personally, I struggle to see that.

Then there's the camp that say it will be the end of Morse - why? There are many enthusiasts of this highly effective, simple and low-cost mode. Simply because the use of competence in the 'code has been removed as a qualifier, surely won't translate in those using Morse to communicate on a regular basis stopping their activity with the mode. More to the point, the many classes run around the country will still be teaching Morse as a language, so there should still be those entering the discipline.

The other significant change this month isn't quite so far reaching. You see, as of this issue we are joined by Donna Vincent and Tex Swann, formerly of the *Practical Wireless* Team. Now, here in SWM land we share their expertise and help. Our gain, though is PW's loss as we are now sharing Rob's Editorial staff between all of our radio magazines. For that matter SWM has lost Zoë as a dedicated team member. I guess this is one of those situations that depend upon one's perspective as to whether it's perceived beneficial or not. Change, progress, synonymous?

Me - I am all for progress!

Geoff Halligey

As Editor of Ferrell's *Confidential Frequency List*, I was particularly saddened to learn that the previous holder of the post, Geoff Halligey, passed away recently. Following are some words from one of Geoff's friends and fellow utility monitor Day Watson.



It is with deep regret I have to announce the death of Geoff Halligey. He slipped away peacefully this on the

morning of 26 June, a few days after suffering a heart attack. He was 90.

Geoff had a professional engagement in communications, seeing service radio operating on merchant ships and UK trawlers, and in aircraft in the days when such carried ROs or 'Sparks'. His first ship was in fact equipped with a quarter Kilowatt quench spark gap transmitter from whence comes the nickname. His involvement with aircraft started in 1937 with a posting in ground wireless operations at Croydon (nr. London) Airport. His WWII postings included Kirkwall, Sumburgh, Stornoway, Castletown and Newcastle-upon-Tyne. There was also involvement with the Radio Security Service monitoring enemy c.w. transmissions.

After the war, Geoff moved full-time to the air being employed by BEA. This lasted until 1962 when ROs were no longer required (v.h.f. radio telephony had taken over) and, with 10,000 hours in his flying logbook, he and his colleagues were made redundant.

In latter years Geoff will have been better known for his contributions as Editor of Ferrell's *Confidential Frequency List*.

I take my hat off to Geoff in that, when I first became acquainted with him some 11 years ago, *CFL* was managed by manual means (pencil, files and reams of paper). In his 80s he took to learning computers and using a database for *CFL*. Eventually taking to the Internet he became a member of WUN and enjoyed using E-mail for world-wide correspondence. A good illustration that one is never too old to learn and move forward with the times.

Our condolences to Geoff's wife, Margaret, and to his family.

SWM Winners

Eleven readers were drawn from the Editorial hat this month, ten winners receive each a pair of RIAT 2003 tickets. These are: Mr R. Webster, Chesterfield; Mr T. Steele, Shropshire; Mr W. Wilkinson, Northumberland; Mr P. Long, West Sussex; Ms D. Clarke, Coventry; Mr C. Thurling, Cambs; Mr H. Warner, Oxon; Mr E.G. Salisbury, Hereford; Mr M. Clenton, Staffs; Mr S. Dobson, Shropshire.

The other lucky SWM reader has the AOR WL500 portable loop antenna winging its way to him - here it's the turn of Mr H Golton. My sincere thanks to both RIAT and AOR UK Ltd. for their generous donations of the prizes.

Happy Listening

AV4 73 Kevin

QSL

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

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

top QSL

Dear Sir

And You Call It Amateur Radio - John Wilson SWM June 2003

I am currently reading a book on Electromagnetic Radiation, called *Electric UFOs* by Albert Budden published by Blandford Books. I found this in the library whilst browsing the shelves and took it out. It is, in my opinion, a little OTT, but interesting. I feel that the author thinks that we shall all go mad just before we curl up like a piece of crispy bacon from the effects of EM.

My point in writing is to highlight John Wilson's remark at the bottom of page 27 of the June issue in the paragraph starting 'Considering the r.f. field...' and ending '...above the shack roof' on the next page. This concerns the gibbering foaming at the mouth types to be found in Amateur Radio! Please then read the passage in the book headed Radio Ham Exposure on page 37, where the author states that Amateur Radio Enthusiasts are harming themselves and everyone who lives next door to them and to cap it all, they are licensed to carry this out!

Perhaps John knows the book, but I would be grateful if you could pass this letter onto him. Although, as I said, the book is a bit OTT in places, there are some thought provoking matters in it. There's no smoke without fire and you will see what I mean if you read *Electric UFOs*. I am off now to bask in the beams of TETRA Data from a misaligned dish that has been erected in Pateley and whose signals go straight through a line of TV Antennas (Radio Agency have it in hand). This, combined with typing this to you sitting in front of my monitor, should set me up nicely for the rest of the day. Must stop now as the men in white coats have come to take me aw...

P.S. As a well balanced informative magazine, you may not want to publish this letter from the loony bin, but you may if you've nothing better to put in!

**Jim Roberts
N. Yorkshire**

Dear Sir

I know the proper place for this debate is probably one of James' many publications, but Peter Bond's ('Sky High' June 2003) comments on the efficacy of the A-10 aircraft should not pass without what the 'meeja' call 'balance'. At 4200 rounds per minute, the GAU-8 gun is Depositing Uranium (DU) in the targeted area at a rate of 300kg per minute, or the official NRPB maximum body burden every two microseconds. Depositing Uranium is a

poison due to its radiological effects and is thus an illegal weapon. If you don't believe me, just try throwing the stuff back at the Americans and they will start screaming murder about 'Dirty Bombs'.

As for Umesh Bharakada and his £4000 fine for selling bugs, perhaps he would have got off if he had described them as 'baby monitors' and put 'CE' stickers on them. My only surprise is that his business made £100,000 when Argos and the other catalogues are selling very good bugs for £19.99. You could probably fit one in the back of a telly in less than an hour. Being able to spot any bugs in your house is the reason why scanners are essential. I would also suggest that the best bugs in the USA work on the cellular band where most scanners are blocked.

Garry Smith (DXTV) got it right on the continuing decline of the BBC. Have you heard the time check on World Service? It's five o'clock in Ulan Bator, etc. Then at half past the hour, they say 'It's half past the hour' and you have to find a clock to find out which hour it was half past. Hilarious!

**John Morgan
Bucks**

John, your observations have been noted.
- Ed.

Dear Sir

Poor BBC Reception Abroad

In your May edition, you published a letter regarding poor reception in Gran Canaria, Canary Islands. I have been to Lanzarote every January for some years and had the same problem. I purchased in Arrecife a Sangean ATS-808 and later a Sony AN-71 Compact Antenna. Treat this as your minimum specification.

I would recommend the BBC World Service *Listen To The World* leaflet (free) obtainable from Bush House, London WC2B 4PH. Request the 'Europe' and also the 'West & Central Africa' leaflet. It is published twice a year and gives details of the current frequencies, together with Time Tables. You will still have problems with buildings, but one can generally get reasonable reception, though it varies.

**Adrian Armstrong
Sutton**

Broadcast schedules are most definitely essential if you're looking to stay 'in touch' with home whilst on holiday abroad. Thanks for the reminder Adrian.
- Ed.

Dear Sir

In answer to Lee Jessup's enquiry. I myself have two DX-394s. One is a Radio Shack DX-394 and the other is a Realistic DX-394. Both are different, in that to tune upper sideband on the Radio Shack model, you have to tune down about 6kHz and with the Realistic, you have to go up 4kHz to resolve the sideband.

My set-up is that I have a short length of wire strung up outside about 9m high. That runs to the outside wall and I have a small connector that separates into two wires that run into two independent baluns which have RG-8 coaxial cable running into the house. This is supposed to bring the impedance down to match that of the receiver which is 50Ω. The coaxial cable then goes into the receiver's low impedance connector via a PL-259 plug. The long wire is not a bad antenna, but the Purists, which means the Amateur Radio Fraternity, would deride this antenna.

There is a lot of snobbery in Amateur Radio. Short Wave Radio Hobbyists are looked down upon, but that's another issue. You can use an a.t.u. or antenna tuning unit which I think is supposed to match the antenna to the frequency you are listening to because a length of wire is a compromise on all frequencies. The shorter the wavelength the shorter the antenna. Nearly called it an aerial then!

The big problem with short wave is noise, which over the years has got increasingly worse. Below 11MHz is bedlam. I have tried an earth wire - that just makes it worse. Trying to receive Kinloss Rescue on 5.680 is impossible. I usually can't go down there until after dark, even then the noise is terrible. It's a complex hobby and you never know if you are doing the right thing and some of the things in the magazine just confuse the issue.

To sum up, I have just purchased a Fairhaven RD-500 which is supposed to be one of the best on the market, but it works no better on short wave than the DX-394. It makes the noise level worse. In fact, the clarification of u.s.b. on s.s.b. is worse than the DX-394. Sometimes more expensive is not necessarily better. Good luck with the hobby.

**Bill Semmens
Penzance**

Bill, I believe that the DX-394s all have tuning offsets when used on s.s.b. There are details on the 'net' to counter this problem. This involves either modifying or adjusting the set internally. For those without web access watch out, we'll be featuring an article on mods in a forthcoming issue.

As for the noise you are suffering, I've heard many a listener's radio set-up and really couldn't believe the noise levels, I've always put it down to poor earthing. However, the other day I connected a hastily erected dipole to a receiver in my shack which happened to be tuned to the same frequency (6.739kHz), as another which was utilising my Wellbrook loop. I was stunned at the difference! On the radio with the loop - no 'S' meter deflection with no signal the other S7! After swapping antennas to prove it wasn't the receivers, sure enough the noise moved with the antennas. Now I don't have a dedicated earth system as I'm in a temp shack at the wrong end of the house so I couldn't exclude noise that way. The loop however killed it - totally.

I know this is sounding rather like a Wellbrook advertisement - but believe me it isn't. Simply a statement of my experience. Good luck with your station.
- Ed.

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KENWOOD

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1 LOW	2 BAND	3 A/B	M-V	B
VISUAL	VOX	PRI	VFD	M.I.N
4 INFO	5 SQL	6 BAL	MR	C
T.SEL	SHIFT	MN-IN	C.IN	D
7 TONE	8 REV	9 MN-f	CALL	
LOUT	STEP	↵		
* MHZ	0 FINE	# ENT		

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- 0.1~1300MHz RX (B band)
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- Bar antenna for receiving AM broadcasts
- Special information memory channel RX mode (10 channels)
- 1200/9600bps packet compatible (ext. TNC)
- 434 memory channels, multiple scan functions

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- 7.4V 1550mAh lithium-ion battery (std.) for 5W output and extended operation
- Built-in charging circuitry for battery recharge while the unit operates from a DC supply
- Tough construction: meets MIL-STD 810 C/D/E standards for resistance to vibration, shock, humidity and light rain
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- Battery indicator
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144/430MHz FM DUAL BANDER

TH-F7E

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E-mail: comms@kenwood-electronics.co.uk

All At Sea

Over the weekend of the 31 May/1 June, three members of the **Southport & District Amateur Radio Club (SADARC)** gave the world a chance to operate a rare maritime mobile station in the Irish Sea. The event started on Thursday 29 May, with a visit to the *Madog* (the *Madog* was originally called the *Prince Madog* and was the maritime survey vessel of Bangor University) to install the antennas and radios. The original intention was to install vertical antennas for 2m/70cm, 6m and a half-sized G5RV for h.f.

A site was chosen on the starboard upper deck hand rail for the v.h.f. verticals. After two attempts it was decided that the structure might be unsafe should heavy seas and/or high winds be encountered, so it was finally agreed to just install the 2m/70cm collinear.

Mike G0ROT, being braver at heights than either **Derek G7LFC** or **Keith G0OXV**, climbed up both the foremast and the main mast to secure the G5RV. The front-end of the antenna dipped down to be secured to the bow.

The shack for the voyage was to be in the old Engineer's Lab, complete with fridges and the engineer's spare kit. The main problem would be the cramped space, lack of seating and noise from the engine room. By 2200, the station was finally installed and successfully tested with **Brian G0JQC**, another member of SADARC, who had been patiently waiting for the call.

Friday came and went - the *Madog* slipped it's moorings at 2315 and headed out of the Albert Dock and into the River Mersey on the high tide. Mike was up first on the Saturday morning and found that the conditions on the 40m band seemed quite good, despite receiving reports of extreme solar activity on Friday wiping out the h.f. frequencies. First up was a French station calling CQ. Keith took the call and F5MMX, 25km south of Paris, was the first contact of the day.

By now, the team were in full swing with Mike operating the h.f. station and Keith and Derek employed on v.h.f. **Alan M1EYO/P** was operating a Summits on the Air (SOTA) station from Whitfell in the Lake District and a good contact was established with him. The next CQ call was answered by G7ANV in Newcastle and it looked like the team would be in for a good few contacts. Mike was also having a good time on the h.f. bands.

After lunch a decision was made to try 2m s.s.b. and GW4DRR, in Holyhead on the Isle of Anglesey, was duly worked. Activity on 2m started to pick up and stations around Dudley and Wolverhampton were worked. Keith relieved Derek on 2m and worked a station in South Oxfordshire - conditions were certainly improving. Several more stations were worked,

but it was getting on towards 0100 on Saturday morning and it seemed unfair to keep the rest of the boat awake and the team retired to their bunks.

Sunday started with news that 2m had been open to Spain about half an hour after retirement earlier in the morning - typical! Keith worked another SOTA station, **Rob G4RQJ/P** on the Old Man of Coniston, on 2m f.m. in the afternoon. Rob was later heard working **Brian G0JQC**, but the team could not raise Brian.

The *Madog* left Port St. Mary at approximately 1400 and was en-route back to Liverpool. Just off the Island Mike had started a 'pile-up' on 40m, but it was hot, the sea was a little lumpy and he was feeling a bit rosey so he handed the microphone to Keith to carry on. Soon after, the heat got the better of Derek too.

Keith stuck at it, but the 40m pile-up was horrendous. He worked at it for about an hour before it became a 'bun fight', the skip had changed and more European stations were calling in.

The shack was empty for about half-an-hour as everyone gathered their thoughts and waited for the temperature inside the shack to drop. Back on v.h.f. (with the APRS beacon running) contacts were still few and far between, mainly towards Barrow and Whitehaven. The silence was broken every now and then by E12JD asking which square we were in - he was able to claim four new locator squares.

At about 1700, approximately half way across, contact was made with another SADARC member, **Martin G6IVC**. Keith had had enough after this and Derek and Mike continued on. Contacts continued until the *Madog* made radio silence around the gas rig before crossing the Mersey Bar. Derek and Mike later continued with Derek now having a huge pile up on 2m f.m. At the request of the boat's Master we switched off the radios whilst the *Madog* was navigated into the Mersey Estuary - hence the sudden disappearance of the station from the airwaves.

Thus ended SADARC's first Maritime Mobile expedition. It was thoroughly enjoyed by all - helped by two very calm crossings. The team hope that this will be the first of many such expeditions and would like to thank the owner and crew of the *Madog* for allowing us to operate aboard her and the members of Liverpool Diving Club who allowed us to sail with them on their diving charter.

Further details of this event can be obtained from **Derek Hughes** on (01695) 573870 or via E-mail at derek@g7lfc.co.uk For general club information, please contact **Don Atkins M1BUL** on (01704) 227726. You can also E-mail Don at donatkins@lineone.net or write to him at **79 Roe Lane, Southport PR9 7HR**.



The *Madog* berthed in the Albert Dock.



The v.h.f. antenna.



Mike and Keith operating the station.



Leaving Port St. Mary and the apparent source of much v.h.f. breakthrough.

11th Successful Year!

This year sees the **National Vintage Communications Fair (NVCF)** celebrate its 11th successful year! Since its inception in 1992, the NVCF has been recognised as the UK's leading vintage communications fair aimed specifically at collectors of early radios, Bakelite and candlestick telephones, fifties television sets, old wind-up gramophones and classic valve audio equipment, etc., all saved from a bygone era and lovingly restored. As well as supplying the needs of collectors, the NVCF caters for those interested in furnishing 20th century period homes and interiors and supplying the film and TV industry with authentic and genuine props.

The fair is held twice a year at the NEC and is supported by over 300 stallholders from all over Britain and as far afield as Europe, America and the Far East, who may be anything from full time specialist dealers, to people selling surplus items from their collections. Several collectors' clubs and magazines also exhibit at the fair and are available to give helpful advice on the practical side of the hobby.

The event is now managed by the **British Vintage Wireless Society**, the UK's only society specialising in the preservation of early Wireless & Television equipment, historical documentation and programming. With many hundreds of members throughout the UK and around the world.

So, the date for your diary this year is **Sunday 28 September 2003** and the venue is Hall 11 in the National Exhibition Centre, Birmingham. Doors open from 1000 till 1600 and admission is £5 (under 14s free). More details from **Terry Martini, 122b Cannon Street Road, Whitechapel, London E1 2LH**, Tel: (07947) 460161, E-mail: info@nvcf.org.uk or visit www.bvws.org.uk

It's That Time Again!

It doesn't seem nearly a year since the last International Lighthouse/Lightship Weekend took place when over 385 stations were active at lighthouses and lightships throughout the world. This year the event will be from 0001 on Saturday 16 August until 2359 on Sunday 17 August 2003. Full details of the rules and an entry form can be found at <http://lighthouses.net.au/illw/index.html> A list of stations that have already confirmed their participation can be found at <http://lighthouses.net.au/illw/2003.htm> So come and join in the fun, listen out for the QRP, newly licensed and other lighthouses/lightships and give them a call.

These Boots Were Made For Tracking

Telecom Design Communications Ltd. (TDC), has shown how child tracking applications are now made possible by using SiRFxTrac Software to enable customers to determine highly accurate location data in previously difficult locations such as shoes, clothing - even working indoors. SiRFxTrac software works on the SiRFstar IIe/LP Chipset and extends the r.f. capture range in which GPS signals can be resolved, thus improving the sensitivity and dramatically increasing the versatility of GPS-enabled consumer products such as PDAs or child tracking units - an area of great interest at this time.

The TDC's SiRFxTrac software enables the highly popular SiRFstar IIe/LP chipset to acquire, and continue tracking GPS signals at far lower signal levels than is currently possible with competitive autonomous GPS solutions. For the user, this means that GPS can now be used in environments such as built-up areas, car parks, dense foliage and, in many cases, indoors. By expanding the number of areas in which GPS can obtain a position fix, SiRFxTrac will improve existing location-based applications and enable new ones that have been impractical until now.

Commenting, TDC's Managing Director **Jerry Sandys** said, "SiRFxTrac software removes the limitations and effectively increases the usability of GPS. Best of all, this feature places little or no additional design requirements on GPS system integrators, but offers huge benefits".

Telecom Design Communications are a technical component distributor specialising in Wireless & GPS components, Modems & Multimedia and Design Services. TDC engineers have been involved in the communications business since 1984, and with GPS since its commercial introduction in 1990. TDC's customers put as much value on the technical support the company provides, as the high quality products it distributes.

Jerry Sandys, Managing Director, is pictured holding one of TDC's concept demonstrators which utilises a highly sensitive SiRFxTrac GPS receiver in the sole of a child's sports shoe. Also integrated are a GSM modem and antennas.



Frequency Change

Effective from 21 June 2003, the IRRS-Shortwave to Europe can now be heard, daily, on 5.775MHz from 1900-2130 - besides operations on Saturday and Sunday only on 13840 from 0800-1200. Check out the latest frequency schedule at www.nexus.org/NEXUS-IBA/Schedules

50th Birthday

On the 27 June 2003, **Deutsche Welle** marked its 50th birthday. Half a century after the first broadcast, Germany's international broadcasting service presents itself as an innovative media enterprise. DW offers multimedia, globally accessible information in more than 30 languages and also uses the latest digital technology for production and broadcasting and, more importantly, draws on the expertise of a multinational team of some 1500 employees from more than 60 countries. So, congratulations to DW! Here's to the next 50 years!



New Details

The **International Short Wave League** has now got a new secretary and new headquarters. The ISWL HQ is now based at **23 College Park, Horncastle, Lincolnshire LN9 6RE**, and the secretary is now **Bill Mackie G4AIE/G9137**, E-mail: bill.mackie@zetnet.co.uk

Radio Guangdong Reaches Out

Radio Guangdong - one of the leading radio groups in China - can now be heard around the world thanks to its cooperation with **World Radio Network** (WRN), the London-based international broadcaster and transmission service provider.

Guangdong Today, the weekly 15-minute English programme about the province and its people is specially produced by Radio Guangdong for broadcast on WRN's global news and current affairs radio network. The first edition of the programme broadcast on WRN looked at the province's anti-SARS efforts and the measures that people are taking to preventing the spread of disease. In future weeks, the programme will focus on social, economic and cultural developments of the region.

Radio Guangdong is based in Guangzhou, the capital of the southern Chinese province of Guangdong, which borders Hong Kong and Macao. It is one of China's leading media groups with eight radio channels broadcasting to a potential audience of 100 million people, two newspapers, one of China's top advertising company and Pacific Audio & Visual Company, one of the country's leading audio-visual companies.

Karl Miosga, WRN's Managing Director said: "I am delighted to bring our listeners the weekly news from Guangdong, a province that has been thrust into the international limelight because of the SARS epidemic. I believe that *Guangdong Today* will offer a deeper understanding of this important Chinese province by looking beyond the headlines".

Guangdong Today can be heard on WRN each Saturday at 1600/1200 Eastern Time in North America and at 1600/1800 Central European Time in Europe. On Sundays, the programme is broadcast at 0800 to South America, Africa, the Middle East and the Asia Pacific region. An archived version of the programme is also available online via the WRN website at

www.wrn.org/listeners/stations/station.php?StationID=93

rallies

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

July 27: Vintage Valve Technology Fair takes place at Haydock Park Racecourse, Junction 23 M6. Doors open at 1000 and admission is £2.50. There will be plenty on offer with up to 120 stalls to browse. For more information contact **Trevor MOTAN** on (01274) 824816 or take a look at www.myciunka.supanet.com/vvtf2003

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

***August 10:** The Flight Refuelling ARS are holding their Hamfest at the Cobham Sports & Social Sportsground at Merley, Wimborne, off the A31 (signposted). Doors open at 1000 and admission is just £3. Talk-in on S22 from 0800. Overnight camping on Saturday. **Mike M0MJS** on (01202) 883479 or hamfest@frars.org.uk

August 24: The Coleraine & District Amateur Radio Society will be holding their annual rally at the Bohill Hotel, Coleraine. Doors open at 12 noon (1130 for any disabled visitors). More details from **Peter** on 0287-035 1335 or **James** on 0287-035 2393.

August 25: The Huntingdonshire ARS Annual Bank Holiday Monday Rally is to be held at Ernulf School, St. Neots, Cambs (near Tesco superstore on A428). Doors open at 1000 and admission is £1.50. Hot and cold refreshments will be

available as will a talk-in on S22. Contact **Peter Herbert M5ABN** on (01480) 457347 or E-mail: peterherbert@aol.com for more information.

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

*** Look out for a representative from PW Publishing Ltd. at this rally. Go along to the stand for great deals on subscriptions to *Practical Wireless, Radio Active* and *Short Wave Magazine*, clearance books and a selection of back issues.**

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

Club Corner

The **Fylde Amateur Radio Society** meet at the Comed Club on Blackpool Airport on the 1st and 3rd Thursdays of each month at 1945. More information from Hon. Sec. **Ken Randall G3RFH**, Seahawk, 13 North Promenade, Cleveleys FY5 1DB, Tel: (01253) 823957, E-mail: g3rfh@fsmail.net or visit the FARS website at <http://mysite.freemove.com/fyldears>

Members of the **Horndean & District Amateur Radio Club** meet on the 1st and 4th Tuesday of each month at the Lovedean Village Hall, 160 Lovedean Lane, Lovedean, Hants. Meetings commence at 1930

and visitors are most welcome. More details from **Stuart Swain**, Club Secretary, on 0239-247 2846 or E-mail: g0fyx@msn.com

Meetings take place every Wednesday at 1930 at the Whitchurch Folkhouse Association, Bridge Farm House, East Dundry Road, Whitchurch, for the South Bristol Amateur Radio Club. More club details from **Len Baker** on (01275) 834282 (24hr answerphone).

The **Malvern Hills Radio Amateur's Club** meet at 2000 on the second Tuesday in the month at the Town Club, Great Malvern. More information from **Mike G3TGD** on (01905) 830752, E-mail: mike@allenson.fsnet.co.uk or visit www.mhrac.freemove.com

Rapid Deployment Mast

South Midlands Communications Ltd. manufacture a high quality range of telescopic masts, marketed under the Hilomast brand name. Recent customer led product development has resulted in SMC gaining an increasing share of the world market for such masts, primarily for Broadcasting, Military, Telecommunications, Surveillance and Security users.

One such product is a rapid deployment unit for the Hilomast range of pneumatic masts for emergency military and commercial communications. The unit is designed to

support a substantial heavy-duty mast and antenna system and is capable of being quickly deployed by only one person. The RDU (Rapid Deployment Unit) fits under the wheel of any vehicle and supports many of the Hilomast variations, meeting differing height and payload requirements.

Visit www.smc-comms.com for details of the above, in addition to the extensive range of high quality radio communications systems and conventional masts and antennas that SMC design and manufacture.

South Midlands Communications Ltd. can

be reached at **SM House, School Close, Chandlers Ford Industrial Estate, Eastleigh, Hampshire SO53 4BY**, Tel: 0238-024 6200, FAX: 0238-024 6206, E-mail: sales@smc-comms.com



■ **ANDY CADIER, 28 ROMNEY AVENUE, FOLKESTONE, KENT CT20 3QJ**

■ **E-MAIL:** off.the.record@pwpublishing.ltd.uk

Off The Record

The Dutch government have recently completed their changes in their m.w. radio allocations. This follows some hesitation over them selling the frequencies to the highest bidders for an eight-year period. The popular Arrow rock station has moved from 828 to 675kHz where Radio 10 (Gold) used to be.

A new consortium involving Laser and Quality Radio will be taking over 828, 1035, 1224, 1395 and 1557kHz. Another change is Ray Anderson's Radlon Media Ltd., a UK based company operating from Frinton in Essex who have secured a Dutch licence to revive the former offshore pirate Radio London, known to many as 'Big L'.

The transmitter and masts at Flevo in Holland are being re-engineered to provide an omnidirectional 400kW service to Britain and much of Northern Europe on 1008kHz. The original offshore Radio London broadcast from a former American minesweeper using 50kW and very tall mast, government legislation forced its closure on 14 August 1967.

Though these new stations are not pirates, they do represent a bold and challenging effort to put some of the spirit back into music radio, in this respect, I wish them all the very best of luck and they can rest assured that when they come on air I will be listening.

War On Pirates

The Dutch government's communications agency 'Agentschap Telecom' is responsible for radio frequency planning and policing the airwaves. Recently their Project Etherflash has led to a crackdown on pirate broadcasters, with a reported total of 50 stations being closed down. First offenders can be fined £1,000 with double that for any subsequent offence and forfeiture of equipment. I think it safe to assume most of these stations being targeted are using f.m. as many of the usual s.w. pirates are still on air at the weekends.

Similar raids have taken place in Ireland too with their communication regulation officials and local police taking action against pirate radio transmitter sites. In Dublin, both Jazz FM who had been on air for seven years and Choice FM who have existed for over four years were taken off air. It is understood that both the transmitter and studio equipment was seized - operators suggest they may return to the air when the purge is over.

Ex-Pirate Memorabilia

I frequently receive letters asking whether there is anywhere you can still get Radio Caroline T Shirts, mugs and stickers and things. One of these is **Mr R. Frost** (sorry no first name) writing from Felixstowe says he was at school when Radio Caroline first started and his teacher let them listen to it. (I clearly went to the wrong school). If you send a stamped, self-addressed envelope to **Caroline Sales, 148 Grange Road, Ramsgate, Kent CT11 9PR**, John and Jenny Knight will send you the info. that you want. They also publish the Caroline in-house magazine called *Horizon*.

MV Communicator

Dave Miller and Janie Ash, former executives at a Belfast radio station have decided to have a go at saving a redundant former pirate radio ship which is languishing in a Dutch inland waterway. The *MV Communicator* was, during the 1980s, used as an offshore pirate and broadcast as Laser 558, but in more recent years has been used as an un-manned m.w. transmitter site for a regional radio station and moored in a Dutch lake. The need for the ship

transmitter site ended when the station was moved and a land-based location found for the antenna.

The ship has been vandalised a bit and will need some restoration work before it can be moved from its location at Pampushaven near Amsterdam. What the new owners intend to do with this bit of pirate radio history is unknown, however they say that they intend to create a brand new vibrant radio station. Whether this involves mooring several miles offshore and challenging the British government is yet to be seen. Their address is: **The Super Station, Suite 449, 305 Madison Avenue, New York, NY 10165**. There is also updated information to be found at www.mvcommunicator.com

How About This

This amusing item came my way from **Mike Terry** of the British DX Club, who found the following in the West Midlands News back in May. Detective Constable Glen Williams was asked to explain why the Nottinghamshire Police was advertising with illegal pirate radio stations to promote the national firearms amnesty? It transpired that the police service had set aside reservations about dealing with illegally operating broadcasters to get across the more important message about guns.

Well, if the police can decide at will which laws they either enforce or ignore, well perhaps an amnesty for nicked pirates should be on the cards. This comes hard on the heels of complaints of the police using vehicle mounted speed safety cameras positioned on patrol cars that are themselves illegally parked. Both cases raise the question about the ethics of breaking one law to enforce another.

Italian Radio Relay Service

Commonly known as IRRS, the Italian Radio Relay Service is a s.w. relay station based near Milan in Italy, apart from relaying religious broadcasts they also carry programmes from former pirates. Recently European Music Radio has been heard on 5.780 on Sunday evenings. The IRRS also use 13.840MHz and the transmitter operator Nexus Broadcasting are happy to receive reception reports at **PO Box 11028, 20110 Milan, Italy** or by E-mail via their website www.nexus.org

On The Move

Traditionally the BBC World Service programmes have been directed solely at an overseas audience, with various reasons being given why the service was not available to UK residents. Now with BBC digital radio relaying the World Service, also its availability at night on several analogue stations, Radio Joint Audience Research Limited - known as RAJAR - are now including World Service listening statistics in their regular UK reports.

The old Radio Caroline ship the *MV Ross Revenge* will soon be moving to another anchorage near Rochester. This move is expected to be fairly temporary while the port authority inspects the mooring buoys at present being used off Queenborough at the Isle Of Sheppey. Intentions also exist to remove both of the ships twin antenna masts that are in a poor state of repair and replace them with a single tower placed just forward of the ships bridge.

Over And Out



Well, as mentioned in the June edition of *SWM*, this is the last 'Off The Record' to be penned by myself. I started the page back in July 1991 when the Editor, then Dick Ganderton, responded to suggestions that *SWM* should not ignore pirates and other radio irregularities. Writing for *SWM* for the past 12 years has been very enjoyable indeed and brought me into contact with a variety of people ranging from a stern faced government official to the mesmerising charms of certain female punk disc jockey.

I can't publicly name all those that have been of invaluable assistance over the years or those that have inundated my computers in-box with messages. The one and most noteworthy exception has to be **Bob Mersh**, (known to us as Bob Marsh) who himself, in his younger days, had been very active with m.w. pirates in London. His interest continued and was usually an anonymous provider of news about London's s.w. pirates. Bob had been in hospital suffering from cancer and sadly passed away at the end of last April. A very fitting tribute to Bob, with an insight into his humour and personality, was broadcast by s.w. station Swinging Radio England on 6.275MHz.

Writing 'OTR' has had its moments, usually involving the lead-in period that exists between the authors' deadline and the magazine reaching the shops. If something dire was going to happen you could guarantee it would occur during this period. Elaine Richards, when she was *SWM's* Features Editor, managed to save my bacon and make some last minute changes to an article when the Radio Caroline ship snapped its anchor chain and was shown on TV being rescued from the Goodwin Sands.

Final and special thanks have to go to the current Editor Kevin Nice and Zoë Shortland plus all the team at the Editorial Offices who perform the magic and turn our computer text into such a superb magazine.

73/ORT

Bandscan America

Although it is old news by now, the dropping of English to North America (and Europe!) by HCJB was one of the nastiest blows the North American short wave community has taken during these last few years during which it has been the 'in' thing to say that short wave is passé. It's probably not too far to guess the first log for about half of the s.w.l.s in North America was of HCJB in Quito, Ecuador. So, for many, it was as if one had been informed of the death of an old friend. The reasons given for the demise of English to North America don't make any more sense in HCJB's case than they did when the BBC threw the first punch a couple of years ago.

The always popular *DX Party Line* survived the crash and will continue to be aired, although via HCJB's Australian station, which means it will be rather more difficult to hear for the average North American based listener. However, as this was being written, there were strong hints that one or more US-based stations might also carry the programme, in which case the question of reception reliability wouldn't be a problem.

The schedule for English from HCJB - Australia isn't complicated: 0700 to 1200 on 11.770 and 1230 to 1730 on 15.480. At the time of writing, times for *DXPL* haven't yet been announced. The address for HCJB - Australia is: **GPO Box 691, Melbourne, Victoria.**

Station News

A new outlet in Peru is Radio Macedonia in Arequipa. It is using one kilowatt on 4.890 and carries religious programming as well as classical music.

Radiodifusora Huancabamba - 6.536 - now calls itself Radio La Poderosa. Also the former Radio San Miguel on 6.895 variable is now called Radio La Superior or 'La Super Radio'. This one is from San Miguel de El Faique. Another new one from Peru is Radio San Cristobal de Huayamanga, Ayuchuco, is using 500W on 5.020

New from Bolivia is Radio Nueva Esperanza, 6.586, operating from La Pasz. The address is **Av. Raul Salmon, 92 entre Calle 4 y 5, Zona 12 de Octubre, El Alto, La Paz.**

WBOH (Worldwide Beacon of Hope) has come on the air using 5.920. Reports for this station go to **Grace Missionary Baptist Church, 520 Roberts Road, Newport, North Carolina, 28570.** It is part of the Fundamental Broadcasting Network, which also includes WTJC on 9.370. This group is also behind the Voice of Liberty in Lebanon - which has been testing on 11.515 - and should be fully active by now. The organisation is also readying a short wave facility in the Marshall Islands and another one in Uganda.

In Mexico, XEQM-6105, Merida, Yucatan, has been reactivated after a considerable period of silence. They announce as 'Rasa Cunda Corta' and 'Candela FM' (95.3) which they sometimes relay. The address is: **Sistema RASA, Edificio Publicentro, Calle 62 # 508, Entre 63 y 65, 97000 Merida, Yucatan.** Or, if you want to simplify things: Just Apartado 217 (same town and state). Radio UNAM - the national university station 9.600 has also been noted recently. This one is seldom reported and may well be active only periodically.

The US Armed Forces Network (AFRTS) has added a new outlet from Keflavik, Iceland, on 13.855 u.s.b. from 0500 to 1830 plus 7.590 at 2100-0800 and 15.620 from 0700 to 1800.

The US government run Radio Marti has of late been aired from one of the Commander Solo EC-130

aircraft used for propaganda broadcasts during the Iraq and earlier the Afghanistan conflicts. It wasn't fully clear whether these were just temporary tests or tests preceding regular services to Cuba via this method. Transmissions were spotted on 6.040 and 6.050 - frequencies not normally used by Radio Marti.

Adventist World Radio has added two more 100kW transmitters to KSDA, its short wave station on Guam.

WBCQ - 'The Planet' (7.415) has got the go-ahead to add another transmitter and associated antenna.

Radio Oriental, the only short wave outlet in El Salvador, continues to be heard albeit on a rather 'iffy' basis. The station makes it through to many US radio shacks around 2300 to past 0030 on variable 17.835. This is always a welcome visitor, especially since El Salvador had no short wave stations for something like 20 years.

The Voice of Guyana continues to be in a yes/no situation - active for a few weeks, then gone for awhile and then back for a time, so you might keep that in mind the next time you tune down in the neighbourhood of 3.290.

WRNO, New Orleans, the station that started the flood of private US short wave broadcasters over 20 years ago continues to experience hard times. There are virtually no loggings of this station from anywhere in North America, even though the station claims to be on the air. The operating power is believed to be extremely low, although an effort is being made to raise money and buy a better transmitter.

Interesting Reports

Here are a few of the more interesting things that have been reported lately - La Voz del Guaviare - 6.035. This difficult Colombian runs until just before 0300 close down. It is usually up against strong signals from Radio Marti on 6.030. Another from Colombia is Caracol Villavicencio on 5.958 which signs on at 0900. Radio Melodia, Bogota, on variable 6.139, can sometimes squeeze through.

One that is not being heard is Paraguay's Radio America. Reports indicate that this one is, indeed, active - using 1kW on 7.370 and 200W on 15.185, with both frequencies active 24 hours a day. Radio del Pacifico on 4.975 is being reported by many of late. This is often a tough catch because there is usually a strong 'utility' station on this frequency.

Guatemala's Radio Cultural is still using 3.300, carrying some English language religious programming from around 0330. This channel was off the air for quite some time, but was recently reactivated. Radio Cultural's other channel - 5.955 - is also in use, but subject to a lot more interference.

Frequencies 6.950 and 6.925 are being more frequently used by US pirate broadcasters, in addition to the more familiar 6.955. One of the most active pirates recently is WHYP. Grasscutter Radio, Radio Oxycontin, WMPR, WFMQ and a number of others are periodically active. No schedules are ever announced.

The past three months have seen short wave propagation conditions doing wild swings from fairly good (rarely!) to perfectly awful as solar storms and a decreasing sunspot number combine to degrade reception. There are frequently days when it becomes a real monitoring challenge to come up with anything of interest. One can only hope for better days ahead!

That covers things for this time. I'll be back with more in three months. Until then, good listening!



KFBS, Saipan, Northern Marianas.



Radiodifusora Argentina al Exterior (RAE), Buenos Aires.

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

LM&S



The propagation conditions in the higher frequency short wave bands varied from day-to-day during May and frequently they were far from good. Poor reception from many areas was mentioned in the reports - in fact some listeners began to wonder if their receiver or antenna had developed a fault.

The longer hours of sunlight during the summer suggest that the ionisation of the layers forming the ionosphere will increase and that propagation in the short wave bands will therefore be better than during the winter months. Although ionospheric soundings confirm that seasonal variations result in the critical frequency of the E and F1 layers being higher in summer than in the winter, they also reveal that exactly the opposite effect takes place in the highest F2 layer, whereby the daytime critical frequency is greatest in winter and least in summer.

Propagation in the higher frequency s.w. bands, which involves the F2 layer, can therefore be expected to be poorer during the summer than in the winter. Furthermore, we are now descending the downward slope of the present sunspot cycle.

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 May.

A marked improvement in reception in this band was noted by **Ernie Strong** (Ramsey, Cambs) following the re-build of a defunct Yaesu FRT-7700 Antenna Tuning Unit (a.t.u.) which he purchased second-hand. Whenever he checked the band around midnight he found the Rikisutvarpid (RUV) outlets at Gufuskalar, W.Iceland on **189** (300kW) and Eidar, E.Iceland on **207kHz** (100kW) were both audible.

A broadcast from RUV via Gufuskalar, W.Iceland on **189kHz** was also received after midnight by **Simon Hockenhuill** in E.Bristol, which he logged as SINPO 24432 at 0045.

While searching the band in Wigan **Jim Edwards** had to assume it was Sofia, Bulgaria which he heard faintly on **261kHz** at 0135 because the language was neither Russian nor German. The Russian stations which he logged on **234, 270 & 279kHz** between 2250 & 2300 (see chart) were also weak and were heard under the regular occupants of those frequencies.

At 2150 on the 27th a broadcast of ballad type songs from Bod, Romania was heard under DLF via Donebach, Germany on **153kHz** by **Sheila Hughes** in Morden. The reception of Bod improved after 2200.

Medium Wave Reports

The increasing hours of daylight during May discouraged some listeners from searching the band late at night for the sky waves from the m.w. stations in the Middle East, N.Africa, Europe and Scandinavia.

Rather disappointing conditions were encountered by **Eddie McKeown** (Newry, Co.Down) during his searches of the band, which took place mainly between

2000 and 2200. Nevertheless, he compiled some interesting logs - see chart.

Most of the entries in the fairly extensive log compiled by **Fred Wilmshurst** (Northampton) were heard after dark. Amongst them is Manx Radio, Isle of Man on **1368kHz**, which Fred logged as SINPO 33443. A few years ago they welcomed detailed reception reports and verified them with an attractive QSL card. If you listen to their broadcasts and send them a report could you please let me know if they still respond in that way.

A change of name by a station in Holland was noticed by **Bruce Watt** in W.London. He says "Radio 10 on 675 is now Arrow Classic Rock - Rock of Ages. I used to listen to Radio 10 so I shall miss it".

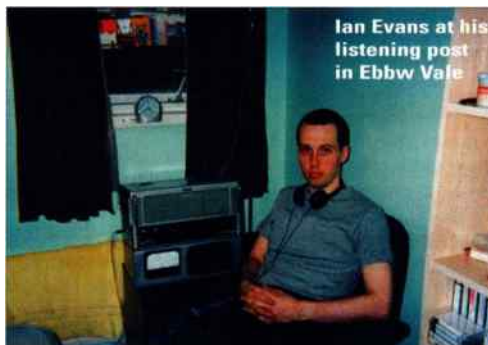
During daylight the ground waves from distant local radio stations attracted the attention of some listeners - see chart.

Short Wave Reports

The daily broadcasts from Radio France International (RFI) in the **25MHz (11m)** band on **25.820** (Fr, Eng to E/C.Africa 0830-1300) may have been discontinued from May 1, but propagation disturbances at that time made it difficult to be sure if they had ceased or were simply buried in the high level of noise. Subsequent checks here revealed that no trace of their carrier

could be detected, so presumably the RFI service planning engineers have decided to withdraw the daily 11m transmissions to Africa from their broadcast schedule for the summer period.

When the broadcast schedules for the summer period



were introduced on March 30th the German international s.w. broadcaster Deutsche Welle (DW) discontinued their daily transmissions on **25.700MHz** (Eng) and **25.740MHz** (Ger). RFI then became the sole occupant of this band. It now seems likely that the 11m band will remain unused until favourable propagation conditions exist during the next solar sunspot cycle.

In the **21MHz (13m)** band R.Australia's early morning transmission to Pacific areas via Shepparton on **21.725** (Eng 0200-0900) seldom reached our shores. During favourable conditions it was rated 34333 at 0740 by **Bernard Curtis** in Stalbridge. Sometimes their broadcast to Asia via Shepparton on **21.820** (Eng 0900-1400) reached the UK. It was noted as 24222 at 0900 in Newry - a marked contrast to the SINPO ratings quoted in this column a few months ago, when it could be received here clearly most mornings!

Also noted in this band were Swiss R. Int (SRI) via Sottens **21.770** (Eng, It, Ger, Fr to Near East, Africa 0830-1030), rated 24222 at 0830 in Morden; R.Pakistan, Islamabad **21.465** (Ur, Eng to Eur 0700-1010) 43323 at 0920 by **Vic Prier** in Seaton; R.Portugal Int, S.Gabriel **21.830** (Port to W.Africa 0700-1655, Sat/Sun) 44333 at 1000 by **Thomas Williams** in Truro; UAE R.Dubai **21.605** (Ar, Eng to Eur 0600-1630) 35343 at 1045 in Northampton; Vatican R, Italy **21.850** (It to Africa 1200-?) 45444 at 1210 by **Jim Brown** in Dregghorn; Vatican R, Italy **21.770** (Chin to Asia, Australia, N.Zealand 1230-1315) 34223 at 1314 by **Peter Pollard** in Rugby; HCJB Quito, Ecuador **21.455** (Eng to Eur, Australasia [u.s.b.] 1100-1430) 34333 at 1350 by **David Hall** in Morpeth; DW via Sri Lanka **21.560** (Ar to

- Listeners:-
 (A) Jim Brown, Dregghorn.
 (B) Jim Edwards, Wigan.
 (C) Simon Hockenhuill, E.Bristol.
 (D) Sheila Hughes, Morden.
 (E) Ernie Strong, Ramsey, Cambs.
 (F) Thomas Williams, Truro.
 (G) Fred Wilmshurst, Northampton.

Long Wave Chart

kHz	Station	Country	Power (kW)	Listener
153	Bechar	Algeria	1000	B*,E*
153	Donebach DLF	Germany	500	B,C,D*,E,F,G
153	Bod	Romania	1200	B*,D*,E*
162	Allouis	France	2000	A*,B*,D*,E,F,G
171	Nador Medi-1	Morocco	2000	B*,C*,E
171	B'shakovo etc	Russia	1200	B*,C,D*,G
171	L'vov	Ukraine	500	E*
171	Sasnovy	Belarus	1000	E
177	Oranienburg	Germany	500	B*,C*,D*,E,G
180	Polati	Turkey	1200	B*
183	Saarouis	Germany	2000	A*,B,E,F,G
189	Gufuskalar	W.Iceland	150	B*,C*,E*
189	Caltanissetta	Italy	10	B*
198	Droitwich BBC	UK	500	A*,D*,E,G
198	WesterglenBBC	UK	50	C*
207	Munich DLF	Germany	500	B,D*,E,F,G
207	Eidar	E.Iceland	100	B*,E*
207	Azilal	Morocco	800	B*,C*
216	Roumoules RMC	S.France	1400	B,C,D*,E,F,G
225	Polskie R-1	Poland	?	B*,C*,D*,E,G*
234	Beidweiler	Luxembourg	2000	A*,B*,E,F,G
234	Krasnyy Bor	Russia	1200	B*
243	Kalundborg	Denmark	300	A*,B,C,D*,E,G
252	Tipaza	Algeria	1500	A*,B*,C,D*,E,G
252	Yerevan	Armenia	150	B*,E*
261	Sofia	Bulgaria	60	B*
261	Taldom Moscow	Russia	2500	B*,C*,E
270	Topolna	Czech Rep.	1500	B*,C*,E,G
270	Orenburg	Russia	40	B*
279	Sasnovy	Belarus	500	B*,D*
279	Yekaterinburg	Siberia	150	B*

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

GOING MOBILE

G. SCAN II MOBILE

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



SKYSCAN MOBILE

Freq: 25-2000 Mhz Length: 650mm
4 tuned stainless steel vertical radials, 3.5" magnetic base with rubber protection, 4 mtrs RG58 coax terminated with a BNC. (With not just one but four vertical radials, take your scanner in the car & enjoy superior reception with this dedicated antenna.)
Our Price £19.95 plus £6.00 p+p.



MINISCAN MOBILE

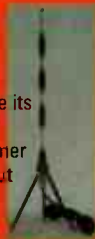
Freq TX: 144-146 430-440 Mhz
Freq RX: 100-1300 Mhz Length: 300mm
Spring loaded black stainless whip, 1" super strong magnetic mount, 4mtrs of mini hi-spec coax, terminated with a BNC. (Ideal for "low profile" scanning while for those with transceivers with wideband receive, its the perfect choice for dual band TX and continued large scale reception.)
Our price just £14.95 plus £2.00 p+p.



PORTABLE ANTENNAS

TRI-SCAN III

Freq: 25-2000 Mhz Length: 900mm
This Desktop Internal Antenna comes with 3 vertical capacitor loaded coils, mounted on a unique helically wound tri-pod, to give its own ground plane for smooth reception. Complete with 5 mtrs of RG58 coax, terminated with a BNC. (Get the most from your scanner with the Tri-Scan III Desktop and enjoy great performance without the hassle of erecting an external one.)
Our Price £39.95 plus £6.00 p+p.



SKYSCAN DESKTOP

Freq: 25-2000 Mhz Length: 900mm
This discone style indoor antenna comes with 4 tuned stainless steel vertical whips, 6 ground plane 12" radials, plus 4 loaded horizontal 3" helical radials. Complete with heavy duty base 5 mtrs RG58 terminated with a BNC. (Don't lose those wanted signals while indoors. Use the SkyScan Desktop at your radio station, on the window seal or even in the loft for increased performance.)
Our Price £49.95 plus £6.00 P+P.



SWP GLASS MOUNT ANTENNAS

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

SWP2000

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

SWPHF30

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



MAX 5 ACTIVE

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



Our Price £49.95 PLUS £6.00 P+P.

SHORT-WAVE WIRE ANTENNAS

MD37 SKYWIRE

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



MWA-HFMKII

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



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

Long Wire Balun

Balun only with SO239 socket and wing nut for wire connection.
Our Price Just £19.95 plus £2.00 P+P.



BASE VERTICALS

SUPERSCAN STICKS I & II

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

SUPERSCAN STICK

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

SUPERSCAN STICK II

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

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

MULTISCAN STICK I

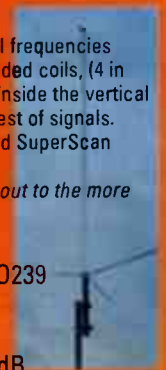
Freq RX: 25-2000 Mhz TX 144-146/430-440 Gain 2.0/4.0dB
Length: 1000mm Socket: N-type.
Our Price £39.95

MULTISCAN STICK II

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

IVX2000

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



AR-AIR BAND ANTENNAS

These dedicated civil & military fibreglass antennas are made pre-tuned & dual band trapped for both Air Band frequencies. Easy connection with an S0239 socket (With these antennas you can obtain high dual band gain which is not available on wideband antennas. Just don't miss take off !!!)



AR-30

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

AR-50

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

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

X1-HF VERTICAL

Freq: 1-50 Mhz Length: 2005mm
Socket: S0239

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

Our Price £49.95 PLUS £6.00 P+P.



DISCONE ANTENNAS

STANDARD DISCONE

Freq: 25-1300 Mhz Length: 1000mm
Socket: S0239

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

Our Price Just £29.95 plus £6.00 P+P.



SUPER DISCONE

Freq: 25-2000 Mhz Length: 1380mm Gain: 3.0dB Socket: S0239

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

Our Price £39.95 plus £6.00 P+P.



HF DISCONE

Freq: 0.05-2000 Mhz Length: 1840mm
Socket: S0239

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

Our Price £49.95 plus £6.00 P+P.



ROYAL DISCONE 2000 (Stainless Steel)

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

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

Our Price £49.95 plus £6.00 P+P.

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



BE DEDICATED

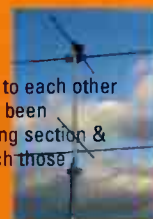
TURNSTILE 137

Freq: 137.5 Length: 1000mm

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

Our Price £39.95 plus £6.00 P+P.

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



BEAM ANTENNAS

MLP32

Freq: 100-1300 TX&RX

Gain: 11-13 dB

Length: 1400mm

Con: N-Type

Our Price £99.95

plus £6.00 P+P

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

MLP62

Freq: 50-1300 Mhz

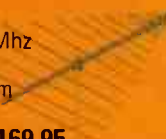
Gain: 10-12 dB

Length: 3000mm

Con: N-Type

Our Price £169.95

plus £6.00 P&P.



HANDHELD ANTENNAS

SUPER GAINER RUBBER DUCKS

Freq: 25-1800 Mhz Length: 400mm

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

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

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



GETTING RIGGED UP

5' SWAGED POLES

Heavy Duty Ali (1.2mm wall)

SINGLE 1 1/4"£7.00

SET OF FOUR 1 1/4"£24.95

SINGLE 1 1/2"£10.00

SET OF FOUR 1 1/2"£34.95

SINGLE 2"£15.00

SET OF FOUR 2"£49.95

CONNECTORS

PL259/9£0.75 each

PL259/6£0.75 each

PL259/7 for mini 8£1.00 each

BNC (Screw Type)£1.00 each

BNC (Solder Type)£1.00 each

N TYPE for RG58£2.50 each

N TYPE for RG213£2.50 each

S0239 to BNC£1.50 each

PL259 to BNC£2.00 each

N TYPE to S0239£3.00 each

HI-SPEC COAX CABLE

RG58 6mm standard....£0.35 per mtr RG213 9mm mil spec£0.85 per mtr

RG58 6mm mil spec£0.60 per mtr RH200 9mm mil spec£1.10 per mtr

RF mini 8 7mm mil spec£0.85 per mtr (Phone for 100 mtr discount price)

SOMETHING EXTRA

UK SCANNING DIRECTORY

8TH EDITION

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

Our Price £19.50 PLUS £6.00 P+P.



MRP-2000 (pre-amplifier)

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

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

Our Price £49.95 plus £6.00 P+P



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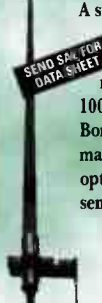
DX-1 PRO (R.F. SYSTEMS)



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

£329.95 DEL £15.00

DX-10 (R.F. SYSTEMS)



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

£169.95 DEL £11.00

Q-TEK STEALTH SR-60



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

OUR PRICE £69.95 DEL £10.00

E.M.F. ANTENNA



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

ONLY £62.95 P&P £4.00

MLB (R.F. SYSTEMS)



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

£42.95 POST £3.00

GLOBAL AT-2000



Deluxe SW ATU 0-30MHz. SO239 fittings.

ONLY £89.00

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

MLBA (R.F. SYSTEMS)



Ready assembled wire antenna offering low noise reception on long, medium, short wave (100kHz-40MHz) adjustable from 6mts to 20mts long. Magnetically coupled transfer system ensures reduced static noise levels and allows unwanted build-up to leak harmlessly to earth without damaging the receiver. (Subject to recvr. being earthed).

£64.95 POST £5.00

PL-259 to PL-259 4mtr patch lead.....£8.99

WA-50 'AMPLIFIER'



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

OUR PRICE £99.95 P&P £7.50

Optional AC adapter.....£16.99

Q-TEK PL-30



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

NOW £24.95 P&P£3.00

Hinged telescope

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

DPX-30 ANTENNA DUPLEXER/COMBINER

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

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

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

To receiver low insertion loss

SEND SAE FOR DATA SHEET

SP-1 TWO WAY COMBINER (PROFESSIONAL)



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

£59.95 P&P £3.50

Can be used in reverse

SP-3 (PROFESSIONAL)



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

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

NEW Q-TEK INTREPID 2000



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

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

ONLY £89.95 P&P £11.00

Q-TEK D.C. 2000 DISCONE

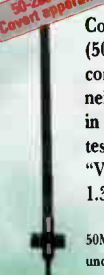


A high performance wideband discone offering superb performance from 0.2-2000MHz. Transmit range: 6m, 2m, 70cm, 32cm & 23cm (power handling 200W). Fitted with low loss 'N' type socket. Supplied with mounting brackets. (N-plug & coax not supplied).

OUR PRICE £54.95 P&P £11.00

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

Q-TEK SS-2000



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

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

Q-TEK DSL-2500

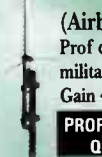


Superb directional antenna for the real scanner enthusiast. This antenna benefits from an extraordinary tight 'lobe' resulting in an incredibly high gain figure. Freq range: 60-2500MHz. T/radius: 1.4 mtrs.

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

£129.99 DEL £10.00

AIR-44



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

PROFESSIONAL QUALITY £79.95 P&P £11.00

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

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

NEW WSK-3000



Weather satellite antenna kit includes:
 A) A 2 element crossed dipole for receiving weather satellite pictures.
 B) Software for your PC. No interface needed (use your PC's sound card). Available at £4.50 extra.
 Requires scanner or receiver.

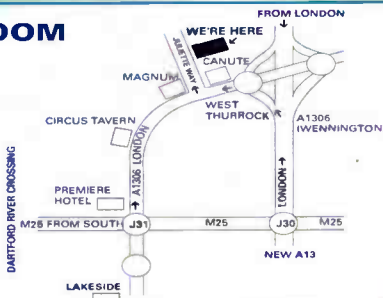
OUR PRICE £29.99 P&P £10.00

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power lead & mount.

£849.00

Etrex	"Yellow"	£99.99
GPSIII+	+free map	£269.99
Street Pilot Mono		£299.99
Street Pilot Colour		£399.99
GPS Map 76		£319.99
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Britain's best selling scanner book now larger than ever.

Nearly 700 pages packed full of frequencies from 25MHz-1.8GHz. *Order yours today!*

OUR PRICE **£19.75** P&P £4.50

M-75 SCANNER PRE-AMP



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

OUR PRICE **£79.95** P&P £5.00

Q-TEK APOLLO 3000



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

£59.95 P&P £6.00

RM-983



Radio controlled clock. (Synchronised from rugby). Double line display, user selectable, time format 12/24hr, back illumination, indoor temperature.

OUR PRICE **£12.95** P&P £3.00

BA-888



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

OUR PRICE **£69.95** P&P £5.00

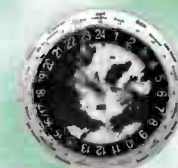
MFI-125 12/24HR CLOCK



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

OUR PRICE **£37.95** P&P £5.00

MFI-115



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

£29.95 P&P £5.00

SUPER-GAINER RH-9090 (SMA)

SMA fitting SMA 40cm flexible whip that is ideal as replacement.

OUR PRICE **£26.95** P&P £1.50

SUPER-GAINER RH-9000 (BNC)

BNC 40cm flexible whip for the ultimate in gain. (Rx:- 25MHz-2GHz).

OUR PRICE **£21.95** P&P £1.50

DB-2000

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

OUR PRICE **£14.99** P&P £1.50

DA-2000 SMAWith SMA adaptor £19.99

REGULAR-GAINER RH-770

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

OUR PRICE **£16.95** P&P £1.50

RH-790 As above with SMA adaptor£21.95

QS-300



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

OUR PRICE **£10.00** P&P £3.00

WATSON HUNTER



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

ONLY **£59.95**

P&P £6.00
Optional case £14.99.....£7.50

QS-200



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

OUR PRICE **£4.99** each
P&P £2.00

3 for **£10.00** P&P £3.50

MAST HEAD PULLEY



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

£8.99
+ P&P £2.50

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

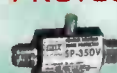
LOW LOSS PATCH LEADS

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

+ £2.50 P&P
All patch leads use low loss coax



SP-350 STATIC PROTECTOR



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

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

£24.95 P&P £2.50

ALKALINE STARTER KIT

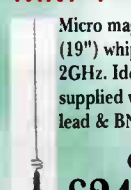


Starter kit includes charger & 4 x AA cells.

£12.99 + £3.00 P&P

Please note that only the special cells can be recharged with this charger.
Extra cells available @ 8 x AA pack £10.99 £1 P&P 4 x AA pack £5.99 £1 P&P. Rechargeable Alkaline. No memory effects. 1.5V cells. 3 x capacity of nicads.

MM-1 MICRO MAG ANTENNA



Micro magnetic base with (19") whip. Rx:- 0.5MHz-2GHz. Ideal for all scanners supplied with miniature coax lead & BNC (all fitted).

OUR PRICE **£24.95** P&P £5.00

BNC to PL-259 adaptor£3.49
BNC to N-type adaptor33.95

EP-300



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

We have supplied 100s of these units to many different government departments.

£9.95 P&P £2.00

NEW NOISE FILTER!



A superb TDK 'snap fix' ferrite clamp for use in Radio/TV/ Mains/PC/Phone etc.

Simply close shut over cables and notice the difference! Will fit cables up to 13mm diameter. Ideal on power supply leads/mic leads/audio leads/ phone leads.

OUR PRICE: 2 for **£10** (P&P £2.50)

On thin cable simply wind cable round clamp 1-to-2 times. Simple yet effective!

Accessory items

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

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YUPITERU MVT-7100

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

OUR PRICE £199.95

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

ALINCO DJ-X3

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

£99.95

Soft case£15.99
Cigar power lead£19.99

Optional battery pack and drop in charger £39.99

NEW ICOM IC-R5

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

OUR PRICE £149.99

P&P £10.00

Best value hand-held scanner

BATTERIES AND CHARGER INCLUDED

TRX-200

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

SUPERB HANDY SCANNER

OUR PRICE £199.99

ALINCO DJ-X10

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

OUR PRICE £269.95

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

ICOM IC-R3

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

FOR THE TRUE ENTHUSIAST

OUR PRICE £329.00

Soft case for IC-R3£17.99

AOR AR8200MkIII

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

OUR PRICE £385.00

Optional case£19.99

CC-8200 PC interface£79.99

ALINCO DJ-X2000

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

£439.95

Includes 8.33kHz spacing

Optional case£15.00

Optional battery box£14.99

Cigar lead£19.99

PC interface£42.95

ICOM PCR-1000

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

compatible. (Requires suitable PC).

OUR PRICE £329.99

Optional DSP unit£85.00

REALISTIC DX-394

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

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

OUR PRICE £199.95 P&P £10

OUR BEST SELLING LOW PRICED RECEIVER

HD-1010 optional headphones£9.99

ICOM IC-R75

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

OUR BEST SELLING HF RECEIVER (Optional DSP £85.00)

OUR PRICE £589.00

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

KENWOOD HS-5

Superb padded professional communications headphones. Designed specifically for SWL. 1/4" jack.

PRICE £56.99 Del £5.00

KENWOOD HS-6

A professional lightweight pair of dedicated short wave listening headphones. 1/4" and 3.5mm jack.

PRICE £36.99 Del £5.00

SANGEAN ATS-505

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

£79.95 (P&P £10.00) Optional PSU£16.95

SONY SW-100E

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

£159.95 (P&P £10) AN-100 active aerial£64.95

SANGEAN ATS-909

A superb performance all mode synthesized world receiver with true SSB and 40Hz tuning for ultra clean reception. The same radio is sold under the Roberts name at nearly twice the price. Other features include RDS facility, 306 memories and WFM.

£139.95 (P&P £10) Optional PSU£16.95

SONY SW-30

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

OUR PRICE £39.95 P&P £8.50

EVOKE-1

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

OUR PRICE £99.95

Car DC lead£14.99 Optional spkr£29.99

EVOKE-2

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

OUR PRICE £159.99

Short Wave Magazine, August 2003

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UNIDEN UBC-780XLT

NEW EUROPEAN VERSION

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

OUR PRICE **£299.99**
Software 780XLT£34.99



YAESU VR-5000

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

OUR PRICE **£549.99**
(incl's PSU)
Optional DSP£79.99
VR-5000 +3 (incl's DSP + voice synth'r + record unit)....£715.00



AOR AR-8600 MkII

Extremely versatile all mode receiver (100kHz-3GHz). Now with improved short wave performance.

OUR PRICE **£599.99**
Optional power supply£19.99



FAIRHAVEN RD-500VX+

Superb wideband receiver (all mode) with over 50,000 memories capable of holding text. 20kHz-1750MHz. Incl's remote control/PSU/PC lead and software.
RRP: £899.00

OUR PRICE **£745.00**



ICOM IC-R8500

Next generation wideband receiver for the true perfectionist. 0.1-2GHz. (All mode). Includes free PSU.

OUR PRICE **£1149.95**
SP-21 extension speaker £74.99
Voice synth board.....£34.95

44333 at 2140 in Dreghorn; Voice of Nigeria via Ikorodu **15.120** (Eng to N.Africa, Eur 1900?-2300) 35444 at 2207 in Northampton; R.Taipei Int via WYFR **15.600** (Eng to Eur 2200-2300) 45334 at 2215 by **Ian Pakeman** in Folkestone.

Noted in the **13MHz (22m)** band were R.Bulgaria, Plovdiv **13.600** (Eng to Eur 0630-0700), rated 45544 at 0635 in Northampton; Croatian R, Deanovec **13.830** (Cr to Eur) 35433 at 1002 in E.Bristol; BBC via Cyprus **13.660** (Ar to M.East 0900?-1200?) 34422 at 1106 in Oxted; R.Netherlands via Flevo **13.700** (Dut to S/SE.Eur 0759-1700) 44333 at 1300 in Dreghorn; UAE R.Dubai **13.675** (Ar, Eng to Eur 0600-2045) 43433 at 1335 in Herstmonceux & 43333 at 1633 in Ebbw Vale; Voice International, Australia via Darwin **13.685** (Eng to Asia 1300-1600) 44434 at 1400 in Morden; VOA via ? **13.600** (Eng to E/S.Asia, Oceania 1600-1700) 34433 at 1608 in Ebbw Vale; All India R. (AIR) via Bangalore **13.620** (Ar to Asia 1730-1945) 44423 at 1745 in Seaton; Voice of Vietnam, Hanoi **13.740** (Eng to Eur 1800-2000?) 43334 at 1800 in Stalbridge; All India R. (AIR) via Bangalore **13.605** (Eng to W/N.Africa 1745-1945) 43322 at 1811 in Newry; China R.Int via Kunming? **13.790** (Eng to M.East, Africa 1900-2000) 43343 at 1910 in Rugby; Swiss R.Int (SRI) via Julich, Germany **13.645** (It, Ar, Eng, Ger, Fr to Nr.East, Africa 1830-2130) 33222 at 1930 in Appleby; R.Australia via Darwin **13.620** (Eng to SE.Asia 2200-0000) 33222 at 2217 in Truro & 24422 at 2300 in E.Bristol; VOIRI Tehran **13.665** (Eng to SE.Asia, Australia 2130-2230) 34343 at 2225 in Folkestone.

Some of the long distance transmissions which reach our shores in the **11MHz (25m)** band come from R.New Zealand on **11.820** (Eng to Pacific, Mid-West USA & Eur 0506-0705), noted as 44333 at 0600 in Morden; R.Australia via Shepparton on **11.660** (Eng to E/SE.Asia 1330-1700), rated 33222 at 1330 in Truro & 42344 at 1640 in Rugby. From 1700 R.Australia may be heard on **11.880** (Eng to Oceania, N.America 1700-2200), noted as 23222 at 1807 in Newry.

Noted in this band during the morning were DW via Rwanda **11.945** (Eng to M.East, E.Africa 0400-0457), rated 35553 at 0415 in Larnaca, Cyprus; R.Prague, Czech Rep. **11.600** (Eng to NW.Eur 0700-0727) 54544 at 0705 in Herstmonceux; R.France Int, (RFI) via Issoudun **11.670** (Fr to C.Eur 0700-1030) 55445 at 0810 in Stalbridge; World Harvest R. (WHRI) via Maine, USA **11.730** (Eng to Africa 0500-1000) 33333 at 0840 in Truro; BBC via Woofferton, UK **12.095** (Eng to Eur 0700?-1800?) 24332 at 0956 in Oxted; R.Prague, Czech.Rep **11.615** (Eng to NW.Eur 1030-1057) 55544 at 1040 in Northampton; R.Bulgaria, Sofia **11.700** (Eng to Eur 1130-?) 44434 at 1135 in Oxted.

After mid-day KNLS Anchor Point, Alaska **11.870** (Eng to E.Asia 1300-1400) was 24122 at 1305 in Newry; WWCR Nashville, USA **12.160** (Eng to N.America, Eur 1200-2300?) 33333 at 1400 in Morpeth & 44243 at 2223 in Newry; R.Romania Int, Bucharest **11.940** (Eng to Eur 1700-1800) 32322 at 1736 in Ebbw Vale; Voice of Greece **12.105** (Eng to Eur 1830-1900) 55545 at 1830 in Seaton; R.Kuwait via Kabd **11.990** (Eng to Eur, N.America 1800-2100) 54333 at 1830 in Appleby & 44444 at 1900 in Rugby; China R.Int via ? **11.790** (Eng to Eur 2000-2200) 43334 at 2000 in Dudley; R.Canada Int via Skelton, UK **11.690** (Eng to Eur, Africa, M.East 2000-2059) SIO 333 at 2004 in N.Bristol; Voice of Russia **12.070** (Eng to Eur 2000-2100) 44444 at 2035 in Morden; R.Damascus, Syria **12.085** (Eng to Eur 2005-2105) 45333 at 2100 in E.Bristol; R.Tashkent, Uzbekistan **11.905** (Eng to Eur 2130-2200) 44444 at 2140 in Folkestone; Israel R, Jerusalem **11.585** (Heb to Eur, N.America 1600-0330) 55555 at 2230 in Dreghorn.

R.New Zealand may also be heard in the **9MHz (31m)** band. Their broadcast to Pacific areas on **9.885** (Eng 0706-1305) was rated 22222 at 0825 in Truro. Later, R.Australia was heard here on two frequencies from Shepparton: **9.475** (Eng to Asia 1330-1858), rated 33433 at 1705 in E.Bristol; **9.500** (Eng to Asia 1900-2130), noted as 44433 at 1904 in Newry.

Noted during the morning were WTJC Newport NC, USA **9.370** (Eng to N.America 24hrs), rated 54444 at 0545 in Morpeth; R.Prague, Czech Rep.

9.880 (Eng to NW.Eur 0700-0727) 45544 at 0700 in Seaton; TWR Monaco **9.870** (Eng to Eur 0700-0820) 54444 at 0805 in Morden; R.Vilnius, Lithuania **9.710** (Lith, Eng to W.Eur 0800-0900) 44444 at 0830 in Dudley; R.Netherlands via Bonaire, Ned.Antilles **9.785** (Eng to Asia, Far East, Pacific 0930-1125) 44444 at 0945 in Truro; R.Netherlands via Wertachtal, Germany **9.860** (Eng to Eur 1030-1225) 44444 at 1035 in Oxted.

After mid-day R.Polonia, Warsaw **9.525** (Eng to W.Eur 1200-1255) was 54433 at 1215 in Herstmonceux; DW via Nauen, Germany **9.545** (Ger to Eur, S.America 0600?-2000?) 55555 at 1304 in Rugby; Voice of Vietnam via Austria? **9.725** (Eng to Eur 1700-1730) 35323 at 1722 in Ebbw Vale; AIR via Aligarh **9.445** (Eng to W.Africa? 1745-1945) 54445 at 1805 in Stalbridge; Voice of Russia **9.480** (Eng to N.Eur 1800-2100) SIO 444 at 1819 in N.Bristol; Voice of Turkey, Ankara **9.785** (Eng to Eur 1830-1930) 55555 at 1830 in Appleby; DW via Rwanda **6.180** (Eng to E/C.Africa 1900-1957) 43334 at 1900 in Dudley; BBC via Cyprus **9.410** (Eng to W.Eur 1600-2200) 55534 at 2055 in E.Bristol; R.Cairo, Egypt **9.990** (Eng to Eur 2115-2245) 55555 at 2210 in Dreghorn; BBC via Singapore? **9.740** (Eng to SE.Asia 2200?-2330?) 25544 at 2220 in Northampton; China R.Int via Russia **9.880** (Eng to Eur 2200-2300) 53444 at 2225 in Folkestone; R.Netherlands via Bonaire, Ned.Antilles **9.845** (Eng to N.America 2330-0525) 44243 at 2334 in Newry.

In the **7MHz (41m)** band WBCQ in Monticello, USA **7.415** (Eng to N.America 2000-0515, 0515-0630 Sat) was 33333 at 0350 in Morpeth; WRMI Miami FL, USA **7.385** (Eng to N.America 2300?-0900?) 33333 at 0358 in Ebbw Vale; R.Japan via Woofferton, UK **7.230** (Eng to Eur 0500-0700) 44433 at 0620 in Herstmonceux; R.For Peace Int, Costa Rica **7.445** (Eng to N.America, Eur 2200-0800) 33333 at 0755 in Stalbridge; R.Slovakia Int. via Rimavsk Sobota **7.345** (Eng to W.Eur 1630-1700) 45544 at 1645 in Northampton; R.Polonia (Polish R), Warsaw **7.285** (Eng to Eur 1700-1800) 32233 at 1700 in Dudley & 43443 at 1730 in Morden; R.Netherlands via Madagascar **7.120** (Eng to Africa 1730-2025) 43433 at 1800 in Seaton & 43433 at 1810 in E.Bristol; R.Slovakia Int. **7.345** (Eng to Eur 1830-1900) SIO 444 at 1830 in N.Bristol; All India R. (AIR) via Bangalore **7.410** (Hind, Eng to Eur 1745-2230) 33333 at 1905 in Rugby; R.Thailand, Udorn Thani **7.155** (Eng to N.Eur 1900-2000) 43333 at 1908 in Newry; Adventist World R. (AWR) via Slovakia **7.130** (Eng to Eur 1930-2000) 42433 at 1934 in Ebbw Vale.

Many of the broadcasts in the **6MHz (49m)** band are intended for listeners in Europe. Some come from R.Japan via Skelton, UK **5.975** (Eng 0500-0600), rated 45433 at 0519 in Ebbw Vale; R.Vlaanderen Int (Belgium) via Germany **5.985** (Eng 0700-0730) 55454 at 0720 in Newry; TWR Monaco via Germany **6.045** (Eng 0700-0815) 55445 at 0750 in Stalbridge; Deutsch Welle (DW) via Julich **6.140** (Eng 0600-1059) 44444 at 0900 in Dudley; R.Finland via Pori **6.120** (Fin, Sw 0500-2300) 44444 at 1018 in Truro; R.Netherlands via Julich, Germany **6.045** (Eng 1030-1225) 35444 at 1203 in Northampton; R.Yugoslavia, Serbia **6.100** (Eng? 1830-1900) 44444 at 1830 in Appleby; R.Slovakia Int, Bratislava **5.920** (Eng 1830-1900) 44444 at 1832 in Rugby; Bayerischer Rundfunk, Germany **6.085** (Ger 24hrs) 55555 at 1835 in Seaton; Deutschland R, Berlin **6.005** (Ger 24hrs) 55545 at 1846 in Seaton; R.Sweden Int via Horby **6.065** (Eng 1930-2000) 55444 at 1945 in E.Bristol; R.Canada Int via Horby, Sweden **5.850** (Eng 2000-2130) 55544 at 2005 in Herstmonceux; R.Japan via Skelton, UK **6.055** (Eng 2100-2200) 43444 at 2106 in Ebbw Vale; VOA via Kavala? **6.040** (Eng 2100-2200) SIO 444 at 2134 in N.Bristol; R.Ukraine Int, Kiev **5.905** (Eng 2100-2200) 44444 at 2110 in Morden; R.Budapest, Hungary **6.025** (Eng 2100-2130) 44444 at 2115 in Folkestone; R.Bulgaria, Sofia **5.800** (Eng 2100-2200) 44344 at 2145 in Dreghorn.

Some broadcasts to other areas may also be received here. They include those from Deutsch Welle (DW) via Rwanda **6.180** (Eng to E/C.Africa 1900-1957), rated 43334 at 1900 in Dudley; VOA via Kavala **6.095** (Eng to Mid.East 2000-2200) 42233 at 2116 in Ebbw Vale; R.Havana, Cuba **6.000** (Eng to N.America 0100-0500) 43533 at 0310 in E.Bristol; American Forces Network (AFN) via Puerto Rico **6.458** (Eng [u.s.b.]) 44344 at 0640 in Morpeth & 24232 at 0751 in Oxted.



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

Sky High

SPECIAL

Peter Bond presents another 'Sky High Special' - this time a comprehensive article covering the history, plus some recent information, of one of the most photographed and listened to aircraft to grace our skies - read on...

The original idea for this part of the airband special came to me when I visited an old friend of mine back in March to celebrate his 50th Birthday. He has been an aviation and airband nut for almost 40 years and his primary interests are the United States tanker and transport fleets. He claims to have photographed all but 10 of the C-135 variants in service and having

seen his very extensive and very impressive photographic collection, I have no reason to doubt him.

Whilst we talked and reminisced, the idea came to me that with the recent conflict in Iraq still fresh in the mind and with my tendency to include some nostalgia in the annual airband special this would be an ideal subject to blend some history with recent information. I could quite easily fill this entire magazine with a detailed analysis of the operations and history of the KC-135, so I can only touch briefly on some aspects of the KC-135 story, but obviously the emphasis will be on the airband elements of the aircraft. Hopefully this will be one of the most comprehensive articles written about the C-135 with the airband enthusiast in mind.

Over the past five decades, the KC-135 and other variants, must be one of the most photographed and listened to aircraft to grace our skies. I doubt if there is one reader of this column who has not monitored a C-135 in the past weeks and most likely in the last day or two. Amazingly, despite the arrival of an apparent replacement in the form of the KC-10, the C-135 soldiers on after almost half a century and with various airframe and avionics updates taking place, most likely for the foreseeable future.

The Birth Of A Legend

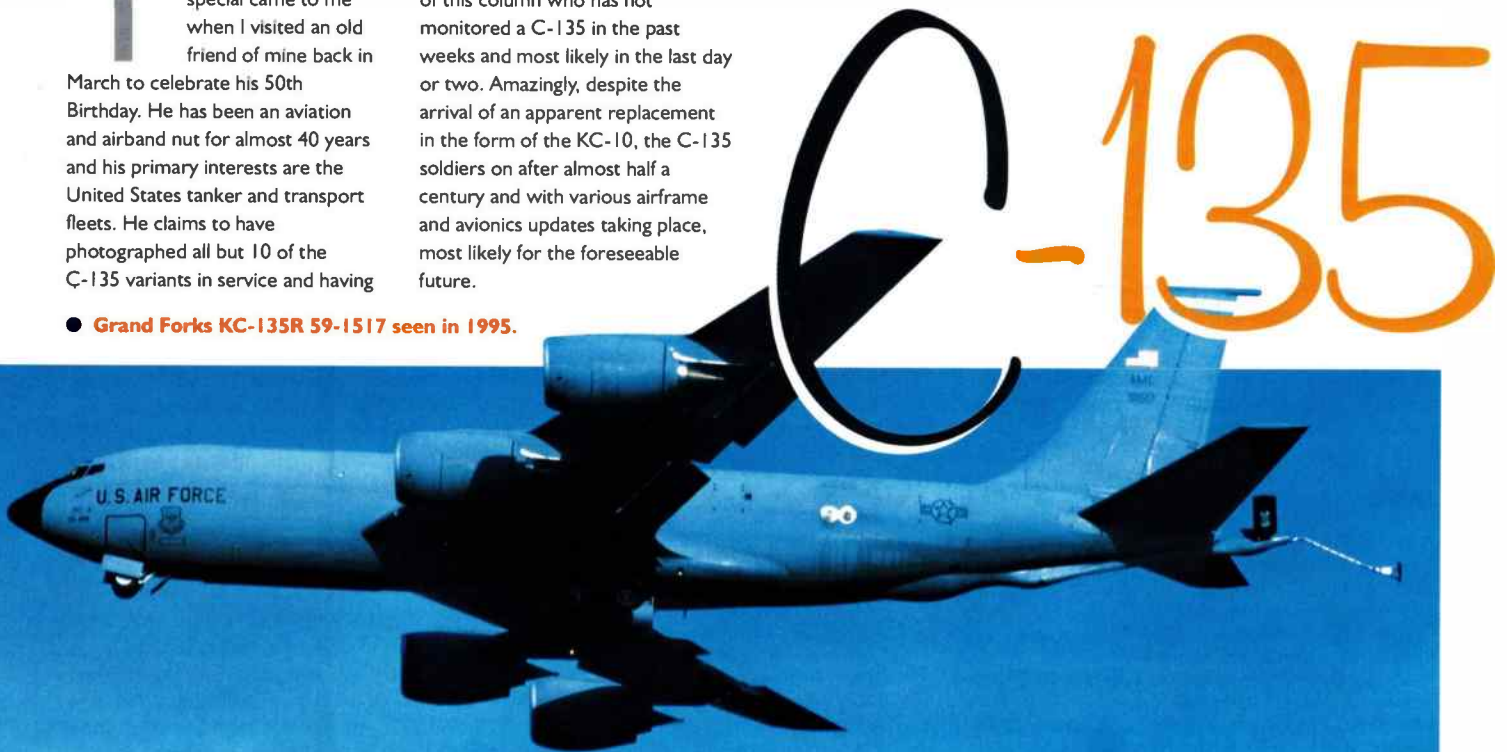
We have an element of the chicken and the egg syndrome here as many people think that the KC-135 was a derivative of the Boeing 707 airliner, in fact, the opposite is the case. In 1952, the far sighted president of Boeing, William M. Allen, called together his research and design team and asked them if they could build and fly a prototype jet aircraft within two years. One of the requirements for the aircraft was that it could act as a tanker as well as a transport aircraft. (It's certainly a bit different these days, how long has development of the Eurofighter taken!).

The prototype was actually designated as the Model 707, but for security reasons, was generally known as the Boeing 367-80, and

referred to by most people as the Dash 80. The development proceeded at good speed and long before the roll out took place on the 15 May 1954 the president made a public statement that Boeing's first consideration was the nation's security and that there was a need for a new military tanker, a task which the Dash 80 could fulfil. This statement did not go unnoticed by various elements of the USAF and in November 1953, Strategic Air Command identified the need for at least 200 jet tankers, a decision that was probably prompted by William Allen's statement.

The requirement was for a jet air refuelling aircraft to ultimately replace the KC-97 fleet of tankers, (sigh - they were the days). Amazingly, some people preferred an alternative suggestion that the

● Grand Forks KC-135R 59-1517 seen in 1995.



STALWART OF THE AIR

European Coronet Frequencies.

Table 1

MHz	Use
294.8	USAF/CORONET A/PRIMARY
296.5	USAF/CORONET B/PRIMARY
298.1	USAF/CORONET C/PRIMARY
299.7	USAF/CORONET D/PRIMARY
344.1	USAF/CORONET E/PRIMARY
268.25	USAF/CORONET F/PRIMARY
246.05	USAF/CORONET G/PRIMARY
307.9	USAF/CORONET A/F SECONDARY
340.65	USAF/CORONET C/E/G SECONDARY
380.8	USAF/CORONET B/D SECONDARY

Domestic USA/Atlantic Coronet Frequencies.

MHz	Use
396.2	USAF/CORONET A
394.6	USAF/CORONET A/SEC
391.0	USAF/CORONET B
388.4	USAF/CORONET B/SEC
378.2	USAF/CORONET C
375.7	USAF/CORONET C/SEC
372.3	USAF/CORONET D
370.4	USAF/CORONET D/SEC
314.5	USAF/CORONET E
297.3	USAF/CORONET E/SEC
293.0	USAF/CORONET F
289.7	USAF/CORONET F/SEC
254.6	USAF/CORONET I
255.75	USAF/CORONET I/SEC
236.75	USAF/CORONET J
228.55	USAF/CORONET J/SEC
343.1	USAF/CORONET K
322.8	USAF/CORONET K/SEC

the aircraft was called the Boeing Model 717, explaining why there was a gap in the civil designators between Boeing 707 and 727.

After six weeks of very extensive ground testing it

scheduled to be built including Electronics, Reconnaissance and Weather versions, the last aircraft was in service by mid 1966. There are currently around 550 C-135s still in operational service. Around 45 KC-135R Stratotankers are fitted with wing tip hose and drogue air

refuelling pods, these are capable of refuelling both US Navy and NATO aircraft, which use a probe and drogue system instead of a boom and receptacle.

This additional system allows the KC-135R to refuel both probe/drogue and boom/receptacle aircraft on a single mission or to refuel two probe/drogue aircraft

simultaneously. In addition to the C-135, there were also five VIP V/C-137s built within the normal serial range, but five other oddities have been added to C-137 inventory, including 67-19417, 85-6973/6974 plus two ex-civil 707s. In addition of course are the E-8 and C-18 variants which were converted from civil Boeing 707s.

The KC-135s history includes several additional system maintenance problems which led to several midlife re-fits including, corrosion problems, re-skinning the lower wing surfaces, new CFM-56 fan engines and most recently the Pacer Crag cockpit avionics update.

Other Coronet East/Boom Frequencies.

Table 2

258.0	299.5	327.6
268.4	303.3	339.0
270.4	306.5	339.4
282.0	308.0	344.15
286.6	311.3	355.2
289.6	314.6	356.45
295.4	316.35	356.8
296.4	317.1	360.2
296.6	318.0	380.55
		399.4

replacement should be turboprop and not jet powered, fortunately this did not happen.

The Dash 80 prototype, serial number N70700, first flew on 15 July 1954, but it's progress into military service was never smooth. A competition with Lockheed and a military version of the Douglas DC-8, politics, finance and

a variety of other problems dogged the project over the next couple of years with many government and military factions wanting to go in different directions. It was a difficult position trying to satisfy the requirement of Strategic Air Command, Tactical Air Command, the US Navy, etc, all of whom had a different viewpoint on their refuelling requirements.

Nevertheless, despite the ongoing arguments, the first KC-135A Stratotanker, 55-3118 was rolled out on the 18 July 1956 on the same day as the 888th and last production KC-97. Before being given the C-135 military designation

took to the air for its first flight on the 31 August 1956. (I can see that the RIAT will possibly have a lot of KC-135s present for its 50th in 2006!). At one point the KC-135 was only seen by some as an interim solution to the Air refuelling and the arguments as to its suitability and a possible replacement carried on well into the 1960s.

By the 1964 fiscal year, a total of 820 C-135 variants were



● Aerospace Systems Division NKC-135A 55-3135 overshoots at George AFB in 1982.

Year	Call	A/C	Use
2002	ADOBE	KC-135/KC-10A	USA/UK CORONET
2003	BLUE	KC-135/KC-10A	UK/USA CORONET
2003	BOBBY	KC-135/KC-10A	USA/UK CORONET
2002	BOOM	KC-135E/R	OFTEN 100 ARW
2002	CACTI	KC-135/KC-10A	USA/UK CORONET
2003	ESKAN	KC-135E/R	USA/UK/GULF
2003	ESSO	KC-135E/R	T/F GERMANY + GEILENKERCHEN
2003	ETHYL	KC-135/KC-10A	USA/UK
2002	EURO	KC-135E/R	UK/EUROPE
2003	EXXON	KC-135E/R	KEFLAVIK/TDY
2003	GOLD	KC-135/KC-10A	USA/UK/EUROPE
2003	LAGER	KC-135E/R	MILDENHALL MISSION C/S SEC
2003	QUID	KC-135E/R	MILDENHALL MISSION C/S PRI
2003	RESORT	KC-135E/R	US/UK/INCIRLIK WFU ?
2003	ROVING	KC-135E/R	T/F MORON
2003	SHELL	KC-135/KC-10A	GULF/UK/USA
2002	SKATR	KC-135E/R	MILDENHALL SPECIAL MISSIONS
2003	STARKY	KC-135E/R	INCIRLIK/UK/US WFU ?
2003	TERRY	KC-135E/R	IRAQI FREEDOM

Table 3

Table 4

Date	Op	Call	Comments
9 Jan	CE 909	RETRO 67	2 x B-1Bs to Thumrait, Oman Tanker c/s REACH 021Y/031Y-033Y
Plus further pairs of B-1s as follows: (RETRO 57-CE 910-10 Jan), (RETRO 47-CE 911-13 Jan) (RETRO 37-CE 912-14 Jan)			
11 Jan	CE ?	MAZDA 71 - 76	12 x 4 Wing F-15Es Seymour Johnson to Moron MAZDA 81-86 Tanker c/s CACTI 22/33 & GOLD 51/53
14 Jan	CE 074	MAZDA 71 - 76	12 x 4 Wing F-15Es Moron to Doha MAZDA 81 - 86 Tanker c/s GOLD 52/54
16 Jan	CE 073	MAZDA 31 - 36 MAZDA 41 - 46	12 x 52 FW F-16s Spangdahlem to Doha Tanker c/s GOLD 21/22
31 Jan	CE 079	ZESTY 71/72	2 x VMFA (AW)-335 F-18Ds Lajes to Moron
14 Feb	CE 083	MAZDA 11 - 16 MAZDA 21 - 26	12 x F/A - 18D from Moron to Al Jaber, Kuwait Tanker c/s GOLD 45/55 and 47/57 plus REACH 621Y/711Y/741Y
15 Feb	CE 076	CUBE 11 - 16 CUBE 21 - 26	18 x F-16s from ??? to Moron on 13th Feb then Moron to Jordan Tanker c/s REACH 054Y - 056Y, GOLD 62 then GOLD 11/12 CUBE 31 - 36
17 Feb	CE 057	TREND 91 - 94	4 x EA-6Bs from Moron to Prince Sultan and Doha Tanker c/s GOLD 11/42

Let me explain - for those of you who are not of a certain age and now go mobile armed with callsign books, radios, laptops and all sorts of other high tech equipment, prior to around 1985 all we had to alert us of an interesting inbound was our eyes, ears and a telescope or binoculars, (v.h.f. airband communications were



● Very smart C-135B 62-4125 preparing for takeoff at Mildenhall in 1991.

Subsequent to the Pacer CRAG program, Rockwell Collins are to update the KC-135 flight deck in support of the new Global Air Traffic Management (GATM) initiative, (see the 'Sky High' column for more information on this).

The Mildenhall Years

In 1951 RAF Mildenhall was handed over to the control of Strategic Air Command and subsequently in 1953 the 22nd AREFS began operating from here with their KC-97Es thus starting a link with Air Refuelling squadrons that exists to this day. It is a shame

that the Air Fete was cancelled this year as they could have celebrated 50 years of Air Refuelling operations at Mildenhall.

I have tried to discover when the first KC-135 arrived or was regularly deployed at Mildenhall but with no success, however, I would guess it was around the late 1950s. I did manage to find a report for the

1961 airshow, but there were no KC-135s present. In late 1965, Mildenhall welcomed the arrival of the Silk Purse Control Group and the 7120th Airborne Command and Control Squadron (7120 ACCS), previously stationed at Chateauroux in France. Upon its arrival at Mildenhall,

the 7120 ACCS converted from C-118s to EC-135s, with the 10 ACCS replacing the 7120 ACCS and assuming its mission a couple of years later. Since then, the C-135 has been ever present at Mildenhall in one form or another and has most recently formed the air re-fuelling backbone of the operations in the Gulf.

EC/RC-135 & Other Variants

For many years the UK was host to EC-135s in the form of the 10th ACCS and to deployments of RC-135s from the 55th Wing at Offutt, so our shores were no strangers to these models. It may seem a strange thing to say, but in some ways the advent of the u.h.f. airband radio took some of the excitement out of our hobby.

used, but usually as a slave link to u.h.f.).

Consequently, the sight of a white EC/RC/NKC-135 on an eight mile final that was obviously not a based aircraft, always bought a tingle of anticipation. Although not that common, there have been regular visits over the years by unusual and often highly photogenic variants, including such models as the COBRA BALL, BIG CROW, SPECKLED TROUT and the Airborne Laser Laboratory.

Coronet Deployments

For many years, KC-135s along with KC-10s have supported Coronet flights across the USA and the Atlantic. I am not certain when Coronet missions started under that name, but I found evidence that these flights were certainly in



● The oldest aircraft still operational, Big Crow 55-3132 NKC-135E seen in 1999.



operation as early as the mid - late 60s. These missions are primarily deployments by groups of fighters/bombers supported by a tanker task force.

In the past, trans Atlantic flights could be escorted the whole way by a flight of tankers, but now more commonly support tankers are

Table 5

USAF/ACC

366 WING/22 ARS ASPEN KC-135R PRIMARY C/S
 366 WING/22 ARS GINNZIA KC-135R PRIMARY C/S

USAF/AFMC

412 TW/AFFTC AGAR 32 NKC-135E 55-3132
 412 TW/AFFTC AGAR 35 NKC-135E 55-3135
 412 TW/AFFTC AGAR 50 NKC-135B 63-8050
 412 TW/AFFTC AGAR 72 C-135E 60-0372
 412 TW/AFFTC TROUT 99 C-135C 61-2669

USAF/AFRC

434 ARW/72 ARS INDY KC-135R PRIMARY C/S
 434 ARW/72 ARS MASH KC-135R PRIMARY C/S
 452 AMW/336 ARS RATS KC-135E PRIMARY C/S
 507 ARW/465 ARS OKIE KC-135R PRIMARY C/S
 916 ARW/77 ARS BACKY KC-135R PRIMARY C/S
 927 ARW/63 ARS AUTO KC-135E PRIMARY C/S
 940 ARW/314 ARS DARR KC-135E PRIMARY C/S
 940 ARW/314 ARS TAHOE KC-135E

USAF/AMC

6 AMW/91 ARS BOLT KC-135R PRIMARY C/S
 19 ARG/99 ARS RHET KC-135R PRIMARY C/S
 22 ARW KANZA KC-135R/T PRIMARY C/S
 22 ARW PETRO KC-135R/T PRIMARY C/S
 22 ARW TURBO KC-135R/T PRIMARY C/S
 92 ARW ASTRA KC-135R/T PRIMARY C/S
 92 ARW BEAK KC-135R/T PRIMARY C/S
 92 ARW COUNT KC-135R/T PRIMARY C/S
 92 ARW EARL KC-135R/T PRIMARY C/S
 92 ARW QUILN KC-135R/T PRIMARY C/S
 92 ARW RESORT KC-135R/T PRIMARY C/S
 92 ARW SUTER KC-135R/T PRIMARY C/S
 319 ARW BOLT KC-135R/T JAPAN OPS ?
 319 ARW DOBBY KC-135R/T JAPAN OPS ?
 319 ARW ELVIS KC-135R/T JAPAN OPS ?
 319 ARW RAID KC-135R/T PRIMARY C/S
 319 ARW TINCUP KC-135R/T PRIMARY C/S
 319 ARW WOODEN KC-135R/T PRIMARY C/S

USAF/ANG

106 ARS/AL ANG DIXIE KC-135R PRIMARY C/S
 108 ARS/ILL ANG CODER KC-135E PRIMARY C/S
 108 ARS/ILL ANG HAPPY KC-135E
 116 ARS/WA ANG EXPO KC-135E PRIMARY C/S
 117 ARS/KS ANG TEMPO KC-135D/E PRIMARY C/S
 117 ARS/KS ANG WILEY KC-135D/E PRIMARY C/S
 126 ARS/WI ANG UPSET KC-135R PRIMARY C/S
 127 ARS/KS ANG JAYHAWK KC-135R PRIMARY C/S
 128 BS/GA ANG PEACH KC-135R PRIMARY C/S
 132 ARS/ME ANG MAINE KC-135E PRIMARY C/S
 133 ARS/NH ANG PACK KC-135R PRIMARY C/S
 136 ARS/NY ANG FUZZY KC-135R PRIMARY C/S
 141 ARS/NJ ANG SNAG C-135D PRIMARY C/S
 141 ARS/NJ ANG SWANY C-135B PRIMARY C/S
 145 ARS/OH ANG TAZZ KC-135R PRIMARY C/S
 171 ARW/PA ANG STEEL KC-135E PRIMARY C/S
 171 ARW/PA ANG MOVER KC-135E PRIMARY C/S
 150 ARS/NJ ANG ROCCO KC-135E PRIMARY C/S
 151 ARS/TN ANG SODA KC-135E PRIMARY C/S
 153 ARS/MS ANG KEYS KC-135R PRIMARY C/S
 166 ARS/OH ANG CAESAR KC-135R PRIMARY C/S
 166 ARS/OH ANG SLUFF KC-135R PRIMARY C/S
 166 ARS/OH ANG TAZZ KC-135R
 168 ARS/AK ANG CHENA KC-135R PRIMARY C/S
 173 ARS/NE ANG HUSKER KC-135R PRIMARY C/S
 173 ARS/NE ANG TANKER KC-135R USA C/S
 174 ARS/IA ANG BAT? KC-135R NEEDS CONF ?
 191 ARS/UT ANG GATOR KC-135E
 191 ARS/UT ANG UTAH KC-135E PRIMARY C/S
 196 ARS/CA ANG GRIZLY KC-135R PRIMARY C/S
 196 ARS/CA ANG REFUEL KC-135R
 197 ARS/AZ ANG COPPER KC-135E PRIMARY C/S
 203 ARS/HI ANG HOKU KC-135R PRIMARY C/S

USAF/PACAF

18 WING/909 ARS SHOGUN KC-135R PRIMARY C/S
 18 WING/909 ARS TORA KC-135R PRIMARY C/S

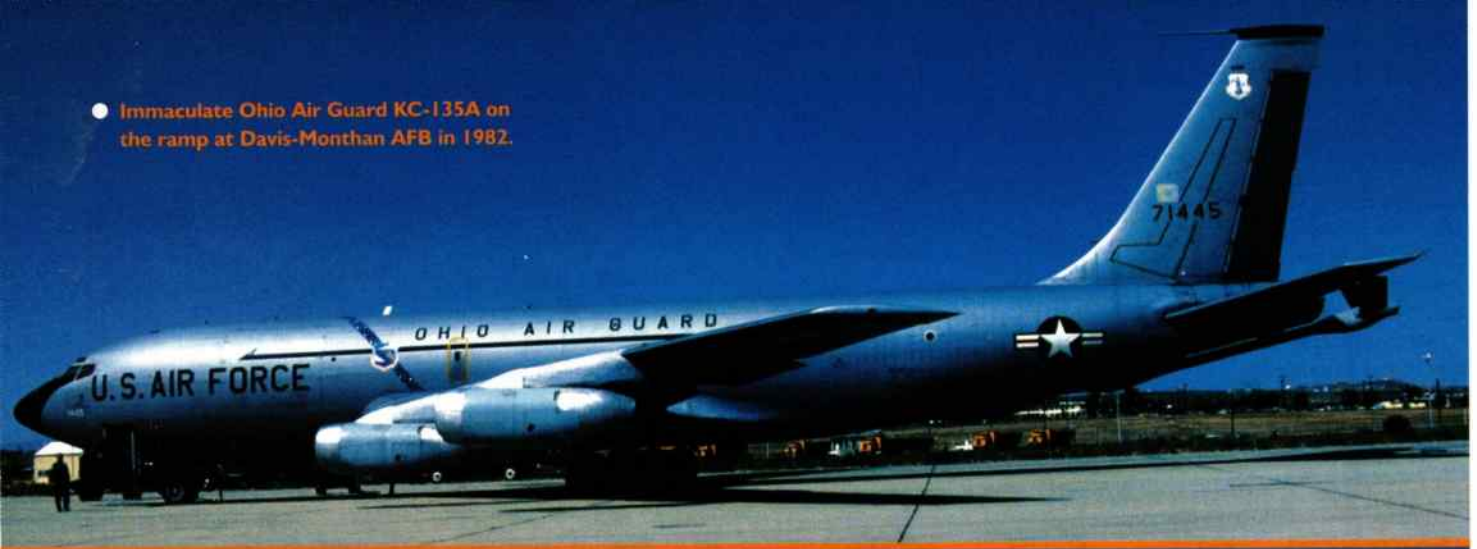
launched from both the USA and Europe with a handover in mid Atlantic, the European operation is currently served by tankers out of Mildenhall and Moron in Spain. Basically, Coronet missions come into two categories, internal domestic deployments within the USA and Coronet East missions across the Atlantic to the UK, Europe and then on to further destinations such as the Gulf.

I believe that there are also Coronet West missions, but these are nowhere near as numerous as

● Gleaming in the Desert sun, Speckled Trout C-135C 61-2669 taxis out at Edwards AFB in 1983.



● Immaculate Ohio Air Guard KC-135A on the ramp at Davis-Monthan AFB in 1982.



● Rare US Navy NKC-135A 55-3134 on approach to Nellis AFB during Green Flag in 1995.

the East missions. When the fighters/bombers depart for a 'Coronet' mission, to insure that the correct number of aircraft take part in the deployment they always have one or two 'air-spare' aircraft which leave with the primary aircraft in case of any immediate un-serviceability, if all goes to plan they will return to base.

For many years the Coronet deployments were controlled by two airborne command post EC-135Ks from the 8th TDCS, (Tactical Deployment and Control Squadron which became the 8th ADCS and then the 8th ACCS), often using the callsign HEADANCER. The arrival at Mildenhall of either 55-3118 or 59-1518 would herald the fact that a deployment was due into Europe shortly and would prompt a flurry of airband activity.

As a general guide for the primary tanker trans Atlantic callsigns, BLUE is used for the westbound Coronet flights and GOLD for the eastbound, but this does not always apply, (see listing). As far as I am aware, the deployment fighters are still controlled by Air Combat Command under the umbrella of the 2nd Air Delivery Group.

Callsigns for the fighters are CUBE, MAZDA, RETRO, TREND and ZESTY, the callsigns PRIDE and SLIP have also been used, but according to my records, neither has been used since 2001. In theory, flights with callsigns using numbers 1* use the European A Primary and Secondary frequencies, callsign numbers 2* the B channels, callsign numbers 3* the C channels, etc., but be warned, deviations from this system have been noted in the past.

For completeness, I have included all of the known Coronet frequencies, (Boom frequencies), including the Domestic US list as these can sometimes be used in Europe. I am happy with the European frequency listing, although one source has suggested that the primary and secondary frequencies for Coronet E were the other way round.

There was some confliction between the various frequency lists I was sent as to which were Domestic and Atlantic Coronet frequencies, it seemed to me that the two were possibly interchangeable. The conflictions extended to the point that some so called official sites on the web did not tie up - any suggestions?

Coronet/Deployment Callsigns

For many years, the KC-135 fleets that were deployed at Mildenhall, (and Fairford), used random callsigns as well as a few regular unit and mission callsigns. As I understand it, (and I am willing to hear from anyone who knows otherwise), there was a USAF allocation of 2400 random callsigns that were assigned in blocks to the type of mission an aircraft performed, (transport, tanker, fighter, etc.). These were then selected at random by the computer for each days mission, which would explain why some units with a similar operational mission appeared at times to share similar callsigns.

By the end of the 90s the regular use of random callsigns had been more or less phased out with most units using one or two primary callsigns or a base mission callsign such as QUID out of Mildenhall. (Hands up who remembers the callsign prior to QUID? - it was DOBBY and it was replaced by QUID in the Summer of 1987). It should be noted that a couple of RC-135 missions during

Iraqi Freedom were using callsigns other than the normal SNOOP or OLIVE, but it must be presumed that they were tactical mission callsigns rather than a return to random allocations as suggested by a couple of SWM readers. The dates listed in Table 3 are those that I have seen the callsigns last reported, as you can see a few have not been reported this year. The callsigns RESORT and STARKY - which were used for flights to and from Incirlik - were both last noted in February 2003 and may have been withdrawn. The types are included as a general guide only.

2003 Coronet Deployments

One of my original plans for this special was to have a review of the units, callsigns and frequencies of aircraft taking part in Operation Iraqi Freedom. Whilst most of the units taking part are known, information regarding operational frequencies and callsigns whilst operating in the Gulf has been, perhaps not surprisingly, very scarce! I had expected some information to filter through by now, but this has not been the case and

Sky High

SPECIAL

Table 6

Serial	Selcall	Aircraft
56-3641	JSAM	KC-135E
57-1427	JSGP	KC-135R
57-1431	JSHL	KC-135E
57-1432	JSHM	KC-135R
57-1439	KLMR	KC-135R
57-1461	KPRS	KC-135R
57-1504	JLQR	KC-135E
57-2603	JRFG	KC-135R
58-0044	KMES	KC-135E
58-0051	KPLS	KC-135R
58-0067	KQFS	KC-135E
58-0121	JSBH	KC-135R
59-1447	JSGQ	KC-135E
59-1468	KMBQ	KC-135T
59-1510	KSDF	KC-135T
60-0315	JQBD	KC-135R
60-0339	JSDG	KC-135T
60-0348	JSGR	KC-135R
60-0351	JSHM	KC-135R
60-0365	KLQR	KC-135R
61-0276	KQAR	KC-135R
61-0294	KQFM	KC-135R
61-0303	KQHM	KC-135E
61-0317	KSDF	KC-135R
61-2669	JQBD	C-135C
61-0327	AJKP	EC-135N
61-2670	JQBE	OC-135B
62-3499	JRBD	KC-135R
62-3517	JSEL	KC-135R
62-3524	JSHM	KC-135R
62-3558	KQAR	KC-135R
62-3564	KQEH	KC-135R
62-3575	KQGH	KC-135R
63-7976	JRLS	KC-135R
63-7991	JQBD	KC-135R
63-8019	JSEL	KC-135R
63-8029	JSHQ	KC-135R
63-8035	KLMS	KC-135R
63-8060	KQAR	KC-135D

Selcalls Of Other C-135/B707 Variants.

Serial	Selcall	Aircraft
62-6000	AEJP	V/C-137C
72-7000	AEHP	V/C-137C
81-0891	KMBF	EC-18B
81-0894	DFAG	EC-18B
81-0896	CMAL	EC-18B
84-1398	ABGK	EC-18B
84-1399	ACHJ	EC-18B
85-6973	AELP	V/C-137C
86-0417	DGAF	E-8A
92-3289	ADEF	E-8C
92-3290	BGAC	E-8C
93-0597	ADEL	E-8C
94-0284	JLGM	E-8C
95-0122	FHAL	E-8C
99-0006	CKAE	E-8C

so the review has been put on hold.

What has become known, which fits in nicely with this article, is details of some of the many Coronet deployments that were made in support of the Gulf war. Some of the fighter deployments were split into two flights with a break for the pilots in between. It looks like the approach to Moron would have a good place to spend a few days with the camera! Table 4 is a review of a few of the deployments: CE = Coronet East.

C-135 Unit Callsigns

Most of these callsigns have been noted in use during the past two years, a few have not been noted since 2001 and so possibly may have been withdrawn, (in particular some callsigns of the 92 ARW and the 319 ARW). Some units, such as the Pacific based Kadena aircraft rarely visit the UK so how current their callsigns are is uncertain, I did find some references to them on the web, but

unfortunately they were too dated to ascertain if they were current callsigns. The 174th ARS/ANG should be converting to the KC-135 at present, it is uncertain if the BAT callsign will be retained? - any updates would be welcome.

C-135 Selcalls

You would have logically thought that most if not all of the C-135s, which regularly travel across the Atlantic and other oceans of the world, would have been fitted with a Selcall facility, but this does not appear to be the case. The research I did, came up with Table 6, collated from a number of sources, but it represents just a small percentage of the C-135 fleet.

Knowing how keen UK Selcall enthusiasts are, I am certain that a

much more comprehensive list would be available if the information were known. So the question is, why have so few aircraft been fitted with a Selcall facility? Does anyone have any ideas?

My thanks for help in preparation of this article go to: Garry, Greg and Larry in the USA, plus various USAF or US military web sites. In the UK, Kevin, Phil P, Keith R, BAR, MAR, Dave G, Photavia Press, Rob, Merv, Selcalman and my anonymous, but very helpful contact in the Azores. As always, any corrections, additions or comments would be welcome.



● NKC-135A 55-3128 on the ramp at Edwards AFB in 1982.



● With the new fan engines fitted, KC-135R 62-3513 lands at Mildenhall in 1991.

It was with great sadness that I heard the news that Concorde was to be retired. Not only is it one of the most sleek and graceful aircraft to ever take to the air, but also because of nostalgic reasons as I was in the Tower at Heathrow when G-BOAA made its first operational flight on 21 January 1976.

Surely, after all the money that was spent on the aircraft after the tragic crash in France, it would be much better for British Airways and the Government to bite the bullet and forget whatever reasons they have against the idea and let Richard Branson operate the aircraft with Virgin. I am not a gambling man, but if I was, I

ever experienced took place on Saturday 31st May in glorious weather with moderately high pressure. Informed people tell me that recent eruptions on the surface of the sun are most likely to have caused these strange conditions.

With my photographers hat on, I was at sea taking pictures of some classic trawlers and gaff rigged boats, who had assembled for an annual race. As usual, whenever I am on the water, I was listening out on Marine Channel 16. It soon became apparent that the lift conditions were very favourable as stations at Cherbourg, St. Peters Port and Solent Coastguard could all be heard clearly. All of these stations

the R8500 and it was very soon apparent how good the conditions were. Two way conversations on London Military South could be clearly heard from the Davidstow Moor transmitter, some 200km distant. Further scanning around London Military and local and distant airfields provided some intriguing listening, but then something quite unexpected happened.

In addition to the London Military frequencies I have in my primary bank of memories, I also include a few other relevant frequencies. As some REACH flights pass just north of me on airways after they are handed off from Shanwick, I regularly monitor AMC Operations at Mildenhall on

conditions?

I had just typed the above when an E-mail came in from **Richard G.** who blows my experience out of the water. He writes: "Just a quick note to report that for around 30 minutes about 2115 on 31 May from my home in Wootton Bassett, Wiltshire, I heard the Volmet on 126.6 from Santiago, North West Spain, brought by tropo ducting over Biscay...a distance of 1080km. I was alerted to the conditions by bad TV co-channel banding during the BBC1 news on the Mendip transmitter (ch 58). I scanned around the airbands using an external discone, and lo-and-behold, an American voice on 126.6 was quite readable and steady, not like Sporadic-E.

Skey High

-the column

wouldn't mind betting that if anyone could run Concorde at a profit, it would be him - we will probably never know? I realise that there would most likely be problems if this happened, especially with aircraft maintenance, but would I be out of place if I suggested that this appeared to be a case of sour grapes?

As a tribute, our picture this month is of Concorde in an unusual scheme. Flown into Gatwick in 1996 for a, (supposedly secret), overnight hanger photo shoot, was French Concorde F-BTSD. As far as I am aware, this is one of the few pictures of Concorde in this colour scheme, taken in flight. Sadly, this aircraft has already been withdrawn from service with Air France and is awaiting its fate, presumably to be donated to a museum?

Propagation

Some of the most amazing propagation/lift conditions I have

were at least 160km away from my location on the water.

I never go anywhere without my trusty airband hand-held and so it was quickly put into action. Aircraft over 320km away working London Military East could be heard clearly and I could make out, (albeit weakly), the transmissions on Brize Norton and Lyneham ATIS. Considering I was at sea level using a hand-held with a telescopic antenna, this was fairly impressive. I was eager to get ashore and head for home and the base station.

Now at this point before you all E-mail me, I should mention that in some parts of the Midlands and Northern England other listeners reported that the conditions seemed to work in the opposite and propagation was very poor.

On returning home, I fired up

396.45 as they quite often call up on this frequency about 300km out.

On Saturday afternoon a REACH flight duly called up to report he was 50 minutes out and fully serviceable, then I got the surprise, the AMC Operations officer replied as clearly as if I was sitting on the end of Runway 29. I continued to monitor the REACH flight on London Military and he was then handed off to Lakenheath Radar on 337.6, I could still monitor the flight quite clearly until he was passed to Mildenhall Tower, only then did I lose him.

My home is about 450km from Mildenhall as the crow flies and in the seven years since I moved into my current house this is only the second occasion where conditions like this have existed - quite amazing. Did anyone else manage to experience these strange

The same frequency, 126.6 is also used by London Volmet North, but on that night it was not readable or was down. Instead, I was treated to weather reports from Madrid, Barcelona, Asturias and others as listed in the book. The voice was made up of stilted words selected by software, as is done on other Volmets. I then checked Brest/Guipavas ATIS on 129.35 and it was there, but barely readable".

Fairford FM

Not strictly airband, but I thought it would be of interest to 'Sky High' readers. A second report from Richard G. The base at Fairford used several n.b.f.m repeaters and simplex channels around 406-408 and 430-432MHz during the visit of the B-52s. The 430MHz band is of course also the



amateur 70cm band, but only as a secondary or shared users.

The first transmissions were noted on 407.75, while the B52 detachment settled in, with a simplex net with people frantically looking for hand-helds, batteries, etc. Soon all stations were told to switch to 'channel 2'. This took some finding, but turned out to be a repeater with the same input, 407.75, and output on 432.300. Soon that just became data transmissions, but meanwhile other stations had sprung up as listed, see table on right.

Richard also comments: Incidentally, one of the RATTLER B52s returned with engine mechanical problems and he could only do wide turns in one direction, so he held under the control of Brize Radar for quite a while. He also reported that he had two weapons hung up, so all in all a bit hairy! - thanks Richard.

Global Air Traffic Management (GATM)

Following on from the Pacer CRAG avionics update program, the USAF selected Rockwell Collins to update the KC-135 flight deck in support of the Global Air Traffic Management (GATM) initiative. The GATM upgrade program will focus primarily on upgrading the aircraft's communication and navigation systems.

The first flight of a KC-135 with the GATM upgrades took place in April 2002. Currently, the proposal is for 50 of the remaining 550 C-135 aircraft are to receive this upgrade. Four aircraft are currently being converted - the first visited Mildenhall on May 8 2003, which was KC-135R, 58-

0093 using an Edwards 412th Test Wing callsign, ARRIS 14. The aircraft flew one mission from Mildenhall and then returned to the USA on the 10th May.

GATM additions to the communications system include an Aero-I SAT-2000 satellite communications system and two FANS (future air navigation) capable CMU-900 Communication Management Units for data link applications. Also, the addition of two Collins Integrated Processing Centres provides an integrated, modularised platform for hosting several partitioned GATM-related software applications.

GATM additions to the navigation system include two Collins GNLU-955M Multi-Mode Receivers, which contain individual modules for GPS, MLS and FM-Immune VOR/ILS (v.h.f. omnidirectional radio range steering guidance linked with an instrument landing system), capabilities. Additionally, one existing and one newly added Embedded Global Positioning System/Inertial Navigation System (EGI) unit will possess twelve-channel, all-in-view GPS receivers.

Now, having blinded you all with science, you may wonder what is the immediate relevance of this information. Well the aircraft that visited Mildenhall managed to navigate from KELLY AFB to Puerto Rico, Hawaii, Japan, Alaska to Mildenhall using a minimum of voice communications. As a test flight and with the prior agreement of the various Air Traffic Centres involved the aircraft navigated using an advanced Satellite text/E-mail messaging system.

The information is passed by the use of two laptop computers

User	MHz	Comments
Tower	406.625/432.900	
Armourers	407.475/431.250	"Breakout"
Military Police	408.700 Simplex	"Romeo"
Military Police	430.850 Simplex	"Sierra"
Re-Fuelling	430.775	
Ground Ops	430.725	
Ground Ops	406.675	Poss RPTR O/P "F"
Mod Main Gate	406.875	"FI"
Unidentified	407.975	
Unidentified	407.725/432.650	"DIM"
Unidentified	430.925	Repeater
Unidentified	407.975	Possibly Local Convoys
UNID Data	407.750	(Was Police "S"/432.3)

which are linked in to the various new navigation and communication systems installed in the aircraft. To put it simply, they communicated with Shanwick Oceanic and London Military using only the text system and with little or no voice communications at all - the possible implications for the airband listener are all too obvious.

To look at it from a different perspective, you would think it most likely that this type of system will be primarily aimed at silent tactical communications as I can see all sorts of problems with general Air Traffic, especially where Civil and Military flights are operating on the same sector. But the title indicates that Air Traffic management will/may be part of a future system?

Unfortunately, the web site with the information which I was pointed to by a 'Sky High' reader, did not define the primary purpose of voice free radio communications. I did think that the choice of the KC-135 to be the first type to receive this equipment was unusual, but if you think of the thousands of kilometres they complete each week around the world perhaps it was a logical choice. If I find out any more, I'll let you know. With thanks to

Kevin, Garry and the USAF technical web site.

Bits & Pieces

- The combined USAF squadron operations by C-141 Starlifters out of Mildenhall for Operation Iraqi Freedom were operated by the 491st AEG (Air Expeditionary Group), 744th EAS (Expeditionary Airlift Squadron).
- The 86th AW/75th AS at Ramstein is to disband in September/October 2003, it is uncertain what is to happen to their C-9s.
- It has been reported that Waddington Tower frequency 388.225 has been replaced by 370.125.
- A new ASACS Buchan frequency has been reported in use for the past couple of months on 375.55. Does anyone know if a TAD has been allocated to this frequency and/or which frequency has it replaced?
- In conjunction with President Bush's visit the E-4B arrived at Mildenhall on the 7th April using the callsign RUSSO 43.

See you next month.

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

GLOBAL AT-2000 RECEIVER ATU



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

£89.95 B

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

MFJ-8100K SW REGEN RX KIT



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

£75.95 B

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

MFJ-1022 ACTIVE ANTENNA



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

£55.95 B

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

MFJ-1026 NOISE CANCELLER



£189.95 B

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

WATSON HP-200 & HP-100



HP-200 **HP-100**

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

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

£22.95 B

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

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

£19.95 B




As reviewed in this issue

OPTOELECTRONICS XPLOER

The Xplorer is a combined wideband scanning receiver and frequency counter. Firstly it hunts out any strong local signals and then it locks onto them and displays the frequency. The station can then be monitored using the built-in speaker. With up to 500 memories, there is plenty of room to store many stations. But there's more. It will also decode virtually any tone signals such as DTMF, CTCSS etc. With the supplied antenna and the built-in ni-cad pack, you have a compact FM go-anywhere monitor that is capable of sniffing out stations on unknown frequencies and displaying their data. It can also be used to reaction tune suitable scanners.

£849.95 B

YUPITERU MVT-7100 "THE ONE & ONLY"



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

£229 B

YUPITERU MVT-7300 "COMPACT SIZE"



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

£239 B

YUPITERU MVT-9000 mk2



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

£369 B

AOR AR-8200 mk3



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

£379 B


ALINCO DJ-X3



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

£109 B

UNIDEN-BEARCAT UBC-3000XL



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

£189 B


UNIDEN-BEARCAT UBC-280XL



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

£179.95 B


UNIDEN-BEARCAT UBC-220XL



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

£119 B


UNIDEN-BEARCAT UBC-120XL



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

£99 B

UNIDEN-BEARCAT UBC-60XL-2



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

£69 B



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ALINCO DJ-X2000 "FABULOUS FEATURES"



- 100kHz - 2150MHz
- AM, NFM, SSB, CW
- 2000 memories
- 23 tuning steps
- Channel scope
- Fully programmable
- 4.8V Ni-Cd battery pack
- 8-15V DC ext.
- Telescopic Antenna

£449 B

UNIDEN-BEARCAT UBC-780XLT



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

£349.95 C

AOR AR-8600 II



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

£599 C

YAESU VR-5000



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

£599 C

YAESU VR-500 YAESU 2 YR WARRANTY



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

£199 B

YAESU VR-120D



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

£119 B

bhi NEIM1031 NEW



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

£129.95 B

bhi NES10-2 & NES-5 FORMERLY NESCB



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

£99.95 B



£79.95 B

ICOM IC-R5 NEW



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

£159 B

ICOM IC-R3 SCANNER & TELEVISION



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

£339.95 B

ICOM IC-R10 "ICOM QUALITY SCANNER"



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

£259 C

ICOM IC-R8500



- 100kHz - 2000MHz
- USB, LSB, CW, AM, FM, WFM
- 1000 Memories
- 3x Antenna Connectors
- Audio 2.5W (8 Ohms)
- Supply 13.8V DC
- Free PSU included
- Weight 7kg

£1299 C

ICOM IC-PCR1000IS



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

£309 B

WINRADIO G303i NEW



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

£440 C

ROBERTS R9914



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

£99.95 B

bhi 1042 SWITCH BOX NEW



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

£29.95 A

- 6x inputs: 3x loaded (8 Ohms spkr level), 6x unloaded (h/phone/line level), 1x output (to spkr/module) * Sockets 3.5mm mono Size *w/ 2x 3.5mm mono - 3.5mm mono leads

MFJ-784B DSP FILTER



£259.95 B

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

OREGON SCIENTIFIC BAA 898 HG NEW



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

£79.95 B

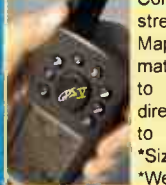
WS-2300 WEATHER STATION NEW



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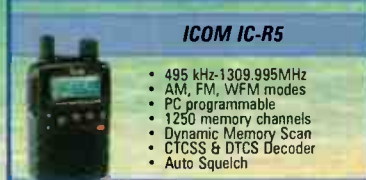


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World Radio History

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The majority of people, both radio enthusiasts and the general public, are aware of the most common radio communications that can be heard at or near their local airport. This is the communications between Air Traffic Control and the aircraft on either v.h.f. or u.h.f. at civil and military airfields.

However, there is what can only be described as a proliferation of other radio communications at most airports. This can be split into two sections: Airside - those radio communications which are used on the aircraft manoeuvring areas, taxiways and runways, secondly, Landside - communications which take place in terminal buildings, car parks, etc.

Two Distinct Sections

I will deal with Airside first, with this category being again split into two distinct sections, voice and other. The

However, there are exceptions, such as Lichfield NDB, which transmits on 545kHz in the medium wave broadcast band and Chiltern which transmits on 277kHz in the long wave broadcast band. There are also other navigational aids, such as VORs (VHF Omni-directional Range) which operate in the lower segment of the v.h.f. band, 108-117MHz. These also transmit a Morse code callsign and usually associated with them is a DME (Distance Measuring Equipment) system operating in the same frequency band at a slightly offset frequency to the associated VOR.

Another navigational aid for aircraft commonly used is an ILS (Instrument Landing System), which provides the landing aircraft with approach and landing guidance. An ILS system consists of two main components, the glidepath and localiser. The glidepaths operate in the frequency range of 328.6-335.4MHz

phonetic letter, such as 'Information Alpha', which depends on the number of changes or special observations taken in the period.

Vehicles driving on the airside must be in contact with Air Traffic Control for obvious reasons. There are also many reasons why vehicles should be mixing with aircraft and listening to them one comes across a variety of callsign types, followed by a number to indicate which vehicle from which section is operating in which particular section of the manoeuvring area.

The callsign type usually indicates from which department of the airport the vehicle belongs to. Some examples are as follows: Ops - airport

working on runway lights and so on.

Some less obvious callsigns can also occur, for example, Bird - vehicles used for bird scaring or Sweeper - special vehicles used for clearing debris, etc., from the runways and taxiways. Also, there are some seasonal callsigns, such as Snowblower, when of course, snow clearing operations are in progress, or Grass Cutter, during the summer when the grass between runways and taxiways is being cut, often by contracted farmers who use it for silage.

Under Control

Vehicles operating on taxiways are usually under the control of the Ground Controller in Air Traffic,

Hello Tower!

- this is Ops Four

Robert Connolly G17IVX brings us a brief rundown covering the various types of airport communication that can be heard in the vicinity of your local airfield.

other section includes transmissions from navigational aids, such as NDBs (Non-Directional Beacons) which transmit a Morse code identity in the frequency band which generally lies between the bottom of medium wave and the top of long wave bands on a domestic radio, i.e. between 590 and 270kHz.

while the localiser transmits in the 108-112MHz segment of the airband.

Some military and joint civil/military airfields use another type of navigational device called Tacan (Tactical Air Navigation Aid) which operates in the same area of the airband as ILS and DME and has a similar operation mode. The final type of radio navigation found at airports is, of course, the radar which operates in the 2.700-3.100GHz band.

Voice Communications

Now a look at the airside voice communications, other than those between air traffic and moving aircraft. Firstly, there is ATIS (Automatic Terminal Information Service), which is a continuous voice transmission providing approaching aircraft and aircraft on the ground with the airport's weather; wind direction, speed, temperature, pressure, cloud details and runway in use.

Examples of these can be found across the v.h.f. airband, depending on the airport concerned. This weather information is usually coded by a prefix



operations section, perhaps carrying out a runway inspection; Fire - airport fire service; Control - air traffic control; Works - general maintenance crews; Engineering - electricians

although they 'free run' at some airports, meaning that they keep their own look-out for aircraft and get out of their way. Also, some airports allow the free-ranging of vehicles on non

active areas of the airport. This means that they have no requirement to be in communication with the control tower if they are staying clear of runways and taxiways in use, the aprons at the arrivals/departure gates are quite often a free ranging area.

Communications take place on u.h.f. frequencies around 455MHz with the actual frequency allocation varying from airport to airport. These u.h.f. frequencies are sometimes in a duplex mode. Duplex is a system where one station transmits on a certain frequency and is received by

Controller. Even on airfields where vehicles keep their own look out for aircraft on taxiways and do not speak to the Air Traffic Controller, they must contact the tower for clearance onto a runway. The reason for this is basically two fold. Firstly, it is so the Air Controller is fully aware of a vehicle on his active runway and therefore does not clear an aircraft to land with the vehicle on it.

Secondly, although a u.h.f. frequency is still used for the communications with the vehicle, this is in fact 'cross coupled' with the v.h.f.

safeguards, these incidents do happen on very rare occasions.

Landside Tasks

On the Landside, there is also communications between the vehicles operating on the airside and their own control rooms. This also applies when vehicles are involved with landside tasks, such as car parks, lighting or fire

excess of 6km long. Even with mobile units, there can be transceiver black-spots due to terrain, buildings or even aircraft. It is also very important that vehicles operating on active areas, such as runway or taxiways have a good and fully serviceable transceiver. Personnel carrying out maintenance on runway lights, etc., must either be in ear-shot of their radio at all times or



the other station on the same frequency. The second station in turn transmits on another frequency and is received by the first station on this different frequency.

As an example, let us say that 'Base One' transmits on 455.775MHz to 'Mobile Two'. 'Mobile Two' receives this transmission on 455.775MHz. 'Mobile Two' then replies to 'Base One', on perhaps 453.525MHz and 'Base One' receives this signal on 453.525MHz. The majority of airports use simplex, i.e. the transmitter and receiver frequencies used by all parties are the same.

Active Runway

Vehicles operating on an active runway are often transferred to the Air

air frequency. Basically, this means that vehicles can hear communications with the aircraft and the controller, along with calls to the vehicle on u.h.f. This is very important as a back-up precaution in the event of the air controller becoming busy with something else and fails to remember that the vehicle is on his runway when clearing an aircraft to land.

The vehicle can hear the aircraft being cleared to land and knows to vacate the runway as quickly as possible and report clear automatically. There is nothing worse than an aircraft full of passengers landing over the top of a vehicle which was still on the runway, or a vehicle which in its haste to vacate a runway overturns, blocking the runway. Despite all the best

hydrant inspections, etc. There are many other users of radio communications on the landside, such as airport police, security personnel, airport authority maintenance workers and similar.

Also, the majority of the airlines or aircraft handling agents makes regular use of radio communication to co-ordinate activities between check-in staff, loaders, engineers, operations staff and the operations centre. Again, the majority of these communications take place within the u.h.f. band between 455 and 457MHz and simplex is used. It is also important to note that quite a few of these agencies also use a duplex system, so if you hear one end of a radio communication, you may not hear the reply.

The u.h.f. systems fitted into vehicles are usually standard commercial mobile units with an output of between 10 to 25W made by the usual PMR companies. On rare occasions will vehicles use the hand-held transceivers that are used inside the terminal building, due to the distances required and terrain and a power output from these is between 2.5 and 5W. Remember that an airfield may look flat when viewed from a control tower or observation balcony, but it does have humps and hollows in it which effect radio transmissions.

Remember, a runway can be in

else either have somebody remain in the vehicle or carry a hand-held transceiver.

Ground Radar

Some major airports have ASMI (Airport Surface Movement Indicators) installed. This is basically a ground radar which can view the movement of both aircraft and vehicles on the ground. The R/T phraseology used on the airside between vehicles and control tower is required to be of a standard nature, similar to aircraft. Vehicle operators must be pre-briefed by ATC on the layout of the airfield and R/T procedures before they can operate on the airside. On occasions, a vehicle operating on a runway will have a partial or full radio failure and in such cases, they are briefed that if the runway lights are flashed by the Air Controller, they must vacate the runway immediately.

Finally, for those of you who are well aware of the standard phraseology between vehicles and air traffic control, you will have noticed the title of the article and thought that this is not standard phraseology. You are of course correct, but the driver of the vehicle concerned always used this initial call to ATC and as a result, it is with fond memories of my days in ATC and regularly hearing that particular call that I used it for the title.



Exploring the

Martin Peters spends some quality time in the presence of the top flight OptoElectronics Xplorer test receiver. Is this the scanning enthusiasts' ultimate aid?

Portable frequency counters have come a long way since their introduction to the hobby by OptoElectronics - first, there were the simple off-air counters. These did no more than display the frequencies of nearby transmissions for their duration and no longer. Most included a manual hold button so you could freeze the display until you had written down the measured frequency.

The Premise

You can now buy basic kit such as this for a lot less than I paid for mine in the eighties. Later versions offered an ever-increasing number of features. Early treats included a signal strength meter and an option that automatically froze the display after each 'hit' until manually cleared down.

Some models boasted so-called digital filters, useful for

eliminating random measurements caused by the ambient noise, whilst others offered CTCSS sub-audible tone and DTMF decoding.

Upmarket examples can now automatically store frequencies as they're captured, and log the number of hits for any one channel. All this information can then be downloaded onto a PC for analysis.

One frequency counter even has a built-in vibrator. Despite extensive research, I have to tell you that its opposite number does not appear to be available. Niche market, I guess.

One major drawback: users had to read off a frequency and enter it into their scanner, by which time the transmission may be over and its content lost.

This shortcoming was resolved at a stroke with the unveiling of 'Reaction Tune'. Counters offering this facility instantaneously tune a suitably connected scanner to the local transmission. A definite boon, and a milestone in the

evolution of counter technology. A rather cumbersome, two box solution, though.

Slightly Differing Needs

Leaving that thread of the story there, an alternative to the frequency counter, and catering for slightly differing needs, the near field receiver, available from the end of the nineties, enabled users to hear any f.m. transmission in the near vicinity without having to tune it in. Using one of these devices, the entire v.h.f./u.h.f. spectrum can be monitored at once, with any activity in the area being heard on the receiver's built in loudspeaker.

Great for listening to the content of any local communications but as there is no display, no use for logging the frequency, although, to be fair, one model features Reaction Tune, allowing you to read off the frequency from a tethered scanner - another, two-box solution.

It was only a matter of time until some bright spark came up with the idea of combining a frequency counter and a near field receiver into one unit.

Icing

OptoElectronics of Ft. Lauderdale, Florida, have long been associated with portable frequency counters, producing a string of products for the professional market and hobbyists alike.

Their flagship product (until recently) is the Xplorer near field receiver. It sweeps the entire spectrum between 30 and 2000MHz in under a second, locking onto any nearby analogue transmissions significantly stronger

(15dB) than the ambient r.f. noise floor.

The Xplorer not only displays the frequency of an intercepted transmission but also its relative signal strength, CTCSS or DCS coding, and any DTMF being sent. The icing on the cake is that if the transmission is in f.m. mode, you can listen in via the integral speaker.

Finally, the cherry on the icing on the cake is that all this information can be committed to the Xplorer's memory. Cool!

Just in case you're thinking this is all too good to be true...it is! All frequency counters, near field receivers and their derivatives, work best when operated under laboratory conditions. Indeed, many of these devices are intended primarily for use as test receivers in the workshop or out in the field, where technicians can check the functionality and characteristics of the transmission equipment they install and maintain.

Difficult Job

However, scanning enthusiasts will want to make use of these tools under more challenging conditions. And that's where the trouble starts.

First of all, the question of sensitivity. Near field receivers, by definition, are insensitive to all but the strongest radio signals. If they were as sensitive as a normal scanner just imagine the jumble of signals that would result. Low sensitivity requires you to be fairly close into your target.

How close, depends on a number of factors: the frequency band being used by the transmitter under investigation; the power of the transmission; the



e Xplorer

antenna you are using, and, most important of all, the number and power of other transmitters in the area.

For the Xplorer to function effectively, the target transmission must be much stronger than other signals in the area - easy if you're out in the countryside; no mean feat if you're down the local shopping centre, suffering the effects of the local *Bland FM* transmitter, pager and 'phone masts on the roof, not to mention passers-by talking into their mobiles. All these unwanted signals result in cloaking of the target transmission in a veil of mush, requiring you to get pretty close in to your prey.

Be aware that if the transmitter is too close or very powerful, the Xplorer may, depending where it is in its frequency sweep, lock onto a transmission's harmonic and not the fundamental. You can help minimise this by judicious use of the blocked bands facility (see later) and careful selection of a suitable, band-resonant antenna.

For these reasons, near field receivers are ideal for use under the local taxi firm's office mast; not at all suited to monitoring communications from a TV mast, from which, as well as the more interesting stuff, there'll be five analogue TV transmissions, a couple of digital multiplexes, maybe Band 2 radio, DAB, not forgetting the ubiquitous 'phone networks. All these signals will combine, the net result being nothing but spurious readings on the receiver.

The Low-Down

So to business. What do you get for your hard-earned cash? Apart from the Xplorer itself, a truly enormous UK sourced, 12V, 1.5A power supply/charger weighing 1.2kg, a cable to interface with your PC, and a 3.5in floppy disk.

The Xplorer is marketed by OptoElectronics as a test receiver first, scanning accessory second. It certainly has the look and feel of

piece of test equipment rather than an enthusiast's gizmo.

The metal clamshell enclosure is certainly robust. Surprising, then, that the plastic window protecting the liquid crystal display is wafer thin and would almost certainly crack or puncture following a direct hit from a screwdriver or other pointy object.

Weighing in at 340g, and measuring 125x75x40mm (h x w x d excluding protrusions), put this in your trouser pocket and people everywhere will be asking if you're pleased to see them.

Maybe it's just as well there's no provision for a belt clip because, quite frankly, with one of these dangling from my utility belt, I'd feel just a little self-conscious.

A word of warning from the manual. Actually, two. The first is to point out that the maximum d.c. voltage input should be no more than 12V. This means you cannot run the Xplorer from the car's cigar lighter socket or your home station power supply unit, both of which will deliver in the order of 13.8V without some form of additional regulation.

Secondly, there's advice with regard to avoiding damage to the unit's front-end with excessive r.f. energy, so be careful you don't use the Xplorer within a few inches of five watts or more.

Whilst on the subject of the manual, it is, I'm sorry to say, a rather scrappy affair, and contains errors and omissions, with little in the way of helpful diagrams. The specification alone details two l.e.d.s that don't exist on this version and fails to list the Xplorer's current consumption.

The top panel sports two rotary controls for adjusting the volume and squelch levels. Connectors include a BNC antenna socket, a 3.5mm headphone socket (mono) and another for RS-232 connection to a PC. There's a 2.5mm socket for Reaction Tuning a separate receiver, and finally, one for an external 9-12V power

source/charger.

On the front panel there's a grille for the 40mm speaker, the two line, dot-matrix display and a seven-button membrane keypad.

The Xplorer, in common with all OptoElectronics products, derives its power from an internally mounted pack of rechargeable NiCads, in this case, rated at 6V with a capacity of 700mAh. A freshly invigorated set of batteries should last around five to six hours, depending on volume setting and use of the back-light.

Getting Going

The first thing you'll want to do is to charge up the battery and this is where you hit an initial snag. Recharging the NiCads is one area completely overlooked in the manual. There's no mention of how this procedure is carried out, except for a line in the specification that reads "Battery charging time: 8-10 hours". There's no indication as to whether charging stops automatically, or if leaving the unit on charge over and above period is inadvisable.

Putting two and two together (combined with years of professional experience) I plugged the power supply into the socket marked 9-12V d.c. and went to bed. Nine or so hours later I awoke to a fully charged unit. So, time to switch on. Repeated presses of the red 'POWER/MODE' key bring the unit to life, then scrolls through the seven so-called modes. The modes are 'SWEEP', 'VFO', 'CONFIG', 'LOCKOUTS', 'BLOCKS', 'MEMORY' and 'TIME/DATE'.

The 'SWEEP' mode takes you



straight to the action. A small block of dots, top right on the display, traverses from side to side, indicating that the unit is doing its thing. Once a signal has been found, the sliding dots stop in their tracks and the top line displays the frequency to six decimal places. The bottom line indicates your choice of either signal strength, CTCSS, DCS (Digital Code Squelch) or any DTMF tones transmitted. An asterisk appears, bottom right, if coding is embedded.

With regard to the frequency readout, you have a choice between displaying the measured frequency, usually within 1 or 2kHz, or the so-called channel frequency, where the Xplorer displays the nearest 'conventional' channel - suitable for most operations.

The Xplorer remains locked on until the captured transmission ceases, at which point sweeping resumes. Alternatively you can press the 'HOLD' and 'SKIP' buttons to pause and resume the sweep manually. Yet another option is to enable the 'AUTOHOLD' feature.

If - make that, when - the unit halts time and again on your local pager frequencies, instead of repeatedly hitting the 'SKIP' button you can elect to lock them

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out on an individual basis by pressing 'SHIFT' + 'SKIP'.

Committing a wanted captured transmission to memory can be achieved manually by pressing 'SHIFT' + 'HOLD', or automatically by selecting the 'AUTOSTORE' feature during configuration.

There are two options here. Choose 'EVERY', and the Xplorer will commit all hits, even duplicate frequencies, to a separate memory, each date and time stamped. Select 'UNIQUE', and all duplicate hits will be stored in one memory with only the first being time stamped but with the number of hits on that frequency being recorded.

With 'AUTOSTORE' enabled, the 500 memories store frequency, date and time of transmissions or the number of times that frequency was used. Manually storing a hit also records signal strength, sub-audible tone parameters (if used) and any DTMF tones that were broadcast.

Other Options

Entering 'LOCKOUT' mode lets you browse each of the 1000 lockout memories and individually unlock channels if desired.

The 'BLOCKS' mode allows you to set up ten user definable frequency bands, which you can either include or exclude during a sweep. This is a great feature as it allows you to exclude, for example, the v.h.f. f.m. broadcast band (Band 2) and the pager bands, without the need for individually locking out each unwanted channel. Or you can include only the band or bands of interest.

Excluding bands does not actually filter out unwanted signals from the receiver's front-end, it merely inhibits the Xplorer from locking onto frequencies within those bands. If you liken it to a very wide lockout frequency you'll get the picture.

Target transmissions still need to be 15dB stronger than anything else, blocked out or not, in order to register a hit.

The 'CONFIG' mode is provided to allow the user to set up their preferences. Here you can

adjust the time and date, back-light operation and a host of other features including whether or not to employ the default, factory-set squelch setting or use the set top rotary. You can also globally turn the locked out channels on or off.

The Xplorer allows you to tune manually to any frequency within its range when operating in the 'VFO' mode. Coarse and fine tuning steps are user definable within the configuration mode and with these set to 1MHz and 12.5kHz respectively, it's a quick and easy affair to dial up any frequency of interest.



In 'MEMORY' mode you can scroll up and down the captured channels and read off the information. If any channel is occupied at the time you'll be able to hear the audio. Memories are cleared down globally.

The 'TIME/DATE' mode merely displays the time in 24 hour format and the date in USA tradition, i.e., month/day/year.

Out and about in the car with the Xplorer sitting on the passenger seat with a 150mm long 145/433MHz dual-band helical I had handy, the unit captured several transmissions including the county's Ambulance service in the 166MHz region and a couple of police base stations around 451MHz, not forgetting a number of hits from the offices of local taxi firms. In all cases I was within about 70m of the source of transmission.

CTCSS tones were displayed in around half a second. A test transmission I made containing CTCSS and a burst of DTMF coding was interpreted and displayed 100% correctly.

Audio wise, the sound quality on communications f.m. is a bit thin and low level but this can be largely overcome by increasing the volume. The v.h.f. Broadcast stations sound fine, though, as the 100kHz filter is not too narrow to accommodate wide f.m.

Although the Xplorer claims to be unable to demodulate a.m., in actual fact, it has a fair old go. The audio is somewhat scratchy, but intelligible enough to be useful.

A feature, available on this latest version of the Xplorer, is Reaction Tuning, which will, using the optional cable, automatically tune a suitably equipped scanner to the frequency of any captured transmission. This could be useful in a mobile situation where a passing vehicle broadcasting something of interest triggers a hit on the Xplorer but then moves out

of range. You can then make use of your scanner's extra sensitivity to continue monitoring.

Meanwhile, the floppy disk that comes with the Xplorer contains a DOS utility that invites you to dump the contents of the memories to a text file. Also supplied is a Windows shareware program called *Radio Manager*, a nifty device that not only reads the data from the Xplorer but is also capable of controlling a suitably connected scanner.

On the downside, there's no 'line output' for connection to a tape recorder or PC, and the headphone socket is mono, which makes it incompatible with the earphones we all own.

The manual actually specifies the headphone socket as being stereo, which is how I wasted five minutes trying to work out why I was hearing nothing.

There is no indication on the unit (or the charger) if charging is taking place - a little disconcerting - and no advice given as to whether charging takes place with the Xplorer switched on. Whilst on the subject of charging, it's interesting to note earlier versions supported a 1.5 hour fast charge facility. A useful feature, no longer available.

Also discontinued, is the feature that permitted connection to a GPS receiver whereby, along with all the usual data being committed to memory, the latitude and longitude were also logged.

When all this information was

downloaded to a PC, a map-based display was generated, showing where each transmission had been captured.

Tuning Out

The OptoElectronics Xplorer is priced £799.95 in the UK including VAT.

Oddly there was no antenna supplied with the unit, which, seems a little strange. Surely telescopic whip with a BNC plug on the end to get you going wouldn't be too much to ask. *(The antenna was missed out of the review unit, which was taken from demo stock, W&S assure me that there is an antenna supplied with new units. They also advised me that they are sourcing an alternative, smaller p.s.u./charger - Ed.)*

Incidentally, if you're looking for an Xplorer on the second-hand market, make sure you know which version you're buying - with or without Reaction Tune, band blocking and GPS compatibility - as Optoelectronics don't differentiate between the different models with Mk1, Mk2, etc.

The Xplorer is a fine piece of semi-professional equipment that is bound to enhance your scanning experience. Go to a public event armed with one of these and you'll be able to build up a picture of most of the on-site communications in under an hour, including the emergency services, the organisers, PMR446 being used by the crowd, maybe even the radio mic's if you're up close to the action.

Just make sure you only attend public events not overshadowed by a local communications mast bristling with antennas.

If you're not expecting miracles, and appreciate the inherent limitations of any near field receiver, then you won't be disappointed.

You can buy the Optoelectronics Xplorer from

Waters & Stanton PLC, 22 Main Road, Hockley, Essex SS5 4QS
Tel: **(08000) 737388**, to whom I extend grateful thanks for their generous loan of the review unit.

OptoElectronics has recently unveiled its latest flagship product, the X Sweeper. At first glance, this accomplishes all that the Xplorer does, and includes a GPS receiver and rudimentary spectrum analyser to boot. I feel another review coming on...

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RX-320D with 12kHz I.F. output for DRM use and revised RF transformer for increased MW sensitivity



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

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

RX320D £269.00 inc VAT. UK mainland carriage £10.00

RX-350 TABLE-TOP 'DSP' SHORT WAVE RECEIVER

The Ten-Tec RX-350 is a full featured, mid-price range HF DSP receiver, on-screen band activity display adds a new dimension to locating transmissions and tuning the receiver, 34 DSP bandwidths provided, noise reduction etc.

John Wilson, SWM September 2002 ... The main display unit on the RX-350 is very impressive because it is so easy to read and yet contains full information on what the receiver is doing. The frequency readout is huge, and can be read at extreme distances... Memory storage is substantial with eight banks of 128 channels being provided... I checked out the effect of the noise reduction facility and noted that in a.m. I obtained a 10dB increase in signal to noise ratio at low input levels, whilst in s.s.b. the improvement was between 5 and 6dB. To have this kind of enhancement available at the touch of a button is a great help when digging out weak signals, and it worked equally well on all types of signal from c.w. to s.s.b. to a.m....

RX350 £1099.00 inc VAT. UK mainland carriage £10.00

- 302R optional keypad £129 inc VAT (carr extra on the above options if ordered separately)
- 307B optional external speaker £89 inc VAT (carr extra on the above options if ordered separately)



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11:47	7070 136 59

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Short Wave Magazine - Listening Contest No. 1

Results G3S

Did you enter, did you listen to us on air, did you win? The results of the first ever SWM

In total, G3SWM worked 231 stations between the sleepy eyed hours of 0500 and 1700. In that twelve hour period, many determined amateurs battled on to establish contact with the Portland based station. It's been mentioned previously, but unfortunately, we chose a far from brilliant day for our contest support station to be on air. The next time I plan an event like this one, I intend to ensure that it doesn't clash with a transmitting contest, Italian or otherwise.

Contest Comments

We received some interesting comments from some of the entrants such as:

Richard Atkins says "The contest easily lived up to my best expectations, particularly logging the first contact, which took me over an hour to get. Despite my first log entry at 0611, I was warming up and listening at 0500 – honestly!" Richard utilised periods of difficult conditions to attend to mandatory family activities – he was clearly under instructions.

Richard's interest in the hobby is mainly due to him obtaining an R-820 from a local enthusiast. Our announcement of a listening contest in the April issue of SWM provided Richard with the catalyst for the development of his listening station. He comments that the planning actioning and testing his set-up for a specific purpose provided him with a month of enjoyable activity in addition to the anticipation of a first time contest.

Tom Read would have like to listened for much longer, the

duration of the contest ideally. Alas his XYL had other ideas! Tom hopes that the contest will become an annual event. He also mentions that there were clear spots on 40m and that our insistence to stick to the QRM soaked 7.070MHz slightly marred the day's operating. I can see Tom's point, but we didn't have the ability to listen around the band extensively, as we only had the one rig in the mobile shack. Each time we did a quick band-scan there seemed to be an end-to-end wall of other stations. Something to note for next time though.

And whilst thinking of the next event, it has become quite obvious to me that although there were many of you who would have been pleased to submit an entry, committing to the whole twelve hour period is perhaps too much of a commitment.

I believe the answer to this is to stimulate a few more keen readers by adding some sub categories for the next event. I intend staging an hours duration mini contest in both the morning and the afternoon, also the best hours logs of the day will also qualify for a prize.

In any event, the whole day's activity, the contacts made on air, the listening contest and all the ancillary activities have proved to be well worth the collective effort.

Excellent Standard

The standard of submitted logs has been excellent, exceeding my hopes. This has made the checking and scoring very straightforward indeed. I am very grateful to all the entrants for helping on this front. One log

however stood out as being a better presented than the others. I'm referring to that of Richard Atkins. Richard's presentation was perfect

each page containing all the required detail, some of which I didn't request, but it soon became apparent it was required. Richard clearly has more contest experience than me. I have decided that I will award a 'Best Log' award in recognition of his superb entry.



Certificates

Contest Certificates will be sent to everyone who entered, as will the special QSL cards designed

listened, entered the contest, worked the station or had any involvement in organising the whole affair. You all know who you are.

The inaugural SWM Listening contest wouldn't have been a success without you all.

Overall Results

The overall winner is Chris Gibbs with a clear 520 point lead. It was Chris' station that was operated

for the longest period. Unsurprisingly, Chris also logged the most stations too. Well done Chris - a very good effort indeed as you logged all but 15 stations. The results are presented in the table.



SWL report / QSL TO RADIO:
Who G3SWM Date 4-5-03 Time 0757 UTC QRO 7.070 MHz Mode E 7x
RST 55 QRM 5 VNF QRN moderate QSB moderate Condx Fair
TAX / PSE QSL DIRECT or via BURO (ISM)



Confirming QSO with	Date (Z)	UTC	Freq / 2XMode	Power	Report
G3SWM	4-5-03	16:24	40mtr SSB	10	59

M13ATK

W.A.B...C41 Loc. 10651A
To Station G3SWM
Confirming our QSO on 4-5 MAY 03 at 7:25 GMT on 7.070 MHz sub fm am cv Rst 59+ Tx-Rx 5A-017
Power 10 watts
Ant. 2x3 G3RV
Pse Tax/Qsl Direct



specifically for the event. QSLs will also be sent to all the stations worked on the day.

Based on the success of this year's event, I'm already planning to arrange a similar event and listening contest next year. I'm sure that the number of readers tempted to enter will be higher. To encourage a higher level of participation I'm intending to award prizes.

I really must thank everyone who



MA3004SWL
 ION REPORT

ND	R/S	WORKING	B/S R/S
1	1	1	5/8/7

BRS 47426



CHRIS GIBBS

UDAC DIG JOTA

MINNIBY



ASGB

WAB, WAB

BRITISH SHORT WAVE RECEIVING STATION

BRS 91705



G3SWM

WWM Results

Listening Contest held on 4 May 2003 are presented here, so to find out more – read on.

Name	Start	End	Logged	Points	Countries	Total
Chris Gibbs	0549	1700	216	1019	8	8152
David Tyler	0605	1700	200	954	8	7632
Andy Middleton	0557	1700	192	914	8	7312
Ger McNamara	0638	1700	189	809	7	5663
D Bambrook	0556	1606	145	683	8	5464
Richard Atkins	0611	1438	76	354	5	1770
Tom Read	0757	1206	46	202	6	1212
Kevin Dale	0558	1609	56	166	7	1162
Peter Freeman	1117	1612	50	220	5	1100
Graham Stephens	0748	1550	37	161	5	805
Gerry McLernan	0931	1606	51	229	4	916

John Collins kindly supplied a check log.

EYP

RDXC 1040
 ISWL G-20843
 WAB SW7C115
 WAB Book 15286
 ICF A 80W4
 IOGA 384
 RSCB RS10710

W

INTERNATIONAL
 SHORT WAVE
 LEAGUE

JOTA

G3SWM

My Tx / Rx / Ant:

- Standard C108
- Sony ICF-SW7600G
- Realistic PRO-2006
- Grundig YB 218
- VY 73 vs DX OM/YL de
- whip
- 25m LW+ATU
- discone
- 3m wire
- 1/4 wave
- G3SWM

Countries worked By G3SWM

- | | |
|-------------|---------------------|
| England | Northern Ireland |
| France | Republic of Ireland |
| Isle of Man | Scotland |
| Italy | Wales |
| Netherlands | |



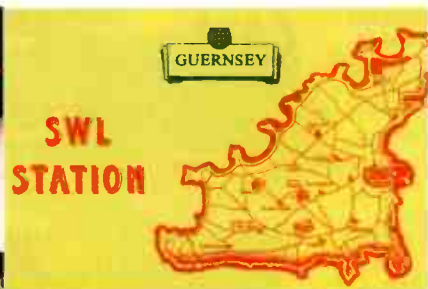
G3SWM operators hard at work to prove those contest logging opportunities back in May.

EI 5HV



JAMESON The Spirit of Ireland

BRS 47426
 Chris Gibbs
 24 Sutton Road
 Camberley
 Surrey, GU15 4AH
 England



Receivers Used by Entrants

- Yaesu FT-747
- JRC NRD-525
- Icom IC-718
- Yaesu FRG-100
- JRC NRD-535
- Icom IC-756
- Yaesu FT-817

- Kenwood R-820
- Lowe HF-225
- Realistic DX394
- Target HF3M
- Ex Russian Mil

Antennas

- 25m longwire and 'balun'
- 18m longwire running N-S

- Random wire in roof space
- Wire dipole in roof space.
- 18m high multi-band dipole.

Locations

- Okehampton, Devon
- Ennis Killen, N. Ireland
- Basildon, Essex
- Woodgate, Birmingham

- Hatfield, Hertfordshire
- Crediton, Devon
- Clonlara, Co. Clare, Ireland
- Camberley, Surrey
- Beckley, Oxford
- Lydney, Gloucestershire
- Macclesfield, Cheshire
- Devizes, Wiltshire

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Connector to Rx	50-75 ohm coaxial
Gain	PL type delivered as standard. Other standards can be fitted on request
Intercept Point	10dB +/- 0.2dBs
DC power supply	+50dBm IP 3rd order (10MHz/12V)
Mast diameter	11.5-13 volt DC at 80mA typ. (230V/12V DC stabilised mains adaptor is supplied with the antenna)
Dimensions	30-50mm can be fitted
	115cm total length. Antenna tube 50mm x 160mm
	Ideal for base stations



ARA 2100 (NEW MODEL)

TECHNICAL PERFORMANCE

Frequency range	50-2100MHz
Output impedance	50-75 ohms coaxial
Gain	0dB -1500MHz +38dB -2100MHz
Noise figure	1.5-2dB -1000MHz 1.8-2.5dB -1500MHz 2.5-4dB -2000MHz
3rd order IP	+38dBm typical
Output impedance	50-75 ohms coaxial
Connector standards	50-75 ohms coaxial = N type connector at the antenna. BNC male connector to the receiver
Power supply	12V DC at 160mA DC. Power supply for 230V AC is delivered comes with the antenna
Dimensions	Length 450mm. Diameter 90mm
Weight	1kg
Accessories	Mains wall plug adaptor (230V A/12V DC). Interface unit (remote supply unit) 12m coaxial cable and mast mounting clamps



dressler

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13cm (covers 2200-2700MHz).....	£125.00

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SMA - BNC RF i/p adapter.....	£2.95
13cm rubber duck antenna.....	£9.00
13cm mag-mount (5dBi).....	£55.00
Phono - Phono AV leads.....	£3.50
Phono - SCART AV lead.....	£4.95
Mains 12V power supply.....	£6.50
Cigarette lighter power lead ..	£4.95

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13cm 2304-2559MHz in 1MHz steps, 20mW out£42.50

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13cm like 23cm but 2304-2559MHz in 1MHz steps, no de-emphasis.£55.00

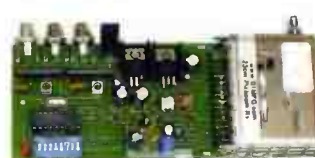


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SSB Utilities

I know that many listeners have a 'soft spot' for Concorde, and it came as not too much of a surprise to hear about their withdrawal from service. The fleet of British Airways Concorde will continue flying until later this year, while the Air France fleet were very quickly withdrawn. The Air France aircraft have already been allocated to several aviation museums, both in Europe and the USA, and a number of them have already delivered to their new custodians.

The last commercial flight by an Air France Concorde was on May 31, when flight 'AFR 001' flew from New York back to Paris. There were VIP flights on 2 June, 3 June, and on 12 June a French Concorde crossed the Atlantic for the final time. It flew to Washington-Dulles airport for presentation to Smithsonian's National Air and Space Museum. The aircraft is the first Concorde exhibited by a museum in the United States and is the oldest of five in the Air France fleet of the world's only supersonic passenger jetliner.

The airline ended 27 years of Concorde service last month and, through an earlier agreement, Air France had promised the Smithsonian the airplane on its retirement. The next flight was on 14 June when a Concorde flew the French President and various VIPs to Le Bourget airport near Paris for presentation to a museum, with the official handover taking place on the opening day of the Paris Air Show.

As I write these words, there are just two more flights to complete, but by the time these words are read, it will all be over for Air France and their Concorde. One aircraft is being donated to an aviation museum in Germany, while the last aircraft will be presented to Airbus Industries at Toulouse. As yet, I have not heard any stories about the potential disposal of the fleet of British Airways Concorde. There have been suggestions that they should be distributed to various museums around the UK, but there are several more months of flying left before their retirement in the autumn. British Airways have not even announced the exact date of the final commercial flights (as far as I am aware), so if anyone hears anything about this please let me know so that I can warn other readers.

Architect Changes

During May I was surprised to hear some rumours about some possible changes to the RAF's 'Architect' h.f. network. After some research I managed to find some press releases covering the news.

Currently the RAF 'Architect' service is run from a number of different sites around the UK, some being transmitter sites and some being receiver sites. The receiver sites are located at RAF Bampton Castle in Oxfordshire and at RAF Kinloss in Morayshire. The transmitter sites are at Chelveston in Cambridgeshire and RAF Milltown in Morayshire. These remote sites are all remotely controlled from Bampton Castle, coordinated by 81 Signals Unit.

At the end of March 2003 the Ministry of Defence announced a series of changes which will significantly improve the strategic communications between Army units, RAF aircraft, Royal Navy warships and submarines, and their UK Headquarters. VT Merlin Communications has been selected as the preferred bidder for the rationalisation and upgrading of the MoD's current h.f. communications systems. The contract is expected to be placed during Summer 2003 following negotiations.

The contractor will take over control of the UK Defence h.f. Communications Service and provide improvements in quality, speed, and reliability. Six sites in the UK and four overseas sites will be included in the contract, and a number of sites will be closed or cease h.f. operations.

The six UK sites to be used as part of the contract are as follows: Crimond in Aberdeenshire, Inskip in Lancashire, Kinloss in Morayshire, Forest Moor in North Yorkshire, Penhale Sands in Cornwall and St. Eval in Cornwall. The four overseas sites are in Cyprus, Gibraltar, Ascension Island and the Falkland Islands.

The h.f. operations will cease at Milltown in Morayshire, Bampton Castle in Oxfordshire, Chelveston in Cambridgeshire, St Mawgan in Cornwall, Fort Staddon, Devon, Toward Taynuilt, Argyll and Bute, Clach McKenny, Argyll and Bute, Plymouth, Yeovilton and Culdrose. These closures will be made progressively between early 2004 and early 2006. Although these sites will stop the h.f. operations they will remain open for other MoD purposes. The only sites that are currently expected to close are those at Chelveston and Bampton Castle.

The contract to be awarded for the running of the sites will last for 15 years, and covers the operation, maintenance and support of the facilities. VT Merlin will enhance the capabilities of the services through the introduction of new technology, and equipment and systems expertise will be acquired from Rockwell Collins (UK).

SAM Callsign Changes

In recent months I have become aware of a change in the callsigns used by various US Air Force VIP flights. Up until the start of this year (at least) the flights were using the 'SAM' callsign with their aircraft tail-number as part of the callsign. In the past few months the numeric part of the callsign has changed to be a sequential four-digit number. These numbers appear to have started at about '5600' and have been increasing steadily since then. The visit of President Bush to Europe and the Middle East in early June saw flights in the 'SAM 6000' range.

One advantage of this change (for the Air Force, that is) is that it is now much harder to work out what kind of aircraft is operating any given flight. With the previous system it was a relatively easy task to compare the numeric part of the callsign (which was the tail-number of the aircraft) with a list of aircraft tail-numbers (easily available via the Internet or in various books and magazines), and you could easily determine the exact aircraft type.

The new series of callsigns is much more secure, as you cannot easily tell which aircraft is operating a particular flight. However, all is not lost, especially if you hear the flights talking with h.f. civil aeronautical agencies. The flight will often give their selcall code to the ATC agency, and from this it is possible to work out the aircraft type. Most of the publicly available lists of SAM aircraft also include their selcall codes. Does anyone know exactly when this callsign change occurred, or does anyone know why it happened?

Web Watch

Concorde arrival in Washington - www.metwashairports.com/authority/pr/pr061203.htm

Attention-123!

Oddities

Having covered most of the active conventional Numbers Stations, we'll now turn to some of the 'oddities' of the short waves. Some of these have been with us for many years, and we cannot be sure which ones are connected with espionage. With few exceptions, they tell us even less than Numbers stations, often, we can't even be sure of their mode of transmission. The system of naming created by ENIGMA (and now in general use world-wide - and certainly not copyright!) is also used for some of these oddities, and the prefix used is X. However, as they are so strange and distinctive, popular descriptive names have evolved too.

Some of our commonest oddities are:-

- X1** (a.m.) the bugle, part of Family **VII**, its voice counterpart being **S2**. (Often played away for hours - clearly an indicator of some kind).
- X6** (a.m./c.w.) *Mazielka* (6 tones repeated, often followed by Morse).
- X21** (a.m.) 21-note melody - two versions.
- XB** (a.m.) UZB-76 'The Buzzer' 4.625MHz (but has also used 3MHz band) - now known as **S28**, due to its (very rare) voice messages.
- XBS** 'Buzz Saw' used 5.1 to 5.8MHz range.
- XC** 'The Crackle' around 5.500MHz.
- XD** (i.c.w.) fast continuous dots, 24hr, 3.595MHz.
- XE** 'The Echo'.
- XF** 'Faders' (until a few years ago very numerous throughout h.f. bands).
- XFR** 'The Croaking Frog' 7.380 (c0800z), also 7.992, 13.975 and 18.864.
- XJ** 'The Jet' may use blocks of 10 freqs (US mil).
- XM** 'Backward-music/Whales/Feedback effects'.
- XP** (a.m.) standard Polytone; tones of 303, 319, 335, 351, 367, 383, 399, 415, 431, 447, 463, 479, 495, 511Hz (used as nominal values for other XP systems).
- XPH** (a.m.) high Polytone (Family **Ia**); tones of 814, 844, 879, 914, 954, 992, 1038, 1089, 1143, 1202, 1234, 1271, 1304Hz.
- XPL** (a.m.) low Polytone (Family **Ib**); tones are product of mixing two non-harmonically related tones including: 150/235, 165/255, 180/245, 205/260, 215/290Hz - results in tone products of 80, 90, 65, 55, 75Hz.
- XPM** (a.m.) mid Polytone; tones of 450, 488, 531, 568, 611, 649, 692, 730, 773, 811, 854, 891, 934, 972, 1015, 1058, 1096, 1177.
- XQ** 'Plaintive Mew' uses sets of parallel paired freqs in 8.8-9.25MHz range.
- XS** 'Saw/Whine'.
- XSW** 'Squeaky Wheel'.
- XSL** 'Slot Machine'.
- XT** 'Tick/Pip' 3.757MHz (night) 5.450 (day) now unknown as **S30** due to its (very rare) voice messages.
- XW** 'The Noisy Workshop' (hammering, sawing, 'phones ringing, shouts!).
- XWP** 'Wop-Wop' 8.034MHz, swept wideband signal.

This is just a small selection, as many others (unclassified) have been heard over the years. Of all the above, we can only be certain that X1 and XP group are used by intelligence agencies, but maybe also X6 and X21. **X6**, operated by the Russians, can very often be heard sending a sequence of six tones for five minutes or so, then popping up on another frequency for a repeat sending. The actual sequence of tones varies with transmissions, although one particular sequence appears more often than others.

Sometimes, after a transmission has ended, there is a pause, followed by a burst of fast (often badly-sent) Morse, then another pause and a short burst of f.s.k. Like S28 and S30, this is another Russian military system.

After our initial discovery that the **XP** group operated the same formats and scheduling habits as Family Ia and b, ENIGMA 2000 has carried on the good work investigating the actual tone content and this work is continuing. This group are sending messages to agents equipped with automated received equipment (as also does M7). The tones represent the digits 0-9, along with operational instructions, and all have been identified, so we can 'translate' a Polytone transmission into its actual number content.

Single Letter Transmissions

Another large group of 'oddities', all run by the Russians, is the **MX** group, the Single-Letter Transmissions (SLTs), which we'll cover in a later column. Often loosely known as Single Letter HF Markers (SLHFMs) they are really far more than mere 'markers'. For now, we'll just mention a certain type of SLT, the solitary long-term type. Some of these at least would appear to operate in a similar way to S28 and S30 - run by SVN (Strategic Missile Troops) and sending orders, times, codes and operational data to remote ICBM sites. Notably, the SLT transmitting from Izhevsk and sending a continuous series of letter-R's to be found at present on 3.195, 4.3288 and 5.4658MHz, occasionally breaks to send similar voice messages. Other solitary long or short term SLT may or may not serve the same purpose.

The Yodelling Franz Lang Strikes Again!

Lastly, an odd story concerning that exotic *pièce de résistance* of Numbers Stations, G1, the 'Tyrolean Music Station'. A recent report claims that this station operated from transmitters near Chartres, **France!** Apparently, an article in a now defunct French radio magazine *Interférences* (Autumn 1975) claimed that its publicity had seen it off! Stating that it had operated on 6.425MHz from 1130-1140 sending personal messages to agents in East Germany. Actually, it operated two close parallel frequencies (the other being about 6.660) and usually only played music during the 1130-40 period, and sent number messages later at 1200 to named agents. This message section was preceded by an interval signature sending a bar of the Communist *Internationale*. G1 also operated an early evening schedule on lower frequencies. It was wishful thinking for *Interférences* to believe that they'd had a hand in closing the station down. G1 made no attempt to conceal its very obvious presence, and its most entertaining qualities, including errors, clicks, squeaks, coughs and tape rewinds and speed problems, not least its occasional cryptic spoken phases (such as "Our hen has laid an egg") invited publicity!

The big mystery is the **same** live male voice which was used by two other Numbers Stations (**G19** and **G20** - ENIGMA 2000 lists G2 incorrectly as a female voice only). G20 ('Spruch') which also played a musical interval signal, had been reliably identified as East German, and in the past, claims for G1 have precisely located its transmitter site - in the DDR! However, I have a 1970s US publication which claims that G1 probably came from the Swiss/French border! Such a tangled web of confusion is no help for Cold War historians. It's a disgrace that even after so many years, extinct Numbers Stations are still shrouded in state secrecy - quite unnecessarily.

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• All-Mode 30kHz/60MHz-USB-LSB-CW-RTTY-AM-FM-S-AM! This superb receiver is designed to suit a range of market sectors from the demanding 'decoder' to the interested SWL. The IC-R75 incorporates Icom's leading-edge technology and offers a range of features that make it exceptional in many ways. It sets a new standard for performance and value, and will become a popular choice for SWLs everywhere.

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Satellite TV News

The last few weeks have been a very 'domestic' period for satellite activity across the Clarke Belt - fortunate perhaps following the Iraqi hostilities though the 'Fox Feed' News reports out of Israel on SESAT, 36°E have continued to update the terrorist attacks in that region. The suicide bombing of May 18/19th revealed that there's an additional Fox circuit operating during heavy news periods and it was the AFC action of my receivers that masked the feeds.

With two receivers working simultaneously and selecting the 'Fox Feed' memories, each receiver displayed differing TV pictures, one with colour bars and the other a news presenter fronting a report into 'Fox News' New York (service ident 'R.R.SNG-05'). A third receiver test proved that in search mode the receivers' AFC was capable of dragging the tuner 2-3MHz from the inputted frequency. The frequencies used for 'Fox Feeds' are 10.960GHz and 10.963GHz, both H @ SR3254 + FEC 5/6. Once the NY transmission was over then both downlinks displayed a common picture, that of Jerusalem at night which of course can rise to confusion!

Whilst scanning over the NSS-707 bird at 57°E - my Eastern limits of clear sky I noticed an additional 'carrier' to the usual digital Star TV bouquet. This proved to be 'SATLINK ISRAEL', running colour bars + ident @ 11.137GHz-H (4648+2/3), curiously the 'SATLINK' circuit was available for several days but changed to 11.142GHz. Only colour bars have been seen and curiously June 1st the 'SATLINK' test card appeared over *Telecom 2D*, 8°W at 12.542GHz-H (13343+77/8) using MPEG 4:2:2.

Recent mentions of MPEG 4:2:2 and use of the 'SkyStar-2' computer card for resolving 4:2:2 pictures in this column and more info with the magazine *What Satellite TV* - June edition carrying a 'how to set-up the computer card' article by John Locker, **Hugh Cocks** (Algarve) - well known TVDX and sat-zapper - has also written a hands-on 'SkyStar 2' setting-up article which will shortly appear in the trade magazine *Television*.

The satellite enthusiasts programme *Dr. Dish TV* aired May 14th from *Intelsat 707* @ 1°W over 11.594GHz-H (6111+3/4) starting at 1700 through to 1945 hours with uplink capacity from the 'Telenor' uplink station. The programme is transmitted over the Nordic beam which favours central Germany and Northwards, we in the UK are 'off boresight' giving us around the 40dBW levels though on a 1.2m dish (0.3dB noise LNB) in Romsey proved satisfactory with the occasional pixellation, **Edmund Spicer** (Littlehampton, W. Sussex) using an 800mm dish and 0.6dB LNB struggled to lock up signals. Many questions were answered, receiver reviews and an MPEG 4:2:2 using a PC board, unfortunately most of the programme was in German with about 10% content in the English language. The next *Dr. Dish* transmission is July 16th, same time and venue, E-mail questions for answering on air to show@drdish.tv

A sat-zapper/enthusiast receiver that features fast auto search on Symbol Rate and Forward Error Correction, the Chinese made 'Coship CDVB3188C' and currently available in the USA is now appearing in small numbers in the UK, I hope to receive a unit for assessment within the next few weeks and I'll report back, it's inexpensive if bought in the USA and runs on 90-240V a.c. The blurb claims a 'unique blind search function in that neither frequency, SR or FEC data is required', apparently the specification was prepared at the behest of US satellite enthusiasts. If it performs and can be recommended, then a short review will be forthcoming!

Now back to the satellite arc. I've often recommended the monitoring of the 'CNN NEWSOURCE' downlink over NSS-7 @ 21.5°W - 11.563GHz-H (6117+3/4) which covers events across the 'States, even down to live local TV offerings from their affiliates. News provider 'APTN' carry their 'APTN DIRECT' news offerings throughout most of the day over *Eutelsat W1*, 10°E - 10.976GHz-V (4167+5/6) with a service ident 'UK4', more info on their unique news service can be found on www.aptnidirect.com

Towards the end of May into June so the G8 Summit and St. Petersburg talks took place. Cruising over W1 I found an 'APTN' sat feed ex. St. Petersburg running as 'Path 01' on 10.964GHz-V (4167+5/6) - a rather chilly Baltic sea and skyscape which looked equally grey either on a mono or colour monitor! Then Evian appeared with the G8 Summit and news reports from the French Alps. APTN were running three news paths from the 'Sommet D'Evian' [parlez-vous Francais?], though I only found Paths 2 and 3 running at 10.967 and 10.970GHz-V (4167+5/6) - I'm afraid multiple uplinks from political conferences is far from exciting!

Much more exciting was the launch of the part UK designed *Beagle-2*, the planet Mars exploration probe. *Beagle-2* enjoyed a flawless launch at 1745 June 2nd aboard a Russian rocket out of Baikonur Cosmodrome. The launch was carried live over *Astra 19°E* and on the 10°E APTN slot of 10.970GHz-B (4167+5/6) - a dramatic sight.

Less spectacular however was the count down to launch of the American Mars probe 'MEA-1' which at about an hour to lift off was postponed due to advancing thunderstorms from the Cape Canaveral, Fla. launch site on June 8th. The countdown and weather analysis was carried over *Atlantic Bird-1* at 15°E, the Globecast bouquet on Channel 1 (plus all three eng. channels**) at 11.104GHz-H (20145+3/4). A second postponement June 9th, but the 10th allowed a 100% successful launch and at the time of writing 'Beagle-2' is now being pursued by 'MEA-1'.

** The Globecast bouquet on *Atlantic Bird-1* features three channels, but on one receiver (Manhattan DigiPlaza) a further three channels appear in this bouquet with varying test patterns identifying as 'G.P. eng/eng', 'G.P. eng/italian' and 'G.P. eng/spanish' - curiously only this one receiver out of four can receive these additional 'hidden' channels. If you are loitering on this satellite, then have a look for the CBS USA regional news feeds which have been carried recently for most of the day - with a caption during downtime. Essential info is 11.466GHz-V (21700+7/8).

Horse racing - usually on a Saturday afternoon there are several European race meetings carried over the 10.950-11.200GHz spectrum on W1, 10°E, well worth a scan. South African horse racing is featured on the 'Tellytrack RSA' downlink on *Europe*Star-1*, 45°E with a very strong signal at 11.495GHz-V (3257+7/8) and continues with VT (taped) reruns of the day's action into the late evening. *Turksat* @ 42°E has a horse racing hot slot - 11.483GHz-V (6111+3/4) though the quality of racing is more on the aggressive side.

Also on 45°E is another 'unusual' horse racing channel, this service identifies as 'STWK' at 11.616GHz-V (a low SR at 1859+7/8) and appears to uplink out of Warsaw since mainly Polish racing action and results are featured. *Eutelsat 2F3* @ 21.5°E used to be a favourite for UK horse racing, but the inclined orbit drift of this bird really calls for an inclined orbit tracking dish, currently the satellite is reported to be optimising mid UK afternoons.

A BBC News team established an uplink site at a base camp feeding back live images of Everest marking the 50th anniversary and even Sir Edmund from NZ revisited Nepal to great welcoming crowds. 'BBC UKI-993' has been the uplink ident with 'Base camp 17600 feet' detail on colour bars at 11.656GHz-V (5632+3/4). Signals were intermittent and missed them all - as usual! (Everest was 29,002 feet a.s.l. in 1953, but today it's 29,118 feet...)

Down on the UK South-Western horizon is the *PAS-9* satellite @ 58°W, **Alan Richards** (Nottingham) reports that the 11.477GHz-H frequency (26463+3/4) slot on this bird has been carrying corporate feeds late May into the US via the NTL uplink site at Crawley Court, nr. Winchester. The 'T.W.I. Mediahouse' facility house ident plus an MCR telephone number has been carried inlaid on colour bars, but mid afternoon encrypted when content was carried! All Spanish regional TV enthusiasts or budding Spanish linguists should check on the *Hispasat* 30°W slot, an up-to-date (last 24 hours) listing of all satellite frequency spectrum of both radio and TV occupation can be found by delving into the **satco.DX** site and selecting the required satellite.



The Dr. Dish TV programme via Intelsat @ 1°W.



US aircraft carrier docks at Pearl Harbour, Honolulu, KGMB-TV via NSS-7.



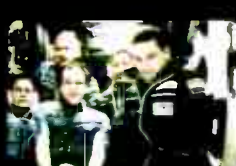
Teleport in the snow (1°W).



Teleport in the London grime (1°W).



Live pictures from S.E. Turkey, rescuers pause as another child victim is uncovered, via W1 @ 10°E.



After the Shuttle disaster the 'stranded' crew on the ISS were brought back to Earth by a Russian Soyuz craft and a replacement crew landed on board, smiling for the camera - courtesy 'CNN NEWSOURCE' via NSS-7.



Memorial service for the men of the US 3rd Infantry Division that failed to return from 'Operation Iraq Freedom', their helmets atop the upturned rifle butts. April 30th, NSS-7.

■ KEITH HAMER & GARRY SMITH, 17 COLLINGHAM GARDENS, DERBY DE22 4FS

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DX Television

After a good start during the previous month, Sporadic-E activity seemed to dip into decline in early May. Conditions soon picked up and some enthusiasts have described the season as the best ever, while others have complained that it is the worst ever!

Reception Reports

A Sporadic-E opening on May 6 produced over six hours of reception, starting with Portugal and Italy from 1300. **Peter Barber** (Coventry) and **Tom Crane** (Hawkwell) noticed Canal Plus from Ajaccio and Bastia in Corsica showing unencrypted System L programmes at 1630. Italian and Corsican signals were present for most of the opening. The finale was football from Spain at 1830 on Channels E2, E3 and E4. **Roger Bunney** (Romsey) comments that the Madrid E2 outlet has been received as in the good old days with tremendously high signal levels.

The opening on the 13th was equally intense with Italy (RAI UNO and TELE A), Rumania, Ukraine, Sweden, Norway, Denmark, Slovenia, Croatia and Hungary logged between 1500 and 2000 by Tom Crane, Peter Barber and, down in Bristol, by **Simon Hockenhuil** and **Stephen Michie**.

On the 22nd at 1652, Peter Barber identified RUV (Iceland) on E4 transmitting a game show until 1713. On the 23rd at 0745, Peter resolved an unidentified service on E2 and E3 which sported a logo with letters 'FF3' or 'PF3' inside a circle in the top-right. **Lt. Col. Rana Roy** (India) reports a good season so far with signals from the Middle East and China (CCTV and CCC1 networks) on most days from mid-May onwards.

Chinese signals have typically remained for around four hours. On May 2nd, Dubai E2 was visible between 0630 and 0830 local time and again during the afternoon in PAL colour. At 1600, Abu Dhabi appeared on E3 followed by an unidentified co-channel Arabic broadcast. Rana was using a D-100 DXTV converter to receive the signals.

Tropospheric signals were in abundance at the end of the month with Scandinavian, Benelux and German u.h.f. signals captured in the north-east by **Peter Barclay** (Ryton). Tom Crane comments that the opening in his area was very selective. The Belgian and French signals which come in from a south-east to southerly direction were strong and in abundance. The more northerly Dutch transmitters such as Hoogezand (TV Noord) were good, but Lopik, which is due east from Tom, was completely absent.

New Logos

Many stations are using new logos this season, which has frustrated identification. The TVE-1 logo sits in the lower-right of the picture. Stephen Michie has queried a boxed '1' logo in the top-left of the screen on E3 which was also around last year. The Portuguese news was seen shortly after. On the 25th, Tom Crane saw a similar logo with TVE-1 co-channel. However, Peter Barber sent a sketch of the RTP logo he saw on May 6 and it resembles the usual stylised 'C1' caption which has been displayed for the past few seasons.

Some of the CIS services tend to share air space so

several different logos can be encountered from the same transmitter! The Ukraine is a prime example. Peter Barber has seen the YT-1 service, initially with its striped '1' logo in the top-left of the picture, change to a boxed logo in the upper-right of the screen.

Stephen Michie advises that the Swedish clock is shown throughout programme breaks with details of the next programme.

Picture-Free DXing

Some DXers are currently experimenting using a computer-aided technique in which signal 'traces' are displayed on a computer screen, using a suitable scanner-receiver as an interface, such as the Icom PCR1000 with *Spectrum Lab* software, www.qsl.net/dl4yh/spectra1.html. By using a very stable frequency reference source, carrier offsets are measured to several decimal places thus enabling individual transmitters to be identified during Sporadic-E openings. Extremely weak carriers can be examined using this technique and it comes as no surprise that Equatorial Guinea, Syria, Dubai and Iran have been regularly identified. Unfortunately, the signals are normally so weak that pictures cannot be resolved.

Blue-Screen Technology

Tony Jones (Basildon) is experiencing problems with modern technology. Recording DX reception is proving to be difficult due to the video recorder muting and displaying a blue screen when signals are weak. Tony has obtained a couple of 5.5in Plustron receivers at £25 each from a shop in Brentwood. The intention is to feed both sets from D-100 converters. Tony has already received his first DX signals in Band I (Italy) at local strength.

FM Reports

Simon Hockenhuil (Bristol) found the 62-72MHz Eastern European f.m. band alive with signals on the 13th from 1820 until 1840, particularly on 66.10, 66.40MHz (the same station), 66.30 and 66.80MHz. The m.u.f.s have extended well into the f.m. band during most of the openings with many north African f.m. outlets being heard.

Recently, Simon Hockenhuil discovered a link belonging to the temporary RSL station 'Power Jam' which was operating around 48.25MHz until it went off the air on May 29.

Stephen Michie advises that the Gloucestershire police TETRA Radio System has been causing interference to TV reception in the Dursley area. The cause of the problem was mast-head amplifier overload due to insufficient front-end filtering.

Keep On Writing!

Please send your DXTV, slow-scan TV and f.m. reception reports, news, off-screen photographs and information to arrive by the first of the month to:- **Garry Smith, 17 Collingham Gardens, Derby DE22 4FS**. We can also use off-air pictures stored as JPG files on PC discs and good-quality video recordings.

Our DXTV and Archive TV website can be found at: www.test-cards.fsnet.co.uk



Fig. 1: An off-air shot of the RAI UNO (Italy) butterfly logo, received on Channel A during a stable Sporadic-E opening by Stephen Michie (Bristol).



Fig. 2: A BBC News from Iraq showing the Colour Bar test signal with a 'Wrong Line Standard' message.



Fig. 3: The final example in our series showing the current, truly abysmal, BBC-1 Identification Symbols. This one is called 'Tango'. Normal service, with 'proper' BBC Idents, will be resumed next month! (Personally I really like this one - Ed!)

MIKE RICHARDS G4WNC, 49 CLOUGHS ROAD, RINGWOOD, HANTS BH24 1UU

E-MAIL: decode@pwpublishing.ltd.uk Web: http://www.mikespage.btinternet.co.uk

Decode

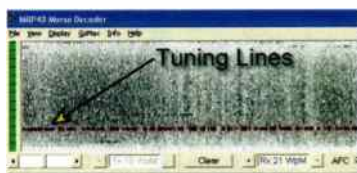


Fig.1 Morse tuning guides.

Jack Cooper has written to me asking about the availability of sound files for digital signals. Thanks to the World Utility News Club - commonly known as WUN Club - the answer is simple. The WUN Club keep an excellent range of sample audio files on their web site. As

well as being useful for helping to recognise the sound of the different modes, most of the files are long enough to be used to check-out your decoder.

The range of modes available is excellent and I would thoroughly recommend a visit to their site at:

www.wunclub.com/sounds/index.html



British Military Communications web site.

Northwood h.f. FAX service. Due to the increased military activity in the Middle East, Northwood have a secondary FAX service being sent using directional

antennas. Reception quality will therefore depend not only on the prevailing conditions, but where you're located.

If you're unlucky you might not be able to hear the station at all. The frequencies logged by WUNers so far are: 6.834, 8.652, 10.5765, 12.39, 14.356 & 18.281MHz. The

frequencies chosen for use depend on propagation conditions at the time so you will probably need to tune around to find an active frequency. Down on the south coast I was able to receive really crisp charts using 6.834MHz in the morning and 12.39MHz in the evening. My thanks to Day for his excellent work with the WUN digital column.

ALE Data

Those of you interested in ALE monitoring may be interested in a letter I received from **Ian Hampshire**. Ian has supplied an updated listing of USAF C-17A Globemaster allocations as follows:

C-17 Globemaster

Tailcode start	end	ALE Call
87-0025		270025
88-0265	88-0266	280265-280266
89-1189	89-1192	291189-291192

90-0532	90-0535	200532-200535
92-3291	92-3294	223291-223294
93-0599	93-0604	230599-230604
94-0065	94-0070	240065-240070
95-0102	95-0107	250102-250107
96-0001	96-0008	260001-260008
97-0041	97-0048	270041-270048
98-0049	98-0057	280049-280057
99-0058	99-0064	290058-290064
99-0165	99-0170	290165-290170
00-0171	00-0185	200171-200185

New block allocations by my working from contacts

00-0201	00-0204	200201-200204
01-0186	01-0197	210188-210197
02-1098	02-1115	220198-221115

02-1098, 02-1100 and 01-0188, 92, 93, 94 all confirmed. If you have anything to add to these lists please drop me an E-mail.

Top Section Courtesy of Mr Sandy Abel.

Morse Decoder

I know Morse is a declining mode, but there it is, still being used with lots of interesting traffic, so you may want a decoder. Resolving Morse signals is not easy and you will find that many of the decoders used in multimode packages can only really cope with strong, good quality signals. When it comes to pulling a less than perfect signal out of the noise there's no chance. The only solution is to use a dedicated Morse decoder program.

One of the best around is *CWGet* from the DXSoft site and I've reviewed that in previous columns. However, a recent web search revealed another program that I don't recall that I've covered before in 'Decode'. *MRP40* is a specialised Morse only decoder and transmitter. Although it was designed very much with the amateur in mind, it is excellent for just about any Morse reception.

The trick with processing Morse signals is to tidy-up the signal as much as possible before you start trying to decode. This is necessary because Morse uses on/off keying which leaves background noise in between each element of the code. As all modern receivers have automatic gain control (a.g.c.) systems you can find that you get a sort of breathing sound as the receiver varies its gain in response to the incoming signal.

If you have switchable a.g.c., it's often worth turning it off or setting the response to slow. The other way to help the decoding process is to use a very narrow receiver bandwidth. This will cut out noise from adjacent stations and reduce the background noise level.

You may be starting to think you need another receiver to cope with Morse. Don't worry, the *MRP40* software has most of the answers! Thanks to the adaptability of modern soundcards and d.s.p. programming techniques, many receiver shortcomings can be dealt with in software and the *MRP40* does a pretty good job of this for Morse signals.

To make the most of *MRP40* set your receiver for normal s.s.b. reception and turn the a.g.c. off, if you can. Next, connect your receiver to the 'line-in' or 'mic.' input of your soundcard and you're ready to run the software for the first time.

When you start *MRP40* you will see a neat spectrum display running from left to right with two narrowly spaced horizontal lines as shown in **Fig. 1**. These lines show the bandwidth of the internal d.s.p. filter. If you have a.f.c. ticked, you will find the lines will hunt around to find a nearby signal and then lock on. You can also use your mouse to select a particular signal in amongst several. One of the benefits of the wide spectrum display is that you can easily spot active stations and quickly switch between stations with a click of the mouse.

When you've selected the station you want, *MRP40* will start analysing the signal and automatically adjust to the appropriate w.p.m. rate. You may need to adjust soundcard levels, etc. but this can be done directly from within *MRP40*. There is a volume slider right next to the green level indicator but you can also bring-up your soundcard mixer controls via the View - Show menu items. You will also find a selection of other goodies available through this menu.

Overall, this is a great specialist software decoder and well worth a try. The demo version is fully functional for 15 days and registration is a reasonable 49.90 Euros. The *MRP40* site can be found at: www.polar-electric.com/Morse/MRP40-EN/

Epson Printer Help

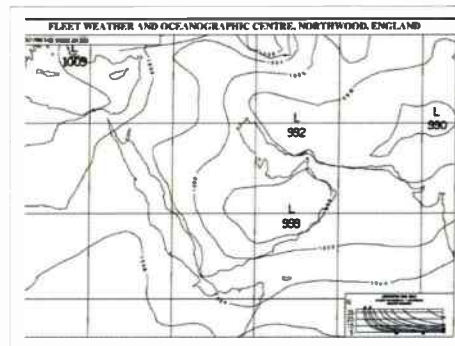
I know lots of you FAX fans tend to eat printers, so thought you might be interested in a really useful support site I found. My Stylus Colour 860 printer locked-up the other day with l.e.d.s flashing, but not responding to any button presses or PC commands. I thought it was going to be a new printer until I found this new site. They can supply full service manuals and lots of other help for all Epson printers.

I duly bought and downloaded the appropriate manual and found that there was a convoluted way to reset the printer. This was money very well spent as I was on the point of giving-up and getting a new printer! Here's the site: www.findmanual.net

British Military

Whilst looking around the web I found the following site that provides a stack of useful information for those that are interested in British Military communications:

www.link11.freeserve.co.uk/index.html If you know of any other useful information sources, please drop me a line and I'll share it here.



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Amateur Bands

In the February column I mentioned VK30M near Melbourne, Australia, who was heard in the UK whilst squirting only 2W into the feeder. This led me to suggest to Foundation Licence holders that 10W was ample for round the globe communication, and I'll stick with that line despite what I've since discovered about the Antipodean station. What Ron, the holder of the call, tells me is that he uses a four element mono-band antenna mounted 21m above ground. Four elements on 7MHz! A slight advantage over your common or garden 20 something metre long wire antenna suspended four metres above the ground me thinks. Plus his QTH being 300m above sea level doesn't hinder the outgoing or incoming r.f. either! With such a good set-up, Ron's been able to work plenty of M3s. He did comment that some of their signals compare very favourably with other G stations known to be running several hundreds of watts. Really! Surely no one with an M3 licence is turning up their power, even ever so slightly? Of course not!

G3SWM & More About Antennas

When considering antennas for G3SWM, the home station of the SWM listening contest on Portland in May, we thought that our elevated location on a relatively small (almost an island) site would serve us well without the need for anything too exotic in the antenna department. For ease of erecting, we opted for simple end-fed long wires 20m long end-fed by 50Ω coaxial via a balun.

Two identical antennas were mounted about 6m above ground and slung between convenient buildings and telegraph poles. To try and get some directivity we erected the antennas at 90° to each other, one running north-south, the other west-east. It soon became apparent that there could be a significant variation in the received signals of some stations depending on which antenna



Some of G3SWM's motley crew doing a bit of antenna erecting for the listening contest on Portland.

was used. Particularly with those stations a little further away, a difference of over 20dB on the 'S' meter was often noted when switching between the antennas.

With the Icom IC-746 used for the contest, switching between the antennas was easily achieved as the rig has two h.f. antenna connections and a front panel selector switch. The rig's internal a.t.u. looked after the matching side of things. The main thing using two similar antennas highlighted that antenna orientation, even with a long wire relatively close to the ground, is important.

Unless you're only listening for stations from one particular part of the world, which no-one is, then it's safe to say that there isn't a 'best' antenna for a given location, as performance will depend on the angle and direction of the signal's arrival. So, if you're struggling with a fixed wire antenna to pick up stations from some parts of the globe, try changing its position. Or even put up another antenna and use a coaxial switch to select the best antenna for the signals being received.

Listener Turned Amateur

Cast your minds back to July 2002's column where I mentioned **Colin Ashman** of Northants working towards his Amateur Licence. Well he's been the holder of M3JCA for over a year now. He's also now a participant in, rather than listener to the Barometric Net, which he drew to my attention and is active on 3.775MHz i.s.b. at 0600 and 1800 every weekday.

Colin is very particular to ensure that no more than 10W goes out into his feeder to the antenna, but this hasn't stopped him working VK5HX in Southern Australia. It also didn't stop him beating the QRM to contact G3SWM, when another Colin G3XAS, was on the mike. As I said before, 10W can be more than enough.

Beyond HF

Possibly as I tend to think of v.h.f. and u.h.f. amateur frequencies as functional short range chit-chat bands rather than somewhere to find anything too exciting going on, I haven't given them the coverage they perhaps deserve. So to redress the balance a little, here's some v.h.f. frequencies worth tuning to now and again.

145.500 - Simplex calling. Having established contact operation usually moves to a frequency between 145.225 and 145.575.

145.600 - 145.625 - 145.650 - 145.675 - 145.700 - 145.725 - 145.750 - 145.775 - 145.800 - 145.825 - 145.850 - Repeater outputs. Don't expect to hear something on all of the frequencies. Which ones are active near you depends on where you are in the country. You'll soon identify the frequency of your nearest repeater.

Two metre repeater input frequencies are 600kHz lower than their output frequencies, so when someone's using the repeater, try listening 'on the input' for their signal going into the repeater. For example, listen on 145.025MHz for signals going in to a repeater that has its output on 145.625MHz.

144.775 - 144.625 - 145.200 - RAYNET (Radio Amateurs emergencY NETwork) - occasional activity. Try listening when a sporting event covering a wide area, e.g. cycling, walking, cross country, etc., is taking place in your locality. All of the above are f.m. frequencies and typically use vertically polarisation.

If you want to try something else, then the s.s.b. centre of activity is around 144.300MHz, with c.w. to be found around 144.050MHz. It's probably best to wait for a contest or such like before listening to these frequencies as day to day activity can be pretty low.

A Life On The Ocean Wave

There's an old adage in amateur radio operating folklore that says 'If you want to get your signal out when operating h.f. mobile, get your wheels in the water'. Well, over the weekend of the 16 & 17th August there'll be lots of stations very much in and around the water for the International Lighthouse/Lightship Weekend, so expect some decent signals from them on the bands. The event lasts for the full 48 hours and is likely to put over 300 lighthouses and lightships on the air in around 50 countries if last year's event is any sort of guide.



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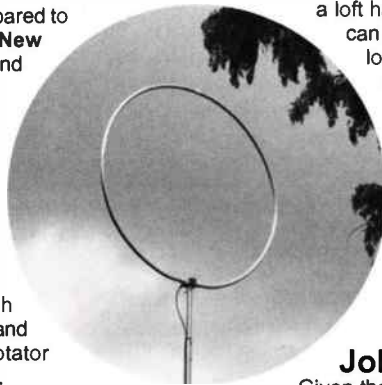
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This is what the experts say.

John Wilson; Nov 2000 SWM:

Given the choice between an active whip and an active loop, I would take the loop every time. It is infinitely better than the whip in terms of E-field noise rejection, performs every bit as well if not better than the classic end fed wire, has very useful nulls for rejecting unwanted signals.



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Info in Orbit

Weather Satellites - The Spring Revolution

The METEOSAT scene has opened up this hobby as never before - and all due to someone making an apparently unwise decision during the design of a solid-state amplifier! This month I am including samples of pictures from the easily monitored NOAA weather satellites (WXSATs), getting up-to-date with the latest on the *MSG-1* tests and showing how to colour those *MSG-1* images.

I have never considered the cost of buying equipment for receiving and decoding the lower resolution signals from polar orbiting and geostationary satellites to be unreasonable. Our hobby is a technical one and capable of providing very satisfying results. We can set up a system to receive low resolution (a.p.t.) images - see **Fig. 1** - from the polar orbiting NOAA satellites in the 137MHz band, and receive several over a 24-hour period. For greater

expenditure we can receive high resolution images from the same satellites - see **Fig. 2** and **Fig. 3**. We can receive near-continuous WEFAX (low-resolution) images from *METEOSAT-7* - see **Fig. 4** - and enjoy many extras from this source of transmissions. WEFAX will be ending in the fairly near future, so the second-hand market has become the best source for those wishing to just try it out at low cost.

Until recently, the simplest-to-receive of the conventional WXSATs has been the NOAA constellation. **Figure 1** shows the a.p.t. (automatic picture transmission) image received at the same time as **Fig. 2** - the high resolution picture transmission (h.r.p.t.) version. The content for both images comes from the same on-board equipment, but the low resolution a.p.t. signal is transmitted on the 137MHz band with a reduced resolution of about 4km per pixel. The original

h.r.p.t. data has a resolution of about 1.1km per pixel. The capabilities of h.r.p.t. are better appreciated in **Fig. 3**.

How Is HRIT Different From HRPT?

The highest resolution data available for amateur reception remains that from NOAA h.r.p.t. telemetry. These satellites provide a consistent 1.1km per pixel resolution throughout their orbits. As they pass over North Africa, Spain, France, Britain and everywhere else, the ground resolution

remains at 1.1km per pixel because their orbital height is nominally constant. The *MSG-1* high resolution visible (channel 12) data stream has a comparable resolution despite its distance in

geostationary orbit, but this refers to the sub-satellite point - latitude zero degrees at around longitude zero degrees. At all other latitudes and longitude, the effective resolution is reduced.

MSG-1 Trial Testing Continues

METEOSAT Second Generation (*MSG-1*) spent all of May transmitting high quality, high resolution images during the first month of the trial 'alternative dissemination mode' phase. There have been several outages and instances of missing data - perfectly normal during a testing phase where so many new procedures have to be optimised. We are privileged to take part in these trials.

As at mid-June we are just days away from the start of the next phase - the addition of the LRIT (Low Rate Information Transmission) data stream on 25 June. On 2 July, images from foreign satellites are scheduled to start - making *MSG-1* a 'must have' transmission for all Europeans who are interested in WXSAT monitoring.

Equipment For The Future?

Those who have already set up a *HotBird* satellite television system for *MSG-1* reception can be assured that EUMETSAT has made a significant decision regarding the future of this transmission service. An official statement says: "As a minimum, the dissemination of MSG services via EUMETCast will continue until such time when full LRIT/HRIT direct reception is available (*MSG-3* as the operational satellite, with *MSG-2* as backup)". I would anticipate that the possibility of launch slippages means that current *MSG-1* HRIT users are looking at a timescale of some years.

MSG-2 launch - probably 2004 (nominally 18 months after *MSG-1*). *MSG-3* launch - expected 2008 (about four years after *MSG-2*).

The Moving HRV Window

MSG-1 produces a vast amount of data, including the HRV channel, a strip of the globe containing the highest resolution imagery from any geostationary WXSAT. The nominal plan is that the vertical strip will be moved during daylight hours to optimise the illuminated image. We can expect to see the east strip during the early hours, followed by a mid-day spell through the centre, and finally a strip across the western side.

During the trial phase, in which many of us are taking part, the strip has occasionally moved to different positions, so I asked EUMETSAT whether this was part of the tests. Dr Christopher Hanson is the Image Operations Manager in the Control Centre Division of the Operations Department at EUMETSAT, and he kindly explained:

"We are currently in our commissioning phase and part of this phase is dedicated to performing tests involving movements of the HRV window. Any large and sudden changes in HRV window that you have observed are certainly caused by these tests. We have a couple of problems with the rectification of the HRV data at the moment, and this could cause small,

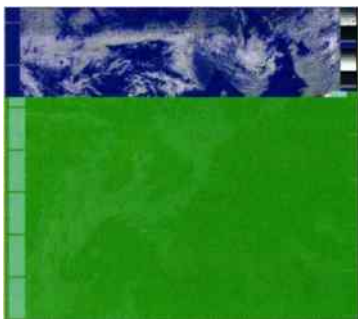


Fig. 1: NOAA-17 a.p.t. image received 1053 13 June.

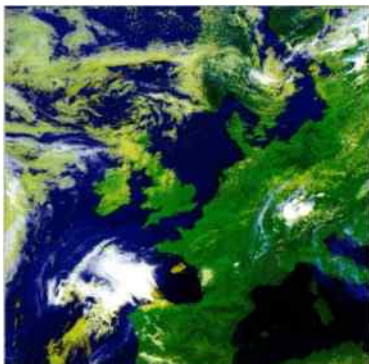


Fig. 2: NOAA-17 h.r.p.t. image as for Fig. 1.



Fig. 3: NOAA-15 h.r.p.t. close-up of Britain 13 June.



Fig. 4: METEOSAT-7 WEFAX image 1100 14 June.

gradual movements in the HRV window. The HRV window tests will continue for a little while yet, but these tests only take place occasionally, and so should hopefully not be too disruptive to you. We are working on the other problems". My thanks to Dr Hanson for explaining the situation.

Current WXSATS

Don't forget the NOAAs! The excitement of receiving such high quality imagery from *MSG-1* has not caused me to leave my other equipment switched off - as you can see from the pictures. The list of transmitting WXSATS is given at the end of the column, and comprises the NOAAs and *FENGYUN-1C* and *-1D* polar orbiting WXSATS. We have now seen the longest period without any (Russian) v.h.f. METEOR transmissions.

Satellite Locations

EUMETSAT has decided not to move *MSG-1* to the prime location at 0° longitude because direct dissemination from the satellite will not now take place. This means that the following positions are valid:

METEOSAT-5 at 63° longitude.

METEOSAT-6 at 10°E.

METEOSAT-7 at 0°.

METEOSAT-8 (MSG-1) at 3 to 4°W (subject to confirmation)

Arne Colours The World!

The images received from *MSG-1* comprise 12 channels, covering a broad spectrum between 0.56 and 14.4µm (micrometres), with some gaps. With five or six channels from the NOAA WXSATS, effective artificial colouring can be achieved. Within a day or two of the start of *MSG-1* image flow, **Arne van Belle**, the Co-ordinator of the Dutch Radio Observers of Werkgroep Kunstmanen, had produced a description of the process that could add simulated colour.

Arne's process uses channels 01, 02 and 03 from *MSG-1* - these are similar to the corresponding channels on the NOAAs. Arne kindly agreed to let me include some of his notes in this column.

The starting point is the availability of images from *MSG-1*. Many people are using David Taylor's software *MSG Data Manager* to produce the images

in their raw form. The process also requires *PaintShopPro*, or a similar graphics program to provide the facilities described. *PaintShopPro* can often be found on CDs issued by computer magazines, including free editions. It is also desirable to have a reasonably well-specified computer: this largely means that lots of memory is required to avoid constant disk activity. The computer used to run *MSG Data Manager* will already have been fitted with adequate hardware. For power use, I stop *MSG Data Manager* running, in order to use the computer's facilities for image processing.

Start by loading the JPG images of channels 01, 02 and 03 into *PaintShopPro*. Convert each image to greyscale, using the options colours, greyscale. The originals will not change, but the palette colours revert to black-and-white. Next we adjust the histogram (contrast) for each image. Select channel 01 and then 'colors', histogram adjustment. The resulting line graph shows the image's histogram - the numbers of pixels having various levels of brightness - as a dark strip.

Below the graph are three arrow-heads (black, grey and white), and the gamma value - all clearly displayed. Use the mouse to click and drag the white arrow marker to the outer end of the curve. Next, slide the black marker to the left end of the black curve. Slide the middle grey marker until gamma reads 1.5 (for cloud-free sunny weather) or 1.7 (for darker images).

This adjustment process has to be repeated for each of the three images. These will represent red, green and blue in the final stage when they are combined. Arne suggests the following values for producing your first colour image:

Colour	Channel	Low	Gamma	High
Red	03	22	1.40	171
Green	02	27	1.50	139
Blue	01	25	1.50	140

To produce the colour composite, select Colors, Combine Channel, Combine from RGB. The channels should be allocated as:

Red channel source = ch03

Green channel source = ch02

Blue channel source = ch01. Click OK and your first colour image appears.

The result is unlikely to be perfect on your first attempt, though I was very pleased with my first result - see **Fig. 6**. Arne suggests that further modifications can be made by analysing which colour should be increased or decreased, and then considering whether red, green or blue should be altered in the shadows, midtones or highlights.

For further modifications, re-select channel 01, click undo to remove the previous histogram adjustment, and restore the low, gamma and high values that you previously logged for that colour. Try moving the black marker a bit more to the left and press OK. You can quickly combine the

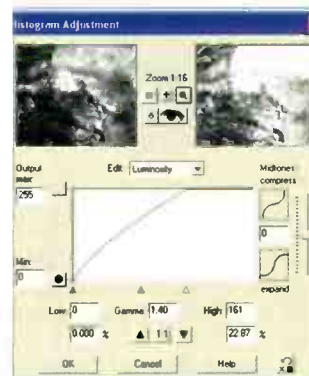


Fig. 5: Histogram adjustment in *PaintShopPro*.

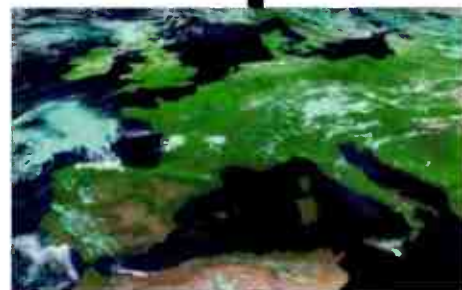


Fig. 6: *MSG-1* 1200 13 June Europe section - my first attempt at a synthesised colour image. Image courtesy EUMETSAT.

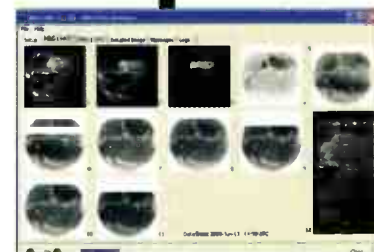


Fig. 7: *MSG Data Manager* with optimised settings.

channels and compare the two colour composites - keep the one you prefer.

Suggested Settings For MSG-1 Data Manager

David Taylor's *MSG-1 Data Manager* is probably the most widely used software for decoding the EUMETCast data stream - look out for my full review in a future edition. The 12 channels have default settings for their appearance, but the individual levels can be set using the *advanced* option on the setup tab.

Arne sent me a list of his optimum min, max, and gamma values for every channel, made using the first beta version XRIT converter from **Rob Alblas**. Arne says this is a very basic manual 1-channel converter, but does support 10-bit greyscale images. I edited in these values and they produce an excellent, well equalised set of thumbnail images.

Channel	01	02	03	04	05	06	07	08	09	10	11	12
Min	65	100	100	51	51	51	51	51	51	51	51	51
Max	564	548	628	844	200	372	865	577	900	907	659	762
Gam.	140	145	130	100	100	100	100	100	100	100	100	135

The effect of using these settings is to considerably enhance the detail shown when you zoom into a selected image - see **Fig. 7**. The settings are optimised to allow channels 1, 2 and 3 to be used for colour synthesis without the need to adjust the gamma settings.

Finally, Arne suggests the following tips: If the colour composite is too dark: increase all three gammas by about 0.1 - too reddish in the mid-tones: decrease the red gamma a little. Clouds too pink/red: move the white marker on ch03 to a higher level.

Don't apply the histogram adjustment to an already adjusted image; the effect will be way too much and you won't have reference values for future images.

If the image is acceptable, record the values for later use. Save the new image in JPG format. Keep the originals for future use.

When one satisfactory image is obtained, it is possible to process all the visible slots from one day, colour combine each set using one histogram setting, and then animate these to produce a stunning composite colour animation using *Animation Shop*. This takes much time and a fast PC. Arne suggests resizing all images to about 600x600 unless you have enough memory. My sincere thanks to Arne for providing the basis of this section.

Correspondence

Rod Wilkinson G3TXA has been involved in amateur radio "for more years than I wish to remember", and told me that he has always had an interest in simple antennas and portable working. Rod sent me a *NOAA-17* image from 1 June 2003 - see **Fig. 8** - received on an indoor antenna! He uses crossed dipoles and a pre-amp, mounted on a camera tripod in the back bedroom at his home in Palmers Green, North London.

Rod has a large Church next door, and a consequent signal reception problem, spoiling the path to the north, but his pre-amp helps a little. Rod's set up includes a Timestep Proscan receiver and the Prosat interface/software. Rod noted that his relatives in Sweden were having a clear, sunny day while they were visiting the coast near Lund.

I was pleased to meet **Mike Scrimgeour** at the Remote Imaging Group's AGM in May, and he has kindly sent me an image of Iceland taken with his a.p.t. system. I find Iceland fascinating because it is rarely free of cloud, and I only receive a signal on my h.r.p.t. system when one of the satellites rises or sets between the trees and roofs on my north-west horizon.

Kevin Hughes sent **Fig. 11** - a *NOAA-17* image showing a recurrence of the interference that may be once more caused by a faulty lamp at his local store. It is about to be investigated!

Join The Club!

The Remote Imaging Group caters for an international membership, though most members are in Britain. Through a well produced quarterly magazine, members are provided with helplines and E-mail contacts and access to some hardware and software. Get instant details by checking out their web site: www.rig.org.uk/



Fig. 8: *NOAA-17* 1024 1 June from Rod Wilkinson.

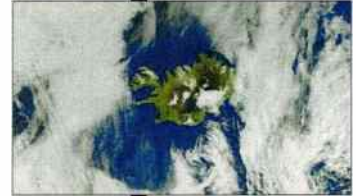


Fig. 9: Iceland from *NOAA-17* on 23 May from Mike Scrimgeour.



Fig. 10: *MSG-1* Africa (above image) courtesy EUMETSAT.

Fig. 11: *NOAA-17* 1050 13 June from Kevin Hughes.



WXSAT Frequencies

a.p.t.

NOAA-12 and *NOAA-15* transmit a.p.t. on 137.50MHz. during overlap periods, *NOAA-12*'s a.p.t. may be switched off. *NOAA-17* transmits a.p.t. on 137.62MHz. *METEOR 3-5* failed.

h.r.p.t.

NOAA-12 and *NOAA-16* transmit h.r.p.t. on 1698.0MHz. *NOAA-14* and *NOAA-17* transmit on 1707MHz. *NOAA-15* transmits on 1702.5MHz. *FENGYUN-1C* and *-1D* transmit on 1700.5MHz.

WEFAX: *METEOSAT-7* (geostationary) transmits WEFAX on 1691 and 1694.5MHz and Primary Data on 1691.0MHz. *MSG-1* provides HRIT (now)/LRIT (from 25 June) via *HotBird-6* and EUMETCast.

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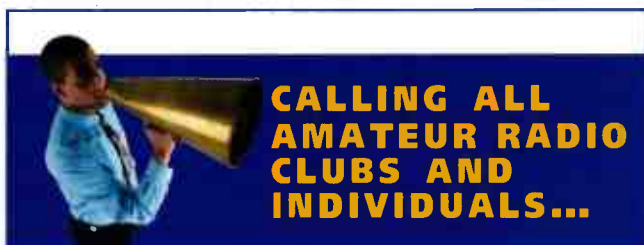
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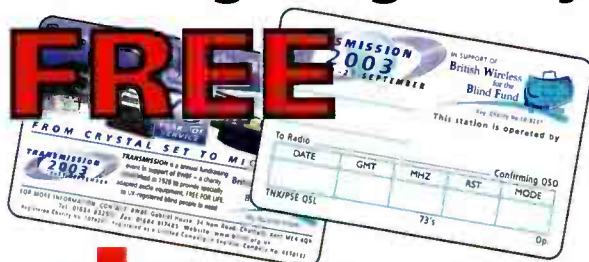
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Details from Trevor Morgan GW4OXB, 1 Jersey Street, Haford, Swansea SA1 2HF. E-mail: gw4oxb@net.ntl.com

International Short Wave League (ISWL - G4BJC)

Information from Honorary Secretary John Raynes, G16436/GOBWG, 267 Pelham Road, Immingham, Lincs DN40 1JU. E-mail: iswl@ntlworld.com or visit www.iswl.org.uk

Military Wireless Amateur Radio Society (GOPTZ)

Further details from John Taylor-Cram, 7 Hart Plain Avenue, Cowplain, Waterlooville, Hampshire PO8 8RP. Tel: 0239-225 0463.

Radio Amateurs Invalid and Blind Club (RAIBC - G4IBC, GB0IBC, GB1IBC)

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Further details from the Membership Secretary John Din, 59 Woodend Road, Coalpit Heath, Bristol BS36 2LH. FAX: (01454) 887880. E-mail: membership@rig.org.uk

Royal Air Force Amateur Radio Society (RAFARS - G8FC, G8RAF)

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Royal Navy Amateur Radio Society (RNARS - GB3RN, G3CRS, G1BZU)

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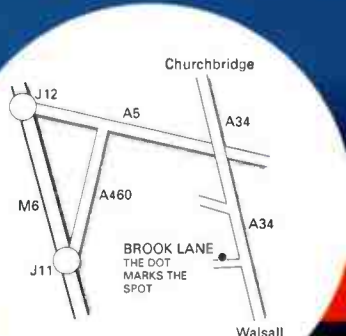
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AOR	AR-3000A WIDE RECEIVER	£475
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AOR	AR-5000 TOP CLASS RECEIVER	£399
AOR	AR-7030 TOP RECEIVER	£550
AOR	AR-8000 WIDE BAND RECEIVER	£199
AOR	AR-8200 WIDE BAND RECEIVER	£230
AOR	AR-8200mkII WIDE BAND SCANNER	£275
DRAKE	SW-2 RECEIVER	£275
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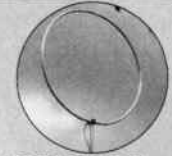
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Scanning Scene

After only a few weeks the 'Roadmap To Peace' in the Middle East appears to have become a road to nowhere. Violence continues on a daily basis with both sides engaging in offensive operations. The Israeli Defence Force has a sophisticated armoury available to it and the Palestinian side mostly relies on suicide bombers or alternately on small unit operations that generally are fatal to those who are foolish enough to engage in them. The IDF certainly is a powerful and highly motivated machine. Despite all this sophistication many of their communications are in the clear. They have recently been heard in the UK on the following frequencies:-

(All frequencies in MHz)

30.000	33.650
32.150	34.050
32.200	34.200
32.950	34.750
33.300	35.250
33.350	40.750
33.400	41.900

Transmissions are n.b.f.m. and although usually conducted in Hebrew, occasionally English is heard. It's worth a listen especially as the situation in the region can only be described as 'hotting up'.

Marijuana Cultivation

In the United States there is a flourishing industry ongoing in rural areas and in some national parks and forests. Marijuana cultivation is the name of the game and increasingly Park Rangers are finding themselves in conflict with the dope growers. On occasions, they shoot at each other too!

Although these enterprising hash farmers have used the US Family Radio Service radios on u.h.f., they got cheesed off hearing kiddy winks and walkers nattering on their channels. That's why they moved to v.h.f. Actually they moved to marine band. It was a logical choice. Their comms would not be disturbed by boaters as most of the areas where they engage in their horticulture are not near navigable waterways.

A few years ago the same thing started right here in the UK. I remember standing at the edge of some woodland on a large private estate and admiring some very large cannabis plants. The land had been carefully prepared by some 'eejit' from a housing estate a few miles away. He

had used some gunk growth accelerator called Baby Bio to feed up his charges and they looked very healthy indeed.

The authorities plotted up the location despite it being in an extremely rural area. Sure enough along comes the budding Titchmarsh on his moped to water the gear. When he was arrested, he was found with a marine band hand-held radio. It transpired that he was using the set to natter to his mate four miles away while he was on his covert allotment. So you see, some crime trends are definitely imported from America.

Interesting Signal

Not v.h.f./u.h.f., but certainly interesting was the signal received in early June somewhere around 7.639 u.s.b. by monitors in the USA and Wales. It consisted of two males engaging in a conversation that led all who heard it to believe that they were listening to some baddies discussing some sort of crime which was thought to be involving the illegal drugs trade.

There were, I am told, several references to 'deliveries' and the guys were swearing a whole lot. The guy from Wales told me that their cussin' even rivalled that of the Scottish east coast fishermen. If that is the case then these blokes must have spent many years perfecting their technique. Apparently they sounded like the baddies on a TV show called *The Sopranos*. I have never seen this programme and thought that this meant that they had high pitched voices. This is not the case.

I believe that the frequency I have quoted is correct, but I'm not totally sure as my main computer has suffered a Three Mile Island style meltdown and I'm using a chisel and slate to write this.

Ancient Equipment

A correspondent in Dunfermline in Fife wrote an interesting letter including some photographs of some ancient intercom equipment that was installed in a room that he stayed in at the Caberfeidh Hotel in Stornoway, Western Isles off the North West coast of Scotland. The kit was disconnected,

but to remove it would have left a big gap in the bedroom furniture, so it had been left in situ to intrigue guests.

On the roof of the building he noticed a whip antenna and wondered whether that was in some way ancillary to the defunct intercom kit. He says that he had seen similar antennas mounted on other hotels in Scotland.

The photograph that was sent to me shows the whip antenna blowing in a stiff breeze. Oh well... I like a challenge and so to cut a long story short I went to Stornoway. For me, taking a trip there involved getting on the MV *Hebrides* from Uig on the Isle of Skye.

Caledonian McBrayne who operate the service generally use 157.550 at v.h.f. but the '*Hebrides*' has an on board repeater at u.h.f. with output frequencies of 457.525 and 457.575 (both n.b.f.m.) - either of which can be heard in use during both port operations and the voyage. On arriving in Stornoway, I took a picture for myself of the antenna. It certainly is a strange device and at present all I can glean is that the item has been up there for decades.

One very good idea from keen monitor **John**

Macaulay was that it could have been used for the hotel to contact tour buses or taxis prior to mobile telephones becoming prevalent. We are convinced that the whip has nothing to do with the intercom, unless it was used at a broadcast receiving antenna.

Stop Press

It's 2200 and I've just had information regarding the antenna on the top of the Caberfeidh Hotel. It seems that about 20 years ago the hotel used to have a CB radio that they utilised to call up taxis in the town that were using Citizen's Band instead of paying a PMR licence fee.

Although no-one is too sure, the hotel staff seem to believe that the antenna is an old 27MHz whip that was never removed. If it is a CB antenna, then it's of the toughest manufacture that I have seen as it has been up there for 20 years or so and

still looks OK.

Has anyone got any other thoughts on this? Basically the staff there are by no means sure.

The picture shown here is one that I took and shows the antenna and the lower section as well. I decided that it was only fitting that my burnt-out computer should be buried in the land fill site near Stornoway - R.I.P.

Celebrity News

Possibly the most successful scannist in the UK, 'Paul' notified his scanning list on the Internet that he had been in London and had seen some sort of female celebrity surrounded by 'bodyguards' (we'll call them this as they are usually just heavies and not real protection officers). They had the earpieces with the curly acoustic tubes inserted. These became fashionable because they are used by the US Secret Service protection staff who look after Presidents of the USA. Now every security guard over 20 stones weight wants one.

Anyhow I digress, Paul was in the big smoke and notices the girly being cosseted by these boys and having a reaction tuned scanner on his person he discovered that they were using 462.3625 n.b.f.m. with a CTCSS of 103.5Hz. This is a short time hire frequency and also is used by many other organisations including Marks and Spencer and a company who specialise in security for rock and pop concerts and the like, called Rock Steady Security. It could be that this firm had supplied the staff.

And the 'celebrity'? It was a girly called Courtney Cox. Paul had never heard of her and neither have I. I mentioned her name to a mate of mine who fell on the deck foaming at the mouth. Apparently she is a 'hottie' from a TV show called *Friends*.

Trust Targeted

I read in the papers that burglars have targeted the National Trust property called Waddesdon Manor, near Aylesbury in Buckinghamshire. The crims took some gold boxes which, no doubt, will be worth millions. The property was burgled previously in 1983 - most of the property from that raid having been recovered. Waddesdon Estates used to have a talk-through v.h.f. system on 165.250 base with 170.050 as the mobile input. The last time I drove past there on the A41 I forgot to check if it was still in use. Does anyone have any ideas as to whether it can still be heard?

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.

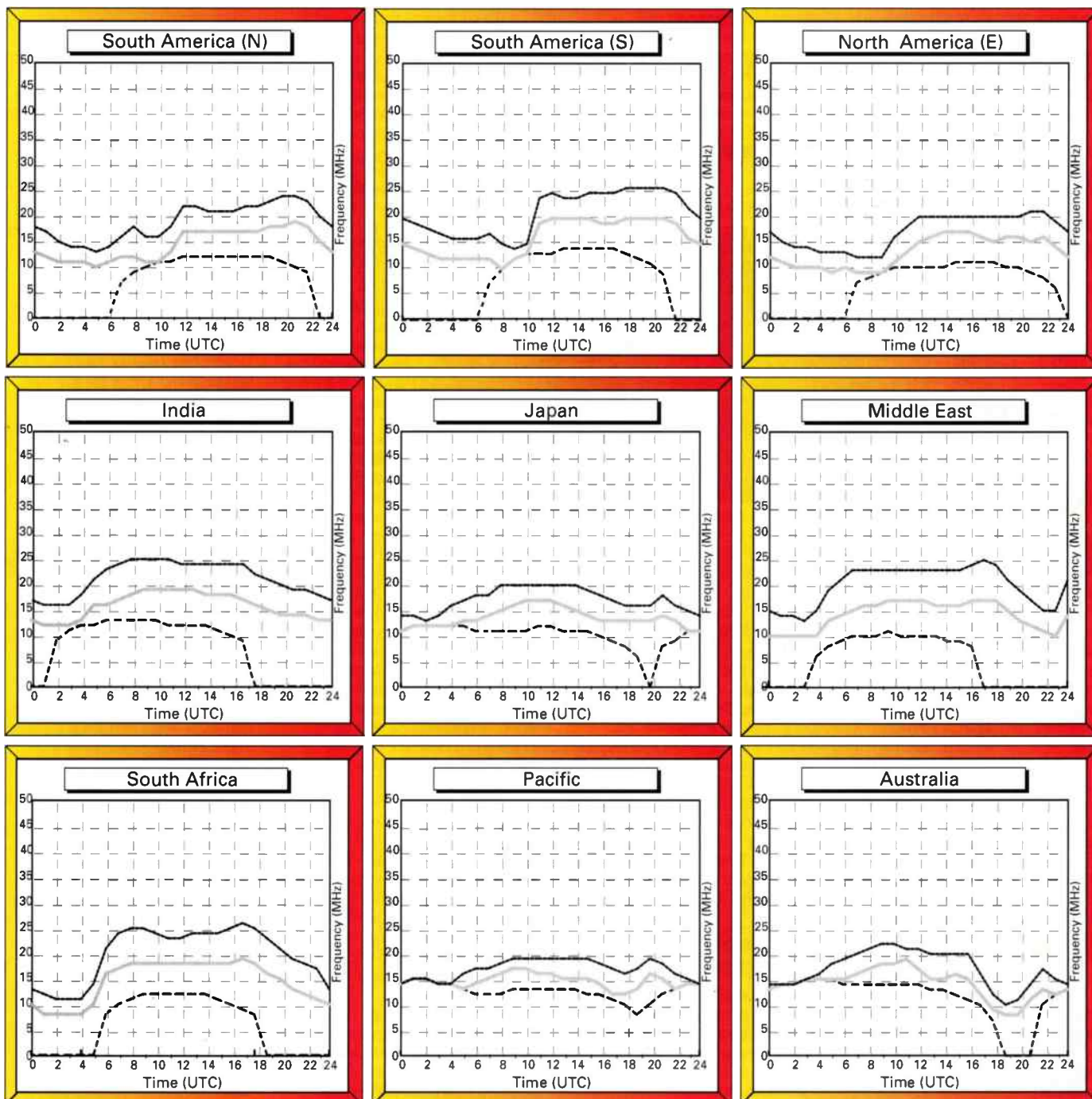
Lastly, the upper dashed line represents the maximum usable frequency (MUF), a 50%

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.

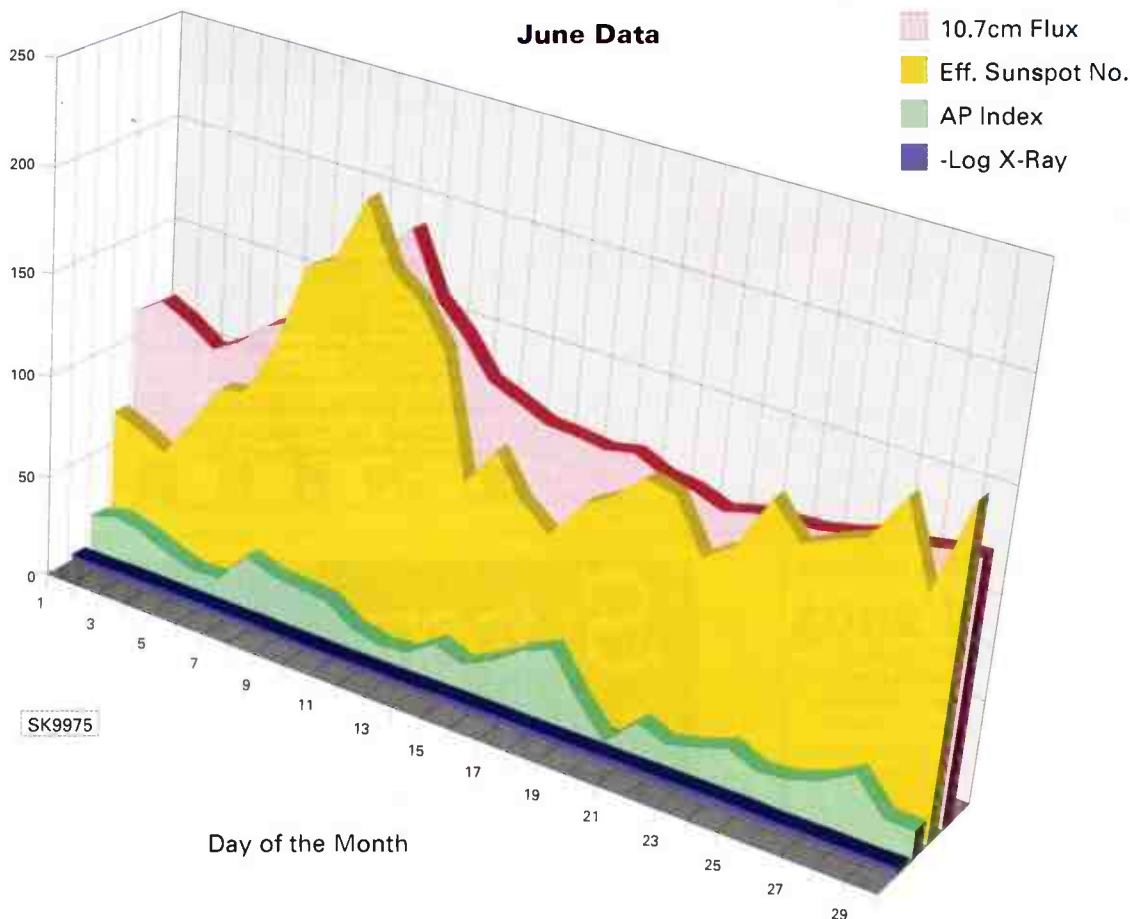
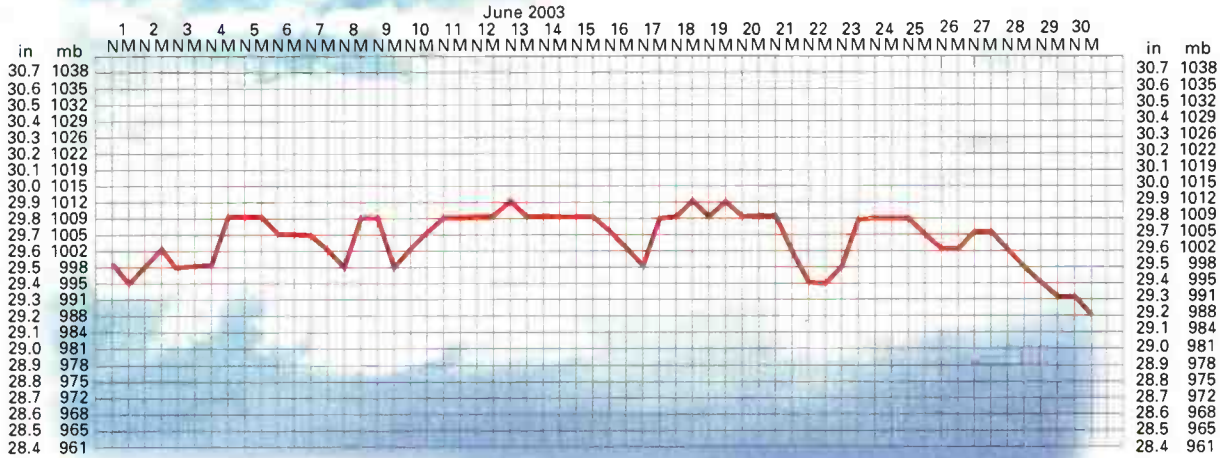
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Propagation Extra

Ron Ham's barometric pressure chart, taken at Storrington, W. Sussex, June 2003.



guide to the chart

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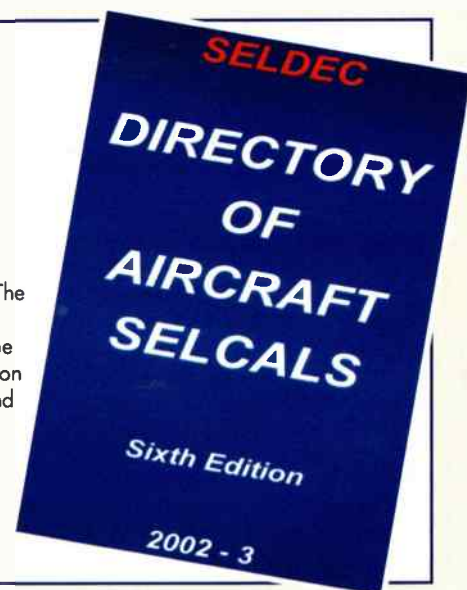
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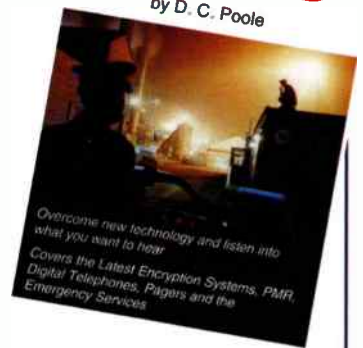
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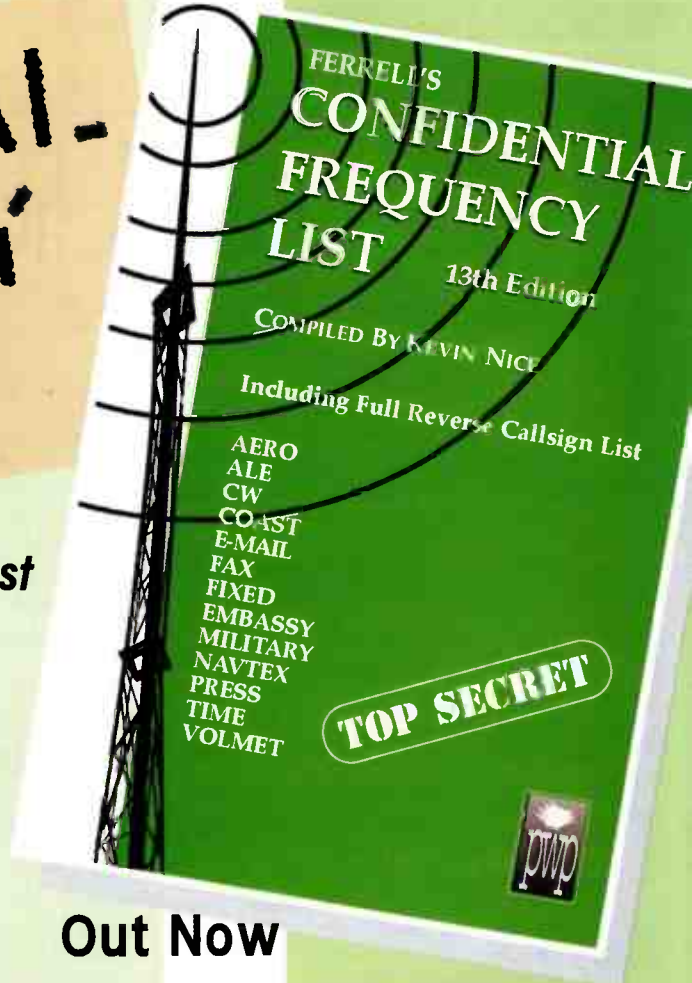
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