Wideband Scanner Antennas
Loops To Build
Spy Antennas
CM Howes ATU Kit Reviewed
RF Systems MLB Mk1 Tested

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High Quality Wideband Antenna

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SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna</td>
<td>Multitrapped Vertical</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>25-1500MHz (500kHz-25MHz at reduced sensitivity)</td>
</tr>
<tr>
<td>Connection</td>
<td>'N' Type</td>
</tr>
<tr>
<td>Length</td>
<td>Excluding Mounting Tube, 1100mm</td>
</tr>
<tr>
<td>Radials</td>
<td>4 Times 200mm Long</td>
</tr>
<tr>
<td>T.X. Power</td>
<td>35 Watts Maximum</td>
</tr>
</tbody>
</table>

only £39.95

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Cover:
New radios from Sony always attract a lot of interest. The latest is the ICF-SW7600, which Howard Bird reviews in this issue. Antennas are the popular subject of this month’s theme.

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...GOOD LISTENING

ANTENNA OFFER COUPON SWM SEP 1992

TRADING POST COUPON SWM SEP 1992
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President

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editorial

SWM SERVICES

Subscriptions
Subscriptions are available at £21 per annum to UK addresses £23 in Europe and £25 overseas. Subscription copies are despatched by Accelerated Surface Post outside Europe. Airmail rates for overseas subscriptions can be quoted on request. Joint subscriptions to both Short Wave Magazine and Practical Wireless are available at £36 (UK), £39 (Europe) and £41 (rest of world).

Components for SWM Projects
In general all components used in constructing SWM projects are available from a variety of component suppliers. Where special, or difficult to obtain, components are specified, a supplier will be quoted in the article.

The printed circuit boards for SWM projects are available from the SWM PCB Service.

Back Numbers and Binders
Limited stocks of most issues of SWM for the past five years are available at £1.80 each including P&P to addresses at home and overseas (by surface mail).

Binders, each taking one volume of the new style SWM, are available for £5.50 plus £1 P&P for one binder, £2 P&P for two or more, UK or overseas. Please state the year and volume number for which the binder is required. Prices include VAT where appropriate.

Orders for p.b.s., back numbers, binders and items from our Book Service should be sent to PW Publishing Ltd., FREEPOST, Post Sales Department, Enefco House, The Quay, Poole BH15 1PP, with details of your credit card or a cheque or postal order payable to PW Publishing Ltd. Cheques with overseas orders must be drawn on a London Clearing Bank and in sterling.

Credit card orders (Access, Mastercard, Eurocard or Visa) are also welcome by telephone to Poole (0202) 665524. An answering machine will accept your order out of office hours.

Peter Rouse has raised a valid point in his column this month. It is unfair to expect, as a right, a columnist to carry out extensive research on your behalf. None of these have unlimited time - many have full-time jobs - and what they get for compiling their columns will not make them rich overnight - if at all.

By all means write to them with problems related to their column's topic - they all appreciate your letters and questions, which help to bring the column alive - but you should not expect a personal reply.

letters

Dear Sir

Regarding the letter on the phonetic alphabet in the August SWM. Mr Thompson describes himself as an old s.w.i. of many years' and goes on to quote some fancy phonetic alphabet, the likes of which I have neither seen nor heard of before - maybe I missed something somewhere along the line!

If he really has been around for as long as he would have us believe, he should not need me to remind him of one or two facts:

Prior to the '39-'45 war, TELEGRAPHY, not telephony, was the main method used in international radio telecommunications. The necessity for a standard phonetic alphabet I don't think had been given very much thought. In fact, no mention is made of any phonetic alphabet in the International Code of Signals 1931 Volume II (radio). The first mention of an alphabet appears in the Postmaster General's Handbook for Wireless Operators (1937 print), from which I quote:

<table>
<thead>
<tr>
<th>Code</th>
<th>Alphabet</th>
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<tbody>
<tr>
<td>R</td>
<td>Roma</td>
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<td>S</td>
<td>Santiago</td>
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<td>T</td>
<td>Tripoli</td>
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<td>Yokohama</td>
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<td>Z</td>
<td>Zurich</td>
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</table>

A book entitled Wireless Transmission for Amateurs edited by a gentleman by the name of P.J. Camm (who, of course, J.A. Thompson will surely have heard of) and published by George Newnes Ltd in 1938 listed the same alphabet for use by amateurs. I say same, although there were one or two minor differences - Denmark became Denmark, Italy became Italy and Kilogramme appeared as kilogram. Who knows, some amateurs might have even used the alphabet in those days, after all, people were more likely to obey the rules then. In the 1990s however, many amateurs are a law unto themselves and don't use any form of recognisable procedure, let alone a standard phonetic alphabet.

At the same time, the armed services were playing around with an alphabet which went: A - ACK, B - BEER, etc. I have forgotten most of them but others included T - TOC and P - PETER. This alphabet left us with one or two terms still in use today: ACK ACK (AA) for anti-aircraft gunfire, TOC H for Talbot House (not many ex-service personnel will have forgotten that organisation) and, of course, Blue PETER. No, not the TV kind - the International Code of Signals flag hoisted on all vessels when ready to proceed to sea.

The phonetic alphabet used throughout the '39-'45 war and into the early 1950s was the ABLE, BAKER, CHARLIE, DOG, EASY, FOX, GEORGE, HOW, ITEM, JIG variant.

Around 1951-52 the present phonetic alphabet came into use. It has been universally accepted. It is used by all colours and creeds. It is understood by all. It works (very well). J.A.T. is the only one I've heard condemn it but I'm afraid he is stuck with it and the fact that he does not approve matters little.

H. Deaville
Stockport
Dear Sir
I would like to thank Datong for their commendable service. Approximately nine months ago I ordered an update kit to convert their audio filter FL2 to an FL3, which arrived practically by return post. In the process of changing the various parts I broke the spindle of the right hand potentiometer as I couldn’t figure how to get the knob off. So I rang Datong and told them what had happened, within a few days I had the new piece. Unfortunately, they had sent me the wrong part, so I rang again and within a few days I had the right piece, which I must say was sent free of charge. Once again I would like to thank Datong for their good service. I have dealt with various companies in the UK with regards to s.w.l. equipment with which most of them I have had pleasurable business, but some I have had a very poor response.

Alan Croft
Belgium

Dear Sir
Around 1950 I purchased from Woolworths a very effective gadget called an ‘aerial eliminator’ which was sausage shaped. From one end a red wire protruded and was connected to the aerial socket of the set and its companion a black wire went to the earth socket. A single black wire from the other end of the eliminator was connected to a mains water pipe. It worked very well indeed on my old Solwell on the s.w. bands and earned me a QSL card from Radio SCAC in Colombia. In due course, it was retired and on dissection I was left with lumps of black pitch, cardboard, the wires and little else. Can anyone enlighten me as to what made it work?

W.W. Croxford, Sidcup
Anyone else had experiences like this, with fond memories of old gadgets? - Ed

Dear Sir
I purchased a Tandy PRO2024 home-base from Radio Shack, which advertises in SWM. I am really pleased with its performance.

I have even compared it with a friend’s 2006 home-base and in my opinion there is no comparison, mine brings in a lot more stations. You can keep later models and for the price it is well worth it, and reader wanting a reasonable priced home-base, they won’t go far wrong with this model even if they think it’s outdated.

M.P., Tewkesbury

Dear Sir
As a regular reader I have followed with interest the letters on s.w.l. QSLing with UK amateur stations since Dec 1990 when I started sending reports. Out of 280 in total, I have received back 221 QSL cards. A very good percentage of those included a very nice letter and a ‘phone number through which I have made new friends all over the UK. Which is what this great hobby is all about. I know I speak for a lot of s.w.l.s. UK amateurs give yourself a pat on the back.

H. Wood, Manchester

Dear Sir
Between the 15th and 21st March, I found myself on Fuereventura, Canary Islands with a Sony SW7600 - the one that comes with a safe-crackers degree for tuning u.s.b./f.s.b. - at sea level, with the standard telescopic antenna. Had I had an S-meter, 5/9 plus 20 might have been quoted in most cases.

15/3/92
0653 7.075MHz VE2ZP/GM3DAP
0720 14.150MHz VP5EN/EA3FAH
0730 14.150MHz WA3OEN/EA3FAH
0732 14.150MHz VK7BB/WA3NEV
0739 14.190MHz WB6UAN/TK5DF
0939 21.265MHz PY2DLL/HLOB

16/3/92
0010 14.130MHz 6BAC/DF1PSI
0854 18.115MHz GW0JGJ/ZL4DJ
1713 21.355MHz 9J2VA/GOPRB
1720 21.340MHz OE3SGU/KC4DIA
1853 18.105MHz GW4VPS/MM/PASEKK

GW4VFS is a radio officer on a Banana vessel, which at the time was bound from Surinam to Portsmouth!

This was just a selection of amateurs, not to mention the ‘yachting net’ on 14.302MHz at 1800Z each day, with yachts scattered all over the Med., Bay of Biscay and the ‘old duck pond’, and the Atlantic air traffic, Miami, Gander and Shannon coming through superbly!

After this experience, I’ll just going to stop worrying about antennas!

J.A. Gray
Poulton-le-Fylde

Dear Sir
I have been a s.w.l. for many years and occasionally have spurs of interest in v.h.f. airband listening. Until recently, my listening to v.h.f. was done on a WIN108 receiver which I was pretty happy with. I work in the Meteorological Office at Wellington Airport which is one of three international airports here in NZ. However, after reading the review a few months ago on the Yupiteru VT-225, I traded the WIN108 and I must comment on the 225’s performance.

It is superb to say the least. I live some 40km from Wellington Airport in a hilly situation in so much as I am surrounded by trees and use a half wave vertical folded dipole fed with coaxial cable. The dipole is about 10m off the roof and the results are just great (I cut the dipole to 120MHz). The local tower booms in on 118.8MHz - my best so far is a Qantas 767 some 279nm distant inbound from Australia at FL350...and there was a hill in the way! A superb receiver for anyone keen on the airband. I also monitor h.f. oceanic frequencies and at this time of year the North Atlantic traffic is received well about out dinner time 5pm (0500UTC) on the 5MHz band. So is RAF VOLMET West Drayton on 11.200MHz - it is audible for most of the day (2200-0600UTC).

Does anyone have any success with South Pacific h.f. in the UK? I would be pleased to correspond with anyone with similar interests. My h.f. gear is all Drake, RTA plus R8 plus various long wires.

Steve Rawdon
New Zealand

Dear Sir
I first became interested in short wave listening last year and now I am completely hooked.

My Philips D2935 with 25m long wire and a.t.u. has supplied me with many happy hours of enjoyment while I fish the air waves to see that station I can catch. The only problem is that with so much to listen from broadcast stations, utilities and amateurs I could happily be twiddling the dial all day long!

I now await the postman with glee to see if any QSL cards have arrived. My only regret is that I never became an s.w.l. years ago.

Derek Mellor
Cheltenham

Dear Sir
Mr scanner is a Uniden Bearcat 200XL, which I purchased in June of last year. I was very pleased with it! I am always busy jotting down new frequencies, and to my wife’s dismay, never turning it off! The reason I’ve written to you is to give my opinion to people who are going to buy a scanner for the first time. I advise them to make sure that it has an a.m./f.m. switch on it. It is very frustrating only being able to listen to a.m. frequencies on f.m.

Luckily, thanks to your magazine I have been able to convert my scanner to a.m. using a switch that I assembled on the back. I listen to more scanning now than before, if that’s possible!

My wife says that my scanner is like competing with another woman in the same house! It drives her mad!

I.K. Gellard
East Tilbury

Short Wave Magazine, September 1992
junior listener

Making Radio

Are you interested in how radio works? Perhaps you think you'd like to work in the radio industry? Maybe you just want to know a bit more about how broadcasts are made. Well, I've recently received a really interesting book and cassette from the BBC World Service which answers these questions and a whole lot more. It could be an ideal birthday or Christmas present if you haven't got enough paper-round money saved up!

*Making Radio* is for budding broadcasters, as well as anyone interested in the behind-the-scenes world of radio.

The book starts right at the beginning, "Radio at its most basic is one person talking to another. What gets the sound from the speaker to the listener?". What follows is chapters on subjects such as acoustics and studios, microphones, the sound desk, tapes, interviewing, writing for radio, music, scripts and so on. What struck me about the book is how simply everything is written. That doesn't mean that it's trivial, just easy to understand.

There is also a tape that goes with the book with 45 minutes more of information on it. I enjoyed the tape as it was done in a very friendly and clever way. The two presenters take you through all kinds of technical information and you don't even realise it! The sound effects quiz was good too - it might get used at a Christmas party yet!

The whole package costs £14.99, but if you just want the book it's £9.95. You should be able to get the book from good bookshops, alternatively you can buy it from the BBC World Service Shop, Bush Arcade, Bush House, Strand, London WC2B 3PH.

The Novice Licence

There are two types of Novice Licence, the Amateur Radio (Novice) Licence Class (A) and the Amateur Radio (Novice) Licence Class (B). Class A Novices can use all the amateur frequency bands allocated to Novices, including some bands below 30MHz. Class B Novices have access to all the frequencies allocated to novices above 30MHz. Both types of licence allow a maximum power of 3 watts r.f. output.

To get a B Licence you have to successfully complete a practical training course and pass an examination. The courses are run by the RSGB and the exam by the City and Guilds (just like the ordinary RAE exam). The only difference for the A Licence is you have to pass a 5 words per minute Morse test, these are also done by the RSGB.

The training course is obviously the first thing you need to do. The RSGB have arranged for these courses to be run all over the country. The aim of the course is to give the novice the basic skills you need to be a good radio amateur. You'll be taught how to operate a station, a bit about radio theory and gain some practical experience in building your own gear. You also have to learn the regulations involved with the Novice Licence.

The RSGB say that the course will probably last about 12 weeks (something like 30 hours in all). Obviously some people may take more time than this, others may take less. The practical course doesn't finish with an exam, but you are assessed whilst you work your way through the specific tasks.

If you think you would like to embark on one of these practical courses, then you should write to the RSGB asking for details of your local courses. Their address is RSGB, Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE - you should also mark your envelope 'Novice Training'.

The exam bit of the Licence can be done four times a year again at different exam centres around the country. There are 45 multiple choice questions to answer and you get 90 minutes to do it. I would contact your local radio club as someone there will be able to advise you on courses on lessons to help with the exam. Local radio clubs will also help with the Morse code learning.

Obviously there's loads more I could tell you about the course, but if you're interested in taking it further, I would strongly advise you to contact both the RSGB and your local radio club. If you don't know how to find a radio club near you, drop me a line and I'll try to put you in touch.

Log Books

In the July issue, I mentioned log books and where to buy them. I've heard from Mark Rich who uses a W H Smith Accounts Book. The ruled lines provide him with boxes for station name, frequency, date and SINPO rating. Since hearing from him I went out and had a look at the book in question and I can see why they're so useful. They're considerably cheaper than the 'official' option too!

Thanks for the idea Mark. Any other money saving ideas like this are always welcome.

Roberts Radios

I thought that I would tell you about two new budget range models from Roberts Radio. It's not easy being an s.w.l. when you're restricted by pocket money, so it's good to hear about more affordable radios. I'm hoping to be able to review one of these in the near future, so I'll be able to tell you more then.

First the R101, which costs £49.99. It's a 9-band radio covering the 49, 41, 31, 25, 21, 19 & 16m short wave bands, plus f.m. and m.w. The tuning is analogue, which isn't the most accurate you can get, but that doesn't stop you DXing. Included in the price is a soft carrying case, frequency guide and stereo earpieces.

The second radio is the R621, costing £59.99. This radio has eight short wave bands, 49, 41, 31, 25, 21, 19, 16 & 13m, as well as m.w. and f.m. Extra features include things like a clock alarm with dual time-zone settings, snooze function and 60 minute sleep timer. Again it comes complete with soft carrying case and stereo earpieces.

Neither radio is very big - just about pocket size - and I'm looking forward to trying one out. When I do I'll keep you posted!

Experimenters now at 14

In Ireland, The Department of Communications has announced that it will now accept applications for Experimenters Licences for those aged 14 years and upwards who have passed the theory and c.w. exam. This brings Ireland into line with most European countries. The IRTS made the request to reduce the minimum age from 16 to 14 at the 1990 delegation meeting with the Department. Good news for junior listeners in Ireland.

Jon Jones
PO Box 59
Fishponds
Bristol BS16 4LH
**Adventist World Radio**

Adventist World Radio (Europe) Sunday DX programmes are continuing via the Forli, Italy, transmitter. 0600-0700UTC on 7.205MHz 0900-1000UTC on 7.230MHz (repeat)

The DX section occupies the first 15 minutes of the broadcast. Subject to satisfactory test evaluations, AWR expect to carry their DX programmes via the Moscow transmitter in due course. This will give good coverage throughout Europe.

**Photographic Mystery**

The photograph shown here has been given to a group of amateur photographers by the family of the late Harold White. Mr. White was a prominent professional photographer during, before and after WWII. The photograph has the caption 'Transatlantic Relay (M) 1939'. The equipment may, or may not be, radio equipment. The two small boxes below the operator's hand appear to be Morse keys. Do any readers have any ideas what this equipment is or where it was located.

**Paul Godfrey. 77 St. Margarets Road, Lowestoft, Suffolk NR32 4HT.**

**RAFIRS QSL Bureau**

If anyone has any cards for RAFIRS members, or for RAFIRS special event stations, they should be sent to: QSL Bureau Manager, Ian Wicker, 28 Lee Warner Avenue, Fakenham, Norfolk NR21 8ER.

**Special Event Stations**

The North York Moors is one of Britain's eleven National Parks, where special care is taken to conserve beautiful landscapes for the benefit of all. The National Park was designated in 1952 and extends over 555 square miles of heather moorland and attractive dales farmland, edged on the eastern side by some of the highest cliffs in England.

To celebrate the 40th anniversary of the National Park, the DTT have issued the callsign GB4ONY, which the Scarborough Special Events Group will be using from Sutton Bank Visitor Centre, during the weekend September 12/13. Operation will be around 3.725 and 7.055kHz in the h.f bands plus 144 and 432MHz. A special, full-colour, souvenir QSL card will be issued to commemorate the occasion.

Further details can be obtained from: Roy Clayton, 9 Green Island, Irton, Scarborough, North Yorkshire YO12 4RN.

**Universal Move**

Universal Radio Inc have moved. Their new address is: Universal Radio Inc., 6830 Americana Parkway, Reynoldsburg, Ohio 43068, USA.

**Morse Class**

Morse for radio amateurs, short wave listeners and pilots will be taught at Telford College from September, starting on Thursday, September 24, from 7pm. Enrolment for the course is on September 7 from 2 to 8pm and September 8 from 10 to 8pm. Last year the course achieved a 100% pass rate.

John Christopher. Tel: (0952) 641122.

**FM Radio Stations in France**

For the 3rd year, the Club Europeen de DX Radio TV is publishing FM Radio Stations in France. This 200-page handbook lists more than 3000 stations, presented by 'departments', frequencies and names operated by Radio France, f.m. networks, independent firms or associations. As the guide is in frequency order throughout, it should provide the DXer with accurate information to identify French domestic radio stations. For the first time, the last part of the book offers a complete list of French radio station addresses.

The cost of the 1993 edition is 120FF in France or 130FF in Europe (postage included), two updates in the form of newsletters cost 50FF.

Club Europeen de DX Radio TV, BP114, 13652 Salon de Provence Cedex, France.

Short Wave Magazine, September 1992
Coastguard Association

G0RCA has been allocated to the Coastguard Association Amateur Radio Society. The Society was formed to foster relations between serving and retired regular and auxiliary Coastguard Officers who hold amateur radio licences.

The CGA amateur radio net is at present on Sundays at 1000 local time on 3.785MHz ±5kHz and again, when possible, at 1900. The net controller is G3RCX and all are welcome to join.

EDXC Club List

The European DX Council has an EDXC Club List available. This 16-page booklet gives details of each member and observer club together with information about the Association of North American Radio Clubs and the South Pacific Association of Radio Clubs.

The booklet can be obtained from the European DX Council, PO Box 4, St Ives, Huntingdon PE17 4FE and the cost is £1 or 3 IRCs world-wide.

Postal Auction

Greenweld are holding a clear-out sale with a difference. A catalogue with hundreds of lots has been prepared and will be sent to anyone who encloses an s.a.e. Bids can be submitted by post until 5.30pm on Monday September 7. Lots vary from individual items to thousands. Fuller details of all goods listed in the catalogue can be seen in a special supplement available for £1 and an A4 s.a.e. with a 28p stamp.

Greenweld Electronic Components, 27 Park Road, Southampton S01 3TB. Tel: (0703) 236307.

Active Airband Antenna

C.M. Howes Communications have introduced an Active Airband Antenna. Covering 118 to 137MHz, it uses an end-fed, half-wave antenna element with a low noise, i.e. pre-amplifier. A band-pass filter gives extra rejection of out-of-band signals. Strong in-band signals can be reduced by the 10dB switched attenuator. The amplifier has a gain of more than 15dB with a noise figure of under 3dB. A 12 to 14V d.c. supply at less than 20mA is needed.

Ribbon cable is used for the antenna element, which can be packed into a small space for holidays, etc. For a permanent installation, it fits into a 1.5in plastics water pipe, but it can be used 'naked' for loft or indoor use.

The kit includes three, good quality, p.c.b.s, with screen printed parts locations, ribbon cable, plus all board-mounted components and full, clear instructions.

The Howes AB118 Active Airband Antenna costs £17.70 in kit form, £24.70 as built and tested p.c.b.s - both plus £1.20 P&P from C.M. Howes Communications, Eydon, Daventry, Northants NN11 6PT. Tel: (0327) 60178.

Short Wavé Magazine, September 1992

DXing USSR

The New Wave DX Club in St Petersburg produce a booklet called DXing USSR and Former Soviet Territories. It includes information such as how to word a report to Soviet local stations, in English and Cyrillic as well as details on different radio stations in and around the former USSR.

Copies are available for $3, which just covers printing and postage, from: Aleksy Ospov, Kazanskaja 4 - 87, St Petersburg 195213, Russia.

DSWC1 Short Wave News

Danish Shortwave Clubs International has been going for some 36 years now, and the monthly magazine, Short Wave News, is produced entirely in English. It covers all aspects of short wave listening and usually arrives through its readers’ letterboxes around the 10th of each month.

If you would like more details on the club and its newsletter, contact: Noel R. Green, 14 Marsden Road, Blackpool, Lancashire FY4 3BZ.

Radio Procedure

If you like listening to the marine bands, then a cassette on the cover of the July issue of Motor Boat and Yachting could be for you.

A refresher course on v.h.f. radio procedure for boat enthusiasts, it deals with the principles, Channel 16, ship to ship, the phonetic alphabet, marine channels, Coastguard channels, links calls, accounting authorities, emergency procedures and Selcall.

Back issues of the magazine, with the cassette, cost £2.50 including P&P.

Motor Boat and Yachting, Kings Reach Tower, Stamford Street, London SE1 9LS.

Kenwood News

From December 1, Trio-Kenwood UK Ltd will take over the distribution of Kenwood amateur radio products in the UK and Ireland from Lowe Electronics Ltd.

Lowe Electronics will continue to distribute the products until the end of November - by which time Trio-Kenwood UK will have set up dealerships - avoiding any disruption of supply to customers. Trio-Kenwood’s Communications Division Sales and Marketing Manager said, “Our relationship with Lowe Electronics has been long and successful and we look forward to its continuation, albeit on a different basis”.

When is a Pirate not a Pirate?

When it’s Pirate FM, of course! Pirate FM broadcasts to Cornwall and East Devon on 102.8MHz f.m. from transmitters at Redruth and Caradon Hill. They operate from a single studio complex at Carn Brea, near Redruth, but they broadcast editionised news to East and West Cornwall at peak periods.

Cornwall Independent Radio Ltd (Pirate FM), Carn Brea Studios, Wilson Way, Redruth, Cornwall TR15 3XX.

muTek limited

The muTek limited 1992 Product Guide contains details of the various modules that the company produce. If you would like a copy, it’s free from: muTek limited, PO Box 24, Long Eaton, Nottingham NG10 4NQ.

Happy 60th

BBC Transmission - the overseas sales arm of the BBC World Service which introduced radio classics including Goon Show and My Music to listeners throughout the world - has just celebrated its 60th birthday.

They sell programmes both specially recorded and previously recorded by the BBC to overseas radio stations in 100 countries.
When it comes to sheer know-how
Look to Lowe

The NRD-535
with a subtle difference

The NRD-535 is a fine receiver, and fully confirms the JRC leadership in this particular field. However, even the best can be improved in specific areas; and after lengthy evaluation of the NRD-535 we decided that there were worthwhile improvements which we at Lowe, with our knowledge and specialist expertise could introduce to the more discerning listener – for it is the true “listener” who will appreciate what we have done.

First; we thought that the audio from the NRD-535 was not totally easy on the ear, and detailed investigation showed that the audio response had been “tailored” to suit the rather rounded shouldered response of the IF filtering. So, we went back to the IF filters and specified a higher performance SSB crystal filter with a 6dB bandwidth of 2.4kHz and a typical shape factor of 1.8:1; with less than 1dB passband ripple. For AM, we fit a more expensive filter with a 6dB passband of 5.7kHz and a shape factor of 1.5:1. The response of these new filters is very flat within the pass band, with steep symmetrical sides giving excellent adjacent channel rejection. The use of these more expensive filters allowed us to flatten the audio response of the receiver giving a much cleaner sound quality and a real improvement in intelligibility both on communications and broadcast stations.

We have noticed in the past that the audio output power from most modern receivers is barely adequate for driving a good loudspeaker, and since we now had top quality audio from the NRD-535, we designed and fitted a completely new audio power amplifier with enough power (3W at 5% distortion) to enable the user to sit back and enjoy that quality to the full.

The use of synchronous AM demodulation and/or ECSS is an established feature of many newer receivers, and fitting the optional CMF-78 ECSS board to the NRD-535 provides the user with the potential to recover good audio from signals which are subject to selective fading.

However we noticed a tendency for the ECSS to unlock during deep fades and then fail to re-lock after the fade. We now have a series of detailed modifications to the ECSS unit which removes this tendency and also improves the recovered audio.

The Lowe Electronics modification pack definitely makes a good receiver into an outstanding receiver. When we sent a sample of our modified NRD-535 to Jonathan Marks at Radio Nederland, he confirmed that the results were quite remarkable and said so in no uncertain terms. We think that you will agree.

Naturaly, these modifications cost a little more, but to complete the whole package we also pre-age the master reference oscillator in the receiver, check out the alignment, and issue an individual test certificate with each one. And because we are proud of our work we add a discreet badge to the front panel to tell you that you own a receiver with a difference.

The “Lowe” NRD-535. We make a good receiver into an outstanding receiver.

- New high specification IF crystal filter for SSB
- New high specification IF filter for AM
- New calculated audio bandwidth “flattening”.
- New higher power audio output system.
- New tighter specification ECSS system.
- Pre-ageing and "burn-in" of master oscillator.
- Individual test certificate for each receiver.

NRD-535 ............................................ £1195
CMF-78 ECSS unit ................................ £239
Lowe modifications .............................. £117
Carriage ........................................... £10

THE LISTENERS’ BOOK OF THE YEAR GETS EVEN BETTER

The new 1992 issue of ‘Passport to World Band Radio’ is now with us and it’s even better than before. The 200 pages have risen to almost 400 and every section carries the unmistakable authority of the world’s best short wave companion. Broadcasts are listed as before, not only in frequency order but also by language, country of origin AND the times of broadcasts. There are no less than 56 pages or receiver reviews, including the latest NRD-535 and Drake R-8, together with news, views and general information.

If you own a short wave radio, you MUST have the ‘Passport’ by its side. The price last year was £12.95; we have kept the price the same this year at £12.95 (plus £1.55 p&p.). Send off today.
VHF/UHF RECEIVERS.
We stock the lot – from AOR to YUPITERU

Although our real love is HF, we recognise that many folk find that a handy VHF/UHF scanner provides a lot of listening enjoyment, and we stock all of the popular makes. We also insist on telling the truth about them, and there are a couple of basic rules to observe. First, I know that they say the scanners will cover from 500kHz to 1300MHz, but if you think that they will perform on short wave – forget it. They are all barely adequate (except the AR-3000A but that’s in a class of its own). Secondly, if you want to particularly listen to airband, for goodness sake buy a dedicated airband scanner because it will handsomely out-perform all of the wide frequency range receivers, (except again the AR-3000A).

Currently top of the shop are the VT-225 and VT-125 from Yupiteru. Daft name, but good gear. The VT-125 is VHF airband only, and the VT-225 gives both VHF and UHF airband. Prices are good at £149 for the 125 and £229 for the 225. For wide range scanning, the MVT-7000 has established a good reputation for styling, ease of use, and good performance. Full coverage and 200 memory channels. Nice one: £289.

The new AR-1500 from AOR is interesting, because it is the first hand-held to offer a BFO for receiving SSB on short wave. (It covers 500kHz to 1300MHz by the way). My first reaction to its announcement was less than enthusiastic, but even I will say that it can make a reasonable job of SSB even though it is a long way from being a short wave receiver. Small and handy, the AR-1500 comes in at £279.

The AR-3000A – now this does stir the blood because it is an amazing achievement. To pack such a receiver in such a small package takes a lot of engineering, but the performance is excellent, and I can recommend it – only snag is the price, but for £765 it’s a HIIII of a good radio. Want to know more? Just ask for full details at any of our branches, or send 4 first class stamps and request the “Airband Pack”. Call in and see us soon for all that’s good in receiving – DC to light.

Communications Receivers from KENWOOD

R-2000
- 150kHz - 30MHz
- 118MHz - 174MHz (optional)
- LSB, USB, CW, AM, FM
- Digital VFO with excellent stability
- Dual 24hr quartz clocks
- 10 memories (tunable by VFO)
- Memory/band scans
- 3 built-in IF filters
- Quality audio with 4in. speaker
- 375mm(W) x 115mm(H) x 210mm(D)
- Optional accessories
- On demonstration at all Lowe Regional Centres
R-2000 £549 inc VAT

R-5000
- 100kHz - 30MHz
- 108MHz - 174MHz (optional)
- USB, LSB, CW, AM, FM & FSK
- 10Hz step Dual Digital VFOs
- Superb Interference Reduction
- 100 memories with full data storage
- Dual 24-hour quartz clocks
- Keyboard frequency selection
- RS-232C interface for use with ‘CONTROL’ software
R-5000 £925 inc VAT

FREE
Send four first class stamps to cover the postage and we will send you, by return, your FREE copy of ‘THE LISTENERS GUIDE’ (2nd edition); a commonsense look at radio listening on the LF, MF and HF bands. Its unique style will, I am sure, result in a ‘good read’; but underneath the humour lies a wealth of experience and expertise. You will also receive detailed leaflets on our range of receivers and a copy of our current price list.

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LONDON (MIDDX): 223/225 Field End Road, Eastcote Tel: 081-429 3256 NEWCASTLE: Newcastle International Airport Tel: 0661 860418

Short Wave Magazine, September 1992
rallies

August 30: The Galessiers Club will hold their annual Rally and Junk Sale at the Focus Centre, Livingstone Place, Galessiers. John Campbell. Tel: (0835) 22886.

August 31: Huntington Ars will be holding their annual Rally and Junk Sale at the Medway Centre,康河bra. Doors open at 11am, and cars are free. Trade stands, bring in or buy, components, etc. Contact the organizers for more information.

September 6: The Vange Ars are holding their rally in the Laindon Community Centre, Laindon High Road. Doors open at 10.30am, and admission is £2.50. Trade stands, players, flea markets, and free parking are available. Mike Musgrave. Tel: (0522) 531788.

September 13: The Ethiopian Medical Mission will hold its rally at the Town Hall, Laindon. Doors open at 10am, and admission is £1. Trade stands, flea markets, and free parking are available. Sue Miller. Tel: (0522) 2255868.

September 20: The Centre of England Radio Computer & Satellite Rally will be held at the British Motorcycle Museum, Bickenhill, near the NEC, Birmingham. Doors open at 10.30am. Admission is £1. Trade stands, flea markets, and free parking are available. John Smith. Tel: 0121 773 2255868.

October 10: The Galessiers Club will hold their annual Rally and Junk Sale at the Focus Centre, Livingstone Place, Galessiers. John Campbell. Tel: (0835) 22886.

October 31: The Vange Ars will be holding their rally in the Laindon Community Centre, Laindon High Road. Doors open at 10.30am, and admission is £2.50. Trade stands, players, flea markets, and free parking are available. Mike Musgrave. Tel: (0522) 531788.

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November 20: The Galessiers Club will hold their annual Rally and Junk Sale at the Focus Centre, Livingstone Place, Galessiers. John Campbell. Tel: (0835) 22886.

November 27: The Vange Ars will be holding their rally in the Laindon Community Centre, Laindon High Road. Doors open at 10.30am, and admission is £2.50. Trade stands, players, flea markets, and free parking are available. Mike Musgrave. Tel: (0522) 531788.

December 4: The Ethiopian Medical Mission will hold its rally at the Town Hall, Laindon. Doors open at 10am, and admission is £1. Trade stands, flea markets, and free parking are available. Sue Miller. Tel: (0522) 2255868.

December 11: The Centre of England Radio Computer & Satellite Rally will be held at the British Motorcycle Museum, Bickenhill, near the NEC, Birmingham. Doors open at 10.30am. Admission is £1. Trade stands, flea markets, and free parking are available. John Smith. Tel: 0121 773 2255868.

December 18: The Galessiers Club will hold their annual Rally and Junk Sale at the Focus Centre, Livingstone Place, Galessiers. John Campbell. Tel: (0835) 22886.

December 25: The Vange Ars will be holding their rally in the Laindon Community Centre, Laindon High Road. Doors open at 10.30am, and admission is £2.50. Trade stands, players, flea markets, and free parking are available. Mike Musgrave. Tel: (0522) 531788.

January 1: The Ethiopian Medical Mission will hold its rally at the Town Hall, Laindon. Doors open at 10am, and admission is £1. Trade stands, flea markets, and free parking are available. Sue Miller. Tel: (0522) 2255868.

January 8: The Centre of England Radio Computer & Satellite Rally will be held at the British Motorcycle Museum, Bickenhill, near the NEC, Birmingham. Doors open at 10.30am. Admission is £1. Trade stands, flea markets, and free parking are available. John Smith. Tel: 0121 773 2255868.

January 15: The Galessiers Club will hold their annual Rally and Junk Sale at the Focus Centre, Livingstone Place, Galessiers. John Campbell. Tel: (0835) 22886.

January 22: The Vange Ars will be holding their rally in the Laindon Community Centre, Laindon High Road. Doors open at 10.30am, and admission is £2.50. Trade stands, players, flea markets, and free parking are available. Mike Musgrave. Tel: (0522) 531788.

January 29: The Ethiopian Medical Mission will hold its rally at the Town Hall, Laindon. Doors open at 10am, and admission is £1. Trade stands, flea markets, and free parking are available. Sue Miller. Tel: (0522) 2255868.

February 5: The Centre of England Radio Computer & Satellite Rally will be held at the British Motorcycle Museum, Bickenhill, near the NEC, Birmingham. Doors open at 10.30am. Admission is £1. Trade stands, flea markets, and free parking are available. John Smith. Tel: 0121 773 2255868.

February 12: The Galessiers Club will hold their annual Rally and Junk Sale at the Focus Centre, Livingstone Place, Galessiers. John Campbell. Tel: (0835) 22886.

February 19: The Vange Ars will be holding their rally in the Laindon Community Centre, Laindon High Road. Doors open at 10.30am, and admission is £2.50. Trade stands, players, flea markets, and free parking are available. Mike Musgrave. Tel: (0522) 531788.

February 26: The Ethiopian Medical Mission will hold its rally at the Town Hall, Laindon. Doors open at 10am, and admission is £1. Trade stands, flea markets, and free parking are available. Sue Miller. Tel: (0522) 2255868.

March 5: The Centre of England Radio Computer & Satellite Rally will be held at the British Motorcycle Museum, Bickenhill, near the NEC, Birmingham. Doors open at 10.30am. Admission is £1. Trade stands, flea markets, and free parking are available. John Smith. Tel: 0121 773 2255868.

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March 26: The Ethiopian Medical Mission will hold its rally at the Town Hall, Laindon. Doors open at 10am, and admission is £1. Trade stands, flea markets, and free parking are available. Sue Miller. Tel: (0522) 2255868.

April 2: The Centre of England Radio Computer & Satellite Rally will be held at the British Motorcycle Museum, Bickenhill, near the NEC, Birmingham. Doors open at 10.30am. Admission is £1. Trade stands, flea markets, and free parking are available. John Smith. Tel: 0121 773 2255868.

April 9: The Galessiers Club will hold their annual Rally and Junk Sale at the Focus Centre, Livingstone Place, Galessiers. John Campbell. Tel: (0835) 22886.

April 16: The Vange Ars will be holding their rally in the Laindon Community Centre, Laindon High Road. Doors open at 10.30am, and admission is £2.50. Trade stands, players, flea markets, and free parking are available. Mike Musgrave. Tel: (0522) 531788.

April 23: The Ethiopian Medical Mission will hold its rally at the Town Hall, Laindon. Doors open at 10am, and admission is £1. Trade stands, flea markets, and free parking are available. Sue Miller. Tel: (0522) 2255868.

April 30: The Centre of England Radio Computer & Satellite Rally will be held at the British Motorcycle Museum, Bickenhill, near the NEC, Birmingham. Doors open at 10.30am. Admission is £1. Trade stands, flea markets, and free parking are available. John Smith. Tel: 0121 773 2255868.

May 7: The Galessiers Club will hold their annual Rally and Junk Sale at the Focus Centre, Livingstone Place, Galessiers. John Campbell. Tel: (0835) 22886.

May 14: The Vange Ars will be holding their rally in the Laindon Community Centre, Laindon High Road. Doors open at 10.30am, and admission is £2.50. Trade stands, players, flea markets, and free parking are available. Mike Musgrave. Tel: (0522) 531788.

May 21: The Ethiopian Medical Mission will hold its rally at the Town Hall, Laindon. Doors open at 10am, and admission is £1. Trade stands, flea markets, and free parking are available. Sue Miller. Tel: (0522) 2255868.

May 28: The Centre of England Radio Computer & Satellite Rally will be held at the British Motorcycle Museum, Bickenhill, near the NEC, Birmingham. Doors open at 10.30am. Admission is £1. Trade stands, flea markets, and free parking are available. John Smith. Tel: 0121 773 2255868.
Dear Sir
Reading through the text of the letter from the Radio Authority I find the same old tired reason of interference. Most of the so-called pirate stations are using equipment of 10 to 30W output, do they seriously expect anyone to believe that these stations transmissions do interfere with stations operating perhaps 10kW of s.s.b. or RTTY? I don't think so.

There is the well documented case of both Caroline and Laser being asked to cease transmissions because the coastguard was getting interference which persisted, and was later found to be the BBC. But the blame was still laid on the ships. Then there is the matter of out of band broadcasts. I, therefore, expect to see Vatican Radio on 6.245MHz told to move, along with Radio Moscow and several American religious broadcasters, plus the World Service of the BBC. Not to mention an as yet unidentified station on 6.210MHz.

M. Coe
Kettering

Dear Sir
Just as Short Wave Magazine - through Andy Cadier - gets an interesting free radio column going to complement all the other aspects of the radio hobby covered in SWM and make it the most comprehensive radio magazine available in Britain - along comes the Radiocommunications Agency to spoil other people's enjoyment.

Andy Cadier's column only listed those unlicensed radio stations that had been heard by radio enthusiasts on the h.f. and v.h.f. radio bands during the three month period prior to any particular issue of SWM.

The Radiocommunications Agency states that these unlicensed operators, "are an irresponsible minority that misuse the frequency bands assigned exclusively to the maritime and aeronautical services".

Can they explain why it is that they or their foreign counterparts cannot do or say anything about the many other powerful 'legitimate' radio stations such as Radio Monte Carlo, Trans World Radio, Vatican Radio, Voice of Hope, Radio La Voz CID and other unidentified legal stations that appear in this part of the 48m h.f. band.

Is it that there is one law for all the powerful international radio institutions and another for the tiny little unlicensed operator?

It is a sorry state of affairs that through the latest actions of the Radiocommunications Agency they would seem to want to prevent the historical record of unlicensed radio stations having been heard on air.

The theory behind this would appear to go along the lines that the publication of the date, time and frequency of an unlicensed radio station being heard on air in some mysterious way helps to promote unlicensed broadcasting. If this same simple logic is applied to other fields - why is it not said that the reporting of criminal activities on out daily newspapers leads to an increase in crime?

Ken Lancaster & Morris Walker
Barnsley & Halesowen

Dear Sir
We all have a tuning knob on our radios to tune elsewhere if we do not like some types of programming, and that also goes for any other station or programming we don't like.

Some people like the type of programming that TWR present. Other stations, like TWR are WYFR and WMLK both of the USA, and to a certain extent WWCR who push bible thumping propaganda on the airwaves, but WWCR do air some interesting non-religious programming, as does WHRI. King of Hope/Wings of Hope, Lebanon also have some good programmes in their schedule. AWR and HCJB also have interesting programmes on various aspects of life with a religious message, for example: Lifestyles on AWR usually cover health topics. WHRI present some enjoyable programmes of modern contemporary Christian music and songs.

Dave Vicars
Brighton

Dear Sir
I note with some dismay that Andy Cadier and your good selves have had your collars felt by the Radiocommunications Agency.

Oh dear, now we'll all be breaking the law.

After all, when you kindly listed the frequencies of stations we shouldn't listen to, we knew where we stood and like good citizens left these frequencies alone (didn't we?).

Now, of course, if we hear a pirate station who is to tell if it is legal or not? In the absence of any clarification we'll all be listening to stations we shouldn't - still, serves 'em right for collar feeling!

K. Anderson
Poulton-le-Fylde

Dear Sir
I gather that you have received representations from the Radiocommunications Agency regarding the future of the 'Off the Record' feature.

Doubltess, what you have been sent will have been very carefully worded. You have to distinguish between two things. Reporting factual information about events which occur is in no way unlawful. "Publicising" something which somebody is planning might be different.

I would urge you to reply robustly to the DTI and assure them that your editorial review ensures that what is published complies with the laws of the land.

Trevor Brook, Cranleigh

Dear Sir
If Mr S. Davidson examines his radio closely, I'm sure he will find a control marked 'OFF' which he can use as soon as the 'rubbish' starts.

D E Boshier
Dolgellau

religious broadcasters
Dear Sir

Perhaps he has never listened to the excellent programmes transmitted by HCJB or CSM, to name but two, which contain a wide and interesting variety of subject matter. That is the attraction of s.w.i.l.; one can travel the world from an armchair, as and when one wants without QRM from the likes of your correspondent.

There are countless stations, other than religious ones, that can be received. I assume the letter writer has a receiver, which in common with all others has an ON/OFF switch, so he does not have to listen to anything he does not want to. To my mind the bigot is in this case at the receiving end, not the transmitting - live and let live!

J.B. Brown
North Yorkshire

Dear Sir

Many of these religious broadcast stations do most certainly spew out fundamentalist, bigoted rubbish liberally intertwined with 2000 year-old biblical quotations which they feel justify their teachings to the world which is now entering the 21st century.

Many of us in Northern Ireland are surely aware more than most of the damage, pain and death inflicted by religious bigotry.

However, I would differ from S. Davidson on the question of banning these broadcasts. Instead why not listen to them and satisfy yourselves as to the content of the polished, antiquated ramblings of these paper doctors and ministers.

Victor Best
N. Ireland

Dear Sir

I agree with S. Davidson of Edinburgh; it is high time religious broadcast stations were banned.

All that is needed is a UN resolution to which all signatories pledge to devote 40% of their transmitter time synchronizing to the frequencies of the offending stations, and broadcast continuous quacking ducks, or high pitched whistles.

This democratic action should not be confused with the deliberate jamming of western broadcasts by the former East European communist countries. That was the wicked suppression of truth.

This action is to save civilised and intelligent people from being hypnotised and therefore incapable of re-tuning their receivers.

Geoffrey Hodson
Norwich

Dear Sir

There is a very thin line between the supply of information, and promotion, and regrettably, in the feature on ‘Religious broadcasting’, SWM strayed quite clearly into promotion.

Many of these purveyors of superstition are past masters at self-promotion, and extracting cash from the vulnerable and gullible. They don’t need any assistance from SWM.

Eddie McKeown
Co. Down

Dear Sir

S. Davidson’s letter condemning your decision to include a feature on religious broadcasting was so extreme that at first I took it as a piece of humour, but I realised that he was serious.

Can he not see that his: “Don’t listen to what you want to listen to- listen to what I want you to listen to” attitude is tantamount to ‘intellectual fascism’ and far more extreme and bigoted than anything I have heard on a religious short wave station?

Is there anything worse than Evangelising Christians? Yes. ‘Evangelising’ Atheists such as S. Davidson.

Martin Scholes, Telford

Dear Sir

Surely with views like this he is missing out on a great deal. Even if he does not wish to have the blessing of the Christian message, there are a number of other aspects in programmes from religious broadcasters. For instance, the warm, friendly voices of some of the programme presenters, nice easy-listening music, DX information and magazine type features.

Also there is freedom of choice. To switch on and find a religious broadcaster whose programmes are to one’s liking, or to switch off on them all!

Sheila Hughes, Morden

Dear Sir

Mr. S. Davidson’s attack saddens me, especially as it is written in such emotive language and is so unbelievably narrow-minded. For my part I have always enjoyed the various religious broadcasts from all parts and many are of very high standards and quality. I refer particularly to HCJB and the Vatican.

Please do not be deterred by bigoted views as aired by the reader in question, but keep up the good work you are presently doing for the many appreciative readers who rely on you for fairminded and broad standards in the realms of the radio world.

Ciaran McCrossan
Co. Kildare

Dear Sir

There is a very effective control on every radio usually marked ON/OFF. May I suggest S. Davidson uses it! Or perhaps if he did really listen for a minute or two he might at least realise his ability to utter such puerile rubbish was not the product of social modern technology, but the ‘miracle of life’ given to us all to do more or less what we please with it.

To start banning anything in this day and age is impossible, but if Hadrian had built his wall really high, that would have been a good start! I’m sure....but it’s too late now I’m afraid.

I trust the last paragraph is read and understood in the spirit of goodwill and friendship that must exist in us all....I hope!

David J Gommo, Somerset

Dear Sir

I have to declare an interest as I am involved with Trans World Radio, but also listen to many other broadcasters world-wide. A number of these organisations devote tremendous efforts to medical and social provision, in addition to their primary function of spreading the gospel, hardly the action of those filled with hate, but rather a practical expression of Christian love. Nobody has to tune to any radio broadcast; many do listen to TWR and other stations, and draw great help and encouragement from the programmes, particularly in those countries where anything other than official broadcasting is already banned, fortunately radio waves don’t recognise such barriers! It has been said elsewhere, “He who has ears to hear, let him hear” - many have, and do.

Peter R. Bethell, Halifax

Dear Sir

S. Davidson might need reminding that there are controls on a radio that either will change frequency, or turn his radio off, so he does not have to listen to the ‘garbage’, as he calls it.

Many of these stations provide a service to minority groups and if S. Davidson was to take some time and listen, he might gain some knowledge of these minority groups and their culture. It is not just these stations that put out a type of propaganda. All stations put, or have put out types of propaganda to do with their own point of view.

I find it’s best to keep and open mind when listening or viewing the world, perhaps others should do the same.

R.J. Radford Reynolds, Guildford

Dear Sir

As a devout atheist I am also not too keen on over-the-top evangelical drivel being rammed down my throat by money grabbing multi-million pound organisations. However, the choice is the listeners, the tuning knob or OFF button is only a fingertip away, if the ‘bible thumping propaganda’ becomes too much.

These broadcasts are found comforting by some, annoying to others. How would Mr. Davidson feel if calls to ban his favourite kind of broadcasting were heeded?

On a DX point of view, how could radio countries such as Palau, Alaska, Guam and Lebanon be added to s.w.i. logs if the religious stations operations were curtailed?

Tony Vaughan
Southampton
LISTEN OUT with SONY at SMC

Yaesu's serious about giving you better ways to tune in to the world around you. And whether it's for local action or world-wide DX, you'll find our HF VHF/UHF receivers are the superior match for all your listening needs.

When you want more from your receivers, just look to Yaesu. We take your listening seriously.

The FRG9600, a premium scan- ning receiver covering 60-50MHz, SSB, CW, AM & FM modes. 99 memories, 5, 10, 15, 25 a 100kHz scanning steps, Keyboard frequency entry. Optional converters to extend range from 0.15-30MHz and 800-1300MHz.

The FRG9800 HF communications receiver. A better way to listen to the world. Continuous coverage from 0.15-30MHz optional module for VHF coverage from

118 to 174MHz SSB. CW, AM & FM modes. Direct Frequency entry.

NRD535 from JRC

The new NRD535 epitomises the very best in communications receiver design. This high technology product is based on the abundant technical experience gained by JRC in the professional communications receivers field. This means that the NRD535 is arguably one of the best receivers available to meet the discerning listeners needs. Brief specifications are as follows:

Frequency coverage: 0.1-30MHz: Operating modes: CW, SSB (LSB & USB), AM, FM, FSK & RTTY. Supply voltage: 240V A.C. or 12V D.C. ECSS, EMC & RTTY units available as options.

DRAKE R8E

Now available from SMC the new DRAKE R8E communications receiver. These receivers utilise the very latest in technology to meet the demanding requirements of today's listeners. Conventional located from panel controls allow for rapid operator programming and ease of use. The R8E receiver covers 0.1-30MHz and with the optional VHF converter will also cover 30-55MHz and 100-174MHz. The large clear LCD display gives the operator full information about the current receiver status.

DRAKE R8E from JRC

SMC are pleased to be able to offer a large number of models from the very comprehensive AOR range which includes both hand portables and mobile/base stations.

All the receivers are built to the highest possible specification yet remain very competitively priced. Often the leaders in the field, the AOR range is proving very popular amongst both professional and non professional users. The top of the range model must be the AR3000 which covers 100kHz-203MHz without any gaps. The mid range model is the AR2000 which is a convenient unit for mobile or base operation and covers 500MHz-600MHz and 800-1300MHz. Last but not least is the AR1000 which is an extremely flexible handheld scanner covering 500kHz-1300MHz.

Why not contact us today for more details of the AOR range.

AOR MAKES AND MODELS

The Bearcat 200XTL is the cream of the Bearcat handheld scanner range. With 200 memory channels and simple operation these are proving very popular.

Frequency coverage: 66-88, 118-174, 406-512 and 806-955MHz.

The compact H850E is a basic scanner with a low memories. Ideally, suitable for a novice in the scanner market. AM/FM modes and a frequency coverage of 60-69, 118-136, 140-174 and 400-495MHz.

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SMC Northerm
Newell Lane Ind. Est. Newell Lane
Leeds LS9 0JE
9am-5pm Mon-Fri
9am-1pm Sat

Chesterfield (0246) 453340
SMC Midlands
102 High Street
New Whittington
Chesterfield
9.30am-5.30pm

Birmingham (021) 327 1497
SMC Birmingham
504 Alum Rock Road
Birmingham
9am-5pm Mon-Fri
9am-4pm Sat

AOR AOR AOR

Southend on Sea (0297) 34918
Reg Fried & Co Ltd
1 Wellington Parade
West Street
Axminster
Devon EX13 5NY
9am-5.30pm Mon-Fri
The AR1500 is the world's first true compact hand-held wide range receiver offering SSB as standard and has arrived in the UK. Coverage is from 500kHz all the way to 1300MHz without any gaps in the range. Channel steps are programmable in multiples of 5kHz and 12.5kHz up to 995kHz, the BFO will allow tuning between these steps for SSB operation. All popular modes are provided NFM, WFM, AM and SSB (USB, LSB and CW) with the BFO switched on. The receiver is supplied with a comprehensive selection of accessories: DA900 wide band flexible aerial, NiCad pack, Dry battery case (for use with 4 x AAA alkaline cells), Charger, DC lead fitted with cigar lighter plug, Earphone, Soft case, Belt hook, 5 metres (approx.) of aerial wire terminated in a BNC connector for shortwave reception and Operating manual.

Versatility is excellent. The AR1500 may be powered from it's internal NiCad pack, spare dry batteries may be carried for extended operation and used with the dry battery case, the set may also be plugged directly into the cigar lighter socket of a motor vehicle (external input range 11 - 18V DC).

Although offering a long list of facilities and operating modes, the receiver remains easy to operate. Many facilities have been carried across for the well proven AR2000 receiver. The AR1500 has a new 'automatic memory' feature which automatically stores busy channels from search bank 9 into the 100 memory channels of scan bank 9. There are 1000 memories in total arranged in 100 memories x 10 banks, there are also 10 additional programmable search banks. Each memory will store frequency and mode (NFM, WFM or AM - not SSB) the search banks will also store the step increment. There is a massive EEPROM memory store for all memories and search banks so that no backup battery is required. The memories may be over-written time and time again.

The display often provides 'prompts' for selected operations such as a flashing "CH" to invite the user to key in a new memory channel number. All information such as frequency, mode (except SSB), channel etcetera is presented via an easy to see Liquid Crystal Display (LCD). The display is fitted with a switchable light to increase visibility in areas of low level lighting.

The AR1500 can meet a number of requirements to satisfy Airband or Marine enthusiasts, Professional off air monitoring and of course casual listening too. The World's shortwave and Amateur bands can be monitored, even the longer range Oceanic Airband and ship to shore. Of course the performance of this compact hand-held receiver can not be directly compared to that of the AR3000A or dedicated General Coverage Receiver.

Amazing value, all for an extremely attractive.

**Recommended Retail Price of £279.00 including VAT.**

The popular AR2000 receiver continues. It has not been replaced by the new AR1500 receiver, the AR2000 remains a firm favourite with listeners and enthusiasts. Features include coverage from 500kHz - 1300MHz and reception of AM, NFM & WFM.

**Recommended Retail Price £269.00 including VAT.**

The AR3000A base/mobile receiver is an evolutionary step forward from the highly acclaimed AR3000, many major improvements have been implemented at the requests of enthusiastic listeners and commercial organisations. Search and scan speed has been increased to an unprecedented maximum of 50 increments per second.

Your listening horizons are truly extended with receive coverage from 100kHz all the way up to 2036MHz without any gaps in the range. The AR3000A offers one of the widest coverage on the market today with a high level of performance and versatility from long wave through shortwave, VHF and onward to the upper limits of UHF and SHF.

Not only will the AR3000A cover this extremely wide range it will allow listening on any mode: NFM, WFM, AM, USB, LSB AND CW.

The high level of performance is achieved by using 15 band pass filters before the GaAsFET RF amplifiers unlike other receivers which may rely largely on broad band amplifiers. This ensures high sensitivity through the entire coverage with outstanding dynamic range and freedom form intermodulation effects.

An RS232 port is provided enabling full remote control via most computers. A rear panel switch changes control between the keypad and RS232 port. Two commercial IBM compatible software packages are available... ACEPAC3A & AOR Spectrum Coordinator.

The AR3000A is powered from 13.8V DC, a suitable mains power supply is provided with the receiver. Other accessories include a telescopic whip, DC lead and comprehensive operating manual.

**Recommended Retail Price £765.00 including VAT.**

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If you are unable to obtain supplies of AOR products from your local dealer, you may order directly - we have a fast mail order service.

Please send a large S.S.A.E. (34p) for further details.

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**AOR (UK) LTD.**
Room 2, Adam Bede High Tech Centre,
Derby Road, Wirksworth, Derbys DE4 4BG.
Tel: 0629-825926 Fax: 0629-825927
A subsidiary of AOR Ltd Japan

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Short Wave Magazine, September 1992
to build or not to build

Dear Sir
So what, if anyone equips his shack with the latest technological marvels?...if it gives pleasure of ownership and even impresses ‘visitors’ good for him, but whether it is good thing to advertise the fact in this envious and greed-ridden world we now live in is a matter for conjecture! Surely things are better kept to oneself?

David J. Gommo
Surrey

Dear Sir
I agree with you that people should be free to buy high power radio equipment. On the other hand, Paul does have a point. I feel that SWM could frighten off newcomers to the hobby with all the advertisements for receivers costing up to £4000, antennas costing £135, etc. Listeners without long pockets have little alternative to getting out the soldering iron and building their own equipment. SWM does help with this (e.g. Ian Hickman’s current series of the 3.5MHz receiver), but perhaps you should run a series of articles on radio for the impoverished.

I could not help wondering whether your remarks crushing Paul were a mile affected by self interest. After all, we appreciate you have to keep the advertisers sweet and there is little profit in self-build!

Taff Rees G3IQU
Surrey

Dear Sir
May I remind Mr Beaumont that the front cover of SWM contains the clear indication: “For the Radio Listener”. It matters not how you listen, the editorial content of the magazine should be based on achieving and sustaining that listening pleasure.

Mr Beaumont mutters about elitism. There is no more self-appointed elite in short wave radio that the “I built it myself from cocoa (or should that be baking) tins and my trusty old ex-WD soldering iron”.

I took great pleasure in seeing Mr Rayer’s station. My only complaint was that the editorial coverage offered was cursory; as a result I have spent many instructive hours studying the cover photograph, and wondering how this piece links up and how that equipment performs.

Three pages of such information would be worth more than the radio listener (my italics) than the endless succession of article on building novel receivers. Surely this sort of article, commendable though it may be, belongs in your sister magazine, to leave space for more of your excellent and much valued specialist regulars on s.s.b., utilities, airband and the like.

M.F. Wright
Hoyland

Dear Sir
Whilst I can fully understand amateurs who have spent years building their own equipment settling down to a more sedate life in their older years and purchasing commercial equipment, it is typical of the younger generation and those with a good credit status to want the apparently best equipment from the start.

My interest in wireless started at the age of eight, in 1943, when my grandfather built a working crystal set, which he supplied in full working order, complete with headphones. I subsequently learnt the importance of an efficient antenna and earth system. I built a one and then a two valve battery receiver.

With reference to the editorial comments to Paul Beaumont’s letter I must point out that am acquainted with a professional musician who not only made his own violin, but continues to play it today. My other hobby being photography I built my own camera and enlarger. They were not built from a kit.

Photography has to a great extent taken over from amateur radio for the last twenty years when I let my G call lapse. I have thought many times of renewing my licence but have been deterred by the antics and attitudes of the differing generations of radio amateurs.

Derek Fisher ex G3LKO Bexleyheath

Dear Sir
I have been an s.w.l. since 1938 and in the ’50s held QSLs from around 300 countries, plus several certificates. Why is it presumed elitist to employ technology presently available? I presume Mr Beaumont has constructed his own telephone and TV set and, of course, did a mechanical engineering course before driving a car built from a kit?

There are a multitude of interests to be obtained from this hobby of ours. Those who wish to construct derive much satisfaction from the success of their efforts. Those who search for rare transmissions are just as fulfilled. Studying for my own disciplines in medical research, I have had little spare time, or wish, to construct - but have preferred to utilise my few spare hours in searching and listening. I must also suggest the soldering iron is better positioned on the work-bench, not on the operators table. My hobby has always been for pure enjoyment and relaxation, not for impressing anybody, although my present set-up is probably as comprehensive as the one that displeases Paul Beaumont.

Live and let live, Paul. There are so many aspects of this hobby and you’d be surprised how many real specialised experts I have met, in 50 years of radio, who never touch a soldering iron but have contributed considerably to our knowledge and enjoyment.

H. L. Spindler G7603
Kings Langley

Dear Sir
With respect I must take issue with the Editor’s comment following Paul’s letter. Self-education is neither the princely duty nor the unique domain of transmitting amateur radio operators. Most reasonably intelligent people, whatever their occupations and interests, seek to improve their knowledge. I’m sure that the average short wave listener improves his or her knowledge of the hobby - and beyond it - by virtue of the hobby’s very nature, and even more so if he or she either builds or modifies the associated equipment.

Some of us seem to be promoting the idea that those who transmit are superior to those who receive! But perhaps even worse, and as described in recent issues of a sister magazine, is the fact that some RAE-qualified, full-licence, transmitting amateurs tend to avoid contacts with those operating under the 2E0 novice callsign. I would further add that I have all but given up monitoring mobile 144MHz operators on the local North London repeater because of their generally bad language and poor R/T procedure. It would appear that all people are equal, but some are more equal that others!

Ivor Nathan
London

Dear Sir
The ability to make all your own equipment must be very enjoyable and rewarding. However, you can’t surely want to ban everyone who isn’t capable of building their receiver from scratch, can you?

Being a student I have a limited time to spend on my hobby. Even if I had the knowledge to build my own radio, I wouldn’t have any time left to listen!

I want to listen to as much as I can - from catching the news from around the world, to hearing aircraft on the h.f. bands. Much as I would love to be an electronics whiz-kid, I’m not. Surely this doesn’t need to be a qualification to listen!

Andrew Middleton
Okhampston

We hope you have enjoyed reading our extended postbag this month. These subjects obviously created plenty of thought-provoking comment! - Ed.
Sony ICF-SW7600 Receiver

New models from Sony always attract plenty of attention. The ICF-SW7600, reviewed here by Howard Bird, is no exception.

Innocent readers out there are probably thinking that the ICF-SW7600 is the latest version of the popular ICF-7600 - wrong! Well perhaps it's a variant of the ICF-7600DA - wrong! Surely it must be close to a ICF7601 - wrong! As far as I can tell, the forerunner to the ICF-SW7600 was the ICF-7600S! Why, oh why, do we have to suffer such a confusing numbering system? Please, please Mr Sony get your model numbers sorted out. Now that's an idea, system, let's get on with the review.

The real ICF-SW7600 is a multi-band portable receiver featuring continuous short wave coverage from 1.6 to 29.995MHz plus the normal long, medium and v.h.f. bands. As well as standard a.m. and f.m. modes, the ICF-SW7600 includes an improved s.s.b. mode. All this in a unit measuring 191 x 118 x 32mm is likely to make the ICF-SW7600 very popular with short wave listeners.

Self-explanatory

The layout of the ICF-SW7600 was pretty self-explanatory, making it very easy to get started without having to plough through the manual. Whilst on the subject of the manual, this was well up to Sony's usual high quality. The one supplied with the review model was a compact booklet written in English, French, Spanish and Arabic. Each of the sections being allocated approximately thirty-five pages. Operation of the various features was covered in good detail with plenty of diagrams to clarify the tricky bits.

Power for the ICF-SW7600 could be supplied either from dry cells or an external source. The dry cells fitted into a conventional battery compartment in the rear panel. If using an external power source such as the supplied a.c. adaptor, connection is made via a coaxial socket on the side panel. The requirement is for a 6V d.c. supply. Sony can supply an optional car adaptor that fits into a standard cigar lighter socket.

Antenna Options

The antenna options available were really very comprehensive. As you would expect with a portable receiver there were internal antenna systems to handle all the various reception bands. Long and medium wave bands utilised an internal ferrite bar whilst v.h.f. and short wave used a conventional telescopic antenna. For the more serious listener the ICF-SW7600 included an external antenna socket. This was a conventional 3.5mm jack that automatically disconnected the internal telescopic antenna. This switching is essential in order to minimise interference and get the best from an external unit.

For the traveller a very compact wire antenna was supplied. This comprised a neat plastics drum containing about 6m of thin wire with a fixing clip at each end. This proved to be a very quick and easy way to set-up a simple but effective antenna. For the more ambitious listener the Sony range includes the AN-1 and AN-102 active antenna systems. These provide a very compact external antenna designed to interface with the ICF-SW7600. However, I suspect that most operators will choose to construct their own long wire antenna. This works fine with the external antenna socket. I would not advise using a very long antenna due to overload problems. These problems are not unusual in this type of receiver and can usually be controlled using the DX/LOCAL attenuator.

If you like to record you favourite stations the ICF-SW7600 has dedicated Tape Out and Remote sockets. This means that you can use the internal timer to turn the radio on and start the cassette unit.

Finally for those who prefer to use headphones for DX work, a standard 3.5mm stereo jack is fitted to drive 16Ω phones.

Versatile Tuning

The provision of digital tuning has been very utilised in the ICF-SW7600. By far the quickest way to get to a particular frequency was to use the direct entry mode. Using this system you simply typed-in the required frequency on the numeric keypad.

As you could use this system to directly select any frequency in the ICF-SW7600's range, it was extremely quick. The only odd point about this system was the requirement to enter trailing zeros. If you wanted to tune to 7.3MHz you had to enter 7300. Not really a big deal, but a point worth noting. Incidentally, if you made a mistake you were greeted with a clear error message on the display.

For those of you who prefer manual tuning this is provided in the form of a pair of tuning buttons. These are marked + and - to give step changes in the tuned frequency. The size of the steps were dependent on the selected frequency range as follows: long wave 3kHz, medium wave 9 or 10kHz, short wave 5kHz, f.m., 1MHz. The selection of 9 or 10kHz steps for medium wave was done using a small slide switch in the battery compartment. To give some interpolation tuning between
the, rather coarse, tuning steps a fine tune control was provided. This took the form of a small edge control on the side panel. Once this had been turned-on using an adjacent slide switch, it gave an approximately 7kHz fine tuning range. Incidentally, this facility was not available on f.m. For the broadcast enthusiast you could use the + and - buttons in association with the BAND button to step between short wave broadcast bands. Once you had selected the required band you could then use the scan tuning facility to automatically search for active stations. When a station is detected that exceeds the pre-set threshold the scan pauses for about one and a half seconds before moving on again. You were able to stop the scan at any time simply by pressing the SCAN button a second time.

For listening to your favourite stations it’s handy to have a few memories. The ICF-SW7600 features ten pre-sets that can be used to store frequencies throughout its operational range. Programming and recalling these memories was extremely simple requiring only one or two key presses. Personally, I thought ten memories was a bit mean for a receiver with such a wide coverage.

**SSB Reception**

The provision of s.s.b. reception opens up a whole new world to the ICF-SW7600 user. In addition to being able to receive phone transmissions you can also use the ICF-SW7600 for utility stations. Selecting s.s.b. reception is done by a small slide switch on the side panel. This has positions for receiving either upper or lower sideband signals. Because of the coarse 5kHz tuning steps, you have to use the fine tune control to resolve these signals. Although this basically worked fine, I found the fine tune control rather fiddly to use.

The provision of s.s.b. reception also opens up the world of utility data transmissions. To receive these you will need some form of external decoder and there are a wide range of options available. Although a ‘record out’ jack was provided the 0.775mV level was too low to drive a decoder direct. The only alternative is to use the external speaker socket, but this has the disadvantage of disabling the internal speaker. I did try receiving a number of different modes with the ICF-SW7600. The performance was OK when dealing with transmissions using a wide shift, but the narrower shift amateur and TOR signals were very difficult to tune accurately. The problem was with the fine tune control which was very difficult to use with any degree of precision. This inadequacy was disappointing as it limits the usefulness of the ICF-SW7600.

**Good Layout**

One of the first points to strike me when I took delivery of the ICF-SW7600 was its excellent layout. Despite the wide range of facilities the layout of the controls has been kept very user friendly. As can be seen from the photographs, the front panel is very clean cut. The direct entry keypad has a good positive feel with the buttons standing just slightly proud of the panel. One of the problems of push-button operation is the ease with which settings can be disturbed. The Sony tackles this problem with a key protect facility. When this is activated the front panel buttons are disabled. To ensure that the key protect cannot be operated accidentally, the operating button was recessed below the main panel.

With the power on-off button being a simple push button affair also on the front panel, there was a risk of flattening the batteries during transportation. This was protected by an interlock system that prevented the power being turned on.

**In Action**

The acid test with any receiver comes when using it to listen around the bands. For use on the broadcast bands the ICF-SW7600 performed very well. I found the various tuning options worked well to make tuning around quick and trouble free. I would have liked to see more memories included, around twenty or thirty would do. My disappointment was with utility listening, where the small fine tune control made accurate tuning extremely difficult. Although narrow shift signals could be received, it was a very fiddly operation.

Moving on to the audio performance, the ICF-SW7600 gave a surprisingly good performance. I say surprising because of its small physical size. This would usually result in a rather thin tinny sound. Somehow, Sony have managed to squeeze a remarkably mellow sound quality from the ICF-SW7600.

**Summary**

The ICF-SW7600 is a very smart and compact receiver that I’m sure will prove very popular with broadcast fans despite the small number of memories. Whilst it has the potential for use with utility data modes, the poor fine tune control is a limiting factor. Providing you don’t need more than ten memories the ICF-SW7600 is certainly a powerful contender in this competitive sector of the market.

My thanks to Sony UK for the loan of the review model. For those interested in the ICF-SW7600 it can be obtained from all Sony outlets and costs £149.

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**Review**

**Specification**

<table>
<thead>
<tr>
<th>Frequency Range:</th>
<th>v.h.f.</th>
<th>76-108MHz (f.m.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>l.w.</td>
<td>150-528kHz</td>
</tr>
<tr>
<td></td>
<td>m.w.</td>
<td>530-1610kHz</td>
</tr>
<tr>
<td></td>
<td>s.w.</td>
<td>1.615-29.996MHz</td>
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<td>Antennas:</td>
<td>v.h.f. &amp; s.w.</td>
<td>Telescopic</td>
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<tr>
<td></td>
<td>m.w. &amp; l.w.</td>
<td>Ferrite bar</td>
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<td>Audio Outputs:</td>
<td>400mW at 10% t.h.d.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.775mV tape out.</td>
<td></td>
</tr>
<tr>
<td>Speaker:</td>
<td>77mm dia.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Phones:</td>
<td>16Ω stereo</td>
</tr>
<tr>
<td>Power Supplies:</td>
<td>4 x R6 (AA) cells; a.c. adaptor 110, 120, 220 or 240V</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6V d.c. external supply</td>
<td></td>
</tr>
<tr>
<td>Dimensions:</td>
<td>191.2 x 118 x 32.3mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weight:</td>
<td>415g</td>
</tr>
</tbody>
</table>

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**Short Wave Magazine, September 1992**
YUPITERU
MVT 7000 HANDHELD
- Receives 5 to 1300 MHz
- 100kHz to 1300MHz
- [at reduced sensitivity]
- 2001 Memory channels
- Rotary or keypad key control
- AM/FM/NIC
- Large display with signal strength
- EACH SET IS SUPPLIED COMPLETE WITH:
  - Full set of high power N/Cads, AC charger
  - DC power lead and carry strap
- £289

MVT 8000 MOBILE/BASE
This new model is the mobile version of the popular MVT 7000 Handheld above.
- Receives 6 to 1300MHz, 100kHz to 1300MHz [at reduced sensitivity]
- THE RADIO IS ESPECIALLY SENSITIVE AT UHF FREQUENCIES.
- Set is supplied with mains power unit.
- £299

MVT 6000 MOBILE/BASE
An economy version of the new MVT 8000 above housed in the same case.
- Receives 25-550MHz, 800-1300MHz
- 100 Memory channels
- SPECIAL PRICE: £199

AIRBAND RADIOS
This month we are pleased to introduce THE WORLDS FIRST DEDICATED CIVIL/MILITARY AIRBAND RECEIVER, THE VT225.
A powerful pocket scanner that leaves the competition standing. A super sensitive set designed for optimum performance on the Civil/Military Airband.
- Receives 108-112MHz
- Civil Airband 222MHz
- 391MHz Military Band
- 149-150MHz Marine Band
- 100 Memory channels
- AM/FM/PHF
- Priority channel function
- EACH SET IS SUPPLIED COMPLETE WITH:
  - N/Cads, earphone, carrying strap
- £229

VT-125 UK CIVIL AIRBAND RECEIVER
Using the same technology as the VT225, this set covers the full Civil Airband - hearing distant signals that are inaudible on some other scanners.
- Receives 108-142MHz
- 30 Direct entry memories
- Search steps 25, 50, 100GHz SUPPLIED COMPLETE WITH NICADS AND UK CHARGER
- £149

AR3000A NEW MULTIMODE SCANNER
- Receives 100kHz-200MHz, Modes: USB, LSB, CW, AM, FM, WFM.
- Az/pan 32 memories now available, plus 32 memories with IBM PCs and clones.
- £119

INTRODUCTORY OFFER
SUPPLIED WITH FREE WIRELESS DISCONE WORTH £49.95
Note: This is a UK version from ARD and not a foreign grey import.

FAIRMATE
HP2000
STILL ONE OF THE MOST POPULAR HANDHELD SCANNERS ON THE MARKET.
Over the last year the HP2000 has outdid almost all other models.
- Continuous coverage from 500kHz to 1300MHz
- 1000 channels of memory
- Keypad or rotary control
- AM, FM and WIDE FM modes
- Search steps from 5 to 995kHz
- EVERY SET COMES COMPLETE WITH:
  - All set of high power N/Cads, 2 earphones, carrying case, earphone, DC cable, belt clip and strap
- £269

MS1000 BASE/MOBILE SCANNER
MORE VERSION OF THE HP2000 HANDHELD BUT WITH SEVERAL ADDITIONS:
- Switchable audio output
- Taper recorder output socket
- Automatic signal operated tape recorder switching
- All metal case for improved S/W compatibility
- Receives: 500kHz - 600kHz, 805 - 1300MHz, Supplied with mains power supply.
- £279

AOR SCANNERS
AR1500 HANDHELD
Covers 500kHz to 1300MHz receiving N/FM, WFM, AM, and SSB.
- Supplied with a large selection of accessories including:
  - Charger
  - Dry cell battery case
  - 15MHz SSB tuned
  - External active antenna
  - External microphone
  - Ear piece
  - Soft case
- NOW IN STOCK
- £279

AR2002 BASE/MOBILE
Receives 25-550MHz, 800-1300MHz, AM, FM, WFM, and SSB.
- Supplied with BFO control
- £399

AR2500 BASE/MOBILE
Receives 3-550MHz, 800-1300MHz AM, FM, WFM, and SSB.
- Supplied with BFO control
- £399

AR8800
Receives 500kHz - 600MHz, 800 - 1300MHz AM, FM, WFM, and SSB.
- Supplied with BFO control
- £395

SCANNERS
ALINCO DJ-X1 HANDHELD SCANNER
- Covers 500kHz to 1300MHz
- 100 Memories
- AM/FM/WFM
- 3 Scanning speeds
- PLEASE NOTE: ALINCO DO NOT INCLUDE BATTERIES AND CHARGERS AT THIS PRICE
- £249

BEARCAT SCANNING RECEIVERS NOW AT NEVADA!
BEARCAT 50XLT
Popular beginners model
- 10 channel programmable
- 66-88, 126-174, 400-512 MHz
- N/Cad or battery powered
- Ideal marine monitoring
- £89.95

BEARCAT 100XLT
Modelled on the popular 200XLT but with only 100 channel memory capability and top frequency of 512MHz
- £164.95

BEARCAT 200XLT HANDHELD SCANNER
Still one of the easiest to use, and the most reliable scanners on the market, easy to program, sensitive receiver.
- £200 memories
- 66-88, 118-174, 400-512, 800-950MHz
- UK charger, nicad/pack supplied
- £199.95

BEARCAT 760XLT
A mobile/desktop version of the 200XLT above but with 100 memories. Supplied complete with mains adapter
- SPECIAL PRICE
- £194

SONY
As a Sony Shortwave Centre we stock the complete range of Sony Shortwave products - here is a selection of the most popular models.
ICF2001D
A full coverage shortwave, VHF, and airband radio (150kHz to 130MHz). Receives AM, FM, and SSB
- £299

SW77
One of the new additions to the Sony range, the SW77 covers 150kHz to 30MHz plus VHF and Medium Wave bands. A rotary dial 125 scan memories, reception of AM, FM, USB, LSB, CW, tape record facility, this is a superb all rounder.
- £349

SW7600
One of Sony's most popular VHF and Shortwave radios, 70-108MHz. FM, 150kHz - 30MHz. reception of AM, FM, SSB. Plus the new SW77.
- £149

AIR 7
Very popular, sensitive Airband handheld radio - 100kHz to 130MHz. preceded with key board.
- £199

NEW PORTABLE SONY SW55 MULTIBAND RADIO
The Sony SW55 is the top of the range portables, with the very latest in digital tuning and automatic frequency control. A top of the range receiver with all the features of the SW77.
- £57.95

AN1
An active antenna for Airband and VHF reception. Suitable for Sony Air 7 and other makes.
- £54

NEVADA'S "BIRTHDAY CELEBRATIONS"
As part of our 23rd Birthday we have two great give-aways during the month of September
1 Free PSU 101 Desk Stand/Charger (worth £30)
2 Free GR50V multiband antenna with every shortwave receiver (worth £19.00)
SCANNER ACCESSORIES
LOW NOISE PRE-AMPLIFIERS
These new pre-amplifiers are a must for the scanner enthusiast and will allow reception of signals that are invisible without them.

MODEL M75
For bore and hand-held scanners...

- 25-1.100MHz
- Low noise GaAs FET
- Selectable filters for optimum performance
- Variable gain/attenuation control...

£69.95

MODEL M100
Some specification as the M75 above but with full RF switching. May be used with transceivers of up to a 5 watt RF output ideal for the latest Tweezer/Sparklers...

£79.95

TWO-WAY REMOTE MASTHEAD SWITCH
Uses one coax feeder to the masthead and remotely switches between 2 antennas with this unit. Very low loss up to 1.3GHz. Uses Greenpark N type connectors...

£44.95

JIM PS101 MK IV
A combined desk stand and power supply/charger for handheld scanners. Suitable for most popular models. Special versions now available please call for more details...

£29.50

JIM BHA3
Desktop stand for handheld scanners...

£9.95

JIM CH-A4
Mobile holder for use with handheld scanners in the car...

£6.95

SCANNING ANTENNAS
NEVADA SCANMASTER (500 KHz - 1500MHz)
New high quality wide band receiving antenna uses fibre glass/stainless steel with 4 small radials. N type connector...

Length 1.1 metres...

£39.95

WH1300 DISCONE (25-1300MHz)
Stainless steel top of the range "N" type connector. Complete with short mounting pole and clamps. "B" elements with vertical whip. Complete with short mounting pole and clamps etc...

Best value...

£49.00

MICRO-SCAN (180-1300MHz)
New low cost 1/2 wave ground plane antenna...

£12.00

SKYBAND (25-1300MHz)
Stainless steel economy wide-band. Discone recommended - bargain price only...

£24.00

LOG PERIODIC BEAM
(105 - 1300MHz)
2Element wideband beam - can be used for transmit on VHF/UHF amateur bands. 7dB.

tw. gain...

£135.00

DIAMOND D707
(500kHz - 1500MHz)
A base antenna with 20dB preamp. 3.5ft long fibreglass with mounting kit. Requires 12V DC supply...

£99.00

DIAMOND D505
(500kHz - 1500MHz)
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New! AR1500 with SSB New! Only £279.00 p&p £5.00

Specification

Model: AR1500
Receiver coverage: 500kHz-1300MHz
Receiving modes: AM, FM(narrow) FM(wide) and SSB with the BFO switched on (USB, LSB and CW)
Number of memory channels: 900 plus 100 reserved for 'auto-memory' in banks 9, 10, 100 total (101x100)
Scan rate: 20 channels per second (approx)
Number of scan banks: 10 total. Bank 9 reserved for 'auto-memory'
Scan delay time: 2 seconds (approx)
Search banks: 6 standard search banks plus one search bank for the automatic search pair of bank 9
Search rate: 20 steps per second (approx)
Scan stop size: Programmable in 5 and 12 kHz steps to a maximum of 95kHz (e.g. 5, 10, 12.5, 15, 20, 25, 50kHz etc)
Priority channel (AUX): Any one of the 1000 memories may be used as priority. Sampling is every 2 seconds (approx)

Receiver sensitivity: FM(narrow) 0.5µV or better for 12dB SNAR
Gain: Continuous -47dBm to -65dBm (approx)
Audio output: One 50 OHM BNC socket on top
case >100mW @ 10% distortion
Power requirements: 6V DC from built-in NiCad battery pack or 11-18V DC from CIS jack or 4xAA dry cells (dry cell pack)
Power consumption: 100mA approx
Weight: 370g
Display: Liquid Crystal (LCD) with switchable light for backlighting or low level lighting

*Specifications subject to change without notice due to continuous development of the receiver.

SONY

ICF SW77

£349

150kHz-30MHz + stereo FM AM/SSB/CW

The SW-77 is the latest short wave portable from Sony. It integrates computer technology to provide a programmable data base of station names in its memory bank. Also included are 5 different timers and 162 preset stations. Fabulous!

HF-150

COMPACT COMMUNICATIONS RECEIVER

£329 INC VAT

Designed as a logical alternative to the Japanese 'push button portables', the HF-150 places a 'real radio' within your price reach. With simplicity of operation, the HF-150 nevertheless has all the features and facilities you need. This truly is 'Real Radio'.

ALINCO's £249.95

"Professional Grade" Scanner

DJ-X1. 500kHz-1.3GHz

"A Scanner of Unrivalled Performance"

Specification:

Model: AJ-X1
Coverage: 500kHz-1.3GHz
Steps: 5, 9, 10, 12.5, 20, 25, 30, 50, 100kHz
Antennas: 500kHz-1300MHz
Supply: 6V-15V DC (internal 9V AA)
Dimensions: 110 x 33 x 73mm
Weight: 370g
Configuration: ADFM of triple conversion
Sensitivity: NBFM -4dB (12dB SINAD)
AM -2dB (10dB S/N)
Power: 6V DC from built-in NiCad battery pack or 11-18V DC from CIS jack or 4xAA dry cells
Supply: 5, 9, 10, 12.5, 20, 25, 30, 50kHz etc
Memory: 100 in banks.

Up until now most handheld scanners have been large and cumbersome with low grade plastic cases using technology that has been around for several years. The arrival of the ALINCO DJ-X1 has changed all this. This new receiver is rugged, compact and above all, uses sensitive ALINCO on the first major manufacturer of communications equipment to produce a new generation of scanning receiver. All of a sudden its competitors seem droll, old fashioned and lacking in speed and performance.

The new exciting DJ-X1 is available now. Try it out for yourself, experience the superior design and performance. Compare it with "conventional" models and find out just how far advanced the new ALINCO scanner is! Just try to beat the price, here's a few of its features:

- 3 scanning speeds
- 3 scanning modes
- 100 memories in 3 banks
- Tune memory locking
- Priority channel
- Dual read battery saver
- Large battery pack
- Stereo frequency display
- Illuminated keys
- Auto illumination
- Dual membrane
- 3 programmable banks
- Variable range of frequency steps
- Presets from and search
- Memory locking
- Mode scanning
- Auto power off
- Wide range of battery packs
- Wide range of accessories
- Intelligent mode program
- Rapid tuning rates of 150kHz (D) (100kHz (A))

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1992 Short Wave Magazine
Shacks I Have Used

John Worthington G3COI dislikes anything permanent. That is why, he maintains, he has never had a purpose-built shack.

Constant modification is my abiding characteristic - indeed this is a trait common to many amateurs! Anyway, even though most of my shacks over the years have been intended for other purposes, they have, nevertheless, been anywhere from mildly satisfactory to just tolerable.

For a few years I was in a falling glass-clad verandah - no that's not a spelling error, but it was always on the point of falling. In the winter I operated there from inside 'arctic gear' and endured the fumes from two paraffin stoves. The latter caused me to give up smoking when I couldn't tell whether I'd got a fag on or not. One of the warmest places I had was a box room - quite tiny with a huge copper cylinder which gave off bags of Fahrenheit through inadequate insulation. It was here that I learned to operate the dials and knobs with my nose and became the standard W. C. Fields look-alike in the local dramatic society. I was obliged to sit on the main power pack and used to fall out of the door at the end of an operating period completely seized up, except for a little wrist movement.

My first ever place was in the roof attic of a large Victorian shop and as our living quarters were in the basement I always suffered from indigestion and heavy panting during the first two QSOs. I learned to shrug off criticisms such as 'Your audio is very breathy and dyspeptic, Old Man'.

In those days the first year of one's licence was C.W. only, so my first QSOs were painful because of the stitch. It was another manifestation of 'brass arm' I suppose. It was quite a nice shack though and through a crack in the fanlight one could see the glorious panorama of Wolverhampton with its lovely hues of black, grey and khaki. Antenna fans will please note that I was end feeding 130ft of wire from a height of 50ft - something not many people have done in their life. The intercom with the XYL down below was a piece of cord that I attached to my ankle. As you can imagine, total peace was easily achieved by omitting to attach same, only doing so when the distant sound of panting footsteps approached.

Another house we moved to was just as big, but being a modest chap I Hankered for the compact premises and chose what had been the coal house. It had a nice smell of small nuts and Welsh large and I soon hammered up a few shelves and installed my humble stuff. There was a window high on the outside wall and by standing on the operating chair one could see the rolling Shropshire countryside. Later I installed a wing mirror so that I could do this without the gymnastics.

The main snag with this shack was acoustical. There was a high ceiling, which was open to long corridors, etc. and when bellowing into the mic - I was always short of audio in those days - I produced reverberations and echoes to rival Winchester Cathedral. They caused numerous misunderstandings during my phone QSOs and for a long time I was obliged to use c.w. only.

Living Room

There was a time when instead of a shack I actually had my gear in the living room. The XYL tolerated this for a short time before fitting a curtain around it, so when operating all you could see from the layman's side was a bulge slightly moving. It was like tent operation and left me with a desire - never been fulfilled - to partake in National Field Day.

I must say that frequent scrutiny by the XYL used to put me off somewhat. Not so much because of having to modify my language, but having to keep the standard of tidiness she required became onerous. This inhibited my natural inclination to have several projects partly finished and ready to be re-attacked at any time.

Tobacco Tin QRP

Many years later I again had the gear in the living room, but instead of a curtain this time she nagged me to reduce its size until, eventually, I was using a QRP outfit that would have fitted into a tobacco tin. In fact I believe that the Practical Wireless article from which it sprang specified just such an enclosure!

Interestingly I have two shacks at present and one of them is again in the living room. This is rather untidy at best, so what has happened to the XYL's opinions? The answer is simple enough - the realisation is that after 46 years she has declared me to be the winner!
Besides our radio data communications equipment, we offer a growing range of electronic weather monitoring and navigation systems.

Print Weather Maps Directly on Most Computer Printers

The Fax-1 connects directly between any HF SSB radio receiver and a 9 or 24 wire dot matrix printer to produce excellent weather maps, as well as printing RTTY and Navtex. Many FAX-1s have already gone round the world in yachts and are in daily use by professional weather forecasters. Excellent value at this price. Built in timer. Does not tie up your computer. All cables supplied.

**FAX-1: £349.95**

**ICS-FAX II: £129.95**

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The NAV-3 allows continuous monitoring of the 518 kHz Navtex channel without using your main receiver.

Please contact us for free catalogue and price list.

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Complete systems available, ready to plug in and go. Built to the highest professional quality. All packages come complete with software, documentation, interface, cable, receiver, pre-amplifier and antenna. Very easy to use and giving superb high quality images. Supports VGA, SVGA displays on 286 processors and above. Includes features hitherto seen only on professional systems costing many times more.

**MET-2a (Meteosat): £975.90**
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Monitor Local Weather Directly on Your Own PC

The new range of Davis Instruments can be used on their own with an LCD readout or can be connected to a computer for long term data logging. 32K built in memory (stores up to 120 days observations), Remote modem access. Records Temperature, Wind Direction, Humidity, Barometer, Rainfall etc. etc. Send for free colour catalogue.

**Weather Monitor II: £339.95**
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Note: All of the above HF radio related products require the use of a good quality general coverage SSB receiver or transceiver.

Data on any product available on request. Prices include VAT at 17.5%. Add £6.00 post and packing (£3.00 for books and software).

ICS Electronics Ltd. Unit V, Rudford Industrial Estate, Arundel, West Sussex BN18 0BD
Tel: (0903) 731101 Fax: (0903) 731105
First Aid

Could anybody please supply me with an owner’s manual and circuit diagram for the Yaesu FRT-7700 antenna tuning unit? Willing to pay all costs. Graeme Wilson, PO Box 255, Stoke-on-Trent, Staffs ST4 2DN.

I am trying to restore an old Philips Radio, which I believe dates from the mid-thirties. I sorely need a circuit diagram plus any additional information that may exist about the radio. My job is compounded by the fact that someone, sometime, tried to repair the radio and made an absolute mess of it, snipping out wires, shorting components, etc. The model number is Type 534U and the serial number is E1715E03. The number 25997 is stamped on to the chassis itself. The name ‘Multi Inductance’ appears on a tag on the rear of the radio and seems to be a logo/trade name of sorts. There are seven valves in it and the pins are all of the side contact variety. John Wynne, 74 Stoneyhirst, Dooradoyle, Limerick, Ireland. Tel: 010-353-61-29011.

I have a Digitar weather station in my shack and it is very good apart from one irritating thing, which is that it gives the barometric pressure in inches of mercury and millimetres of mercury and not millibars as we use over here. This is, I think because the Americans, who make the Weather Master, don’t appear to have gone metric yet. I have spoken to ICS (who were very helpful) and Digitar (who seemed amazed that I should ring them from the UK), but neither of them could come up with the answer to my question which is: is there an easy method of changing the chip to read millibars instead of millimetres of mercury?

There was a rumour that a man in Oxford had found a way of re-programming it, by entering a certain combination of figures when setting the device up. I wonder if it’s true. If it is, does he read SWM and if so, PLEASE will he (or anyone else come to that) tell me how to do it? I know that I can multiply inches of mercury by a constant of 33.86 and get the correct answer in millibars, but it would be so much nicer if it happened automatically. Mike Hack G8SLU, Anmee, The Ride, Ifold Loxwood, Billingshurst, West Sussex RH14 0TF.

A couple of months ago I purchased an ex-military communications set, namely a Pye Marine m.f./h.f. AP. 100339, serial number PYM.4638 and I would dearly love to have a copy of the circuit diagram and if possible a copy of the service/user manual. I would also like to know if the crystal switch on the front is for calibration or filter use and what crystal should be plugged in as the set came without it.

If anyone has an outdated copy of the WRTH they would like to sell then I would be very interested. Any costs incurred with the above will be fully reimbursed. J.I.G. Roland, United Farm, Releath, Praze-An-Beeble, Camborne, Cornwall TR3 7DT.

Printed circuit boards for SWM/Constructions are now available from the SWM PCB Service. The boards are made in 1.5mm glass fibre and are fully tinned and drilled. All prices quoted in the table include Post and Packing and VAT for UK orders.

Orders and remittances should be sent to PW Publishing Ltd, FREEPOST, Enelco House, The Quay, Poole, Dorset BH151PP, quoting your envelope SWM PCB Service. Cheques should be crossed and made payable to PW Publishing Ltd.

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**Listen With Grandad**

By Leon Balen and David Leverett

Short Wave Magazine, September 1992
The Revco RADAC series of wide-band v.h.f/u.h.f. antennas was developed from the 'Nest of Dipoles' concept to give improved performance over a discone. We are offering you the opportunity to buy the UHF & UHF Airband version, covering 108 - 135MHz and 220 - 400MHz, at a very special price of £59.95 plus £4.00 P&P.

The main part of the antena is the heavy-duty, coaxial mounting hub which supports six pairs of dipole retaining arms. The dipoles are fitted into these arms and are displaced at an angle of 22° from the vertical to minimise undesirable coupling and phase relationship effects. This ensures that each dipole functions at its resonant frequency and a greater than normal bandwidth is achieved, with only a slight deviation from a fully omni-directional polar diagram.

The antenna fits onto a standard 1.5in o.d. alloy mast and is fitted with an N-type connector. The maximum diameter is only 190mm and the weight, including the 1m support stub, is 3.6kg.

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PW Publishing Ltd., Poole, Dorset
(Reg. No. 1980539, England)
C.M. Howes CTU30 ATU Kit

An a.t.u. will match your stations receiver and antenna. The staff of Short Wave Magazine have been looking at the C.M. Howes Communications CTU30 a.t.u. kit.

This simple a.t.u. is designed for use with short wave receivers and low power (30W) transmitters. One of the main attractions of this kit, (apart from the price) is the use of a p.c.b. to mount all the components. This greatly simplifies the problem of mounting tuning capacitors that are at r.f. potential.

Circuit Description

The a.t.u. utilises a 'T' configuration with two variable capacitors and an inductor with twelve taps, selected by a rotary switch. The balun mounted on the p.c.b. enables the a.t.u. to match balanced or unbalanced antennas to 50 or 75Ω.

Construction

The kit was well packed and included everything except the metal box. All you need to build the kit is a standard electronics tool kit and some resin-cored solder. The instructions were comprehensive and up to Howes' usual standard, including a section on soldering for first time kit builders.

The main inductor uses a novel method of construction. A pre-cut and stripped length of ribbon cable is soldered to the p.c.b., the p.c.b. tracks complete the turns and provide the tapping points. Tip when fitting the ribbon cable - solder only the two outside wires at each end to start with. This is holds the cable, but makes it easy to adjust the position if necessary. The range switch and air-spaced Jackson variable capacitors are all mounted on the p.c.b. The range switch also uses a short length of pre-striped ribbon cable to connect one row of pins to the board. Winding the balun can be a bit fiddly, but is easily achievable with a little care and patience. The completed kit should be mounted in a metal box for best results. The only point to watch is that you should leave plenty of clearance around the variable capacitor shafts as they are at r.f. potential. You may wonder why this precaution is necessary. Well, if the unit is used with a transmitter, high r.f. voltages may be present on the capacitor shafts under certain load conditions. Even if you are only intending to use the a.t.u. for reception it is wise to take these precautions if only to minimise the detuning effect of the enclosure. The review kit was constructed by an experienced kit builder in about one hour.

In Use

The a.t.u. was initially tested with a low power transmitter on the amateur bands, with great success. The antenna used for this test was an array of parallel dipoles for 3.5, 7, 14, 21 & 28MHz all with rather narrow bandwidths. The a.t.u. was able to provide a good match with this antenna on all bands between 1.8 and 30MHz.

The next test was to attempt to match this antenna on all frequencies between 1.8 & 30MHz, with the short wave listener in mind. Again the a.t.u. achieved this quite easily. As expected though, some frequencies required careful adjustment for a perfect match. The twelve tapping points on the main inductor were very useful for coping with difficult antennas.

Summary

Overall this is a good first kit for the enthusiast. The small number of components, combined with the comprehensive instructions, ensure a good chance of success first time. Although ideal for the beginner the a.t.u. is a fully functioning unit which is also well suited for the QRP operator or short wave listener and represents good value for money. The kit costs £31.50 or £38.40 for a ready assembled model (P&P is £1.20 for kits and £3.00 for hardware) and is available from:

C.M. Howes Communications, Eydon, Daventry, Northants NW11 6PT.
Tel: (0327) 60178, who kindly provided the review kit.
SONY SW-7600 £149
200kHz-30MHz + FM BROADCAST
SSB/CW/AM
Includes free AC supply aerial and case!
The classic portable for those on the move who want to keep in touch with the world broadcasts. In addition it gives good reception of SSB and is a travellers joy! All our stocks are genuine UK Sony.

SONY ICF-2001D £289
150kHz-30MHz + FM + airband USB/LSB/CW/AM (sync)
Includes free universal AC adaptor
If you want a truly portable communications receiver that performs as well as base station models yet fits into the domestic scene, look no further. At £289 it would be good value. At £289 it's an absolute bargain.

SONY IC-F77 £349
150kHz-30MHz + stereo FM AM/SSB/CW
The SW-77 is the latest short wave portable from Sony. It integrates computer technology to provide a programmable data base of station names in its memory bank. Also included are 5 different timers and 162 preset stations. Fabulous!

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- 100kHz - 1300MHz No Gaps!
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Yupiteru are fast finding their way into wide areas of the commercial market including many government departments. This is testimony to their performance and rugged design. And when it comes to reliability you won't find any other brand can match its excellent record. We rarely see one back for service! If you want to know more about the leading range of scanners give us a call or write for the full product information.

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- Military & Civil Airband Monitor
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- Delay and Lockout
- Priority Channel
- Memory Lockout
- Steps 10 - 25 - 50 - 100kHz
- Superb Weak Signal Reception
- Illuminated Display
- Power from 4 x Ni-cads
- 240V AC PSU + 12V cigar lead
- BNC Helical Antenna & Strap
- Size only 127 x 35 x 59mm

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- 108 - 142MHz
- 30 Memories
- High Quality AM Reception
- Scanning and Search Mode
- Priority Channel
- Memory Lockout
- Steps 25 - 50 - 100kHz
- Superb Weak Signal Reception
- Illuminated Display
- Power from 3 x Ni-cads
- 12V Cigar charge/supply lead
- BNC Helical Antenna & Strap
- Size only 57 x 127 x 35mm

YUPITERU VT-150 £149
- Dedicated Marine Monitor
- 142 - 170MHz
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The Travel Loop

Does your m.f./lf. loop antenna neatly fold up and allow you to transport it in your suitcase without damage? This simple design by Martin Doig certainly does and together with two small separate tuning units allows coverage from below 15kHz to above 1.6MHz.

Many designs have been published for loop antennas, I have built many different types. However, they all suffer a similar disadvantage, transportability! This simple design of m.f./lf. loop antenna neatly folds up to allow you to transport it in your suitcase. Together with two small separate tuning units it gives coverage from below 15kHz to above 1.6MHz. The frame and loop windings both slide neatly into a cardboard tube measuring 787 x 50mm.

Loop Construction

The type of wire used is the important factor in this design. It needs to be fairly rigid to avoid tangling, yet flexible for neat storage. 20-way ribbon cable is used with an overall length of 2134mm. The framework consists of two pieces of planed wood 25 x 12.5mm, each 749mm long, forming a cross and held together by a halved joint. The joint is kept as tight as possible to avoid using additional securing materials such as nuts and bolts. Once the ribbon cable is formed into a permanent loop, it simply slides over the wooden frame. This needs to be as tight as possible to avoid slipping off. If necessary, small equal amounts can be sawn from each leg of the frame to ensure a good snug fit.

The frame is supported in an upright position by a 3.5mm diameter knitting needle. Saw the knitting needle in half, filling the ends to avoid scratching table tops, etc. Next, drill a suitable sized hole through two adjacent legs of the frame 6mm from the ends, aiming for a tight fit. A neater approach is to cover the needles with heatshrink sleeving. Additionally two cable "P" clips could be screwed into each base leg allowing the needles to be pushed through them. At the same time one clip could be allowed to swivel through 90° allowing the needle stand to be held parallel to the framework using a third clip, making easier storage and the stands less likely to be lost.

Loop Connections

Start with a total length of 20-way ribbon of 2134mm. Strip a small amount of insulation (3-5mm) from every wire at each end of the cable. Solder the opposite ends of the cable together off-setting connections by one position, eg. Black to brown, brown to red, etc. (Fig. 1). Symel sleeving or similar is required to insulate adjacent connections. Some coil taps are required as indicated in Fig. 1. You should end up with the main loop starting at a single black connection and ending at a single grey connection. Leave one turn of the coil (the outer white) unconnected from the main loop. This will act as the coupling loop to give a low impedance feed to the receiver antenna input.

A short length (say 500mm)
of 7-way ribbon cable can be used to make the connection to the main loop tags and coupling coil. This length is then terminated in connectors to suit the user. I chose a 5-pin DIN plug for the main coil connection and a 3.5mm jack plug for the coupling coil to feed my Sony ICF-7600DS antenna input. All the joints on the loop can now be neatly taped up.

180kHz - 1.6MHz Tuning Unit

The m.f./l.f. tuning unit 1.6MHz-180kHz simply consists of a dual-gang capacitor to resonate the loop and a rotary switch to short turns, so varying the tuning range. The dual-gang capacitor was 2 x 550pF found in a junk box. Its combined value of 1100pF is essential to make the loop tune down to 180kHz. A 700pF capacitor could be used but an additional fixed capacitor of 390pF would need to be switched in when required. The size of the box depends on the capacitor and switch, if fitted. A 5-pin DIN socket can be mounted on the rear of the box. The tuning capacitor was not calibrated accurately, but approximate tuning ranges for the coil taps shown are: 180-700kHz, 500-1100kHz, 1000-1600kHz (Fig. 2).

One limitation of using ribbon cable for this type of loop seems to be the increased self-capacitance due to the close spacing of the turns. The effect is a lowering of the Q at the h.f. end of the tuning range - a small trade-off for making the loop very transportable.

15-180kHz Tuning Unit

The coil described above has an inductance of approximately 0.6mH and 1100pF resonates this at 180kHz. I posses a v.l.f. converter which operates down to 10kHz and the loop can be made to successfully tune down to these frequencies. An additional tuning unit connects directly in place of the unit above. No variable capacitor is used here due to the enormous range of capacitance needed. For example to tune 60kHz, 10nF is needed; whereas for 15kHz, 160nF is required. Eight fixed values of polystyrene capacitor were chosen, and any combination of the eight can be selected, giving a range from 1 to 160nF (Fig. 3).

The size of the box needed will depend on the number of switched ranges required and the availability of the larger capacitors; i.e. a 68nF capacitor may have to be made from 7 x 10nF in parallel. A 5-pin DIN socket is again used to connect the loop. The graph below shows the capacitance required to resonate the loop between 180kHz and 15kHz.

---

**Abbreviations**

DIN  German Standards Institute  
h.f.  high frequency  
kHz  kilohertz  
l.f.  low frequency  
m.f.  medium frequency  
mH  millihenries  
MHz  megahertz  
mm  millimetres  
nF  nanofarads  
pF  picofarads  
Q  the 'goodness' of a circuit  
v.l.f.  very low frequency  
°  degrees

---

**Fig. 2.**

**Fig. 3.**

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Short Wave Magazine, September 1992
The Jack Scanner Antenna

The performance of some scanners is quite remarkable, even when only used with the little telescopic whip antenna or rubber-helical that's supplied with them. When they are connected to an efficient wide-band antenna the set's true capabilities start to show themselves and signals can be received from quite astounding ranges.

You can buy a number of dedicated commercial antennas which do the business, but most of these are a little on the pricey side. It's not too difficult, with a little bit of effort, to build a suitable antenna for a fraction of the price of the commercial alternatives.

The antenna in this article, provides quite good reception performance, can be built in a few hours and depending on how good a shack 'junk box' you have, shouldn't cost you more than a few pounds. It is intended primarily for indoor use - mounted in the loft is ideal - but you can use it on a temporary mount outdoors and even attach it to a mag-mount for use under 'static' mobile conditions when parked at some radio-advantageous high spot.

The antenna consists of four 'whip' elements of different lengths connected in parallel to the centre core of a PL259 plug. Three of these whip elements are, for convenience and ease of adjustment, standard telescopic antennas of the type you can pick up for 50p a piece or less at radio rallies.

Don't get the type with hinged or swivel bases, these are usually more expensive and more trouble to use. The ideal sort are those tapped to take a M2.5 or M4 screw in the base and with a fully extended length of around 1m and a collapsed length of 13 - 15mm. Don't worry too much about getting these exact sizes, just get what's going! Fig. 1 shows how these antennas are attached to a small mounting plate and then to the back of a PL299.

Construction

Cut a piece of aluminium plate for the base as shown in Fig. 2 and drill four holes as indicated. The hole in the centre should be of a size to take a length of 6BA brass studding, while the other three should suit the screw threads in the whips (M2.5 or M4). Now take the length of brass studding and insert it into the PL299 plug so that it fills the central connector. Solder in place. Wrap a length of adhesive tape around the 'waist' of the plug body to stop any Araldite from running out of the holes as you complete the next stage.

With the brass studding soldered into the plug and the tape in place, put some Araldite (epoxy resin) into the open back of the plug where the studding protrudes. Try to keep the studding as near central as possible and avoid any movement whilst the Araldite is setting. Fill the plug until the Araldite is level with the rim and put to one side to thoroughly set overnight. Now mount the triangular...
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SHORT WAVE MAGAZINE, SEPTEMBER 1992
plate onto the brass studding, ensuring that you place the two nylon washers on the studding first so that these act as insulation between the plate and the metal plug body. Put two 6BA nuts on the studding above the plate - Fig. 3. and tighten to hold the plate securely in place. Don’t overtighten as you can easily strip the threads.

Of the original 150mm length of brass studding you should have 100mm or so standing proud of the centre of the mounting plate. Leave this in place as it forms the fourth ‘whip’ element. Now attach the other three telescopic whips. The table shows some suggested lengths and each whip should be extended to match one of the lengths. You could choose your three favourite bands or just space them throughout the operating frequency range of your receiver.

If you wish you can now cover all the nuts above and beneath the plate, together with the Nylon washers, with Araldite and allow it to set. This is particularly useful if you intend to use the antenna much outdoors.

That’s the main part of the antenna completed. Obviously the PL259 just plugs straight into the socket on the top of the mag-mount.

**Ground Plane**

For fixed use, either at home in the loft or for occasional use mounted outside, you need some sort of ground plane. There are several different ways of making one of these. Perhaps the simplest is the one I used with a loft-mounted version of the Jack antenna and shown in Fig. 4.

This consisted of a small diecast box with an SO239 UHF socket mounted in the middle of the base. The coaxial cable connecting the socket to the receiver exits at the side of this box.

Four thin strips of aluminium, each 800mm long x 100mm wide, are screwed to the lid of the box. I used the existing lid fixing screws to fix these strips, which had holes drilled to line up with those in the box lid. That’s all there is to it.

**Performance**

So, what are the received signals like compared with the small whip that came with the scanner? Well, first you have to take into consideration the actual location of my QTH, just space them throughout the operating frequency range of your receiver.

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**Performance**

So, what are the received signals like compared with the small whip that came with the scanner? Well, first you have to take into consideration the actual location of my QTH,
which is on the south facing slopes of a small hill, in a valley surrounded on three sides by mountains up to 600m high. My best take-off for v.h.f./u.h.f. operating is to the south. About 10km in this direction is a large town and using the set’s whip antenna, only one or two of the better-sited p.m.r. base stations located there can be heard. With this antenna mounted in the loft connected, quite a few more can be heard, as can a few odd mobiles working to them. Additionally, the control tower at Bristol airport can also be heard, about 22km away - not possible on the set’s own whip as this airport is more ‘around the corner’ from my clear signal take-off direction.

Lastly, as there is bound to be some licensed amateur who feeds r.f. up it, just to see if it will work. The answer is, yes it does, on 144 and 430MHz, but that’s not what it’s intended for. It’s intended to be a wide-band receive antenna. If you want to transmit on those two ‘narrow’ segments, there are much more suitable antennas about.

Why did I call it the Jack? Simply because I use it plugged into a JIL!

YOU WILL NEED

1. PL259 UHF plug (suitable for UR67 coaxial cable)
2. Telescopic whip antennas (see text)
3. M2.5 or M4 screws to fit whips (see text)
4. Nylon washers 6BA
5. M4 nuts
6. 6BA brass studding, 150mm long
7. Epoxy resin (Araldite or similar)
8. Aluminium for mounting plate 12-14s.w.g. (see text)
9. Diecast aluminium box (see text)
10. Strips of 14s.w.g. aluminium (see text)
11. SO239 UHF socket and mounting bolts
12. Rubber or Nylon grommet for the cable exit point from the box

If you are going to make up the diecast box/ground-plane assembly you will also require:
Espionage Antennas

During World War II agents needed to be able to set up their radios without being detected. June Stirrat looks at some of the ways in which they arranged their antennas to get the best performance without attracting unwanted attention from the enemy.

The circumstances surrounding World War II espionage often prevented an operator from setting up an outside antenna. Anyone could have been a Gestapo agent or informant and a single stray wire could have looked out of place and led them straight to the room where a clandestine transmitter was being used. The only safe option was to keep all of the wiring on the inside of the building and possibly on the inside of one room within it.

**Rule of Thumb**

The efficiency and operation of h.f. antennas rigged up within buildings depends on many factors which are difficult to describe and hard to measure. As well as this, stations would only be used once or twice at the same location and on the air time would be kept to a minimum. This meant that there was little chance for practical experience, so rules of thumb gained out of experience had to be relied on.

An amateur is often happy to take pot luck on who they can get through to. The spy needed to contact a particular station, a known distance and compass bearing away. If the control station was less than 500km away, some element of high angle radiation would be needed to secure contact on h.f. However, if the control station was at a much greater distance, some low angle radiation was essential. In any event, the largest room on the highest floor of a building would be chosen whenever possible.

**Precious**

Out of doors, an antenna wire would be cut to a quarter wave for the lowest frequency in use. Indoors, about 2 metres of wire would be added to this length, using and nothing else but rule of thumb, to compensate for the building.

The arrangement shown in **Fig. 1** gives low angle radiation from the vertical wire near to the set and some high angle radiation from the horizontal length along the ceiling.

This arrangement may suffice above 10MHz. However, the longer wires required for low frequencies, such as 3.5MHz and 7.0MHz, have to be folded in a suitable way.

The way in which the wire is folded will effect the angle at which small, but precious, amounts of r.f. are radiated.

For high angle radiation, try the arrangement shown in **Fig. 2**. The wire is run up the wall and fold the surplus backwards and forwards along the end wall.

For low angle radiation, run the wire up the wall and fold the surplus backwards and forwards across the ceiling as shown in **Fig. 3**.

Earthing at r.f. is always a problem and can be difficult to arrange on the upper floor of a building. Sometimes connection to the mains wiring is adequate to secure h.f. contacts. Central heating pipes often offer a useful earthing point. The counterpoise wire remains an essential standby. Lay it out on the floor, as in **Fig. 2**.

**Challenge**

Equipment has changed over the years and modern receivers work very well with short antennas. However, h.f. transmission from an antenna inside a room will always remain a challenge. Wire antennas are simple and inexpensive, but be warned, drawing pins can be hard to get out of the ceiling!

**Abbreviations**

h.f. = high frequency  
kHz = kilohertz  
l.f. = low frequency  
MHz = megahertz  
r.f. = radio frequency
Antennas for Scanners

Desk top scanners are generally supplied with a short telescopic whip antenna and a socket to enable an alternative antenna to be connected. In this article Mathew Probert looks at choosing antennas for use with desk top scanners.

The most striking feature of any scanner is the wide range of frequencies that it is designed to receive. It seems logical, therefore, to first consider 'bandwidth'. The term 'bandwidth', refers to the range of frequencies to which an antenna is responsive. Portable television antennas are often referred to in advertising literature as 'wide band', indicating that they are responsive to all the television channels in use in the UK. Although the manufacturers of a television antenna may describe it as wide band, it is only designed to receive signals within a very narrow range compared to a scanner. Indeed, a wide band television antenna only needs to receive signals between 470 and 852MHz, whereas a scanner is designed to receive signals between 25MHz and 1.3GHz, more in some cases!

Polarisation

The next consideration, that of 'polarisation', is not quite so obvious. Radio waves may be transmitted using one of three 'polarisations': Horizontal, Vertical or Circular.

An antenna responsive to horizontally polarised radio waves only, will not receive signals from vertically polarised sources, and similarly, an antenna which is responsive to vertically polarised waves only will not receive horizontally polarised radio signals. An antenna that is responsive to both horizontally and vertically polarised radio waves is described as being 'circularly polarised'. Most commercial and government radio signals in the v.h.f. and u.h.f. wave bands are transmitted with vertical polarisation. Some broadcast stations, and radio amateurs use horizontal polarisation.

Antenna Gain

The 'gain' of the antenna also needs to be considered. The term 'gain' is perhaps the most widely abused and least understood of all radio jargon. The 'gain' of an antenna, in simplified terms, is a comparative figure describing how much stronger a signal will be received by the described antenna compared to the same signal received when using a short, straight piece of wire. A television antenna provides a good example of both the benefits, and drawbacks, of 'gain'. A television antenna is often described as having 'gain' in terms of 10dB or more. The 10dB measurement is best viewed as a simple comparative figure, the higher the figure the stronger the received signal. The television antenna derives its gain from the fact that it only receives signals from one direction. To radio signals arriving at the antenna from directions other than the way the antenna is pointing it actually has a high loss in terms of received signal strength. Fig. 1 illustrates a typical television antenna that will receive strong signals from a transmitting source B, but very weak signals from transmitting source A. This occurs because of the receiving antenna's directional characteristics, or 'gain'.

Practical Solutions

Having discussed some of the basic considerations of wideband scanner antennas, we may now look at some of the practical solutions which are available. Perhaps the most widely known wideband scanner antenna is the 'discone'. Commercially available discone antennas often boast that they can receive frequencies between 25MHz and 1.3GHz, which, at first glance appears to be perfect for a scanner user's requirements. But what about polarisation and gain? In order to better understand the discone antenna it is necessary to consider its design characteristics. The discone antenna is a variation on the simple wire antenna, where the simple wire has been replaced by a disc, or more commonly, a number of horizontal wires resembling the spokes of a wheel, and suspended a short distance above a cone. Hence the name 'disc cone', which contracts to 'Discone'. The diameter of the disc is one quarter of the length of the radio wave at the lowest frequency that the antenna is required to receive. Likewise, the length of the side of the cone is also one quarter.
of the length of the radio wave at the lowest desired frequency, as is the diameter of the cone.

When constructed to these measurements, a discone antenna will receive vertically polarised radio waves from the lowest frequency upwards. It also provides gain over the simple wire antenna. This gain is achieved, not at the expense of horizontal directivity, but rather by restricting the vertical directivity to radio waves received from the horizon rather than the sky above. Since v.h.f. and u.h.f. radio waves only travel in a straight line, this directivity is not a drawback for a scanner antenna.

A properly constructed discone antenna does, then, appear to satisfy most of the requirements of a wideband scanner antenna, that is, it is wideband. But the polarisation is vertical, so horizontally polarised radio waves will not be received very well. In addition, a discone antenna that can receive radio signals from 25 MHz upwards will be something more than 3 m wide and nearly as tall!

Most commercial discone antennas sold for use with scanners are nowhere near as large as that. This leaves only one conclusion to be drawn - they do not cover the range of frequencies claimed. In fact, many commercial discone antennas are designed for use from 14 MHz upwards.

Fig. 2 shows a typical commercial discone antenna. To summarise, the discone is a wideband, vertically polarised antenna that will receive signals from all around it at slightly higher strengths than a simple, single wire would. Its drawbacks are that it does not receive horizontally polarised radio waves, it is too large to be practical at the lower frequencies and it must be mounted on a non-metallic post otherwise its reception of signals from some directions will be reduced.

I previously described an antenna's gain as being the result of restricting the direction from which the antenna would receive radio waves. In many cases this is true. However, there are also other ways in which an antenna can be built so that it exhibits gain.

The Long Wire

The physical size of a length of wire influences the strength of received radio signals. Generally, the longer the wire, the stronger will be the received signals. An antenna
The new HOWES AB118 Active Antenna has been optimised for the VHF air-band listener. A low noise Integrated Circuit preamplifier gives excellent performance from 118 to 137MHz without any fall-off in sensitivity at the band edges. A band-pass RF filter on the output helps reduce out of band signals - this is especially useful when operating from hill tops and other good locations. The half-wave, end-fed antenna element is formed with ribbon cable, so it can be easily rolled up and packed for holiday use. It also fits in standard 1.5inch plastic water hose. There are lots more kits components. There are lots more kits, quality printed circuit boards with screen printed parts. The CTU30 "hardware package" contains抢先 the optional PMB4 Programable Digital Readout. It is an add-on Digital Readout for swept frequency type analogue radios (FR7G etc.). By adding the optional PMB4 Programmable Matrix you can switch between six different IF offsets. The C4M "hardware package" contains a custom made case with pre-punched anodised aluminium front panel (see photo), plus switch, knob, BNC socket, nuts and bolts etc. to enable you to achieve a high standard of finish for your project. If you would like to add digital accuracy to your radio, why not give me a ring to discuss it in more detail?

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PMB4 Kit: £9-90

AA2 150kHz to 30MHz Active Antenna Amplifier

Broad-band performance that does not tail off at the higher frequencies has made the AA2 very popular for wide band monitoring as well as for locations where space is limited.

AA2 Kit: £8-30

AA4 25 to 1300MHz Active Antenna

This is the scanner antenna for VHF/LHF monitoring applications. Broader bandwidth than a discrete and it's nearer and more compact (only 16\(\text{\textdegree}\)) long.

AA4 Kit: £19-80

CTU30 HF Antenna Tuning Unit

The CTU30 covers all the shortwave bands and will match all types of antenna, balanced or unbalanced. It also adds extra front end filtering to your receiver.

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72 & 73 from Dave G4KQH, Technical Manager.
which takes advantage of this is the long wire, which is simply a single length of wire supported horizontally between two supports, and fed directly to the receiver. This type of antenna receives horizontally polarised radio waves from all around it. Immediately it becomes apparent that this is not suitable for use with a scanner, since it does not receive vertically polarised radio waves in fact most v.h.f. and u.h.f. transmissions. If, however, the long wire is bent through a right angle to form an L shape, with a vertical and horizontal element, then both horizontally and vertically polarised radio waves will be received. We now have a circularly polarised antenna receiving signals from all directions at high strength.

So what's the catch? The catch, or drawback, of the 'inverted L' antenna, as this type of wire arrangement is called, is that, although it is a finite length of wire, to radio waves of different frequencies it appears as different wave lengths. This characteristic is called 'resonance'. To understand why this condition is a drawback, we need to consider a matter called 'impedance'.

For the sake of simplicity we will accept that most scanners require to be connected to an antenna with an impedance of 50Ω. A resonant piece of wire, which is an odd number of quarter wavelengths long, has an impedance at the end of 50Ω, when that same wire is an even number of quarter wavelengths long it has an impedance at the end of several thousand ohms.

If the impedance of an antenna where it connects to a radio receiver is significantly different, then radio signals in the antenna travelling towards the receiver will, upon meeting the different impedance, be reflected back along the antenna rather than passing into the receiver as desired.

It is obvious, then, that a similar impedance is required at the point of the antenna where it connects to the scanner, and at the scanner's antenna socket. It should also be apparent that, since scanners are used to listen to a wide range of frequencies, a finite length of wire will present varying impedances at the point where it connects to the scanner, and at frequencies where the antennas' impedance is very different to the scanners' very little signal will be fed into the scanner.

**Significant Problem**

This matter of different antenna impedances was not a problem with the discone antenna discussed earlier, but is a significant problem with the inverted L. So how do we resolve this problem? A length of wire may be made non-resonant simply by connecting a 470Ω resistor at the far end of the wire and connecting the other end of the resistor to an earth connection, or short length of wire. If this is done, the impedance at the other end of the wire will remain a constant 470Ω. This difference in impedances is still significant and it may be found that insufficient signal is being transferred from the antenna to the scanner, in which case a transformer can be connected between the scanner's antenna socket and the antenna.

A typical inverted L antenna arrangement is illustrated in Fig. 3. This is a good all rounder if you have the space to erect it and if you can live with the compromise between high signal levels received by the antenna and the loss of signal strength delivered to the scanner as a result of the difference in impedances.

**Umbrella Antenna**

If you do not have the room to erect an inverted L, or, if your spouse, neighbours or local authority object to its appearance, you may wish to consider an umbrella antenna in the loft space. The umbrella antenna is a number of different lengths of wire supported around a vertically orientated plastics pole, such as a length of 1.5in plastics waste pipe. This type of antenna gets its name from its appearance, since any wires which are so long that they overlap the end of the pole, are taken away horizontally. Each wire is cut so that it is a quarter wavelength long at a different frequency. All the wires are joined together at the low end and soldered to the inner conductor of a length of coaxial cable, which in turn is fed to the scanner's antenna socket.

At different frequencies, the different lengths of wire each have a different impedance at the end where they connect to the coaxial cable, with at least one wire having a sufficiently similar impedance to transfer its received signals on to the scanner. This antenna is primarily vertically polarised, except for frequencies where the wire offering the correct impedance to the scanner is bent, in which case both vertically and horizontally polarised waves are received. Radio signals from all around are received by the umbrella antenna, but at a lower strength to the inverted L. Finally, the umbrella antenna needs to be mounted above a metal surface, or series of wires all connected to the outer braiding of the coaxial cable.

In comparison tests with a commercial discone antenna, I have found that the umbrella antenna with six different wire lengths delivers higher signal levels to the scanner than the discone and is much cheaper to build than a discone is to buy!

I hope that this article has explained some of the problems connected with wide band antennas for scanner users and that you will experiment with antennas of your own.
RF-Systems
MLB Antenna
Mk-1

Antennas are a popular subject. They can be made cheaply and lend themselves to experiment - after all you might manage to invent the ultimate antenna!

I first noticed the RF-Systems MLB Antenna Mk-1 at Friedrichshafen when Lowe Electronics had them on their stand opposite us. In fact, they strung one from their stand across to ours and back again to enable them to demonstrate their receivers.

The instruction sheet explains briefly how the antenna works and offers suggestions as to how it can be shortened if you cannot find room for its 13m length. The antenna itself is interesting as it appears to be constructed from oxygen-free, copper speaker cable. At least it is easier to handle than the solid drawn copper wire more commonly used for this type of antenna. I was reminded of the special 'aerial wire' sold in boxes when I was starting out - was it really better than ordinary flex? One end of the antenna has a metal loop fitted to connect to the magnetic balun. The opposite end is attached to an insulator (egg) to which is attached a length of Perlon cord for attachment to a suitable anchor point.

Another length of Perlon cord with a metal loop also fits the terminal of the balun and serves to anchor the balun at the shack end. The balun is the component that makes the MLB Antenna Mk-1 different to your ordinary longwire. The 'patented impedance matching transformer' ensures that the varying impedance of the short 'longwire' is matched to the feeder. The balun is claimed to do away with the need for an a.t.u. and as it feeds into screened coaxial cable, there should be a noticeable drop in background noise.

The transfer of the signal from the antenna to the feeder is performed magnetically, so the feeder is electrically isolated from the antenna. This is claimed to offer improved noise performance. A galvanic connection to earth gives protection against static.

**Installation**

The instruction leaflet offers advice on how to put up the antenna. I decided to hang the balun from the top of my Tennamast and attach the other end to a suitable tree. Unfortunately I couldn’t reach a high branch, so the wire sloped at 45°, west to east.

The feeder connects to the balun with a PL259 UHF plug, supplied with the antenna along with a rubber boot for weatherproofing. I used RG58 coaxial cable for the feeder.

My first problem came when I realised that my receiver has a 75Ω input. Not much good for testing a 50Ω antenna! A phone call to George G4HNM secured the loan of an FT-757GX. This was positioned alongside my two computers and connected to the feeder. I wanted to try using the receiver in close proximity to the computers to test the claim of reduced interference problems from such sources. The balun was hanging from its Perlon cord some 4m up. The leaflet suggests that it should be outside an ‘envelope’ extending 5m from the house and 1m above the roof. In my case this is not really practical - the height above the roof is easy, but I could only achieve about 3m from the house. However, any interference from either the Mac Plus or the PC 286 wasn’t discernable.

**Well Made**

This short review was written while listening to the s.w.r. receiver during the afternoon. I have listened to a variety of stations mainly on 7MHz but also to HCJB’s s.s.b. transmission on 21.455MHz. The antenna seems to be well made. Although it would need at least a year of weather to find out just how rugged and weather-proof it really is, I can see no real problems occurring. The magnetic balun certainly seems to overcome the problems of using a computer alongside the set.

The RF-Systems MLB Antenna Mk-1 was kindly loaned by Lowe Electronics Ltd, Chesterfield Road, Matlock, Derbyshire. Tel: (0629) 580800. The RF-Systems MLB Antenna Mk-1 costs £58.00 inc VAT.
The Living Room Loop

I have, in everyday use, a superb 9-waveband (l.w., m.w. and seven s.w. bands) classic receiver in polished wood cabinet. This RX has an unblemished, polished wood cabinet and is a piece of furniture in its own right! The large speaker is covered by an attractive two-tone speaker fabric, flecked with gold. Coverage is from 2000m (150kHz) to 13m (23MHz) and with a good antenna it will receive the world of DX, on all bands, with excellent audio reproduction. What an insult for it to be used with loops that, although efficient, look as though they originated on Heath Robinson’s drawing board. I also have efficient m.w./l.w. communications RXs and TX/RX equipment.

Ruthless

A careful, but ruthless, specification for the Livingroom Loop was drawn up under the two main design headings that I considered to be of importance. These were Decor and DX m.w. reception efficiency.

1. Decor. a. The loop must be decor compatible with the above All-Wave RX and its surrounds. It must be acceptable to other people.

b. It must fit into a predetermined space - yet provide excellent performance.

c. All wooden parts should be wood dyed and wax polished to a suitable finish; and all visible screw heads should be round head chromium plated or bronze.

d. The loop wire should be colour compatible, and all extraneous wiring hidden. All moving parts should be hidden and protected in a box, which would also serve as the loop base.

2. Efficiency. a. The loop should be absolutely efficient, with m.w. and amateur Top Band (160m) DX performance. The option to add m.w.

- listening facilities if required should also be available.

- The loop must be convenient to move to m.w. communications receivers for maximum DX results, and domestic convenience.

- For maximum ‘pick-up’ the loop should be as nearly circular as possible.

- The turns configuration should be spiral, as experiments have shown that this gives the best nulling (directional) and ‘pick-up’.

- For really serious m.w. DX listening the loop would be mounted on a turntable alongside a communications receiver and it was essential that the frequency resonating knob should be so positioned that both it and the loop could be rotated in one operation - at the drop of a hand and a twist of the wrist - without looking.

- As (c) previously.

Description

The colour schemes adopted in the design can obviously be modified to suit individual requirements without changing the design. It is up to the individual.

The circuit (Fig. 1) is relatively conventional. It does, however, consist of an unconventional spiral loop represented by L2, coupled to a coaxial feedline by L1. L2 is resonated by a two-gang, 500pF per section, variable capacitor with a 150pF ceramic capacitor in series with one section to cover the required frequency range without switching. It was found in practice that a slow-motion drive on C2/C3 was not necessary.

The loop covers from 2.2MHz to 545kHz (136-550m), i.e. the whole m.w. band plus the amateur Top Band and all frequencies between.

The circuit diagram shows the extra l.w. listening option circuit, which can be inserted at point ‘X’ using a switch. A convenient value for L3 could be a 2.5 - 3.5mH r.f. choke, possibly with a ceramic capacitor across it, to adjust to exact l.w. band coverage.

No pre-amplifier is fitted to the loop, although there is plenty of room, for a transistorised loop amplifier in the base. It has been found that with a good h.f. gain RX, a pre-amplifier is not necessary. On those occasions where an amplifier is needed, then an external 500 input 50Q output external amplifier is used between loop and RX.

Construction

Fig. 2 shows the double twin cross boom arms, onto which is wound an octagonal spiral loop winding. This is supported by a vertical arm, which is bolted to the rear of the base. The tuning capacitor C2/C3 is mounted on the top and fitted with a 50mm diameter instrument knob with a 75mm diameter skirt. The abs plastics box is a mottled black, which is superior to the usual smooth-surface boxes, which show every finger mark. All visible screws should have round chromed heads.

The twin cross boom and vertical arm are made of Masons Timber Products Wood Mouldings.

Can you think of one good reason why a Medium Wave DX Loop Antenna should not be attractive to look at?
Richard Q Marris couldn’t either, so he came up with this design.
ANTENNAS

advantage over ordinary timber being that the surface does not need rubbing down and is easily dyed and polished. Also it does not warp. Ruskins Red Mahogany WoodDye is used with two applications being made to each wooden part, using a piece of cloth. When dry, each limb is polished with domestic wax polish. The WoodDye comes in a variety of wood colours. It is also possible to do some interesting colour mixing to achieve a particular shade.

The wire chosen was single strand 1/0.6mm, orange pvc covered. However, it is available in 11 different colours. So wood and wire colour schemes can be in many alternative combinations to suit a particular situation. It is up to you!

Arms

The cross boom arms are shown in Fig. 2. Holes A & B are to accommodate the coupling loop, L1.

Holes 1 - 16 are used for L2, at the bottom of the two vertical arms and holes 2 - 16 at the other six ends. The simplest way is to mark out and drill one end with holes 1 - 16, plus A & B, and then use this as a template, with a sharp point, to mark out the hole positions on the other seven ends. Then drill them. The twin cross booms should be securely screwed together, after polishing.

The L2 winding consists of 15 turns starting and finishing at the bottom of the two vertical limbs. Leaving a 380mm long tail, feed the end of the wire through hole 2 of the left hand bottom vertical and feed the tail back through hole 1. Anchor with a piece of cocktail stick as a wedge. The wire is then fed through hole 2 on all arms but into hole 1 on the bottom right hand vertical arm, and then for 15 turns, in a spiral terminating at the end of the bottom of the right hand vertical arm. This is a lengthy job; feeding - pulling - feeding - pulling the wire until the loop is complete.

Terminate with another ‘tail’ at hole 15. Then go back to the start and tighten each turn, up to the outer wire turn in hole 15. Fold back the ‘tail’ through hole 16 and wedge as before. The result is worth the time and effort.

At this stage the spiral loop and cross boom, should be screwed to the main vertical support arm, behind the top, of which, is fixed a small 2-way terminal block. L1 consists of one large turn, and one small turn, as shown in Fig. 2, the ends being terminated at the terminal block. The wire ends should be led along the rear of the top horizontal arms and stapled in position, using a Bambi stapler or similar.

The black abs box is used in an inverted position, with the lid at the bottom. The variable capacitor C2, C3 is mounted with the spindle hole 38mm from the front edge, on the longitudinal centre of the box. It is essential that the body length of the variable capacitor/should not exceed 56mm, excluding the spindle.

The spiral loop cross boom assembly is now bolted to the

![Fig. 2: Constructional details of the Living Room Loop. The wire end L2 (Upper) and L2 (Lower) are showed.](image-url)
Small terminal block

Cable cleats

Drilling details

L1 winding details using holes A and B

RG58 coaxial cable

Small terminal block

Cable cleats

Drilling details

L1 winding details using holes A and B

RG58 coaxial cable

A 1.5m length of RG58 coaxial feeder is connected to the LI ends at the terminal block. It should be cleated and hidden down the back of the vertical support arm.

The ‘lid’ of the plastics box is at the loop assembly bottom and it is suggested that some non-scratch material be stuck onto this to avoid scratching furniture. Cut-up beer mats were used on the prototype.

Efficient Nulling

On attaching the spiral loop to a good RX it will be found that the signal pick-up is excellent, with efficient nulling.

Between 2.2MHz and 545kHz the loop operates as an efficient directional RX loop. On the higher frequencies, up to 23MHz it has often proved to be quite effective as a non-tunable, non-directional, indoor s.w. RX antenna.

The Livingroom Loop offers a new look to m.w. loops. It is quite impressive to look at, domestically acceptable and very efficient as an antenna.

(CBL/EW1/orange) and the abs box (MB6 213 x 142 x 57mm) can be obtained from Marco
Tel: (0939) 32763. The two-gang, 500 ± 500pF airspaced, variable capacitor (small-size), is
13 The Strait, Lincoln LN2 1JF. Tel: (0522) 20767.

Short Wave Magazine, September 1992
This month we are offering SWM Subscribers' Club Members the chance to buy a Radio Amateur's Map of Europe at a saving of £2.45. This useful, full colour map covers all of Europe and Scandanavia as well as part of western Asia. The map gives callsign prefixes, Maidenhead Locator squares, countries and major towns and cities at a scale of 1:6000000. Amateur beacons in the 50, 144 & 430MHz bands, together with 144MHz repeaters, are also shown with their details being given in a separate table.

You would normally expect to pay £5.95 inc post & packing for this map, but as a Subscriber's Club Member you can buy your copy for just £4.50 inc. P&P.

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The 28MHz beacon chart, Fig. 1, this time certainly supports what Tony said, because, from the 48 beacons on the log and sheets that I sent out to contributors, only 20 were heard and that included one 'extra' LU1FHF (28.264MHz), two heard once only and most of the rest were copied due to seasonal outbreaks of Sporadic-E. However, the sun is never quiet and remember, it only takes an active spot to cause a really good disturbance.

**Solar**

For your records, Patrick Moore (Selsey) kindly supplied me with a copy of the large sunspot group that he projected through his telescope at 1500 on May 21, Fig. 2. In June, Ted Waring (Bristol) counted 16 sunspots on the 3rd, 18 on the 8th and 11 on the 20th. Ron Livesey (Edinburgh), using a 2.5m refractor and a 6ft projection screen, located three active areas on the sun's disc on days 2, 13, 15, 17 & 24 and four, on days 11, 12, 14 and 21-23.

Earlier in the month, Patrick Moore was keeping watch on a 'string' of sunspots that crossed the disc between the 7th and 13th and as usual he sent me a drawing, Fig. 3, of how they appeared on his screen at 0840 on the 10th. Around this time in Sevenoaks, Cdr Henry Hatfield's spectrophotoloscope located 3 sunspot groups, 8 filaments and 7 quiescent prominences on the sun's disc on the 9th and 10th; 2 spots, 10 and 5 small spots on the 12th and 12b; a few spots, 6f and 4 small spots on the 14th and 15th; 1g and slightly active, 12l and 8 spots on the 18th; a slightly active plage, 12l and 6 small spots on the 27th and 9f and 6 small spots on the 28th. Henry also recorded individual bursts of solar radio noise at 136MHz on the 27th and 30th.

While visiting the South Downs Astronomical Society's Trundle Observatory, near Chichester, on July 12, their Chairman, Ian Wood, showed Jon and I a long string of sunspots, around central meridian, being projected, through their refractor telescope. More details next time.

**Auroral**

Although mid-summer observation of aurora is hampered by the lightskies, Ron Livesey, the auroral co-ordinator for the British Astronomical Association received reports of sightings for the overnight period on June 1, 7, 9-11, 14, 27 & 28. Although Dave Gavine (Edinburgh) (latitude 59°) reported a 'faint glow' on the 11th, Ron points out that the other observations came mainly from astronomers where the sky is darker nearer to the magnetic pole in Canada. Once more this proves the value of the international co-operation of many observers. Auroral reflected radio signals were noted by Tony Hopwood during the afternoons of the 8th, 10th & 23rd. Fred Pallant (Storrington) reported a 'very rough' tone on the signals from the Swedish beacon, SKTEN, at 0822 on the 3rd and 1556 on the 9th.

**Magnetic**

The magnetometer used by Tony Hopwood detected 'disturbed' conditions on June 4, 14, 17, 23 & 25, "very disturbed" on days 5-11 & 18 and 'storm' on the 8th & 28th. The various instruments operated by Karl Lewis (Saltash), Ron Livesey and David Pettitt (Carlisle), between them recorded storm conditions on days 8, 10, 11, 18, 24, 27, 29 & 30.

**Sporadic-E**

The influence of Sporadic-E, reaching to at least 100MHz, was proved by Richard Gosnell (Swindon) when he logged 7 East European broadcast stations in Band II on June 1 and around 8 and 20 at 1515 and 1930 respectively on the 8th. Furthermore, on the same band, Simon Hamer (New Radnor) heard programmes from Morocco, Portugal and Spain on the 8th and all Scandinavian countries on the 7th. Simon's 28MHz beacon log during this period certainly indicates prolonged openings and towards the end of the month, evening heard and coupled for a couple of days.

**Propagation Beacons**

First, my thanks to Gordon Feete (Didcot), Richard Gosnell, Henry Hatfield, Ted Owen (Madon), Fred Pallant, Ted Waring and Ford White (Portland) for their 28MHz beacon logs from which I produced the usual chart, Fig. 1. Fred Pallant checked the band many times on the 10th and did not report a beacon. Although there are less 28MHz beacon logs in the chart this time, the extra space was soon occupied by a special report of the 50MHz beacon copied by Richard Gosnell, during Sporadic-E openings on the days indicated. The event at 1100 on the 23rd was so intense that Richard was able to copy GB3LER with only a whip antenna feeding his portable receiver.

**Tropospheric**

During the tropospheric opening on June 12, Simon Hamer received Band II signals from stations in Denmark, Germany and Sweden and, while tuning around on the 30th, Rhoderick Illman (Oxted) logged Bedfordshire on 103.8MHz for the first time and was among those who heard the strongest transmissions between 99.9 and 101.9MHz, from the new Independent National Radio Service 'Classic FM'. This station was also heard by David Ashley, George Garden, Simon Hamer and myself, "It's just like opening my window", said Rhoderick, after hearing their outdoor sounds transmission which included various birds, dogs, sheep and overflying aircraft. I found several Dutch and German stations in Band II around 0730 on July 7.

**Extra Info**

Further reports about ionospheric and tropospheric conditions, including the variations in atmospheric pressure can be seen in DXTV Round-up elsewhere in this issue.
A s promised last month a look at weathermen using the airwaves this month and in particular the NOAA hurricane hunters.

First, though, a look at what has been happening a little closer to home and the UK metmen have been zooming around the Azores in their C-130 Hercules, nicknamed 'Snoopy'. Every spring and summer there is a near constant bank of 80% cloud cover that hangs over the Atlantic off the West African coastline. An international study took place in during June and the Meteorological offices research flight took part. Snoopy was dispatched with its sophisticated sensors and equipment to scan an area from the Azores to Madeira. The Hercules is normally based at the Royal Aircraft Establishment base at Farnborough in Hampshire and they do use h.f. for communications. I have heard them on 6.75MHz using the callsign 'Metman' (listen-out for 'Snoopy' as well though) although I suspect they may well have other frequencies available as well. You will note of course that the 5.75MHz frequency is in the middle of a band normally used for military or government operations.

You Have to be Mad to Work Here

If you hold a Commercial Pilot's Licence and have a death wish then NOAA would like to hear from you. They use Lockheed P-3 Deltas and send them right into the middle of thunderstorms to gather data. Indeed by the time you read this the hurricane season in the Caribbean will be fast approaching. The first sign of activity is usually a storm building up and you may get notice of this if you can hear the NOAA weather broadcasts on 7.880MHz (It is swamped by the constant carrier from Hamburg Meteo in most of Europe. They do not seem to use the frequency much but are obviously terrified that someone will steal it if they do not leave it a carrier there). If you have a Meteosat weather satellite system then the pictures of the Caribbean on channel 2 can also give an early warning. The reason NOAA takes such interest is that these storms produce between three or four hurricanes a year and they often head north and cause considerable damage in states such as Florida, Georgia, Carolina and the states bordering the Gulf of Mexico.

Once the Orions are airborne listen-out on 3.407, 5.582, 6.673, 8.576, 9.020, 10.015, 11.898, 12.267, 13.354, 17.901 and 21.597MHz. The callsign KJYA or 'Miami Monitor' is used on the ground and the Orions use callsigns NOAA-41 and 42. NOAA are not the only ones monitoring the hurricanes. The USAF also operate modified Hercules using call-signs with the prefix 'Gulf'. They regularly work McDuff AFB in Florida 4.746, 6.750, 8.993, 12.246, 13.244 and 18.019MHz. You might also hear them on the regular USAF GCCS channels.

Magnetic Balancing Act

So you have all gone out and bought GSRV antennas (I am going to start demanding royalties from the people that make them) and now the enquiries are rolling in about the baluns that you need to make them really work well. The majority of GSRV's have their ribbon cable feeders terminated with a little plastics tube with an SO-239 socket on the end. Unfortunately, if you plug a standard 50Ω coaxial cable into this point you get a mismatch because you are connecting an unbalanced feed to a balanced feed. The balun that you need to get a proper match is a separate item and, unfortunately, will probably cost more than the antenna. Commercially made baluns usually consist of a tube with SO-239 socket at one end and two screw terminals. They are available in 1:1 or 1:4 ratios and personally I find the 1:1 works best (in theory the 1:4 should be better). You will need to snap off the ribbon cable, bare the ends and connect them to the screw terminals. Some sort of protection should be applied to the terminals such as silicone grease or Waxoyl. You should also ensure that your connection to the socket which now provides an unbalanced feed is well taped-up to stop rainwater getting in.

The baluns mentioned should not be confused with the Magnetic Longwire Balun which I briefly mentioned last month. This device from Love Electronics is designed for operation solely with longwire or 'T' type antennas. There has always been a problem feeding longwire antennas because of the signal loss that can occur on the feeder because of mismatch. The alternative is to bring the longwire into the shack and feed it directly to the a.t.u. or receiver but of course that means picking up all sorts of mains born interference. I am always sceptical of claims made for some of these 'miracle devices', but I must say I am most impressed by this little gadget. It allows static build-up to leak away to earth and it really does seem to meet the claims made for it. In order to make it work hard I tried it connected to just 6m of wire. Above about 7MHz it performed just as well as my GSRV and in some cases better because there was a noticeable improvement in the signal to noise ratio. Below 7MHz the GSRV had the edge (according to the S-meter) although at times the lower noise levels on the longwire could make the signal easier to hear. Do not throw away your GSRV but if you can only string up a modest longwire then this balun should be seriously considered. Love can also supply full antenna kits (12.5 or 20m long) using a similar balun.

You write

Graham Tanner asked about the callsign 'Cosmos' on behalf of reader Stephen Legg of Gosport. I have never been able to get to the bottom of these callsigns which regularly appear with 'Watchdog' and 'Maffbase' - however, I will stab a guess and say I think they are fisheries protection vessels and they use the callsigns when working in conjunction with the Ministry of Agriculture, Fisheries and Food because that's who 'Maffbase' is and the 'Watchdogs' are their aircraft.

Charles Beanland wrote from Gibraltar where he used to be able to hear the NASA Shuttle rebroadcasts on 20.198MHz. He hears nothing now and, of course, that is due to the maximum usable frequency (m.u.f.) being much lower at the moment. By coincidence my latest press releases from NASA show the frequencies currently in use and they are: 3.860, 7.185, 14.295, 21.395 and 28.395MHz.

Catching Up

Graham has passed all your letters to me and I am slowly sifting through them. If your logs have not appeared yet do not panic, it's just me trying to catch up with everything.

Fair Play

Meanwhile another plea for fair play. Like myself, Graham also got a lot of letters requiring a personal reply. Chaps, this just is not on! We write a column and get a modest fee, but that does not cover us for spending hours and hours each week digging out information as part of a free consultancy service. This month's biscuit goes to Mr. K of Cheshire who liked the companion book and asked if I could let him know what frequencies the USAF used. Arghhh!

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Short Wave Magazine, September 1992
LAUNCH DAY FOR ICOM’S BIRMINGHAM SHOWROOM

Well, it’s not exactly the official opening day, because we opened in Birmingham last January. Since then we have been very busy bringing it up to Super Hamstores standard by stocking up with all kinds of goodies for the radio Amateur, shortwave listener and scanning enthusiast.

We believe that we now have one of the best showrooms in the country, but don’t take our word for it, come along and take a look for yourself. We are open every day from Tuesday to Saturday, but on ...

SATURDAY 12th SEPTEMBER

you are invited to call in and celebrate the setting-up of our Super Hamstore in Birmingham.

Between 10am and 4pm on that day we plan to give our visitors an extra special welcome. Yes, we do have the best coffee on hand every day, but how about a little Buck’s Fizz? Maybe you might even treat yourself to a new radio, there will also be some extra special discounts on offer plus ...

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- Local radio club representation
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We stock items by AEA, AKD, Alinco, AOR, Barenco, CDE, Comet, Cushcraft, Dee Comm, Diamond, Drake, Hills Kits, Hustler, Icom, JRC, Kenwood, Lowe, MFJ, Siskin, Sony, Toyo, Yaesu, Yupiter etc. Gordon G3LEQ, John G8VIQ and their Herne Bay colleagues look forward to meeting you!

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If you cannot visit either ICOM HAMSTORE in person we operate an efficient Mail order service. Stock items normally dispatched within 24Hrs.
With big political changes in Canberra and in Sydney over the past few months it has been hard for me to get away from the local a.m. and f.m. news broadcasts to do any other listening around. Still I suppose being a news freak does help when it comes to bringing you some of the happenings in this part of the world.

**Political Upheavals**

Labour Party power broker and Minister for Transport and Communications Senator Graham Richardson was forced to resign from the government when the Chinese Long March rocket attack on the Marshall Islands Affair threatened to destabilise the government. In his wake Senator Bob Collins was appointed as the new minister. In an attempt to regain the political initiative the government issued a raft of policy changes.

Included was an announcement of changes to previous government policy on pay television. There will be six channels up for grabs on the new generation of Austrail satellite when the Chinese Long March rocket problems are solved and the satellites can be placed into orbit.

The first four channels will be sold on a competition price-basis later this year. These channels will not be available to electronic media owners. The remaining two transponders will be made available later for all comers including existing commercial networks, other media organisations and the Australian Broadcasting Corporation (ABC).

**BCC in Sydney**

During daylight hours here reception of the BBC World Service is difficult. To satisfy the demand for the World Service during our daylight hours the BBC has begun operating World Service Subscription Radio in Sydney.

The signal is picked up from satellite and rebroadcast in an encoded form by Sydney f.m. radio station 2SER-FM. To accept the encoded signal you require a $450 (about $20) deposit and $150 (a lot better) fee for a specially constructed a.c.-d.c. portable f.m. radio receiver. The set can be tuned to any f.m. radio station but at the press of a button locks onto the encoded signal. The set comes equipped with a telescopic whip antenna, but has a socket for an external antenna.

**ABC SW Transmitters**

Simon Hamer from New Radiator reports the reception of the ABC short wave domestic transmissions VL8A, VL8T, VL8K, VLQ, VLM and VLV. Back in 'Bandscan' Australia for March 1991, I listed the transmission frequencies for these stations but not the transmission time schedules.

Since then frequencies seem to have moved a little. The most recent schedule to hand has VLQ and VLM transmitting from Brisbane both operating at 10kW during a 24-hour day. VLM is on 4.924MHz and VLQ is on 9.666MHz.

From Perth VLW has a 24-hour daytime transmission of 50kW on 9.614MHz and VLW15 a day, the daytime transmitter VLW15 puts out 50kW on 15.429MHz between 2245-0915UTC and the night time transmitter VLW8 puts out 10kW on 6.144MHz between 0900-0100UTC.

There are three ABC S.W. transmission sites in the Northern Territory. Each puts out 50kW and operates from 2230-0730UTC during our day and from 0730-2230UTC during our night. VL8K from Katherine operates on 5.025MHz during the day, 2485kHz at night; VL8T from Tennant Creek operates on 9.615MHz and VL8Q from Alice Springs operates on 4.835MHz during the day and 2.31MHz at night.

**Queensland Television**

As Simon Hamer has reported before in *SWM*, he has received the Australian television stations ABC Channel 0 from Wagga Wagga in NSW and commercial station DQQ, from Toowoomba in Queensland.

DQQ has a bit of a history. It started service in 1962 as the local Toowoomba station Channel 16 and continued on this channel until sold to owners of TVG Channel 0 in Brisbane. In 1988 a channel swap between Brisbane and Toowoomba resulted in TVG going onto Channel 16 as part of the Australia Wide Television network. DQQ and DDD was left with Channel 0.

In 1981 WIN Television bought DQQ and joined it to their Rockhampton based Nine Network operation. It then became known as RTQ Channel 0 officially though WIN markets it on air as WIN Television.

RTQ Channel 0 operates from 1060MHz above sea level on Mount Meebollon near Dalby and this is presumably the signal that Simon was able to see. Vision carriers is on 46.17875MHz, stereo audio carriers are on 51.8711MHz and 51.933MHz and e.r.p. is 150kW +3dB.

Public Broadcasting stations in Australia are non-profit, community based stations funded by sponsorship, community donations and some government grants. Australia's first public broadcaster was Adelaide station 5UV which began transmitting in 1927 with a restricted experimental licence.

Of the 100 stations now operating, 71 are community radio stations and 29 are special interest stations. There are many more community groups interested in providing services. Community radio stations are, as the name suggests, stations providing a service to a particular community. Special interest stations serve specific interests within a community including educational, religious and Aboriginal interests.

**Reception from Australia**

Colin Bartlett from Stanthorpe, Milton Keynes reports reception of Radio Australia around 9.54MHz at 1740UTC on June 10. Colin Laycock from Kidlington can get Radio Australia "almost like a local station" on 21.720MHz for a few hours in the mornings.

**Football**

For followers of the Australian Football League and Australian rugby league, Radio Australia will broadcast the first full-time operating f.m. transmitters were commissioned for the ABC FM network in Sydney, Melbourne and Adelaide on 1 January 1976.

The number of operating a.m. broadcast transmitters tags at just 260. Last financial year around half these a.m. stations operated at a loss. Despite this slump in the fortunes of a.m. stations Melbourne's 3XY has just been named 'Best Breeze' on 95.9kS. Using the latest technology the entire station will operate 24 hours a day with just nineteen staff.

Orders have been placed for two new 250kW transmitters for Radio Australia to install in Darwin and a contract has been let for a new curtain array for the Shepparton Victoria site. The new transmitters and a Reel system will complete Radio Australia's upgrading programme and are scheduled to be operational during the second half of 1993.

As a result of WARC-92 Australia will reconsider introducing digital audio broadcasting on the 1452 - 1492MHz band as early as 1994-1995. The Australian frequency band plan for the 900MHz band has been made to enable the introduction of commercial competition in public mobile telecommunications including cordless telephone services.

I welcome any news and comments. In particular I am interested in any s.w. information on Australian stations heard by SWM readers so I can chase up more details and interesting snippets from this end. My address is PO Box 208, Berrimah, N.S.W. 2622, Australia. For personal replies please could readers send 2 IRCs.
One of the current 'vogue' buzz words in the TV business is Digital Compression. Until recently it was fashionable to talk of DMC, D2MAC and perhaps HDTV, but developments in the States, and technological lead forward dramatically and the suggestion is that the various European MAC stabiles may be redundant before they've even been used! Already in the States, Scientific-Atlanta have sold their VC digital compression system to Mediatach, a major media commercials producer, for satellite distribution of their TV video advertisements rather than use the traditional method of casette disciples and road-traffic transportation. VK(Vector Quantization) compresses the TV picture frame by frame offering an easier means of editing and adding effects.

The digitally compressed information can also include timings, scheduling, invoicing and is supremely efficient for spectrum management, being possible with today's technology to transmit four digitally compressed TV programmes in a bandwidth that formerly carried just one standard (analogue) TV programme. Additionally, that one compressed channel can also carry up to 20 CD quality audio sub-carriers. Scientific-Atlanta claim that as technology advances it is possible that up to 10 channels can be squashed into the same bandwidth as the four compressed channels now! Being all digital, the quality remains as the master tape throughout the programme and satellite chain. Cost is reduced since only a fraction of the conventional transponder bandwidth is used (a satellite transponder hire charge increases with ever widening bandwidth).

With a dedicated satellite transmission from Spacelab, Mediatach is simple for TV stations to receive the transponder and use decoding and digital expansion equipment to regain the high quality original commercials or programming. And it's quick.

The ITC in the UK have been experimenting about the use of Digital Compression in their 'Spectre' research programme and towards the end of '92 will carry off-air tests via Stockland Hill and Beacons Hill transmitting. It is hoped to try include HDTV tests in the same series of tests. It also means that if when the UK goes HDTV on a new band it can radiate standard PAL and 16:9 HDTV on the same transmitter and channel (subject to a home decoder).

HDTV (High Definition TV) has now been given a 5-year starter by the FCC in the USA early April at NAB. This will give established broadcasters a start time in 1998 with a 13-year timetable for all broadcast operations to convert totally to HDTV. Several HDTV systems are available and being tested - none MAC based and the tendency is to favour digital compression. It's interesting to report the comments of a reporter who saw 3 video monitors displaying virtually similar high quality pictures. The first was an HDTV laser disc at 1125 lines/60 field, the 2nd and 3rd were decoded from a converted TV picture from the same source but on 525lines/50 fields and 525lines/50 fields. Despite the down-conversion to a lower standard the pictures retained a much higher perceived quality than if the same material were originated in 625 or 525 lines.

Another buzz word is VSAT - Very Small Aperture Terminals - and relates to industrial or corporate satellite linkups. Basically its simply a small quality Ku band dish system ranging from 1.0 to 2.0m (fixed) use a high quality LNB, receiver and decoder, etc., providing reception from a given satellite that has a part-time take-up free from that specific company. In a VSAT system there will usually be a hub or central origination studio - often a company head office with a small TV studio facility - which upticks to the satellite via their own equipment more though a link - in a satellite link (such as provided by the UK) that is leased by the day for the tele-conference.

All the remote VSAT terminals receive the programme and reverse communication is usually achieved by telephone - it being much cheaper than a 2-way vision circuit which would then impose a requirement at the remote site(s) for cameras, uplink trucks, etc. With the introduction of Inmarsat K in orbit it is feasible for VSAT conferences to be conducted with a head office in the States and direct links via "K" to regional offices throughout Europe and reaching into the CIS.

Though VSAT activity has been a routine industrial activity for some years in the States and Western Europe, Eastern Europe is only just becoming aware of the potential with this medium. Both Eutelsat and Intelsat are slotting satellites into strategic positions with modified beam coverage footprints to maximise coverage and taking advantage of the growth in industrial communications. VSAT is a term that was becoming increasingly commonplace in the commercial world during the 1990s.

Orbital Sightings

The depressing continuation of the Serbo-Croat war reached home with the arrival of SNG (Satellite News Gathering) at the Gulf War means that up to date and live pictures reach back into our living rooms from the war front. Early July saw the UN forces take over Sarajevo airport and since then SNG down-links with their live news reports are regularly monitored on many satellites either direct incoming or as a regenerated uplink from VisEurope. Equipment at the airfield will utilise uplink dishes probably no greater than 1.2m. With power supplies somewhat edgy (not forgetting local bombardment from mortars), many of the live signal feeds can be of poor signal strength. VisEurope's transponder over Eutelsat II 13°E 12.56GHz vertical has been carrying many compilations of Yugoslavian war footage, interesting to see VisEurope drop carrier on this transponder to allow a distant uplink from the war-front to send its news feed back to base.

The BBC have an active SNG at the airfield, often seen with colour bars and the identification 'UKI-17 BBC Sarajevo' to ...., there being a broadcaster's destination abbreviation shown such as TF1, TVE, etc., though "NBN" seen on July 3 is a new one on mel both 625 line PAL/SECAM and 525 line NTSC will be seen during these feeds depending on the destination. Apart from VisEurope's 13°E feed, Eutelsat II F3 18°E often carries Yugoslav output. June 29 produced 'URD-Zag-2' Earth Station followed by the standard HTVS Fukb test card and footage of relief supply flights and war reports. Weak 'EBU Sarajevo' ident colour bars appeared on July 13 at 1630 on Intelsat 601 27°W at 11.0Ghz vertical showing that the war feeds can appear anywhere. Just above this signal was 'Goonhill' ES fired up and running on colour bars 11.13GHz (ES stands for Earth Station).

Incidentally VisEurope intend are to encrypt with Videocrypt during August which will put an end to viewing their output - apparently there is a concern that broadcasters elsewhere in Europe are lifting material and retransmitting as their own sourced material. This point is proved by Sporadic-E observations in Band I when both CNN and Children's Channel have been received in the UK from Italian private stations that have lifted AsiaSat.

The French lorry blockages also commanded satellite time in early July notably 1TN ENG-3 with live reports from the street, like instant into the UK news. Other SNG feeds witnessed the past few weeks have included 'Satellite News Gathering D- 28 Saratnet Schwen' and 'Hot 4 Intrax'. Maxat is a newly established Central London broadcasting facility that specialises in originating news feeds and links either broadcast or corporate between points A and B, leasing transponder feeds as and when required. Often to be seen airing their own identification slide over 13°E and 12.56GHz horizontal- and carrying WTN news compilations.

A satellite often forgotten is TELEX at 5°E though operating only at Telecom Band 12.5-12.7GHz, and seen carrying TV programming (12.64GHz) for Scandinavia, David Thewl writes in the Transponder bulletin that clear but weak PAL transmissions have been seen on 1261, 1266 and 12720GHz - signals are circularly polarised.

For full details on the Transponder satellite news bulletin write with s.a.e. to PO Box 113, CREWE, Cheshire CW1 7DS.

The mystery of the 'ZOO TV test card' that was seen over Eutelsat II 13°E during a concert broadcast has been solved by reader Howard Sedden from Wigan, apparently this is the name given to the latest concert tour of the pop group 'U2' and would be a live telecast of the concert.

Our C Band expert Des Sherwell from Berkshire has been monitoring signals from Intelsat 603 27°W and has seen the African channel M NET sharing the BBC World Service TV transponder (3.5GHz) with various test programmes and signals in the clear, normally M NET use Inrad scrambling - thought is that M NET are going to go 27°W to gain improved coverage over Africa. A long letter from Nicholas Earley (Victoria, Australia) telling of the considerable debate over the future of satellite PAY- TV now that the government have allowed more PAY-TV bidders to apply - final tenders have to be lodged by end October with the successful winner announced during November, already over 160 companies have expressed interest - both home grown and overseas. Intelsat 4 channels will be allowed though increasing in later years.
A couple of cries for help first.

Harry Davies in Liverpool has been given a Sanyo RX900, and wants to know how to calibrate his receiver. It has a switch, inscribed 'OFF - 1kHz - 100kHz - 10kHz'. By switching to the 1kHz position, you will hear a signal at every 1kHz up the band: 14MHz, 15MHz, 16MHz and so on. At 10kHz position, the pins will be at every 10kHz: 14.0, 14.1, 14.2 MHz, etc. Now switch to the 10kHz position and you will find the pins every 10kHz up the band: 14.1, 14.11, 14.12 MHz. Your own ears and eyes will enable you to interpolate between the 10kHz points to better than 1kHz. Since the receiver is of total coverage, there will be a standard-frequency station available on one band or another. 2.5, 5, 10, 15MHz for example; the crystal calibrator will have an internal trimmer so you can turn it for zero-beat against one of these. In normal use the calibrator is preferably tuned for zero-beat in the s.s.b/c.w. position if there is one on the receiver, and of course switched off when not actually in use.

Gerard Bramwell in Manchester is in problems too; his problem is that strong broadcasts are appearing on every amateur band. What can be done to stop the problem? The implication in the letter is of something changing in the station, as Gerard hasn't noted the problem in previous letters. Secondly, all bands are affected. Thirdly, conditions up to the time of the letter haven't been all that good. This suggests that possibly a signal is appearing inside the receiver at an I.F. Once it is in the i.f., no amount of twisting the antenna dial or attenuator will shift it. I recall the effect on the old Edystone S460 and also the Minimitter receivers. As a first shot, I would go right through the shack, looking at all connections for a dry or bad joint in wiring. Likewise the wire of the actual antenna and earthline. Bear in mind a soldered joint contains the copper wire in contact with tin and lead so electrolytic corrosion can occur in outside conditions unless the soldered joint is adequately protected from the weather. Any bad joint can form a diode and harmonic generator.

Each item in the shack should be separately earthed, like the progs of a fork coming to the handle which can constitute the main line to ground. If you have a single wire which runs from earth to unit to unit, you may have a resistance loop which might couple a signal from one unit to another.

Turning to Gerald's report, and summarising a bit, on Top Band, his c.w. reception included G portable and home stations, LY2BV, ON4ACG, plus sideband from YL2GUY, R5RSQ, KB1JQ, T1QD, G0WY and Gs. On G8 he might find lots of ranges, call letters from W9CM, 4J1FS (s.s.b. and c.w.), ES6MO, U6F6KW, ON0/MI0HJR, VK6LS, TAAK, VK2CWG, 9X5NH, P9JHG, Z21AS, PPSJR, VK3D0M, Z2KB, and of course the European signals. At 7MHz, we find members of the old USSR, Europeans, PPSWG, D05, SP1MAW, AS2BE, ZS5BH, EA8LZ, CXZL, PT7CB, Z7GDP, N5SA1 and ZL460. At 14MHz shows a different colour - green for RTTY and various Vans, Europeans, J45REK, CN8NP, while sideband was copied from VE1EOS, VE20CJ, KJ2Z, N8NVM, VE7YJ, UA8YDJ, RASSAC, V85GA, 8R1UN, PY2CVC, FY5FX, Y55LX, CE4LFP/3 and EL2PP. For 18MHz we see 4J1JS on both modes, WS and VE5, Z7PW2, JR1MAF, PJ3JEE, LU5G0, 72ZAB, Z8PXMH, 9Y4NN, FM5CD, YV54DPQ, FK5CP, PA4PAC2, JR6B. At 21MHz we see EUs, a crop of WS including K0PT, UI8ACP, assorted EUs, P1Y1GT, CE5BPE, PT7AZ, PA4/N4BWS, PT7JBA (c.w.), CE30DY, LU11NH, VP2MR, W1N1EZ, HK3CMC (RTTY), E8HAC, CN8ASJ, B12KNEF, CS5U, 9Y4UX (c.w.), PY2BTV, KF4DQ and P8BLLDZ 24 and 30MHz show just how conditions have fallen away this summer, With just one W on the former and none on the latter. Hence on Ten it was mainly the f.m. phone Gerald listened to with a bit of RTTY and c.w. thrown in for luck.

Goof!

When mentioning the Geoff Watts lists in the July issue, I quoted an outdated price. Double-sided versions are £1.25, the single-sided ones £1.50 each. The available lists include the 15-page CQ-

ITU Zones Guide, which lists all the prefixes in each zone plus a list of all special call signs and 'special' calls issued by that county. The Obstal Guide is now 15 pages, listing each oblast in numerical order and prefix order, awards included, QSO's, contest details, and 250 QSL bureaus. The 14 pages of the DXCC Countries Guide lists the DXCC countries alphabetically, present and past prefixes back to 1945, previous names of countries, detailed list of operators, and QSO data. Why I mention the guides is that they are still available, and have been for many years. Only laziness has kept them from being advertised, by which means a pretty sunburnt one.

Nets!

For the listener, nets have a lot going, says Simon Griggs of Chelmsford, who knows the CQ200 offerings of the ET net, 14.172MHz, and the 14.254 one run by WA4JTK. Between these two, we have taken Simon's country score up to 104 - a C1 being the magic 100. Outside, a 21MHz inverted-vee dipole has gone up to supplant the end-fed. Simon listens to the c.w. as well as the sideband, 7MHz yields E130, VP2MLD (c.w.), VE2EY and VE1IKY also on the key. 14MHz gave a lot, for instance, VE6, SV5S, EABDTA, P43LJP, YV5ANF, JY2ZU, JRASAY, 4X7S, 9H1EL, Y94CR, P1Y1EZ, 4X100Y - which must be a special with that 70 in the middle - RA5CF, 5B4ADA, K2CM, OD5Z2, FM5WE, YV5EN, W3G4CNY in the E230, 4X14JL, 4X1K, 4X2K, TACE, VK3KBR, H13UN, ODS5W, HK1YJ, G4MCMBR, YV5ANF, P43LJP, VK5VZ, 5N8HM, UZ2HUX, TA5E, HK6DJN, WA2HMT1IM in phone- patches. 4CBSK, P5PSA, 4XKTC, 4X4JU, H12AB, UIJ1UEG, VE07G, SV5S, UZ4AH, 9K2GS, UC6A/4XLA, YS1EJ and HP1SBH all on sideband, plus c.w. from KA1EJG, ST3AK, PZ1D, PY3UR, U1BT6, CE1DWA, U1G8U, 4X4BP, 457NR, PPSLN, TUX2P, WA1W (The ARL HQ station), VO1VQ, Z1TAJ, CD7P, VE1CAB, PP2JUW, UY90MH, UA5FJ, UI8BFM, KP4ET, LU4FD, U8M9GM and P7TCPAR. 21MHz accounted for PZ2K, VC7BYV, LU4DP (c.w.), PTTWXX, UASXMC, 5G3AS and 28MHz PY1RR, UZ200, 4X4FR, TATKA and USZVAP.

E. M. Trowell comes next. On Top Band Ted did note ON72W on sideband, plus GUPADERA on c.w. 7MHz c.w. yielded UD6D/Y4DA2, UF7FFW, ZAX/AB7SF, all on the key, while 10MHz produced HB7T who used to be well-known on Top Band and now still sends good Morse at 81, TK3 GJT, ZL4HB, 00HBF and ZL1ATC.

14MHz gave with PZ1D, UF6JF, ES0Z (Isle of Hiiumaa), HAS/0Z1KLD/P, VE1ST/NA1V, 4STWP, LUL1C, RLDPI, WROA/1J, while 18MHz offered s.s.b. to OXDL3LW, c.w. to 5T5CJ, AM1EK (Pechon Is), FY5F, HS8BAM, OX3RM, DL2VK and DJ2KH. As for 21MHz, the keying of ZA1, ZA1M, JASN9K, JASNPN, HK3RD, ZAT7, JADLV, UF5DF, AB4BMY, YC1CCZ, CS5FX, W5XBOKXX, TASO, IS5O/YUMDO, TK2LNBH, KI0GZ, UM87ZM, UASB, HB9BW, AMSVN while 28MHz c.w. gave FY0N4ZD, 89BAXD and AM25LW.

Now how to get a letter from a novice licensee! John Hemming started with 2E1ANW and now runs 2WOACN, then some 'elimining' from 64LQF of the G-QRP Club. On the transmit side, 21.15MHz from an DXO transmitter and a PA, home-brewed, gives 2W out, to a simple dipole mounted in a balcony, on 3.5MHz A rowes Howig, Rowes or B40 receivers plus 80 metres of wire totally contained in the flat's loft space. Worked both W2 and W6 January P.W.a.s.u. to a counterpoise about 6m long. This sounds pretty unpromising but already John has 'got across the Pond' on 21MHz to KB2LNN, no doubt his listening activity has helped a lot.

Deadline

The address, as ever, is given above; the dates are for your letters to arrive, on September 5, October 10, and November 7.
Godfrey Manning G4GLM
c/o The Godfrey Manning Aircraft Museum,
63 The Drive, Edgware, Middlesex HA8 8PS

I would like to know something about your Museum," writes Bill Solley (Bristol). It's very small, but technical. I aim to demonstrate many of the principles of flight and navigation. To make an appointment to view, call me on the number given at the end of this column. Bill goes back a bit - his career in aeronautical engineering spanned 1935-1975 and took in the Swordfish, Brabazon, Britannia and Concorde. An enviable catalogue.

Bill asks a general point about the photographs that appear in 'Airband'. Mostly they are taken from a stock and fill up odd gaps on the page. They give an attractive aeronautical appearance to the column but are not often directly connected with the text. I'm sorry that confusing code numbers like "ESXK" appeared in the titles recently; they are only intended as a reference during the preparation of the article and weren't meant to be seen. As far as the new Chichester-Miles venture is concerned (see photo, July) I've heard of a connection with the original Miles aircraft company (where Bill worked for a time).

Down to aeronautical radio, and Bill raises a valid point about abbreviated callsigns. Here are some examples. "Speedbird 123" may not be abbreviated but "Concorde Golf Bravo Oscar Alpha Charlie" may be shortened to "Concorde Alpha Charlie." Likewise, "Golf Bravo Golf Lima Mike" may become "Golf Lima Mike." Further reduction to "Lima Mike" is a bad habit and is not officially permitted - but people do it. On first contact with a controller, pilots must use the full callsign; if the controller replies with an abbreviation then, and only then, may the pilot also abbreviate. This arrangement has been in a century or so for quite some time - at least a quarter of a year.

Aeronautical Happenings

Down in Cheltenham, Anne Reed RS 8797/6G-20126 had an exciting time at the end of June when a rare aircraft landed at Gloucestershire. CCCC 74010 is a Ukrainian Antonov 74 which Anne photographed when it arrived to bring an engine for local aerospace companies to evaluate. For the return flight it was loaded with gifts of aid. As you can see from the photo, the jet engines are mounted above the high wings. Despite its untypically appearance, this configuration has the aerodynamic advantage of good short-field performance which might be an advantage at undeveloped airstrips.

The Transatlantic Balloon Race will be in progress when this issue appears. Anne found that competitors wouldn't discuss possible h.f. channels with her as, last time, too many "amateurs" blocked the frequencies with well-intentioned good wishes. This does lead me to question exactly who sent these transmissions as true amateur equipment would not be able to transmit in the h.f. airband.

Alternatively, were the balloonists encroaching on amateur allocations - in which case, hard luck?

Long before the isle of Man and Mrs. B. reported that the CAA have refurbished the Snaffley relay. She went flying at Jurby in both a Cassana and, with a member of the British Women Pilots' Association in command, ultra-light G-STRK. Hopefully the flight went better than that of a Manx Jetstream. Mrs. B.'s video camera captured its engine-out landing after it returned to Ronaldsway with a malfunction. All went well, with no injuries, but this aircraft type is unable to taxi on one engine and had to be towed.

Navigation

Mike Bennett (Datchet) has found the outer marker for BBL at Heathrow. It's immediately south-east of Datchet railway station. In return, I'll locate various reporting points that Mike asks about. WILLO is at NS0°59.1' W000°11.4' or, alternatively, on the 109° Midhurst radial at 17km distance; it forms part of the Gatwick approach.

LOREl is at NS2°00.8' W000°03.1' or, alternatively, on the 345° Lambourne radial at 16km from Brookmans Park; it is on the Luton approach. BIRCH is near Birmingham but my charts don't cover it, unfortunately.

On the subject of charts, and in particular the free ones from the CAA (detailed are in June's 'Airband'), a reader from West Glamorgan points out that RC 3-0-1 is temporarily out of print.

I have also discovered that RAC 5-0-2 will not be re-issued once the current version goes out of date. If you send a stamped envelope for the CAA Publications Catalogue please be advised that it has grown and now weights 150g (45p for 1st Class and 34p for second class).

My Aerodrome London Area Chart agrees with Tim Binder (East Grinstead) that Gatwick outbounds may call London Airways on 123.9MHz if departing via Midhurst, Compton or Southampton. This frequency also handles arrivals via WILLO. What the chart doesn't show is an apparently normal or at least temporary? frequency of 121.32 for the same purpose. Tim hopes to find many of the frequencies he requires in Air Traffic Radio (by Ken Davies available from SWM Book Service). Unfortunately, as mentioned elsewhere, all military h.f. allocations have changed. The book covers h.f., v.h.f. and u.h.f. But, in common with all such guide books, the u.h.f. section will be wrong unless updated since mid-May.

Follow-Ups and Foul-Ups

Tim Christian (North Walsham) clarifies something I didn't quite get right in June. Norwich use 118.475 exclusively for ground controlled approaches; 119.35MHz is the radar for all other purposes including zone transits.

Additional information on Scottish Airways (June) comes from Peter Lewithwaite (Northumberland) and Duncan Pettet G1M8YT (Alve). They have the main h.f. channels are back-up frequencies as follows. Paired with 5.616MHz are 2.899 and 8.864MHz; with 5.289MHz are 2.872 and 8.879MHz; with 4.579MHz are 2.971 and 8.891MHz. Higher frequencies are favoured by day, lower at night.

On the American side, Gander has an allocation at 127.9MHz (as listed in the 1984 Supplement but the people of the relay is not shown; how can it cover out to 40W? If based on the coast, Ikerassassua (Prins Christian Sund) is not the answer - only an n.d.b. is listed here.

Flights from the south for Aberdeen and Inverness work London (131.05 or 128.05), then Scottish (135.85 then 124.5MHz) and finally their terminals.

Going across the North Sea to Scandinavia? Scottish take the flight on 134.77 (above FL245). Flights to Iceland work Scottish first (135.85) and then, on passing 61CN, Iceland on 132.2MHz.

Information Sources

How can you keep pace with the ever-changing callsign structures adopted by the larger airlines? W. Sutton (Bradford) is finding this as difficult as the rest of us! There are some things that will help, though. First, re-read January's 'Airband' where listed some new Speedbird flight numbers under the heading "Changes to Air Traffic Control". During a flight I went on I noticed that the new callsign was derived from the conventional flight number. Next, buy two reference books each year. Flight Routings (T.T. and J.J. Williams) is available from SWM Book Service. Airport Timetables UK (Clapperton, Hollick & Taylor) is from Airtime Publishing Ltd., 13 The Holloes, London Road, Tonbridge, Kent TN9 1ES. These both list flight numbers, which is a help. Lastly, be nice to your local travel agent, who might give you a redundant copy of the ABC World Airways Guide when this is renewed at the end of a month.

A special case is the British Airways Shuttle callsigns. All these flights have Heathrow as one terminal. The number designates the remote terminal, and the letter distinguishes successive flights on that route each day. Numbers are as follows: 2 - Manchester outbound, 3 - return, 4 - Belfast outbound, 5 - return, 6 - Glasgow outbound, 7 - return, 8 - Edinburgh outbound, 9 - return. So Shuttle 8 Alpha would be the first flight of the day from Heathrow to Edinburgh.

Frequency and Operational News

Listed in the 6/92 edition of GASIL from the CAA are various new n.d.b. frequencies as follows (all kHz): Belfast Harbour, now known as Belfast City (H8, 420); Bembridge (IW, 426); Blackpool (L1, 420); Newcastle (T2, 416); Nottingham (N0T, 430); Shobdon (SH, 426) and St. Mawgan (SM, 365).

Also, a communications change. Stansted Tower is now on 122.9MHz. The number designates the remote terminal, and the letter distinguishes successive flights on that route each day. Numbers are as follows: 2 - Manchester outbound, 3 - return, 4 - Belfast outbound, 5 - return, 6 - Glasgow outbound, 7 - return, 8 - Edinburgh outbound, 9 - return. So Shuttle 8 Alpha would be the first flight of the day from Heathrow to Edinburgh.

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I have now had a chance to try out the new ADR AR1500 hand-held I mentioned a couple of months ago. In many ways this model is similar to the popular AR1000/2000 series but with one or two notable differences. The most obvious change is in the case styling, the new model is much smaller than I had anticipated measuring only 160 x 55 x 40mm which makes it just a bit larger and slightly longer than the tiny Icom IC-R1.

The top of the receiver is rather tightly packed with SNC antenna connector, rotary volume, tuning and concentric b.f.o./squetch controls as well as push buttons for the attenuator, b.f.o/offset and keyboard lock functions. The keyboard is small, but the well spaced raised buttons make entries relatively easy. A reset switch on flying leads has been provided in the battery compartment, the reset procedure being similar to that of the AR1000/2000 with the need to enter a series of commands from the keyboard after a reset has been performed. For the most part the features offered by the receiver are the same as those available on the AR1000/2000 series, however some of the keyboard commands have been simplified making operation that bit easier.

The main new feature is the addition of a b.f.o. circuit which permits the reception of s.s.b. and c.w. transmissions. This is pretty well essential if you want to receive anything other than broadcast stations on the short wave bands. In order to receive s.s.b. signals the receiver has to be used in the am mode with the b.f.o. switched on by means of the buttons on the top panel. The selected tuning step that can be selected is 5KHz so use has to be made of the rotary b.f.o. tuning control on the top panel if you are receiving signals that do not appear on the am frequency display. In practice this is not as big a problem as it might seem. The largest frequency error is only likely to be half the tuning step size (2.5KHz) and the core tuning pupil is usually about 0.5KHz.

I had great fun tuning around various short wave frequencies and could hear numerous Amateur and Utility stations operating from far flung parts of the globe with the supplied v.h.f./u.h.f. antenna.

The other new feature is the ability of the receiver to automatically search a specified frequency range and store any active frequencies in one of the memory banks. This is a great way to find new or elusive frequencies, as the scanner can be left running unattended and you can examine the contents of the memory bank at your leisure.

The receiver is supplied with an internal rechargeable NiCad battery pack which comes complete with both an a.c. charger unit and a 12V d.c. supply lead, alternatively you can unplug the NiCad pack and use the additional dry battery case if you wish. This last option makes it easy to carry a spare set of dry cells around with you if you intend planning an important event, as it's an unwritten rule that all hand-held scanner batteries go flat at the worst possible moment.

I found the overall sensitivity to be good but I did experience some problems with interference from a commercial p.m.r. base station which operates at a few hundred metres away from my house. As you may have expected connecting an external antenna made the problem worse and produced spurious signals on various frequencies. Switching in the attenuator solved the problem totally at the expense of reduced sensitivity.

To summarise I would say that the new model offers a lot of features at a reasonable price - especially the b.f.o. and search and store functions. These make it particularly attractive to listeners with an interest in both short wave and v.h.f./u.h.f. monitoring. However the r.f. performance is slightly worse than that of the AR1000/2000 series and this should be weighed against the additional features when choosing the model most suited to your requirements.

As with the AR1500 ADR are also working on several new models including a high performance, budget priced hf communications receiver and a top of the range v.h.f./u.h.f. receiver in a more conventional package which should give the opposition a good run for their money. Development work is also continuing on a couple of compact antennas, which should be available before too long.

My thanks to AOR UK Ltd for the loan of the AR1500, you can contact them at Adam Bead High Tech Centre, Derbys, DE24 8W, UK Ltd or (0629) 825026 if you require further information.

Special Events

Several readers have written asking about the frequencies used during special events such as cycle races, car rallies and TV outside broadcasts etc. It is rather a difficult question to answer as a whole range of frequencies are used depending on the type of communication required. As most equipment is usually hired for a specific event it's always worthwhile checking the short term hire frequencies for activity. The majority of these are grouped around 168MHz and a new allocation at 164MHz. If the receiver is being used by the people operating it or if it is likely to be used at several different events then the users may have been allocated a specific frequency in one of the many bands set aside for p.m.r. use. The equipment is also likely to be used in other countries or belongs to a foreign team then occasionally frequencies outside the normal p.m.r. bands may be allocated on a temporary basis.

As well as voice communications, data transmissions are also becoming more common. Typical uses of this include sending engine performance data back to the pits in formula 1 racing and contestants positions and times back to race controls during round Britain races. As well as involvement with the competitors a fair amount of communication is also required for spectator control, parking, maintenance services and security. Once again these generally use short term hire equipment although some large stadiums and race-courses may well have their own frequencies and equipment.

If the event is important enough there are almost certain to be Radio and TV companies in attendance. These usually employ a large number of radio communication channels for radio microphones, co-ordination of site activities and for studio to site communications. These are often found on very odd frequencies as they tend to be slotted into parts of the spectrum well away from other commercial users in order to reduce the possibility of interference.

I would be very interested to hear from any readers who have monitored communications at events such as these for inclusion in a future column.

New Frequencies

Forgive me for mentioning the UK Scanning Directory yet again but the second edition is now available. The majority of contents are pretty much the same as before, however the section relating to the u.h.f. military airband has been revised to include the new frequency allocation. The format of the publication has also changed, the new version is A5 sized which makes it much more convenient to use. You can contact Interproducts, 8 Abbot Street, Penz PH1 0EB, Tel: (0738) 441199 for further details.

Searching the Bands

Whistawe are on the subject of Military airband monitoring Jack Redfern of North Yorkshire has written to ask me about the use of the 'Search' function on his hand-held scanner. He has been monitoring the u.h.f. military airband recently but he finds that he hardly ever hears anything. He has to try to find locally used frequencies by automatically searching the band but with very little success. He wonders what he is doing wrong and asks if I can offer any suggestions.

You are probably not doing anything wrong but you may be able to improve your chances of hearing some activity. The first step is to try and do a bit of
detector work. Although the following suggestions relate mostly to military airband monitoring many of them will also apply to monitoring other users of the radio spectrum. A good frequency guide (like the one mentioned previously) is usually the key to locating elusive frequencies. Check that the information is up to date as there have been many changes made recently, for example the military airband frequencies were revised about 3 months ago, so check that any publication is up to date before buying.

If you look at the way the frequencies have been allocated you may find that there are large blocks which have very few active channels. In the military airband these are used for other purposes such as navigational aids or satellite up and down links. If you forget about these parts of the band and concentrate on the more active portions you are already increasing your chances of success. Sometimes the inverse of this technique is true, you may occasionally find that interesting signals appear in quiet blocks of frequencies adjacent to those in more common use.

The next tip is to search the band in small chunks. Don't try to cover the whole band in one sweep, even with the fastest scanner this will take a considerable period of time. As transmission tend to be very brief you need to maximise your chances of detecting them. As a rule I would never try to search a band wider than 10MHz in one go, in fact I usually limit it to around 1MHz. This means that each

The new AOR AR1500.

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frequency is checked every few seconds, a lot depends on the average length of transmissions. If they tend to last for several seconds then you could try increasing the size of the search band. Concentrate on just one part of the band for a few days and make a note of the active frequencies that you find. You'll be surprised at how quickly you build up a comprehensive list of activity in your area.

Tuning step size is another important factor, always try and choose the most suitable size for the band being searched. For example, the military airband uses 50kHz channel spacings, if you tuned in 25kHz steps it would take the scanner twice as long, or 4 times as long with 12.5kHz steps and 10 times as long with 5kHz steps. If the channels are offset by a small amount say 6.25 or 12.5kHz then you may have to tune in smaller step sizes unless your scanner can cope with the offset frequency. Typical examples of such offsets include the 27MHz CB allocation, 139MHz fuel and power industries band, and 900MHz cellular telephone channels.

Another useful tip is that the more established users of the radio spectrum tend to have wider gaps between consecutive channels which are allocated to them. This is because channel spacings have been halved on several occasions in order to take advantage of improvements in equipment design and the increasing demand for more channels. Originally 100kHz channel spacings were used this was then reduced to 50, then 25 and currently 12.5kHz. Some users have been given additional frequencies in between their original channels. It is for this reason that you sometimes find individual company channel numbers run in a sequence like 1, 2, 3, 5 when listed in frequency order.

Don't forget that a lot of transmissions are only present during working hours, that is to say 9am - 5pm, Monday to Friday. This even applies to the military as most services employ a large number of civilian staff who work normal hours. You have to choose your monitoring period to suit the type of activity you wish to hear. Many keen scanning enthusiasts even arrange holidays to coincide with specific events so it is always worthwhile keeping an eye as well as an ear open for details of forthcoming attractions.

If you can't be near your scanner during the day then why not invest in some form of automatic tape recorder. By connecting it to your scanner and arranging for it to only record when a signal or speech is present you can condense several hours activity on to one tape, ready for you to replay on your return home. If you want to get really sophisticated then several of the computer control programs now available have automatic logging features. By using such a programme you can see which channels have had the strongest (and therefore the most local) signals present, which are the most active and at what time of the day they are at their busiest. This technique is known as 'Traffic Analysis' and it can often tell you a lot about the user of a particular frequency without you actually ever needing to listen to them. For example, taxi companies are generally very busy at pub closing times, security guards tend to make calls at regular intervals during the night, Breakdown and recovery services get swamped with calls during very wet weather, etc.

I hope that these suggestions have given you some food for thought - if you can add any additional tips of your own why not drop me a line and share them. Until next month - Good Listening.

Airband 51

A show that I did get to was RAF Halton in Buckinghamshire. The enlightened operators here displayed the frequencies in use for the day (132.9 and 369.6MHz). A further sign on the control caravan said "Bates - 2 Sets." Naively assumed this to be something to do with the manufacturers of the radio equipment, until Chris reminded me that Wimbledon was in progress! On the subject of shows, the Red Arrows still apparently talk to each other on 245kHz whilst displaying.

More information from the CAA appears in AIC 55/1992. Dunsfold operates a Danger Area Activity Information Service (DAAIRS) for EGDO05 (Fraser Ranges) on the new u.h.f. channel 367.375MHz. Eastern Radar, on 135.275 or 299.975MHz, now provides a Danger Area Crossing Service for EGD316/317 (Neathhead). The new EGD703 (Tain) DAAIS frequency is 122.75MHz. When such services are unavailable, the usual Flight Information Region should be contacted.

Two aerodrome changes in AIC 56/1992. At Bristol, runway 15/33 has been withdrawn. Southend now has L.I.S./d.m.e. on runway 24.

The next three deadlines for (topical) information are September 4, October 9 and November 8. Replies always appear in this column and it is regretted that no direct correspondence is possible. All letters to "Airband", c/o The Goodfrey Manning Aircraft Museum, 63 The Drive, Edgeware, Middlesex HA8 6PS. Genuinely urgent information/enquiries: 081-858 5113.

Heathrow Procedures

London (Heathrow) is not, despite the claims that some people make to the contrary, the world's busiest airport. It comes nowhere close to Chicago O'Hare and similar USA terminals. In the States, though, it is about as far across the continent from east to west as it is across the ocean from the UK to the east coast. Hence, a high proportion of flights from American terminals are domestic. Heathrow has a larger ratio of international flights and it just so happens that it has more international (but not domestic) movements than anywhere else.

What happens when your flight arrives at Heathrow? Looking on a radio-navigation chart you will find that the airport is surrounded by four VOR beacons. They are Bovingdon in the north-west, Lambourne to the north-east, Biggin Hill over in the south-east and Ockham to the south-west. Aircraft coming off airways are handed over by London Airways when approaching the appropriate arrival beacon. At busytimes aircraft can be held in the 'stacks' of which there is one based at each beacon.

When the arrival is cleared to continue, it must be merged with the other traffic. Here is a typical example, although things do change with varying traffic volumes and circumstances. No. 1 director joins the Ockham and Biggin traffic on 119.5MHz. Also, the Bovingdon and Lambourne arrivals are joined on 119.2. Control is handed off to No.2 director so that the two streams can be further condensed into one final approach sequence on 120.4MHz. Finally, shortly before (or just when) the outer marker is reached, the flights call the Tower (118.7MHz) for clearing to land. On vacating the runway, Ground is contacted (121.9) for taxi instructions.

Departures first request a slot time from Clearance Delivery (121.7MHz) but contact Ground for push and start. Taxi instructions involve moving from one numbered block to another and, if you travel from Heathrow, you will see yellow signs with black lettering telling you the number of the block that you're leaving and the one you're entering. Ground might also switch green taxiway centre-line lights on and off, in which case the instruction given is "Follow the greens".

Again, tower has to give clearance to enter the runway (at busytimes, separate frequencies operate for arrivals and departures). Initial routing follows a Standard Instrument Departure (SID), a track defined by distances and bearings from various beacons. To study these you need the charts for the airport but, to give you some idea, there are SIDs terminating at Brookmans Park, Compton, Daventry, Dover, Mayfield, Midhurst and Southampton. From here, the airways route is followed to the destination. Control is handed to London Airways very soon after take-off.
MARTIN LYNCH - 1

From the person who put the “stuffing” back

MARTIN LYNCH is celebrating his 2nd birth

For those of you who couldn’t make it to my party last year, no worries! Here’s another one for you to go to. The official day is SATURDAY, the 12th of SEPTEMBER. Open from 8 o’clock to 8 o’clock there is of course FOOD and DRINK, but most of all I’ll be TALKING TURKEY even more than usual with HUGE SAVINGS ACROSS THE RANGE. NEW & USED, it doesn’t matter, OFFER ME A SENSIBLE PRICE AND WE’VE GOT A DEAL! If you can’t make it to EALING, come and see me and the LYNCH MOB on SUNDAY, at the famous B.A.R.T.G. RALLY at

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KENWOOD

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S TWO YEARS OLD TODAY! ...

...k into AMATEUR RADIO RETAILING, day at the EALING shop.

Sandown Park in Esher, Surrey. For all of you who are into PACKET and Data transmissions don't miss it – it's one of the biggest events in the rally calender! Remember to bring your PART-EXCHANGES along. I'm still paying top money either to buy out-right or as a part exchange against another item. Finally, thanks for a great first TWO years at Northfields. Without your help, I couldn't have got as far as I have today. Without you I haven't got a business. I'll never forget that.

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The there is a lot more to receiving long-distance (DX) television signals than trying to see a test-card from afar on the television.

Very often, especially during Sporadic-E openings, DXers only get a glimpse of a picture from foreign parts and rely on their previous knowledge of signals and logos to identify its source. However, there are many changes going on in the world today and Carl Bowen (Strelley) rightly rings a bell of caution, by quoting an example that happened to him while watching signals from the CIS (Commonwealth of Independent States). A programme on Ch. R2 had 'CIF' in the top left hand corner of the screen which was due to the film being made by Canal France International and dubbed into Russian.

"Another one to look for," said Carl, "is 'TEMA' in the bottom left corner" and he would like to know its source.

How often have you asked a friend or a disbeliever to see long distance television pictures only to find a blank screen when the visitor arrives? Well readers, George Garden (Edinburgh) hit the jack-pot on June 13 when he took a Dutch friend, keen to see European DX, to the top of Cairn Mounth to see what was about. As usual George had mounted his big h.f. Yagi and head-amplifiers in the back of his Ford pick-up truck so that he could adjust the beam-heading by hand through the rear window. Although there were no signals from Germany, he found a strong Belgian test-card (BRT TV1), in colour, around Ch. 45 and conveniently very strong pictures from Holland on Chs. 30 and 35. George and his guest were delighted to see the Wimbledon tennis from Holland and the British comedy, George & Mildred, spoken in English with Dutch subtitles.

While experimenting with a Band III wide-band antenna and pre-amplifier mounted on a 7m high pole, Carl Bowen found he could often receive signals from Belgium (BRT & RTBF1), France (Canal+1 and Holland's Nederland 1 from Roermond (Ch. 53) and Smilde (Ch.58). A photograph of the 'RTBF1' test-card, Fig. 1, was discovered by John Woodcock (Basingstoke) when his film was recently developed. John received this from Wavre, Ch. 8E, during a tropospheric opening on January 31. Under similar conditions early on January 3, Lt Col. Rama Roy, received strong pictures from Pakistan TV (PTN). Fig. 2, at his home in Meerut, India on Ch. E11.

Band I

"The 'R' channels are proving most interesting this Sporadic-E season," wrote Carl Bowen, who, on June 22 sat through a commercial break, from Poland (TVP) on Ch. R3, "which included adverts for Pepsi-Cola and Imperial Leather soap. Like most other DXers, Carl had a good haul of Band I signals in June. He logged signals from the CIS on the 7th, 19th, 22nd & 23rd, Czechoslovakia (CSTV 1) on the 7th, Italy (RAI) on the 6th, 9th, 22nd & 26th and Spain (TVEI) on days 3, 5, 7, 17, 19 & 21.

Roughly on or around the days already mentioned Bob Brooks (Great Sutton) received test-cards and/or programmes from the CIS, Czechoslovakia, Hungary (MTV), Iceland (RUV), Italy, Norway, Poland, Portugal ( RTP), Spain and Sweden (Kanal 1 Sverige). Among the programmes seen were adverts and cartoons from Spain, news from the CIS, Czechoslovakia, Italy, Norway and Spain and various sports from Norway plus a couple of unidentified sources. In New Radnor, Simon Hamer had very satisfying results from the June Sporadic-E in addition to the regulars, Simon's log included Morocco (RTM) and Yugoslavia on the 5th, CIS on Chs. R1, 2, 3 & 4 on the 6th, 7th & 23rd and Nigeria (NTA) on the 20th.

While these events were in progress, David Glenday (Arbroath) received pictures from France, Portugal and Spain on the 1st, Germany and Spain on the 2nd, France and Spain on the 3rd, Russia (CT-1) on the 10th and Norway (NRK) on the 11th.

Band I in The Ukraine

Test-cards from Norge-Televerket, Fig. 3 and the Norwegian regions Bagn, Gamlem, Greipstad, Gulen, Kongsberg and Melhus were received in the Ukraine by Sergei Olejnik while various Sporadic-E openings were in progress between April 27 and June 8. In addition he logged Germany (ZDF) on April 27 & May 12, Holland (PTT-NED1) and Italy (RAI-1) on June 6, Jordan (JTV-AMMAN) Fig. 4, on June 4, Sweden (Kanal 1 Sweden) on the 8th and Syrian TV on May 13 (Fig. 5) and June 4 (Fig. 6) & 21. "It was fantastic to see it (Holland), Fig. 7, after midnight," said Sergei, who also had excellent sound with the pictures he received from Holland, Italy, Norway & Syria. I am always pleased to hear from readers overseas as it gives us in the UK a chance to learn how the various atmospheric disturbance effect our friends around the world.

Weather

Congratulations to Malcolm Bell on building a weather station at his home in Gloucester. So far he has assembled a Maplin digital thermometer module to read the air temperature and purchased a digital rain gauge and a max-min thermometer. The wind-speed and direction information senders, Fig. 14, were made by Malcolm using a fixed magnet to operate a Reed switch connected to a i.e.d. display for the direction indicator and hall-tennis balls for the cups to catch the wind to drive a 3V d.c. motor for the anemometer. The letter feeds a 50A meter movement, which he has calibrated to the Beaufort scale.

The slightly rounded atmospheric pressure readings for the period May 26 to June 25, Fig. 15, were taken at noon and midnight from my own barograph. In June, I recorded 1.38in of rain with the heaviest fall of 0.50in, with thunder, on the 10th. This and the TV was well down on the 4.68in that fell in June 1991 and 3.22in in June 1990.

Tropospheric

While DXKing on Cairn O'Mouth around 1330 on June 1, George Garden received strong colour pictures from Televizion on Chs. 29 and 61. The letter "was as good as focal," said George.

June proved a rewarding month of u.h.f. DX for David Ashley (Norwich) who watched programmes from Holland (NED1, 2 & 3) on days 3, 5, 7, 11, 14, 20 & 23. Denmark's TV2 came up on the 1st, 8th, 12th-14th, 17th, 20th, 27th & 29th and various German stations were seen on the 11th (ARD1), 12th (ZDF), 12th (ARD1, N3, RTI1, SAT1 & ZDF), 20th (ARD1, N3, SAT1 & ZDF), 25th (ARD1), 28th-29th (ARD1, RTI1, SAT1 & ZDF) and 29th (ZDF).

From the UK he received pictures from Central TV on the 28th, Tyne Tees TV on the 9th & 11th, Yorkshire TV on the 1st, 12th & 26th and all three on the 8th, 13th & 27th-29th. At times he saw co-channel interference between Netherlands and Tyne Tees and as usual was only able to watch the latter after the Dutch station closed down. Early on the 14th, he saw an unidentified, negative image, logo above Ch. 65. David sent me a sketch of the logo, Fig. 8, which I reproduced, using my Amstrad 2286 computer, any ideas?

Bob Brooks logged a test-card from Denmark (DR) on Ch. E6 at 0740 on June 17. Carl Bowen received pictures in Band III from Belgium and Holland between 0700 & 0900 on the 28th. Simon Hamer had a good haul during the tropo-opening on the 12th. He logged pictures from Germany & Scandinavia in Band III and Denmark (TV2), Eire (RTL), France, Germany (ARD1, HESSEN2, MR3, NDR3, RTL1, SAT1, WEST3 & ZDF), Holland & Sweden (TV4) in Bands IV and V.

Fig. 1: Belgium (RTBF1).

Fig. 2: Pakistan.

Fig. 3: Norway.

Fig. 4: Jordan.

Fig. 5: Syria.

Fig. 6: Syria.

Fig. 7: Holland.
The tropospheric openings on June 1, 9-13, 17, 20 & 21-29 meant a good haul of u.h.f. DX for David Glenday. On most of those days he logged pictures, often in good colour, from stations in Belgium, Denmark, Germany and Holland. "Excellent reception on the 12th with superb Dutch & Belgian DX bringing in TV5 Europe from Belgium for the first time on E65 - in-colour!, plus Nederland 3 from Eys and Maastricht's relays and AFN Soesterberg," wrote David who also saw a new Dutch testcard on the 29th with 'NOZEMA' in the upper panel and 'Nederland 3' in the lower. I received a test-card signed 'Danmark Radio' at 0750 on July 7.

**SSTV**

In June, John Scott's patience earned him a couple of first-time slow-scan television pictures. One from Argentina (LU1BP) on 14.230MHz and the other from Strathclyde (GM90DB), Fig. 8, on 144.500MHz. John often looks-in on a SSTV net around 3.730MHz during the early evening and has copied signals from England and Wales (GBAZX, GW0JAL & GW4WPF), Figs. 10 & 11. Other captions he logged around 14.230MHz came from Germany, Fig. 12 and Spain (EA3A2J). John tells me that GM90DB is using a DRAE slow-scan converter and that the outside of his own home in Glasgow is "turning into an antenna farm, hi!"

**Antenna Maintenance**

The summer is an ideal time to examine your antenna installation and replace any defective parts or renew and/or update the whole system. Even a simple antenna, like the u.h.f. Yagi in Fig. 13, could be below par because the wind has loosened the fixing bracket and put a directional beam like this slightly off-target. In this case, even the weight of a large bird, Fig. 13, could make it droop or turn slightly. Smoke from the chimney may have corroded the driven element and connector block. Do remember that antennas are subject to all extremes, hot, cold, wind and rain. Plastics on the outer of the coaxial cable and the cover on the connector become very pliable with heat and very hard with bitter cold. Should these changes leave a gap, then the rain and smoke can get in. Wind can also loosen one or more directors or the reflector any of which will reduce the antennas performance. You can always take a preliminary look, from the ground, with a strong pair binoculars. Make sure you walk all around and that you don't miss any of the vulnerable points. Look for rust on chimney-lashing wires, 'J' bolts securing the lashings to the pole mounting bracket and the 'U' clamps holding the pole to the bracket. Mechanical failure of any of these components could bring the installation down in a high winds, especially if the pole is carrying a rotator and/or heavy arrays. Also check the clamps holding the antenna booms to the mast.

**New Catalogue**

All this came to mind when I saw the latest catalogue, with its 30 or so illustrated pages, from Aerial Techniques, 11 Kent Road, Parkstone, Poole, Dorset BH12 2EH. Sometimes, while browsing through such a catalogue, you may see an easier method of supporting or adjusting your existing antenna by referring to the illustrations of brackets, couplings and pole mounts. They list 8 types of antenna for Band 1 ranging from a dipole to beams, 13 for Band II, 4 for Band III and nearly 30 to suit all needs for the u.h.f. bands. In addition there are converters, diplexers, filters, distribution and head-amplifiers and a variety of sundries all aimed at improving that incoming signal. In fact a DXer can choose his complete station from Antenna to receiver from this catalogue and, if required, have the benefit of David Martin's expert advice. Why not give him a call on (0202) 736232 or send E1 for the catalogue.
Many of the scanners and receivers currently being sold canteen into the weather satellites. I have received many letters from SWM readers who have picked up one or other of the several that can be heard in the 137 to 138MHz band. Even the little antenna supplied with these receivers can often pick up these powerful transmissions, particularly when used outside. The WXSAT transmission power is about 5W but, of course, when they pass by high up, there is nothing in the way.

I recently took part in a city centre demonstration of sun spot projection, and used my battery-operated scanner together with a predictions list showing all Canadian WXSATs that would be passing over during the morning. Needless to say, there was much astonishment when I explained to visitors that the ‘bleeping’ sounds were weather satellites passing over the UK.

**Recent activity**

During late June, the Russian weather satellite METEOR 3-3, which had been operating on 137.40MHz (just like the OKEAN satellites used to), stopped transmitting. This leaves only two Russian WXSATs operating - METEORS 2-19 (on 137.85MHz) and 3-4 (on 137.30MHz). Of these two, only 3-4 operates during the night-time part of its orbit.

The Russian WXSATS can be very confusing for the beginner. In the past they have changed both frequencies and operating characteristics. However, in recent years, there have been some continuity, with METEORS 2-19 or 2-20 always using 137.85MHz, and either METEOR 3-4 or 3-5 using 137.30MHz. METEOR 3-3 came on as a strong signal using 137.40MHz and no doubt we shall see it again.

**NOAA 9 and 11**

The early days of July saw the two American WXSATS NOAA 9 and 11 both remaining in operation despite some overlapping of their passes. Both use 137.52MHz but their orbits are slightly different. NOAA 9 is passing during morning and evening times that are similar to NOAA 10 (which uses a different frequency). For a few weeks, both 9 and 11 can interfere when they are both above the horizon.

Usually when this happens NOAA 9 is switched off, following announcements on the TBUS transmissions (these are operating messages transmitted by RTTY, GOES schedules, BBS and probably other methods). Although the announcement was made about NOAA 9 going off, it remained on. This is why people monitoring these satellites might have heard (and seen) the resulting interference. I watched the passes coinciding on July 8 between 1642 and 1647UTC when the NOAA 11 picture of the western Atlantic gradually changed into a NOAA 9 picture of Europe.

**Solar Eclipse**

There was a total eclipse of the sun on June 30 and although my finances would not run to an ocean cruise of the south Atlantic, we all had a spectacular view of the moon’s shadow travelling across the ocean, and was able to see normal WEFAX images though I was able to use my Primary Data system to see the whole earth images every 30 minutes. All the clouds within the circle were dark and it looked very dramatic. I stored some images for later photography. The prints will be shown when available.

**MAGION 3**

If you operate a scanner for long periods, searching the WXSAT band (nominails 137 to 137.99MHz) then you must have picked up the strange tones of MAGION 3 which uses 137.85MHz - i.e., the same frequency as some METEORS. From time to time mine locks onto MAGIC and the signal can be quite strong.

MAGION has an orbit of high eccentricity (so that its distance from the earth varies widely); its orbital period is about 121 minutes, and inclination about 82° which is similar to the Russian WXSATS and so some interference is inevitable. MAGION 3 also transmits on 137.15MHz. You may also hear the scientific satellite PROSPERO transmitting in the band, on 137.56MHz.

**New METEOSAT Schedules**

As has been mentioned in a previous month, METEOSAT 3 (the geostationary Atlantic Data Coverage satellite) currently positioned over longitude 50°W, is expected to drift further westward, probably at the end of the year. From its next position at longitude 75° west, it will have a clear view of the whole USA, rather than just the eastern coast. Unfortunately we will not then be able to monitor it. From August 1 I will have a new dissemination schedule of which I have obtained a copy originating from the BBS operated by EUMETSAT.

There are significant changes to the various sequences of transmissions, both for WEFAX and the primary data pictures, and so I won't attempt to summarise them here. Anyone wishing to have a copy should write to EUMETSAT at Am Effelgrund 45, D-6100 Darmstadt-Eberstadt, Germany.

For those who are fairly new to the monitoring of METEOSAT signals, this weather satellite, originally part of the European Space Agency’s satellite system, has been allocated for American use due to the long delays in launching a new GOES WXSAT. Last year it was drifted from longitude 0° (over Greenwich) to its current 50° position.

It can be received by any normal METEOSAT system but only transmits on 1691.20MHz. If you are trying to hear it for the first time, you must allow for the fact that, unlike METEOSAT 4, it only transmits at the scheduled times. In between pictures, it cannot be heard. This contrasts with METEOSAT 4 which always transmits a tone in between the pictures.

METEOSAT 4 is also going to operate a revised schedule, but on this occasion the changes are few. I had noticed that the L1XIF (infra-red digital data originating from METEOSAT 3) has been followed by an unscheduled visible/whole disk image, though not at full resolution. During the time between WEFAX pictures you will also hear the data transmissions involved with the Data Collection Platforms (DCP).

**Drought**

The monitoring of planet earth using the METEOSATs is not only a technical achievement for those who have perhaps designed and built their own systems, but the means to get an insight into the global situation that is not easily available elsewhere. During the last 18 or so months we have been able to see the eruptions of Mount Etna before they ever hit the headlines, monitor the immediate and long-term environmental effects of the Gulf War, and now there is another event taking place. There has been an absence of cloud over the southern countries of South America for weeks, if not months. The picture has remained unchanged. I do not have archived images to refer back to but I have been able to ‘zoom in’ to regions in Angola and Zambia to see what appear to be rivers drying up. Are we seeing climatic changes?

**Letters**

No shortage of interesting points raised by correspondents! Bob Warriner of Lancing sent me one of his PROsat2 images complete with a colour palette. It showed the area around the Nile and there was another image showing parts of Italy shrouded in fog. Both were from METEOR 3-4 taken during early May. Bob asks about a PDUS review!! OK but give me a little time please - I’ve been marking 403 exam papers! One of my first PDUS images is shown in Fig. 4.

Roger Ray of Telford has also sent me some pictures from his PROsat2 system. He tells me that his Timestop Weather Systems PROscan receiver has proved resistant to the paging units.
Roger also agrees with Geoffrey Child's suggestion of a 'readers list' for mutual aid - see 'contacts'. Keith Elin lives in Northern Ireland and has been able to monitor the shuttle re-broadcasts from WASHAN from the Goddard Space Flight Centre. He has previously published these frequencies in this column, though I must admit I find it very difficult to receive them, although several writers have confirmed the pass but I received no response - maybe my f.h. antenna needs checking. Keith actually saw the space shuttle launch of Endeavour at 2345UTC on May 7 from home, and describes how he watched the whole orbit between for a few minutes until low cloud moved in.

Ben Ramsden of Halesowen describes himself as a beginner in the WXSAT field. He uses a crossed-dipole antenna and a short antenna with a different receiver and then into a second-hand YU3UVV framework. This is similar to my first system, which, as Ben says, is one of the cheapest systems that can display reasonable pictures, if you don't already have a suitable computer. Ben asks whether the additional filters in his receiver, which were fitted to reduce paging interference, will cause picture degradation? These filters should have no effect on picture resolution because they are carefully selected to maintain the proper bandwidth characteristics for weather satellites. They are added to restrict the passage of non-a.p.t. frequency components, and they can have a marked beneficial effect in reducing this unwanted interference. Mine were fitted by Dartcom shortly after the paging transmitters were first activated and eliminated most of the corruption.

**How Long Each Pass?**

Ben asks about the total time that one location can expect to receive a high NOAA METEOSAT pass. The maximum duration of any satellite pass depends mostly on two factors, first the height of the satellite, and secondly the observer's own horizon. NOAA WXSAT is currently at 869km up; the METEOSAT class satellites are about 950km up; the class three satellites are the highest - at 1200km and the OKEAN oceanographic satellites are lowest at about 600km. Consequently the OKEAN satellites are the quickest movers and their passes (on those strangely rare occasions when they are transmitting for a whole pass) last about 12 minutes. The NOAA's and the class 2 METEOSAT last for about 15 minutes and the high orbiting class three METEOSAT can clock up to 20 minutes! Obviously these higher satellites also let us see more of the earth. A good METEOSAT 3-4 pass can be monitored almost up to the north pole!

The second factor - the observer's horizon - may limit the amount of the complete pass that is actually visible. I have houses on my eastern side that stop me seeing to the east of Cyprus. I have received pictures from correspondents such as Brian Duddman who is right over to Sardinia. However, my western horizon is superb and so METEOR 3-4 reveals the USA right down to Boston! I heard decodable signals down to about one degree below the horizon. Ben has a 9-story building due south, which stops him seeing North Africa. This is a physical obstruction which cannot be overcome. Fitting a pre-amp won't help, and would probably make matters worse by amplifying unwanted signals which could interfere with the a.p.t. (WXSAT) signals.

James Booth wonders whether any readers have had success using the Maplin system with the Amstrad 464 computer? A letter from Bob Anderson told me that he bought a Griffin framemore some time ago (they date back to about 1986 or so) but is now hoping to use his Amiga to decode WXSAT a.p.t.

**Dish Size**

Bob asks about the sizes of dishes for use with METEOSAT. The most commonly used size is about 1m diameter and should be used with a good quality pre-amp or a suitable down-converter, some of which have built-in pre-amps.

Obviously if you use a bigger dish then you will receive a more powerful signal. I use a standard RIG (Remote Imaging Group) 1m dish for most WFXAF use, and a 1.8m unmounted dish for PDUS (METEOSAT Primary Data User) use. Sometimes I collect WFXAF data from GOES using the large dish and the picture quality is then very good.

**Atari Pictures**

Reader Ron Scrimgeour tells me that there is a program called 'Pictures from Space' by Leslie Kaye on Shareware disk GD942 for the Atari ST computer costing £2.75 from Goodmans Enterprises, 16 Conrad Close, Meir Hay Estate, Longton, Stoke-on-Trent ST3 1SW.

**Contacts**

This column is written mainly for the weather satellite enthusiast, including both beginning and those with many years of experience. An increasing number of people are asking to be put into contact with others mentioned in the column who have solved various types of problems. This feedback can be very helpful and I so always keep letters for a period of about one year, to allow me to refer back to the addresses. Could I ask correspondents to indicate on letters whether they are happy to have their addresses given to others on request?

**PC-GOES**

Martin Liddament of Reading has sent me some pictures taken using his PC-GOES system which I recently reviewed. He has worked out an innovative method of producing good pictures from recordings. In my review, I mentioned that PC-GOES cannot really cope with tape recordings of a.p.t. data. Martin has recorded signals on the soundtrack of his domestic video recorder and on playing them back he says that results were indistinguishable from live data! Martin sent me four pictures to prove this, of which one is shown in Fig. 3. He now uses his v.c.r. for the programmed recording of a.p.t. signals. Martin noted my comment about the price of PC-GOES (I said that I thought at £250 it was a little high). Martin points out that Comar Electronics advertise the same system for about £200. He is correct, as I was! The information that I quoted was from another distributor who told me of the price rise last December.

**Predictions**

The summer holidays will see many hobbyists spending time on satellite monitoring and so in the table below are another set of predictions for those who have a suitable receiver to tune into the WXSATs but no predictions program. The table lists AOS (acquisition of signal) time UTC, the LOS (loss of signal), the maximum elevation and whether east or west and finally whether travelling north-bound (NB) or south.

**Frequencies**

NOAA 9 and 11 a.p.t. on 137.62MHz; NOAA 10 and 12 on 137.50MHz; METEOR 2-19 or 2-20 on 137.95MHz and METEOR 3-4 or 5-5 on 137.30MHz.

**Abbreviations**

AOS - Acquisition of signal
a.p.t. - Automatic picture transmission
ESA - European Space Agency
EUMETSAT - European Organisation for Meteorological Satellites
GOES - Geostationary Operational Environmental Satellite
VGA - Video Graphics Array
LOS - Loss of signal
h.r.p.t. - High resolution picture transmission
BBS - Bulletin board service
PC - Personal computer
PDUS - Primary Data User Station

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**Table:**

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</table>

Please remember that I cannot be sure whether every satellite listed will be operating, and that the times may be a few minutes out.
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AH-212 144/430/1296MHz transmit, 20W power rating, 140-900MHz receive. 3.6dB gain at 430MHz. 350mm long (flexy)...£28.95
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No subject in the world of listening is surrounded by more confusion, myth, and general nonsense than that concerning aerials, and I see no reason why I shouldn’t add my two penn’orth. The best all purpose aerial is still a random length of wire erected in a straight line and as high as your house will allow. A length of 10 to 15 metres is ideal, although you can make this longer if you do a lot of listening to medium wave. At the end of the wire I recommend using the RF Systems Long Wire Balun – not just because we sell them, but because they WORK MIRACLES for low noise reception.

I am told that the good old GSV is nearing its head in the world of short wave listening, and I can’t think of a more UNsuitable aerial for the general listener. As a radio amateur myself, and as an ex-colleague of Louis Varney from my days with Marconi (no-not Marconi himself, I like the GSV, but you will be better off with a simple end fed wire – and the wire end on your house, not 50 feet out in the middle of the garden on open wire feeders. Next month I will tell you of some research we have been doing into the fallacy of aerial tuners for the short wave listener, and will answer the question “Does the listener need, or benefit from an aerial tuner?”

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Short Wave Magazine, September 1992
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LONDON (HEATHROW): 6 Cherwell Close, Langley Tel: 0753 545255

LONDON (MIDDX): 223/225 Field End Road, Eastcote Tel: 081-429 3256

NEWCASTLE: Newcastle International Airport Tel: 0661 860418

Short Wave Magazine, September 1992
I am Pleasant of Highams Park in London is an experienced computer programmer and writes asking for help. He wants to write his own decoding software, but doesn't know where to obtain all the technical details. The answer is to be found in the Klingenfuss Radioteletype Code Manual (SWM Book Service stocks). This excellent book gives hard to find technical details of most of the modes found on the h.f. bands. However, you do need a certain amount of basic comms knowledge to get the best from the book.

Mark Cox of Wigan has spotted a station that neither he nor I have been able to identify. The station operates on 388.2 kHz between 2347 and 0033 UTC and sends MCR repeatedly. Can anyone help?

The column sure seems to have an international appeal as I've just received a letter from Jim Burns in Australia. Jim's a keen listener and currently runs an IBM PC-based system using the 286 processor with a clock rate of 12 MHz. The receiver is a Yaesu FRG-8800 which feeds a Listening Point 11 decoder. This decoder is a new one to me and looks to be very good value at $80 for the kit. This converts to about £35.00 sterling. The decoder not only handles FAX at 120 and 60 r.p.m. but decodes c.w. and RTTY. If anyone would like more details the suppliers are: High Tech Tasmania, 39 Pillingar Drive, Fern Tree, TAS 7054, Australia.

Readers Queries

Short Wave Magazine and consequently 'Decode' have increased in popularity to the point where I'm having great difficulty supplying individual answers to the wide range of questions asked by readers. To help overcome this problem I've started to put together a set of factsheets to cover most of the more common points. I will also be attempting to answer questions via the column. Just one more favour, if you're asking for help could you put the question near the top of the letter. Although it's useful to have a full case history, it's easier if I know the question before I read the history. I don't want to stop answering queries individually, but time is short as I don't write as my full-time job, so your help will be appreciated.

With regard to requests for frequency lists, Elaine will be helping me with these and we are aiming to return these within a few days.

Starting FAX

I seem to receive a regular flow of pleas for help from readers who are just starting out with FAX reception. One such letter arrived recently from Ian Harper of Bury St. Edmonds. Hopefully, running through his questions should answer the queries from a number of people and help a few who are just starting out.

Ian's first question concerns tuning systems and how to use them. There are two types of tuning system in common use, the bargraph and oscilloscope. The bargraph system usually takes the form of a horizontal display either on a computer screen or a row of LED's. The technique with this system is to tune the FAX signal so that it's evenly balanced around the centre point. The easiest way to do this is while the station is transmitting a picture. If you try to tune in between pictures you'll only get a single LED lit. With an oscilloscope tuning system you are generally presented with a display comprising three horizontal lines. One in the centre of the screen and the other two equally spaced about the centre. The two outside lines represent pure black and white respectively. As with the bargraph system, the easiest way to tune is while a picture is being sent. The receiver tuning should be adjusted so that the signal is equally spaced about the centre line. For best results with charts, the signal should reach or overlap the two outer lines.

FAX Reception

Once you've mastered the basic tuning techniques, you can use the receiver tuning like a brilliance control to refine received picture. It's important to remember that reliable FAX reception demands excellent frequency stability from the receiver. It's not uncommon for listeners to find they have to adjust the tuning during reception. This is especially true with the cheaper models.

Now let's move on to the main settings for FAX reception. There are two key parameters that must be set correctly - r.p.m. and I.D.C. The r.p.m. or lines per minute has to align with the drum speed of the transmitting station. By far the most common setting is 120, though 60 and 90 are in use on the h.f. bands. The I.O.C or Index Of Cooperation is a complex parameter that has to align with the relative speed that the transmitters sensor moves across the image. Fortunately, there are only a couple of common settings in use. These are 576 for most weather charts and 288 for press photos. To help you get started, try tuning to 13.595 MHz or 4.782 MHz with settings of 120 r.p.m. and 576 I.O.C. Once you are accurately tuned-in you should receive weather FAX images. Don't worry if the picture looks as though the ink has been smudged, this is due to multipath propagation. The way to overcome this is to try receiving the same station on another frequency. This is where a good frequency list can prove to be invaluable.

Simple Guidance

Once you've mastered the basics of manual tuning the next step is to try the auto reception modes. Most of the current FAX systems include this very useful feature. The system works by analysing the start tone and pacing sequences that are sent at the beginning of each picture. The start tone is used to convey the I.O.C, whilst the synchronisation sequence gives the drum speed. One of the main advantages of using the auto reception modes is that the received picture is always properly aligned. If you use the manual mode you will often find that the edge of the picture is anywhere but at the edge. This is not a serious problem as most packages include some manipulation tools to tidy-up the received picture. I hope that provides some simple guidance for newcomers to this fascinating aspect of the hobby.

Mike Richards G4WNC
200 Christchurch Road, Ringwood, Hants BH24 3AS.

Suisse Radio International

I'm mentioning this station again by way of a reminder. Swiss Radio International or SRI as it's more commonly known is one of the few broadcast stations to use RTTY. The original service started towards the end of 1991 with news broadcasts in Swiss national languages. So as to make the service available to as many people as possible the transmission format is standard 50 baud RTTY. The transmitter power is 2kW so the signal is generally very good.

The service has developed since those early transmissions and they now regularly broadcast programmes in English French and German. The latest schedule I have was sent in by Graham Burnett of Berwick-on-Tweed as follows:

10.515 MHz, 2000-2100 UTC towards Asia
10.515 MHz, 0030-0130 UTC towards South America
10.515 MHz, 0200-0300 UTC towards North America
15.835 MHz, 1700-1800 UTC towards Australia
17.53 MHz, 1830-1930 UTC towards Africa

If you'd like to QSL with the station you will need to send a sample printout to Swiss Radio International, PR and Marketing, CH-3000 Bern, Switzerland.

Photo Call

Yes it's time for another mug shot! This month the honour goes to Paul Charlton of Ilford. Paul's a regular contributor and something of an old hand at utility listening. His current setup consists of a Yaesu FRG-7700 h.f. receiver that feeds a Multiytem decoder via a Datong audio filter. This compact system gives him good quality access to RTTY, c.w., FAX and ARQ modes. Paul asks about the legal implications of showing FAX print-outs to his colleagues. The answer depends on what stations have been received. If it's weather charts there shouldn't be a problem as it's perfectly legal to receive weather information for amateur use. You must ensure that you don't make any form of commercial use of the charts. When it comes to any other transmission types, I wouldn't advise making the information public. This is particularly true of any personal communications you may come across, such as ship to shore ARQ transmissions.

If you'd like to be featured in my phone call section, just send me as good a photo as you can. It would be helpful if you could also send details of your station and listening interests.
Bracknell RTTY Schedules

With the tremendous interest in weather data from this station, though it was about time I published a schedule. Getting hold of a schedule, on the other hand, is not that easy as they aren't transmitted like FAX schedules. The solution came from Bill Clark of Aspatia. He's sent me a summary of the latest schedule - the full version runs to eight pages!

Let's start with a rundown on the frequencies in current use.

- **4.489MHz** (GFL26), 24hr
- **6.835MHz** (GFL22), 1800-0600UTC
- **10.5513MHz** (GFL23), 24hr
- **14.256MHz** (GFL24), 24hr
- **18.23MHz** (GFL25), 0600-1800UTC

The transmission mode from each of these stations is 50 baud with a shift of 400Hz. Incidentally the transmitter power is 10kW so the signal is generally very strong in the UK.

Let's now look at the transmission contents. The broadcasts are mainly divided into three hour periods to align with the standard three hourly observation times. The transmission periods start at 0000 and run right through the 24hr period. Probably the best example to start with is the 1200-1500 time slot as this usually has the most observations. The transmission runs as follows:

**1200-1300UTC Surface Observations**
- Land station 1203 Eire Bulletin 1 (SMUE01)
- Land station 1208 UK Bulletin 1 and 2 (SMUK01 and 22)
- Land station 1220 N and W Europe 1 (SMUE01)
- Ships 1240 North Sea, North Atlantic and Mediterranean (SMUE01)
- Land station 1250 N and W Europe 2 (SMUE22)
- **1300-1400UTC Upper Air Observations**
  - Land station UK parts 1 and 2 (USUK01 and UKU01)
  - Land station N and W Europe (USEU01 and UKEU01)
  - Ship WX ship Cumulus (US/UK01)
  - Ship WX ship Polar Front (US/UKWF01)
  - **1242 Retards USU01 and UKUK01**
  - **Surface reports for 1200**
  - **1300-1400UTC Surface Observations**

Various after 1427 N. America and C.I.S. (SMNA and SMRS42). Now let's take a look at a typical Bracknell transmission header to demonstrate how you can work-out the type of bullet for yourself.

**ZCZC**

**SMUK01 EGRR 011200**

**AAXX 01124**

**ZCZC = Standard signal indicating the start of a message.**

**SM = Surface observation for a main hour.**

**UK01 = United Kingdom Bulletin 1 (see later section for details)**

**EGRR = Location indicator showing where the bulletin was compiled (EGRR is Bracknell).**

**011200 = 1st day of the month at 1200UTC.**

**AAXX = SYNPTIC surface observation from a land station.**

**01124 = Date/time/synoptic obs.**

Whilst it's not possible for me to include a full list of bulletin types, here's a breakdown of some of the more common identifiers.

**IE01 = Eire bulletin 1, 2 stations in Eire.**

**IE22 = Eire bulletin 2, 6 stations in Eire.**

**IE23 = Eire bulletin 3, 6 stations in Eire.**

**UK01 - UK bulletin 1, 26 UK stations.**

**UK22 - UK bulletin 2, 12 UK stations.**

**USUK - Part 1 of upper air messages.**

**UKUK - Part 2 of upper air messages.**

**EU01 - NW Europe, 121 stations in Norway, Sweden, Finland, Iceland, Denmark, Holland, Belgium, Switzerland, France, Spain, Portugal, Greece, Poland and Canary.**

**EU02 - Compilation of 54 stations: Austria, Czechoslovakia, Hungry, Yugoslavia, Bulgaria, Italy, Greece, Cyprus and Israel.**

EU22 - Compilation of 194 European stations as in EU01.

NA22 - Compilation of 18 stations from Eastern seaboard of Canada, the US and Bermuda.

- **RTTY** - A compilation of 30 stations from C.I.S.

**SPKX30 - Location of atmospherics, Europe and N. Atlantic broadcast hourly on the hour or just after.**

- **SSNT11 - Drifting buoy observations**

UANT01 - Aircraft reports broadcast hourly just after the hour for previous hours report from aircopter over the N. Atlantic.

**TBUS - Satellite (NOAA) location information from Washington broadcast around 2040-2105 and continued or repeated at 2240.**

Now let's see some of the more common location identifiers associated with main Meteorological centres.

- **EGRR - Bracknell**
- **EIDB - Dublin**
- **ENMI - Oslo**
- **EDZW - Offenbach, Germany**

Next I'd better list some common observation type identifiers.

**AAXX = Synoptic report from a land station.**

**BBXX = Synoptic report from a sea station.**

**TTAA = Upper level temperature, humidity and wind report from a land station.**

**TTBB = Part B of TTAA.**

**TTC0 = Part C of TTAA**

If all this has further whetted your appetite here's a few suggestions as to the where you can find more detail on the various code types.

- From the Klingenfuss stable the Air and Meteor Code Manual lists details of the reporting codes and location identifiers. However if you want to cover the TBUS system you will also need to buy his Guide to Facsimile Stations. An alternative source of information is the Admiralty List of Radio Signals. Volume 3 contains the codes for SYNPTIC and SHIP observations, while Vol. 4 has the station names and identifiers.

My thanks to Bill Clark for taking the trouble to put this useful report together.

**Frequency List**

Now for this month's frequency list. I've used the normal format of: Frequency, mode, speed, shift, callsign, time and notes. The contributors to this month's list were, Jan Nieuwenhuis, Paul Chariton, Day Watson and Robert Hall. If you would like my complete frequency list then just send three first or second class stamps to the address and the head of the column.

134.26MHz, FAX, 120, 576, DC54F, 0702, Offenbach Meteorat

3.236MHz, FAX, 60, 576, - 0126, USSR

3.537MHz, FAX, 120, 576, - 0143, UNID

4.5127MHz, RTTY, 350, 32D, DEJD, 0403, Jeddah Met

4.757MHz, FAX, 120, 576, - 0046, UNID

4.788MHz, RTTY, 50, 400, 6VU23, 0438, Dakar Met

7.52MHz, RTTY, 75, 400, BZPST, 1300, Beijing press

7.959MHz, FAX, 120, 576, AIE, 1945, Minsk Meteo

7.75MHz, FAX, 60, 576, RAW78, 2030, Moscow Met

8.09MHz, CW, -, -, NAM, 0811, USN Norfolk

8.165MHz, RTTY, 50, - , 5YD, 1517, Nairobi Air

8.471MHz, CW, -, -, UXN, 1357, Arthkangelis radio

8.487MHz, CW, -, -, IDQ, 1406, IN Rome

8.551MHz, CW, -, -, CTP, 1438, NATO Lisbon

9.1945MHz, ARQ-E3, 48, 400, SST, 0544, Ascena, Antananarivo

9.443MHz, RTTY, 75, 170, - , 1850, UNID

12.7185MHz, CW, -, -, NNN, 2301, USSR Portsmouth

12.72575, CW SAF, 1500, Tripoli Air

18.416MHz, RTTY, 50, 400, - , 1312, MFA Jakarta

19.300MHz, RTTY, 100, -, -, 1813, Turkish news

20.132MHz, RTTY, 75, 400, - , 1515, Yugoslav press

20.7544MHz, ARQ, 100, 170, HBC88, 1055, IRC Geneva

22.955MHz, RTTY, 50, 400, ISX22, 1541, Rome press
By international agreement the 120m (2,300-2,450kHz), 90m (3,200-3,400kHz) and 60m (4,750-5,060kHz) bands are allocated for broadcasting use only in designated tropical areas. The 75m (3,900-4,000MHz) band is for regional broadcasting only in Europe and Asia. The LMS& tropical band charts clearly show that a number of international broadcasters are ignoring these agreements.

Despite pressure from some countries, it was decided at the World Administrative Radio Conference (WARC) held in Toronto in 1970 that a February-March '92, that the tropical bands would not be opened for international broadcasting. It will be interesting to see if the broadcasters abide by this decision.

Long Wave Reports

Note: I.w. & m.w. frequencies in kHz; s.w. in MHz; Time in UTC (=GMT). Unless stated, all logs compiled during the four week period ending June 30.

The unexpected reception of transatlantic l.w. signals in Canada during May, encouraged Alan Roberts (Quebec) to continue his checks during June. The most extraordinary l.w. reception he has ever encountered occurred at 0300UTC on June 2, when signals from R.Monte Carlo via Roumoules on 216kHz were heard quite clearly. He says, "I listened to their 5am news and heard warnings of violent storms in the Pyrenees, Massif Central and the Alps. It was nice to hear another country's commercial jingles. RMC watches were offered as prizes in a phone-in competition." The opening continued for half an hour. For about 5 minutes their signal was sufficiently strong to enable Alan to receive it on a portable using the built-in ferrite rod antenna! He checked all of the European l.w. channels, but no other signals could be heard.

The sky wave signals from Al Karanah, Jordan on 207 (600kW) were received after dark by David Hertl in Lenesice, Czechoslovakia, rated SINPO 3333. He also heard the 200kW signals from Nardor, Morocco on 171, rated 3222.

Whilst in N.Majorca, Jim Cash used a pocket sized Sony ICF-SW1 portable to check the band in the evenings. The internal ferrite rod antenna proved to be rather inadequate, but nevertheless he compiled an interesting list for the chart. At 2128 he picked up BBC R4 on 196, which is shared by Burghhead (50kW), Droitwich (50kW) and Westerline (50kW) - BBC was rated 2522. Using headphones, R4 was audible with considerable hiss. On 153, which is shared by DLF Donebach, Germany (500/ 250kW) and Bechar, Algeria (1000kW), he was surprised to find the German dictionary more pronounced than the Algerian music.

Medium Wave Reports

In Grimsby, Jim Willett continued his search for transatlantic m.w. signals during the early hours of the morning. At 0110 he picked up Gronlands NF on 196, their 5kW signal rated SIO222. Later, WINS in New York, NY on 1010 became audible and rated SIO222 at 0250, but signals from countries in the area were weak and could not be identified. Although the Caribbean Beacon, Anquilla on 1610 was peaking SIO222 at 0235, signals from S.America were noticeably absent. Two stations in St.John's, NF were logged, VOCM on 580, SIO222 at 0250 and CJYG on 930, which peaked SIO222. At 0130 Jim heard CKOX in Hamilton, ON, their signal on 1150 was SIO222.

Down in Worthing, Ron Damp has also been burning the midnight oil. He picked up CJYG on 930 at 0315 and rated them 33333, but much to his surprise they faded out at 0330.

Good reception of the sky wave signals from some stations in N.Africa and S.Europe was noted after dark, by George Millmore in Wootton, IOW. His extensive list includes several stations not heard before. He rated Layonne, Morocco on 711 (50kW) as SIO434; Messina, Italy (1143kHz) SIO432; Valladolid, Spain 1539 (5kw) SIO222; and Vitoria, Spain 1620 (10kw) SIO222.

Brian Oddy 63FX, Three Corners, Merryfield Way, Storrington, West Sussex RH20 4NS

Medium Wave Chart

Long medium & short

Short Wave Magazine, September 1992

Listeners:
A. John Anderson, Windmill, Hanwell
B. Scott Oakwell, Warrington.
C. Jim Cash, N Majorca.
D. Francis Veere, Brussels.
E. David Hertl, Lenesice, Czechoslovakia.
F. Sheila Hughes, Milton.
G. Eddie McEwan, Newry.
H. George Millmore, Worthing, Sussex.
I. Ken Morley, Banbury.
Short Wave Reports

Good reception from many areas was noted during early June, but towards the end of the month the propagation conditions were disturbed by the effects of solar activity and reception from some areas was reduced.

Considerable variations in propagation were evident in the 25MHz (11m) band throughout the month. In N. Majorca, Jim Cash noted good reception in June from DW4J at 21.500, Germany on 25.70 (Ger to M.East, E.Asia 1130-1355) rating their signal 45323 at 1333. On June 14th he logged BBC via Issoudun, France 25.820 (Fr to E.Africa 0700-1530) at 2533.

Reception of the 11m broadcasts in the UK tends to be unreliable because they are beamed to other areas and arrive here via backscatter and other modes. Up in London, John Stevens found reception poor throughout the month, the most consistent being from the BBC.

In N. London, Ron Galliers logged BBC as 25220 at 0930. He also picked up UAE, Abu Dhabi on 25.690 (Ar to Far East 0900-1100) rating the signal 35323 at 0930. Ower in C. Down, Robert Connolly (Niel) also logged DW4J at 21.500 on 0830 at 1101 and Eddie McKee of Newry noted R. Noderners on 25.94 (Du to W. Africa 1030-1115, Sun only) as 24212 at 1030 and 5424 at 1015. Their signal on chronic weakness was rated 80535 at 1040 by Kenneth Buck.

Although intended for other areas some of R. Australia's 21MHz (13m) broadcasts have reached here in the morning, simultaneously at 0525. (Eng to SE Asia 0100-0800) was rated 24532 at 0632 by David Edwards in Wallsend, 21.725 (Eng to S. Asia 0800-1251) 310333 at 0915 in Largs; Camaron on 21.500 (Eng to S. Africa 0530-0945) was rated 30433 at 0830 by Bryan Kimber in Hereford and 34333 at 0625 in N. Majorca.

Also noted in the morning were

Long Wave Chart

R. Japan via Moiabay 21.575 (Eng, Jap to Europe 0700-0830) 32333 at 0735 in Salisbury; 21.520 by Tony, Istanbul 21.520 (Eng to Europe 0800-0945) 44333 at 0810 in Newry and (Eng to Europe 1100-1200) 54444 at 1107 by Chris Shorten in Norwich; Croatian, R, Zarreb 21.460 (Eng to Europe 0930-1115) 44444 at 1130 by Rhodes, Millan in Oman; Srivia Schwarzenburg 21.770 (Eng to Asia 0900-0930) 55555 at 0950 by Darren Beasley in Bridgwater;

Air via Aligur 21.735 (Eng to NE Asia 1000-1100, Th to Thailand 1115-1200) 55555 at 1105 by Chris Shorten in Norwich; R. Japan via DW4J 21.650 (Ar, Eng to Europe 0615-1645) 44444 at 1032 by Peter Pollson in St. Andrews; BBC via Lmasso 21.470 (Eng to E. and Asia 0900-1200) 44444 at 1100 by Romania 21.500 (Eng to Europe 1800-2000) 44444 at 1902 by Ken Milne in Basingstoke; R. Nederlands via Bonaira 21.590 (Eng to Africa 1730-2025) 44444 at 1950 by Sheill Hughes in Morden; VORBC via Greenville 21.485 (Eng to Europe 2000-2200) 44444 at 2020 by Darran Taplin in Brenchley; WFRF 21.525 (Eng, Fr, Port to Africa 1600-2300) 44444 at 2055 in Worthing; VORBC via Okeechobee 21.720 to Europe 2200-2300) 44233 at 2253 by Vera

Bradley in Woodley Sp.

Quite often the 17MHz (16m) broadcasts to Pacific areas from R. New Zealand Int. have reached the UK. Typical ratings for their 100kW transmission from Rangataiki on 17.770. (Eng to 2300-0830) were 31022 at 2142 by Bill Clark in Rotherham and 35543 at 0532 in Welland. Two of R. Australia's broadcasts have also been heard here in the early morning: 17.715 via Shepparton (Eng to Pacific areas 0500-0830) rated 34433 at 0830 in Worthing; 17.750 via Darwin (Eng, Fr to S.E. Asia 0600-0900) 31022 at 0630 by Francis Hearne in Bristol.

Later, R. Finland via Por. 17.800 (Eng to Japan, Far East 0830-0855) rated 44333 at 0815 in Morden; KHBI, N. Mariana Is. 17.555 (Eng to NE Asia, Russia 0800-1200) at 0930 in Norwich; South Africa, No.1 17.050 (Fr, Eng to W. Africa 0700-1600) was 44344 at 1200 in Kilkeel; Voice of Israel, Jerusalem 17.545 (Heb to W. Europe, N.C Africa 1105-2200) 54444 at 1238 in Woking; R. Romania Int. Bucharest 8.850 (Eng to Europe 1300-1355) 43333 at 1312 in St. Andrews; BBC via Maine 17.885 (Eng to E. Africa 0900-1400) 31222 at 1317 by Julian Wood in Elgin; R. Russia via Sakhalin 8.220 to Europe 1600-1629) 44444 at 1625 in Thurrock; BBC via Issoudun 17.860 to Europe 1600-1700) 44233 at 1637 in Newry and
43433 at 1600 in N.Majorca; HCJB, Ecuador 17.90 (Eng to M.East 1630-1800) SI044 at 1700 in Herford; SRI via Sottens 17.655 (Eng to M.East, E Africa 1700-1730) SI034 at 1700 in Macassar; WWCR, Nashville 17.575 (Eng to Europe, USA 1200-2300) 32332 at 1722 in Woodhall Spa.

During the evening VOA via Tanger 17.885 (Eng to N.Africa 1800-2200) rated SI045 at 1830 in Edinburgh; RCI via Sackville 17.875 (Eng to Europe 1900-1929) SI034 at 1908 by Michael Williams in Redhill; WSHB, Cypress Creek 17.215 (Eng to Europe 1900-2010) 34333 at 1909 in Bastingoke; R.Sofia, Bulgaria 17.85 (Eng to N/Africa 1945-2030) 34333 at 1951 in Oxted; R.Nederlands via Bonaire 17.699 (Eng to W.Africa 1930-2030) 32322 at 2013 by Charles Beanland in Gibraltar; R.Havana Cuba 17.705 (Eng to Europe 2000-2100) 35553 at 2014 in Branchley; also 17.815 (Eng to Africa 2000-2110) 42443 at 2100 in Bridgewater; VOFC Taiwan via Kechouko 17.750 (Chn, Fr, Ger, Eng to Europe 1900-2300) 43433 at 2129 in N.London.

In the (15m) band three of R.Australia's broadcasts have been reaching the UK: Shepton Heath on 15.40 Eng to pacific area as 0900-0930) rated 32323 at 0305 Worfing, 15.320 (Eng to Europe 2100-0130) rated 34333 at 2010 in Bridgewater and 15.170 from Darwin (Eng, Chin to Asia 0900-1400) 55545 at 1200 in Norwich.

Some of the broadcasts to Europe originate via RPPI Costa Rica 1430-2100) was 0300-1000) 34444 at 1200 in Oxted; HCJB, Ecuador 15.270 (Eng 0700-0830) 32332 at 0816 in Woodhall Spa; UAER Dubai, Gulf 15.455 (Eng, Ar 0615-1545) 32322 at 0900 in Newry; AWR via Saraya 15.125 (Eng 1630-1630) 32322 at 1600 in Maccassar; VOA via Gloria 15.155 (Cz 1600-1800) 34333 at 1730 by John Coullter in Winchester; RNBR, Brasilia 15.695 (Eng, Ger 1800-2050) 55444 at 1946 by Richard Reed-Farxkendoff in Guildford; R.Iran Iraq Baghdad 15.210 (Eng 1900-2000) 55444 at 1950 by Scott Caldwell in Warrington; WCSN, Maine 15.665 (Eng 1900-2100) 34333 at 1907 in Bastingoke; VORl Teheran 15.260 (Eng 1830-1930) 43433 at 1915 in Brenchley; Voice of Vietnam, Hanoi 15.010 (Eng, Viet, Fr, Sp, 1600-0000) 34444 at 1900 in Oxted; R.Kuwait 15.505 (Ar 1900-0000, also to N.Africa) 54555 at 2024 in Woking; R.Damascus, Syria 15.095Eng 2005-2105, also to USA) 32323 at 2025 in Dalton; WWCR, Nashville 15.690 (Eng 1200-0000) 44444 at 2249 in N.London.

Throughout the day there are numerous broadcasts to other areas. Amongst those noted in the morning were SLBC, Sri Lanka 15.425 (Eng to S.Africa 0900-1230) 32322 at 1200 in Thumrait; Voice of Malaysia, Kuala Lumpur 15.295 (Eng to SE.Asia, Australia 0555-0825) 34423 at 0850 in Herford; R.Austria int via Mosbourn 15.460 (Eng, Ger to Australia, NZ 0900-1100) 44454 at 1030 in St Andrews; AIR via Allahgarh, India 15.050 (Eng to NE.A sia, Pakistan 1000-1100) SI0227 at 1100 in Largs; SRL via Schwerin 15.505 (Eng to Australia, Asia 1100-1130) SI0344 in Edinburgh; RTL Luxembourg 15.350 (Eng, Fr to E USA 24hrs) SI0322 at 1107 in Rotherham.

Later, R.Finland via Pori 15.400 (Eng to USA 1330-1400) was rated SI0222 at 1337 in Egin; DW via Julius 14.455 (Eng to S.Africa 1600-1650) SI0555 at 1600 by Charles Beanland in Gibraltar; DW via Poznan 15.400 (Eng to W.Africa 1600-1630) SI0333 at 1655 in Redhill; BBC via Woodfort, UK 15.070 (Eng to N.Africa 0700-2315) 55555 at 2205 in N.Majorca; UAR, Abu Dhabi 15.305 (Eng to USA 2200-0000) 33333 at 2235 in Kilkeel; DW via Cyclops 1.455 (Port to S.America 2130-2300) SI0444 at 2230 by Antonio De Abreu-Teixeira in Esseham; VOA via Timag 15.305 (Eng to Asia, Oceania, Pacific 2200-0000) SI0345 at 2245 in N.Bristol.

UK listeners have reported good reception from many areas in the 13mFm (22m) band. Among those reaping in Europe, two R.Austria's broadcasts via Carnarvon have been clearly received here: 13.755 (Eng to S.Aira 1450-2100) 55555 at 1015 in Dalton; 7.705 (Eng to SE Asia 2100-2300) 55555 at 2258 in Woking. In N.Majorca their 13.755 transmission was 4444433 at 1620.

Also taking advantage of the propagation conditions in this band are R.Austria int via Moosbourn 13.730 (Ger, Eng, Sp to Europe 0400-1700) SI0444 at 0730 in N.Belgium; SRL via Sottens 13.855 (Eng to Australia 0900-0930) 555555 at 2000 in Bridgewater; also 13.635 (Eng to Asia 1100-1130) SI0433 at 1130 in Manchester and DW via Jullich 13.610 (Eng, M.East, Africa 1900-1500) 43433 at 1500 in Thumrait; UAR Dubai 13.675 (Eng to Europe 1330, 1330 & 1630) SI0444 at 1630 in Edinburgh; KSDA, Guam 13.720 (Eng to S.A sia, E.Africa 1700-1900) 55332 at 1815 in Newry; RCJ via Sackville 13.650 (Eng to C.Europe 1900-1959) 44444 at 1908 in St.Andrews; R.Kuwait 13.820 (Eng to Europe 1800-2000) 55554 at 1932 in Branchley; SRL via Sottens 13.650 (Eng to M.East, Africa 2000-2030) SI0322 at 0200 in Dalston; R.Croatio Zagreb 13.460 (News in Eng heard at 2100 by Roy Pateryn, Derby; BTRN Int via Wave 13.855 (Fr, Eng Sp to S.America 2130-7) 44244 at 2130 in Otto, WHRI Redmond 13.760 (Eng to Europe, Canada 1700-0000) 32322 at 2240 by Robin Harvey in Bourne; UAE R, Abu Dhabi 13.655 (Eng to USA 2200-0000) 44445 at 2235 in Walsend. The 11mFm (25m) band has much to offer the listener throughout the day. Amongst the many entries in the reports were R.Nederlands via Bonaire 11.895 (Eng to Pacific areas 0930-1030) 23322 at 1005 in St. Andrews; KNLS Anchor Point 11.560 (Eng to E.Africa 1200-1400) SI0111 at 1335 in Macassar; VOA via Timang 11.715 (Eng to Asia, Pacific 1200-1300) SI0343 at 1315 in Herford; SLBC, Sri Lanka 11.800 (Hi, Ka, Mat, Sin, Ta, Tel, Ur to Asia 0830-1730) 13333 at 1730 in Hitchin; FEBA via Mahe 11.995 (Eng to S.A sia) 34343 at 1403 in Thumrait; Voice of the Mediterranean, Malta 11.925 (Eng, Ar to N.Africa 1400-1600) 44243 at 1410 in Dalton; R.Austria int via Moosbourn 11.780 (Ger, Eng, Fr to SE Asia 1400-
intended for European listeners. Some
stem from VOA via Wofferton 7.325
(Eng 0600-0700) SI0333 at 0615 in
N.Bristol, Vatican Radio, Italy 7.250 (Lt.
Fr, Eng 1000-1030) SI0544 at 1015 in
Hereford; AIF via Algiers 7.412 (Eng
1845-1945, 2045-2300) 32333 at 1905 in
Ottok, 55444 at 2146 in Bridgwater; and
R.Podence, Portugal 7.525 (Eng 1930-07
33433 at 1938 in St.Andrews; Voice of
Greece, Athens 7.450 (Gr, Fr, Eng 2000-
2050, also Gr 2200-) 44433 at 2010 in
Toulon and SI0445 at 2210 in Edinburgh,
Beograd, Serbia, 7.620 (Relays R.Beograd 11.2322 at 2027 in Woodhall Spa; R.Czechoslovakia, Prague 7.345
(Eng 2100-2130) 55444 at 2100 in
Breconfield; R.Moscow via Ushant 7.320
(Eng 1600-2300) 44444 at 2115 in
Makkah.

Also noted were RSA, S.Africa 7.270
(Eng to Africa 0200-0400), 34433 at 0230
in Thumrait, VWCCR Nashville 7.475
(Eng to USA 0000-1200) 45333 at 0915
in London; WFR: R.Budapest, Hungary
7.315 (Eng to USA 0000-1100) SI0333 at 0725 in
Macclesfield; R.Australia via Brandorf 7.280 (Eng to New Guinea 1100-2100) 44444 at 1610 in Kilkeel,

Transatlantic DX Chart

<table>
<thead>
<tr>
<th>Frequency MHz</th>
<th>Location</th>
<th>Time (UTC)</th>
<th>DXer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1011</td>
<td>WINS</td>
<td>New York, N.Y.</td>
<td>0200 B</td>
</tr>
<tr>
<td>580</td>
<td>VOCI</td>
<td>St. John's, N.F.</td>
<td>0500 B</td>
</tr>
<tr>
<td>930</td>
<td>LJOY</td>
<td>St. John's, N.F</td>
<td>0135 A/B</td>
</tr>
<tr>
<td>1150</td>
<td>CNGC</td>
<td>Hamilton, Ont.</td>
<td>0115 B</td>
</tr>
<tr>
<td>1891</td>
<td>Caribbean Bird</td>
<td>The Valley, Argo, Texas</td>
<td>0200 B</td>
</tr>
</tbody>
</table>

Other Areas

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>860</td>
<td>GUP</td>
</tr>
</tbody>
</table>

DXers

A: Ron Dam, Worthing B: Jim Willett, Grimby.

WSHB Cypress Creek 7.385 (Eng to USA, Caribbean 0000-0200) 44344 at 0022 in Newry.

In the 6MHz (49m) band, R.Pyongyang, N.Korea 5.816 (Eng to Europe, E.M. 2100-2300) 35544 at 2315 in

Station Addresses

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBC Radio Humberside</td>
<td>63 Jameson Street, Hull HU1 3NU.</td>
</tr>
<tr>
<td>ILR Radio Orwell, Electric House</td>
<td>Lloyds Avenue, Ipswich IP1 3HZ.</td>
</tr>
<tr>
<td>Radio Mediterranean Int</td>
<td>3 Rue Emsallah, Tanger, Morocco.</td>
</tr>
<tr>
<td>Radio CKCM, Box 560</td>
<td>Marystown, N.F. AOE 2MO, Canada.</td>
</tr>
<tr>
<td>Radio WKNR, 9446 Broadview Road</td>
<td>Cleveland, OH 44147, USA.</td>
</tr>
</tbody>
</table>

Used Equipment

Jana Arunachalam, Thurham, Oman: Panasonic RF-854 or Sony ICF-7600DS + 6m wire.

Charles Beanland, Gibraltar: Sangeen ATS-803 + a.t.u. + 1/2w or Howes A23.1

Darren Beasley, Bridgwater: Philips D22935 + Hexagon loop or a.t.u. + 10m wire.

Vera Brindley, Bridgwater: Philips SA-8030A + whip or r.w.

Kenneth Buck, Edinburgh: Lowe HF-225 + r.w. In loft or screened loop.


Scott Caldwell, Worthing: Saisho 2000 or Sony ICF-2001 + 60w wire.

Jim Cash, N.Majorca: Sony ICF-SW16 + r.w.

Bill Clark, Rotherham: Sony ICF-2001D + built-in whip or r.w.

Robert Connolly, Kilkeel: Sangeen ATS-8030A + 30m wire in loft or AN-1.

John Coulter, Winchester: Yaesu FRG-7 + r.w.

Ron Damp, Worthing: Racial RAI1 + Hex Loop or 30m inverted V dipole.

Antonio De Abreu-Teixeira, Evesham: Sony ICF-2050 + 12m wire.


Robin Harvey, Bourne: Matsu MR-4099 + s.w. loop.

Francis Heare, N.Bristol: Sharp WQT370 + r.w.

Sheila Hughes, Morden: Sony ICF-7600DS + r.w. Panasonic DR48 + 16w loop.


Bryan Kimber, Hereford: Zenith R-7000 or Realistic SX190 + 25m wire.

Eddie McKeown, Co.Down: Tatum TMN-7602.

George Millimore, Wotton, IOW: Sangeen ATS-803A + loop.

Ken Milne, Basingstoke: Matsu MR-4099 + built-in whip or 6m wire in loft.

Sid Morris, Royliew Regis: Kenwood R-6000 + 31m wire.

Fred Pallant, Storrington: Kenwood R-2200 + r.w. in loft.

Roy Patiick, Derby: Lowe HF-125 + 22m wire.

Peter Polson, St.Andrews: Lowe HF-225 + loop or indoor Joystick.

Richard Rudford-Reynolds, Guildford: Sangeen ATS-8030A + 10w.

Phil Rambaut, Macclesfield: Int.Radiowave Radio R-7000 + r.w.

Ernest Randall, Dalton: Lowe HF-225 + 15m wire.

Alan Roberts, Quebec, Canada: Lowe HF-225 + 15m or 11m dipole.

John Sargent, Bolton: Lowe HF-225 + loop or 20w.

Chris Shorten, Normandy: Matsu MR-4099 + 10m wire.

Tony Singh, Hitchin: Zenith 7000 or Grundig Satellite 3400 + built-in whip.

Tom Smyth, Co.Fermanagh: Morphy Richards R191 + Vega Serina B10 + r.w.

John Stevens, Largs: Hammarlund HQ 180 or Icom R-70 + r.w.

Darran Taplin, Brindley: Yamaha R-7700 + FRT-7700 + 35w wire or FRA-7700.


Phil Townsend, London: Lowe HF-225 + loop or r.w.

John Wells, Bingley: RCA AR88D + loop, also LW converter.

John Willett, Grimby: RCA AR77 + 4m loop or Trio SR-59050 + a.t.u. + dipole.

Michael Williams, Redhill: Sony CFS-20L1 cassette radio plus built-in whip.

Julian Wood, Elgin: Kenwood R-2000 + Yaesu FRT-7700 + a.t.u. + 6m wire.
The extensive changes to the I.W. maritime radio-beacon service, which took place on April 1, were cut down in my article for the June ‘92 SWM. Some of the beacon’s fire did not commence operation on their new frequencies until a few days after the change-over was implemented and several failed, but they were soon restored to working order. Many of the engineers involved with the project were kept very busy!

The reports now reaching me suggest that the new system has settled down, but some further changes may become necessary if mutual interference problems arise.

Since the changes, DXers have been enjoying the challenge of searching for beacons on their new frequencies. The keyed carrier (c.w.) transmission system now in use is proving to be advantageous, especially when attempting to identify by the weaker signals. Beacons which were hitherto audible have been logged by some DXers. Writing from Worcester Park, Taff Rees says, “So far as I am concerned the reorganisation has meant that I am able to hear stations at a greater distance than previously e.g. SB South Bishop, FB Flamborough Head”.

Quite a number of beacons that were not listed in my earlier June column were logged this time, however it was not all plain sailing! Much confusion arose because of some of the aeronautical radio-beacons which operate within, or very close to, the maritime radio-beacon band have two letter callsigns. Several DXers logged an aeronautical beacon (LA) on 282.9kHz as Lista Lt, Norway, which also uses the callsign (LA) is on 303.5. Another one on 317.0 (VS) was frequently noted as Cabo Estayo Lt, Spain (VS), but that is on 312.5. Before logging a beacon it is important to compare the frequency (if known) with that quoted in the SWM charts, or some other up-to-date guide and study the keying sequence. The maritime beacons key their callsign in Morse code at least twice during an interval period lasting 13 seconds and then radiate a plain carrier for 47 seconds, or 43 seconds if there is a short pause before the cycle is repeated. Most aeronautical beacons radiate a plain carrier which is keyed once with the callsign in Morse code.

After studying the details of the new system in the June issue, several readers decided to check the band for the first time, using the chart as their guide. Beacons along both sides of the English Channel were logged by Ron Damp in Worting during the evening, but a high level of electrical interference masked some of the weaker signals. Ken Milne (Basingstoke says), “I tried what should have been the easiest - St. Catherines Lt (CP) on 293.0 and there it was amongst all the noise.” Encouraged by this result, Ken now intends to build a l.w. loop for use with his Matsui MR4009 portable. Down in Cornwall, Vic Doidge (Gunmislake) compiled an impressive first list during the evening with a Yeasu FRG-7100 plus FRT-7700 and random wire antenna.

All of the beacons in the first report from Ernest Randall in Dorset, received during daylight with a Lowee HF-225 plus 15m orbit wire antenna. The Sumburgh Head beacon (SB) on 304.0 was heard in Hyde by Dave Logan using a Sadio SW5008 with just the internal ferrite rod antenna. After listening to the Flamborough Head beacon (FB) on 302.5, he sent a QSL card to the lighthouse keeper. In confirming reception, he requested packet of information about the new beacon service! DXers should note that most lighthouses are now unmanned.

In an attempt to improve reception, several DXers are experimenting with loop antennas. A screened loop built by Kenneth Buck (Edinburgh) is shown in the photograph. It is supported by a small wooden box. A series of bubble plastic sheets was wound around the loop to lower the capacitance to the screening, which consists of a strip of aluminium baking foil. An air gap in the screening ensures that the loop does not act as a shorted turn. A source follower (f.e.t.) is used to couple the high impedance loop to the 50Ω input of his Lowee HF-225 receiver via coaxial cable.

---

**DXers**

- A. Deans, Redhill, Surrey
- B. Keisses, Keisses
- C. Rorotonga, Isle of Scilly
- D. John Coulter, Winchester
- E. Ron Damp, Worthing
- F. Vic Doidge, Gunmislake
- G. Bill Eav, Stockport
- H. Chris Haigh, Hullfsfield
- I. Richard D. Illman, Swindon
- J. Taff Rees, Worcester Park
- K. John Sargent, Bletchley
- L. John Stevens, Largs
- M. Kevin Suckling, Wotton
- N. Ken Milne, Basingsrove
- O. Fred Pallant, Storrington
- P. Ernesti, Rochester, Kent
- Q. Taff Rees, Worcester Park
- R. John Sargent, Bletchley
- S. John Stevens, Largs
- T. Kevin Suckling, Wotton
- U. Philip Townsend, E. London
- V. Steven Wellheorne, Brussels
- W. John Wells, E. Greenwich

---

**Logs**

<table>
<thead>
<tr>
<th>Callsign</th>
<th>Station Name</th>
<th>Location</th>
<th>DXer</th>
</tr>
</thead>
</table>
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September 1992
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**SHORT WAVE MAGAZINE, SEPTEMBER 1992**

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<tr>
<td>AR-950</td>
<td>£199.95</td>
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<td>AR-2000</td>
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<td>AR-1500</td>
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<td>AR-2002</td>
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<td>HF-225</td>
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<td>FRV-8800VHF converter for above</td>
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Short Wave Magazine, September 1992
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SHORT WAVE MAGAZINE, SEPTEMBER 1992

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FOR SALE/WANTED maximum 30 words

A photocopy of this form is acceptable, but you must still send in the center flash below, as proof of purchase.

CONTACT DETAILS maximum 12 words

(30)

(12)
IC-R7100 Wideband VHF/UHF Receiver.
- All mode from 25MHz to 2GHz.
- Basic, window and dual scan.
- 900 memory channels.
- CI-V system for computer control.
- Built-in clock and timer.
- Noise squelch and S-meter squelch.
- Noise blanker and attenuator.
- Optional TV/FM adaptor.
- 241(W)x94(H)x239(D)mm.

IC-R72 HF Receiver.
- Frequency coverage: 30kHz- 30MHz.
- High sensitivity.
- Advanced DDS system.
- 100dB dynamic range.
- 24-hour system clock with timer.
- Direct keypad entry.
- Preamplifier and attenuator.
- 99 memory channels.
- 241(W)x94(H)x239(D)mm.

Shown here are wideband and HF base-station receivers, designed to complement handheld and mobile receivers in the ICOM range. Remember, whatever your particular radio requirement the answer is ICOM, so good to receive.

For further information about ICOM products and the location of your nearest authorised dealer please contact:
ICOM (UK) Ltd. Dept SW Sea Street Herne Bay Kent CT6 8LD
Telephone: 0227 741741 (24hr). Fax: 0227 741742
HF RECEIVER TECHNOLOGY
INNOVATION DESIGN MANUFACTURE TECHNICAL SUPPORT

HF-150
Compact Communications Receiver
£329 inc VAT

Designed as a logical alternative to the Japanese 'push button portables', the HF-150 places a 'real radio' within your price reach. Whilst reflecting the Lowe approach to simplicity of operation, the HF-150 nevertheless has all the features and facilities you need. This truly is 'Real Radio'.

Frequency coverage: 30kHz - 30MHz
Modes: USB/LSB/AM/Sync. AM (Selectble S'band)
IF Bandwidths: 2.5kHz & 7kHz
Tuning: 8Hz steps with variable speed
Memories: 60 holding frequency & mode

HF-225
Gateway to the World
£429 inc VAT

Aerial inputs: 600 ohms, 50 ohms & Hi-Z Whip
Power: 12Vdc from mains adaptor (supplied)
Case: All-metal light alloy case
Size: 185mm(W) x 80mm(H) x 160mm(D)
Weight: 1.3kg (less batteries)

HF-235
The Professionals' Choice
£1116 inc VAT

Remote control: RS232C Computer interface (optional)
Memories: 30 holding a host of data
Tuning: Spin-wheel, keypad & MHz button freq. entry
Power supply: 110-120 or 220-240Vac 50Hz
Size: 483mm(W) x 88mm(H) x 320mm(D)

Frequencies: 30kHz - 30Mhz
Tuning: 8Hz steps.
Memories: 30 channels
Filters: IF filters for all modes fitted
Tuning: Keypad & spin-wheel
AM/FM Sync. Detector (optional)
Keypad for remote entry (optional)
Excellent quality at reasonable cost

LOWE ELECTRONICS LIMITED
Chesterfield Road, Matlock, Derbyshire DE4 5LE Tel: 0629 580800 Fax: 0629 580020

Barry (S Wales): 0446 721304 *Bournemouth: 0202 577760 Bristol: 0272 771770
London (Middlesex): 081-429 3256 Newcastle Airport: 0661 860418 *Closed on Monday

Sole appointed UK Distributor for KENWOOD Amateur Radio

PRIVILEGE
MEMBERSHIP CARD

LowE

Membership Number: 100000