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Reporting for Rewards
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Cover: QSLing is an important aspect of the SWL hobby. Our special feature should help you to get better returns from your reporting. The cover is a montage of QSL cards, pennants, badges and other 'goodies' sent by broadcasters and amateurs in response to reports. Here are a few more from our files.

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...GOOD LISTENING

TIMESTEP SPECIAL OFFER
COUPON SWM MAR 1992

WRTH 92 SPECIAL OFFER
COUPON SWM MAR 1992
I have been looking out for a suitable cartoon strip to try to add a bit of humour to Short Wave Magazine. Quite by chance - all those things seem to happen by chance - I mentioned it to one of our authors, David Leverett, who said "I do cartoons", or words to that effect. "What sort of cartoon do you want?"

The result is a regular cartoon with Grandad as the central character. Grandad is a radio enthusiast with two grandchildren, a boy and a girl, who also happen to be twins. I hope that you enjoy their adventures.

Apologies

In the Airband Special issue (February) something went amiss here in the Editorial Offices and the article 'Air traffic Control' in the UK was wrongly attributed to Ben Knock. The real author was Philip C. Mitchell, who also wrote the 'HF Airband Communications' article in the same issue. My apologies to both of these authors. The articles on the non-directional beacons has generated a lot of interest. A lot of you out there obviously listen to these and want to know more about them.

Competitions

In this issue (page 27) you will find the results of the 'Win an AOR 2000 Scanner' competition. This was a resounding success with all of the entries being of a high standard. Some of the ideas put forward were very interesting indeed. Alan Gardner and myself spent a whole evening studying the entries before deciding on the winner of the AOR 2000. Because the entries were so good I have decided to award two runners up prizes and these will each receive a signed copy of Peter Rouse's book Short Wave Communications.

The results of the other two competitions - the crystal set and the Radio Times Poem - will be announced next month.

At the express request of the newly installed President of the RSGB, Terry Barnes GB3USS, I am signing off with my callsign. It seems that very few people actually read the masthead on the Contents page, so, for the members of the Bangor ARC - regardless of the impression given in your Newsletter - I do have a callsign, albeit only a Class B.

Dear Sir

In the January '92 issue the icom R71 is reviewed by Andreas Pirog, but there is no caveat about the so-called passband tuning. The receiver came out in 1984 as a replacement for the R70. In 1988 a patent dispute arose and Icom dropped the p.b.t. control and circuitry in March '89, but continued to make and market the receiver under the same model name! This means that some second-hand R71s will not have the p.b.t. control. Look for it in the lower right-hand corner of the front panel - it's a very valuable feature, as is the optional and expensive FL44A filter for the p.b.t. A typical price for a used R71 with these features would be around £500. Surprisingly, perhaps, the R71 is still in production at £875 and what is essentially the same p.b.t. is back again.

The 'confusion' concerning the p.b.t. seems to be in Andreas's mind! Icom initially made an unfortunate choice of words when they described the control as p.b.t. (I have the original specification sheets and they do not use the term v.b.t.) The circuitry makes it quite clear that the control enables the pass-band to be varied in width, i.e. v.b.t. This variation happens to be asymmetrical so there is some slight movement of the centre frequency, but this is quite incidental. In no way does the R71 have 'conventional i.f. shift', as Andreas would have us believe.

By the way, I was astonished to note the use of S-meter readings to compare sensitivities. Geoff Arnold, a former Editor of Practical Wireless, said it all in an excellent article in the July '85 issue of Practical Wireless, which would bear reprinting some time!

Gordon Bennett
Bramhall

Dear Sir

I am only writing to say how pleased I am with one of your advertisers, namely AOR (UK) Ltd., Derbyshire.

I sent my AOR1000 to them for repair, etc., and the service received was excellent. Nothing was too much trouble even to the extent of advice over the 'phone.

I would recommend them to friends and wish them the best for the future as they certainly know scanners.

Bill Ross
Tewkesbury

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 £34 (UK) £37 (Europe) and £39 (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 price £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.c.b.s, back numbers, binders and items from our Book Service should be sent to PW Publishing Ltd., FREEPOST, Post Sales Department, Enefo House, The Quay, Poole, Dorset 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.
Dear Sir
Some years ago at a car boot sale I purchased what I was told to be a 33 Set TX and RX separates for £7. With the help of a fellow amateur an h.t./l.t. p.s.u. was 'lashed up' and soon waiting 1W of r.f. around the UK and across into the 'continent'. Eventually the set was assigned to the attic.

On reading June Stirrat's superb article, I find I am the lucky owner of a 128 Set. So, inspired, it was dug out and dusted off and again active on a limited number of plug-in crystals. 7.022, 7.030 and 3.560MHz. Reports of the 'wine glass' tones would be of interest to me if heard by s.w.l.s on these frequencies.

I would now like to resurrect the RX and operate the set as a complete unit, and would be grateful for any assistance and information, namely, any circuits, and details of the 8W patch lead mentioned.

So, now there are two 128 Sets, one in the article and mine. Perhaps there are more awaiting resurrection hidden away in dark cupboards and attics. Maybe the start of the 128 Set Owners' Group?

Martin Ward G4ZXN
Coventry

Dear Sir
First of all the flattery; many thanks for an excellent magazine to which I returned a couple of years ago, after an absence of some tens of years!

The topic I wish to pursue is that of 'scanners'. You will note that I have used inverted commas, because in my dictionary (albeit a very old one), the word scan is defined as 'to examine with critical care'; thus a scanner is properly someone, or something that 'examines with critical care'. Thus presumably, a microscope is a 'scanner', as is a video camera. The point I am trying to make is - we have once more, as in the case of 'Hoover' and 'transistor' - allowed a word to mean something it is not, and this could create a wrong impression in the mind of a non-technical person to the effect that any receiver sold as having the facility to scan, is 'naughty'.

Now, should the Government decide to ban 'scanners', have we shot ourselves in the foot, by not making it abundantly clear that it is not the facility of 'scanning' that makes a receiver 'naughty', but the fact that some receivers with that facility cover frequencies to which the powers that be would prefer we do not listen. A blanket ban on 'scanners' would render illegal some highly respectable h.f. receivers, which do not even cover 'sensitive' frequencies.

I trust that, should the need arise, the RSGB and/or all specialist magazines will make that point crystal clear to the Government departments concerned. Surely, the present laws regarding listening are sufficient, because law-breakers, by definition, ignore the law anyway and would continue to use the offending type of receiver.

If you do manage to find space to print this letter, I will be very interested to see whether any other readers agree with me.

G. Chance
Redruth

Chambers 20th Century Dictionary gives "Scan, v.t. to examine metrically: ... to examine critically: ... to examine all parts in systematic order: ... an instrument which scans. -n. "My car radio can be set to scan the memories (all six of them!) or search up and down a band for a signal, but does that make it a scanner? Ed

Dear Sir
Congratulations on a great all round magazine, which makes interesting and informative reading, I've only bought the last two issues and was very impressed.

I have recently taken up the art of s.w.l. just to occupy some time. I have only a basic receiver, Realistic 200, and about 80m of wire out of the bedroom window. I want to know how I go about sending QSLs, etc., as most of the time I only get the call signs used.

I've received VK, VE, PP, etc., and want to send them my SINPO report. As far as I can see, the only way to do it is either buy the Call Book or join the RSGB, which is too expensive for me.

When broadcast stations are heard and I look in a book or your magazine for, say, Radio Australia on 25.750, where is that on a simple thing like the 2007? It has the 500kHz calibration tone, however, sometimes there are 3 or 4 high pitched tones even when the antenna is out, which one is it? I tried setting it up to my friend's Yaesu FT-101ZD, we got it spot on, however, whilst scanning through the frequencies I was picking up broadcast stations on the amateur bands. We were both on the same frequency but all he got was amateurs and not broadcast stations, which seems to really spoil it for me.

Is there anyone out there who could give me a taste of their experience and show me or tell me how to do things the proper way, logs, etc. Or is there anyone of your readers who also have experience with a Realistic DX200 and live in the Lincoln area?

T.T. Davidson
Tattershall

I hope Mr Davidson finds this issue more help than usual. If anyone would like to offer help, send all your letters care of the Editorial Office and we will pass them all on to Mr Davidson. Ed.

Dear Sir
I manage to keep up with most of the British news by listening to the BBC World Service on short wave. But can anyone tell me why the reception invariably deteriorates as soon as the soccer results come on?

Cella Almeida
Portugal

I don't know about this - what is soccer, anyway? Why is it that, when I'm listening to the radio in the car on a Sunday evening returning from a radio rally, the newscaster starts the sports report with the winner of the Grand Prix? It always seems to me that, no matter how poor reception has been, it is perfect just at this point. As I cannot turn the radio off fast enough, my enjoyment of the highlights on television later in the evening are spoilt by knowing the result! Ed.

Dear Sir
I have just finished reading your January Short Wave Magazine, and I would like you to know, I think it's the best radio magazine on the market.

I subscribe to two short wave clubs at the moment, but now having read your January issue, I realise I don't need to pay money out on other boring articles or clubs.

I see you are now doing articles on the marine frequencies also, which is a favourite of mine, and I loved your story about the sailing ships.

Please don't change your magazine in anyway, I have just retired and bought myself a Kenwood R5000 and an AOR1000 scanner, so you can see how much I look forward to buying my Short Wave Magazine every month.

R I Holland, Nottingham
**Rallies**

*March 1*: The Great Northern Rally, otherwise known as the Trafford Rally, will take place at G-MEX, the Greater Manchester Exhibition & Events Centre. All rally activities, including free draw and Bring & Buy, Morse Tests will be available, licensed, hot & cold meal with lots of traders. Doors open at 10.30 am and close at 5 pm. Admission is £1.50. Talk-in on Sat 22 by G101MNK.

*March 7*: The TARS annual rally will be held at a new venue this year, the Temple Park Leisure Centre in South Shields. Jack GODZ. Tel: 091-265 1718.

*March 8*: The London Amateur Radio Show will be held at Pickstalls Lock Centre. Pickstalls Lock Lane, Brentford, London NW. Free parking, On-Deaundr Morse testing, Talk-in on both 2m and 70cm. Bars and restaurants, free prize draw each day, free lectures, etc., etc., Admission £2.00 (disabled & children £1.00). Doctrum opening times are 10am to 6pm.

*March 7*: Nifolrup Dream Rally will be held at the Hubb Church, Hayes, March 17 - Cycling in the Himalayas. Geoffrey Mine 0163-462 6289.

*March 10*: The Great Northern Rally, otherwise known as the Trafford Rally, will take place at G-MEX, the Greater Manchester Exhibition & Events Centre. All rally activities, including free draw and Bring & Buy, Morse Tests will be available, licensed, hot & cold meal with lots of traders. Doors open at 10.30 am and close at 5 pm. Admission is £1.50. Talk-in on Sat 22 by G101MNK.

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*March 7*: Nifolrup Dream Rally will be held at the Hubb Church, Hayes, March 17 - Cycling in the Himalayas. Geoffrey Mine 0163-462 6289.
The Discone

For those who haven’t already worked it out, the discone gets its name from its construction i.e. it comprises a disk and a cone for the technical angle. However, this type of antenna operates as a wide band impedance matching transformer. The idea being to match the 50Ω impedance of the coaxial cable to the much higher impedance of free space. The performance of a discone is very similar to that of a quarter wave vertical antenna except that the discone operates over a much wider frequency range. Most discones are usable over about an eight or ten to one range. This is the reason discones are so popular with scanner enthusiasts. As several readers have asked for advice on antennas, I thought I’d include a design for a simple discone.

and come out of a card covered with aluminium foil. If your other popular alternative would be to use fine mesh chicken wire. Both of these two construction techniques are only really suitable for making a loft mounted antenna. If you’d like to build an external unit the best bet is to make the disk and cone in skeleton form using aluminium rod. I would suggest you use 6 or 8 rods for both the disk and cone. This is the technique that’s used by many commercial antenna manufacturers. The antenna described here can easily be adjusted to work to a different lower frequency limit. All you have to do is scale the antenna from the design frequency of 125MHz. For example, if you wanted an 80MHz lower frequency just multiply all the dimensions by 125/80. If you do try building one of these antennas, I’d be very pleased to hear how it performed. I’d also like to hear of any constructional tips you may have.

Contest Time!

How would you like to win yourself a copy of the 1992 Passport to World Band Handbook? If your answer is yes, I’ve made it as easy as possible for you. All you have to do is write giving me details of a tip for improved reception that you’ve developed and tried yourself. Examples of the sort of thing I’m looking for could be a novel antenna system or perhaps an ingenious speaker system - I’ll leave the choice to you. When sending in your entry make sure you include your name, address and age. Also make sure you send your entries to the address at the head of the column. The closing date for entries is April 1, so don’t delay.

Digital Audio Broadcasting

This is the latest in broadcasting systems that’s bound to have a significant impact over the next few years. Let’s start by taking a look at some of the problems with the existing broadcast systems.

The most common through the short wave bands is amplitude modulation or a.m. This system is both easy to generate and decode - hence its popularity. There are, however, one or two problems with this system. The first is its susceptibility to impulsive noise such as ignition interference. Although there have been many ingenious techniques devised to minimise this interference, there is no total solution. A second problem is that of the distortion caused by the fading experienced on the short wave bands. The latest solution to this problem is the use of synchronous demodulators. When you add to these problems the narrow channel spacing and resultant narrow bandwidth, the overall loss of quality is enormous. These limitations have resulted in broadcasters moving to frequency modulation if for their networks. The services have been very good, with most major stations boasting digital links between the studio and transmitter. I suspect that most listeners feel that the v.h.f. i.m. service represents a very high quality service. Despite this excellent performance, there are a few significant limitations. The network as designed works fine to fixed receivers with good quality antenna systems. However, there are a great many listeners that demand a high quality service from cars and portable receivers. This brings interference in the form of multi-path propagation, where signals arrive at the receiver by more than one route. This is further compounded as you move from one reception area to the next. The answer to all these problems comes in the form of Project 147 of the European ‘Eureka’ programme. This was set up in 1987 specifically to overcome the problems I’ve highlighted. The partners in the project come from broadcasters, research institutions and public broadcasters. The countries involved include Germany, Holland, France and the UK. From the UK the BBC is playing a major role. Development of the system is progressing well and it’s been demonstrated in several locations world-wide. The system has been designed to be transmitted from both satellite and terrestrial stations. It’s main broadcast potential is likely to be realised using the satellite option.

One of the keys to success is to have the specifications ready early, so giving the manufacturers time to develop suitable receivers. The latest news suggest that the specifications will be complete in the next few months and receivers should be on the market by 1995. If the satellite option is to be a success, it’s important that segments of the spectrum are made available as early as possible. It’s hoped that this will be done at this year’s World Administrative Radio Conference (WARC-92). At the moment the service is most likely to be allocated spectrum at around 2.5GHz.

One of the main differences between DAB and other broadcasting systems is that a single system carries several different programmes. The most likely format will use a 2MHz wide block and carry six high quality stereo signals.

There are likely to be many problems introducing the system, not the least of which is the availability of frequencies for terrestrial broadcasts. The hope is that a temporary allocation can be found to enable the systems to be introduced. Once the service has been established it could then migrate to the existing bands for terrestrial broadcasting.
**IRTS Special Award**

The Irish Radio Transmitters Society are celebrating their 60th Anniversary in 1992. As part of the celebrations, they are sponsoring a 'Diamond Jubilee Award' that will be issued to any radio amateur that makes contact with 20 of the 26 counties in the Republic of Ireland during 1992.

Short wave listeners can apply for the award on a heard basis. There are no mode or band endorsements. QSLs are not necessary, send a log extract signed by two amateurs together with Ire3.00 or equivalent to:

The WEIC Award Manager, PO Box 462, Dublin 9.

El amateurs will be active on all bands from all 26 counties in El from March 14-17 for St. Patrick Day celebrations. Many clubs will be activating the rarer counties both on h.f. and v.h.f. This event should be very helpful to stations trying for the Award.

---

**New TVDX Club?**

Mike Evans is interested in starting a TVDX Club with other related off-shoots like v.h.f./h.f./s.h.f., satellite and ATV. He lives in Loughton, which is on the Central Line and is near the M11/M25, so has easy access from London and Essex. If enough people come forward, he knows of a venue (which has ample parking spaces) where a room can be hired for £15 a night where there are TV/video/35mm slide/film projector facilities plus refreshments. The most important feature is that there is also a means of erecting temporary antennas during the season.

He feels that members could discuss their related hobby, show videos, photographs, etc., and help each other with projects. There is also the possibility of setting up a telephone link when DX is coming in during the season.

Anyone interested, send an s.a.s.e. to: Mike Evans, 120 Loughton Way, Buckhurst Hill, Essex IG9 6AR.

---

**New from Yupiteru**

The VT-225 is a civil and military airband receiver, covering 108-142MHz v.h.f. and 222-391MHz u.h.f. Its main features are:

- Twin modes (a.m. & f.m.)
- Programmable search steps (100, 50, 25, 12.5 & 10kHz)
- Scan & search facilities (20 channels/steps per second)
- 100 memories
- Priority function
- Channel memory pass function
- Signal strength meter
- Individual power/volume & squelch controls
- Key-lock switch
- Key sound on/off function
- Back-lit I.C.D.
- 3-way power supply

For more details on the Yupiteru VT-225, contact: Nevada Communications, 189 London Road, North End, Portsmouth, Hants PO2 9AE. Tel: (0705) 662145.

---

**The Camel Trophy**

South Midlands Communications Ltd has been awarded the contract to supply communications equipment and a communications management team for the 1992 Camel Trophy to be held in the remote Brazilian and Guyanan forests in April.

The Camel Trophy is an annual event involving teams from all over the world driving Land Rover Discoverys over 1600km of some of the most inhospitable landscape.

The communications vehicle is equipped with the Inmarsat satellite communications systems and virtually every type of mobile communications systems. It will carry v.h.f. f.m. radio for inter-vehicle communications, airband v.h.f. radio to communicate with support helicopters and h.f. using a 2.4m whip and auto-ATV for long distance communications on the move, as well as hand-helds and transceivers, etc.

The SMC communications team will accompany the Camel Trophy drivers and will also be based at Manaus, Brazil for the start and Georgetown, Guyana for the finish.

---

**New Catalogues**

Universal Radio is pleased to announce a new expanded edition of its famous Communications Catalogue. The new catalogue 92-01 contains 100 pages. It covers equipment for the amateur, short wave and scanner enthusiast. An impressive selection of antennas, headphones, books and accessories is also featured.

The catalogue is available outside North America for four IRCs.

Universal Radio Inc., 1280 Aida Drive, Reynoldsburg, Ohio 43068 USA.

---

**New Foreign Language Radio Programmes**

The Voice of Young Albanians in Exile (Zeri i Rinise Shqiptare Ne Mergim) is a radio programme in the native language of Albania heard at 2200UTC on Fridays on 15.690MHz. This foreign language broadcast of local music and news is aimed at listeners in Albania, broadcast on WWCR short wave with transmitters located in Nashville.

On Mondays at 2330UTC on 12.160MHz, WWCR also broadcasts Radio Khalistan in the Punjabi language of India. This programme, produced by Jagjig Boparai, is designed to be received in the early evening hours.

Also on Mondays at 1215UTC on 15.690MHz, WWCR broadcasts in many languages with programmes produced by nationals from each country.

George McClintock.

WWCR, 1300 WWCR Avenue, Nashville, TN 37218, USA.
Transmitter Lists for TV DXers.

With the changes in what was East and West Germany to a unified Germany, there are changes to transmitter allocations.

The main network ARD-1 (West) service is transmitted over all former DFF-1 (East) transmitters. The ARD-3 service is transmitted over all former DFF-2 transmitters. The ZDF transmitters now transmitting (or about to) in the former East region of Germany are:

Marlow Ch. E46; HELPERBERG CH. E52; CALAU CH. E57; LEIPZIG CH. E42; DRESDEN CH. E46; LOUBAUCH CH. E56; CHEMNITZ CH. E49.

All are 500kW e.r.p., assumed horizontal polarisation. HELPERBERG and CALAU are 200kW, 100kW respectively until September '92.

Additional ZDF outlets planned, again 500kW e.r.p. are:

SAMPLE CH. E55; BREITENBERG CH. E38; FRANKFURT/ODER CH. E50; ROBEL CH. E56; SCHWERIN CH. E54; STRALSUND CH. E21.

(Wr. info via BDXC.)

WRTH 1991 Awards

This is the fourth year of a prestigious award scheme organised by the World Radio TV Handbook. In over 40 years, the WRTH has received many awards itself as the industry reference standard in the field of international broadcasting. They believe in recognising excellence in other parts of the international broadcasting industry. They hope these will act as a stimulus to the provide the market place with even better products.

At the moment, thousands of hours of programming are being broadcast from stations around the world. It is not their intention to give awards to the programme makers, or individual stations. To be fair, they would have to understand a multitude of languages and have an in depth knowledge of the studio facilities available to the producer. The WRTH is a reference book and they do not feel it is right to pick out a broadcaster as being 'best'. In the equipment field, however, they do think that awards are needed.

Best Analogue Portable Receiver 1991: Grundig Yacht Bow 206

Full marks to Grundig for designing a simple portable radio for those with a tight budget. This set combines good audio with a wide choice of short wave bands.

Best Digital Portable Receiver 1991:

Panasonic RFB 45 (see the review starting on page 40 in this issue)

Nicely styled, this radio combines ease of tuning with pleasant audio structure for the price. Now that Panasonic have adjusted their pricing structure, this set become excellent value.

Best Communications Receiver 1991:

Japan Radio Company NRDS35 (see Nov 1991 SWM)

There's no doubt in the minds of the WRTH test bench team. High performance, excellent computer connectivity and ease of use make this set a clear winner.

Most Innovative Software 1991:

Bandview 1.50i

This is a very versatile computer program for IBM computers and owners of the JRC NRD525/535 or Kenwood R-5000. Tom Kashuda has worked very hard to make this program work completely independently from the radio. The NRD 535 version is by far the best. Tom Kashuda, 2000 Commonwealth Avenue, Suite 1407, Boston, MA 02135, USA. Tel: +1 617 782 6660 (14-20UTC).

The WRTH editors are open for nominations for the 1992 awards, published in the 1993 WRTH.

WRTH, PO Box 90271006 AA Amsterdam, The Netherlands.

Radio and TV DX News

Czechoslovakian TV are now carrying intensive testing between colour system PAL and SECAM and it is thought that there will be an announcement to opt for the PAL standard rather than the existing SECAM. Originally, consideration was also for adoption of the System B/G soundvision spacing as used in Western Europe of 5 MHz, though the cost and complexity are thought to be unlikely to be pursued. At this time most TV receivers in Czechoslovakia are dual standard colour switching so there will be few problems.

The French TV network 'La Cinq' filed for bankruptcy late December with losses this past year amounting to 1 billion Fr. francs. The network plans to stay on-air for the immediate future whilst a refinancing package is being sought, though the channel could close during the Spring if finance is not found. The Italian TV magnate Silvio Bursaconi is thought to be considering involvement.

Cable systems in both London and Luton are carrying a British originated 'coloured' channel - 'The African Caribbean Television Channel' - which started test programming over Christmas with both locally originated and bought-in programmes. It is financed by an African consortium of Bahamas-based financiers and several UK-based coloured community groups.

The new commercial TV network in Sweden was given the 'OK' in November and the first transmitters should be on air by March '92 with a population coverage of 85% reaching to 95% within 2 years. NORDISK TELEVISION (TV4) will carry about 50% of home grown programming within a 40 hour weekly framework, rising to 50 hours by '94 - 10 hours being news and current affairs.

Independent TV now for Czechoslovakia with their new Broadcasting Bill which allows several new groups the facility of regional broadcasting. The new franchise winners will probably gain access to established transmitters in the OK3 and TA3 system (Czech and Slovak regions respectively) which currently provide satellite programming. Transmissions are not expected before the end of this year.

The recently closed Telecine Romandie Swiss pay-TV channel is now on-air again from the transmitter high on La Dole. Its failure was due to poor coverage from the 1 transmitter which reached only 20% of the potential French speaking Swiss audience and only 11,000 subscribers were booked. The service was based on movies only but now the new owners have spread the programme format to include sports, quiz and other popular programming for 30% with movies comprising the other 70% of content time. Telecine can carry advertising from April and there are thoughts of taking a satellite channel later in '92. Meanwhile over the border at Annemasse near Geneva a French regional channel 'Huit Mont Blanc' is establishing an office for a rival TV service into Switzerland.

The Spanish government and national broadcaster TVE are to provide finance and facilities to improve the 'Canal 7 TV Boliviana' in La Paz, Bolivia.

Following the demise of the Irish TV3 network recently, the Irish government intends that a Gaelic TV channel should be in operation by Winter 1992 carrying Gaelic news and entertainment produced by RTE and other regional TV studios. The government it seems will organise much of the funding.

Singapore will have her first introduction to PAY-TV with three subscription channels opening later this Summer '92, these will comprise a news, a movie and a sports + general entertainment LE channel. The Singapore Broadcasting Corporation will be providing the technical facilities and programme presentation for the three channels.

A commercial radio network, the China Huayi Broadcasting Company has now opened in Fujian Province at Fuzhou, SE China. The Chinese language service operates in both medium, short wave and v.h.f. f.m. bands for 8 hours daily intended for Chinese nationals both within and outside of China.

Improved radio reception for listeners to Radio France Internationale (RFI) in East Africa, the Indian Ocean and Middle East with the proposed construction of a new relay at Djiibouti once agreement has been reached with the local government, it is hoped to commence building Winter 1992 with on-air late 1993.

Yamaguchi is to introduce regional broadcasting at Naoshima Wave late in this decade with the establishment of four new studio centres at Nachingwea, Dodoma (central - Tanzania's new capital); at Kigoma in the West on Lake Tanganyika and at Songea in the South West region.

Roger Bunney

Faeoie Islands TV

Since January 1, Faeroeese TV viewers have been able to watch 10 hours of programmes from TV2/Danmark each week. An agreement between TV2/Danmark and Sjónvarp Føroya (the Faeroese television) ensures a large supply of films, sport and factual programmes from TV2.

In late summer 1991, a similar agreement was settled between Greenland Radio (KNR) and TV2/Danmark.

Short Wave Magazine, March 1992
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Short Wave Magazine, March 1992
## Communications Receivers from KENWOOD

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Latest in the line of NRD receivers, the NRD-535 is a triumph for JRC and represents a true step forward in features, performance and facilities for the dedicated listening enthusiast.

The smooth tuning is the first thing you notice and JRC has developed a direct digital synthesiser (DDS) system which tunes in 1Hz steps. The accuracy and stability are of laboratory standard. There is of course the front panel keypad for swift frequency setting.

All mode reception covers AM, USB, LSB, CW, FM, RTTY and even FAX with IF filter bandwidths to suit the modes.

For the keen broadcast DXer, there is also an optional plug-in ECSS board for locking on to an incoming AM signal and then picking off either sideband.

There are 200 memory channels, each of which stores, frequency, mode, bandwidth, attenuator and AGC settings, comprehensive frequency sweep facilities and no less than 16 different functions which can be programmed from the front panel by the user.

For the advanced user, the NRD-535 is fitted with a RS-232C interface for 28 computer controlled receiver functions. Available for demonstration at Matlock and the regional centres.

**NRD-535 HF Receiver** .................. £1,095 inc VAT
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- **100kHz - 30MHz**
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**R-5000 ... £925.00** inc VAT

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Telephone us today for delivery tomorrow.

Mail order welcomed at all our centres
If we forget all the theory and come down to hard practice, there are five things about an antenna that we can alter. Its length, height, direction, where we feed it, and what sort of wire we use. In this short tutorial article Paul Essery GW3KFE explains some of the mysteries.

Up to a half-wave long the antenna will radiate or receive best at right-angles to itself. If we have an antenna which is a half-wave long at 3.5MHz (around 39.6m) and we try to use it on 28MHz, we will observe that the favoured direction has changed; it now seems to favour directions more towards the ends. So, if we put up a half-wave on 3.5MHz and use it on all bands we will have one wavelength on 7MHz, two wavelengths on 14MHz, and four wavelengths on 28MHz. The preferred direction swings round progressively from right angles at the lowest frequency to favouring the ends at the highest. (Figs 1 & 2) That, at least, is what the theory says! However, in practice, we live in a world of non-radio wires, cables and buildings; so our half-wave may have its two major lobes pushed to one side. We say it 'squints'. Worse, we cannot say that a squint affecting one band will have a predictable effect on another band. 'Suck it and see' is the motto, then - particularly if we are antenna-farming in a loft.

**Height**

There's not a lot to say about the height of an antenna, save that the higher the better! This is simply because for long range we want our antenna to favour signals from low angles. That's not to say that a low antenna won't hear signals from faraway places - it usually will, but they will be weaker and the Euro-choir louder. The argument that a quarter-wave and odd multiples thereof are 'bad' is based on diagrams assuming a perfect earth. Our practical earth, perfect it ain't!

**Direction**

To assess direction, you need to use a Great Circle Map based on the UK. The Great Circle projection makes a hash of shapes, but for our purposes it has the outstanding advantages that it gives true direction and distance. With a half-wave which has been put up with its ends at the north and south, the main lobes will thus be east and west, plus or minus about 45 degrees. By and large this covers Europe, Asia, N. America and S. America. Australia and New Zealand may in fact be heard over either the long or the short path depending on time of day. That leaves out Africa, but by changing bands or whatever we may be able to fill in the gaps. Not that there is much activity from mainland Africa outside of ZS.

**Feed Point**

Does one centre-feed or end-feed? Usually, the house is at one end of the plot; alternatively your shack may be in the garden shed at the other (Yes, we know you like a little relief from wives, screaming kids and the telly!). Either way, you are stuck with end-feed. The transmitting types have different problems, to wit a solid-state p.a. stage compounded with a dash of TVI for flavour. This mixture prefers a coaxial feed into a 50Ω antenna impedance. We, as s.w.i.s, can end-feed happily enough, with some sort of tuning unit to turn whatever the wire just happens to be into what your receiver prefers, namely 50Ω. Indeed some s.w.i.s disdain the use of a.t.u.s, though I think that this foolish.

If we consider a half-wave dipole slung, say, between a couple of masts, then clearly the coaxial feeder hanging down from the middle tends to drag the middle part (which does most of the work of receiving) down towards the ground. We can only reduce the sag of such a coaxial-fed dipole by over-tightening the halyards, or cutting off the weight of the cable! Draw a Triangle of Forces and you will immediately see why.

Halyards that tug are an invitation for something to break and dump all back on the ground. Usually that means dropping the mast to reeve a new halyard as well. Clearly, end-feeding has a lot going for it, in practice.

**Wire**

Obviously, the wire of a half-wave dipole supporting the weight of umpteen metres of coaxial cable needs to be pretty strong. On the other side of the coin, I have used 28s.w.g. enamelled copper wire to make an end-fed Top Band half-wave which lasted well and was almost invisible. It relied on the insulation properties of the nylon string - quite good enough, but the weight of a ceramic 'egg' would have had it down in hours, while a coaxial cable's weight would have made sure it broke while hoisting it. So - wire strength to suit the arrangement. I'm not too keen on pvc insulated wire, but if you've got some - use it! However, if you must make joints, solder them and if they're outside, paint them as well, lest they later create noise due to electrolytic corrosion, or worse, cause the apparent antenna length to change. Thin wire may be a bit lossy, but it's not as lossy as...
no antenna at all!

How about the half-wave centre-fed dipole on other bands? Fed with coaxial cable, no way! (You can, as a joke, use a 7MHz dipole on 21MHz, though). Thus a dipole used as a multiband antenna is fed with a twin feeder instead of coaxial cable. Twin feeder, though, brings its own problems - the stuff breaks at the dipole feed point because the wind gives it such a thrashing; and it doesn't survive all that long before ultra-violet 'sees off' the insulation. So, for twin feeder, make some proper open-wire line and/or take great care to be sure that a gale can't break off the connections up aloft. (Only yesterday an s.w.l. friend rang me to bewail that the gale had not only snapped off his balanced feeder at the antenna but - worse - had wrapped it around the neighbour's TV antenna! At the bottom, use a balanced a.t.u. connection, and make the a.t.u. also transform to 50Ω unbalanced (coaxial) to offer the receiver.

Lower Frequencies Yet!

If we have an end-fed half-wave for, say, 7MHz, we can make it match on 3.5MHz and even Top Band (1.8MHz) with our a.t.u. It will tend to favour the same directions as on 7MHz, but for best results you must 'go for broke' in the way of earthing. For a centre-fed with coaxial or twin feeder we can go lower by joining each leg of the feeder before they reach the a.t.u., put the joint to the a.t.u. antenna terminal, and feed the result against earth as though it were a single wire. You may find it receives quite well all round the compass but it has become somewhat unpredictable. Don't forget a little theory: the difference between a dipole and an isotropic radiator which is infinitely small, is a mere two-and-a-bit decibels. Practically then we are talking, first last and all the time about reducing losses. If the antenna impedance is a couple of ohms, and the earth impedance 100Ω, it doesn't take a genius to work out that most of the incoming signal will appear across the earth impedance rather than the receiver input!

Summary

A half-wave at the favoured band should be oriented for preference to North-South, so that it fires East and West. However, in practice it will 'squint' a bit depending on your surroundings; higher in frequency, the main lobes will tend to slew round towards the ends of your wire. For lower frequencies strapping the feeders produces useful and interesting if somewhat unpredictable results. With an end-fed antenna, work on the earthing side will be found useful.

Listen With Grandad

By Leon Balen and David Leverett

Grandma says if you don't beam yourself up for dinner within two minutes she will transmit it direct into the rubbish receiver.

Enjoy the antics of our newest addition to the Short Wave Magazine staff. 'Grandad' and his family will be appearing regularly from now on.

Do you relate to any of the situations the old chap gets into? If so then why don't you let the Editor know, there must be loads of strange and funny experiences you could share with our readers. £5 SWM Gift Vouchers for any published.
Portable Mini-Shack

It is a great advantage to have the receiver, a.t.u. and other accessories in one unit as the interconnecting leads are short and can be permanently made. The ingenious Mini-Shack, designed and described by F.G. Garraway, will be of help to those whose receiver has 'no fixed abode'.

To ensure that everything fits into your Mini-Shack with no wasted space, a scale drawing of all the components of the station should be made. This article describes the simplest version of the Mini-Shack, as the design can be expanded quite simply if required. No dimensions are given, other than the thickness of materials, as the actual size of the completed Mini-Shack will depend on your equipment.

Further Ideas

Modifications could include an enclosed section for a larger speaker, leaving space behind for batteries or a p.a.u.; an upward extension of the sides at one or both ends to serve as book ends for WRTH, etc.; an antenna change-over switch on a bracket at the rear, operated by a shaft and front-mounted knob; a speaker/phones changeover switch operated from the front and a large hook at the rear for hanging the 'phones on. A telescopic, or even a rotatable ferrite rod, antenna could be fitted on the top of the Mini-Shack at the rear. A drop-in, or clip-on, front cover would help to subdue any possible domestic disapproval! The tilting of the receiver helps to improve viewing and make for ease of operation as well as provide space beneath for logbooks, paper, etc., while pens and pencils can be dropped through suitable holes in the top shelf.

Accurate and Square

Success depends on the chipboard shelving being cut accurately and squarely to length. The 40mm chipboard screws through the sides must enter the mid-thickness of the shelves to avoid splitting. Ordinary wood screws will probably split the chipboard, hence the use of chipboard screws. Drill through the sides and into the shelves with a suitable pilot drill for the screws, followed by opening out and countersinking the holes in the sides to clear the screws. If it is thought necessary to strengthen the shelf holding the a.t.u. and audio filter, steel brackets can be fitted. These should be checked to ensure that they are truly right angled before screwing them in place. Don't forget to drill pilot holes to start the chipboard screws holding the brackets in place.

The lifting handles should be bolted in place, not screwed, for safety and - most important - strips of wood should be pinned or screwed to the shelves around the base of each unit to prevent any movement. No responsibility can be accepted for bent receivers or bruised toes!

MATERIALS

17mm thick x 230mm wide Melamine covered shelving
6mm ply for base and shelf stops
4 off 50 x 50mm steel brackets
18 off 40mm chipboard screws for shelf fixing
40 off 12mm chipboard screws for base, shelf stops and brackets
4 off stick-on rubber feet
2 off handles with 4BA or similar bolts, nuts and washers

All the above items are readily available at any d.i.y. outlet.
LISTEN OUT with SONY at SMC

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A COMPREHENSIVE RANGE OF RECEIVERS AVAILABLE AT MOST BRANCHES

DRAKE R8E

The NRD535 from JRC

The new NRD535 approximates 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 demanding listener's needs. Brief specifications are as follows:

- Frequency coverage: 0.15-30MHz
- Optional modules for VHF coverage from 118 to 174MHz
- SW, CW, AM & FM modes
- Direct frequency entry keyboard

NRD535 from JRC

DRAKE R8E

The DR8E is the newest model available from SONY and covers 500kHz-1300MHz. SSB, CW, AM & FM modes.

Prices and availability subject to change without prior notice.

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. Conveniently located front panel controls allow for rapid operator programming and ease of use. The R8E receiver covers 0.15-30MHz and with the optional VHF converter will also cover 36-55MHz and 108-174MHz. The large clear LCD display gives the operator full information about the current receiver status.

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Leeds LS9 6JE
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SMMC Midlands
103 High Street
New Whittington
Chesterfield
9.30am-4.30pm
Tues-Sat

Birmingham 021-327 1497
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Axminster (0297) 34918
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1 Western Way
West Street
Axminster
Devon EX13 5NY
9am-5 20pm Tues-Sat

Short Wave Magazine, March 1992

13
From the longest of long wave to the top end of the short wave spectrum, the HF-150 is designed to give you everything you need in a real radio receiver. There's too little literally never before been a receiver like the HF-150, because only now have technology and engineering been combined in such an attractive package. This is innovation at its very best.

Listening to radio can mean many things, news and current affairs from around the world, ships at sea, aircraft warning their vicinity or accessing the oceans of the sky, sounds of conflict, sounds of peace, dreams or distant, untold, untold stories; they are all at your fingertips with a good radio receiver. This is the arena where the HF-150 operates; and operates equally well at home by your fireside or travelling with you wherever you may be.

The HF-150 is designed to be a survivor. No fancy boxes here, just solid hard alloy casings, metal corners, and machined ports right down to the alloy smooth tuning control and carefully crafted carrying handle supports. This level of mechanical strength carries the bonus feature of ensuring excellent stability and shock proofing. Take the HF-150 anywhere - it will handle more treatments than you can.

Its performance in electrical terms is impressive, and the specification comprehensive. Tuning range is all the way from 300KHz to 30MHz, with variable tuning rate according to the speed of the main tuning knob. For large frequency shifts, a single press on the "FAST" button gives tuning in 30KHz steps for a second press returning you to the normal ultra fine tuning rate. Transmission modes are Upper Sideband (USB), Lower Sideband (LSB), CW, FM and AM, but also included is an all new phase-locked AM system which allows selection of either symmetrical or asymmetrical Upper Sideband and symmetrical double sideband. This is the ultimate in tuning, the best from any short wave broadcast, and can virtually eliminate the effects of selective fading.

PRICE ABOUT £250 (including VAT)

ANTENNAS AND PRE-AMPS

AA2 ACTIVE ANTENNA for 150kHz to 30MHz

The HOWES AA2 is the active antenna to beat for general short wave reception. By-passing the radio's own pre-amplifier, the AA2 will ensure that no other components in the receiving system influence the level and quality of the incoming signal. The AA2 is supplied with a PVC lead, BNC connector and a separate power lead to allow the use of the AA2 in the car.

AA4 ACTIVE ANTENNA FOR SCANNERS

The HOWES AA4 is a true scanner receiving aerial covering a frequency range of 150kHz-30MHz. The aerial is only 4" long and is designed to be operated with a 6V battery or phantom power. A low noise IC pre-amplifier is used so that the scanner is operated without the usual hum and noise associated with a conventional aerial. This makes the AA4 the ideal aerial for use with scanning receivers. The AA4 is supplied with a PVC lead, BNC connector and a separate power lead to allow the use of the AA4 in the car.

SPAA BROADBAND PRE-AMP

The HOWES SPAA is a true wide band aerial covering a frequency range of 150kHz to 30MHz. The aerial is only 4" long and is designed to be operated with a 6V battery or phantom power. A low noise IC pre-amplifier is used so that the aerial is operated without the usual hum and noise associated with a conventional aerial. This makes the SPAA the ideal aerial for use with scanning receivers. The SPAA is supplied with a PVC lead, BNC connector and a separate power lead to allow the use of the SPAA in the car.

ADD-ON DIGITAL READ OUT

The new HOWES Digital Frequency Display with Triple Power is a digital aerial to add to your existing aerial to give a comprehensive digital read out to the radio receiver. The display is supplied with a PVC lead, BNC connector and an aerial lead for connection to the radio receiver.

NEW HARDWARE PACKAGES

Now your home brew may look as good as letters equipment with our innovative range of kits that have always been possible to complete one of our starter receivers in a weekend by following the simple instructions. New are our custom made complete kits that are a must have for the serious home brewer. New are our range of kits that are a must have for the serious home brewer.

AR2000 Hand-held wide band scanning receiver, improved specification. The coverage is 500KHz - 1300MHz with no gaps. Modes are AM, FM, CW and 10 pin wide. The AR2000 includes 1000 memories for spot frequencies and 19 search banks. The receiver is powered from the supplied internal NiCd batteries but these may be removed and dry batteries substituted to allow extended operation in the field.

P&P £1 EACH BOOK.

MORE BEST SELLING RECEIVERS

ARF 1100/1050KHz-30MHz 4-bit hand-held NO DAPS.

AR2000 Hand-held wide band scanning receiver, improved specification. The coverage is 500KHz - 1300MHz with no gaps. Modes are AM, FM, CW and 10 pin wide. The AR2000 includes 1000 memories for spot frequencies and 19 search banks. The receiver is powered from the supplied internal NiCd batteries but these may be removed and dry batteries substituted to allow extended operation in the field. The AR2000 may also be charged and powered from the car cigarette lighter socket using the supplied lead. Also supplied as standard are the 6000 wide band aerial, soft case with strap and AC charger.

AR2000 including kit £259 (p&p £13)

HERO'S夢 Professional"Grade" Scanner

DJ-X1, 500kHz-1.3GHz

A "Scanner of Unrivalled Performance"

Specification:
- Models: AM/NBFM/WMFM/FM
- Stand: 5, 9, 10, 12, 25, 20, 30, 50, 100kHz
- Antenna: 500mW
- Radio: 10VDC
- Supply: 24mA (Battery save)
- Dimensions: 110 x 53 x 37mm
- Weight: 70g
- Configuration: AM/FM Triple conversion
- Sensitivity: AM:8/10dB (128K SFAD)
- FM: 50dB (AM: 5-10dB)
- Memories: 100 in banks

Up with new advanced 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 DX-X1 has changed all that. This finish receiver is ruggedly built, capable, and above all, ultra-stylish. ALINCO are the first major manufacturers to adopt the "Professional" look as part of their current range.

The new exciting DJ-X1 should be available now at your local dealer. Try it out yourself, experience the superior design and performance. Compare it with yesterday's models and find out just how the advanced new ALINCO systems work. Ask your local dealer for all the details.

1. Scanning mode
2. Status mode
3. Memory mode
4. Alarm mode
5. Priority channel
6. Command mode
7. Dual watch mode
8. Additional mark/tonal frequency
9. Station summary
10. Memory backup
11. Multi scan mode
12. Auto scan mode
13. Auto tuning
14. Advance scan mode
15. Pre memory mode
16. Memory lockout
17. Fast change
18. Memory backup
19. PMT (Preset memory tuning)
20. Auto tuning
21. Auto scan mode
22. Auto lockout
23. Auto tuning
24. Auto lockout
25. Auto tuning
26. Auto lockout
27. Auto tuning
28. Auto lockout
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THE NEW MVT-7000 1MHz-1300MHz

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- Better than 0.5uV
- 100 Memories
- Rotary Dial
- S-meter
- Fast Scan Speed
- Live Listening
- NiCads
- AC Charger/DC PSU
- 12V Lead
Logkeeping and the Short Wave Listener

There may be many reasons for not keeping a log of what is heard. For example, they may not be entirely dedicated to the hobby and it may be just a passing phase until something else captures their imagination. Or they may find logkeeping takes up too much time and is tiresome. Whatever the reason, the s.w.l. who does not keep a log misses one important point - logkeeping is an integral part of short wave listening and it gives the keeper documentary information that can be recalled at any time.

Unlike a licensed radio amateur, who is compelled by law to keep a log of his activities, the s.w.l. is not bound by these rules and can therefore log as many or as few stations as he or she prefers. As all s.w.l.s know, if one were to log all the stations one hears, the logbook would be filled in one afternoon, so the logical thing to do would be to log only the most interesting stations that are picked up.

I know that it would be nice to log all the countries in the world in one single afternoon, but I personally would prefer to log them over a certain period of time, and log a new country from time to time.

What do you log?

What you log depends, of course, on the individual s.w.l.’s preference, as broadcast listening may be the order of the day for some, amateur band listening for another, and so on.

I keep just one logbook for s.w.l. purposes; I list broadcast stations, the occasional amateur, some maritime stations, medium wave local radio stations and a host of other transmissions. After all, variety is the spice of life, and short wave is home to an extensive variety of signals, isn’t it?

As I mentioned earlier, some s.w.l.s may not be sufficiently dedicated to the hobby and, therefore, may decide to leave s.w.l.ing to move on to other pursuits. In cases like these, I believe keeping a logbook would provide some incentive to remain in the hobby and to work at it whilst the logbook becomes an ever growing treasure chest of information.

The Logbook

A basic logbook, of necessity, is required to show the time, date, frequency, band, mode, signal quality, location and, of course, station callsign or identification.

One may wish to design a more elaborate logbook to include the station being called, QRM, QRN, QSB, local weather, language used as well as the obligatory remarks column. Of course, it is left to the individual s.w.l.’s discretion as to how he/she designs the logbook, suffice to say that the basic format is essential, the latter more or less optional.

As mentioned earlier, it would prove virtually impossible to log all the stations that one hears, so the s.w.l. should only log those station which would provide a really comprehensive list of what can be heard via short wave. Imagine having a visitor in your receiving station who has no experience of short wave radio. You open your log to demonstrate what you have heard; Radio Australia, KH6SED in Hawaii, Skybird 123 - a civil aircraft over Calcutta, 4K1ABA operating from the Antarctic. Your visitor leaves the station very impressed indeed, and is enquiring where he can get one of these short wave radios. Thus, short wave has yet another devotee.

To any s.w.l. who has not yet started logkeeping, I would advise them to seriously consider doing so, especially if the QSLing pastime is to be entered into. It is essential that the s.w.l. keeps a permanent record in his station of the report he/she has sent to the transmitting station or stations.

I must confess to not sending reception reports or QSLs arising from my listening activities nowadays, but I find that logkeeping is an essential part of short wave listening - short wave listening just would not be short wave listening without it!

---

Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QRM</td>
<td>interference from other stations</td>
</tr>
<tr>
<td>QRN</td>
<td>interference from noise</td>
</tr>
<tr>
<td>QSB</td>
<td>fading</td>
</tr>
<tr>
<td>QSL</td>
<td>acknowledgement of contact</td>
</tr>
<tr>
<td>s.w.l.</td>
<td>short wave listener</td>
</tr>
</tbody>
</table>

To most established short wave listeners, the thought of s.w.l.s not keeping a logbook may come as quite a surprise, yet Leighton Smart GW0LBI personally knows of a number of s.w.l. stations who do not bother logging what they hear!
Reporting for Rewards

So, what is a QSL? In simple terms it is a certificate to confirm that a listener has received the radio station concerned. These certificates are most often printed on the reverse of a picture postcard and usually carry the date, time and frequency of the broadcast heard, together with the name and address of the listener. If QSL cards are not issued by a station, a report may be verified with a letter containing similar details. Some QSLs are signed by the station engineer, an executive or even a programme presenter.

It should perhaps be noted at this point that not all radio stations need or want reception reports, although most international broadcasters welcome them. An increasing number have their own monitors but will tolerate reports as a way of fostering good audience relations.

Make a Good Impression

Reception reports are still important to most international station as they provide the only means available to help the engineers to determine future transmission times and frequencies. For this reason it is very important that the information contained in a report is as detailed and accurate as possible.

As you are concerned with obtaining a QSL verification from the station, it is essential for your report to make a good impression. A well thought out and neatly-presented report will be more appealing than a quickly scribbled note on the back of a postcard - no matter how pleasant the view on the front!

Reports to international broadcasters may be written in English or the language of the programme heard. If possible, they should be typed and photocopied reporting forms, of the kind that are often produced by listening clubs, should be avoided as these remove the personal touch preferred by most stations. Some of the more long-established stations have their own forms for this purpose and will send a few of these when your first report is received.

Head the first sheet of your report ‘Reception Report’ and enter your name and address at the top right-hand corner. It is good practice to ensure that these details appear at the top of each sheet used as your report may be read by several different departments at the station and the pages could become separated.

Beneath your own address but on the left of the page, put the name and address of the station you are reporting on. The report should be addressed to the appropriate language department, e.g. English Section. Full station addresses are often announced at the end of broadcasts, as well as being listed in publications, such as World Radio TV Handbook, that may be found in some of the larger reference libraries if you don’t have your own copy.

Although often overlooked as a part of the radio hobby, collecting QSL cards and verification letters can be very rewarding. Despite this, there is very little readily-available information to help the frustrated new DXer who hears that a mysterious item called a QSL will be issued by a particular station in return for a correct reception report. Roy Spencer offers some words of wisdom on the subject.
Table 1. The SIO Code

<table>
<thead>
<tr>
<th>Signal strength</th>
<th>Interference</th>
<th>Overall merit</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - good</td>
<td>4 - nil or very slight</td>
<td>4 - good</td>
</tr>
<tr>
<td>3 - fair</td>
<td>3 - moderate</td>
<td>3 - fair</td>
</tr>
<tr>
<td>2 - poor</td>
<td>2 - heavy</td>
<td>2 - unusable</td>
</tr>
</tbody>
</table>

**Reporting Codes**

There have been several internationally recognised reporting codes over the years, but the one presently favoured by stations is the 'SIO' code. This allows the listener to provide a brief guide to the quality of the signal received, rated according to Table 1.

When rating a signal it can be helpful to work backwards from O to S, deciding on the overall merit first, then considering the reasons that the O rating justified. As an example, if O was rated as 3 (fair), then this may have been because of heavy interference (I rated as 2) although the strength (S) of the signal was good (4). It is useful to stations if you provide a brief explanation of the I rating. Perhaps the interference was caused by another station using the same frequency (co-channel interference) or a frequency very close to that reported on (adjacent channel interference). If the intruding station can be identified, include details in your report.

**Programme Details**

A brief description of the programme heard should be given, but must contain enough information to prove that the station has been received. Include the names of programmes and features, pieces of music, performers and announcers, together with a note of the subject matter covered.

**Comments**

What you really thought of the programme heard comes under the heading of 'comments'. Was it interesting or very boring, easy to follow or difficult to understand? Will you tune in again? Don't be afraid of being truthful - stations want to know exactly what their audience think of their programmes! This part of the report may sit more comfortably as part of the covering letter, which is dealt with later in this article.

**Receiver**

Some stations find it useful to know what type of receiver is being used to listen to their output - was it a sophisticated table-top communications receiver or a portable transistor radio with an 'SW' button.

**Antenna**

Tell the station the type of antenna used - it could be erected indoors or outside, a random longwire (state the approximate length) or a specially-constructed device such as a dipole. Do you use an amplified active antenna or an antenna tuning unit (a.t.u.)?

**Location**

The location of the receiver may influence reception condition - someone living on a hill will generally enjoy better reception than a listener in a valley. Similarly, an inner-city tower block poses problems not encountered by a DXer living in a country village.

When your report is complete, sign it off at the bottom. It is now time to turn your attention to an accompanying letter. The letter is the place to request that your report be verified with a QSL and may also be used to add comments or suggestions about the programme heard or to ask any questions which you might have.

**Promotional Items**

Nowadays, most stations produce a number of promotional items but it is not always a good idea to ask for a large quantity on one occasion. Few stations have a large budget for pens, badges, posters and the like, but will usually mention any items which they have during the course of their programmes.

A few years ago a certain station quoted from a letter in which the listener had requested about thirty different items, none of which were available. It was pointed out that the listener had written to a radio station, not a supermarket! Having said that, when a station is satisfied with a reception report, small items...
MVT-5000 scanner £229
25-550MHz & 800-1300MHz AM/FM
The MVT-5000 is a superb budget priced scanner with amazing sensitivity added to which it is very simple to use. The only gap in its range is the TV broadcast band and if you can live with 100 memories it offers incredible value! Hundreds are in use, many by professional users and like all Yupiteru equipment it has proved to have unsurpassed reliability. Available from stock with our 12 month parts and labour warranty.

SONY ICF-7600D £149
200kHz-30MHz + FM BC 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 traveller's joy! All our stocks are genuine UK Sony.

SONY ICF-2001D £299
150kHz-300MHz + 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 299 it would be good value. At 299 it's an absolute bargain.

YUPITERU VT-150 £169
142-170MHz FM Includes ni-cad pack and charger The VT-150 is a purpose designed scanner that covers the marine, and 2 metre amateur band plus a bit more! There is no doubt that a scanner dedicated to 130MHz is good. It is a 200MHz scanner that performs as well as base station models yet fits into the domestic scene, look no further. At 299 it would be good value. At 299 it's an absolute bargain.

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!

YUPITERU MVT-7000 £289
1MHz-1300MHz FM/AM/WBFM Includes ni-cad pack and charger The Yupiteru MVT-7000 is the very latest scanning receiver to leave the factory, being a complete update of the MVT-5000. Its sensitivity is unsurpassed and its logical controls and beautiful design make it one of the smallest and slimmest scanners around. Our professional customers love it and you will too when you try it. Fully featured it has 200 memories, extensive scanning features, is fully programmable and even has an adjustable contrast control on the LCD. To try it is to buy it, so be warned!

SONE ICF SW150 £329
800-1300MHz FM Includes ni-cad pack and charger The VT-150 is a purpose designed scanner that covers the marine, and 2 metre amateur band plus a bit more! There is no doubt that a scanner dedicated to 130MHz is good. It is a 200MHz scanner that performs as well as base station models yet fits into the domestic scene, look no further. At 299 it would be good value. At 299 it's an absolute bargain.

YUPITERU VT-225 £449
222-291MHz. Superb sensitivity, 100 memories – Phone!

AR-1500 £299
2MHz-1300MHz FM/AM/SSB/CW Yes it's true, a hand held scanner that gives you SSB and CW reception. We are hoping to have supplies available by March of this self contained all mode receiver. New from AOR, this promises to be the most comprehensive scanner yet. If you want full details, phone or write for the full specification.

Retail and Mail Order: 22 Main Road, Hockley, Essex SS5 4QS. Tel: (0702) 206835/204065 Fax: (0702) 205843
Retail Only: 12 North Street, Hornchurch, Essex. Tel: (04024) 44765
Visa & Access Mail Order. 24 Hour Answerphone. Open 6 Days a Week 9am-5.30pm RT: Liverpool St./Hockley or District Line/Hornchurch

Short Wave Magazine, March 1992
ALINCO's
"Professional Grade" Scanner
DJ-X1. 500kHz-1.3GHz

"A Scanner of Unrivalled Performance"

Specification:
Modes: AM/Narrow FM/Wide FM
Steps: 5, 9, 10, 12.5, 20, 25, 30, 50, 100kHz
Antenna: 500 BNC
Supply: 6-15V DC (Internal 9V AA)
Battery: 24mA (Battery save)
Dimensions: 110 x 53 x 37mm
Weight: 370g
Configuration: AM/FM Triple conversion
Sensitivity: NBFM -8dB (12dB SINAD)
AM -2dB (10dB S/N)
Memories: 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 that. This brand new receiver is ruggedly built, compact, and above all, ultra sensitive. ALINCO are the first major manufacturer of communications equipment to produce a new generation of scanning receiver. All of a sudden its competitors seem drab, old fashioned and lacking in sparkle and performance. The new exciting DJ-X1 should be available now at your local dealer. Try it out for yourself, experience the superior design and performance. Compare it with "yesterday's" models and find out just how far advanced the new ALINCO scanner is! But just to wet your appetite, here's a few of its features:

* 3 scanning speeds
* 3 scanning modes
* 100 memories in 3 banks
* Auto memory loading
* Priority channel
* Dual rate battery saver
* Large battery pack
* Rotary frequency control
* Illuminated key pad
* Auto illumination mode
* Dual antennas
* 5 programmable bands
* Widest range of frequency steps
* Super front end sensitivity
* Memory lockout
* Mode scanning
* Auto power off
* Wide range of battery packs
* Wide range of accessories
* Intelligent mode programme
* Rapid tuning rates of 1MHz/10MHz.

*Each unit now comes with the UK Gold Seal Warranty. Look for the sign on the box!

ALINCO STOCKISTS:

UK Distributors: Waters & Stanton Electronics
22 Main Road, Hockley, Essex Tel: (0702) 206835

ALINCO STOCKISTS:

AYON: GATJIB (0903) 512757 : Uppington Tele Radio Ltd (0722) 557732 : Andis (0722) 699352
BUCKINGHAMSHIRE: Photo Acoustics Ltd (0908) 619565 CAMBRIDGESHIRE: Link Electronics (0733) 346770 CHESHIRE: CB37 Communications (0270) 588440 : Flightdeck Ltd 061-499 9370 COUNTRY DURHAM: Border Communications 091-4109 6969 DORSET: Poole Logic (0202) 638939 EIRE: Innovet 01-35121 1631007 ESSEX: Waters & Stanton (0702) 208475 : Selectronics (0286) 591481
HAMPSTEAD: Farnborough Communications (0252) 518009 : Siskin Electronics (0703) 207155 : Nevada Communications (0705) 626145 ISLE OF MAN: Audio & Domestic Spares (0624) 815889 LANCASHIRE: Holdings Amateur Electronics (0734) 599995 LONDON (CENTRAL): RAYCOM Communications (0734) 598766 : Farnborough Communications (0705) 598766
LONDON (EAST): 22 Main Road, Hockley, Essex

Short Wave Magazine, March 1992

£269
Radio Japan
NHK Tokyo
150 QSL received by
Roy Spencer
May 1985,
15.235MHz.

Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.t.u.</td>
<td>antenna tuning unit</td>
</tr>
<tr>
<td>DXer</td>
<td>listener who looks for 'long distance' stations</td>
</tr>
<tr>
<td>IRC</td>
<td>international reply coupon</td>
</tr>
<tr>
<td>QSL</td>
<td>acknowledgment of contact</td>
</tr>
<tr>
<td>SIO</td>
<td>Signal strength, Interference &amp; Overall merit</td>
</tr>
</tbody>
</table>

such as stickers and pennants tend to be issued automatically, so the best policy is to wait and see what the post brings.

Return Postage

It is not usually necessary to include return postage with your report to an international broadcaster, but in today's cost-cutting climate, it is polite to do so if possible. This should be in the form of an international reply coupon (IRC), which may be bought over the counter at any Post Office. When your report is received, it will be checked for accuracy against the station log. If these guidelines have been followed and your report is found to be in order, before long you will be rewarded with a QSL and who knows, maybe more besides!

SPECIAL OFFER

WORLD RADIO TV HANDBOOK
1992 EDITION

No serious short wave broadcast band listener can afford to be without the World Radio TV Handbook beside his receiver. This is the listener's 'bible', giving all the information about all the broadcast stations around the world. Comprehensive listings, country-by-country, for long, medium and short wave broadcasters by frequency, time and language. What more do you need? WRTH is also noted for its special features which include, in this edition, world satellite broadcasts, receiver test reports, short wave reception conditions, worldwide broadcasts in English, maps of principle transmitter sites as well as station addresses and personnel. This edition also has the latest Radio Moscow technical data.

Our stock of the 1992 edition has just arrived in our offices and you can get your copy for just £16.95 incl post & packing - a saving of £3.00 over our normal price of £18.95 plus £1.00 p&p. This offer closes on 3 April 1992.

How to order

Complete both coupons, in ink, giving your name and address clearly in block capitals. Coupon (2) will be used as the address label to despatch your book to you. Send the coupons, with your cheque, to: SWM Special Offer (March) FREEPOST, Enefco House, The Quay, Poole, Dorset BH15 1PP.

If you wish to pay by credit card (Access, Mastercard, Eurocard or Visa only), please fill in your card details and sign the coupon where indicated. If you do not want to cut your copy of SWM, you must send the WRTH offer flash from the foot of the Contents Page of this issue.

Pw Publishing Ltd., Poole, Dorset
(Reg. No. 1980539, England)
To QSL or Not to QSL? - That is the Question!

Well, how many of you think like that? Quite a few, or so your letters in the August issue imply. I am not a short wave listener. I am not even a UK licence holder. As VP8CEO I would like to say thank you to all the s.w.l.s who have sent me reports and I hope that you have all received my QSL card confirming the contacts listed in your report.

R. Thomson wrote the rules for G3MCK, I haven't seen that letter and can't comment, but here are some facts as I see them.

Not everybody can be a rare DX station!
Not everybody can pass the RAE!
Not everybody can afford a TX/RX!
Not everybody can have an antenna outside!
Not everybody can get about!
Not everybody can use their hands!
Not everybody can see!
Not everybody can talk!
Not everybody is as fortunate as you and I!

Harry Scrase states that, as a disabled ex-army signal operator, he is competent with Morse but hasn't taken the RAE, so he could have been a Class A licence holder for, I dare say, 50 years. Yet through the years he has obtained a lot of pleasure from being an s.w.i. - and long may he do so. Should his ability with Morse place him above a Class B licence holder? Maybe the Class B licence holder has difficulty with the use of his hands so that he doesn't bother with Morse.

There is no pecking order, there is no winner, no race to be won. Our hobby is one of personal achievement with the aim, set by oneself, of using our ability to communicate with others. If that means that you get a report from old Fred just across town when you're pushing the linear to the legal limit chasing DX in a pile-up, so what? If Fred didn't know your OTH and sent the card via the bureau, well, it's a good excuse to just drop the reply card in next time the band is quiet. You might get a nice piece of cake and a cup of tea! You may get a nice surprise, old Fred's garage is full of all sorts of goodies collected over many years of dabbling with radios. He knew you were local and was hoping you would reply quickly. He's moving soon to a new home and can't stand the thought of all those goodies going to the tip! Either way he shares an interest with you - you have something in common. If you can't spend the time of day communicating with strangers what are you in this hobby for?

The Best Report

What is the best form of s.w.i. report? As a VP8 I tend to be in a pile-up a lot of the time, working stations by taking a list of the last two characters of their callsign then working through the list. I can't give you a definitive answer, but I can give some examples. Take the early morning of 8 December 1990, when I worked 140 contacts between 0405 and 0853Z - to save you working it out, it's approximately one minute per contact with list taking. Yes, I agree, a nice ragchew is good and I've had plenty of them when I wanted. But let's be fair, many people want a VP8 for DXCC so I spread it about. I had been working as a DX station on the 222 DX Net and as the net closed down I was given the frequency. With the beam turned to the north-west over South America into the Pacific. I worked a few West Coast USA, a 3D2, UAO, UM3 and some Js among the VKs. At 0600 I was into HL and the Japan stations were really piling in. The ZLs had tuned in also, causing a bit of beam swinging over the South Pole.

At 0643 I handed over the frequency to Jim VK9NS for the net which he organises and had a brew till he handed it back at 0628. With the beam still to the north west, I was picking up Europe with the I stations calling. I finished off a few more Japan and swung the beam 30 degrees east of north. First in was the Italians but either after a short list I started calling for countries and managed to get around a bit before the pile-up was too thick. Getting a few of each, I, OM, HB, Y, OE, DJ, SM and CT.

By 0716 the pile-up was in full chorus and I was getting tired, also starting to lose my

What use is a report from a short wave listener to a DX station? Why bother sending a report? What do you hope to gain from the expense involved? Who cares if you heard a QSO - you can't reply? Why should a full licence holder even bother with a short wave listener?

M.J. Sables VP8CEO gives his side of the story to try to answer these questions.

Members of The Royal Air Force Amateur Radio Society can use its distinctive QSL cards.
voice. However having started it, it was up to me to try and make it as many people as happy as I could. To the rescue came CT1BY who offered to take a list for me. While he did that I grabbed a brew and suitably refreshed set to again however things became fraught with so many stations calling while I tried to work the list. Many continued to call right through the QSOs they couldn’t hear.

The Japan stations had found me again over the northern path, so I did the best I could between 0720 and 0853 when I called QRT. I had worked I, OM, HB, Y, DK, LA, J, 9H, G, F, EA, OZ, OE, EA8, PT, SM, CT and a ZL1 on the same heading.

Too Hasty
A great night and the QSLs are still coming in, and will all be answered. But what has this to do with an s.w.l.’s report. Simple, from those few hours I have received a number of s.w.l. reports. From HL1-6678 he reports a very nice signal at 0630 working JH0AUB. Well I worked two HLs over an hour before his report and thought I had lost propagation around Japan. Maybe if I had asked for HL or even BVs or BLYs I might of been lucky. I didn’t have a contact with either - at that time also was I too hasty in swinging the beam to Europe?

Then came RS88266 Dennis in Exeter. He followed my antics from 0625 until 0759, an hour and a half. I thought I had little or no propagation into G land as I only made contact, despite requesting G stations, with G3TJV at 0808 and G3GED at 0829. Dennis reports both sides of the chat with VK9NS, Is, Js and DL. Now that shows that while I still had the beam north west over the Pacific, Dennis could hear both Jim and myself. Now that is interesting. Also it explains a bit more why I could never get G stations. I had always blamed propagation, UK Class A licence holders don’t work DX nets or have better things to do at night!

Next comes OE 1002419. Now this is important. He claims that I worked CT1PY between 0717 to 0720. Now if you recall, this was the kind person who took the list for me. Checking in my log I find that I have corrected the callsign from CT1PY to CT1BY. Have I made a mistake? Which is correct? This is still under investigation so far a QSL to CT1BY has not been returned or replied to! I want to thank this person properly.

Then we have OK3-4565. His card is well laid out, having space for three contacts and lists them about five minutes apart, he has listed an SM, I and LA. None of these have QSLed, but at least I know that their callsign is probably correct.

And finally UB5 3813 reports my contact with DK3CF at 0723Z. This tells me that my signal that night on 30” spanned from Norway LA in the north to the Canaries EA8 in the south and from Dennis in Exeter in the west to the Ukraine in the east. I also had long path skip into Japan. New Zealand was probably off the back of the beam, possibly on a grey line path as dawn was breaking at 0553 Stanley time and dusk would be around in ZL. Analysing further I could, given call books, etc, draw on a map the area covered by the skywave. Finally, Brazil on a ground wave. Some may have other theories about the propagation but that is not at issue.

Useful
So, you see, a report is useful on its own. On face value, those who know little about what they have been doing will consider it pointless. But, when used in conjunction with a good log of what you were doing at the time and given accurate information, it is of equal value, if not more, to another station worked. Especially if you intend trying that path again when the m.u.f. is right and you need the country of origin.

Who Pays?
As for who pays and what to send. I personally believe in the old rule that I was taught many years ago - If you call the station you QSL and the QSO is not complete until the QSL is done. However, since a short wave listener calls the station, albeit by post, it is only fair that you enclose a self-addressed envelope plus either a stamp or IRC. QSL cards at the rate I have been sending them would cost me a fortune, but as people are fair, the cost is tolerable. I would prefer to use the Bureau and I am a member of the RSGB. I have sent a card, via the Bureau, to all the G stations that have contacted me, but not yet QSLed. Its up to them to they want them, they don’t need to be a member to receive cards. However, I would like a card from them - after all most contacted me and I assume they needed a VP8.

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I hope this has shown a different aspect of the validity of a s.w.l.s report. And answered the questions I posed at the start. To each their own, some will throw an s.w.l. report in the bin without reading it, some will not. But don’t despair, some of you will receive a reply - not all stations have a negative attitude.
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First Aid

I'm looking for a schematic and or manual for the ITT Marine receiver type SR - 401 Class B made by International Marine Radio Comp Ltd., Croydon, UK. Costs can be reimbursed.


I recently purchased a second-hand Sony 2001D portable. This is the version minus the Airband. Unfortunately, there was no manual with it. Would it be possible to mention to your readers that I would be very grateful for any assistance in getting the best from this receiver?

Douglas Smith. 5 Lake Green Road, Lake, Isle of Wight PO36 9HW.

I am writing this letter in the hope that some of your readers could help me in acquiring the circuit diagram or photocopy for my Saisho 5000 short wave radio. I will pay postage or any costs involved.

E.J. Sands. 14 Timon Avenue, Bootle, Merseyside L20 9DZ.

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“FULL RANGE KENWOOD COMMUNICATION EQUIPMENT"
suggested that the instruction books should be written by a British technical author rather than an English-speaking Japanese - with which I would wholeheartedly agree.

Among the simple, but sensible ideas put forward by many entrants a couple kept cropping up over and over again. 'Why not put Braille markings on the keys for the blind users?' was popular. This, of course, would make the scanner easier to use in the dark, anyway. Several of you wanted the display to be put on the top of hand-held scanners, rather than on the front to make it easier to see. Others suggested that the display light should be permanently on for mains powered base scanners or could come on for a brief interval when a signal lifted the squelch. Another popular item was the request for more than one priority channel.

**Sophistication**

Now we can get onto the more sophisticated suggestions. Some of these were most intriguing and showed that a lot of thought had been put into the entries. Some of the drawings accompanying the entries were also works of art.

A digital speech store to hold the last five seconds of a transmission was one suggestion. This would enable you to recall what was transmitted in case it was difficult to copy - a 'what did he say?' button. Certainly this would be possible with modern technology. How about a two-in-one unit? A base station which used the hand-held as a plug-in front end. There were several interesting and ingenious variations on this theme.

However, Alan and myself both felt that the winner should come from amongst the group that had suggested the idea of using a plug-in pre-programmed card to change the bands of frequencies the scanner had in its memories. Going to an air show? Then plug in the Air show card - perhaps pre-programmed with the appropriate frequencies from your home computer or organiser. Combine this with a simplified means of actually operating the scanner and you have the eventual winner. Mr. N. Evans of Redlynch, Salisbury suggested a touch screen with icons being displayed. You touch the appropriate icon which causes the next screen to be displayed. You can work your way logically through the screens to program the scanner. This, along with his suggested use of a magnetic strip or EPROM 'smart card' to load selected frequencies seemed to us to give him the edge of the two runners up. Mr. Evans' drawings were crystal clear and showed that he had really thought his ideas through.

C.F. Tearne of Oxford also suggested programmable modules for an air display, a visit to the seaside or a Grand Prix or motor rally. In fact, very much like Mr. Evans' ideas. He also suggested a new concept - a variable bandwidth broadband self-tuning receiver that could be pointed at a transmitter antenna and then rapidly tuned in to the frequency, using a novel ten-position rotary and pull switch to reduce the bandwidth to enable you to focus in on the frequency to the nearest 10kHz. A signed copy of Peter Rouse's new book Short Wave Communications goes to Mr. Tearne.

Our second runner up had some different ideas. His 'Super Scan' mode offers the facility to program the scanner so that it only stops on a signal if that signal has valid modulation on it. This would prevent the scanner getting stuck for long periods on frequencies that only have a plain carrier. He also suggested that the scanner could check to see if you already have a frequency stored in a memory before storing it again. Why waste valuable memories on duplicate frequencies? So a signed copy of Peter Rouse's new book Short Wave Communications is also on its way to Robin Nixon from Beckenham, Kent.

I would like to take this opportunity of thanking AOR UK for so generously donating the first prize of an AOR 2000 hand-held scanner, Alan Gardner for jointly judging the entries with me and all those 94 readers who sent in such interesting and thought-provoking entries.

Dick Ganderton
Electric Blanket Interference

J E Brown

It was a typical early winter’s night in the life of a radio inspector, cold, a good night to be inside beside a fire, watching television, but the old radio interference detection car was parked under a leaning city council wooden lamp post, bright orange unearthly sodium light flooding the interior, showing Young Golly the Radio Inspector Trainee with his feet up on the dash. His left shoe sole had come loose and his purple sock poked through, with a hole and a big toe.

Kilocycle Ken the Senior Radio Inspector was watching the output meter connected to the Pye broadcast car receiver tuned to a spot on the dim dial where no broadcast radio transmission were audible.

There! A burst of radio interference pinning the black needle of the milliammeter. It went on and on. “Electric blanket”, Kilocycle Ken said sagely. He had had dinner in town at a Chinese place and the chicken chow mein seemed to have turned sour in his stomach. He belched quite loudly. “Let’s go, Young Golly. It’s probably in the old people’s home”.

They got out. A tangle of power and telephone wires disappeared into darkness from the post towards an old weatherboard mansion with an orange-tiled roof, surrounded by big trees dripping dew.

Both men were wearing black issue telephone overseer’s oilskins, so big they came down to their ankles, like tents, with velvet collars. They had been likened to Storm Troopers by an irate member of the public being questioned about a noisy electric drill. He had said that all they needed was jackboots, but Kilocycle Ken was wearing issue brown safety shoes with steel toe caps, while, of course, Young Golly’s shoes were a disaster, like the rest of him; his trousers were too big, or he was too thin, one of his lenses in his spectacles was cracked, he wore a yellow shirt and a green tie. Anyway, Kilocycle Ken didn’t look like a Storm Trooper because he wore an issue yellow plastic sou’wester to cover his bald head.

There was no bell for the house, but an old-fashioned heavy iron knocker. Kilocycle Ken lifted it and let it fall, heavily. There was a long wait. He banged twice more.

“Probably all in bed, as all old people should be at 7 o’clock at night”, Young Golly said.

Kilocycle Ken sighed. Had he ever been as young and brash as this young man? Somehow he doubted it. Young Golly was willing, sometimes cheerful, that was the trouble, he was often obnoxious, but it was difficult not to like him - most of the time. He was smart technically, a whizz kid who knew everything and let everybody know he knew everything. “One day you will be old”, Kilocycle Ken said. Young Golly only laughed.

The front door of the old people’s home opened a crack, held by a security chain. “Yes?”, said a pink dressing-gowned elderly female.

“We are radio inspectors. You are a source of severe radio interference”, Young Golly said loudly.

“I beg your pardon?”

How could she believe? This was the age of the conman, of burglars and rapists. Did Kilocycle Ken look like a rapist? Not with that ridiculous yellow sou’wester. A quick look to the street, a government car with a logo on the door, but did that mean anything? It could be stolen.

Kilocycle Ken showed her his official pass. It had his photograph on it, but it could have been anybody. She was still doubtful, but she released the chain. There was an umbrella stand made from an elephant’s foot. “I was in bed”, she said severely.

A rasping roar erupted from the old Pacemaker transistor radio Young Golly held.

“Hear that!”, Kilocycle Ken cried. Young Golly rotated the transistor in his hand, seeking a direction. “Where is your switchboard?”, Kilocycle Ken asked.

“Quick!” Young Golly shouted.

“Down the corridor...”

Young Golly was running. He found the electric switchboard and the main’s switch and pulled the lever of the iron-clad circuit breaker and plunged the building into darkness. There were faint cries from the blackness.

“This is it!”, Kilocycle Ken said. “The source is within. Oh what an awful transgression to upset radio reception by producing such a raucous sound”. Kilocycle Ken hadn’t been drinking either. Maybe it was the Chinese food that made him talk that way. He
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Short Wave Magazine, March 1992
was usually so gentlemanly polite.

"Are you accusing me of a crime?", the woman said haughtily, but there was a quiver in her voice through the darkness.

"It is an offence under the Radio Interference Regulations 1958", Young Golly said, peering at her.

"I am a criminal".

"You are in charge of this place?"

"I am the matron".

"Rule by regulation".

"We rarely prosecute. Education is our motto".

"The old are too ancient for education", Young Golly said.

"One is never too old to learn", Kilocycle Ken said soothingly.

Young Golly restored power. The corridor was dim, weak light bulbs in old-fashioned pink fluted glass shades hung on frayed fabric-covered wires from old ceiling roses, controlled by old brass tumbler switches. "All worth a fortune to a second hand antique dealer", Kilocycle Ken said, vaguely.

Young Golly asked.

"We must check every bedroom", Kilocycle Ken said firmly. He was implacable when he got a whiff of interference and he had to track it to its source.

Kilocycle Ken was ponderous, Young Golly was racing up and down the corridors, over the frayed, once expensive carpeting, the rubber plants shivering in his wake. From bedroom to bedroom, relentless, checking with the transistor radio. The picture of The Stag At Bay frowned upon them, the bobbles on the velvet drapes shuddered their disapproval.

There were lace caps, curlers, cold cream, woollen nightdresses, frilly nightgowns. Some old women held blankets up to their necks, or over their heads, some grinned at them. There hadn't been anything like this in the church-run home for gentlewomen since it had been converted from a rich man's bygone age mansion.

"Have you ever seen so many wrinklies bedded in one place?", Young Golly said loudly.

Kilocycle Ken ignored him. This was a situation where the utmost tact was needed. He'd talk severely to him, later. "The matron is as old as the inmates", Young Golly said.

Kilocycle Ken lectured Young Golly, "Old age is to be respected".

"You old buggers should be pensioned off".

"You're still wet behind the ears", Kilocycle Ken said shrilly.

Young Golly said, "You notice all the oldies are women. Where are the men, their husbands?"

"Dead, driven to an early grave by hard work".

The matron certainly wasn't dead. She said, broodingly, "They had husbands".

There was no gold wedding band on her finger, no mark of where one might have been.

A burst of noise from the transistor. "Here it is", Young Golly shouted. An aspidistra shivered. Young Golly flung open the old-fashioned panelled door. No scream. A woman in a three-quarter wooden bed, reading by the light of a brass bedside lamp with a green fabric shade. She was wearing a frilly pink nightie, lipstick, had neatly combed hair, as if she had been expecting a visit. She was bright eyed. "You should have knocked", she said reproving. "Though in the old days it was not done for young men to enter a lady's bedroom, ever, under any circumstances".

"This is Miss Prudence", the matron said.

There was an old Philips wireless with a large round lighted dial.

"An antique", Kilocycle Ken said. Don't see wireless sets like that anymore, with the callsigns of the stations on it, 2ZB, 1ZB, 1YA - all in the wrong places".

Miss Prudence said, sadly, "Progress".

"Now, Miss Prudence, it's all right, these gentlemen wish to check your electric blanket".

She was reading the Hite Report.

"Do they all read books like that in here?"

"We are not old has-beens, young man", the matron said sharply.

Kilocycle Ken was looking at her old blanket almost affectionately, green, flat, gridded, with its umbilical electric power cord of crumbling rubber hanging out of it, an inserted ancient bakelite switch. "They don't make them like this anymore", he said with a shake of his head.

"I've had it for decades", Miss Prudence said proudly.

"But perhaps it has come to the time when it should be pensioned off, it's very old,
very tired”. Kilocycle Ken looked at Miss Prudence.
“Why about buying a new
model with a three-heat
switch, say, no interference”.
“I’ve noticed bursts on the
wireless, almost deafening, I
didn’t realise”. She was
fingering the ancient blanket.
“I’ve loved it, it has kept me
warm as toast every night for
a long time”.
“Could you switch it off for
the night, make a decision in
the morning about getting a
new one”.
“I am warm now”. Miss
Prudence was flushed. She
giggled. “Such an exciting
night”.
“We’ll leave you now,
relax”. The matron took the
two radio inspectors into her
quarters, for supper. Kilocycle
Ken sat in an old Victorian
velvet plush chair, Young
Golly in a seagrass chair.
“That’s a bit wobbly, but it’ll
hold”. The matron
disappeared, came back
pushing a chromium-plated
trolley. She had taken her
curlers out, combed her hair,
put on lipstick. “It’s like at
school”, she said. “A picnic in
the dorm. A midnight feast. I
wonder what happened to all
the girls I was at school with
all those years ago”.
There was a silver teapot, a
large fruit cake with orange
icing. The tea was weak, the
cake was somewhat stale.
“Never seen Miss Prudence
look so cheerful. You made
her day”.
“Rather late in the day”,
Young Golly said.
“It’s never too late, young
man. And you’ve solved a
problem we’ve lived with for
years. We all got interference,
but didn’t know what to do”.
“A neighbour complained”,
Kilocycle Ken said.
The matron looked from
Young Golly to Kilocycle Ken.
“Both of you are wonderful”.
Was she going to embrace
them? Golly recoiled and the
chair collapsed.
“The electric blanket
thermostat goes on and off to
keep it at a constant
temperature”. Kilocycle Ken
said. “New ones don’t cause
interference”.
“Not all my ladies have
electric blankets, some have
hotties”.
Kilocycle Ken said, “I like a
hot water bottle, it focuses the
heat on the feet”.
“I have both a blanket and
a hot water bottle, but of
course a hot water bottle gets
cold in the middle of the night,
and it has to be kicked out”.
“What have you got,
Young Golly?”, Kilocycle Ken
asked.
Young Golly leered.
“Don’t tell us”, Kilocycle
Ken said quickly.
The matron frowned.
“My wife keeps me warm”.
Kilocycle Ken said.
The matron looked sad,
very sad. “Thank you
gentlemen”.
“I hope we haven’t been
too officious”.
“Oh no, far from it.
Delightful to meet such
courteous public servants. So
many are so callous these
days, unfeeling, unthinking,
sometimes they shout at us
old people, they think we are
defa as well as stupid. Call
again anytime.”
“Anything for a laugh”,
Young Golly muttered.
Kilocycle Ken would really
have to speak severely to him.
SANEGRS ATS 803A
(Direct key-in world receiver with quartz alarm clock timer)

Specifications and features
- 150-29999 continuous tuning with no gaps. Phase locked loop-double conversion
Superhetorodyne • Full shortwave/AM/SSB 150-29999kHz no gap! • FM 87.5-108
mono/stereo • Five tuning functions: Direct press button frequency input auto scanning, manual scanning memory recall and manual tuning knob • Built-in clock and alarm. Radio
turns on automatically at preset time and frequency. • Large digital frequency display • Fourteen
memories – nine memory channels for your favourite station frequencies. Last setting of mode and waveband
stored in five memories. • Direct press button access to all 12
shortwave broadcast bands. • Two power sources – battery or AC mains adapter • General coverage of all
AM bands in LW/MW/SW (dedicated broadcast band coverage on all
versions), plus of course the FM band for quality sound broadcasts in headphone stereo.
• SLEEP function turns the radio on or off after an adjustable time of 10-95 minutes.
• Separate BASS and TREBLE controls for maximum listening pleasure. • External
antenna jack for better reception. • Adjustable RF GAIN control to prevent overloading
when listening close to other strong stations or if there is interference. • New improved
wide/narrow filter (6/2.7kHz) • BFO control (Beat Frequency Oscillator) enables reception
of SSB/USB/LSWB (single side band) and CW (Morse Code) transmissions. • Illuminated
display to facilitate night-time use. • Designed for both portable and desk top use. • Five
dot LED signal strength indicator.
DIMENSIONS: 29.2cmx16.0cm (11.5inx6.3inx2.36in).
OUTPUT: 1200mW (10%THD) WEIGHT: 1.7kg (3.75Ibs) without batteries. Wide/narrow
filter switch.
£109.95 + £5 check, test and p&p.

SKY SCAN
Desk Top Antenna Model Desk 1300
Built and designed for use with scanners. Coverage: 25 to
1300MHz. Total height – 75cm. – 9ins at widest point. Comes
complete with 4 metres of RG58 coax cable and BNC connector
fitted. Ideal indoor – high performance antenna and can also be
used as a car antenna when your car is static. REMEMBER YOUR
SCANNER IS ONLY AS GOOD AS YOUR ANTENNA SYSTEM!
£49.00 + £3.00 p&p

SKY SCAN
V1300 Antenna
Most discos only have horizontal
elements and this is the reason that they
are not ideal for use with a scanner. Most of the transmissions
that you are likely to receive on your scanner are transmitted
from vertically mounted antennas. The Sky Scan
V1300 disco has both vertical and horizontal
elements for maximum reception. The V1300 is
constructed from best quality stainless steel and
aluminium and comes complete with mounting
pole. Designed and built for use with scanners.
£49.95 + £3.00 p&p

SKY SCAN
Magmount MKII
For improved performance, wide band reception, 25 to 1300MHz. Comes
complete with protective rubber base, 4m RG58 coax cable and BNC connector.
Built and designed for use with scanners.
£24.95 + £3.00 p&p

SAMLEX
Model Regulated 13-8V DC power supply
RPS1210- WITH SHORT CIRCUIT PROTECTION
10-14 amp. £49.95 + £5.00 p&p
Model RPS1215- £69.95 + £5.00 p&p
15-20 amp.
The PROSAT 2 weather satellite decoding software has been designed to run on an IBM compatible '286' (or better) computer with a VGA (or SVGA) monitor and hard disk drive. The program can use both mouse and keyboard. The software comes on three floppy disks and includes an installation program. The hardware is the now customary board which is fitted into a vacant 16-bit expansion slot inside your computer. The hard disk must have at least 6Mb of space available.

**Menu Driven**

PROSAT 2 is a combination of three programs, VGASAT, MEGANOAA and ANIMATE, which together can cope with just about every weather satellite picture format that you are likely to come across, so you can use it anywhere - from America to Australia - and decode METEOSAT, GOES and GMS geostationary satellites. A fourth program (TRACK2) is an optional extra which can be incorporated into the Menu. In addition there are some other programs included which are run from DOS. The software must be run from a hard disk, and requires one or two files to remain in the root directory of your drive. The choice from the main 'Windows'-style menu allows selection of VGASAT, which is for METEOSAT type data collection from the geostationary satellites, (it is also used for processing sections of pictures transferred from the NOAA program); or NOAA which is for all of the polar orbiter satellites - NOAA, METEOR, FENGYUN or OKEAN. The third option is Animation which allows sequences of frames from the geostationary satellites to be collected, and finally the fourth option (excluding TRACK2) is the return to DOS.

**Checking the Signal Levels**

Before any passes are taken, the second job (after installing the hardware and software) is to run the 'level' program. The hardware fitted into an expansion slot inside your PC has two cables coming out of the back. One is for the input of audio signal from a METEOSAT receiver and the other is for connection to your polar orbiter receiver. Each signal has a different dynamic range and so this is a useful facility to incorporate and which also saves much cable swapping. Once set up you should not need to use 'level' again, though you may wish to occasionally re-check the settings. Running the program produces a horizontal indicator which pulsates with the signal, and adjusting the appropriate potentiometer on the back of the card allows the optimum setting. It is easy to do.

**NOAA (MEGANOAA)**

The name MEGANOAA seemed a little ostentatious until I realised that the program stores the whole pass, even the long METEOR 3 passes that can last up to 20 minutes, and so can generate files up to 2.4Mb hence its name. During my testing of this software I produced several large files.

**The Menu**

On selecting NOAA you get an almost blank screen with one line of menu along the top, from which you can select any of a variety of options. 'File' includes loading, saving, deleting and directory changing; 'Section' includes the marking of a section (512kb) for future transfer to the program VGASAT, which has extra data processing facilities; 'Receive' allows the setting up of the synchronisation format ('sync' or 'async' for the METEORS, and 'start only' or 'line by line' sync for the NOAAs). 'Delay' allows a later start for satellites if you wish to ignore the noisy a.o.s. (acquisition of signal) period. 'Display' has further options including zooming in or out, and temperature read-out. Other temperature options are included under the 'Options' label and I feel that they could all be together. 'Grid' currently works only for the NOAAS, and allows a latitude and longitude grid to be superimposed on the picture. Without detailed information about the cameras on-board the METEORS it is not easy to draw a grid on their pictures. 'Colour' provides pre-set palettes (optimised for particular formats, such as NOAA infra-red) or d.i.y., and also 'Equalise' which has been pre-set to enhance sections of the image. Selecting this almost always produces a superior METEOR picture enhancing the land grey levels which are otherwise not seen well, if at all. 'Options' is the last label and allows the choice of satellite, direction of travel, 'channel' selection for those with Timestep's Prosat receiver, 'receiver' for their Meteosat receiver, 'temp slice'...
VT 125 UK AIRBAND RECEIVER

A new and powerful pocketsize air band radio that leaves the competition standing. Covers all the new UK airband frequency allocations.

- Covers 108-142 MHz
- 30 direct entry memories
- Search, scan and keyboard operation
- Search steps 25kHz, 50kHz, 100kHz
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- Pass and delay functions
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Model: AM FM WFM
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Switchable Audio Squelch
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Continuous Freq Coverage from 100KHz to 1300MHz
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Keypad or rotary control
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Every Set Comes Complete With:
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A mobile/base version of the popular 200XLT handheld, but with 100 memories supplied c/w AC adaptor for home use.

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HF 225 SHORTWAVE RECEIVER

Covers 30kHz to 30MHz
Receives all modes (FM optional)

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Top of the range desk scanner
100KHz to 200KHz with no gain
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Including Free Delivery

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NEW RADIO FROM DRAKE R8E COMMUNICATIONS RECEIVER

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- Wide frequency coverage: 100 kHz - 30 MHz (with optional VHF converter): 35 - 55 MHz & 100 - 174 MHz
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- Five built-in filter bands widths (6/4/2.31/8.05/5.20 kHz
- Synchronous detector - for improved AM reception
- Non volatile memory
- RS 232C serial interface - for computer control
- Multiple scan functions
- 110 channel memory capacity
- Two operating VFOs
- Built in pre-amp & attenuator
- Timer function
- Dual time zone built in clock
- Dual mode band switch
--pass band offset
- Selectable AGC
- Dual antenna inputs

Features

- 125 memories
- Rotary Tuning Dial
- Scan tuning
- 200-280 kHz, 360-520 MHz - 16 channel scanner covers 28-30, 50-88, 200-280, 380-520 MHz - 16 memories
- Battery and charger at this price.

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For the Radio Enthusiast
and 'temp range' for allowing further enhancement of infra-red imagery. Finally 'grid colour' allows a choice of colours for the grid.

**Picture Quality**

Given all of these options the real reason for the software can get overlooked! We want to produce the best quality pictures from signals received under varying conditions. For such images you must make sure that the level program has been run and suitable adjustments made. When all is correct the program can produce a perfect picture limited only by the satellite's sensors and imperfections in your receiver. Using a VGA monitor you should get a full 64 grey level picture. With a special Hercules monitor card this equipment can give you 256 grey levels, but the card is expensive! I am satisfied with 64 greys.

**Synchronisation**

As well as following the instructions, I tried using the wrong settings (METEOR 3-5 settings for receiving METEOR 2-20) to see the effect, and in fact it wasn't too bad. The reverse (using METEOR 2-20 settings to receive METEOR 3-5) did not produce a fully synchronised visible picture, so care is needed when getting ready for these satellites. That could be a problem for newcomers who might not realise the subtle differences, but the manual mentions this and in practice you might well be using a predictions program as well, and therefore know which satellites are expected. One important point - METEOR 3 series infra-red transmissions require the 'asymmetrical' (METEOR 2) setting, but the visible transmission is synchronous! Consequently you cannot have a perfectly synchronised METEOR 3 series picture which includes both infra-red and visible. The best answer is using the 'asynchronous' setting if you want to collect both types - or save each section separately. The Russian OKEAN satellites have several different picture formats and synchronising a 'live' image may not be easy.

The best way is to record OKEAN signals on tape and then try the options on the recording.

MEGANOAA holds the picture in RAM and it can be stored as a complete file using the save option. The picture can be inverted after reception simply by pressing the F5 key which, together with some other keys, has been pre-programmed. The options vary for the different satellites. For NOAA the manual comments that the 'start only' option gives better quality than the 'line-by-line' option, but I couldn't see any significant difference. Using the latter means that lines are individually synchronised and so poor signals near the start and end of passes are properly aligned. I gave this option a severe test during my review, when NOAA 10 was left on during its clash with NOAA 12. I set the program to decode NOAA 12 data with NOAA 10 interfering and maintain synchronisation! Using the 'line-by-line' option it passed with flying colours and I obtained some fascinating pictures.

**Sufficient RAM?**

As mentioned, a complete pass will occupy up to 2.4Mb RAM, but it does not matter if your computer has just 1Mb video RAM because the incoming data can be stored directly on the hard disk. As the 2400Hz tone is detected the program starts, unless a delay was programmed. So with line-by-line sync (NOAA only) the computer will receive, decode and display the image, and at the end of the pass will then stop. You will not see scrolling, so the image remains in RAM until your return. Synchronisation can be lost during a noisy pass of the METEORS. If the signal stops for any reason (e.g., the end of the pass) then the program pauses and only continues when the signal is again received.

The screen shows the whole pass in a 'summarised' form, compressing some 15 or more minutes worth of data. It has advantages in that all the data is present for analysis at your convenience but has the disadvantage that you will have to assure your admirers that this image is only the beginning! With NOAA images you will see both sections side-by-side, so during a mid-day NOAA 11 pass you will see both the infra-red and the visible picture. You may notice that because of the 'missing' lines (stored in RAM but not shown) the minute markers show in sequences. METEOR images show the full picture width including bars and grey scale.

**Grids and Temperature**

MEGANOAA contains ample processing options - those facilities used to enhance or examine the whole or part of the picture. You can use the gridding option to put a most impressive latitude and longitude grid on your NOAA picture, but first you need current Kepler elements, and they must be current. Old elements will give wrongly placed grids. Current elements can be saved within the picture file for re-use. Elements fed in some weeks later will not be usable with your earlier image, so this is a sensible addition to the program. It will be indispensable for geography classes! The temperature read-out and slice facilities are excellent, though a mouse is required. Using the NOAA i.r. section you can measure temperatures anywhere; I traced warm water flows around the Mediterranean Sea and in the Atlantic. Cold clouds can be shown as blue and warmer rain clouds could be identified. I would presume that the temperatures were

---

Fig. 3: UK NOAA infra-red. Measuring Birmingham's temperature.

Fig. 4: Pacific Ocean off California. Measuring pixel intensity level.
correct to within about two
degrees. Calibration is
performed within the
satellite, and is included
within the a.p.t. signal, but is
rarely used in 'amateur'
satellite, and is included
performed within the
geostationary satellites and
terminator .NOA.

One criticism - there is no
operation as implied in the
software or on my own machine. Duri-
ing my tests I found that the
function keys didn’t all
operate as implied in the
menu. I queried this with
Timestep and received an
update disk some days later
which fixed the problem!

METEOSAT has other
generation satellites and
can be set to store individual
frames at full satellite
resolution, but obviously you
need to check that your hard
drive has sufficient space for
each frame, which occupies
some 512Kb. It is an upgrade
of the previous program, and
has new image enhancement
options. Some of these are not
available in the ‘NOAA’ mode
but you can use the NOAA
‘Section’ option to mark and
save a 512Kb portion of your
polar satellite image to load
into VGASAT. VGASAT files
have the terminator .DAT
whereas NOAA and METEOR
files can be any size up to
about 2.4Mb and have the
terminator .NOA.

New Options
As with NOAA, the screen
starts with just one Menu line
at the top and has the labels
File, Receive, Display, Process,
and Colour. Receive allows the
setting up of a table of frames
to be stored later using
‘autosave’ mode. The setting
up of these times is made very
easy by the provision of
helpful options, for instance if
you wish to add all the D2
times at 30 minutes past the
hour, then selecting ‘add all
hours’ requires the simple
entering of 30. Remember
though - every image requires
half a megabyte!

One criticism - there is no
facility to set the time (which
VGASAT uses) - you have to
do that either in the ANIMATE
section, or in DOS. On some
‘first use of the day’ occasions
the ‘autosave’ option did not
trigger. However, it always
works if you grab one image
first. The ‘set slip’ mode is
only used for GMS images
which need special treatment.
This ensures the international
flavour of the software, for
those able to receive GMS
data or tapes. The Display
label is similar to that in NOAA
mode, with the addition of a
3D simulation which is quite
effective on some Meteosat
images. It interprets the cloud
brightness as being height
related and produces a
simulated 3D image. The
‘Roaming zoom’ option allows
you to use the cursor keys at
any resolution to examine any
part of the image. I found a
minor bug in which the image
may sometimes slip sideways
so that you can also see an
off-image area. Printing to an
HP Laserjet 2 or compatible is
available.

Image Enhancement
A new set of facilities are
provided that were not present in
the earlier version. Mathematical
processes originally
developed for the statistical
analysis of large volumes of
data have been applied to
WXSAT imagery with
remarkable results. Anyone
familiar with NOAA imagery
knows that the afternoon
winter NOAA 11 pass has an
under-illuminated visible
image. Similarly METEOR
visible-light images provide
excellent cloud detail but land
is scarcely identifiable except
for that of the deserts. The
detail is there, but on most
framestores and computers it
may only occupy a few grey
levels and so be unseen by the
eye. Using the ‘Process’ option
and selecting ‘histogram
equalise’ will modify (stretch
out) the image e.g., land/sea
boundaries under some
conditions.

Animate
The ground controllers who
look after METEOSAT adjust
the exact position and
orientation of the satellite
during the ‘ranging’ period on
the schedule. Every so often of
a particular area will therefore
be identical to the previous
scan of that area. The only
exception is when policy
decisions are taken to
manoeuvre the satellite. So we
can save identical frames each
time they are transmitted, and
so produce an animation
sequence to follow the
progress of weather features.
There is nothing ‘gimmicky’
about this; the professional
forecasters constantly monitor
areas of the tropics using this
technique in order to spot the
early formation of hurricanes
and tornadoes. We, too, can
see weather systems develop
and change as they move
across the globe.

Extra Memory
This version of Animate is
similar to that previously
issued, using virtually the full
screen for display, and
supporting 16 grey levels. It is
used to best advantage if you
have some extended memory
fitted to your computer. Many
PCs have both the minimum
640Kb RAM and some
expanded memory, usually
taking the RAM up to 1Mb.
With the minimum 640Kb
RAM you can save two
images, but you can store more by using your hard disk. I now use a full 4Mb RAM which allows the storage of some 29 images - far more than you are likely to want to save. Each image (called 'name':PA2) occupies approximately 112Kb. So each additional megabyte can hold about nine images. For reference, RAM costs approximately £45 per Mb.

Sequences

The software allows deletion of sequences and also works out how many images you can store in either RAM or on the hard disk. You can then tell the software how many frames to store. If you have plenty of space on your hard disk then you can enter a larger number of images after specifying the disk (instead of memory) for storage. There are many options. You can set up (and save) the times of each frame transmission sequence that you wish to retain - there is no obvious limit to the number of named sequences. Once set, this timetable is saved for re-use. Sequences such as the UK in either visible (using CO2) or infra-red (using D2); perhaps the Mediterranean using CO3 - all can be stored, and with the name of your choice. Keeping a personal list of all of the names of your image sequences allows quick selection of any particular set. One sequence that I tried was to save a large set of DTOTs - the whole disk infra-red images that are transmitted every three hours. The effect of animating these was extremely impressive!

Mixture

I found that another interesting idea was to select several different frames during the day, e.g., CO2, CO3, C2D, D8 and any others in which you are interested (assuming all on the same channel). You won't animate this sequence of course, but when you return to the computer you will be able to see exactly what is happening in your chosen areas. I called this selection 'mix' for future use.

Sections

You can set the current time and date without leaving the program, and of course you can change the section of the picture that you wish to animate. This may not be particularly easy if you don't already have an image to work on; for instance, if you wish to zoom in on the UK and don't already have a sample image then you will have to either take one image to set up - or estimate the position and size of the frame box. The required section (zoom area) is set using the 'Display/section' option and then using the mouse to size and place the box. For this reason I find it helpful to keep one image of each frame that I regularly animate. With practice it is straightforward and some impressive results can be obtained quite quickly. This saves much time instead of waiting for the 'first' image! A missing image transmission does not crash the program. Infra-red images can have improved clarity if the 'Display/enhanced' option is selected. Otherwise, you can try the 'standard' and 'offset' options to improve your image quality. Frankly, I didn't feel the need to improve the images - I was quite pleased with them.

Stills

You can examine each frame separately by pressing the F4 key and stepping through the sequence using the cursor keys. You also have a choice of speed which is only limited if you are using a slow hard disk. Using RAM you can go as fast as needed. My initial criticism of Animate was its inability to store frames on the hard disk without constant access, and the aspect ratio of the whole disk image - I feel that the earth looks too squashed. However, only the whole disk image reveals this short-coming. My first moan was effectively removed when I had the memory expansion fitted to my computer, courtesy of Timestep, since with 4Mb RAM I can store more images than I shall ever need! I cannot think of any additional features that one could ask for in this program.

Conclusions

I have to scratch hard to think of any real problems with this software. The manual should be enlarged to do justice to the work that has gone into the development of the product, and it contains some minor typing errors. Other than that, I feel that the capabilities of a.p.t. transmissions have now been pushed to the limit with this program suite. A good tracking program is needed in conjunction with this software.

The earlier versions of PCSAT3 etc., will continue to be sold at entry level prices - this suite is for advanced users. My thanks to Dave Cawley of Timestep Weather Systems for providing this product for review.
The NEW AR3000A is an evolutionary step onward from the highly acclaimed AR3000 and many major improvements have been implemented at the request of enthusiasts. The tuning control is now “free running” to provide a smooth feel for SSB/CW. ×10 buttons have been added to make step size faster and more convenient. All information is contained on a larger LCD with an improved viewing angle instead of a separate LED status indication. The RS232 facility has a switch on the rear panel to enable/disable operation. Memory reset functions are available from the front panel. The re-writing of microprocessor firmware using an even more efficient language has further increased scan and search speeds.

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 a high level of performance and versatility from long wave through shortwave, VHF and onward to the upper reaches of UHF.

Not only will the AR3000A cover this extremely wide range, it will allow listening on any mode: NFM, WFM, AM, USB, LSB and CW. Tuning rates are selectable from an ultra-fine 50Hz step for SSB and CW, right the way up to 100kHz steps for the TV bands and Band-2.

400 memory channels are provided arranged in 4 banks × 100 channels. Each memory channel will retain mode, frequency, RF attenuator setting, and lockout status.

15 band pass filters are aligned before the three RF amplifiers (including GaAsFet). This ensures high sensitivity through the entire coverage with outstanding dynamic range and freedom from intermodulation effects.

The AR3000A is powered from 13.8V DC and is supplied complete with mains power unit, DC lead, telescopic whip aerial and comprehensive operating manual. An RS232 port is fitted as standard to enable remote operation by connection to most computers.

R.R.P. £765.00 inc VAT. Carriage by post £5.00 extra.

ACEPAC3-A is a NEW and exclusively developed multi-function IBM-PC based program to further increase the versatility of the AR3000A (please note: the earlier ACEPAC3 will not function with the new AR3000A).

R.R.P. £119 inc VAT. Carriage by post £2.00 extra.

The NEW WA5000 is an ultra-wide range receiving aerial covering VLF-SHF. A MOS power FET amplifier is utilised to provide superior performance in the HF 30kHz-30MHz range. The useable coverage of the aerial is 30kHz-30MHz/6dB max and 30MHz-2GHz/0dB max. The total length of the WA5000 is 1.3m and is fed via a PL259 connector located in the aerial base mount and out of the direct effects of the weather.

Approximately 15m of terminated coaxial cable is provided ready to plug in and start using. The aerial is powered by 12V DC @ 100mA (mains power supply provided), this being fed up the coaxial cable. A small interface box is included for connection to the power supply and receiver, this is fitted with a BNC patch lead ready to plug into any current AOR receiver. ‘V’ bolts and clamps are included to ease installation however a small additional support pole will be required.

R.R.P. £150.00 inc VAT. Carriage by post £5.00 extra.

The NEW WX-2000 is a stand alone radio facsimile terminal designed to produce hard copy images from various facsimile services including weather charts, maps, news media and even satellite pictures from NOAA, GOES and METEOR etc. The WX-2000 simply requires an audio signal from a shortwave or satellite receiver capable of receiving facsimile signals.

The built-in high resolution (8 dots per mm) thermal line printer produces crisp images with high resolution. The WX-2000 is also capable of simulating grey scale which is ideal for automatic picture transmission by weather satellites. In addition to the basic functions, the WX-2000 provides full operational controls such as auto start, sync, adjustment, position alignment, tuning LED etc to produce the highest quality images. The power requirement is 12-13.5V DC @ 3A, this makes the WX-2000 ideal for both on land and off shore applications.

R.R.P. £925.00 inc VAT. Carriage by post £5.00 extra.

Please send a S.S.A.E. (34p) for further details on these exciting new models and the AR1500, AR2000, AR2002, AR2800, AR2500 etc.

AIWA - VISA

Please send a S.S.A.E. (34p) for further details on these exciting new models and the AR1500, AR2000, AR2002, AR2800, AR2500 etc.
With a fast growing hobby such as short wave listening, there is always a great demand for receivers at the lower end of the price scale. The new Panasonic RF-B45 fits clearly into this category with a price tag of around £130.00 and comprehensive short wave coverage. One of the features that sets the Panasonic apart from many other is the provision of an s.s.b. receive mode. This opens up a whole range of new communications such as amateur, h.f. air and marine bands. With the addition of suitable decoding equipment, modes such as Radio Teletype (RTTY) and FAX can also be received. In addition to short wave coverage the RF-B45 features standard I.w., m.w. and v.h.f. broadcast bands. All this in a stylish compact case makes the RF-B45 a formidable competitor.

Good Looks

As you can see from the photographs, the RF-B45 is housed in a very practical and stylish case. The main operating panel features a large liquid crystal display. This is used to indicate operating frequency, mode, time and signal strength. All the front panel functions were controlled by push buttons. To add to the high quality feel of the RF-B45 the panel was gently scolloped so that the push buttons didn't stand proud of the panel. As well as being pleasant to use, this helped to prevent accidental operation of the push buttons.

The neat case was further enhanced by a retractable stand that angled the receiver at about 30 degrees. This was ideal for table-top operation. The power requirements were straightforward needing just four AA cells for battery operation. For prolonged use in the shack, it's useful to be able to use an external power source. The RF-B45 included an external power socket which employed a standard coaxial connector. The required voltage was a convenient 6V d.c at 8 watts. This could either be supplied by an optional mains adaptor or by a suitable car adaptor. All serious short wave receivers need to use an external antenna if only to minimise interference. The RF-B45 uses a 3.5mm jack for the external antenna connection. The review model even came equipped with a simple 10m wire antenna that could be rigged-up to a curtain rail or similar. There was also a LOCAL/DX switch that put in a useful 10dB of r.f. attenuation. For listening late at night headphones are essential and this was catered for with a standard 3.5mm jack on the side panel. Although a single earpiece was provided, potential users would be well advised to invest in a pair of headphones.

Digital Keypad

The RF-B45 employs a digital frequency synthesiser that gives a number advantages for the operator. The most obvious of these benefits is the digital frequency display. This gives a readout in tens of kHz on the v.h.f. band and kHz on all other bands. This level of resolution makes identifying stations so much easier than with an analogue dial system.

The RF-B45 features four basic tuning methods manual, auto, direct and memory. The manual tuning system uses two large push buttons marked + and -. These change the frequency in preset steps depending on the band in use at the time. For the long and medium wave bands the default steps were 9kHz, which is in line with the standard channel spacing. These steps can be changed to 10kHz to match the channel spacing used in the USA. When tuning on the short wave bands the steps change to a useful 5kHz, while v.h.f. gave 50kHz steps. For rapid tuning the + and - buttons could be held depressed.

There are times, especially when receiving s.s.b., when much finer tuning is required. This is catered for with a
Panasonic have just released a new portable short wave receiver that should appeal to many new listeners. Mike Richards takes a close look at the RF-B45 receiver.

The RF-B45 receiver opened up to show the neat construction.

separate fine tuning control on the side panel. The fine tuning is selected by a simple slide switch and can be used both for a.m. and s.s.b. reception. The range of the fine tuning was set so that it just overlapped the 5kHz tuning steps. The auto tuning mode was an extension of the manual system that provided an automatic search facility. When the AUTO button is pressed, the frequency increments rapidly only stopping on stations that are stronger than the preset threshold. The auto tuning is particularly useful for tuning through the busy short wave broadcast bands.

When tuning to a specific station, the RF-B45's direct entry mode is very useful. With this system, the frequency is simply typed in on the numeric keypad. Unlike many systems, the RF-B45 didn't automatically insert trailing zeros. This meant that when entering, say 14.100MHz, you have to type 14100 - hardly a chore!

For broadcast band enthusiasts the "metre band" facility will prove to be very handy. As its name suggests, this facility enables the direct selection of any one of the ten broadcast bands from 75m to 13m.

The final frequency selection option was to use the sixteen internal memories. These were divided into two groups of nine, one group on v.h.f. and the other for the a.m. bands. In addition to the simple storing and retrieval of frequencies, the RF-B45 included a search function. When activated the RF-B45 stepped through each memory channel stopping on each one for approximately three seconds. The search is useful for checking activity and reception conditions on your favourite stations.

Clock Timer

In addition to the main radio functions, the RF-B45 included a very useful clock and timer. The initial setting of the clock was done via the front panel keypad using the 24 hour clock. The presence of the clock enabled a couple of useful timer functions to be included. The most basic of these was the SLEEP function that's useful for insomniacs! This can be set so that the receiver operates for 30, 60 or 90 minutes before automatically shutting down. The second timer mode is called STANDBY and enables the receiver to be set to turn on at a specific time and play for 90 minutes. As far as I can see the main use of this mode is as an early morning alarm.

Performance

My initial impressions of the RF-B45 were that it was a surprisingly sensitive and capable receiver. In an attempt to confirm this I put the receiver through a few tests in the lab.

The first area to come under scrutiny was the r.f. sensitivity. This produced surprisingly good results with a best figure of 0.2µV for 12dB SINAD at 3.5MHz. This sensitivity was remarkably consistent over the frequency range, with a worst case of 0.4µV at 25MHz - an excellent result for this type of receiver. This level of performance on s.s.b. was complimented by a 1.75µV sensitivity on a.m. and 1.4µV on f.m.

Another important area that many receivers fail on is the audio distortion levels. The RF-B45 gave a good showing in this area with a.m. distortion of 0.65% and f.m. of 0.44%, again, very good for a portable receiver of this type.

For the on-air tests I tried the RF-B45 both portable and in the shack. When operated using its internal antenna the high sensitivity gave surprisingly good results. In addition to being able to receive a wide range of broadcast stations there were plenty of amateurs and utilities to be heard.

Encouraged by this initial success, I moved into the shack and connected up my long wire antenna. Although this brought in more stations, it did highlight a, not unexpected, problem. The extremely high sensitivity of the RF-B45 means that it is
also very vulnerable to overload from strong signals outside the main pass band. This results in the appearance of a number of spurious signals and an increase in the background noise level. This type of overload problem is very common amongst cheaper receivers and can often be controlled by using an r.f. attenuator between the antenna and receiver. In the case of the RF-B45 switching the DX/LOCAL switch to LOCAL inserted 10dB of attenuation - this reduced the problem to an acceptable level.

When receiving s.s.b. signals, the fine tune control proved to be just right. It gave a good overlap between the 5kHz tuning steps, but was fine enough to enable signals to be properly tuned. The provision of an s.s.b. mode means that the RF-B45 could also be used to receive some of the data utility signals that abound on the h.f. bands. Receiving these signals requires a receiver with good frequency stability and the ability to tune in very fine steps - 20Hz or less ideally. To evaluate the RF-B45's performance I used the sophisticated Hoka Code 3 package and the much simpler Microreader. As with any new receiver, I found that it took a little practice to familiarise myself with the operation of the fine tune control with RTTY signals. One tip I can give any potential users is to earth the receiver. If not, the audio output tends to contain spurious signals that confuse the decoder. I was surprised to find that the frequency stability was well up to the standard required for utility work. Using the Microreader, I was able to easily resolve c.w. and RTTY signals with a shift of 400Hz or greater. I did however, find that resolving 170Hz shift amateur RTTY signals was very tricky.

Moving on to the audio quality, this too was very good. The HIGH position of the tone control gave a very full sound that was very pleasant to listen to. Moving this switch to the LOW position restricted the high frequency performance and was useful for reducing whistles and whines on short wave broadcast signals.

**Specifications**

<table>
<thead>
<tr>
<th></th>
<th>f.m.</th>
<th>l.w.</th>
<th>m.w.</th>
<th>s.w.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>87.5-108MHz</td>
<td>144-288kHz</td>
<td>522-1611kHz</td>
<td>1.62-29.995MHz</td>
</tr>
<tr>
<td>Power</td>
<td>4 x AA or R6 batteries External 6V d.c.</td>
<td></td>
<td></td>
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<tr>
<td>Speaker</td>
<td>80mm dia. 8Ω</td>
<td></td>
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<tr>
<td>Output</td>
<td>600mW r.m.s.</td>
<td></td>
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</tr>
<tr>
<td>Dimensions</td>
<td>204 x 119 x 37mm</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Weight</td>
<td>620g</td>
<td></td>
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**Conclusion**

What can I say? The RF-B45 will, I'm sure, prove to be extremely popular with anyone requiring a compact portable s.s.b and broadcast receiver. The technical performance was well up to the standard required for general short wave listening, including utility stations.

The excellent performance combined with very smart styling means that I have no hesitation in recommending this model. The RF-B45 is available from most Panasonic stockists at an average selling price of £129.95. My thanks to Panasonic UK for the loan of the review model.

**Abbreviations**

- %: per cent
- c.w.: continuous wave
- d.c.: direct current
- dB: decibels
- f.m.: frequency modulation
- g: grammes
- Hz: hertz
- kHz: kilohertz
- l.w.: long wave
- m: metres
- m.w.: medium wave
- MHz: megahertz
- mm: millimetres
- mW: milliwatts
- r.f.: radio frequency
- r.m.s.: root mean square
- RTTY: Radio TeleType
- s.s.b.: single sideband
- s.w.: short wave
- SINAD: Signal to Noise And Distortion
- V: volts
- v.h.f.: very high frequency
- W: watts
- µV: microvolts
- Ω: ohms
was interested to learn that the 850mm 'dish' antenna and converter used by Peter de Jong (Leiden, Holland) for gathering pictures from Meteosat also serves as a radio-telescope. He tells me that, "during the equinoxes, when the sun shines right into the dish, reception is disrupted by solar noise".

Sunspot Activity

Ron Livesey (Edinburgh) using a 2.5in refractor and a 4in projection screen located four active areas on the sun's disc on November 1, 7, 11, 14, 19, 22 & 28, seven on the 9th and ten on the 2nd.

Cmdr Henry Hatfield's (Sevenoaks) observations with his spectrohelioscope revealed 3 sunspot groups, 13 filaments, 8 equisent prominences, 2 slightly active plages & a plage area near the south-east limb at 1122 on the 6th. From the 20th, Patrick had a 'big flare' the previous day. Gordon Hopwood, Karl Lewis (Saltash), Ron Livesey, David Pettitt (Carlisle) and Doug Smillie showed magnetic storms were recorded by their various instruments on November 1, 2, 4, 8, 9, 11, 16-22, 28 & 30.

Propagaton Beacons

First, my thanks to Gordon Foote, Henry Hatfield, Ted Owen (Maldon), Fred Pallant (Storrington), Ted Waring (Bristol) and Ford White for their 28MHz beacon logs which enabled me to produce the monthly chart, Fig. 3. The signal from WA4APU was heard on November 30 by Ted Owen and Fred Pallant.

Tropospheric

"For the last few days a high pressure area has been stable over Ireland and Britain, giving good tropo reception all over," wrote Des Walsh (Ballinhassig) on December 4. Des uses a Pioneer 225V receiver and has a variety of antennas including a 4-element Yagi, which he modified to give good results in the 98/100MHz region of Band II. On the 4th he logged several stations from France and two from Germany between 95 & 106MHz.

On the 7th, 8th & 9th, Simon Hame (New Rednor) received broadcast stations from Germany and all Scandinavian countries on their respective spots throughout Band II. For my part, I was not surprised to hear French stations pounding during the evening of December 6 especially as the weather was cold and clear and my barograph was showing 30.6in (1036mb).

Michael Larsson (Cheadle) logged programmes from France & Ireland on December 2, Denmark, France, Germany, Ireland, Norway & Sweden on the 3rd, France, Germany & Ireland on the 13th, Belgium, Germany, Holland & Sweden on the 14th, Sweden on the 19th and BBC R4 from Wales on the 28th. I heard very strong signals from French and German stations spread throughout the band between 0800 & 1200 on January 11. The atmospheric pressure readings for the period November 26 to December 25 can be seen, along with allied propagation gen, in my DXTV column elsewhere in this issue.

Short Wave Magazine, March 1992
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**44 Short Wave Magazine, March 1992**
our letters and logs to Peter have now been forwarded to me. For those of you who had asked questions and sent an s.a.e, I have sent a reply. All other questions raised in your letters will be answered within the column.'Ascot Without The Horses!' A number of your letters and logs mention hearing various transmissions by the RAF. These principally come under two categories, and cover two areas: the broadcast of weather details for various RAF airfields worldwide, and providing two-way communications between RAF aircraft and ground installations. The weather details are transmitted continuously on 4.722 & 11.200MHz by the RAF. They provide a minimum amount of weather information for most RAF airfields in the UK, followed by RAF airfields in the USA, with 4.730MHz for Ascension Island in the South Atlantic. The broadcast of weather details began in 1982, and includes details on over two thousand RAF installations. The other 'half' of the system is used for two-way communications between aircraft and various ground stations. This network is known as the Strike Command Integrated Communications System (STCICS); the parts that are of interest to this column are known as RAF Flight Watch Centres, and are more commonly known by their voice callsign of 'Architect'. The main purpose of the flight watch centres is for H.F. communications and they have a wide coverage, from Royal Flights to SAR helicopters, also based at Woodbridge. The squadron is due to move to RAF Alconbury soon, I wonder if anyone else heard this so that he can complete his own copy.

There are several sites equipped for H.F. communications, they are at Ascension Island in the South Atlantic (voice callsign 'Haven'), RAF Akrotiri on Cyprus (voice callsign 'Cyprus'), Gibraltar (voice callsign 'Gibraltar') and at Mount Pleasant in the Falkland Islands (voice callsign 'Viper'). These sites also provide a form of weather broadcast at certain times through the day, covering airfield QNHs (pressure settings) on the hour, and airfield colour states at 30 minutes past each hour. At 15 minutes past and 45 minutes past there is a broadcast of the RAF Hercules transport aircraft.

Mount Pleasant, Falkland Islands: 4.742, 9.032 & 11.234MHz

One of the most surprising and memorable things heard on these frequencies during recent months (for contributor Keith Elgin, at least) has been the return of British hostages from the Middle East courtesy of the RAF. On 19/11 he heard 'Ascot 2100' (a VC-10 of 10 Sqdn) contact RAF Lyneham Ops with arrangements for an H.F. link-up between Terry Wale and John Major. This all occurred on 11.234MHz, but due to interference from another station on 11.245MHz, but contact was lost. Keith wonders if anyone else heard this so that he can complete his own copy.

For those of you who regularly listen to these RAF frequencies, you may like to know some more about the RAF callsigns for transport aircraft. The callsigns are all 'Ascot' followed by a 3 or 4 digit number, which usually identifies what type of aircraft is involved.

700+: Andover (HS.748) or BAE125 from 32 Sqn, RAF Northolt
1000+: Andover (HS.748) or BAE125 from 32 Sqn, RAF Northolt
2000+: VC-15s from 10 Sqn, Brize Norton
3000+: Tristars from 216 Sqn, Brize Norton
4000+: Hercules C.1 from RAF Lyneham
5000+: Hercules C.3 from RAF Lyneham
7500+: Andover (HS.748) or BAE125 from 32 Sqn, RAF Northolt
8000+: Andovers from 60 Sqn, Wildenrath Germany (Northolt from April '92)

Callsigns 'Kitty' and 'Kittyhawk' are used by royal flights, and are operated by BAE146 aircraft based at RAF Benson. Many of these aircraft use the system to report their departure from various airfields, and the estimated arrival time for wherever they are going. They can also get the latest weather forecast for their destination. Aircraft going to Cyprus usually make contact with Cyprus as they pass 15° East (approx. southern Italy) and pass on their ETA and request the weather forecast; this happened rather a lot more than usual during the Gulf War. The photo on this page was taken by me during June 1991. It shows the view from the astrodome of an RAF Hercules aircraft 'somewhere over southern England' during the formation build-up for the Granby Flypast, the view is towards the tail of the aircraft, and the wire H.F. antenna is just visible stretching from the upper fuselage to the top of the tail.

Tony D of Stafford send an impressive log, listed by frequency, containing everything from Royal Flights to SAR ops in the north Atlantic. His log includes lots of USAF aircraft making phone-patches to various places, including McGuire AFB (NJ, USA). Tony's log also has a number of 'Shadow' aircraft talking to 'Woody'. 'Shadow' is the callsign of a USAF Hercules aircraft, and is always followed by the last two of its serial, e.g. 'Shadow 23'. 'Woody' is flight ops at RAF Woodbridge, north east of Ipswich. The squadron is due to move to RAF Alconbury soon, I wonder if the ops callsign will change to 'Alicy'! Callsign 'Pave' is used by the MH-53 helicopters, also based at Woodbridge. Your logs often report these two callsigns frequently operating together.

Mysteries and Requests

Now a few 'mystery' transmissions that maybe some of you can help to solve. These are all frequencies that I have heard in use, but I have been unable to identify the user(s): - brief transmissions on 11.224MHz u.s.b.; I hear interference on 11.170MHz and when I GSY to 11.224 I hear the very end of the speech; the most that I have ever heard is somebody reporting their arrival at a given time. It appears to be either Spanish or Italian, as I live very close to Heathrow Airport I suspect that it is an airline frequency, but which airline? - on 3.11 I heard a radio test by a station on 11.280MHz, with a callsign of 'Night stalker base'; the operator had an American accent. - on 8.913MHz I heard 'Sprinbob 234' talking to a ground stations and passing some times and weather details, is this a new/another South African Airways company frequency? - on 6.736MHz I heard Australian voices, but was unable to identify either station before they stopped transmissions.
I had planned to spend the Christmas-New Year period quietly at home getting my mind in order for 1992 and maybe even listening to the odd radio transmission. Instead, I ended up taking it in shifts at the bedside of Nic, our son, in hospital. So instead of a radio, I saw some very interesting medical electronics and learned a few new terms like oxygen saturation. And later on, when Nic was out of intensive care and in the paediatrics ward I also learned that some of that fancy electronics makes highly unusual patterns across a television picture. Still, I suppose television viewing pleasure was the last thing on the designers’ mind.

**Melbourne Greek Radio**

The third largest concentration of Greek people in the world is in Melbourne and the saga of local Greek language radio appears to be coming to a close. For some years a company was licensed to transmit an encrypted Greek language service to subscribers only, but operated illegally without encryption from July 1989. Despite repeated attempts by the Department of Transport and Communications (DoTC) to have the company encrypt its signals, the station was finally forced to close in March 1991. At the time on air, the service had gained a large listening audience but according to Warren Snowden, Parliamentary Secretary to the Minister for Transport and Communications, “the Government regret that the Greek community now sees itself as losing a valued service, but the Greek Radio Service has been operating illegally and the Government had no choice but to close it.”

Now a new Hellenic Radio service has been launched in Melbourne with transmissions encrypted as required to enable reception by subscribers only. Though there is some expense in buying decoding devices, no doubt the Greek community is happy that its service is licensed, but the Greek Radio Service has been operating illegally and the Government had no choice but to close it.

**New Ministers**

Political upheavals that have given Australia a new Prime Minister - Paul Keating - have also given Australia new Ministers for Transport and Communications in a period of a few weeks.

With the unsuccessful challenge to Prime Minister Hawke by Treasurer Paul Keating in mid-1991 came Mr Keating’s move to the back bench and the promotion of John Kerin from Primary Industry to the Treasury job. But Mr Kerin’s faltering attempts to fill this position, in view of the worsening recession and renewed behind the scenes moves to unseat Mr Hawke eventually led to a shuffle among the top jobs, a shuffle which moved long-time Minister for Transport and Communication Mr Beazley out and Mr Kerin in.

The December 1991 ousting of Prime Minister Hawke by Paul Keating led to another reshuffle, in which Mr Kerin headed out of cabinet altogether. In his place in Transport and Communications came Keating supporter Senator Graham Richardson.

**Microeconomic Reform**

DoTC is considered one of the plum jobs for cabinet ministers because much of Australia’s microeconomic reforms are taking place within this portfolio. Examples are changes to state and federal transport legislation which have harmonised free interstate trade for decades and changes to telecommunications legislation with a view to increasing competition in this sector.

Though the change has been the amalgamation of the overseas telecommunications carrier OTC with Telecom to produce AOTC and the entrance of a new competitor Optus Communications to this apparently lucrative field. Optus will pay the Australian government $A800 million - about $530 million - for the opportunity to compete and for Australia’s ailing satellite company, Austrac. I hope that this competitor fares better than Australia’s newest airline Compass which fell in a heap while trying to beat its head against the brick wall thrown up by the existing airlines.

**School of the Air**

Some of Australia’s outback children are so isolated that it is not practical for them to even think about going to school every day. To cater for these children, the various states run radio schools of the air. In my state, New South Wales, for example, there are around 1200 school age children living in isolated areas.

Until recently, school of the air radio transmissions were on frequencies in the h.f. band. This caused some problems with reception and because the system has been in operation since the sixties, equipment was beginning to be outdated and unreliable. As a result, the network is gradually being replaced with v.h.f. fm. equipment.

Each isolated property involved has been provided with a transceiver on long term loan and a radio tower and antenna to pick up and transmit signals. Such a system was demonstrated at the Congress when Olof Lundberg, the Director General of INMARSAT, held a telephone conversation with the Permanent Secretary of Singapore’s Ministry of Communications and Information on a special airline flight over Singapore on September 25.

**Other News**

In Bandscan September 1991, I talked of Australia’s print handicapped radio stations. The system has now increased by one station with the opening in Perth Western Australia of GRPH operating on 990kHz a.m.

The capital cities Sydney, Melbourne, Brisbane, Adelaide, Perth and Canberra as well as the NSW regional centres Wollongong and Newcastle currently support five television channels each with just one possible vacant slot in the u.h.f. band. A Parliamentary inquiry has been set up to examine options for such channels, one possibility according to DoTC being for television parliamentary proceedings. That really does sound like a channel to help insomniacs to a sound night’s sleep.

I’ve heard no more about the cry for help from the outback station band-reported in ‘Bandscan’ December 1991. No bodies or skeletons have turned up, at least not those that could be identified with the mystery caller. Perhaps it was all a hoax after all. The great benefit of carrying a Royal Flying Doctor Service (RFDS) radio when travelling the outback, was shown in a recent issue of a popular Australian four-wheel driving magazine. One of their writers, travelling in far western NSW, became paralysed with back pain and contacted the RFDS who were able to land nearby and fly him to hospital in Broken Hill. His message to “any of you who think they can risk travelling in the outback without a flying doctor radio - THINK AGAIN!”

I welcome any news and comments. In particular I am interested in any s.w.l. 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, Braidwood, NSW 2622, Australia. For personal replies please send 2 IRCs.
Numerous letters arrive each month, most querying a certain point or other but its pleasing to receive letters with views or helpful advice. Take, for instance, Cyril Willis near Kings Lynn who is using a 1m tracking dish system. He advises that Super Channel (Eutelsat I F1) carries a satellite news page no. 270 with typically 12 pages full of satellite news and information, including: 'readers' letters'. The Teletext magazine is changed Tuesdays and at weekends.

Another name known in both TVXing and satellite circles overseas is Bindu Padakki from Bangladesh, India. Bindu has for some years been receiving the Stat T satellite transmissions - at (714MHz) with various cross polarised and helical antennas, more recently Bindu found additional u.h.f. satellite TV signals at 754MHz. Both downlinks are from Russian satellites, the latter one time shifted, each relaying the main TSS-1 TV national channel and intended for the vast expanse of the North and North Eastern USSR for direct reception using simple Yagi antennas or for area distribution (terrestrial) via local transmitters. I have reports of signal reception from the Statstation T craft as far west as British Isles and south to Sri Lanka. Also known as 'Ekrain' (Window) the satellite orbits at 99°E transmitting into a 24MHz bandwidth channel centre 714MHz with 1 TV and 2 radio programmes. Power is an impressive 750kW via 200W Klystrons feeding a 'co-phased' antenna array some 5.7 x 2.1m giving a gain of 28dB, photographs of the antenna resemble an old bedspring with helical spirals emerging. The project has been running since 1976 and provides TV for Siberian a area some 9 million square km. The u.h.f.-TV satellite is an operational lifetime of 2 years - earlier craft were parked in adjacent slots 84 and 95°E, it is possible that the 754MHz transmissions could be located at 99°E (being the later craft) and the 95°E older bird is providing the 714MHz service. A great deal of mystery surrounds this satellite service, if any overseas reader can advise please write in.

Bindunow has graduated to C Band (4GHz) using a 2.5m dish, 30K Gardner LNB, Chaparrel feed and locally manufactured receiver, with this combination many downlinks are being received including Vietnam TV via Gorizont, Oman, Saudi, NTSC Burana and several Intelsat birds.

Orbital Sightings

The USSR again hit the headlines around Christmas Day with the resignation of President Gorbachev and with this latest dramatic news so a flurry of news feeds were seen. Gorizonts’ 12 and 15 (11.51GHz) at 11, 14°W respectively were, of course, very busy with VoiceNews/WTN feeds plus various BS-
PAL and 525-line NTSC outbound circuits to the various world’s broadcasters. Even our old favourite Intelsat V F2 at 21°W was fired up with BBC/BBC feeds during Christmas Day (SISLINK were of course not in operation this day from any UK race course). January 14 produced 11°W with 'WTN Moscow Bureau' output and 14°W with 'VISNEWS MOSCOW' simultaneously.

Memories

SISLINK 2 were busy on New Years Day with a feed over 21°W of Wincanton Race Course - brings back memories of a Wincanton Southern ITV outside broadcast rig day on Christmas Eve (1969ish) when we gathered around a monitor to watch one of the Apollo missions circle the Moon! On the 31st at 11.40GHz horizontal again on 21°W the 'Latvius' test card was carried followed with a news item showing rather tougher domestic scenes of the 'new life' without Gorbachev.

SIS outside broadcast feeds are often carried over the 21°W Intelsat in the clear through due to the age and inclined orbit of the bird so signal reception is at best fair and at worst nonexistent, due to the drift around its allocated slot. The signal variation can be noted over 30 minutes or so, gradually weakening and sparklies (noise) increasing. Look horizontally at the time of writing the colour bars with (noise) increasing. Look horizontally then vertically again on 21°W the 'Latvius' test card was carried followed with a news item showing rather tougher domestic scenes of the 'new life' without Gorbachev.

What was identified clearly over Eutelsat II F2 10°E at 11.58GHz carried the test pattern 'Teleton Test' followed with various pop videos and other programming from early January - yet another new 'Turkish channel', but at 720i PAL and 525-line NTSC outbound circuits to the various world’s broadcasters. Even our old favourite Intelsat V F2 at 21°W was fired up with BBC/BBC feeds during Christmas Day (SISLINK were of course not in operation this day from any UK race course). January 14 produced 11°W with 'WTN Moscow Bureau' output and 14°W with 'VISNEWS MOSCOW' simultaneously.

New Turkish Channel

What was identified clearly over Eutelsat II F2 10°E at 11.58GHz carried the test pattern 'Teleton Test' followed with various pop videos and other programming from early January - yet another new 'Turkish channel', but at 720i PAL and 525-line NTSC outbound circuits to the various world’s broadcasters. Even our old favourite Intelsat V F2 at 21°W was fired up with BBC/BBC feeds during Christmas Day (SISLINK were of course not in operation this day from any UK race course). January 14 produced 11°W with 'WTN Moscow Bureau' output and 14°W with 'VISNEWS MOSCOW' simultaneously.

The 'Middle East Broadcasting' test card seen over Eutelsat II F1 at 13° East, 11.54GHz, hor.
L'let's start with a couple of crises for help. Paul Essery GW3KFE re- ceived for which he needs service data, particularly a layout of the coils, trimmers, etc., so that he can carry out a needed realignment. Please drop a line to: Paul, 60 West Road, Bedburn St Mary, Exeter, Devon EX6 6AE.

Matt Spencer picked up a National Panasonic RF-5000 for $4 at a car boot sale, together with a pair of 'cans' for 20p, and after mating these to about ten metres of wire found in the loft, came back to the bands after some twenty plus years of inactivity. Can anyone help? The address is: Matt Spencer, 5 Dunraven Avenue, Saddlers, Redhill, Surrey RH1 5JW.

Turning to Matt's list, 3.5MHz telegraphy produced AI3AT, EA7FGC, WW1K, K9VG, 72, AI7, AI3EUF, K3LGC, W3GH, W1J0, 5E7BC, YV5MR, PZ1EL, PY7YA, XE1VIC, J6KXMM, J6JUEC, J60EAM, J1AJR, J1AJW7, Y51RD, 72XDK, 72XK8, 4U1UIN, T4CF, CE5AG, AI6BAY, and A452Z. On 7MHz the coverage was G0JUE, ZP1ELD, PY3NY, K9HHR0, ZL1SN, ZL1APW, T2ZL, UU1JUotal, VE3GQ, HJ4ARK, UY4DRR, W9PKPM and JF1SI. A short list on 14MHz included VKLX2, ZL1HS, 5NL8RG, VKD3X, TBSA, A41UR, VK4JFO, YB0JUE and VK8RI, before a QSY to 18MHz for such as XE1DN, AI6AB and AI6CZ.

Gerald looked on Top Band frequencies. Any suggestions? Sometimes it is T9, but usually just a foray on 28MHz came up with AI1UAT, K0M9, KW6AQ, W1J0, AI4OTW, Z61G, K728, AI6ZGC, and makes a first report with an AR88LF in Newcastle-on-Tyne, who notes his has ever used. Top Band, WB2CLN, WB1EKO, K3LGC, W3GH, W1J0, WA3EUL, N4COC, A4MM, N29K, K3LGC, N2MK, RV8BC, RV9CH, AI9XEO, AI9LCX, T77C, RA0SFL, W2JY, AI9BE, KA1H0V, K3B3AF, N2KQ, W3AVN, WAQ0GH, K32O, K4Y8H and T4QI. On 3.5MHz the pickings included ZL1CCR, ZL1JR, ZL1TU, ZL2BCG, ZL2BCG, Y5V5MR, PZ1EL, PY7YA, XE1VIC, J6KXMM, J6JUEC, J60EAM, J1AJR, J1AJW7, Y51RD, 72XDK, 72XK8, 4U1UIN, T4CF, CE5AG, AI6BAY, and A452Z. On 7MHz the coverage was G0JUE, ZP1ELD, PY3NY, K9HHR0, ZL1SN, ZL1APW, T2ZL, UU1JUotal, VE3GQ, HJ4ARK, UY4DRR, W9PKPM and JF1SI. A short list on 14MHz included VKLX2, ZL1HS, 5NL8RG, VKD3X, TBSA, A41UR, VK4JFO, YB0JUE and VK8RI, before a QSY to 18MHz for such as XE1DN, AI6AB and AI6CZ.

Another to cover the whole f.h. range is Gerald Bromwell from Cambridge. Gerald looked on Top Band for LA1UAT, G5XAK, K3ZC, ESADLC, AI4OTW, Z61G, K728, AI6ZGC, and makes a first report with an AR88LF in Newcastle-on-Tyne, who notes his has ever used. Top Band, WB2CLN, WB1EKO, K3LGC, W3GH, W1J0, WA3EUL, N4COC, A4MM, N29K, K3LGC, N2MK, RV8BC, RV9CH, AI9XEO, AI9LCX, T77C, RA0SFL, W2JY, AI9BE, KA1H0V, K3B3AF, N2KQ, W3AVN, WAQ0GH, K32O, K4Y8H and T4QI. On 3.5MHz the pickings included ZL1CCR, ZL1JR, ZL1TU, ZL2BCG, ZL2BCG, Y5V5MR, PZ1EL, PY7YA, XE1VIC, J6KXMM, J6JUEC, J60EAM, J1AJR, J1AJW7, Y51RD, 72XDK, 72XK8, 4U1UIN, T4CF, CE5AG, AI6BAY, and A452Z. On 7MHz the coverage was G0JUE, ZP1ELD, PY3NY, K9HHR0, ZL1SN, ZL1APW, T2ZL, UU1JUotal, VE3GQ, HJ4ARK, UY4DRR, W9PKPM and JF1SI. A short list on 14MHz included VKLX2, ZL1HS, 5NL8RG, VKD3X, TBSA, A41UR, VK4JFO, YB0JUE and VK8RI, before a QSY to 18MHz for such as XE1DN, AI6AB and AI6CZ.

One of the confirmed countries score now runs 109, and makes a first report with an AR88LF in Newcastle-on-Tyne, who notes his has ever used. Top Band, WB2CLN, WB1EKO, K3LGC, W3GH, W1J0, WA3EUL, N4COC, A4MM, N29K, K3LGC, N2MK, RV8BC, RV9CH, AI9XEO, AI9LCX, T77C, RA0SFL, W2JY, AI9BE, KA1H0V, K3B3AF, N2KQ, W3AVN, WAQ0GH, K32O, K4Y8H and T4QI. On 3.5MHz the pickings included ZL1CCR, ZL1JR, ZL1TU, ZL2BCG, ZL2BCG, Y5V5MR, PZ1EL, PY7YA, XE1VIC, J6KXMM, J6JUEC, J60EAM, J1AJR, J1AJW7, Y51RD, 72XDK, 72XK8, 4U1UIN, T4CF, CE5AG, AI6BAY, and A452Z. On 7MHz the coverage was G0JUE, ZP1ELD, PY3NY, K9HHR0, ZL1SN, ZL1APW, T2ZL, UU1JUotal, VE3GQ, HJ4ARK, UY4DRR, W9PKPM and JF1SI. A short list on 14MHz included VKLX2, ZL1HS, 5NL8RG, VKD3X, TBSA, A41UR, VK4JFO, YB0JUE and VK8RI, before a QSY to 18MHz for such as XE1DN, AI6AB and AI6CZ.
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A typical example of the smery and usually difficult to identify images received via openings in the F2 region of the ionosphere is shown in a picture, Fig. 1, received by Lt. Col. Rane Roy (Meerut, India), on Ch. E3 (55.25MHz) on September 28. It requires great patience watching for the prevailing conditions to vary so that the signal can offer a reliable clue as to its source. While such an opening was in progress early on December 13, Simon Hamer (New Radnor) identified Star Television from Switzerland on Chs. E2 & E3 (55.25MHz) & E4 (62.25MHz) and a lot of pictures from New Zealand on NZ1 (45.250MHz) and Malaysia and Thailand on Ch.E2 (48.25MHz).

These disturbances always create an interest and Richard Gonnell (Swindon) has set specific TV sound channels in Bands I and III on his MX7000 scanner, fed by an external discone antenna, to study such propagation. Richard reports that the m.u.f. (maximum usable frequency) was 37MHz at 0845 on December 14, 42MHz throughout the morning of the 25th and, on the 26th, it was 30MHz at 0800, 39MHz at 0845 and 42MHz at 1300. Later he heard stations from the USA, around 34MHz, till about 1700.

Band I (Sporadic-E)

"In the past couple of months I have logged TVE, SVT, RAI, JRT and BRT," wrote Ross Burke (Northampton) on December 23. John Woodcock (Basingstoke) heard utility stations from the USA at the lower end of Band I on the 9th & 10th. Bob Brooks (Great Sutton) logged programmes, via short periods of Sporadic-E, from Denmark (DR Denmark) late on December 4, Denmark and Spain (TVE, an orchestra) on the 14th, Italy (RAI, football) and Spain (cartoon) on the 15th and Denmark and Russia (TS3) on the 16th & 17th respectively. Bob saw pictures from Italy and/or Spain again on January 3 & 4 and Iceland (RUV Island) on the 5th. He also caught the CST (Czechoslovakia) logo and their news for the hard of hearing at 1530 on the 4th.

Meteor Scatter

Simon Hamer received 'pings' of pictures, via meteor trail reflection, from stations in Norway at 1830 on December 14, Italy at 0800 on the 15th and unidentified programmes on Chs. R1 (45.25MHz) & R2 (55.25MHz) at 0730 on the 19th. He had similar results during the Quadrantids meteor shower at 1920 on January 3 but, wrote Simon, "It's not often that we get Sporadic-E and meteor scatter at the same time".

While this was all going on he logged pictures from Austria (ORF1), Czechoslovakia (CST1), France (TFP), Germany (ARD1), Hungary (MTV1), Romania (TVR1) and Switzerland (+PTT/ SRG1) on their various channels in Band I around 1900 on the 4th. He remarked that there were unidentified signal 'pings interfering with Sporadic-E' throughout the band. Simon witnessed one of those rarer cases when one mode of propagation, especially in mid-winter, spoilt the observation of another.

Despite this he did recognise All Creatures Great and Small being broadcast in a box on a wall outside the Harbour Master's house in the fishing village of St. Abb's. Like many others, John checked its readings every morning while he was there. On this subject Steve Mildon (Willenhall), having recently added a barometer to his DXTV station, is among those readers who would like to know more about the association between pressure readings and openings on Bands III, IV & V. Briefly Steve, this is a frequency range of 175 to 420MHz where the transmitted signals travel through the troposphere and, of course, are subject to ground and tropospheric turbulence within that medium. The troposphere being the home of the earth's weather.

You may wish to compare your records with the slightly rounded atmospheric pressure readings for the period November 26 to December 25, Fig. 13, which were taken at noon and midnight from the barograph installed at my home in Sussex. December was generally dry in my area with only 0.81in of rain being recorded during the 15th and 20th inclusive, compared to the 3.85in which fell in November. I recorded 13 frosts during the month, the worst being on the 14th when the overnight temperature fell to 16°F and the freezing fog showed some amazing sights as the sun came up. For instance, this can be seen on the cobwebs around my domestic TV antenna, Fig. 8, and the plants around my very frozen rain gauge, Fig. 9.

David Glenday (Arbroath) reports, "strong winds - some hurricane force at times over Scotland" at the end of December and in early January. Peter de Jong (Leiden, Holland) tells me that, "on the afternoon of December 21, TV5 (Eutelsat II F1, France) suffered an uplink fade-out during heavy snow," and explained that, "these uplink fade-outs only occur when the WX is abnormal. Pater has a 850mm dish' antenna mounted indoors behind a south facing window, a pre-amplifier and a DSH WX1700 converter to receive pictures from Meteosat, Fig. 10. While checking Eutelsat on Christmas Day, he logged 'seasont greetings' from British Aerospace Communications, Fig. 11 and BT, Fig. 12.

Tropospheric Openings

John Woodcock received weak pictures from France, in Band III, on Ch. 5 & 9. Simon Hamer logged pictures from Denmark (ORF1), Germany (ARD1), Norway (NRK), Poland (TVP) and Sweden (SVT1) on many channels in Band...
Short Wave Magazine, March 1992

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Ill on the 7th, 8th & 9th and from Denmark (TV2), Germany (ARD, NDR3, Hessen 3, West 3 & ZDF), Poland (TVP) and Sweden (SVT2) in the u.h.f. band during the same period. He did well again on the 14th with Austria (ORF1), Czechoslovakia (CST1), Germany & Switzerland (+PTT/SRG1, +PTT/SSR1 & +PTT/TS1) on their respective spots.

At noon on December 23, the pressure was low around 30.0 in (1015mb) and falling, then at 1500 a rapid rise began and by midnight on the 24th the barograph was reading 30.7 in (1040mb). However, not surprisingly, there was a tropospheric tropo haul comprising pictures in Bands III and/or IV from stations in Germany (ARD, HR3 & ZDF) and Holland (NED2 & 3) on the 2nd, Belgium (BRT1), Germany (HR1) on the 3rd & 4th, Holland (NED1) on the 4th and Denmark (DR) and Norway (NRK) on the 6th. He did better in the u.h.f. band with a variety of programmes and idents from Germany (ARD, HR3 & ZDF) and Holland (NED2 & 3) on the 2nd, Belgium (RTBF-TELE21), Eire (RT1), England (Emley Moor) and Germany (HR3, WDR1 & ZDF) on the 3rd, England (Sandy Heath), Germany (HR3 & ZDF), Holland (NED2 & 3) on the 4th, Denmark (TV2), Germany (ZDF) and Holland (NED3) on the 6th, Denmark (TV2) on the 7th, Belgium (BRT1), Germany and Holland on the 9th, Belgium (BRT1 & 2), England (Tacolneston) and Holland (NED1, 2 & 3) on the 10th and Holland again on the 11th.

Andrew Jackson's (Birkenhead) tropo haul comprised pictures in Bands III and/or IV & V from stations in Belgium (BRT1 and RTBF1), France (Canal+, RTL+, WDR1 & ZDF) on December 2, Belgium (BRT1), France (A2 & Canal+), Germany (HR3, RTL+, SW3 & ZDF) and Switzerland (TSI1) on the 3rd, Ireland (RT1E & 2) and Germany (ARD1 & ZDF) on the 4th, Ireland on the 9th, France (A2, Canal+, FR3 & TF1), Holland (PTT/NED3) and Ireland on the 9th, Belgium (BRT1 & 2), France (A2 & Canal+) and Holland (NED3) on the 10th and Belgium (BRT1 and RTBF1), France (A2 & Canal+) and Holland (NED3) on the 14th. Andrew has installed a NV148 video inverter and has ordered a D100 converter for his station. The pressure was rising rapidly during the evening of January 10, the temperature was low, the sky clear and a widespread frost was expected, but there was a change. Clouds built up overnight, as did a tropo-opening and between 0800 and 1200, I received strong pictures from two German stations in Band III and watched their Heute (Today) programme around 0810.

Regardless of this, during the first half of the month, he identified pictures in Band III from stations in Germany (HR51) on the 3rd & 4th, Holland (NED1) on the 4th and Denmark (DR) and Norway (NRK) on the 6th. He did better in the u.h.f. band with a variety of programmes and idents from Germany (ARD, HR3 & ZDF) and Holland (NED2 & 3) on the 2nd, Belgium (RTBF-TELE21), Eire (RT1), England (Emley Moor) and Germany (HR3, WDR1 & ZDF) on the 3rd, England (Sandy Heath), Germany (HR3 & ZDF), Holland (NED2 & 3) on the 4th, Denmark (TV2), Germany (ZDF) and Holland (NED3) on the 6th, Denmark (TV2) on the 7th, Belgium (BRT1), Germany and Holland on the 9th, Belgium (BRT1 & 2), England (Tacolneston) and Holland (NED1, 2 & 3) on the 10th and Holland again on the 11th.

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SSTV

James Bence (Hamilton) is equipped for slow-scan television reception with a Trio 800 receiver, 48K Spectrum computer with GiFTU software and an Alphacom 32 printer for hard copy. James plans to add a Star LC10 printer for this work.

Among the signals copied in December, around 14.230MHz, by John Scott (Glasgow) were idents from Germany, Fig. 14 and a couple of amusing, but unidentified, captions, Figs 16 and 17 transmitted while communications were in progress. John now has a Realistic scanner, with a discine antenna, tuned to 144.500MHz, hoping for SSTV signals in this v.h.f. band. David Glenday has added a Lowe HF-225 communications receiver and Technical Software's RX8 program to his DXTV station in order to probe the slow-scan world around 14.230MHz.
airband

Godfrey Manning G4GLM
c/o The Godfrey Manning Aircraft Museum,
63 The Drive, Edgeware, Middlesex HA8 8PS

Those of you who live, or travel, in the Heathrow and Gatwick areas might like to listen to Airport Information Radio (1.534MHz). This local service is intended to provide flight delay, road traffic, and weather news plus other general information on airport facilities. At the time of writing, the service has been reduced pending re-equipping of the studio and future improvements. In the meantime, Bill Cody (Senior Compiler, Airport Information Radio, c/o Radio Mercury, PO Box 1, Crawley, West Sussex, RH11 9TT) would very much like comments on how listeners wish to see the service develop. This could be a really useful facility for readers who find themselves in the coverage area, here's your chance to have a say in what's provided.

Your Experiences

An important function of this column is to help readers to understand observations and theories they have made. From his home in Huddersfield, Chris Haigh R59142 has a view of B1, B4 and the approach/departure route to the east of Manchester. The boundary between lower and upper airspace is FL245. Chris was surprised by a B.747 apparently exercising a racetrack distorted by high-altitude winds. A triangle is also officially the pattern to fly when trying to draw attention to a radio failure but this is absolutely common about these days of secondary surveillance radar transponders that can transmit an emergency code. Whatever the explanation, I'm sure the relevant controller could see the flight on radar and was almost certainly instructing it to exhibit this apparently bizarre behaviour.

Chris' other question is just a 'quickie!' The callsign 'Quick' belongs to Quick Airways, a Dutch third-level operator flying Piper Navajos. The Berry Head v.h.o. looks similar to the picture in the October issue and Jeff Hellowell (Huddersfield) found that there was no barrier to stop him getting a close-up view when he was down in south Devon. For the record: Bristow's northward frequency of 123.4MHz may have been reduced pending re-equipping of the studio and future improvements.

Follow-Ups

I never did like abbreviations. For v.m.c. (visual meteorological conditions) for instance, many pilots insist on substituting 'air' in 'v.m.c.' and pronouncing it, 'air-may-see.' I come up with something like 'quickie!' The callsign 'Quick' belongs to Quick Airways, a Dutch third-level operator flying Piper Navajos. The Berry Head v.h.o. looks similar to the picture in the October issue and Jeff Hellowell (Huddersfield) found that there was no barrier to stop him getting a close-up view when he was down in south Devon. For the record: Bristow's northward frequency of 123.4MHz may have been reduced pending re-equipping of the studio and future improvements.

Boeing 737-377 VH-CZM (24302) of Ansett Australia at 'The Alice'.

Short Wave Magazine, March 1992

CONTINUED ON PAGE 55 —
S

everal new items of interest from AOR this month. By now I guess you will have seen advertisements for the AR1500 hand-held, but for those of you who haven’t I will include brief details. In many respects, the new receiver is similar to the AR2000, except that it is in a much smaller case, only 55mm wide, 43mm deep and 155mm long, which makes it only slightly larger than an Icom IC-R1. The other main selling feature is the inclusion of a b.f.o. circuit. This permits reception of s.s.b. signals that can be resolved by tuning the b.f.o. control in-between 5kHz receiver tuning steps. Operation of the receiver is very similar to that of the AR2000 with 300 memory channels available, 10 banks of 10, each one capable of storing the frequency and mode. The frequency coverage is also the same as the AR2000 with a lower limit of 50kHz and an upper limit of 1.36MHz.

The next item is a revised version of an existing model. The AR3000A incorporates several suggestions made by AR3000 owners, and resolves any minor criticisms that may have been made of the original model. Physically, the new receiver looks very similar, but major changes have been made to the software operating system and one or perhaps two modifications made to the p.l.l. circuitry. The result end is that the search and scan rate has now been increased to 50 increments per second. The revised software also provides lockout facilities for up to 100 individual frequencies in each of the four search bands as well as new programmable hold and pause facilities. In addition, if it is not possible to perform a microprocessor ‘reset’ from the front panel, which is a quick means of erasing all the memory contents should it be required.

The i.c.d. front panel display has been modified in order to provide a better viewing angle, the tuning knob is now free running and two buttons permit selection of 5 and 10 times the nominal tuning rate. The RS232 port now has a rear panel selector switch and only outputs data like signal strength readings on request. This should please anyone who has attempted to use an existing 3000 under computer control.

A new PC based control program is also under development and should be available soon. This is designed to operate with either the AR3000, AR300A or 2500 and will permit uploading and downloading of memory contents, automatic signal logging, several thousand memory channels and a listeners logbook which makes computer control worthwhile.

Further details are available from AOR (UK) Ltd, Room 2, Adam Bede High Tech Centre, Derby road, Wirksworth, Derby DE4 4BG or phone (0629) 825925.

AR3000 Reset

One or two readers have experienced problems with early versions of the AR3000 ‘locking up’ under certain conditions, usually when entering lockout frequencies or setting the alarm time. When this occurs it is not possible to do anything with the receiver other than open it up and press the internal reset button. This cures the problem, but only at the expense of losing all the memory contents. Later models have a revised microprocessor that is much less susceptible to such problems, and replacing an earlier version may be a solution if your receiver ‘locks up’ on a regular basis.

One simple modification I have made to my AR3000 is the provision for an external reset. The existing internal reset button connects a signal line down to 0V when it is pressed. All that is required for an external reset is an additional wire between the non-earth end of the reset switch (the end away from the chassis), and the unused centre pin of the rear panel DIN socket. To perform a reset all you then need to do is to momentarily short the centre pin of the socket to the chassis. If you are really keen you can fit a miniature centre pin of the rear panel DIN socket. To perform a reset all you then need to do is to momentarily short the centre pin of the socket to the chassis. If you are really keen you can fit a miniature

Scanning Hong Kong for 

Bargains

I was lucky enough to be able to visit Hong Kong recently. The City and the surrounding New Territories must be one of the most interesting places in the world to visit, particularly in respect of its geography, culture, religion, politics and its reputation for electronic consumer goods - which of course is the main reason for mentioning it in this column. Although the bulk of these are now produced outside of Hong Kong, in countries such as Korea and Taiwan there are still some bargains to be found. Most streets in the main shopping area of Kowloon have at least one shop selling photographic, radio, video and radio equipment. You have to be prepared to shop around and give yourself enough time to barter with the sales assistants, but as an example I could have obtained an AOR AR-3000 for £560, an AR-1000 or Yupiteru MVT-700 for £170 and an Icom IC-R1 for £190. However you have to pay VAT and import duty on any goods brought back to the UK and you may not get a valid warranty, so you have to consider these factors against any saving you may make.

Computer buffs may fare better, just outside the main Kowloon shopping area in a district called 'Sham Shui Po' there is the 'Golden Computer Shopping Arcade'. This contains several hundred small companies selling just about every aspect of computer related hardware and software (a fair amount of which is pirated). Many of the companies will actually construct a PC to your specification while you wait, but the competition is very fierce and you really need to know what you are doing before you part with any cash. Ready-built branded equipment was also available and I was offered a Sharp pocket PC-3000 for £480, which is around £30 less than the price the model is likely to sell for when it finally reaches the UK.

The level of radio activity in Hong Kong is very high, cellular phones are very popular and just about everyone seems to sport a display pager - or a cheap cigarette lighter disguised as a pager! One reason for this phenomenon is that the area occupied by Hong Kong is very small and the population density is very high. This makes it very economical to provide cellular coverage as very few base station sites are required. I was also amused to find that a ‘New CT2 public telephone service’ was just being launched with one of the first base stations commencing operation in a park in the heart of the island business district - I wonder if they got a good deal on the equipment? (See later). Digital communications systems were also much in evidence and is yet another indication that the wireless communications systems are heading, so start swotting up on data transmission systems if you want to keep ahead of the technology.

Car Rally Communications

J Layden of Nottinghamshire recently sent me some very intriguing information, which I am sure will be of interest to many readers. He had been monitoring teams competing in last years Lombard RAC Rally. The communications systems in use were much more sophisticated than in previous years when most activity had been confined to either the 86MHz p.m.r. band or 168MHz short term hire frequencies. This time several of the major competitors were using aircraft as flying repeater stations to relay communications between the drivers, tyre vans, mechanics and team managers. The use of an aircraft for this purpose greatly extended the operating range of the radio systems, many of which could clearly be heard in Nottinghamshire, even when the rally stages were being held in Wales and Cumbria. Judging from past experience it is likely that these frequencies will be used again during the next rally season, so it may be worthwhile while keeping an ear to the scanner when events are being staged.

Most of the activity seemed to be between 183.5-164MHz, which used to be allocated to BT for its ‘System 4’ Radiophone service. However this has now been superseded by cellular telephone networks which have made the equipment redundant. The old system used to transmit from base sta-
troller to co-ordinate things. Without the need for a ground con-

A new system - the Pan-European digital cellular network, GSM is starting a trial service in the Greater London area. This is destined to operate in the band 950-960MHz, with mobiles 45MHz lower in frequency between 1005-915MHz.

Low Band VHF

Several readers have written to me with details of their low band moni-

Airband 53 ➔

The next three deadlines (for topical information) are March 6, April 10 & May 8. All correspondence to 'Airband' at Saunders-Roe Nautical

Abbreviations

AIC Aeronautical Information Circular
B Boeing
CAA Civil Aviation Authority
Cat category
d.m.e. distance measuring equipment
FIR Flight Information Region
FL flight level
f.m. frequency modulation
ft feet
BASIL General Aviation Safety Information Leaflet
h.f. high frequency
i.s.s. instrument landing system
kHz kilohertz
LATCC London Air Traffic Control Centre
m metres
MGB Messerschmitt-Bolkow-Blohm
MHz megahertz
N north
n.d.b. non-directional beacon
Ops operations
Pan Am Pan American World Airways
SRN Saunders-Ros Nautical
v.f.r. visual flight rules
v.o.r. very high frequency omni-directional radio range
W west

Short Wave Magazine, March 1992
The weather satellite scene seems to have become almost predictable during recent months. We have the four American NOAs (on 137.50 and 137.62MHz) providing visible and infra-red pictures, and the Russian METEORs have continued to operate in a routine manner. Since late November when problems hit METEOR 3-5, we have been seeing reasonably good pictures from METEOR 3-4 (on 137.30MHz) which remains transmitting continuously.

The visible pictures still have some banding on them - strips of darker shading that revert to normal after a minute or so, possibly indicating problems with the camera aperture. However, the banding doesn't seem to correlate with the aperture bars that form part of the picture. Similarly METEORs 2-19 and 2-20 continue to alternate - when METEOR 2-19 (on 137.85MHz) reached the morning terminator (the change from day to night) on December 24 it was only just on over the UK for short periods. It was still on at Christmas Day in the morning at 0822UTC, but the next day we heard METEOR 2-20 (on 137.85MHz) during the afternoon, and 2-19 was off.

**METEOSAT 3**

Positioned over longitude 50° this geostationary satellite (using 1691MHz) continues to provide pictures of North and South America plus almost all of the Atlantic Ocean. It also transmits digital pictures. On some occasions it misses out transmissions which are then listed in the next administration message, like METEOSAT 4. You can also locate it using an azimuth setting of about 220° and its elevation is about 20° as seen from southern Britain.

**GOES 2**

This American geostationary satellite (on 1691MHz) continues to be heard from the UK while it drifts between azimuth 230 and 247°. Its elevation varies now from about 2 to some 20° but it is not stabilised and so its signals are difficult to receive here in Britain. Using some new equipment I have been able to at least identify that it is operating.

**OKEAN**

I have not had any reports of anyone receiving signals from either OKEAN 2 or 3 (on 137.40MHz) for some months. For several days I left a cassette recorder operated by a receiver to record any transmissions but no data was heard. This is very unusual because OKEAN craft are invariably used to obtain radar and microwave images of the ice that forms near Norway during the winter. These pictures are used to guide shipping around the icebergs.

**UsOSAT-5**

Last July the microsat UsOSAT-5 was launched by Ariane rocket alongside the European Earth Resources Satellite (ERS-1). Controlled by the University of Surrey (UoS) this satellite carries a number of separate experiments including space radiation environment monitors, a Health-Net Communications Transponder, a solar cell technology experiment, and an Earth Imaging System. This latter consists of an experimental c.d.d. camera which, with the two integral transponders, is producing imagery with a resolution of two kilometres! This is almost as high as the high resolution pictures obtained by the NOAA satellites!

Professor Martin Sweeting (G3YJO) has kindly sent me details of the satellite's experiments, and two photographs taken by UsOSAT-5. Fig 1 shows a close-up of the Nile Delta and surrounding countries. The photograph is of excellent quality and demonstrates the skill of several groups; the hardware design team have produced a satellite with a fully integrated system capable of producing pictures of the highest quality; the operations team at UsOS have proved their capability to use the satellite to routinely collect over 150 high quality images; and from experience, I know that there will be others in the background doing valuable work on systems development.

During the late seventies and early eighties I worked in the UK 5 and 6 Control Centres and then the IRAS Centre at Rutherford Appleton Laboratory near Didcot, and can fully appreciate the work that these teams are doing. Professor Sweeting tells me that images are now being transmitted routinely in the Amateur Satellite Service on 435.12MHz at 9600bps f.s.k. I will include another picture from UsOSAT-5 next month - one showing the iceberg that detached itself from the south polar ice sheet. Perhaps I will be able to visit the UsOS Operations Centre during 1992.

**Letters**

A number of correspondents continue to refer to paging interference on their WXSAT receivers. Geoffrey Chance of Redruth re-assembled his ‘tunnisite’ antenna only to find that the satellite signals were swamped by the paging transmitters. Geoffrey made some enquiries and it appears that he may be just 500 metres from a transmitter! Before buying a new receiver he examined the circuit and tried exchanging the 10.7MHz ceramic filter, which has a bandwidth of about 280kHz, for a 30kHz bandwidth crystal filter. This improved the performance considerably and so Geoffrey has tried further modifications, finally using two 50kHz ceramic filters in front of the l.f. transistor and making other changes. This seems to have worked and Geoffrey sent me a print-out of a NOAA 11 pass but unfortunately its contrast was a little low for good reproduction.

**Mount Étna**

Peter de Jong suffered from considerable paging interference particularly on 137.30MHz but has overcome it by using a Jaybeam 2XT137C crossed dipole, followed by a 10dB amplifier. Peter comments that he is now getting great results and apparently saw Mount Étna erupt! This volcano is easily seen on most easterly NOAA passes and I sometimes notice it appearing warm in the infra-red images, but I have never seen any activity.

**Shuttle Keplers**

Doris & Ray Williams wrote from Grantham to say that they are keen short wave listeners and wanted a copy of the NASA 2-line Kepler elements for the Shuttle flights that I mentioned a couple of months ago. In fact I was almost swamped with requests for those elements! They remain available for the cost of an s.a.e. Ron Scrimgeour of Dundee uses a Maritec WXSAT decoder and a 'BBC Plus' computer, but although he has good results with the American NOAA satellites he has not produced synchronised METEOR pictures. I'm not familiar with Maritec's decoder but after looking at their advertisements I am sure that there will be a facility to provide a reference signal to synchronise METEOR pictures. John Henry of Nottingham started his short wave listening when he was just 14, and now, in retirement, he has set up some receiving equipment to tune into the satellites, with some success.

**Atari ST**

D Gell of Nottingham has also been a s.w.l. for a very long time and set up a comprehensive WXSAT receiving station. He uses the RIG (Remote Imaging Group) dish feeding a Dartcom...
ICOM's stand at the London Amateur Radio Show at Pickett's Lock, Edmonton will in effect be one large retail hamstore where you will be able to buy the ICOM rig of your choice. If you have not yet been able to visit either of our new Hamstores in Kent or Birmingham then a trip to Pickett's Lock is just what the doctor ordered.

On show will be ICOM's full range of Ham equipment, 'hands-on' demonstration literature and friendly advice will always be on-tap on ICOM's Stand S, Red Hall.

Here are just a few examples of latest models available at the show...

1. IC-2410E 144/430MHz Dual Band FM Mobile £625.
2. IC-R7100 25MHz/2GHz Wide Band Receiver £1120.
3. IC-P2ET 144MHz FM Handheld Transceiver £275.
4. IC-P2E 144MHz FM Handheld Transceiver £259.
5. IC-2SRE 144MHz FM Handheld Transceiver/Wide Band Receiver £425.

HERNE BAY

Unit 8, Herne Bay West Industrial Estate, Sea Street, Herne Bay, Kent CT6 8LD
Telephone: (0227) 741555, Fax: (0227) 741742

BIRMINGHAM

International House, 963 Wolverhampton Rd. Oldbury, West Midlands B69 4RJ
Telephone: 021 552 0073, Fax: 021 552 0051
Do you need a scanner or receiver?  
Do you need amateur radio equipment?

"Kenwood, Icom, Yaesu, Alinco, Yupiter, Aor etc"  
But most of all do you need equipment serviced?  
We have up to date test equipment, fully equipped workshop for all types of radio equipment.


TEL: OR FAX: 0603 788281

Prop: P. Gunther G4XBT, 95 Colindeep Lane, Sprowston, Norwich, Norfolk NR7 8E0  
VAT No. 5951239 21
Bob kindly sent me a copy of the transmission and it clearly shows the problem.

**Bulletin Boards**

I am receiving details from a number of people who have set up bulletin boards to provide up-to-date information about satellites and Kepler elements. Barry Spencer set up the Prometheus system back in 1995, primarily for astronomers, but it has grown and now includes radio astronomy, rockets and Kepler elements - courtesy AMSAT-UK. To use the system you need a terminal/ micro running the Viewdata emulation and, of course, a modem. The number is (081300) 7177. RIG and Timestep Weather Systems have started a BBS which contains the very latest Kepler elements for the weather satellites. David Cawley tells me that some of these elements may be just 18 hours old! Access will be limited for 15 minutes and is free, and can be reached on (0446) 82902.

**Down-converters**

The conventional way to receive METEOSAT signals, which are broadcast in the SHF band at 1691MHz (and also 1694.5MHz for METEOR 4), is to collect the signal using either a dish or a yagi. Most users incorporate a good quality pre-amp immediately after the antenna and this will invariably improve the signal. The next stage is a matter of preference and pocket! Until recently the most common method of signal processing was to use a down-converter to convert the METEOSAT 1691MHz signal to 137.50MHz and then feed this into a normal weather satellite receiver. This method has the disadvantage of stopping the normal use of the receiver for scanning for polar satellites. Additionally, the receiver characteristics are not optimised for METEOSAT. Good quality WXSAT receivers have extra bandwidth to allow for Doppler shift in the signal from the moving satellites.

METEOSAT is of course, geostationary and so a rather smaller advantage of stopping the normal use of the receiver for scanning for polar satellites. Additionally, the receiver characteristics are not optimised for METEOSAT. Good quality WXSAT receivers have extra bandwidth to allow for Doppler shift in the signal from the moving satellites. METEOSAT IS is of course, geostationary and so a rather smaller bandwidth can be used, which also improves the signal-to-noise ratio, giving us better picture. In recent years the improvement in component performance has enabled the production of METEOSAT receivers - units that can directly extract the a.p.t. information from the 1691MHz signal. These have the great advantage of combining the actions of both a down-converter and a receiver in one unit.

Recently my Microwave Modules down-converter failed after having a period of increasingly bad operation, and I had been wondering about repair or replacement - the unit was purchased several years ago. I wrote fairly regularly to various manufacturers for information on new products for possible mention in this column and I became aware that Microwave Modules no longer cater for the amateur market. Meanwhile during investigations into the high resolution picture transmissions (h.r.p.t.) equipment market I received a letter from Peter Hayes who has developed h.r.p.t. hardware and he kindly offered to look at my down-converter. After repairing it for me he has kindly agreed to offer to check out similar pieces of equipment for SWM readers. Costing repairs is a difficult job but Peter can be contacted by writing to him at Seahaze Kennels, Spring Garden Farm, Dunure Road, Ayr KA7 4LA. Please enclose a s.a.e. and a description of the equipment and fault and Peter will respond. Please do not forward equipment until you have discussed the matter with Peter. I had expected to have to write off this down-converter and so I am very grateful for Peter’s help.

**Frequencies**

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>Description</th>
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<tbody>
<tr>
<td>137.50 MHz</td>
<td>METEOSAT</td>
</tr>
<tr>
<td>137.62 MHz</td>
<td>NOAAS 9, 11</td>
</tr>
<tr>
<td>137.50 MHz</td>
<td>NOAAS 10, 12</td>
</tr>
<tr>
<td>137.2-137.5 MHz</td>
<td>METEROR 2-19</td>
</tr>
<tr>
<td>137.5-137.8 MHz</td>
<td>METEROR 3-4</td>
</tr>
<tr>
<td>137.5 MHz</td>
<td>OKEAN 3</td>
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</tbody>
</table>

**Instant Track**

As mentioned some months ago, this satellite predictions program has been marketed by both AMSAT-UK and Timestep Weather Systems. I have been asked by AMSAT-UK to print the following statement: Timestep and AMSAT-UK jointly refer to the article which appeared under the heading ‘Instanttrack Software’ in the August 1991 issue of Oscar News. As a result of a breakdown in communications, Timestep did not receive written confirmation from Franklin Antonio, the author, to sell under licence, although a licence has now been granted and all royalties have been paid (16 October 1991). AMSAT-UK acknowledge that, although acting in good faith from information received, the other allegations concerning David Cawley and Timestep Electronics are incorrect. In view of this statement, both parties agree to take no further action.

**Abbreviations**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>a.p.t.</td>
<td>automatic picture transmission</td>
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<tr>
<td>ADX</td>
<td>Acquisition of signal</td>
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<tr>
<td>AVHRR</td>
<td>Advanced Very High Resolution Radiometer</td>
</tr>
<tr>
<td>BBS</td>
<td>Bulletin board service</td>
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<tr>
<td>CGA</td>
<td>Colour Graphics Adapter</td>
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<tr>
<td>DOS</td>
<td>Disc Operating System</td>
</tr>
<tr>
<td>EMS</td>
<td>Expanded (or extended) memory</td>
</tr>
<tr>
<td>ESA</td>
<td>European Space Agency</td>
</tr>
<tr>
<td>GDOES</td>
<td>Geostationary Operational Environmental Satellite</td>
</tr>
<tr>
<td>GOMS</td>
<td>Geostationary Operational Meteorological Satellite</td>
</tr>
<tr>
<td>h.r.p.t.</td>
<td>high resolution picture transmission</td>
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<tr>
<td>LOS</td>
<td>Loss of signal</td>
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<tr>
<td>NASA</td>
<td>National Aeronautics and Space Administration</td>
</tr>
<tr>
<td>PDUS</td>
<td>Primary Data User Station</td>
</tr>
<tr>
<td>VGA</td>
<td>Versatile Graphics Array</td>
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</table>
First this month is Colin Bates of Yeovil. He has been a regular contributor for some time and writes this time with one or two problems. The first concerns the apparent lack of activity between 4 and 7 MHz. Colin has tried many different antenna systems including a 50m long wire and currently uses an active antenna. The fact that he's experimented with so many antenna systems implies that he must have a more serious problem. The problem is most likely tied-up with his location as he lives in a small valley that's surrounded by hills. Just to make matters worse, the electricity supply is fed using overhead cables. Colin gives another clue in the fact that his portable radio fades as he moves towards it. This suggests that the signal strengths in his area are very low indeed.

I'm afraid there's little I can offer in a way of help, other than suggest you move house! From the point of view of antennas the best results ought to come from the longest wire you can manage. If any other readers have managed to overcome similar difficulties perhaps you'd write and let me know the secret.

Chris Norfolk writes from Hull to tell me of a new frequency for the press station ANSA Rome. His latest log shows this station is active on 19.592 MHz using 400Hz shift and 50 baud. Chris hasn't had time to log the complete broadcast schedule but it's usually active at 0900 UTC with a closedown at 1500 UTC. If anyone has any further details I'll be pleased to hear from you.

Following my recent mention of Infonova, John Dimond of South Africa reports a new TASS variant. The new heading is TURKVENINFORM-TASS and was received on 18.0475 MHz at 1355 UTC on Christmas Eve. I don't have any more details, but would be pleased to hear about any TASS variants. John is also asking for some help in identifying a FAX transmission. The station in question operates on 12.747 MHz and is thought to be NWC. Can anyone help with more details? If so just drop me a line and I'll pass the information on to John.

Henry Brooks from Whitton uses a Yaesu FRG-8800 and an ERA Micro-reader for his utility listening and has sent me a very comprehensive log. One of his favourite stations is the Yugoslavian Ministry of Foreign Affairs, which uses the callsign DFZG. Regular loggings have been made at 14.805 UTC using 75 baud and 400Hz shift. The station transmits a variety of languages on the following frequencies: 5.312, 11.139, 13.399, 14.674, 14.912, 16.302, 18.055, 20.132, 21.858, 22.988 & 24.190 MHz. Henry finishes his letter with a question - does anyone know of any c.w. or RTTY transmissions from Antarctica? Please write to me if you have any details.

Low Cost RTTY On A PC

Ideas for cheap decoding systems are always in demand, so this month I've details of how one listener tackled the problem. Alan Gifford of Crowmarsh Gifford wrote with an account of how he put his station together. The only item of ready-built equipment is his Yaesu FRG-8800 hf. receiver. Let's start with the computer which is an 80286 AT running at 12MHz. Rather than buy a ready-built unit, Alan's machine is home-built from the main sub-assemblies that are available in the computer magazines. If you'd like some guidance on this, take a look at the July 1991 issue of SWM. This was a special issue that gave extensive coverage to personal computers. Alan realises that you can easily save up to 50 percent by building your own computer.

With the computer sorted the next step was to find an appropriate terminal unit to convert the audio RTTY tones into a digital signal that can be handled by the computer. After much thought the popular Maplin demodulator and RS-232 converter was chosen. The final link in the chain was a software decoding package to run on the PC. The obvious choice here was to use one of the excellent value programs from the Public Domain Software Library in Crowborough.

For anyone who wants to really experiment with terminal units the public domain disk contains text files with circuit diagrams for terminal units and associated accessories. Having completed the exercise Alan reports that the results are very good indeed. Having seen some simple print-outs, his system is certainly producing clean copy. For those who'd like to follow Alan's footsteps here are a few details:

Hardware: Maplin Electronics, PO Box 3, Rayleigh, Essex SS6 2BR. RTTY FSK Demodulator Kit, Order Code LM95D, £13.95; RS232/TTL Converter Kit, Order Code KL17T, £9.75.

My thanks to Alan for taking the trouble to share his experiences.

Soviet Maritime Book

This month I've received a couple of interesting books from Universal Radio Research in Reynoldsburg, Ohio. The one I'll mention this month is entitled USSR Merchant Ship List and is just that! If you read my feature on tracking ships from RTTY weather transmissions you will see that this ship list is potentially very useful. The book comprises some seventy-two AP pages bound in a soft back. The introductory chapters contain some concise explanations of how the list is laid out with some useful tips on how to get the best out of it. There are also some good examples of typical ship messages as well as useful translatior tables. These tables are used when decoding third shift cyrillic transmissions that have been received on a conventional decoder.

Moving on to the main list, this is split into three main formats. Each of these lists contains the same information, it's just the order that changes. The three formats are: Callsign, Ship name, Serial number. The detail contained in these lists was very comprehensive and included: callsign, vessel name, serial number, ship code, notes, ITU List entry and date of logging. The final chapter gives a list of what is called inactive ships. These are effectively ships that haven't been heard for five years or more. Those who spend time monitoring the Russian will no doubt find this book very useful. The book can be obtained from Universal Radio, 1280 Aida Drive, Reynoldsburg, Ohio 43068, USA. Tel: 010 800 431 3939.

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My thanks to Alan for taking the trouble to share his experiences.
Sit down, relax, get comfortable and prepare yourself for a... **SHOCK!**

Here's something to fill the hearts of rally organisers with... **HORROR!**

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**YES**, each day one lucky visitor will walk away with a brand new rig absolutely... **FREE!**

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**Picketts Lock Centre, Picketts Lock Lane, Edmonton, London, N9.**

**Lee Valley Leisure Park**

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The LONDON AMATEUR RADIO & COMPUTER SHOW is presented by RADIOSPORT Ltd in association with Southgate Amateur Radio Club.
Direction:  
0 = Stationary.  
1 = NE.  
2 = E.  
3 = SE.  
4 = S.  
5 = SW.  
6 = W.  
7 = NW.  
8 = N.  
9 = Not reported.

Speed:  
0 = Stationary.  
1 = 1-5 knots.  
2 = 6-10 knots.  
3 = 11-15 knots.  
4 = 16-20 knots.  
5 = 21-25 knots.  
6 = 26-30 knots.  
7 = 31-35 knots.  
8 = 36-40 knots.  
9 = Over 40 knots.  
/ = Not reported.

With a standard transmission format such as this it's a comparatively simple task to write a computer program to handle the decoding. From the practical point of view, Ed recommends that you filter out all the foreign registered ships and concentrate on UK ships in coastal waters. The next refinement would be to convert the ships callsign to the ships name. Unfortunately it is just so simple because there are so many ships. The only publication I know of that lists ship names against callsign is the ITU List of Ship Stations.  

However, if you know of another, cheaper, source please write and let me know. To help you capture reports from Sea stations, I've checked the Bracknell schedules and extracted all the SHIP reports. The times to monitor are as follows: 0340-0425, 0645-0655, 0800-0805, 1200-1205, 1220-1240, 1555-1630, 1845-1900.  

The times to monitor are: 0200, 0800 and 2000UTC for c.w. 0235, 0825 and 2035UTC for FEC.  

My thanks to Day for supplying this information.

Military Routing Codes  
Following my recent mention of the callsign/routing codes used by the French military ARQ/TDM stations, Jim of Wellington has written with some information. These routing indicators are derived from the ACP127 series of worldwide routing indicators. These indicators were designed to be used by manual and automatic tape relay centres. The codes being used to indicate the important aspects of the message routing. For those of you who monitor these transmissions, here's a summary of the code's structure.

1st letter:  
R = Strategic routing indicator.  
D = Reserve strategic routing indicator.  
U = Tactical (theatre) routing indicator.

2nd letter = Nationality.  
A = Australia.  
B = British.  
C = Canada.  
D = Denmark.  
E = Spain.  
F = France.  
G = Germany.  
H = USA.  
I = Italy.  
J = Argentina.  
K = Greece.  
L = Luxembourg.  
M = SEATO.  
N = Netherlands.  
O = Unallocated.  
P = Portugal.  
Q = Belgium.  
R = Turkey.  
S = S. Africa.  
T = N.W. Africa.  
U = USA.  
V = Unallocated.  
X = N.A.  
Z = New Zealand.

3rd Letter = Geographic area.  
A = East Asia.  
C = Central N. America.  
D = UK & Iceland.  
E = Eastern N. America.  
F = Continental Europe.  
H = Central S. Pacific.  
K = Alaska, Aleutians.  
L = Caribbean, S. America.  
M = S.E. Asia.  
Q = Middle east.  
S = Western Asia.  
T = Liberia, N.W. Africa.  
V = S. Africa.  
W = Western N. America.  
Y = Australia.

4th letter = Service.  
A - H = Army.  
I - O = Navy.  
P - V = Air Force.  
X = NATO.  
Y = MoD, etc.

To illustrate how the routing code operates there's nothing like a few examples.  
RFF = Strategic routing indicator for the French Army in continental Europe.  
RFFF = Strategic routing indicator for the French Army in continental Europe.  
RFFW = MoD in Paris.  
RBDP = RAF primary UK relay.  
RBFM = RAF secondary relay.  
CF = Nail benders (technicians!)  
CR = Crypto.  
CU = Commercial carrier transfer office.  
CX = Routing information office.  

cx, MO = Message office.

In addition to the routing codes you may find three letter suffixes added to represent the individual circuits. Jim reports that the exact format for these is quite arbitrary with a typical example being WFA WFB WFC. Those of you who monitor the French military transmissions will note that the phrase 'Controle de voie' is sent as a channel test. If you make a note of the routing code on this transmission you will see that they're self addressed. This ensures that the message is always returned so proving both the transmit and receive directions of the link. If you'd like to find out more about routing codes and message formats the Kingershus 'Guide to Utility Stations' can help. The chapters to read are: 7 - Without Callsign and 22 - Standard Telegram Format Regulations.

WLO Frequency Changes

Day Watson of Clevedon has just sent me the latest amendments for this popular maritime station. The first change is that the following frequency pairs have been permanently abandoned:
ITU Chan TX RX  
405 4.1745 4.2125  
805 8.3785 8.4185  
1250 12.5015 12.684  

For those who would like to catch the full schedule it's sent after the traffic lists at the following times: 0200, 0800 and 2000UTC for c.w. 0235, 0825 and 2035UTC for FEC.  

My thanks to Day for supplying this information.

Frequency List

This month's list has been compiled from logs supplied by Day Watson, Henry Brooks and Ted Rickett. I've kept to the usual format of: frequency, mode, speed, shift, callsign, time and notes.  

129 kHz, F7B/TAS, 200, 100, DGF48, 0621, German stock  
3.332MHz, AUTOSPEC, 68.5, 85, -,-, Dil rig Ocean Nomad  
3.357MHz, FAX, 120, 576, NAM, 0951, USN Norfolk  
4.214MHz, SITOR, 100, 170, FNBU, 1755, MV Port Bara  
4.215MHz, SITOR, 100, 170, 0551, TASS Moscow  
5.4MHz, RTTY, 50, 425, YOG37, 1627, Bucharest Meteo  
6.98MHz, c.w., -, -,-, MKL, 1527, RAF Meteo  
6.685MHz, c.w., -,-, RFNV, 1411, Moscow Air  
7.5146MHz, c.w., -,-, FDGD26, 1843, French Air Force  
9.028MHz, c.w., -,-, RMP, 1745, Kaliningrad Naval  
9.925MHz, FAX, 120, 576, KVM70, 0543, Honolulu Met  
9.97MHz, FAX, 120, 576, JMHH3, 0606, Tokyo Met  
10.63MHz, RTTY, 50, 425, ULV, 1330, Arctic Meteo, Moscow  
11.425MHz, RTTY, 75, 425, -, -,-, Shannon Air  
11.09MHz, FAX, 120, 576, KVM70, 0553, Honolulu Met  
12.315MHz, RTTY, 50, 425, RVW57, 1505, TASS Moscow  
13.7MHz, RTTY, 50, 425, SVV, 1705, Burundi Air  
14.356MHz, c.w., -,-, R1W, 1037, Khiva Naval  
14.764MHz, RTTY, 75, 425, AVW, 1625, Gulf News Agency  
18.164MHz, RTTY, 50, 425, STK, 1315, Khartoum  
18.592MHz, RTTY, 50, 425, -, -,-, ANSA Rome  
20.826MHz, RTTY, 50, 425, -,-, RHF, 1215, TASS Moscow  
22.825MHz, c.w., -,-, IAR76, 1247, ANSA Romefigures  
23.3MHz, RTTY, 50, 425, HGX, 1303, Hungarian embassy traffic
Short Wave Magazine, March 1992

T o allow for seasonal changes in propagation, some s.w. broadcasters alter schedules up to four times a year (March, May, September & November). So, some of the details here may be inapplicable soon.

British Summer Time (BST) starts on March 29, being one hour ahead of Greenwich Mean Time (GMT). However, LM&TS times will still be quoted in Universal Time Co-ordinated (UTC), which for all practical purposes is the same as GMT. Please state UTC in your contributions for LM&TS.

### Long Wave Reports

Note: I.w. & m.w. frequencies in kHz; s.w. in MHz; Time in GMT. Please state UTC in your contributions for LM&TS. Details here may be inapplicable soon.

#### Short Wave Reports

- Montala, their oldest radio station, Appar-1/2hrlater)34433 at 1233 by David Edwardson in Wallsend; 153 are 52222.
- Listening at 2330 in Congleton, Tim Bucknall heard the Voice of the UAE in Abu Dhabi at 25.650 kHz (March, May, September & November). So, some of the details here may be inapplicable soon.
- Broadcasters still taking advantage of conditions in the 25MHz (11m) band include the Voice of the UAE in Abu Dhabi 25.650 kHz (Ar to 0900-1100) 35555 at 1000 by Don Philips in Bridlington; R/Norwegian Int, Østergøttland 1364 kHz at 1300 by Don Philips in Bridlington; R/Norwegian Int, Østergøttland 1364 kHz at 1300 by Don Philips in Bridlington.

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<th>Power</th>
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Broadcasters still taking advantage of conditions in the 25MHz (11m) band include the Voice of the UAE in Abu Dhabi 25.650 kHz (Ar to 0900-1100) 35555 at 1000 by Don Philips in Bridlington; R/Norwegian Int, Østergøttland 1364 kHz at 1300 by Don Philips in Bridlington; R/Norwegian Int, Østergøttland 1364 kHz at 1300 by Don Philips in Bridlington.
All other entries were logged during daylight or at dawn/dusk.

1200-1355) RFI via Issoudun 25.820 (Fr to Asia, 0700-1530) S10444 at 0700 in Wallsend; Carnarvon (Eng to S.Asia, M.East 1600-1159) S10444 at 0700 in Edinburgh. In contrast to previous months, three were heard by Alan Roberts in Quebec; RCI rated the broadcast on 17.770 (Eng to Africa, 1600-2200) S10444 at 1600 in Rowley Regis. 

Sources C) diu 711
Owing to severe adjacent channel interference R.New Zealand’s 15MHz (19m) signals to Pacific areas have been inaudible in the UK until 1830 or later. In Hemel Hempstead, Peter Perkins logged their 100KW signal on 15.12 (Eng 1800-2200, Sun to Fri) as 23342 at 1830. Good reception of R.Australia’s Shepparton broadcast to Pacific areas on 15.240 (Eng 2000-0030) has been noted most mornings by Stewart Russell in Forfar. Their Darwin broadcast to C.Asia on 15.70 (Chin. Eng 0900-1400, 2200-7) were 44432 at 112 and C.Over in Sudam and 2233 at 217 in Sunderland.

Many 15MHz programmes are beamed to Europe during the day. R.Finland via Pete, (Ger 1100-1130) SIO555 at 1125 in Guildford; WWCR Nashville 15.690 (Eng 1200-0000) 44332 at 1254 in Oxford; UAE R.Dubai 15.435 (Eng 1300-1400, also to 1800-2000) 33383 in Swavimba; RCI via Sines 15.325 (Fr, Eng 1500-1600) 43323 at 1532 by Ciaran Fitzsimons in Co.Louis; RBN Brazaia, Brazil 15.265 (Eng, Ger 1800-2100) heard at 1800 in Cheltenham; WNBR Red Lion 15.295 (Eng 1800-2000, also to N Africa) SIO323 at 1812 in Macclesfield; WSBY Cypress Creek 15.695 (Eng 1800-2200) SIO437 at 1940 by AIll Gray in SW.Birmingham; HCJB, Ecuador 15.270 (Eng 1800-2000) SIO44 at 1958 in Edinburgh; WYFR Okeechobee 15.566 (Eng 0000-0700) heard at 2100 in Bridlington; WWRD New Or.leans 15.420 (Eng 1800-2000, also to USA) SIO213 at 2110 in N.Birmingham; K.Rorea, Seoul 15.575 (Eng 2000-2130) S5555 at 2113 in Walsend.

Some to other areas were also heard on W155: Tahi 15.75 (Fr, Tah to SE Pacific 1600-0030) SIO555 at 0030 by Simon Hamer in New Radnor, DW via Wartachtal 15.185 (Eng to Wfrica 0900-0950) 54333 at 0950 in New York; VOA Alighir 15.650 (Eng to 1000-1100) SIO144 at 1015 in Herf;ord; R.Afghanistan, Kabul 15.140 (Eng to Asia 0930-1030) SIO44 at 1015 in Sheffield; RTL Luxembourg 15.300 (Eng, Fr to E USA 24hrs) SIO212 at 1105 in Rotterdam; R.Tashkent, Ubek 15.470 (Eng, Ur, Hi to S Asia 1200-1500) 42324 at 1230 in Bridgewater; RSA, Africa 15.160 (Eng to Africa 1600-1900) 5444 at 1712 in Tshwane; also 15.365 (Fr to Wfrica 1800-2000) 35554 at 1940 by Sergei Olejak in Kalush, Ukraine; R.Latvia, Liepaja 15.365 (Eng, Fr to N Europe) 42324 at 1712 in Tshwane.

**Tropical Bands**

<table>
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<th>Freq</th>
<th>Station</th>
<th>Country</th>
<th>UTC</th>
<th>DXer</th>
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<td>ABC Alice Springs</td>
<td>Australia</td>
<td>1915</td>
<td>N.P.O.T</td>
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<tr>
<td>2.410</td>
<td>ABC Tamworth</td>
<td>Australia</td>
<td>1810</td>
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<td>2.415</td>
<td>ABC Townsville</td>
<td>Australia</td>
<td>1805</td>
<td></td>
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<td>2.455</td>
<td>ABC Toowoomba</td>
<td>Australia</td>
<td>1830</td>
<td></td>
</tr>
<tr>
<td>3.250</td>
<td>BBC Bengal</td>
<td>India</td>
<td>1625</td>
<td></td>
</tr>
<tr>
<td>3.255</td>
<td>BBC Bhubaneswar</td>
<td>India</td>
<td>1602</td>
<td>L.P.</td>
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<tr>
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<td>India</td>
<td>1400</td>
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</tr>
<tr>
<td>4.485</td>
<td>BBC Kochi</td>
<td>India</td>
<td>1210</td>
<td>F.P.</td>
</tr>
<tr>
<td>5.150</td>
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<td>India</td>
<td>1100</td>
<td></td>
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<td>BBC Mumbai</td>
<td>India</td>
<td>1050</td>
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</table>

**Others**


Short Wave Magazine, March 1992
are aimed at European listeners. A few
stem from RTV Sfax, Tunisia 11.550 (Ar
7085-2000 0955 at 0700 in Vilnius;
R.Portugal, S.Gabriel 11.740 (Eng 2000-
2030) SI044 at 2000 in SW Birmingham;
R.Damascus, Syria 12.085 (Eng 2005-
2051) heard in Brindlenton, Voice of Israel; Jerusalem
11.605 (Eng 2000-2030) 54334 at 2011 in
Swanwick; VOVA via Tanger 11.710 (Eng
1900-2200) SI033 at 2030 in N.Bristol;
AIr via Aligarh 11.620 (HL, Eng 1845-
2230) SI044 at 2046 in Edinburgh;
R.Beijing, China 11.500 (Eng 2000-2200)
54444 at 2140 in Norwich; R.Japan via
Miyabo 11.735 (Eng 2900-0000) SI0444
at 2300 in Sheffield.
Among those to other areas were
KFBS, Marpi 11.650 (Rus to N.Asia,
5.10-1400) 44333 at 1100 in KFBS, Marpi 11.650 (Eng to N.Asia,
2230) SI0444 at 2046 in Edinburgh;
R.Sweden via Horby 11.705 (Eng, Sp,
0515-0825) SI0222 at 0600 in Co.Down; Voice
of the Mediterranean, Malta 11.925 (Eng,
24hrs) SI044 at 1100 in Voice of the
Mediterranean; Armenia 11.880 (Eng
To Africa 1600-1800) 43434 at 1650 in
Bridgwater; R.Iran via Varma 11.785
(Eng, Fr to S.E.See Asia 1400-1700)
SI044 at 1505 in Rowley Regis; RSAfghanistan, S.Birmingham,
11.765 (Eng, Fr to S.E.Asia 1400-1700)
SI044 at 1750 in Macclesfield, R.Australia via
Carnarvon 12.00 (Eng to S.E.Asia 1340-
2110) 24332 at 2000 in S.Bristol;
R.France via da Amazonia, Brasilia
11.780 (Porto-0800-2230) 24322 at 2055
in Hemel Hempstead; King of Hope,
Leonard 11.530 (Eng to M.East 2000-
2200) 43434 at 2120 in Morden;
R.Amghuener, Brazil 11.830 (Porto700-
0400) SI0444 at 2120 by John Stevens
in Largs; R.Globo, Brazil 11.805 (Port
0800-2200) 54334 at 2011 in S.Bristol;
R.Vilnius, Lithuania 9.710 (Eng 0000-?
2245-0100) SI0333 at 2300 in Edinburgh;
R.Tirana, Lushnje 9.480 (Eng 1830-1900)
34233 at 2300 in Bourne; ISBS, Iceland
9.265 (Eng to Aust, Pacific 0830-0900)
43433 at 1930 in Lexington; SRI via
Schwarzenburg 9.560 (Eng to Aust,
Pacific 0730-1100) 54344 at 0745 in
Norwich; SHR via Schwarzenburg 9.580
(Eng, Toc to S.Asia 0800-1300) was
heard in Congleton; R.Palonia, War-
saw 5.340 (Eng 1800-1900) 54343 at
1620 in Rowley Regis; VOVA via Kovel
9.700 (Eng 1500-2100, also to M.East,
Africa) SI054 at 1651 in Rayleigh;
R.Tirana, Lushnje 5.840 (Eng 1800-1900)
43333 at 1830 in Morden, W.Orleans,
7.022 (Eng 1930-2030) heard in
Brindlenton, Voice of Greece, Athens
4.925 (Eng, Fr 1900-1950 SI0555
at 1930 in Edinburgh; Voice of Vietnam,
Hanoi 9.840 (Eng 2010-?) SI0433 at
2044 in Swanwick; R.Cairo, Egypt 9.000
(Eng 2115-2245) 44333 at 2118 in Brenchley;
R.Beijing, China 9.520 (Eng 2000-
2200) SI0433 at 2235 in Wallsend;
R.Pakistan 7.892 (Eng 2200-2330) 53553
at 2252 in Bridgewater; R.Sofia, Bulgaria
9.700 (Eng 2245-0010) SI044 at 2333 in
Rothemund; R.Vilnius, Lithuania 5.110
(Eng 0000-?) SI0444 at 0004 in Gibraltar.
Some for other areas came from
DW/ia Antigua 8.670 (Eng to USA
0500-0555) 43433 at 0445 in Co.Down;
Voice of Europe. Some came from
R.Prague, Czech 7.345 (1930-2030)
at 1930 in Hemel Hempstead; R.Portugal,
Ukraine.
Alf Gray, Birmingham: Coder CR70 + PR30 + a.t.u. + Ex -Army whip.
Jim Willett, Grimsby: Int.Marine Radio R.700M + r.w.
Lee Williams, Birmingham: Sony ICF-2001 D + 9.5m wire or Howes AA2.
Bryan Kimber, Hereford: Zenith R7000 or Realistic SX190 + 20m wire.
David Crookes, Plymouth: Sony SW7600 + built-in whip.
George Millmore, Wootton, IOW: Tatung TMR 7602 or Racal RA17L + v.l.f.
Lee Williams, Birmingham: Sony ICF-2001 D + 7.5m wire or Howes AA2.
Sid Morris, Rowley Regis: Kenwood R5000 + 31m wire or Nevada MS 1000 + whip.
Lee Williams, Birmingham: Sony ICF-2001 D + 7.5m wire or Howes AA2.
**Long Wave Maritime Beacon Listening**

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

---

**An impressive list for the chart was compiled by Steve Cann in Southampton. At least twenty of the beacons noted in his previous list could not be heard, but he was delighted to receive several new ones. All were logged between 0830-1200 or 1000-2100UTC with a Lowe HF-225 receiver in the c.w. mode plus Dee Comm antenna tuning unit (f.a.t.) and a GSVR amplifier.**

Up in Largs, John Stevens has found that he can only receive the seven beacons noted in the chart. He says, “Sometimes after dark I hear faint signals which I try to identify, but cannot do so because of interference.”

**Taffe Rees** (Worcester Park) has also found that most of the beacons in his list can be heard regularly, but the signals from the Casquets Lighthouse, Chancel Islands (CS) on 298.8kHz and the long range Consul beacon (LEC) on 316kHz have only been heard on one occasion.

Down in Torpoint, Pat Manning tuned the band from time to time and noted all the usual beacons, however during the night of January 9th he picked up the signal NO on 294kHz, which stemmed from the Cabo de la Noa lighthouse on the Mediterranean coast of Spain! He says, “The weather was cold, very clear, strong winds with a high over the country. It seems that something unusual pops up to give fresh inspiration when all seems flat.”

In Bridgewater, Darren Beasley did most of his listening during the mornings and evenings of the Christmas period. He logged a total of twenty seven beacons, but some that he had heard previously were not audible. Nevertheless he was pleased to log two new ones.

**John Jeremy** (Rusholp) has found that he can receive more beacons by operating his Sony ICF SW7600 portable in the s.b. mode. This model has user keys for tuning channels, and a manual rotary tuning knob. However, it is worth noting that fine tuning of less than 5kHz is possible, though it is not shown on the l.c.d. display.

A Sony ICF 7000DS portable plus Sony AN-1 active antenna was used by Cyril Kellam in Sheffield to compile a good log. He discovered that water had penetrated into the telescopic sections of his balcony mounted AN-1, even though the sections were in tight. After getting rid of the water and sealing it up, he received several new beacons. This is certainly a good tip for others who use a Sony AN-1 outdoors.

Some receivers are relatively insensitive in this part of the spectrum, or do not cover the band at all. One solution is to use an up-converter to shift the beacon signals to a band more suited to the set. This technique is used by George Millmore in Wotton, 10W. Such converters have either a tunable local oscillator and output on a pre-determined frequency, or a fixed (crystal controlled) oscillator and a broadband output. The latter type is preferable, since the calibration accuracy is that of the main receiver. An excellent crystal controlled v.l.f. converter with output in the 10m amateur band is available from Datong. It will enable signals in the range 10-500kHz to be received by tuning the main receiver between 26.010 and 29.500MHz.

No doubt the high level of electrical interference present in towns and cities limits the activities of many beacon DXers. In an attempt to overcome this problem Kenneith Buck (Edinburgh) has built a balanced screened loop. Although it eliminates most of the radio interference it does not reject TV line timebase harmonics, which appear to get into the loop by the magnetic component. He is well pleased with the performance, but he still finds it necessary to listen in the morning when the neighbours are out.

Kenneth has drawn my attention to the fact that all of the UK lighthouses are now unmanned and fully automated. Apparently they are remotely controlled by two computers (one situated in Ipswich for England and one in Edinburgh for Scotland) and in some cases it is possible to check the signal in the off-shore ones, by radio links. Nevertheless, the equipment at the lighthouses still has to be checked and cleaned at regular intervals.
If you have a subscription then you will know all about the Short Wave Magazine Subscribers' Club. If you don't then read on. Membership is free and automatic for all subscribers to this magazine and is our way of saying thank you to all those who have had faith to pay for it 'up front'. Each month there are Special Offers and occasional competitions with some really useful prizes to be won.

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Short Wave Magazine, March 1992
Many Radio Amateurs and SWLs are puzzled. Just what are all those strange signals you can hear but not identify on the Short Wave Bands? A few of them such as CW, RTTY, Packet and Amator you’ll know – but what about the many other signals?

HOKA ELECTRONICS HAVE THE ANSWER! There are some well-known CW/RTTY decoders with limited facilities and high prices, complete with expensive PROMS for upgrading etc., but then there is CODE3 from Hoka Electronics! It’s up to you to make the choice – but it will be easy once you know more about Code3. Code3 works on any IBM-compatible computer with MS-DOS 2.0 or later and having at least 640k of RAM. The Code3 hardware includes a digital FSK Convertor unit with built-in 230V ac power supply and RS232 cable, ready to use. You’ll also get the best software ever made to decode all kinds of data transmissions. Code3 is the most sophisticated decoder available and the best news of all is that it only costs £299!

- Morse – Manual/Auto speed follow. On screen WPM indicator
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- ASCII – CCITT 5, variable character length/parity
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- SWED-ARQ/10/100 channel CSR 119 variant
- ARQ-FA/ARQ1000 Duplex variant
- ARQ-ED/CCIR 119 variant
- POL-ARQ = 100 baud Duplex ARQ
- TDMAX/ARQ-100 24-channel CSR 119
- FEC-A = FEC100A/FEC110
- FEC-S = FEC100 Simplex
- Press DPA – 300 baud ASCII F7BC
- Writnhalsofitel - 300 baud ASCII TBC
- Sports Info. 300 baud ASCII F7BC

All modes are pre-set with the most commonly seen baud rate setting and number of channels which can be easily changed at will whilst decoding. Multi-channel systems display ALL channels on screen at the same time. Split screen with one window continually displaying channel control signal status e.g. idle, Alphas/Beta/RQ’s etc. along with all system parameter settings e.g. unshift on space, multiple carriage returns inhibit, auto receiver drift compensation, print on, system sub-mode. Any transmitted error correction information is used to minimise received errors. Baudot and Sitor both react correctly to third shift signals (e.g. Cyrillic) to generate ungarbled text unlike some other decoders which get ‘stuck’ in figures mode!

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 Getting there

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 Where we stay

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 What we see

During our holiday in Friedrichshafen we will be staying for four nights in what is considered to be the best Hotel in town The Buchorner Hof. Roger Hall G4TNT, has examined the Hotel Bar (very closely!) the rooms, and eaten in the restaurant, and he says it's certainly very luxurious.

 Double rooms

The only minor problem is that most of the rooms are doubles. In this case, really mean double-beds, not twins! This means that this trip is more suitable for couples, and so we can encourage more husband and wife or boyfriends to come. I have organised a couple of day excursions for the Friday and Saturday. One trip is to the beautiful Island of Mainau, famous for its flowers and topiary and the other is into the heart of the Black Forest, the home of the cuckoo-clock. Both trips will provide delightful days out.

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Interested in coming? Why don't you call me, Roger Hall G4TNT, on 071-731-6222 during the day or weekends, or the answerphone at night, for further information. Or you can call Rob Mannion G3XFD, the Editor, on 0202-678558 for a chat about the trip. Alternatively you can send your deposit of £25 now to book your place to:

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FOR SALE Yaesu FRG-7700 with manual, good condition, £150 o.n.o. Tel: 0164-483 0753 after 6pm.

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FOR SALE D100 TV converter, deluxe model, still boxed, £95. Lowte HF225 receiver, still boxed, all accessories fitted and leather carrying case, £400. Bob. Tel: (0507) 351666 Birch, Northumberland.

FOR SALE BBC-B computer complete with a.t.p.l. sideway ROMboard, Watford Electronics 32K RAMcard, Acorn data recorder, dual self-powered 46/60 disk drive, View and many other ROMs, Hires colour monitor, glance screen, programs on disk and cassette, user guide and books, £200. Tel: 0181 455 8831 anywhere, London.

FOR SALE KW2000 transceiver complete with power-pack/speaker and KW109 Superscan. Also AOR900 scanner, boxed, with power-pack/speaker and KW109 antenna for ERA Microreader MkII or £125 each, buyer collects. Tel: (0992) 653122 Herts.

FOR SALE T2100 portable PC 2 X 2.5in drives 640K RAM complete with DOS, V.A.1.0, modern card, manual and carrying case, £100. Illness forces sale, condition a.m./f.m. 108-174, 220-380, 406-490, 520-584, 762-890, all in excellent condition with instructions, £475 o.n.o. Tel: (0344) 8826874 Bracknell.

FOR SALE Yaesu FRG-7, mint condition, £120, with frequency listing and aircraft callsign listings always welcome. Also correspondence on same. P. T. Martindale, 6 The Crayke, Marton Fields, Bridlington, East Yorkshire Y016 5YP.

FOR SALE Yaesu 7010 or Icom IC203S. Bob. 120 Birmingham Road, Airedale, Castelford, West Yorkshire WF10 3ED.

FOR SALE AR2000 scanner, 4 months old, little used, boxed, £150, buyer collects. Tel: (0903) 705638 Rustington, West Sussex.

WANTED Microreader MkII, in excellent condition with instructions, cash waiting. Mr Holland. 41 Airedale Road, Airedale, Castelford, West Yorkshire WF10 3ED.

WANTED Yaesu SX-88 receiver, please collect. Peter. Tel: (0362) 485571 Marlow, Bucks.

FOR SALE NRD 535 receiver, included Lowe matification, head phones, Microfone sale 18-12-91, £800 o.n.o. cash buyer collects. Tel: (0698) 28945.

FOR SALE DX400 receiver, 150-kiloc., 30MHz f.m., 12 memories, £120. Sony AR4-12, 6m-6m, £105-114MHz three antennas plus case, £150. Both receivers with original packing together, £200. Paul. Tel: (0622) 841225 evenings, Hull.

FOR SALE Yaesu FRG-3000 receiver, 1975 model, boxed, £250. John. Tel: (081) 2481205 weekdays.

FOR SALE Yaesu FT-790R all mode 2.5in drives 640K RAM complete with DOS, 80 32K RAMcard, Acorn data recorder, dual self-powered 46/60 disk drive, £475. Morse, etc. Offers invited. Morse, etc. £125.

WANTED Yaesu FRG-7 with a.t.u. and power-pack, Hornchurch. Also RIC700 or any good quality Kenwood, as new, boxed, £120. Offers invited. P.T. Martindale, 6 The Crayke, Marton Fields, Bridlington, East Yorkshire Y016 5YP.

EXCHANGE Yaesu FRG-7700 with a.t.u. and manual for FT-290 or any reasonable 144MHz multi-mode. Tel: Runcorn (0292) 735622.

FOR SALE Yaesu 747, Baker Williamson a.t.u. £190. Addision compressor mic. AM508, 25A p.s.s., complete, boxed, less than eight months old. Will accept £80 o.n.o. Tel: (0233) 500354 Eastbourne.

WANTED private collector/restore seeks 22 set, 10 set or 18 set and accessories. BC46 wanted, unmodified, high voltage capacitors wanted 0.1uf 40(0 or similar with long leads. Tel: (0565) 823674.

WANTED regulated power supply 12-15-20 amp for CB radio. Tel: Bolton (0204) 288844 after 5pm.

FOR SALE FR7700 antenna tuner. £35. ERA BPS4 audio filter, £45. WANTED Edystone 1637/2 or Edystone 1536 or Sony CRP-1. Tel: (0772) 704008 after 6pm.

WANTED ARF WWII fighter or bomber h.f. receiver in working order, also manuals. Not a collector, just a serious h.f./6m enthusiast! Tel: (0424) 845238 evenings.

FOR SALE AOR3000 needs no description, superlative scanner, £125, Can deliver South Wales or anywhere along M4. Tel: 01-797 6770.

EXCHANGE ARA60 or ARA1500 active antenna for ERA Microreader MkII or £125 each, buyer collects. Tel: (0992) 653122 Herts.

FOR SALE FRG-7, mint condition, £120, with manual. Tel: (0458) 480778 Ringwood, Harls.

WANTED buy or borrow manual or handbook for Kenwood R1001 receiver, all costs refunded. Any h.f., v.h.f. or u.h.f. frequency listing and aircraft callsign listings always welcome. Also correspondence on same. P. T. Martindale, 4 The Crayke, Marton Fields, Bridlington, East Yorkshire Y016 5YP.

FOR SALE Ralcal-Lokata professional Navtex receiver (see photo page 25 January SWM, £225, huge clear-out of radio items including scanner accessories, spy radio, military items, antennas. Send 6p stamps for huge lists. WANTED Trio 7010 or Icom IC2025. Bob. 120 Birmingham Road, Redditch, Worcs B91 6EP.

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