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editorial

SWM SERVICES

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

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

The printed circuit boards for SWM projects are available from the SWM PCB Service, Badger Boards, 87 Blackberry Lane, Four Oaks, Sutton Coldfield B74 4JF. Tel: 021-353 9326.

Back Numbers and Binders
Limited stocks of most issues of SWM for the past five years are available at £2.00 each including P&P to addresses at home and overseas (by surface mail).

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

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It's an III wind . . .

One of the failings of v.h.f. f.m. transmissions as far as the motorist is concerned is the need to constantly retune the radio as the signal disappears. Ever since RDS became available I have been promising myself that my next car would be fitted with an RDS-equipped radio. I have never managed to achieve this - until recently. While it was parked in the car park opposite the main Police Station in Bournemouth recently someone decided that my radio would be better off in their car. Entry was gained by simply destroying the door lock barrel and the entire radio installation removed - nothing else, just the radio. After six weeks of arguing with the insurance company over the value of the radio fitted as standard equipment we finally came to an arrangement and now I have a radio with RDS.

After just one week and a long journey with RDS I wonder how I put up without it. It's great to be able to listen to Classic FM without having to constantly retune or put up with a constantly disappearing signal. The "joins" were almost seamless in modern parlance - just an almost inaudible "plop" as the RDS changed frequency. Mind you, like our new office telephone system - designed, I am certain, by someone who has never used a telephone in their life - the set has so many features that at my age I will never master them all.

Sackcloth and Ashes - Again!

To those of you trying to make the Green Dipper my humble apologies. The gremlins got into the system with a vengeance last month and somehow the wrong drawing was picked up and placed. The correct set of drawings is on page 12 of this issue. Did you try the Crossword last month? Were you frustrated by the lack of a clue for 23 Down? For once I relied on the artwork supplied being correct and didn't try to solve the puzzle. It should have been obvious that the second of two Down clues was really 14 Down, but there was also a problem with 4 Down, which was one letter short for the anagram. I have decided that 4 and 23 Down will not be taken into account when judging the results.

Dick Ganderton G8VFH

Letters

Thanks!

Dear Sir,

May I, through your excellent magazine, express my appreciation for the repair service offered by AOR (UK) Ltd.

My scanner had been repaired by another dealer and returned to me, returned to them and returned to me with the comment that it worked fine and was within specification.

The set was sent off to AOR after a 'phone call to Mr Hillier and returned in working order, with the parts that had been changed.

Once again, my thanks to Mr Hillier and AOR (UK) Ltd for taking such a sympathetic view of the matter.

R. Drake, Northants

Holiday Radio

Dear Sir

With reference to the letter from Terry Broadhead in April's SWM, regarding taking his AR-2000 on holiday, I take mine to Cyprus every year, it has also been to Spain and Gibraltar. Only once did the check-in officers at Heathrow ask to see it!

You must carry it in your hand luggage, and you cannot use it on the aircraft in case it interferes with Navigational Aids, etc.

The Captain of Cyprus Airways even wrote down all the frequencies that they used when I told them what my hobby was.

I have taken my scanner abroad twice a year for the past 12 years. It is not on the prohibited list of articles allowed on aircraft. Hoping this will help a fellow s.w.l.

M.J. Gardiner BR894668

Southampton

Mains Adaptation

Dear Sir

In response to A. Barber's letter regarding the problem with a 3-pin plug fitting in the travelling case of the SW55. Basically, 'what problem'? My mains adaptor is fitted with a standard plug and fits into the SW55 case with no problem as all. You place the 3-pin plug 'pins down' in the far left-hand corner of the base, with slight re-education of the wires, it fits with no straining on the case hinge at all. Hope this helps other SW-55 owners - a great little radio.

Andy Gray

Notts

IF YOU HAVE ANY POINTS OF VIEW THAT YOU WANT TO AIR PLEASE WRITE TO THE EDITOR. IF YOUR LETTER IS PUBLISHED YOU WILL RECEIVE A £5 VOUCHER TO SPEND ON ANY SWM SERVICE

The Editor reserves the right to shorten any letters for publication but will try not to alter their sense. Letters must be original and not have been submitted to any other magazines. The views expressed in letters published in this magazine are not necessarily those of Short Wave Magazine.

Short Wave Magazine, June 1993
**Broadcast Bands**

**Dear Sir**

I was interested in Robert Connolly's letter in the February issue of SWM and support his idea for a one-off special on Band II v.h.f. f.m. broadcast stations. It might also be useful to do a feature on the audio equipment used in the stations of f.m. stereo broadcast stations and to cover the licensed ethnic/community and minority-interest music stations available on v.h.f. There is more to broadcasting than just transmitters and receivers!

Ivor Nathan  
London

---

**Microwave Magic**

**Dear Sir**

While preparing Christmas dinner this year, my wife commented that potatoes cut in two do not cook well in the microwave oven, 'because of the flat side'. This leads me to wonder whether for optimum cooking, the food should be in the shape of a microwave antenna for efficient absorption of the available energy. Should she whittle the potatoes into a Yagi shape, or would another form be more efficient for microwave dish of the day? Would any readers care to comment?

Nick Day  
Cheltenham

---

**RSGB Not for SWLs**

**Dear Sir**

I sympathise completely with the remarks made by Bill Solley in the March SWM regarding the treatment of listeners by the RSGB.

Although a licensed amateur for 10 years, my first love has been and always will be short wave listening. I was always disappointed by the tiny section devoted to listening in Radio COMMUNICATION and by the fact that the society assumes that listeners are only interested in the amateur bands!

In 1991, having got very despondent with the RSGB, I decided to look elsewhere. Through a friend I found the International Shortwave League and have never looked back. In fact, I've enjoyed being a member so much that I have recently volunteered my services to the HQ as Publicity Officer.

It's the only organisation I know of that treats the licensed amateur and short wave listener with equal respect. The monthly journal **Monitor** covers all sorts of topics from amateur band transmitting through to broadcast band listening, from ORP to members' own reminiscences. The League runs contests (for transmitting and receiving), has awards available for the winners, has its own very efficient QSL bureau and runs regular nets at various times.

I can only suggest to Bill that he refers to the piece about the ISWL, in the February edition of 'Junior Listener' as it contains the current membership prices plus the address of the HQ. Believe me, it's well worth it.

Chris Carrington  
Derby

---

**The AR88**

**Dear Sir**

I was most interested in the article about the famous AR-89 in the May '93 edition of SWM.

I acquired one myself some months ago and after clearing some minor faults and getting rid of all the dead spiders, I have got it going like the proverbial bomb. Although lacking some sensitivity at the top end of its range, it is much more fun to drive than the modern push-button black boxes.

Your author mentioned the apparent difficulty in replacing such components at the r.f. gain control, which is shown on the service sheet as having a value of 66megohms. This is not the case. The service manual - I have a copy of the Canadian Air Force one - uses the old American nomenclature where M means 'thousand' (mile) and Meg means megohms, so all is not lost.

The r.f. gain control is not 66MΩ, it is 66 thousand ohms, a value that could easily be replaced with a standard 50kΩ pot, without any appreciable effect on performance.

On curious thing to note in this receiver is the way in which negative bias for r.f. and a.f. stages is obtained from resistors in the common h.t. negative line, rather than the normal use of cathode bias resistors. No doubt the author will elaborate in this in future articles. I look forward to reading more about this super receiver in forthcoming editions of SWM.

As a matter of interest, the weight of this monster is 100lb, which explains why the floor of my shack sags at one end!

Les Painter  
Swansea

---

**Code Free Licence**

**Dear Sir**

There has been a lot of talk about the code-free licence recently. There are, however, many who wish to get the Class A at the moment and who have trouble getting around to starting or finishing.

I am, I regret to say one of these many who lacks self discipline and time to achieve this licence at home. Please could we have more information on courses. I'm sure they would receive great support. Evening and maybe during holiday time with an exam at the end? This would certainly help in clearing all those Class Bs who plan but don't achieve getting their licences due to other priorities.

M J Alderman  
Chelmsford

**Ed:** My first suggestion is to contact your local amateur radio club. Many of these run courses almost all year round. Drop me a line if you are involved with some such course.

**Dear Sir**

Well, well, well. Talk about whinge! The letter from W. Mitchell (April '93) seems to tar all 'B' licence holders with the same brush. And what's this 'unfair disadvantage' that English speaking amateurs have over foreign counterparts? Didn't he pass his Morse test in English? Don't the rest of the world talk English on the radio? If 'he, she or it' wants to learn another language and talk to the world in a foreign tongue, go ahead! Just don't expect the rest of us to follow.

If all you B licensees want to talk to the world without an A licence, use the satellites. You can talk to the world, be free of interference and enjoy world-wide communication at the same time. Also you can do this with very little power.

But beware!! Should you contact the world by satellite don't be TOO eager to let some of your A licence friends know where you are getting to. Some are of the opinion that we 'cheat' as the satellite is a 'repeater in the sky'. Or that we should not be talking around the world because we are not 'real amateurs'. No, Mr Mitchell, you are no smarter than we are, but that through progress and the dedication of amateurs world-wide we are able to speak to the world (in English) through that progress.

After all, if it were not through progress we would all be communicating by semaphore! Things I believe will change in amateur radio for the better. Passing a Morse test does not give you the experience that I believe is needed to make confident contacts throughout the world.

I. Duffin G7HXI  
Norfolk

---

**Unwanted Gifts**

**Dear Sir**

Regarding Mr Buggins letter 'Unwanted Gifts' in the May issue.

Surely, their 'relatives' should know if a receiver would be appreciated or not?

H. Richards, South Humberside

---

Short Wave Magazine, June 1993
rallies

May 30: Plymouth Radio Club Rally will be held at Plymstock School, Plymstock, Devon. Doors open 10am and 10.30am to 4pm. There will be car parking, traders, Bridge & Bay, Talk-rallies and a licenced bar. Berkor FOSTER G7ESZ. Tel: (0752)781181.

June 6: The Spalding & DARS are holding their Jubilee Mobile Rally to be held at Springfield Gardens, Spalding. T. Kayle. Tel: (0775) 224940.

June 28: The 4th Belfast Radio Rally will be held in The Chimney Corner Hotel, 603 Antrim Road, Glengormley. Doors open 12 noon (11.30am for disabled). Bring & Buy, traders, parking, and overnight camping. Tel: R. Hogan G4VCIL, Tel: (0904) 708164.

July 4: The York Radio Rally will be held in the Tattersall building, York Racecourse, Knavesmire, York. Doors open at 11am, entrance fee £1. Ample free parking, amateur radio, electronics and computers, arts and crafts, Morse tests, licensed bar and café. Talk-in on S22. Address £1 and proceeds to the RABIC in Northern Ireland. Tel: (0232) 471379.

July 6: The 36th Longleat Amateur Radio Rally, Longleat House, near Warminster, Wilts. Radio Rally will be trade stands, RSGB bookstall, large craft fair, camping & caravanning facilities and a licensed bar and catering on site. Shaws. Tel: (0225) 873000.


July 30: The Wirral & DARC: June 2 - Drink & Waffle at Eastham Ferry Hotel, 9th Practice HF Hunt. 8pm - 10pm - Drink & Waffle The Greave Dunning, Gosby, 23rd - Mobile Treasure Hunt. 7.30pm - Ewelme Low Power Field Day, 8pm. Paul. 051-648 5892.

July 5: Wirral & DARC: June 2 - Drink & Waffle at Eastham Ferry Hotel, 9th Practice HF Hunt. 8pm - 10pm - Drink & Waffle The Greave Dunning, Gosby, 23rd - Mobile Treasure Hunt. 7.30pm - Ewelme Low Power Field Day, 8pm. Paul. 051-648 5892.

July 11: The Wyre Radio Rally will be held in the Tattersall building, York Racecourse, Knavesmire, York. Doors open at 11am, entrance fee £1. Ample free parking, amateur radio, electronics and computers, arts and crafts, Morse tests, licensed bar and café. Talk-in on S22. Address £1 and proceeds to the RABIC in Northern Ireland. Tel: (0232) 471379.

July 11: The Wirral & DARC will be held at Eastham Ferry Hotel, Wirral, Cheshire. July 6 - DXpeditions by GOSNO. Walter. (0562) 259583.

July 17: The Bromley & DARS: Mondays, 7.15pm. Darton Hotel, Station Road, Darton, Barnsley. Tel: (051) 804 5643.

July 24: Wirral & DARC: June 2 - Drink & Waffle at Eastham Ferry Hotel, 9th Practice HF Hunt. 8pm - 10pm - Drink & Waffle The Greave Dunning, Gosby, 23rd - Mobile Treasure Hunt. 7.30pm - Ewelme Low Power Field Day, 8pm. Paul. 051-648 5892.

July 24: Wirral & DARC: June 2 - Drink & Waffle at Eastham Ferry Hotel, 9th Practice HF Hunt. 8pm - 10pm - Drink & Waffle The Greave Dunning, Gosby, 23rd - Mobile Treasure Hunt. 7.30pm - Ewelme Low Power Field Day, 8pm. Paul. 051-648 5892.

July 31: Wirral & DARC: June 2 - Drink & Waffle at Eastham Ferry Hotel, 9th Practice HF Hunt. 8pm - 10pm - Drink & Waffle The Greave Dunning, Gosby, 23rd - Mobile Treasure Hunt. 7.30pm - Ewelme Low Power Field Day, 8pm. Paul. 051-648 5892.

*August 8: Flight Refuelling ARS Hamfest will take place at the Flight Refuelling Sports Hall, Merley, Wimborne. The event will run from 10am to 5pm and will include the usual mix of traders, Bring & Buy, craft exhibitors, the usual array of talks and field events. Overnight camping facilities available for the 7th. Talk-in on S22. Richard Hogan GW6CVO. Tel: (0202) 697212.

If you're travelling long distances to rallies, it could be worth phoning the contact number before setting off to check as all will be different.
licensed as JY1, agreed to participate in a sked to take place during the opening ceremony.
A number of the young patients were able to visit GBOOSH to sample the delights of amateur radio.
In the photograph you can see young Robert, aged just 6, trying amateur radio under the watchful eye of Dave G0BDC.

Rallies
The International Short Wave League (ISWL) have written to inform me they are going to be attending the following rallies.
June 27 - Longleat Radio Rally, Longleat Park
August 8 - Flight Refuelling ARS Hamfest, Wimborne, Dorset
September 11 - Scottish AR Convention, Cardonald College, Glasgow.
ISWL representatives will be on hand at all League stands to distribute information, answer questions and, of course, enrol new members!

GB0OSH
In February, a special event station, GB0OSH was put on the air for several days from the Hospital for Sick Children in Great Ormond Street, London. The studios of the hospital’s internal radio station, Radio GOSH, were kindly loaned to the amateur radio team by Station Manager Peter Losch. King Hussein of Jordan, who is

Last Chance for A Bonaire QSL
TWR will stop short wave broadcasts from Bonaire in July 1993 after nearly 28 years of daily transmissions. The results of a recent listener survey revealing a dwindling short wave audience in South America, and the lack of funding were the primary reasons for the decision. There is a long term commitment to continue and expand the medium wave broadcasting from Bonaire.
Also, TWR Bonaire plans to begin the distribution of radio programmes to numerous radio stations throughout Latin America. So, try listening on 11.815 and 15.345MHz in the mornings and 9.535 and 11.930MHz in the evenings.

C.B. Almey of Wisbech in Cambridgeshire is new to radio and just joined the ranks of SWM readers. The first problem he has encountered is that of acronyms and general jargon. In particular he wants to know what u.s.b.l.s_b. and b.f.o. mean. Instead of just expanding the acronym, I’ll add a short explanation of each of the terms.
The first two are different types of Single Sideband (s.s.b.) transmissions known as Upper Sideband (u.s.b.) and Lower Sideband (l.s.b.). So what does all this mean? To explain it we need to think about how a speech signal from a microphone is changed into a radio signal. To do this we have to somehow change the frequency of the speech signal. For general communications a speech signal is usually regarded as containing audio frequencies from around 300Hz to 3000Hz. If we wanted to to generate a signal for use in the 14MHz amateur band we would need to somehow change the audio frequency up to this higher, radio frequency. This is done by mixing the speech signal with a fixed radio frequency from an oscillator inside the transmitter. After the mixing there are four signals that need to be sorted out.
1: The original speech signal.
2: The radio frequency oscillator.
3: The radio signal plus the speech signal.
4: The radio signal minus the speech signal.
So which of these do we want? The answer is 3 or 4 as these represent the upper and lower sideband signals respectively. The other frequencies need to be filtered out.
Now that we’ve generated the signal, let’s look at how we can resolve it at the receiver. If you try tuning to the 14MHz amateur band with your receiver set to a.m. you’ll see that the signals are very distorted and impossible to resolve. In order to receive an s.s.b. signal you have to mix it with a radio carrier in the same way as when the signal was generated. It’s here that the Beat Frequency Oscillator plays its part. This is a stable oscillator that’s used in the receiver to resolve s.s.b. signals. For those with receivers that include an s.s.b. mode, these are built-in. Whilst some have a knob for adjusting the b.f.o. frequency, the more sophisticated type simply have a switch for upper or lower sideband.
If you’re one of the many who don’t have an s.s.b. facility on your receiver all is not lost. You can use an external b.f.o. to resolve s.s.b. signals. Whilst this is not as effective as a built-in unit it does at least give access to the world of s.s.b. signals. If you’d like to try your hand with an external b.f.o., a constructional article was published in the August ’85 edition of Practical Wireless. Photocopies of this can be obtained from the editorial offices priced £1 inclusive.

Novice Course
TriTec in Sheffield are running a Novice Licence Radio Course, starting On June 28 at 3pm. If you’re interested, then contact TriTec, Thomas Street, Sheffield S1 4LE. Tel: 750581.
Obituary

Stan Crabtree G3OXC

On behalf of Stan’s wife, Helen, and their two children Elaine & David, I regret to tell you that Stan died from a sudden heart attack on Wednesday, March 17. He was 62.

His enthusiasm and hunger for detail was obvious to all those who have read his frequency papers and radio magazine articles in Short Wave Magazine and Practical Wireless over very many years. He became an internationally recognised authority on the history and development of mercantile marine radio equipment and operating. At the time of his death he was devoting much of his spare time researching into the life of the very first mercantile marine radio operator, whose German family he had previously traced.

During his many years as an amateur he held and operated under several prefixes, including GM, VO4, VQ1, CS6 and 5A.

Michael Robertson

G3USX.

TVDX News

There’s a new Swiss TV network - ‘S PLUS’ opening end August with RTL opening offices in Zurich. Transmitting in German to compete with other popular German programmes from PRO7, SAT1, etc., local advertising will also be sourced for the service together with an exclusive programme feed. The 1994 operating budget will be 50 million Swiss Fr and population coverage approximately 70%. The selected terrestrial transmission frequency will be typically Ch. E36 u.h.f. or via cable distribution. With the high ownership of satellite and v.c.r. equipment one can foresee problems akin to the projected UK Channel 5!

French channel TF1 is now transmitting CEEFAX standard Teletext on a test basis in parallel with Antiope (the French version of t/text) until end 1993 when Antiope will cease and CEEFAX takes over the full service. The next step to Antiope’s end will be the France 3 network, who already have page 888 in CEEFAX. The 20kW transmitter is part of a $12 million deal signed between ‘Channel 5’ programme (a Thai based network)in Phnom Penh. The next step to Antiope’s end will be the France 3 network, who already have page 888 in CEEFAX. The 20kW transmitter is part of a $12 million deal signed between ‘Channel 5’ programme (a Thai based network)in Phnom Penh. The next step to Antiope’s end will be the France 3 network, who already have page 888 in CEEFAX.

The 20kW transmitter is part of a $12 million deal signed between ‘Channel 5’ programme (a Thai based network) in Phnom Penh. The network will also gain financial help from Bangkok. Roger

Bunney

Receiver Kit

MFJ have just introduced a new short wave receiver kit designed for both the novice constructor and the old timer who wants to experience a piece of nostalgia. Based on a regeneration design, first made popular in the 1920s, the receiver covers 3.5 to 22MHz in five switched ranges.

The kit is supplied complete with all components, metal work, knobs, etc., and a very detailed manual of about 40 pages.

For details of the UK availability of this kit, which was seen by many of the SWM & PW readers who went to the Dayton Hamvention in April, contact: Waters & Stanton Electronics, 22 Main Road, Hockley, Essex SS5 4Q5. Tel: (0702) 206835.

Islands on the Air

The Lagan Valley ARS will be running a DXpedition to Copeland Island between June 11 and 13. They will be running 10-80m amateur bands and all s.w.l. reports ill be QSLed.

IOTA No B EUNL422 GI
Lat. 50°41’N long 5°33’W
QRA I074FQ
WAB J58 North Down
QSL via Bureau or G10DVU, QTHR.

New Scanners

Tandy have introduced three new scanners into their range. They range from the £149.99 PRO-44 50-channel programmable scanner through the PRO-46 100-channel scanner at £199.99 to the PRO-39 200-channel scanner at £219.99. Keep a look out for reviews in the future.

Lost

On Wednesday April 14, I had the misfortune to lose my Yupiteru MT-7000 scanner. My fault, I left it on top of my car and drove off! When I discovered it was missing, I returned over the same area but to no avail, so I immediately telephoned the police to report the loss. Despite numerous local advertisements offering a reward, the set has not been recovered.

The set was in a Yupiteru leatherette case and had a Yaesu 2m black rubber duck antenna fitted. The serial number is 20901832. Please help as I’m suffering terrible withdrawal symptoms without it. It’s like losing and old friend.

Stephen Ades, 9 Tedder Terrace, Rock Lane, Hastings, East Sussex. Tel: (0424) 445349.

Scanners in the USA

Just before it adjourned last year, Congress sneak the home radio controlling 900 MHz bands. When the bill becomes fully effective it will be illegal to manufacture or import into the US a general coverage receiver that scans the cellular phone bands. The measure had been attached to the Federal Communications Authorization Act (HR 1674), but when it became clear that the bill was not going to make it, Congressional sponsors move the provision to HR 6191, a bill that regulated ‘900’ calls, and pushed it through. The Association of North American Radio Clubs opposed this legislation in letters to Congressional leaders, but our volunteer efforts were no match for the wealthy professional cellular lobby. The bill gives the FCC 180 days to write regulations that deny equipment certification to any scanning radio that is capable of being equipped with decoders that convert digital cellular transmissions to analog voice audio. One year after the effective date of FCC regulations, it will be illegal to manufacture or import such a radio.

What is the effect of this legislation on existing radios? Nothing. The new law does not ban the use or purchase of any radio.

Nothing. The new law does not ban the use or purchase of any radio. What is it intended to do is dry up the supply of radios that pick-up cellular. It will do that initially by denying certification to any new models that do not comply. Eventually, the law will ban the manufacture in the US or import of radios such as the Icom R-1. However, if you can find a non-complying radio for sale after 1994 that received certification prior to 1993, it will still be legal to buy it and use it.

Will it still be legal to after a radio to pick-up cellular?

Taken from American Scannergram the official publication of All Ohio Scanner Club.
Broadcast News

NHK Radio Japan is now being relayed by the BBC's Far Eastern relay station in Singapore whilst BBC World Service is using a new 300kW transmitter at the NHK Tokyo-Yamata station.

Radio Japan from Singapore:
0100-0300 on 11.86 MHz
0500-1000 on 11.74 MHz
2100-2200 on 6.035 MHz

BBC World Service from Yamata:
0900-1330 on 11.765 MHz
2100-0030 on 15.37 MHz

The latest schedule from Radio Australia suggests these frequencies for European listeners:
0700-0900 on 21.595 MHz
0900-1300 on 21.725 MHz
1430-1800 on 13.755 MHz and 9.565 MHz
1800-2030 on 7.26 MHz and 5.885 MHz

Radio New Zealand undertook some test transmissions on its new 6MHz antenna array during April and now has added a 49m band transmission to its schedule. 6.035MHz is on daily between 1650 and 2130, but may not be audible in the UK. If it is, please let me know here at Short Wave Magazine.

Test transmissions as well from Bulgaria. The Bulgarian Telecommunication Company contracted a Danish organisation to organise tests on two 19m band frequencies during April which may enter service at some time in the future. Two 50kW transmitters were deployed, one operating on 15.72MHz on a bearing of 2960 between 0800 and 1600, the other on 15.675MHz on a variety of bearings: 0800-0955 on 1260; 1400-1455 non-directional; 1500-1530 on 3310. These were curious frequencies, well outside the official portion of the 19m broadcast band, so are the Bulgarians about to move to more out-of-band channels? Keep your ears open!

Danish Radio's European transmissions are now operating at the following times:
1330 on 9.59 & 15.23MHz
1530 on 17.86MHz
1630 on 15.23 & 17.825MHz
1730 on 9.655MHz
1830 on 9.59, 15.22 & 21.706MHz
1930 on 9.59 and 15.22MHz
2030 on 9.59 and 17.73MHz
0430 on 15.175MHz
0530 on 7.215, 9.59, 15.17 & 17.815MHz
0630 on 9.59, 15.65 & 17.815MHz
0730 on 9.59, 11.735 & 17.815MHz
0830 on 17.705MHz
1030 on 17.795MHz

Radio Vilnius has made further cutbacks to its use of Russian transmitters. The English service is now on the air at 1900-1930 on 9.71MHz and all the medium wave channels of 1557, 666 & 612kHz; 2130-2200 on the same channels and 2300-2330 on 11.75MHz.

The Voice of Israel's European English service is now heard at:
0400-0415 on 9.435 MHz
1000-1030 on 17.545 MHz
1300-1325 on 17.59, 17.575, 15.65, 15.64, 11.603 & 11.587MHz
1700-1715 on 17.575, 15.64, 11.675 & 11.587MHz
1900-1930 on 17.575, 15.65, 15.64, 11.675, 11.603 & 11.587MHz
2130-2200 on 17.575, 15.65, 15.64, 11.675, 11.603 & 11.587MHz

Peter Shore
Short Wave Magazine, June 1993

QRP Contest

The 11th Annual Practical Wireless 144MHz QRP Contest will take place on Sunday June 20 from 0900-1700UTC. Transmitter output power will be limited to 3W as usual. Rules are as previous years, except that this year there is an additional section for listeners. Further details will be published in the June issue of Practical Wireless. Full rules may be obtained by writing to Practical Wireless offices. The contest adjudicator is Neil Taylor G4HLX.

Persian on the Short Waves

KVOH began weekly short wave broadcasts in Persian from their Rancho Simi, California site on May 1. KVOH's sister station KHBN, on the island of Palau, also carries regular broadcasts in Persian. KVOH also broadcasts 17 hours daily in English, Spanish and French on 17.775 and 9.785MHz, with 50kW beamed to South America and the Caribbean. KVOH operates 0300-0700 on 9.785MHz and 1400-0300 on 17.785MHz.

The new broadcast in Persian is scheduled from 0200-0230UTC on Mondays on 17.775MHz. French is broadcast from 1400-1430UTC on Sundays on the same frequency. Programmes in Spanish are scheduled daily from 1430-1500, 1830-2130 and 2200-2400 and from 1400-1430 Mondays to Saturdays, all on 17.775MHz.

English is schedules on 17.775MHz from 0000-0300 daily, except Mondays, and 0000-0200 and 0230-0300 Mondays only. The teaching broadcasts of Dr Gene Scott, from the University Network, a US satellite station, are aired on 9.785MHz from 0300-0700.

Reception reports for KVOH should be addressed to:
Box 93937, Los Angeles, CA 90093, USA. Return postage in IRCs or US stamps is required.
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Short Wave Magazine, June 1993
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Do-It-Yourself Chart Recorder - Part 2

Richard Noble continues his description of how he built his own chart recorder, dealing in this part with the pen drive and associated parts.

Pen Drive

Next we come to the pen drive sub-assembly. The power is supplied by a small electric motor of the type used by modellers. It should be nominally a 4 - 6V, 3000-5000r.p.m. variety, not the 7000-15000r.p.m. sort, as we are going to direct couple it, rather than use gears and complicate matters. The motor is attached to the side plate opposite to the one which carries the clock, but not in a solid fashion. Two small hooks, made by bending short lengths of 1/16 in brass rod, are inserted into the two small holes either side of the motor position and soldered (or Araldited) to the copper foil of the p.c.b. side plates. The motor is held in place by a small elastic band passed from one hook to the other over the end of the motor. This holds it firmly but does allow a small rocking action, thus relieving any wobble in the fitting of the leadscrew.

Another advantage of this method of fitting is that it allows for easy maintenance of the mechanism and, in particular, it makes it a simple job to replace the travelling nut spacer. This is necessary from time to time, as it is the part which suffers the most wear.

Leadscrew

The leadscrew is made by cutting a length of 4BA brass studding to fit comfortably between the plates, allowing for any centre-boss on the motor which sticks out through the side plate. This will probably result in a length of about 75 - 78mm. Then it is necessary to drill central and axial holes in each end with a 1.5mm diameter drill.

At this point you will feel totally let down, since this can only be done with a lathe, which we do not have. Once more we resort to an old instrument maker’s trick, namely make a special jig instead. This takes a little longer but will achieve something very close to the desired objective solely by hand.

You will need a piece of scrap metal, steel, aluminium or brass, or even at a pinch, a piece of hardwood. Size is not critical as long as it is at least 25 - 50mm thick, the thicker piece probably producing the more accurate result. Start by drilling a 1.5mm diameter hole right through it. Take it gently, letting the drill do the work so as to get a straight, constant diameter hole. If you are impatient and lean on it too heavily the chances are the hole will be bigger at the top than at the bottom.

Next take a piece of adhesive tape and wrap it around a 3/16 in diameter drill so that the bottom of it is at a distance from the end of the drill equal to about half the thickness of your jig piece. Use this to slowly open up the 1mm diameter hole until the tape just touches the surface, giving you an enlarged hole to about half the depth of the material. Again, let the drill do the work so that it follows the smaller diameter hole as a guide.

You should now have a hole with two different, but coaxial, diameters. The fact that it may not be truly at right angles to the jig surface does not matter. The jig piece should be turned over and held in a vice or clamped to the edge of a table. If the brass studding is now pushed up into the bottom of the hole and held firmly, the 1.5mm diameter drill can be used to (slowly) drill a hole in the end, guided by the top of the jig hole. Since you do not have three hands it is at this point that you will require the services of a colleague, girlfriend or ‘she who must be obeyed’. The end result however should be a central, axial hole in the end of the studding.

The process should be repeated to obtain a second hole in the other end of the studding. At this point, but not before, the 1.5mm diameter jig hole can be opened up (carefully) to the same diameter as the motor spindle. This is likely to be a 2mm diameter hole as this seems to be a popular size and you should certainly try to choose a motor with a spindle no larger than this. Using this as a guide open up the hole in one end only of the studding by the same jig technique as before. If you are lucky the studding will now be a good push fit on to the motor spindle. If not just put a small amount of glue on the spindle before assembling. Cut a short length of 1/16 in diameter rod and fit it to the other end of the studding in the same way, so that it protrudes by about 10mm or so. This provides a support pivot in a hole in the side plate. File the end of it to a roughly hemispherical shape.
Pen Support Lever

The pen lever is a wood block approximately 10 by 12mm, 45mm long. A 6mm hole should be drilled 10mm from one end and the other end should be filed or sandpapered to have a shallow curve as shown in Fig. 4. The 4BA tapped spacer should be a push fit into the hole. If it is loose, use a little glue to fix it. Check that the travelling nut runs freely on the leadscrew throughout its length. Two 1mm holes should be drilled on a horizontal line about halfway down the flat end of the pen lever, to take the two slider guide pins shown in Fig. 4. The pins are made from solid copper wire taken from a piece of heavy mains cable and should be pressed into the hole with a pair of pliers. The spacing should be such that the control blade of the slider potentiometer just slides between them with very little free play. Being copper they can easily be bent with pliers to make this happen.

This method of construction not only provides the drive to the pen, but also acts as the pen lever support, allowing at the same time a free up and down movement to the pen.

A set of drawings covering the mechanical parts of the chart recorder and referred to in the articles is available on receipt of a large s.a.e. direct from the Editorial Offices at Broadstone. Mark the envelope Chart Recorder.

The next step is the fitting of the pen holder and pen. This is made from a fine pointed fibre tipped pen and its cap. A typically suitable type is the Berol 'Handwriting' pen, though there must be many more equally good. Remove the cap and with a fine hacksaw saw the top off so that when the pen is reinserted, the tip protrudes about 5 - 7mm as shown in Fig. 5.

The pen holder can then be glued to the hollowed end of the pen lever. Try to glue this so that with the pen inserted and just touching the paper drive roller the pen lever is approximately horizontal.

You may now be wondering why the pen in the diagrams is such a short dinty little thing. One reason is that professional recorders have dainty pens, but if you try to buy one you will find it very expensive. A better reason is that we want to get inside it anyway and while we are doing this we might as well make it neat. Simply saw the pen off at whatever length you consider appropriate. This may be messy but does work. To make a really neat job push the cap out of the sawn-off bit and refit it to your little pen. The main reason for getting into the pen is that such fibre tipped pens usually dry out, if left open to the atmosphere for hours on end. A few drops of Glycerine in the end will greatly improve the performance. In addition you can continuously top up your pen with the appropriately coloured 'Quink' doped with a little Glycerine to avoid frequent replacement.

Pen Lifter Mechanism

The final mechanical sub-assembly is the pen lifter, made from no more than a piece of bent 1/16in diameter brass rod, a small solenoid and a rubber band as shown in Fig. 5. Between the side plates the rod is bent rather like an engine crank and the part outside is simply bent down at right angles, so as to lie parallel to the side plate, where it can be pulled by the solenoid. The solenoid is attached to the side plate in such a position that when operated it allows the pen to drop down. When the solenoid is not activated the rubber band pulls the lifter rod so as to lift the pen from the paper. This way round, the solenoid is only operated occasionally, reducing power consumption.

If the paper tends to curl as a result of being wound into a roll, then a paper tensioner can be added. This is just a wide block of wood pivoted as shown in Fig. 5, to which a piece of felt has been glued. In falling under its own weight it provides frictional drag on the roll, keeping the paper flat. The pivot can be just a length of 1/16in brass rod pushed through a hole in the wood block and holes in the side plates.

The method of attaching the solenoid armature will depend on the type of solenoid selected. Fig. 4 shows the slotted end variety which is easy to use in this application. Other types will have to be left to the ingenuity of the builder, but at worst you can always drill a 3mm diameter hole in the armature (a very sloppy fit) and push the lifter rod through it.

Finishing Touches

One other small refinement is needed in the pursuit of accuracy. Although the leadscrew is rigidly attached to the motor spindle, this does not unfortunately guarantee it remains in a known fixed position. Most small motors of this type have from 1 - 2mm of end-play in the spindle, which must be taken out to prevent a similar size uncertainty in the pen position.

This can be done by applying a force to the other end of the leadscrew, to push the motor spindle against the internal end-stop.

One method is to attach a piece of springy brass shim to the side plate, so that it presses against the previously rounded end of the leadscrew pivot where it comes out through the side plate as illustrated in Fig. 6.

A second refinement worth adding is small bushes where the leadscrew spindle and the pen-lifter rod go through the fibreglass side plate, because although fibreglass is regarded as tough, it will wear if there is a lot of movement. These are simply made as short (3 to 4.5mm long) pieces of 1/16 in diameter brass tube pushed through the glass fibre sides and soldered or glued after they have been aligned to run smoothly.

In Part 3 a start will be made on the electronic control systems of the recorder.

Note: A convenience kit of all mechanical parts, finished and drilled, including p.c.b.s, motor, solenoid, clock, paper roll, pen, etc., but no electronic components other than the slider potentiometer, is available from the author. SAE for details to: R & W Noble, Penbidwal House, Pandy, Aber-gavenny, Gwent NP7 8EA.

Short Wave Magazine, June 1993
A Green Bandspread Dipper

Unfortunately the gremlins really got to this article last month. Somehow the wrong combination of Figs. 4, 5 & 6 was used on page 42 of the May 93 issue. The p.c.b. copper foil pattern, Fig. 4, was correct. However, Fig. 5 was used twice. The author has also pointed out that, as drawn the NiCads shown in Fig. 5 have no means of being charged! So, here is Fig. 5 with a PP3 9V dry battery shown instead of NiCads and a correct Fig. 6.

The p.c.b. is now available from the SWM PCB Service, Badger Boards, 87 Blackberry Lane, Four Oaks, Sutton Coldfield, B74 4JF. Tel: 021-353 9326. The price is £5.75 inc. post & packing.

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Short Wave Magazine, June 1993
The 'New-Look' RadioLine

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Short Wave Magazine, June 1993
Radio Communication Products from AOR

AR1500EX - One of many receivers & products produced by AOR. The very compact AR1500EX hand-held wide range receiver offers all mode reception including SSB as standard. Newly designed printed circuit boards have been incorporated to ensure this new version offers the very best performance. Frequency range is 500 kHz - 1300 MHz without gaps, all mode reception AM, FM(N), FM(W) & SSB (USB, LSB & CW - with BFO). The AR1500EX offers full coverage of the VHF, UHF and Shortwave Airbands plus Broadcast, Amateur band, Utility services etc. Many accessories included: NiCd pack, Charger, Dry battery case, DC lead, Soft case, Belt hook, DA900 VHF-UHF aerial, SW- wire aerial, Earphone, Comprehensive Operating manual... Suggested Retail Price of £349.00 inc VAT. (UK Carriage free)

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New ABF~125

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The ABF125 is a receiver handpass filter especially designed to improve the strong signal handling characteristics of receivers for VHF commercial Airband listening. The ABF125 is suitable for connection to most airband and wide range receivers on the market, it is not designed just for AOR branded products. The addition of this filter to the aerial signal path will provide additional selectivity which will enable the receiver's circuitry to cope more easily with strong interfering signals such as Band-2 Stereo or Shortwave broadcast transmissions which can be manifest in many ways such as 'hissing', mixing of many signals together, music breakthrough and desensitisation of the receiver.

The ABF125 will provide useful additional selectivity (in many situations) to any receiver's 'front end' by reducing the multitude of unwanted strong signals from reaching and saturating the receiver's first mixer stage... this results in less interference and improved reception.

Of course 'stub filters' can provide a degree of rejection to unwanted signals but tend to be bulky and often require station applications and usually have to be hand-made. The ABF125 on the other hand is ready made and very compact measuring only 73.5mm and weighing a mere 52g yet offers excellent out of band attenuation typically of 25dB from 0.3 - 75 MHz and 20dB from 190 - 400 MHz. This makes the ABF125 suitable for connection to both external aerials and for connection directly under the whip aerial of a hand-held receiver. A BNC socket (female) is fitted to the top of the ABF125 and a BNC plug (male) to the other making connection to an aerial easy and straightforward.

The ABF125 is not an amplifier so will not 'boost' signals, however the additional selectivity offered can significantly improve reception in many situations by removing unwanted strong signals which may overload the receiver and reduce it's effectiveness. When any connection is fitted to the aerial signal path some reduction of signal is inevitable (attenuation) however the ABF125 in band attenuation level is very small due to the excellent in band V.S.W.R. of 2.1 resulting in a loss of only about 4dB.

Note: Remember to remove the ABF125 from the aerial when monitoring signals other than VHF Airband or signal strength will be dramatically reduced.

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Avid TVDXer, Roger Bunney, has been looking at an interesting and inexpensive TVDX tuner from HS Publications.

With the growth of interest in TVDXing as a hobby so the market in imported v.h.f./u.h.f. multi-standard TV receivers has mushroomed. This type of receiver will usually offer several receiving systems - as a normal System B/G (5.5MHz sound vision spacing), perhaps including the UK/Eire system I at 6MHz and with the French System L, an odd standard with positive-going video and a.m. sound. System B/G/I of course use - going video with f.m. sound. Colour receivers usually include PAL and SECAM, the more upmarket receiver may feature NTSC and hopefully the East European System D with a 6.5MHz sound/vision spacing. The receiver, be it colour or mono, will utilise its own onboard tuning system accessed by an infra red remote control, though the more basic mono TV may be manually operated - with real knobs!

**Short-comings**

Efficient and convenient as this method of operation is, there are basic short-comings in such a packaged system - at least within the TVDXing environment. TV signals can be weak and can suffer from adjacent channel signals resulting in heavy interference. It's a well known fact both in TVDXing and general short wave DXing that reducing the receiver's i.f. bandwidth will improve the signal/noise performance sufficient to resolve or help identify the unknown signal. What this means on a weak TV signal is that the signal in a wide bandwidth is masked with grain and snow - and perhaps nearby frequency interference, reducing the i.f. bandpass will reduce the wideband noise and interference, improve the signal quality - hopefully sufficiently to identify the signal. On a short wave radio a weak signal will be covered with grain and snow - and perhaps nearby frequency interference, reducing the i.f. bandpass will drop the level of 'shash' and make that weak signal much clearer.

Many short wave receivers incorporate variable bandwidth switching as a main control feature, progressively switching in reduced bandwidth functions until the required clarity or adjacent channel interference is cleared. TV receivers are designed for the domestic market which will have no switched selectivity and in general have an i.f. passband as wide as a barn door! Clearly a wonderful standard for the very strong signals such as from Sporadic-E - and in full colour - though in the weak signal or heavy interference market the performance will leave much to be desired.

To the writer's knowledge there are no TV receivers produced that have variable selectivity - though there is a low threshold enthusiasts' satellite receiver with such functions which I hope to review later.

The i.f. output (35MHz) fed into various filtering circuits to produce bandwidth switching between wide (6MHz), medium (3MHz) and narrow (2MHz). The output, at 35MHz, is then fed into a modified upconverter that took the input 35MHz up to about Ch.28 - Ch.32 and fed as a u.h.f. signal into any domestic TV. A further unit was designed that allowed French System L signal conversion for display on a conventional UK TV. Using these techniques it is, therefore, possible to obtain high performance TVDXing reception on any u.h.f. domestic TV, all outboard operational functions being carried on the additional tuning system with the TV acting, in effect, as an r.f. v.d.u!
For many years Universal of Ohio, USA have manufactured a quality range of CODE CONVERTERS. As their appointed authorised dealer, here is their entire range for you to consider. Call today for a free Specification sheet and start putting your receiver to REAL USE!

NEW UNIVERSAL M-400

Forget the limitations you have come to expect from most 'readers'. The self-contained Universal M-400 is a sophisticated decoder and tone reader offering an exceptional range of capabilities. No computer or monitor is required. The sloped front and two-line, 40 character LCD makes it easy to read. The shortwave listener will be able to decode Baudot, SITOR A&B, FEC-A, ASCII and SWED-ARO. Weather FAX can also be decoded to the printer port. The VHF-UHF listener will be able to copy the ACRS VHF aviation teletype mode plus GOLAY and POCSAG digital pager modes. Off-the-air decoding of DTMF, CTSS (PL) and DCS is also supported. The M-400 can even be programmed to pass only the audio you want to hear based on CTSS, DCS or DTMF codes of your choosing. The M-400 can run from 12 VDC or with the supplied wall adapter. All metal construction. The American-made Universal M-400 is the affordable accessory for every shortwave or scanner enthusiast. One year warranty.

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model M-400 Reader</td>
<td>£379.95</td>
</tr>
<tr>
<td>Mode M-900 with Video FAX option</td>
<td>£499.00</td>
</tr>
<tr>
<td>AC Supply for M-900 (12VDC 1A)</td>
<td>£19.95</td>
</tr>
</tbody>
</table>

UNIVERSAL M-1000

The M-1000 turns an IBM computer (or fully compatible clone) into a powerful intercept device! The Universal 1000 Decoder Card requires just one full-size slot in a "PC-type" computer. Standard reception modes are included such as Morse Code, Baudot RTTY and Sitor A & B, plus advanced diplo-military modes such as ARO-M2, ARQ-E and ARQ-E3. ASCII and Packet modes are also featured. Advanced RTTY enthusiasts will appreciate the Datadite and Literal modes. For FAX reception only, the computer must have either an EGA or VGA monitor (colour or mono). Advanced high-resolution FAX imaging includes false-colour and zoom features. FAX images and text can be saved on to disk, operation is easy through on-screen menus, status indicators and help windows. A new datascope feature operates in both RTTY and FAX modes. Software is supplied on both a 3½" 720K and 5½" 360K disks. This is a receive-only board.

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Model M-1000 Decoder Card</td>
<td>£379.95</td>
</tr>
<tr>
<td>Mode M-8000</td>
<td>£1199.00</td>
</tr>
<tr>
<td>VGA 9in Colour Monitor</td>
<td>£179.95</td>
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</tbody>
</table>

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CALL 081 566 1120 TODAY FOR YOUR TAILOR MADE QUOTATION.

*Please NOTE prices are based on 17.5% VAT & no more price increases! E&OE
Outboard DX Tuner

So much for the theory and need for the outboard tuning systems. In the mid-1980s well known TVDXers Keith Hamer and Garry Smith introduced, through their company HS Publications, the D100 tuning system. This was an outboard DX tuner that featured a wideband v.h.f./u.h.f. tuner (v.h.f. including the channels above Band 1), three i.f. selectivity positions and feeding out at u.h.f. The D100 later incorporated variable audio subcarrier tuning so that any TV system audio carrier could be tuned - including satellite subcarriers if the u.h.f. output from a conventional satellite tuner is fed into the D100 with the latter tuned to the satellite tuner output around Ch.35. The updated D100 with all necessary functions sells for around the £100 mark. However, HS Publications felt that there was a need for a more inexpensive tuner and thus the D-400 was born.

Two Units

Unlike the D100 tuner package, the D400 comes as two units, the p.s.u. and the tuner itself. The p.s.u. is a modified and fused ZX Spectrum power supply. Plugged into a standard 13A socket this provides a 13V supply via a 2m long and 3.5mm mono plug to the tuner proper. The tuner itself is small, housed in a black a.b.s. plastics box some 120mm long x 100mm wide x 45mm high, excluding knobs. Three controls are provided, a main tuning knob top right, a band selector to the top left (Bands 1/3/u.h.f.), while the third, towards the bottom centre, is the variable bandwidth/gain control. The system does work well, in an intense tropospheric opening it's best left in a narrow position to save repeated adjustment. Both Band 1 and Band 3 signals either in a high level Sporadic-E or low level Tropospheric mode are well received. The u.h.f. band is less so well catered for with, unfortunately, only partial band coverage and lack of calibration - I suspect the tuner is really intended for the v.h.f. TVDX market though a pity that for those amongst us without the cash for a D100 that are wanting improve performance at u.h.f. The only other comment relates to the size of the calibration dots which are one channel wide, smaller dots I feel would have been better. Otherwise the unit works well, has excellent v.h.f. coverage with the incorporation of i.f. selectivity for weak signal working and reducing interference. The p.s.u. runs cold. The D-400 tuner costs £49.95, including UK postage, direct from HS Publications.

Simple Operation

To operate the tuner is relatively simple, once the main TV is set up and the tuner adjustments are mastered. Fire up the Sinclair PSU with the D-400 connected, rotate the bandwidth control clockwise, connect to and tune the main TV through the Ch.30 to Ch.40 section, there will be seen various peaks of noise and screen blankings. A lower noise peak than the rest will be found, that is the 'real' signal output from the D-400. Now look for signals from the local u.h.f. channels using the D-400, if nothing is seen you have selected the wrong noise 'peak'. Once the correct tuning point is found DX hunting can commence. The real advantage of a tuning system like this is the wideband coverage and the ability to reduce i.f. bandwidth to improve weak signals and reduce noise, plus the rejection of adjacent channel interference. It's only when you have experienced the ability to reduce or eliminate interference on closely adjacent channels such as Ch.E2 and R1 - extremely difficult on a wide bandwidth receiver - that you can appreciate the value of dedicated TVDXing equipment. The expert can obviously modify a TV proper at the i.f. output of the internal tuner for selectivity adjustment, but few readers, I suspect, will be able to undertake such modification and the outboard tuning system is both effective and simple.

Coverage

Band 1 coverage runs from Australian Ch. 8 (always the optimist) through to Ch. R4 vision (45-87MHz); Band 3 Chs. E5-12 (170-230MHz) and u.h.f. somewhat restricted ch.21-51 (actually 455-720MHz) on the unit. At the rear of the tuning box is a recessed 75Ω coaxial socket, the 3.5mm power input socket and a coaxial u.h.f. output lead - 90cm long - terminated in a standard coaxial plug for connection to the u.h.f. domestic TV.

Review

A wide-band Band I, II & III antenna used for TVDXing by Roger Bunney.
**NEVADA**

**YUPITERU**

**NOW IN STOCK**

**THE NEW MVT 7100**

Set to be the handheld scanner of 1993 this radio has to be heard to be believed!

- Covers 330MHz to 1650MHz
- Modes N/M/F/M/AM/SSB/USB
- Memory: 108/142 MHz
- Rotary or keypad freq control
- 50-88, 118-174, 406-512 MHz
- Includes Mains Adapter
- £249

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**MVT 7000 HANDHELD**

- Receives 5 to 1300 MHz
- Covers 330MHz to 1650MHz (at reduced sensitivity)
- 300 Memory channels
- £389

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The worlds first dedicated Civil/Military Airband Receiver, the VT225.

A powerful and practical scanner that leaves the competition standing - A super sensitive set designed for optimum performance on the Civil/Military Airband.

- Covers 8 to 1300MHz
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**NEW SONY “PYXIS” GLOBAL POSITIONING RECEIVER**

A portable satellite receiver that gives...

- Position in lat/long and altitude accurate to 30-100 metres
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- £54

**SONY**

As a Sony Shortwave Centre we stock the complete range of Sony Shortwave products - here is a selection of the popular models.

**KCF2001D**

A standard shortwave receiver. VHF, and airband radio (150MHz to 1350MHz). Receives AM/FM, and SSB Special Price £249

**SW77**

One of the new additions to the Sony range, the SW77 covers 150kHz to 30MHz plus70-100MHz. With a rotary tuning dial, 125 scan memories, reception of AM, FM, USB, LSB, CW, TV, record facility, this is a superb all rounder. £349

**SW7600**

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**AN3**

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**SHORT WAVE MAGAZINE, JUNE 1993**

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**SHORT WAVE MAGAZINE, JUNE 1993**
SCANNER ACCESSORIES
LOW NOISE PRE-AMPLIFIERS
These new preamps are perfect for the scanner enthusiast and will allow reception of signals that were inaudible without them.

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For base and handheld scanners.
- 255kHz
- Low noise GaAs FET
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MODEL M100
Some specification as the M75 above but with full RF switching. May be used with transceivers of up to 5 watts RF output.

JIM PSU101 MK IV
A combined desk stand and power supply/charger for handheld scanners. Suitable for most popular models. Special versions now available. Please call for more details.

YAESU
NEW FR-700 100 HF RECEIVER
Covers 3.5MHz to 30MHz. Includes 900 memory channels with all mode capability. Five different scan options and an automatic record facility. What more do you ask? Full brochure available. Special offer - £115.

KENWOOD
SRS900 RECEIVER
Covers the receive section of the TS440S HF Transceiver both in looks and design. This model covers 100MHz to 300MHz all mode, 100 memories and facility for optional filtering. RECOMMENDED CALL 0239 218181

MICRO-READER
ERA Microreader
Data Communications decoder - decodes RTTY, CW, AMTOR (A) & STOR (B). 16 characters LCD display needing only connection to receiver expansion speaker socket. Easily available to become available will be the large 16-line LCD display with builtin parallel printer driver port. Variable built-in micro tape. (Call and reserve your optional display now) - £169.00

SHORTWAVE RECEIVERS
LOWE HF-225
Receiver 130MHz - 300MHz Optimal extra inc FM, SW, AM, Airband, Scanner Case & Active Ant. Long standing favourite. Quality filtering included - £479.00

LOWE HF-150
Ideal receiver for the general range of HF bands in excellent condition. Ideal for the general HF enthusiast. Includes 900 memory channels with all mode capability. Five different scan options and an automatic record facility. What more do you ask? Full brochure available. Special offer - £359.00

NRD-535
Japanese top of the range general coverage receiver. 0.1 - 30 MHz - lots of options available. 139.

EMC R88
Drake's R88 connoisseurs is a must have high performance receiver. 100/300MHz with 100 programmable memories. AM, FM, and WFM Modes, Sleep timer and clock Facility. Optional N5Cards, carry case, and fast chargers are available. NEW LOW PRICE - £329

IC R1
Icom's most popular panelized wideband receiver frequency from 150MHz to 300MHz with 100 programmable memories. AM, FM, WFM Modes. Easy to use and built to the highest quality. A £1, 999 memory channels with scan facility and a 10dB preamp fitted as standard - £759

RECEIVERS

SANGEAN

SSB Transceiver both in looks and design this gives the top performance. To the shortwave listener this is a top-class receiver with a huge 4-line LCD display needing only connection to receiver expansion speaker socket. £169.00

AR3000 OWNERS LOOK!
SCS RECEIVER CONTROL SOFTWARE
We've just released a new software package for the AR3000 that offers:-
- AR3000 Computer Control
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RUSH B707
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DIAMOND D305
[500MHz - 1500MHz]
Mains version of D707 - £60.00 - 4 line LCD display - £4.75 p&p.

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SANGEN

AT5803A
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STEELPEN MR87
Marine Band Radio, this radio will appeal to both Aircraft Enthusiasts and the Marine Monitor. The multi band 'jumpradio' has almost everything you need to monitor these bands, SW1, SW2, SW3, SW4 and SW5 the Marine and Armed Forces...

Short Wave Magazine, June 1993
21
There are, of course, several African countries also broadcasting on the higher short wave frequencies, but we are concerned only with the 60, 75 and 90m bands. Apart from their own vernacular languages, broadcasts are frequently made in English, French and Portugese, usually on the hour with a newscast. The programme content consists mainly of pop or indigenous music, the latter being readily recognised by its distinctive African beat.

The best time for hearing the weaker and more difficult stations is during the winter months, when ORN is low and the dark path is at its longest. As the majority of the countries will QSL your equipment is generally old. Economies in a poor state, that with most of the day. It should also be noted frequent breaks during the sign off around 2300UTC, with the dark path is at its longest. Stations is during the winter months, when QRN is low and the Okavango Swamps. R. Botswana signs on at 0300 and signs off at 2200.

The distinctive, and easily recognisable, interval signal consists of cow-bells and farmyard sounds.

There are, of course, several frequencies, although some eluding to swamped by R. Namibia, but 4.910MHz may be heard from sign on at 0255 until 2200. The interval signal for R.1 is a peal of church bells and for R.2 is a mix of local instruments.

DXing Africa on the Tropical Bands

There are at present 33 countries on the African continent broadcasting on the Tropical Bands. With patience and good propagation, most of them may be heard and indentified. Dick Moon offers some help and information for the would-be Africa-DXer.

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1 REPUBLIC OF SOUTH AFRICA

R. Orion; R. Orange; RSA, PO Box 4549, Meyerton, Johannesburg. 2000.

Freq: 3.215 (R. Orange); 3.320 (R.Suid Africa); 4.810 (R.South Africa); 4.880 (Radio 5) Lang: English; Africans

South Africa transmits on four frequencies, signing on at 0300. On 3.320 and 4.810MHz, RSA transmits from 0300-0530 and again from 1640-1930 when Radio Orion takes over the frequency for the remainder of the 24hr. period. 4.480MHz is allocated to Radio 5 which transmits from 0300-0445 and from 1630-2400.

The interval signal is the call of the Bokmakerie accompanied with a folk song played on a guitar.

2 SWAZILAND

Trans World Radio, PO Box 338, Mbabane.

Freq: 3.200; 4.760; 5.055MHz Lang: English; German; Portugese, French; Vernacular

The kingdom of Swaziland is a land-locked enclave within the borders of South Africa, and is one of the bases for Trans World Radio, an International religious broadcasting company. The sign on for 3.200MHz in Ndebele and for Portugese, French; Vernacular

The National Antem is played at the opening and closing of the LNBC transmissions.

4 BOTSWANA

R. Botswana, Private Bag 0080, Gaberone.

Freq: 3.356; 4.830MHz Lang: English; SeTswana

Botswana, a self governing country, has borders with South Africa, Namibia and Zimbabwe. It is the home of the famous Chobe Game Reserve and the Okavango Swamps. R. Botswana signs on at 0300 and signs off at 2200.

The distinctive, and easily recognisable, interval signal consists of cow-bells and farmyard sounds.

5 MOZAMBIQUE

R. Mozambique or R. Maputo, CP 2000, Maputo.

Freq: 3.2105 (Maputo); 3.281 (Beira); 3.338v (Maputo); 3.371.4v (Beira); 4.858 (Maputo); 4.864.2 (Maputo); 4.927MHz (Maputo)

Lang: Portugese, English; Vernacular

Despite a civil war, which has been raging in the country for many years. R. Mozambique continues to operate on several frequencies, although fluctuations in frequency are frequent.

The national station on 3.210 and 4.864MHz signs on at 0300 and signs off at 2200.

The interval signal is a tune called Mbira played on a zylophone with spoken IDs in Portugese, English and Swahili.

8 ZAMBIA

Broadcasting House PO Box 10015, Lusaka.

Freq: 3.290; 4.910MHz Lang: English/Vernacular

Zambia, formerley Northern Rhodesia, has two tropical band frequencies. 3.290MHz is very difficult to catch, usually being swamped by R. Namibia, but 4.910MHz may readily be heard from sign on at 0255 until 2200. The interval signal is the very distinctive and thrilling call of the fish eagle.

9 ANGOLA

R.Angola, CP 1329, Luanda.

Freq: 3.270; 3.390MHz Lang: English; Africains; German; Vernacular

The newly created state of Namibia took over the old Radio Southwest Africa equipment swamped frequencies, and now broadcasts from 0230-2200. The sign-on and off tunes are Rondo Russo for the English programme, and Das Sudwesterfied for the German and Afrikaans programmes.

7 ZIMBABWE

R.Zimbabwe, PO Box HG 444, Highlands, Harare.

Freq: 4.828 (Radio 1); 5.011MHz (Radio 2)

Lang: English; Vernacular

Zimbabwe broadcasts on the tropical bands from Gweru, and signs on at 0300 running through to 2200. The interval signal for R.1 is a peal of church bells and for R.2 is a mix of local instruments.

6 NAMIBIA

R.Namibia, PO Box 321, Windhoek, 9000.

Freq: 3.270; 3.390MHz Lang: English; Africains; German; Vernacular

The newly created state of Namibia took over the old Radio Southwest Africa equipment swamped frequencies, and now broadcasts from 0230-2200. The sign-on and off tunes are Rondo Russo for the English programme, and Das Sudwesterfied for the German and Afrikaans programmes.
For your deal call: 071-637-0353

Short Wave Magazine, June 1993

23
Another one of Africa's war-torn countries, Angola still manages to transmit on several frequencies, and is heard from 0500-2300. The interval signal is played on a vibraphone.

10 ZAIRE
La Voix du Zaire, BP 3164, Kinshasa.
Freq: 4.862MHz v (Bukavu)
Lang: French; Vernacular
This somewhat turbulent country broadcasts from 0300-0700; 1000-1245; 1500-1830. It shares its frequency with R. Maputo.

11 MALAWI
Malawi Broadcasting Corporation, PO Box 30133, Chichiri, Blantyre.
Freq: 3.3806MHz
Lang: English; Vernacular
Malawi transmits with a power of 100kW from 0255-0710; 1400-2200. The interval signal is a cock crow and drum beats.

12 TANZANIA
R. Tanzania, PO Box 9191, Daar es Salaam.
Freq: 4.785; 5.050MHz
Lang: English; Vernacular
R. Tanzania broadcasts on two frequencies, which may be heard between sign on at 0200 until 2100.

The interval signal is a tune played on a celeste.

13 KENYA
The Voice of Kenya, PO Box 30456, Nairobi.
Freq: 4.885 (NE & Coastal service); 4.915 (Central service); 4.935MHz (General service).
Lang: English; Vernacular.
The General Service of the Voice of Kenya on 4.935MHz can usually be heard between sign on at 0200 until sign off at 2010 broadcasting in English. 4.915MHz is difficult to identify as it is on the same frequency as R. Ghana.

The interval signal is played on flutes and drums.

14 UGANDA
R. Uganda, PO Box 7142, Kampala.
Freq: 4.976v; 5.026MHz v
Lang: English; Vernacular
The Blue Network of R. Uganda transmits from 0600-0600 and from 1300-2100. The transmission on 5.026MHz has co-channel competition from ORT Parakou, Benin on 5.025MHz, and is best heard between 0300 and 0600 before Benin signs on.

The interval signal is played on a zylophone.

15 CONGO
La Vde la Revolution Congolaise, BP 2241, Brazzaville.
Freq: 4.765MHz
Lang: French; Vernacular
After being dormant for some years, RTV Congolaise registered short wave broadcasting in 1989. Transmissions are from 0400-0700 and from 1700-2100. The sign on is a typical African tune, with the National Anthem played at sign on and sign off.

16 GABON
R. diff Television Gabonaise, BP 10510, Liberville.
Freq: 4.777; 4.890MHz (R. France relay)
Lang: French; Vernacular
The National service of this ex-French colony puts out 100kW, and transmits from 0455-0600 and from 1600-2300. The station open and closes with the National Anthem and has an interval signal played on indigenous instruments.

17 EQUATORIAL GUINEA
R National de Guinea Equatorial, Apartado 749, Bata, Mbni.
Freq: 4.926; 5.003MHz
Lang: Spanish; Vernacular
This small Spanish speaking country, sandwiched between Gabon and Cameroon, broadcasts between 0430 and 2200, both channels carrying the same programme.

The station opens and closes with the National Anthem.

18 CAMEROON
Cameroon RFT, BP 1634, Yaounde.
Freq: 4.000 (Bafoussam); 4.750 (Bertoua); 4.795 (Douala); 4.850

Lang: French; Vernacular
The National service of this ex-French colony puts out 100kW, and transmits from 0430-0600 and from 1600-2300. The station open and closes with the National Anthem and has an interval signal played on indigenous instruments.
African continent, and is
As its name implies, this small
the vernacular languages.
Gulf of Guinea and
Nigeria is one of the more
Radio Nigeria.
21 NIGERIA
Radio Nigeria.
Freq: 3.326 (Lagos); 4.770
(Kaduna); 4.990MHz
(Lagos)
Lang: English; Vernacular
Nigeria is one of the more
highly developed countries in
Africa and has a sophisticated
communications system. The
tropical band broadcasts may
be heard at the following
times: 3.326MHz; 0430-1000,
1700-2300; 4.770 and
4.990MHz; 0430-2305 (English
news at 1800; 1700)
22 BENIN
Rdiff. et Television du Benin,
BP 366 Cotonou.
Freq: 4.870 (Cotonou);
5.025MHz (Parakou)
Lang: French; English;
Vernacular
This small country on the west
coast of Africa transmits from
0500-0845; 1200-1400; 1600-
2300 on 4.870MHz and from
0500-0800 and 1700-2200 on
5.025MHz.

The interval signal is on
local instruments.
23 TOGO
Rdiff. Television Togolaise, BP
434 Lome.
Freq: 3.221 (Kara);
5.046MHz (Lome)
Lang: French; Vernacular
Togo is sandwiched between
Benin and its larger neighbour
Ghana, and broadcasts from
0525-0005 on 5.040MHz, and
0525-0900; 1200-1400 and
1600-2305 on 3.221MHz.

The interval signal is a peal
of chimes, and the Hymn
Togolaise is played at sign on
and sign off.
24 GHANA
Radio Ghana, PO Box 1663
Accra.
Freq: 3.366 (Radio 2);
4.915MHz (Radio 1)
Lang: French; English;
Vernacular.
Radio 1 transmits from 0530-
0905; 1200-2300 and Radio 2
from 0525-0900 and 1700-2300.
4.915MHz is a shared frequen-
ty with the Voice of Kenya. The
interval signal is a drum beat.
25 IVORY COAST
Rdiff. Television Ivoirienne, BP
V191, Abijan.
Freq: 4.940MHz
Lang: French; Vernacular.
Broadcasts are from 0600-
0800 and 1700-2400
The Ivory Coast signs on
with clock chimes and the
National Anthem.
26 LIBERIA
Radio ELWA, PO Box 192,
Monrovia.
Freq: 3.230; 4.760MHz
Lang: English
This station is the owned by
the Cultural Broadcasting
Service of the Sudan Interior
Mission, but has been inactive
for some months.
27 SIERRA LEONE
Sierra Leone Broadcasting
Service, New England,
Freetown.
Freq: 3.316MHz
Lang: English; French; Creole
This is a tough one as the
station only puts out 10kW.

The interval signal is a 5-
ote chime, followed by a
military band.
28 GUINEA
Rdiff. TV Guineenne, BP 391
Conakry.
Freq: 4.900MHz
Lang: French; Vernacular
Not to be confused with its
next door neighbour, Guinea-
Bissau, the Republic of Guinea
is situated adjacent to and
almost surrounds Sierra-
Leone. Transmission times are
0555-0800 and 1200-2400.

The interval signal is played
on a guitar.
29 MALI
Rdiff. TV Malienne, BP 171
 Bamako.
Freq: 4.783; 4.835MHz
Lang: French; Vernacular.
A large, sparsely populated
country in central West Africa,
Mali broadcasts on two
frequencies from 0600-1000
and 1800-2400.

The interval signal is played
on a guitar.
30 BURKINA FASO
Radiodiffusion-Television
Burkina, BP 7029,
Ouagadougou.
Freq: 4.815MHz
Lang: French; Vernacular.
Formerly known as Upper
Volta, Burkina Faso broadcasts
from 0530-0900 and 1700-
2400.

The interval signal is played
on a Balafon.
31 NIGER
La Voix du Sahel, NP361
Niamey.
Freq: 5.020MHz
Lang: French; English;
Vernacular.

Niger transmits from 0530-
0700 and 1700-2200.

The interval signal is played
on a flute.
32 MAURITANIA
Rdiff TV de Mauritanie, BP
200, Nouakchott.
Freq: 4.845MHz
Lang: Arabic; French;
Vernacular.
Mauritania is an Islamic
Republic situated on the
extreme west coast of Africa
and broadcasts from 0830-
0830 and 1600-0100.

The interval signal is played
on a Mauritanian guitar.
33 RWANDA
Rdiff. de la Republique
Rwandaise, BP 83 Kigali.
Freq: 3.330MHz
Lang: French; Vernacular
This tiny country sandwiched
between Tanzania and Zaire
broadcasts from 0300-0600;
0900-1200 and 1330-2100.

The interval signal is played
on a local harp.

We have now concluded the
total round-up of African
countries operating on the
tropical bands, and it just
remains for you to switch on
and start your collection.

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“It’s Fantastic!”
Optoelectronics 2300

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The SW -55 is the latest short wave portable from Sony. It integrates computer technology to provide a programmable data base of 25 station names in its memory bank. Also included are125 preset stations for individual frequencies. Fabulous!

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Short Wave Magazine, June 1993
HUGE RETAIL STORE
Mail Order Price Catalogue
We now have our new mail order price list available. Nearly 1500 items listed from all the top manufacturers. You'll find items in these you never knew existed! From big rigs to little accessories, its the biggest list in the industry. All you have to do is ring or write and it will be in the post.

Mail Order
We have the busiest mail order department in the business. And its expanding. We send out over 10,000 parcels a year. We now have a regular night shift for despatch and of course everything is computerised. We really do try to get everything out the same day and in the last couple of weeks we have re-organised the mail order departments to try and make sure we can continue to achieve this target as our business grows.

Come and see for yourself - Visit us on our OPEN DAY, Sunday 9th May - BARGAINS GALORE!

MFJ - 722
Receiver Audio Filter

This filter will radically improve your short wave reception whether it be receiver or transceiver. Simply plug between audio output and speaker or headphones and hear the weak signal DX without the QRM! Uses 71C devices and provides full speaker output when fed with 12V DC. Far cheaper than conventional IF crystal filters and far more flexible. Used by DX'ers throughout the world, the MFJ filter will transform your listening pleasure.

SSB high pass filters 2.5 - 2.0 - 1.5kHz
CW band pass filters 180 - 150 - 110 - 80 Hz
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Notch filter 300Hz - 3kHz variable
Notch bandwidth adjustable
Straight Through Position

GLOBAL AT-1000
Receiver ATU 500kHz - 30MHz

This receiver ATU has been in production for over ten years and is still the best on the market! Its performance is excellent and is the sure way to improve your aerial matching problems when using random wires, balancing feeders or even coastal fed systems. No aerial can hope to be a good match over the whole spectrum and you will only get maximum transfer of signal into your receiver when the aerial load presents a 50 Ohm impedance. This is just what the AT-1000 does. It also has provides the added bonus of improving the front end selectivity. An essential item.

£89.95 carr £4.00

Short Wave Magazine, June 1993
WEATHER MONITORING

Follow global weather by HF radio and satellite.
View and record local weather conditions.

ICS-FAX III
All you need to produce superb reproduction of weather maps and amateur transmissions on the VGA screen of an IBM-PC. Extremely easy to use. The hardware to interface between your PC and an SSB receiver is included. Covers weather facsimile, Navtex, RTTY, CW and FEC.
ICS-FAX III: £139.95

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SYNOP data sent in RTTY format on HF by meteorological organisations around the world are directly plotted on the screen of your IBM-PC. Just stand back and watch weather observations appear on a map on the screen of your PC as you watch. Updates every 3 hours. Hardware interface included. A total breakthrough in weather monitoring by radio. Send for more details.
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FAX-2
A powerful weather fax system designed for marine use, but equally suited to the discerning land based user. Quiet operation with inbuilt printer. Auto scheduling. FEC, Navtex and RTTY also included. Connects to a good quality SSB radio receiver.
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Short Wave Magazine, June 1993
The Infantry Wireless Set No. 38

Ron Ham describes one of the radios designed for use during the Second World War.

At the beginning of WWII the British Army needed portable wireless sets for man-to-man and man-to-vehicle communications. Such a set had to be easy to use and as economical on batteries as possible and, because the infantryman carried almost everything, the set and accessories had to be as lightweight as 1940s technology allowed.

Do remember that this all happened 20 years before low voltage and minimal-current semi-conductors replaced the thermionic valve at the heart of wireless equipment.

The One Man Station

In my view, WS-38, made about 1941, was years ahead of its time because, with this set, a man became a complete wireless station. He could transmit and receive signals anywhere between 6 and 9MHz and, with simplicity in mind, the designers arranged for the transmit and receive frequency to be selected by the rotation of a single knob.

An instruction card, Fig. 1, packed with each set, shows how a soldier should carry it along with his gas mask, haversack, helmet and most likely a rifle. The incoming signals were received via a headset which was designed to fit under a steel helmet and his voice was transmitted through a pair of throat microphones, thus leaving both hands free for writing messages or firing a rifle in battle. These microphone assemblies have a pair of pick-ups, which look like small leather pads, held in position, one each side of the throat by an elastic neck band and, believe it or not, the sound quality was reasonable.

The large dry battery, with a four-pin output socket, that provided the 3V and 150V required to drive the WS-38 was carried in the haversack and the antenna rods were kept in a long canvas container slung from the users shoulder. The signals satchel, displayed behind the set in Fig. 2, contained the headset and microphone, an extra battery and a padded metal case packed with five spare valves (4 x ARP12 and 1 x ATP4).

A Look Inside

One side of this compact set with its five valves, four ARP12s (Army Receiving Pentode) and one ATP4 (Army Transmitting Pentode) is seen in Fig. 2 and the opposite side, showing much of the component layout, is the subject of Fig. 3. Although both illustrations show the control panel with its single tuning knob in the centre and combined on/off and send/receive switch at the bottom, the best view of the angled socket for the antenna rods is in the top left of Fig. 3.

The hefty multicore cable travels from the set to the soldier’s haversack where it is connected by a multi-way plug to a dedicated junction box seen at the lower left of Fig. 2. The latter has a short lead and plug for the battery and two non-reversible sockets for the headset and microphone jack-plugs. WS-38 is protected by a metal container, measuring approximately 155mm long, 160mm wide and 97mm deep and is fixed to the control panel framework by a 2BA screw in each corner. This flat sided case enables the set to be operated while standing on an ammunition box, floor or table.

Construction

There were no printed circuit boards in those days for mass production, so the majority of military sets were hand-wired and the joints for each component were individually secured, usually by members of the fairer sex with an electric soldering iron.

The three-gang tuning capacitor and its associated trimmers, the headset and microphone transformers and the large coil box occupy the left, centre and right of the upper side of the main chassis, Fig. 3 and their positions, relative to the valves can also be seen in Fig. 2. Although each of the four ARP12s (CV1331/Mazda VP23) require 2v at 80mA for its filament and 120v on its anode, the ATP4 (CV1366/Mazda V248A) needs 2.6V at 300mA and 150v respectively. It is interesting to note, I assume to save extra filament current and space, that a westector, fitted among the parts in the large coil box, is the receiver’s detector.

Continued over
Preservation

A variety of military sets are on display at the Chalk Pits Museum (Amberley, Sussex.) and visitors to the wireless exhibition building often ask if any of these sets work. The general answer is 'no', mainly because most of the capacitors, resistances and transformers, used in manufacture, have failed due to old age, damp storage and lack of use.

The next obvious question is "why aren't the faulty parts replaced and the radios made to work?". Of course, this could be done, but there are two very good reasons why not. First, such equipment, especially the transmitter, is of little use today so there is no point in doing the time-consuming repairs and secondly, if any of those original components, nearly 50 years old with their wartime army markings, are removed and replaced by present day parts, students in the future will only see a hotch-potch of electronic bits instead of the military designs and technology of the early 1940s when factories were in full wartime production.

Used In Anger

Should a valve be broken through mechanical shock, which could easily happen in battle, it was possible for a soldier to replace it by following the instructions under the lid of the spare valves container. WS-38 had a range of between 5 and 10 miles and, in addition to another WS-38, the operator could communicate with units equipped with the more powerful WS-18 (a back pack set with provision for a hand microphone and a Morse key), WS-19 (fitted in armoured-cars and tanks), WS-22 (used in lighter vehicles), WS-46 (similar to WS-38, but has three crystal-controlled pre-set frequencies and a button type Morse key on the control panel) and the Canadian built WS-58. The signals transmitted by all of these sets could be received at headquarters or in a 'wireless-wagon' on the army communications receivers type R103, R107 and R109.

Listen With Grandad

by Leon Balen & David Leverett

My Grandma she say, if your Grandad was RAF Sergeant George Jenkins stationed here in the war, he MY Grandad also.
Did you know that the best deals are always available at RADIO HAMSTORES. Part-exchange, trade-ins and second-hand purchases are always welcome. We help radio enthusiasts to own the equipment they really want, all top brands are available at prices to suit your pocket.

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Short Wave Magazine, June 1993
Joan Ham met well-known TVDXers Edwina and Tony Mancini on a glorious Sunday afternoon at Chalk Pits Museum. It is always interesting when familiar names are augmented by faces and personalities. Ron and I ‘know’ many people through these pages and enjoy meeting and talking to them when they come to the Chalk Pits. On a glorious sunny Sunday in July, Edwina and Tony Mancini, having driven all the way from Derby and spent the night in Arundel, visited the museum and made themselves known. I took the opportunity to find out about these regular contributors to Ron’s television column.

Edwina is a nursing auxiliary and Tony is in the electrical business. How did they both become hooked on watching television pictures from many countries? What was the peculiar appeal of receiving less than perfect reception of English programmes with foreign language subtitles, or of seeing familiar products advertised in unfamiliar, strange-sounding, catch-phrases?

Curiosity

The earliest recollections were Tony’s, going back to the age of nine or ten when his natural curiosity was fed by a teacher who happened to be a radio amateur. Two nights a week, he and other interested boys stayed after school and learnt to build receivers, crystal at first progressing later to one- or two-valve sets. Their local government surplus emporium was Eddy’s in Nottingham, advertised in PW. Leaving school, Tony went to work for Rediffusion at their headquarters at Castle Rock. The firm was then installing ‘wired vision and radio’, the forerunner of cable TV. It was here that Tony first heard of DXTV and decided that he would like to investigate the phenomenon.

Tony’s first installation was an East German Mini-star televiser fed by an old BBC1 ‘H’ antenna and he found it worked well, producing his first pictures. With this, he was hooked. I asked Edwina what she thought about it and she said frankly that she thought he was ‘off his rocker’, until it dawned on her that the first test card she saw was coming all the way from Czechoslovakia! Like Tony, she was thrilled. They realised that this was serious, and they must add to their monitoring equipment. Next was added a Hitachi with a turret tuner and a Bush converted to French Canal+ and Bands I and III. They never really bothered with Band II. Every kind of propagation was interesting at all seasons, meteor scatter, Sporadic-E and tropospheric.

Edwina and Tony live in a unique area, which they described as a bowl. To the east is about eight or nine kilometres of hills running due N-S and about 200 metres high. The ground is full of iron and tin mines, which Tony thinks bend the signals, as their reception does not conform to that expected by the location. At home they can receive Norway and Sweden, theoretically shielded from them by hills, but on top of the hills, they pull in Spain.

Habit-forming

TVDXing is definitely habit-forming, and the home station has grown to accommodate their interest. They now have tevision receivers by Ferguson, Hitachi, Philips, a D100 converter, a multi-system Grundig receiver and video recorder, and just to play with, a Citizen hand-held covering the vhf and uhf bands.

Two such dedicated TV anglers could not miss out on the new sport, and so a Luxor satellite television system with 900mm dish in the garden was added to the Mancini menage. Edwina enjoys driving the antennas around and clocking up stations, but Tony is quite happy to sit and watch his favourite programmes translated out of English.

Our visitors, needless to say, were not confined to Edwina and Tony, but we also met the Grundig and Citizen which had travelled from Derby with them and were put through their paces.
No. 2
Fighting for the No 1 spot, the Kenwood R5000 is still the benchmark to which others are compared. The superb engineering and excellent audio, together with the VHF converter as an option make this an unbeatable package.
Deposit £194.95 & 9 payments of £89.00
With VHF option, Deposit £309.00 & 9 payments of £99.00

No. 3
The elusive Yaesu FRG100 - it may be winning all the awards, but where are they? By the time you read this, I should have plenty. It's crept up in price, but so has everything else. An ideal starting machine.
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With VHF option, Deposit £309.00 & 9 payments of £99.00

No. 4
The LOWE HF150 still amazes everyone who comes into contact with it. It's small & dumpy looking, but looks aren't everything. (So my MUM says anyway). It works brilliantly and I've sold hundreds. Do you want to be the next proud owner?
Offered with keypad option, Deposit £40.00 & 9 payments of £39.89

No. 5
Now at No. 7 is the Drake R8E. In direct contrast to the competitors, the Drake comes with all the filters fitted as standard. Once you get used to driving it, it's a real masterpiece and one that's outsold all other receivers so far this year!
Deposit £295.00 & 9 payments of £100.00
With VHF option, Deposit £340.00 & 9 payments of £120.00

No. 6
The Icom IC71E has zoomed up in price, but I've got a selection of excellent USED examples, just LOOK at the savings!
New, Deposit £259.00 & 9 payments of £88.88
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No. 7
Nine Mont
DID YOU KNOW, that you can turn that old receiver or accessory) into ready cash? Trade against a new model, put the rest of your NEW one over NINE months - INTEREST FREE. Better still, there's no catch. No dodgy TEN CARD HANDLING CHARGE, just the best possible WITHOUT ANY RISK.

No. 8
The IC701E is the ideal alternative for those who don't want to fork out for its big brother, the IC71E. Keypad entry, Large display & speech announcement available, make this receiver a real winner!
Deposit £159.00 & 9 payments of £77.77

No. 9
If you must have the FM mode on a shortwave receiver & fancied the Lowe HF150, then the HF225 is the one to choose. Slightly larger than its stable mate, I'm offering the unit with FM/ECS unit fitted for you, it's a solid job, and priced it to include the KeyPad, which is a must.
Deposit £154.00 & 9 payments of £45.00

No. 10
At number 10 is a package deal that will get the keen beginner off to a flying start. With the massive bulk of new stock I get through every month, I always have a good selection of USED RECEIVERS available. One that continues to sell time and time again is the good old FRG7700 from YAESU. They're digital display, all mode & offered with 9 months warranty. I'm offering them in good condition, with the following extras:
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* ANTENNA TUNING UNIT
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Deposit only £70.00 & 9 payments of £39.50

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No. 2
The AOR 1500 is now up to ‘EX’ spec and makes a close runner to the MVT7100. Still featuring all mode capability, the Handie continues to offer excellent value including NICADS, CHARGER, FLEXI Antenna, CIGAR LEAD, CASE & much more as standard.
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No. 3
The AOR 3000A is still the ultimate in BASE/Mobile scanners. It’s actually more than a scanner, but a true ShortWave receiver as well. All mode and offered complete with Power Supply & Antenna. I’ve also EXTENDED the payment terms.
Deposit £241 & 12 payments of £59.00

No. 4
For the keen AIRBAND enthusiast, the VT-225 from Yupiteru is a must. Covering Civil & Military Airband only, this HANDIE scanner has its performance optimised for those two bands leaving the wide band scanners unable to compete.
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No. 5
The Icom IC7100HF mk111 has found its way into many commercial applications & even more listeners homes! No shortcuts in design & thanks to our HF Modification, the receiver now covers 50KHz - 2000MHz with no gaps. It’s not cheap but I’ll probably never sell you another receiver!
Deposit £405.00 & 9 payments of £110.00

No. 6
The AOR 1500, despite the introduction of the 7100, is still high up the charts & selling well. Basically, if you don’t want 1000 memories and have a SW receiver with SSB already, then this is the beastie for you. Brilliant performance & purchased recently by several PUBLIC SERVICE operators.
Deposit £69.95 & 9 payments of £33.33

No. 7
AOR have had their AR2000 around for a while now and I’m bound to say its one of the most reliable of all the models. 1000 memories & offered with all accessories, in true AOR VALUE FOR MONEY tradition, buy one & you won’t be disappointed.
Deposit £59.00 & 9 payments of £28.88

No. 8
The ever so tiny Icom IC-R1E has still to be caught up with in terms of its size and performance. A real "POCKET" scanner, sold in their thousands to amateur and commercial users alike.
Deposit £39.50 & 9 payments of £39.50

No. 9
The amazing VT-125 mk11 from Yupiteru still represents the best civil airband handle scanner available. Nothing comes close to its performance or size. Offered with the very latest "AIR BAND FREQUENCY GUIDE"
Deposit £29.00 & 9 payments of £16.66

No. 10
Just sliding into the top ten, the incredible value MS1000 base/mobile scanner from NEVADA. Built in a strong metal case, the unit covers all the important frequencies from 500KHz-600MHz & 805-1300MHz. Offered with free Valins Power Supply and mobile or base antenna for instant operations!
Deposit £49.99 & 9 payments of £77.77
**June Special Offer**

**SANGEAN ATS803A**

(Direct key-in world receiver with quartz alarm clock timer)

Specifications and features:
- 150-200 kHz continuous tuning with no gaps. Phase locked loop-double conversion Superheterodyne
- Full shortwave/AM/SSB 150-2999 kHz no gaps!
- FM87.5-108 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.
- Two power sources - battery or AC mains adapter.
- General coverage of all AM bands in LW/MW/SW.
- Dedicated broadcast band on all versions.
- Auto stop function - tone or sound broadcast in headphone stereo.
- SLEEP function turns the radio on or off after an adjustable time of 10-90 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 (62.7kHz)
- BFO control (Beat Frequency Oscillator) enables reception of SSB/USB/LSB/WB (single side band) and CW (Morse Code) transmitters.
- Illuminated display to facilitate night-time use.
- Designed for both portable and desk top use.
- Five dot LED signal strength indicator.

DIMENSIONS: 29.2 cm x 16.0 cm (11.5 in x 6.3 in x 2.36 in)
OUTPUT: 120 mV (10% THD)
WEIGHT: 1.7 kg (3.7 lbs) without batteries.
Wide/narrow filter switch.

£119.95 + £5 check, test and p&p.

**SKY SCAN V1300 Antenna**

Most discones 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 discone has both vertical and horizontal elements for maximum coverage. The V1300 is constructed from best quality stainless steel and aluminium and comes complete with mounting pole. Designed and built for use with scanners.

£29.95 + £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.

**YUPITERU MVT 7000**

**NEW**

**MTV 8000 MOBILE/BASE**

This new model is the mobile version of the popular MVT 7000 Handheld above.

- Receives 8 to 1300 kHz 100kHz to 13000 kHz (at reduced sensitivity)
- 200 Memory channels
- Rotary or keypad freq. control
- AM/FM/NFM
- Large display with signal strength meter.
- Each set is supplied complete with:
  - Full set of high power NiCads, AC charger, DC power lead and carry strap.
  - UK charger.
  - Earpiece.

£29.95 + £3.00 p&p.

**NEW**

**AR1500 HANDHELD**

Covers 500 kHz to 13000 kHz receiving NFM, WFM, AM, and SSB. Supplied with a large selection of accessories including:-
- Charger
- Dry cell battery case
- 5 in 1 UV antenna
- Earpiece
- Soft case

June Special Offer £29.95 + £2.00 P&P.

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- Charger
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- Earpiece
- Soft case

June Special Offer £29.95 + £2.00 P&P.

**AIRBAND RADIOS**

This month we are pleased to introduce THE WORLD'S FIRST DEDICATED CIVIL/MILITARY AIRBAND RECEIVER, THE VT225.

A powerful pocket scanner that leaves the competition standing.
A secure sensitive set designed for optimum performance on the Civil/Military Airbands.
- Receives 108-142 kHz Civil Airband 220-390 MHz Military Airband 144-150 MHz Marine Band
- 100 Memory channels
- AM/FM or WFM
- Priority channel function

**NEW**

**NEW 100 Channel Scanner**

Netset PRO-46. Covers 66-88, 108-136.975 kHz (AM), 137-174 kHz, 406-512 kHz and 806-966 MHz. LCD display with backlight.

- Search, priority, lockout, scan-delay, memory backup circuit.
- Belt clip. Requires 4 "AA" batteries or Adaptor.

£199.99 + £5 check, test and p&p.

**NEW 50 Channel Scanner**

Netset PRO-44. Covers 66-88 kHz, 108-136.975 kHz (AM), 137-174 kHz, and 380-510 MHz. LCD display with backlight.

- Search, lockout, scan-delay and keyboard lock.
- Memory backup circuit for charging batteries.
- Belt clip.

Requires 6 "AA" batteries or AC/DC Adaptor.

£149.99 + £5 check, test and p&p.

**NEW 200 Channel Scanner**


- Hyperscan search and scan, 10 channel monitor back, priority, lockout, scan-delay, LCD display with backlight.
- Memory backup circuit.
- Belt clip.

Requires 6 "AA" batteries or AC/DC Adaptor.


**S.R.P. TRADING**

SRP Trading, Unit 20, Nash Works, Forge Lane, Belbroughton, Nr. Stourbridge, Worcs. DY9 9TD • Tel: (0562) 730672. Fax: (0562) 731002
An Innocent Amateur Abroad

Geoff Craddock GOHHH found the opportunity to operate in Canada too good to miss.

Opening the front door, we faced the usual pile of bills, junk mail and normal correspondence, amongst which was a Data Post Letter with a Canadian postmark.

Bearing in mind the fact that our son and his family live in Canada, my wife's first reaction was "My God, what's wrong now?" So, in fear and trepidation, the envelope was quickly torn open. To our amazement, enclosed were two return tickets to Toronto and an invitation to fly out two weeks later to visit them.

The reaction from my better half was, "What am I going to do, I haven't got a thing to wear?" So it was panic stations as far as clothes were concerned. My first thought was, "Can I get a reciprocal licence quickly?". Letters were rushed off to the Department of Communications in Toronto - thanks to the RSCB for their help with addresses - for the licence and to the CARF (Canadian Amateur Radio Federation) and the CCRRL (Canadian Radio Relay League) for details of 144MHz repeater frequencies. All these letters with the request that replies be sent to my son's address in Barrie, Ontario. So far, so good.

Hand-held

Besides packing our cases with clothes, mainly ladies', I hastened to add, I tucked the really important things, like the little hand-held - FT-209. this just happened to have extended TX facilities, essential in North America as all 144MHz repeaters generally operate on 144MHz up. The magmount with antenna broken down to fit into the suitcase, neck mic, spare battery and the car charger, the latter most essential because of the 110V mains supply in Canada, were also packed. So there, we were ready to go.

The big day came, we bought the usual duty free at Manchester Airport. Air Canada looked after us remarkably well, and the seven hour flight passed without event. On arrival at Toronto we were met by our son, Bill and started the drive to Barrie, about 100km north of the city. The traffic out of Toronto has to be seen to be believed, nearly dead straight roads with about six lanes in each direction, packed with traffic, it seemed the rush hour should hate to be loose in that traffic as a stranger to the city. Anyway, we did not have any hassle as Bill certainly knows his way around.

The difference in time hits you most on the first night of arrival, the time difference being five hours. At eight o'clock there it was 1 am our time, but the understanding family let us go to bed at 3am, so we were quite lucky!

However, we soon got over the time difference and were delighted to see our grandchildren and Pat our daughter-in-law again. My, how children grow in the short space of three years since our last visit.

VE3 Callsign

"There are two letters, for you Dad", says Pat, one was from the CARF and one from CCRRL, both enclosing details of the repeater frequencies, but nothing from the D of C, Toronto. Panic stations! A telephone call to Toronto revealed the fact that, "Yes, we have had your application, it has been processed and the letter of authority was written on the 17th, inst." It was now the 25th, and the letter eventually arrived on the 27th. By the way, this delay did not stop me getting out on the frequencies due to my taking verbal approval as authoritative! So off we went with my VE3 call sign.

Right, having sent up the equipment, the magmount in the corner of the lounge and the hand-held, with separate speaker, on the nearest table, I donned the neck mic and tuned to the local repeater VE3TTB on which a QSO was already in progress, waiting until the end of the conversation I put out a call to VE3JPB and VE3JQO, Stan and AI respectively who were on the point of going QRT. Stan, I reminded, I had spoken to some three years ago, at which point he had said, "Wait a moment and I will come back to you." In the meantime AI VE3JQO said, "Stan has the best log in all Canada." Sure enough, Stan VE3JPB, or Peanut Butter as he calls himself, came in with, "Yes Geoff, we spoke on this frequency at 11.05am on the 21st September 1987, and your QTH is Kidderminster". Stan I understand is well into his eighties and keeps daily skeds with his local pals.

Many more contacts were made on 144MHz, and I was made to feel welcome at all times. Every Wednesday night is Club Net Night, other than when it's a meeting night. After the half hour net they have a Sales and Wants half hour, the net controller pausing between announcements to enable interested amateurs to come in, make their comments and to offer new items if required. Phone numbers are given to enable further details to be given. A pity that we are not able to do the same over here.

Club Repeater

The repeater that I have mentioned, VE3TTBT, is a Club repeater and is accessed by transmission of the carrier, no tone burst is needed. Furthermore, you are greeted with audio which announces, "Welcome - to - Vee - Eee - Three - Three - Vee - Tee - Bee - Repeater!" I was rather impressed with this.

Talking of repeaters, it is interesting to note that there are 31 repeaters in Toronto alone, that is Metropolitan Toronto, of which 12 are for 430MHz and one each for 1297 and 52MHz. Some repeaters are privately owned, while some are used for Autopatch, to access the local phone system. It must be born in mind that local calls are free of charge. Much use of this facility is made by the younger generation, including my grand daughter who is thirteen years of age!

I wonder how many readers can recall the days when we had SO free calls a quarter and the system was run by the GPO.

Open Arms

I had made a provisional arrangement with some of my amateur friends in England to try to make contact on the h.f. bands. On my last visit to Barrie I had noticed a bungalow quite close to my son's home that sported a tower with a Tribander mounted at about 12m. So, plucking up courage, I decided to have a word with the amateur in occupation. I need not have worried. I was welcomed with open arms.

Bill VE3CUC, incidentally, a WW2 Lancaster pilot, was only too happy to meet my needs and after a quick telephone conversation to the UK to GO1ZE, who spread the news around, we succeeded in making contact with home on two occasions. Bill's rig is a FT-7/67GX and it certainly lived up to expectations. Might I add that the registration number on Bill's car is VE3CUC! Apparently any licence number is available in Canada provided that it has not already been allocated. Will we ever be able to do this over here?

I mentioned earlier that I had extended transmit frequencies available on my hand-held, it may have been a US model, because all the 2m repeater frequencies in North America start from 146MHz. So, be warned, there is a problem with a UK set - unless you know a man!

Our visit to Canada ended with a visit to the Barrie Radio Club, I was take there by my old friend Peter VE3PKN, the meeting being presided over by his daughter Alex VE3PKA, who was nominated and re-elected as President for the ensuing year. Yours truly had the pleasure of being co-scrutineer! A very interesting talk was given by Phil VE3FAS, ex-C48JK, on 'The compilation and use of the Smith Chart' and I there had the chance to renew acquaintances made three years ago. A very pleasant ending to our visit.

All in all, a very good holiday and one that my wife and I will long remember. To think I have not long remember. To think I have not
They Don't Only Broadcast the News - The BBC World Service

As it enters its seventh decade of international broadcasting, BBC World Service is continuing to expand, transmitting programmes to an audience of more than 120 million people in every country on earth. Its aim, though, is not to broadcast to the last vestiges of the Empire, as Peter Shore explains.

It was the week before Christmas 1932 that the BBC’s Empire Service started transmitting programmes, in English, to the far-flung reaches of the British Empire from Daventry in the Midlands. A few days later, on Christmas Day, King George V’s Christmas message was transmitted by the BBC. By 1937, foreign language services were inaugurated, with Arabic, German and Italian amongst the first. During the Second World War, the BBC’s overseas services were listened to throughout occupied Europe, beaming messages to resistance movements in France, Norway, and the Low Countries, and news that was a little more truthful than that from the German stations which operated. The fortunes of the BBC External Services ebbed and flowed in the years after the war, subject to the whim of the Government, which prescribed the languages and the number of hours that each service might broadcast. One of the most telling examples, perhaps, of Whitehall’s short-sightedness was the closure of the cutbacks to the Spanish services which took effect the week before the Argentinean invasion of the Falkland Islands.

Today, World Service broadcasts in English and thirty-eight other languages, from the recently restarted Albanian Service (stopped in the 1960s) through to Vietnamese. Almost anywhere you go in the world, you will meet people who listen to, and sometimes rely on, programmes from Bush House to provide the latest news, often about their own country, let alone the rest of the world. The powerfulness of the World Service’s broadcasts can be attested to by the reaction of governments to what they consider to be controversial and perhaps inaccurate news reports. At the time of the demolition of the mosque in Ayodhya and the subsequent inter-religion riots, World Service was blamed for exciting unrest for reporting the incident, something which the state-controlled All India Radio and its television colleagues, Doordarshan, censored heavily. The Kenyan election campaign was another example. The Kenyan authorities were displeased with much of the coverage of the intimidation and sharp practices which occurred and were reported in an even-handed manner by World Service in English and Swahili. Of course, mistakes do happen, and even the World Service news room has been known to get things wrong, but not with quite the same frequency of some other news organisations.

Tuning in to London

If you are off on your travels, whether business or pleasure, tuning in to London is a relatively easy thing to do. Since 1980, millions of pounds has been spent on upgrading transmission facilities in the UK and overseas. World Service operates three transmitting stations in the UK: Skelton, in Cumbria, Wooofferton in Shropshire (shared with the Voice of America) and Rampisham in Dorset. Overseas, there are transmitters on Cyprus, in Oman, the Seychelles, Ascension Island, Singapore, Hong Kong, Antigua and Lesotho. In addition to its own transmitting stations, World Service has relay agreements with the Voice of America and Radio Canada International and with NHK Radio Japan to exchange transmitter time. World Service also rents medium wave and short wave transmitters in the former Soviet Union and Albania to reach audiences in China, Asia and South East Europe.

World Service radio is also carried on satellites over Europe, Asia, the Middle East and North America which can all be received on domestic satellite equipment, although with different sized dishes!

There are still some blackspots when it comes to reception: the south of France seems peculiarly problematic, as does some parts of Italy. It may be that the signals from the UK sites simply skip over these areas, or that the mountains prove particularly difficult for signals to pass over. Australia and New Zealand are also known to be poor at times, although two cities in New Zealand now have World Service for most of the day on medium wave.

Programmes

Once you’ve tuned in to World Service (times and frequencies for some parts of the world are listed in the box opposite), what can you expect to hear? Well, there’s news on the hour throughout the day and night, with nine minute summaries at 0300, 0600, 0800, 1600, 2000, and 2200; half-hour bulletins in Newsdesk at 0000, 0200, 0700, 1100 and 1800 and the flagship Newshour three times a day at 0500, 1300 and 2100. British news bulletins are at 0309, 0609, 1609 and 2209 and in both Newsdesk at around 20 past the hour and in Newshour at around 40 minutes after the programme begins. But there is much more than news and current affairs:

London Calling is the monthly programme guide for the World Service and is available inside the BBC Worldwide magazine.
### World Service Frequency Guide

**Europe (inc. Turkey & Greek Islands)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Frequencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daytime</td>
<td>15.075; 12.095; 9.41 &amp; 17.64MHz</td>
</tr>
<tr>
<td>Evening</td>
<td>6.195; 7.325; 9.41; 6.18MHz &amp; 648kHz</td>
</tr>
</tbody>
</table>

**North Africa**

<table>
<thead>
<tr>
<th>Time</th>
<th>Frequencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daytime</td>
<td>17.705 &amp; 15.07MHz</td>
</tr>
<tr>
<td>Evening</td>
<td>15.07; 12.095; 7.325 &amp; 6.195MHz</td>
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**West Africa**

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<tr>
<th>Time</th>
<th>Frequencies</th>
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</thead>
<tbody>
<tr>
<td>Daytime</td>
<td>17.79 &amp; 15.40MHz</td>
</tr>
<tr>
<td>Evening</td>
<td>15.40; 15.07; 12.095 &amp; 9.41MHz</td>
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**Southern Africa**

<table>
<thead>
<tr>
<th>Time</th>
<th>Frequencies</th>
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<tbody>
<tr>
<td>Daytime</td>
<td>21.66; 11.94 &amp; 6.19MHz</td>
</tr>
<tr>
<td>Evening</td>
<td>15.40; 6.19; 3.255MHz &amp; 1197kHz</td>
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**East Africa**

<table>
<thead>
<tr>
<th>Time</th>
<th>Frequencies</th>
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<tbody>
<tr>
<td>Daytime</td>
<td>21.47; 17.885 &amp; 15.42MHz</td>
</tr>
<tr>
<td>Evening</td>
<td>15.42; 9.63 &amp; 6.005MHz</td>
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</table>

**India**

<table>
<thead>
<tr>
<th>Time</th>
<th>Frequencies</th>
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</thead>
<tbody>
<tr>
<td>Daytime</td>
<td>15.31 &amp; 11.955MHz</td>
</tr>
<tr>
<td>Evening</td>
<td>17.79; 15.31; 11.75 &amp; 9.74MHz</td>
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</table>

**Thailand**

<table>
<thead>
<tr>
<th>Time</th>
<th>Frequencies</th>
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</thead>
<tbody>
<tr>
<td>Daytime</td>
<td>17.79; 11.955; 9.57 &amp; 8.195MHz</td>
</tr>
<tr>
<td>Evening</td>
<td>17.83; 15.36; 11.75 &amp; 9.74MHz</td>
</tr>
</tbody>
</table>

**Caribbean & USA: Eastern**

<table>
<thead>
<tr>
<th>Time</th>
<th>Frequencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daytime</td>
<td>17.84; 15.22 &amp; 9.515MHz</td>
</tr>
<tr>
<td>Evening</td>
<td>15.07; 12.095; 9.59 &amp; 6.175MHz</td>
</tr>
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</table>

**USA: Central, Mountain and Pacific**

<table>
<thead>
<tr>
<th>Time</th>
<th>Frequencies</th>
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</thead>
<tbody>
<tr>
<td>Daytime</td>
<td>17.84; 15.26; 15.22; 11.82 &amp; 9.74MHz</td>
</tr>
<tr>
<td>Evening</td>
<td>12.095; 9.84; 9.59 &amp; 5.975MHz</td>
</tr>
</tbody>
</table>

This is a selection of frequencies which are used for some time during the day and evening; they may not be on the air constantly. Full frequency information is available from BBC World Service at Bush House, The Strand, London WC2B 4PH, Tel: 071-240 3456. Details of programmes and frequencies appear in BBC Worldwide magazine, published monthly and available in good bookshops and at airports, or direct from Bush House, price £1.75

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**Religion**,
**music**, **drama**, **science** and **sport** all feature in the day-to-day line up. Each Saturday afternoon, **Sports Roundup** provides results and news, on the air at 0315, 0945, 1245 (except Sunday), 1745 and 2245. Voices familiar to listeners to BBC home services appear on World Service: Dave Lee Travis presents **A Jolly Good Show** [Saturday 0815, 2315 and Tuesday 1515]; John Peel is heard in his own show on Saturday at 1715, Tuesday 0330 and Thursday 0830 and The Ken Bruce Show is on Sundays at 0030, 1130 and 1830. The only person missing seems to be Terry Wogan!

Television

World Service has moved in to television and now provides a service to Europe, Asia and the Middle East and Africa. The European service draws on programmes from BBC1 and BBC2 and is available on subscription. The transmission is D2-MAC and is carried on Intelsat VI. In Asia and the Middle East, the service is news based, with World Service news bulletins on the hour, every hour. Programmes following the news range from **Top Gear to Film 93**, **Mastermind to Horizon**. Unlike Europe, the Asian and Middle Eastern service is not scrambled, and is free to anyone who can receive AsiaSat 1 at 105° East. In Africa, World Service Television is available from 0000 to 0900 and 1500 to 1700 in the same package as M-Net International. There is a subscription charge. Many hotels are now starting to include World Service Television on their room televisions, particularly in Asia, alongside WSTV’s arch-rival, CNN. It is interesting to compare the quality of the two services, so if you get the chance, see what you think. Just about wherever you are, you can keep in touch with home - and the rest of the world - by tuning to the BBC. Happy holidaying!
The first thing Nick Williams noticed on arriving on Malta for a holiday was the forest of antennas on nearly every rooftop. He soon found out that, whilst TVM (Television Malta) transmits one programme in English and Maltese, up to nine other television transmissions are regularly received from Sicily and the Italian mainland.

Many cafes and bars have a television set showing an Italian programme, often with quite severe co-channel interference, although reception intends to improve during the evening. I did not see any private satellite dishes during our stay on Malta, only some large ones belonging to the national telephone company and seventy-five years—finally left. I have no information regarding the locations and power of the v.h.f. f.m. stations, but as the total area of the Republic of Malta (Malta plus the neighbouring islands of Comino and Gozo) is less than that of the Isle of Wight and the terrain, though hilly, is not mountainous, I would imagine that they are audible everywhere. Island Sounds sounds very much like a UK commercial station with its British DJs and relays of BBC World Service news and programmes (via satellite) throughout the day. Radio 101 employs American DJs and relays CNN radio news and VOA Europe news and programmes throughout the day and all through the night. Radio Malta Two also relays many BBC World Service programmes. Radio Malta One and the other v.h.f. f.m. stations appear to broadcast mainly in Maltese, but they do play a lot of English records. The Voice of the Mediterranean has a daily programme in English from 1400 to 1500 UTC on 11925 kHz which is repeated the following day on 1557 and 9765 kHz at 0800 to 0900 local time.

In addition to the Maltese stations there are numerous Italian transmissions from both RAI and local stations to be heard in the v.h.f. f.m. radio band. The medium wave band is quite uncluttered in Malta, so that several Arabic language North African stations were clearly audible, even during the day.

Listening Guides

There is no local equivalent of Radio Times but the excellent daily English language Times of Malta (for about 23 pence) lists all the Maltese radio stations, the Maltese and Italian TV stations viewed there and the BBC World Service on short wave. The Italian language Nuova Guida TV is available (about 55p) listing all the Italian TV programmes, those of the RAI radio networks and Radio and TV Monte Carlo.

Delightful Experience

Finally, our visit to Malta was a delightful experience, the islands are rich in history depicting the many sieges and invasions that they have endured over the centuries. Unarmed police, driving on the left, red pillar boxes and telephone kiosks are all a pleasant reminder of their most recent colonial past. Malta is currently enjoying a period of prosperity unprecedented in its history and there is full employment.

But the last word must belong to a Maltese old school friend of my wife’s; you see, there are only about two sets of traffic lights on Malta and when I was commenting on them she exclaimed, “Red means go doesn’t it? I usually just follow the traffic!”

Famous view of the Grand Harbour in Valetta, a good vantage point listening too.

Telemalta Corporation. However, I read in the local paper that a cable company, Melita Cable TV Ltd has been given the go ahead to begin laying cables, so presumably the Maltese will eventually have quite a large choice of programmes from both Italy and the ever expanding satellite services.

I was surprised to learn that there were no domestic broadcasting stations in Malta until after World War Two. Up to that time Rediffusion provided wired radio programmes in English and Maltese, which at least were immune from jamming! The first stations to broadcast from there were those set up by and for the British forces stationed in Malta. These stations broadcast originally on short wave from the nineteen forties and then on v.h.f. f.m., until 1979, when Malta became a republic and the British Forces, in residence for over one hundred years, finally left.

Table 1: Maltese medium wave and v.h.f. f.m. stations

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<tr>
<td>1557 kHz</td>
<td>Deutsche Welle/Voice of the Mediterranean</td>
</tr>
<tr>
<td>88.0 MHz</td>
<td>Super One</td>
</tr>
<tr>
<td>100.2 MHz</td>
<td>Radio One Live</td>
</tr>
<tr>
<td>101.0 MHz</td>
<td>Radio 101</td>
</tr>
<tr>
<td>101.8 MHz</td>
<td>Island Sound</td>
</tr>
<tr>
<td>102.3 MHz</td>
<td>Radio Malta Two</td>
</tr>
<tr>
<td>102.6 MHz</td>
<td>Bay Radio</td>
</tr>
<tr>
<td>103.0 MHz</td>
<td>RTK</td>
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The ‘Silent City’ of Medina offers spectacular views of the Island from its battlements.

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RC818 (SSP £199.99)  
Multi-band Digital Preset Stereo World Radio with Cassette Recorder  
This flagship model demonstrates the leading edge of Roberts technology. With a clear LCD display of all functions, it has 5 tuning methods, 45 preset stations, dual-time display, standby and clock/alarm plus a cassette section for timed recordings from the radio. Provision is made for single sideband and CW transmissions as well as stereo FM on headphones and stereo record/playback of cassettes. Comes complete with a mains adaptor.  
- 5 Tuning methods – direct frequency keying, auto-scan, manual scan, memory recall and rotary  
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The new Roberts R621, reviewed here by Mike Richards, is likely to appeal to those just going on their holidays.

Many short wave listeners would dearly love to take their stations on holiday with them to take advantage of all that spare time. Unfortunately, this is not possible for most because of baggage restrictions. However, all is not lost as small portable receivers, such as this latest model from Roberts, provide a convenient solution. Not only is the new R621 very compact, but it gives full coverage of the h.f. broadcast bands. So, let's take a closer look to see how the R621 fares.

Quality Feel

Like all Roberts products, the R621 was very well presented and had a reassuringly solid feel. As you can see from the photographs, the front panel was dominated by the analogue tuning dial and liquid crystal display unit. Apart from the clock settings, all the operational controls were located on the top and sides of the receiver.

In addition to the receiver itself, there was a handy instruction manual that covered all the R621's features very clearly and concisely. A particularly nice touch was the inclusion of a Wave Handbook. This small (111 x 190mm) booklet lists the frequencies and times of all the main international broadcast stations. As you can imagine this was a great help when operating away from home without all the normal reference books. Just to complete the package, there was also a soft protective cover that included space for the miniature drop-in earphones.

Tuning Around

As with most receivers in this price range, tuning was by an analogue dial that, in this case, was operated by a knob on the side panel. The review model showed very little backlash and so had a very positive feel. Although the scale length was only 26mm, the reduction ratio had been well chosen to give very positive control. On the short wave bands this was enhanced by bandspreading each broadcast band so that it occupied the whole of the tuning display. This resulted in easy tuning even on the more congested bands.

Selection of the required band was made using a ten position slider switch on the top panel. There was also a useful confirmation of the band selection on the I.c.d. readout. This was supplemented by a tuning and stereo indicator, also on the I.c.d.

One of the important considerations of any broadcast receiver is sound quality and the R621 came out very well. The rather small internal speaker (62mm dia) produced the expected bright sound. However, using the supplied headphones gave a much fuller sound that was well balanced for a wide range of music and voice types. As the headphones were fed via a standard 3.5mm jack, it would be easy to connect other types of headphones.

When tuning around the short wave bands the selectivity proved to be very good indeed. I found I was easily able to separate signals and there was a minimum of splatter from adjacent stations. This is an area where many of the cheaper receivers fall down, so this was a good result from the R621. The general ease of use was further enhanced by the remarkably accurate tuning dial. This enabled stations to be found with a minimum of searching. As you can see, the general performance of the receiver section of the R621 was remarkably good.

Clock/Alarm

To further extend the usefulness of the R621, Roberts have included a handy clock/alarm facility. The main I.C.D. was used to display the time regardless of whether or not the receiver was turned on. In addition to being able to handle standard clock facilities, the R621 had a dual time button that could be set to an alternative time zone. This was particularly useful for keeping track of UTC. Switching between the two display modes was achieved with a single button press.

Just to complete the facilities, the R621 featured a range of useful alarm modes. For those who like...
to drop off to sleep with the radio playing there was a sleep mode. This could be set for a playing time of 15, 30, 45 or 60 minutes. For a more conventional alarm, you could choose to be woken with either the radio or a tone. The tone system was remarkably effective and built-up from very quiet to extremely irritating over a period of about one minute. If the alarm isn’t cancelled, this sequence repeats every other minute for an hour! If you are like me and tend to doze in the morning, you could hit a button to give five minutes peace in between alarm soundings!

**Summary**

The Roberts R621 is certainly a very well thought out portable receiver that should find favour with the traveller. The combination of compact size and sound performance make it a very attractive receiver.

The Roberts R621 can be obtained from all Roberts outlets and the recommended price is £59.99. My thanks to Roberts Radio Co Ltd. for the loan of the review model.

**Specification**

- **Frequency Range:**
  - 530 - 1710kHz
  - 5.9 - 6.2MHz
  - 7.1 - 7.4MHz
  - 9.5 - 9.9MHz
  - 11.65 - 12.05MHz
  - 13.6 - 13.9MHz
  - 15.1 - 15.6MHz
  - 17.5 - 17.95MHz
  - 21.45 - 21.95MHz
  - 87.5 - 108MHz (f.m.)

- **Speaker:**
  62mm 8Ω

- **Output Power:**
  120mW into 8Ω

- **Headphone Socket:**
  3.5mm Stereo

- **Antenna:**
  - f.m. & s.w. Telescopic
  - m.w. Internal Ferrite Antenna

- **Power Requirements:**
  - 3 x IEC R6 cells (AA)
  - External via coaxial socket, 4.5V at 200mA

---

**Air Traffic Radio**

You’ll soon be able to take off with air band listening with this special offer. Kathy has landed a bargain with this book, as it’s full of information to help you find the best channel to hear all the UK airband communication frequencies. It’s fascinating to hear as well as see that aircraft high above you in the sky, and you’ll find it much easier with a copy of **Air Traffic Radio** at your side. Usual price is £4.25 plus p&p. But you can get your copy for only £2 plus 50p p&p (UK), or 75p overseas surface mail.

To: Short Wave Magazine (Special Offer June), FREEPOST, Arrowsmith Court, Station Approach, Broadstone, Dorset BH18 8PW.

Please send me Air Traffic Radio @ £2.50 inc. p&p (UK) £1.50 p&p (overseas surface mail).

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Short Wave Magazine, June 1993
Dee Comm
SWL Antenna Tuning Unit

Roger Bunney decided to buy a budget-priced antenna tuning unit with a 'Made in Brum' label. This is what he thought of it.

Unpacking the large box produced an feeling of initial disappointment. The antenna tuner unit was rather large and the front panel artwork rather poorly reproduced - not unlike a glossy photocopy - and emblazoned with a coloured Union Jack confirming its British pedigree. The two large tuning knobs - one at each end - were both loose, caused, it transpired, by the screws holding the tuning capacitors to the chassis of the tuner unit not being fully tightened. The black, mild steel cover is held in situ with two small self-tapping screws, which gives a rattling loose fit. Once the cover and the tuning knobs had been removed the problem was identified and the two tuning capacitors tightened.

The rear panel of the tuner unit carries two SO329 antenna input/output sockets. The input socket also has a single terminal connected in parallel with the input SO329 socket for the attachment of a long wire antenna. In one corner is an extremely large brass terminal - the earth connection. In fact, it is the largest brass terminal I've seen and would do justice to any early radio.

The tuning gangs are compact and were originally designed for f.m./a.m. domestic radio use, since both the v.h.f. and m.f. vanes are visible. The coil is magnificent, with the turns wound round the spiral threaded former - full marks for a perfect linearly wound coil. Connections to the tapped coil run to a 12-position switch mounted in the centre of the front panel.

Performance

How well did the Π network tuning unit work? My random length 'L' antenna runs from the house a lattice mast to a height of 10m and then downwards to ground level, a total length of perhaps 15m. In the shack a basic Lowe SRX30 short wave receiver is in use. Although the receiver has an input pre-selector tuning control, this was 'off-tuned' to give incorrect input tuning.

Various frequencies were selected from 29MHz down to 560kHz at the low frequency end of the medium wave. Above about 28MHz the a.t.u. produced no improvement, but below this the atmospheric noise level could be heard peaking. I found the most dramatic improvement to be on the medium wave band, where up to 2 1/2 'S' points could be obtained with careful tuning. On short wave between 1 1/2 to 2 'S' points were obtainable.

Tuning the a.t.u. was not critical other than on the medium wave band. One useful point of the tuning capacitors is that a small geared mechanism is fitted to the tuning gangs, giving 1/2 turns from minimum to maximum capacitance.

Summary

Performance was very good and showed considerable improvement of signal transfer into the receiver, particularly on the medium wave band. However, I was not impressed with the size of the beast which could, I feel, have been fitted into a more compact housing. The artwork also left a little to be desired.

As a budget-priced, ready made a.t.u. it's not bad value and it works! The unit weighs in at 5.5kg and measures 283mm wide by 158mm deep (less knobs and rear sockets) by 78mm high excluding the stick-on feet.

The antenna tuning unit is manufactured by Dee Comm, Unit 1, Canal View Industrial Estate, Bretell Lane, Brierley Hill, West Midlands DY5 3LQ tel: (0384) 480565 and costs £39.95 including VAT.
These are just a part of our stock, phone me for the best prices.

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Short Wave Magazine, June 1993
Peter Wood G0HWQ had a short, if conventional, apprenticeship to amateur radio. It began with a period of short wave listening, lasting about a year, whilst he studied for the Radio Amateur’s Examination.

My first short wave radio was a 3.5MHz (80m) direct conversion receiver which I built from a C M Howes Communications kit. Listening on the band was enhanced by using equipment I had built myself and which I heard other’s talking about over the air.

The experience taught me about really listening, as opposed to spinning a dial, as discussed in a book I read much later titled The Complete DXer by Bob Locher W9KNI. Bob talks about basic, intermediate and advanced listening and there are some really good tips on the subject in his book.

After several years with an amateur radio licence and experience on various bands and modes, I am still drawn to periods of listening, turning up interest and suspense equal to any good TV programme!

**Gripping**

One Boxing Day, I had settled down in front of my transceiver for a listen on the 14MHz (20m) band. The next ninety minutes proved to be some of the most gripping I have spent listening on the amateur bands. At 1924 GMT I was tuned into the Carribus Net (Caribbean/US licence) on 14.372MHz and copied Carribus net control Bill KA2WHU was net control for the occasion!

The experience was to be some of the most gripping I have ever experienced. Listening on the 80m band was a bit of a shock after spending a few hours on the 20m band, but it was a most gripping experience. I even copied the comments of the net controller, Bill KA2WHU, as he took over the net control duties.

The signal from the boat was unreadable to me, but clearly audible to Bill in Maracay and also, albeit with difficulty to Miami Coastguards. Apparently, Ben was receiving both clearly but Bill acted as a reliable relay.

On board were Ben, his wife and crew member Howard. Ben K8FKY had only obtained his amateur licence the previous August and he and his wife were moving from their home in Port Orchard, Washington to Puerto Rico. En route they were struck by a squall.

The boat's position was given as 13° 04' North and 75° 32' West on a heading of 240° running about 4.5 knots. Miami Coastguards were keen to have a description of the boat (white with a 300mm wide blue band around the hull) along with the colour of the life rafts and jackets.

Ben reported local conditions as wind 15-20 knots from the North. Visibility was about 8km and the barometer steady at 29.8 with waves at 2m.

All this amounted to a manageable situation as things stood, but Ben was concerned about the boat’s seaworthiness if conditions worsened. With all this detail, I had a very clear and dramatic picture of the situation in my mind’s eye. I reckoned was about 520km away or divert to Puerto Rico, which I reckoned was about 520km away or divert to Jamaica 360km north north east, if things got difficult.

Eventually it was agreed that Ben would press on but would keep in touch with Bill on an hourly basis as long as propagation held up. No details of the boat’s antenna or radio were gleaned, although I gathered that some sort of emergency maritime radio gear was available on board as well.

Propagation did change and frustratingly I dropped out of the picture. Curiosity got the better of me so I wrote to Ben’s PO Box in Washington, copied over the air, in the hope that eventually he would receive the letter and let me know the outcome along with a few of the details. Four months later I received his reply.

By then Ben and his wife Bobby were settled in Puerto Real, a small fishing village on the west coast of the island where they were now living. Ben wrote that following their frightening experience, Bobby no longer wanted anything to do with their 40’ Valiant cutter-rigged sailboat - it was up for sale!

**Sloshing Water**

Ben explained during their transit from Panama to Puerto Rico, they had fallen off the top of a steep 10m wave. The toilet, with its associated hoses, was torn from its foundations allowing large quantities of water to come in. This event occurred at 2.00am; Ben had been on watch and the others asleep. They were awoken by the sound of sloshing water. A bulkhead had separated from the hull, which in turn allowed the hull to flex as it pounded into the rough seas.

As a result of the ingress of a large amount of water, Ben had alerted the coastguard before investigating the cause. Initially the bilge pump failed to work properly, but eventually things came under control. They continued towards the southwest tip of Haiti, where the current, which was sweeping them west, eased.

At this point the engine heat exchanger gave up the ghost and they tacked east for several days. The wind died 42 nautical miles from Puerto Rico, so Ben cross-connected the salt water into the fresh water, removed the thermostat from the engine and motored through the infamous, but flat calm, Mona Channel.

They arrived at their destination from Seattle, Washington, 6400 nautical miles away after four months and one day. In a PS, Ben said they ran aground less than a metre away from the dock, where
he and his crew were greeted by his father holding a bottle of champagne!

Real Life Drama

Apart from actually being on the boat, what other hobby could offer you the same excitement and real life drama occurring thousands of kilometres away, yet simultaneously in your own home? Transmitting is exciting, but so is short wave listening and often cheaper, too. Either way, you just never know what you might stumble upon next. A lady in space possibly?

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Short Wave Magazine, June 1993
The value of combined astronomical and radio reports was again clearly shown early in March. There can be little doubt that the solar noise recorded by C. M. Moore of Hatfield (Sevenoaks) at 136 MHz and the increased number of beacon signals on the 6th, was caused by that large sunspot group, near central meridian, Fig. 1, at 1300 on the 8th. This was observed by Patrick Moore (Selsley) and drawn from his telescope projection screen. Even though the sun is moving into its quiet stage no one can be sure when a group like that in Fig. 1 will appear. For example look at drawing, Fig. 2, that Patrick made of the sun’s disc 10 days earlier, at 1430 on February 27.

Solar

From Edinburgh or Glasgow, depending where his travels took him, Ron Livesey, using a small refractor telescope and projection screen, observed four active areas on the sun’s disc on February 7, 12, 23, 24, 25 & 28 and six on the 27th. Ted Waring (Bristol) counted 10 sunspots during February 27, 28 and six on the 27th. Ted Owen (Didcot), Ted Dew (Huddersfield) and Tom Sandale and from the transmitters of Radios Borders at Eyemouth, Forth at Craigeloch, Tay at Dundee and Perth, Central FM at Earl’s Hill and Classic FM at Black Hill and Pontopt Pike.

Magnetic

The various magnetometers used by Karl Lewis (Saltash), Ron Livesey, David Pettitt (Carlisle) and Tom Rackham (Goostrey) between them recorded magnetic disturbances on February 1, 2, 7, 8, 9, 10, 16, 26, 21, 22 & 23.

Propagation Beacons

First, my thanks to Gordon Foote (Didcot), Henry Hatfield, Ted Owen (Maldon), Ern Warbrick (Plymouth) and Ford White (Portland) for their 28 MHz beacon logs and associated information that enabled me to combine their efforts and produce a chart of beacon signals heard in the UK on the dates shown in Fig. 3. "The first 4 days of the period were good, together with March 8th," wrote Gordon Foote and explained that he found the clearest signals were those logged on March 1st and the worst days for him, were March 15, 16, 17, 24 & 25 when no beacons were heard. Gordon also copied W3FGQ (28.232 MHz) for the first time at 1740 on the 8th.

Tropospheric

Around 1800 on Monday March 15, James Muir (Hamilton) was driving 11km s.w. of Stirling, some 467m (1442 ft) a.s.l. when he stopped to tune his Philips car radio. To his surprise, he found generally good signals from the BBC transmitters at Ashkirk, Black Hill, Darvel, Forfar, Meldrum, Perth and Sandale and from the transmitters of Radios Borders at Eyemouth, Forth at Craigeloch, Tay at Dundee and Perth, Central FM at Earl’s Hill and Classic FM at Black Hill and Pontopt Pike.

"I was not aware of any particularly favourable conditions at my time of listening," said James, who certainly had a good haul of v.h.f. stations. However, I would imagine that the improved conditions on that Monday were due to the high pressure and the changing temperature that was moving across the UK at the time. I spent that afternoon on a seat in a public garden, in the warm sunshine without a coat, writing my PW column on my lap-top computer. By 1700, the air was definitely getting cooler. Tuesday morning we awoke to a thick fog and it was positively cold.

Between 0900 and 1115 on March 7, Lee Barr (Sunderland), using a Sony ICF-SW7600 receiver BBC Radio 1 FM from Ashkirk, Black Hill and Holme Moss, Radio 2 and Radio Scotland from Ashkirk, Radio 3 from Holme Moss and Radio 4 from Ashkirk. He also logged Classic FM from Black Hill and Holme Moss and Pennine FM for the Halifax and Huddersfield Area. Leo noted the fog when he awoke on the 7th and remembered that such weather conditions were often associated with enhanced v.h.f. conditions. Now you proved it, Leo.

Further information about Sporadic-E plus the daily atmospheric pressure readings, for the period February 27 to March 25, can be seen in my Television column elsewhere in this issue.

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<td>X</td>
</tr>
</tbody>
</table>

Fig. 3.
The Atlantic Express
news circuit from
Intelsat 601 27.5°W
11.016GHz horizontal
from Andrew Sykes.

An exciting catch
early this year,
west-bound news
circuit on 2nd hop
from Andrew Sykes.

Cattle auctions
can be seen on Eutelsat II
F3 16°E from Andrew Sykes.

Noise Problems
Wall-mounted antenna systems
such as a dish with an H to H motor or actuator jack - and
terrestrially the standard motorised v.h.f./u.h.f.
installation but bracketed to the wall
of a house can give rise to motor
noise being conducted into the
structure, along the walls and
causing much grief or anger from
neighbours in adjoining terrace/semi
structure, of a house can give rise to motor
installation but bracketed to the wall

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Wall-mounted antenna systems such as a dish with an H to H motor or actuator jack - and terrestrially the standard motorised v.h.f./u.h.f. installation but bracketed to the wall of a house can give rise to motor noise being conducted into the structure, along the walls and causing much grief or anger from neighbours in adjoining terrace/semi structure, of a house can give rise to motor installation but bracketed to the wall of a house can give rise to motor noise being conducted into the structure, along the walls and causing much grief or anger from neighbours in adjoining terrace/semi structure, of a house can give rise to motor installation but bracketed to the wall of a house can give rise to motor noise being conducted into the structure, along the walls and causing much grief or anger from neighbours in adjoining terrace/semi structure, of a house can give rise to motor installation but bracketed to the wall.
I am often asked what’s so special about DXTV; my quick answer is that it is another aspect of specialised interest in the worldwide of radio communications. For instance, the vast majority of medium wave and short wave enthusiasts enjoy finding and listening to signals from stations in far off lands. The only difference between them and the TVDXers is that the latter looks for television pictures that have travelled far in excess of their normal range. In both cases, the abnormal long distance (DX) reception is caused by some form of natural disturbance within the earth’s complex atmosphere. Now there is an added meaning, the fun has become a specialised field of study for the dedicated and interested enthusiast.

**The Troposphere**

March was a strange month for propagation because the predominantly high atmospheric pressure throughout the period February 26 to March 25, Fig. 1, should have produced many more tropospheric openings than it did. Therefore, this suggests that there are other factors in our complex weather systems, such as sudden changes in temperature and/or humidity to take into consideration. This all means that, whatever the weather, frequent checks on Bands III (175-2280MHz), IV (471-608MHz) and V (615-856MHz) are essential to finding DXTV signals. Keep in mind, 1.6MHz and 1.7MHz are required for the multi-range communications receivers, with some form of natural disturbance within the earth’s complex atmosphere. Now there is an added meaning, the fun has become a specialised field of study for the dedicated and interested enthusiast.

**Band I**

For instance, a browse through the World Radio TV Handbook (available from SWM Book Service) shows that in Band I, Ch. E2 (49.25MHz) is used by stations in Belgium, Germany, Norway, Portugal, Spain, Sweden and Switzerland; Ch. R1 (49.75MHz) in Czechoslovakia, Hungary, Lithuania, Poland and Russia; Ch. IA and IB (53.75MHz) in Italy and Ireland respectively; Ch. E3 (55.25MHz) in Denmark, Finland, Germany, Greece, Iceland, Norway, Portugal, Spain, Sweden and Switzerland; Ch. R2 (59.25MHz) in Czechoslovakia, Estonia, Hungary, Lithuania, Poland, Romania and Russia; Ch. IB (59.75) in Italy; Ch. IC (61.75MHz) in Ireland and Ch. E4 (62.25MHz) in Austria, Denmark, Finland, Iceland, Norway, Spain and Sweden. Mixed among that lot is Austria with their Ch. E2A sharing 49.75MHz plus the French channels 2, 3 and 4 on 55.75, 60.5 and 63.75MHz respectively.

**Sporadic-E**

Briefly, Sporadic-E is a sudden disturbance within the ‘E’ region of the ionosphere and while it is in progress moving clouds of more densely ionised gas will reflect signals, by varying degrees, between about 20 and 150MHz. The peak is the lower TV band between 40 and 80MHz. When Band I is hit by and extensive Sporadic-E, it may have done by the time you read this, it can be just as crammed with ‘extra’ signals as any of the short wave bands. Such disturbance are expected at any time, during the daylight hours, between late April and early September, peaking in June and July.

**Picture Archives**

Typical examples of this come from, Andy Gilbert (Worthing) who has a multi-standard Grundig receiver coupled to a 2-element beam for Band I and a 6-element for Band III and, with this set-up, ring the 1990 Sporadic-E season he received strong coloured test-cards from Iceland (RUV Island), Fig. 2, the Norwegian regionals 'Gamlem' and 'Melhus', Figs. 3 and 4 and a weaker one from Tunisia (RTT), Fig. 5. The line ‘shudder’ beginning to show on Figs. 2 and 3 happens during the the deep and sharp fading which usually occurs at the onset and toward the end of a Sporadic-E opening.
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- 10 programmable bands
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**HP2000**
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- 1000 programmable channels
- Search and scan facilities
- AM, FM and WBFM modes
- 10 programmable bands
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**VT225**
- Civil and military airband receiver
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- LC display with signal meter
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Band I

In addition to Sporadic-E certain disturbances in the upper 'F2' region of the ionosphere can send television signals, around Ch. E2/E1, off over thousands of miles, in fact during the winter months it's not uncommon to receive pictures in the UK that began their journey in China, but, they are difficult to identify because they are usually warped and without frame lock.

"Some 'F2'/TEP was trickling in even in mid-February from SE Asia," wrote Lt. Col. Rana Roy from Meerut, India on March 5. He logged such smeary and distorted pictures during these events, mainly on Ch. E2, from Bangkok TV, possibly Thailand and other unidentified stations from January 4 to 9 inclusive and on February 10 and 19. Typical of this mode of propagation were the pictures he received on Ch. E2 from SE Asia, Fig. 6, at 0925 on January 5 and from Bangkok TV3, Fig. 7, on the 8th.

In New Radnor, Simon Hamer received pictures from Denmark (DR) on Ch. E5 and Germany on Ch. E2 on the 18th.

Your Weather Reports

"We have had some very strange weather for almost a month from January 28 to February 23," stated Rana Roy on March 5 and explained, "It became very warm with temperatures going up to 33°C during the day and 16°C at night. Such temperatures are in April. From February 23 it rained for five days and there was heavy snowfall in the Himalayas bringing down temperatures to 7°C at night and 18°C during the day. It is as cold as it should be in January."

"It's very dry again with sharp frosts at night," wrote John Woodcock (Basingstoke) on March 26. This is about like us John with only 0.8in of rain for the month and some of the overnight frosts, during the latter half, went down to 28°F. The bulk of the March rain fell overnight on the 22nd (0.60in) and the rest on the 30th (0.29in) and 31st (0.50in).

"March has been surprisingly mild this year, with plenty of dry, warm weather and mostly light winds," wrote David Ashley (Norwich) at the end of the month.

From Airbros, David Glenday reports, "March was another month of high pressure, with only the occasional low sweeping across the country, except for the last week which was typically low for this time of year."

Tropospheric Openings

From his home in Meerut, Rana Roy received pictures, in Band III, from such stations as Amritsar on Ch. E7, Jalandhar (E9), Lahore (E5), Mark (E8) and STN (E11) during tropospheric openings on January 24, 27, 31 and February 8, 10, 12, 13, 15, 16, 17, 18, 23 & 24. Here in the UK, Simon Hamer reported two 'very selective' events when he received pictures from Sweden (SVT1) on Ch. E6, in Band III and (SVT2) on Ch. E30 in Band IV on March 9 and Germany's 'ARD/MDR1' on Ch. E6 and 'MDR3' on Ch. E34 on the 26th.

John Woodcock copied weak signals from France (Canal+) in Band III, around midday on March 1, 7, 9 and 19. David Ashley received pictures from Holland (NED1), 2 & 3) during improved u.h.f. conditions during the evening of March 10, all day on the 11th, the daylight hours on the 12th and 13th, all day on the 20th and the evening of the 29th.

"Sadly, little tropospheric DX to report," wrote David Glenday, who, on two days only, logged u.h.f. pictures from Holland (NED1, 2 & 3) on the 12th and Denmark (TV2) and Germany (ARD1, NDR3, SAT1 & ZDF) on the 13th.

Portable DXing

While parked on high ground, near Biddulph, on March 19, Tim Bucknall (Congleton) tuned through the u.h.f. band and, although the pressure was low at 964mb, he indentified various strengths of pictures from BBC1 on Chs. 28, 33, 41 and 55; BBC2 on Chs. 29, 34, 40, and 62; Central TV on Chs. 25, 26 and 43; CH4 on Chs. 21, 32, 50 and 65 and Granada on Ch. 59. From home on the 2nd and 7th he found 'messy co-channel distorted pictures at the lower end of Band III.'

Satellite TV

Among the items received toward the end of December from Eutelsat, by Peter de Jong (Leiden, Holland) were captions from Poland Fig. 8, Hungary Fig. 9 and Turkey Fig.10. While moving his 'dah' antenna about in March, John Scott (Glasgow) received test-cards from Hungary (Budapest), Middle East (MBC) and Turkey (TGRT). John passes the video signal through his Robot slow-scan television converter which enables him to produce hard copy, on A4 paper, from his dot-matrix printer.

SSTV

John Scott spent a most enjoyable afternoon, on March 20, logging slow-scan television pictures during a contest. The stations he received were mainly from Europe and Scandinavia and he tells me that the signals from Russian club stations were very strong at times. Although John printed out some very good examples of the Arktika club's captions, I selected Fig. 11, because of the lines across the top and bottom of the call-sign which illustrates to our new readers the damage that interference can do to the reception of a good picture. Part of a contact between UZ3AZG and HB8BYD (Switzerland), Fig. 12, plus the caption from a German station, Fig.13, further confirms John's point about strong signals. Among the pictures he copied during March were two with camera shots of people and equipment, Figs.14 and 15.

Fig. 8: Poland.
Fig. 9: Hungary.
Fig. 10: Turkey.
Fig. 11: SSTV caption.
Fig. 12: SSTV Switzerland.
Fig. 13: SSTV Germany.
Fig. 14: SSTV picture.
Fig. 15: SSTV picture.
S

ince I last wrote our local bushfire brigade has bought a swag of u.h.f. CB f.m. transceivers including three hand-held sets. These latter three are so we can keep in touch when we are on foot tackling fires away from our fire tanker. They come equipped with speaker microphones so those using them look a little like the police we see here on that popular television programme The Bill. They work well and are a great asset to our efforts. Now for some news and frequencies.

Frequencies

I read with great interest SWM’s February Marine Radio special. For those with an interest I have dug out a few Australian frequencies from the Handbook for Radiotelephone Station Operators. Some will no doubt be frequencies in world-wide use but nonetheless may be worth a listen for the Australian end. The main frequencies for establishing routine communications with an Australian coast station or another ship are 2.182, 4.125 and 6.215MHz. Coast stations provide broadcast of routine weather forecasts and weather and navigational warnings on 2.201, 4.426, 6.507 and 8.176MHz. There are coast stations at Sydney, Melbourne, Perth, Darwin, Townsville and Brisbane. The Adelaide station was closed in January 1993 and the Brisbane station is only open during our daylight hours. Other frequencies worth trying are 2.112, 2.164, 4.535, 4.620, 27.173 and 27.529MHz; for commercial vessels try 1.715, 1.725, 1.775, 2.068, 2.032, 2.436, 2.583 and 27.68MHz.

Time Signals

Australian time signals can be heard 2.032, 2.436, 2.638 and 27.68MHz. Vessels try 2.112, 2.164, 4.535, 4.620, 27.173 and 27.529MHz; for commercial vessels try 1.715, 1.725, 1.775, 2.068, 2.032, 2.436, 2.583 and 27.68MHz.

Station Locations

Those with beam heading computer programs may be interested in the following latitude and longitude information for Australian domestic h.f. stations.

<table>
<thead>
<tr>
<th>Station/Location</th>
<th>Lat°</th>
<th>Long°</th>
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<tbody>
<tr>
<td>VL8T Tennant Creek</td>
<td>19°40’</td>
<td>137°15’’</td>
</tr>
<tr>
<td>VL8K Katherine</td>
<td>14°24’</td>
<td>132°10’’</td>
</tr>
<tr>
<td>VL8A Alice Springs</td>
<td>23°49’</td>
<td>130°50’’</td>
</tr>
<tr>
<td>VL8M, VL8 Brisbane</td>
<td>27°18’</td>
<td>153°36’’</td>
</tr>
<tr>
<td>VL8W Perth</td>
<td>31°51’</td>
<td>119°49’’</td>
</tr>
</tbody>
</table>

Digital Music Express

Soundcom is a company that provides programme music to businesses in the main cities via f.m. sub-carrier technology. Currently there are two main channels: instrumental for offices, shopping centres and other low-key areas; and vocal for businesses such as fast food outlets and restaurants.

Soundcom’s venture into pay radio will not commence until later this year according to Soundcom in Sydney. The service to be called Digital Music Express will offer up to twenty programmes covering the spectrum from classical to rap. It will start initially in the larger population centres of Sydney and Melbourne where a series of microwave transmitters will be fed from a common satellite source. Subscribers will rent a small microwave receiver and decoder for around $A30 (less than £15) per month. This equipment will be operated by an infrared remote control. A disk of the entire set will show such information as track title, album name, record company and record number.

Although much of the material will originate in the USA, local audiences expect a fair proportion of Australian content in areas such as rock where Australian musicians have made a mark. The method to ensure appropriate Australian content has yet to be decided but will either be injected locally or uploaded from Australia to the USA and broadcast directly from there. When the system is operational I will report the details.

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, N.S.W. 2622, Australia. For personal replies please send two IRCs.
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<table>
<thead>
<tr>
<th>DIGITAL CLOCKS</th>
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<tbody>
<tr>
<td>Digital Alarm Clock, black or white</td>
<td>£53.95</td>
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<tr>
<td>Time-Zone Digital in black or white</td>
<td>£53.95</td>
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<th>MANTEL CLOCKS</th>
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<tr>
<td>Large face, available in white and black</td>
<td>£74.95</td>
</tr>
<tr>
<td>Grey Mantel 12 hour Roman (grey face)</td>
<td>£79.95</td>
</tr>
<tr>
<td>Black Mantel 12 hour with black face</td>
<td>£79.95</td>
</tr>
<tr>
<td>Real wood – walnut, cherry or maple</td>
<td>from £189.00</td>
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<tr>
<td>Eurochron Mantel Clocks in black and grey</td>
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<td>Large white, 22 cm diameter</td>
<td>£73.00</td>
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<tr>
<td>Large white, 32cm diameter</td>
<td>£105.00</td>
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<td>Solid wood case, 26.5 cm diameter</td>
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<th>WRIST WATCHES</th>
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<tr>
<td>Analogue radio controlled Wrist Watch</td>
<td>from £279.00</td>
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<tr>
<td>Ladies Wrist Watch, black face – black leather</td>
<td>£299.00</td>
</tr>
<tr>
<td>Digital Wrist Watch still available</td>
<td>from £149.00</td>
</tr>
</tbody>
</table>

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Short Wave Magazine, June 1993
The definite answer?

That h.f.

I am not sure where John got his information from but it seems to be that the frequencies allocated to the various civil aircraft oceanic areas are quickly out of range of the stations operating in regions of sparse population such as South America, Australia, Asia and the Pacific. I suspect therefore that h.f. is best used for a while yet but if anyone has any definite news of forthcoming changes please let me know.

Back to the same bands Mr P D Burrill of Leeds asked what r.f. power the aircraft and ground stations use? Strangely enough nothing in my fairly extensive library provides the answer but I do recall reading an advertisement for an h.f. aircraft radio that specified a mere 25W. I suspect commercial airliners and ground stations use more than that but I doubt if we are taking more than a few hundred watts at most. Does anyone have the definite answer?

Back to Concorde and Keith Edgar has provided a schedule for the British Airways and Air France flights so that you can try and monitor them.


British Airways Concorde 01 departs London at 10.30 for New York daily.

British Airways Concorde 02 from New York arrives London 18.10 daily.

British Airways Concorde 03 departs London at 1900 for New York daily.

British Airways Concorde 04 from New York arrives London 22.25 daily.

British Airways Concorde 05 from Washington arrives London 16.45 (Tues, Fri, Sun).

British Airways Concorde 06 departs London for Washington (Mon, Thurs, Sat).

Concorde 01
3.809MHz at 16.49 Speedbird
Concorde 02
5.649MHz at 20.58 Speedbird
Concorde 04
5.649MHz at 21.30 Air France
Concorde 001
All times quoted are UTC

The Weatherman and the Frozen Wastes

Ian Lockwood has logged a station I mentioned some time back. The one-man weather station on Bermuda using the call sign 'Southbound 2'. Ian found a station on 6.228MHz and says it can be heard most nights after 2200. The station provides weather information for small craft in the Caribbean. Ian also logged a host of UN callsigns on 5.310MHz and US coastguard stations at Norfolk, Portsmouth, Boston and Miami on 5.659MHz (primary) and 8.984MHz (secondary).

Mike le Vesconte has logged a few exotic deep say complaints from most regulars that conditions during the first three months of the year were poor. Mike's log included Mauritius a.t.c. on 5.634MHz, Flarco and Santa Cruz controllers both on 8.931MHz, Lima a.t.c. on 10.245MHz and Tokyo a.t.c. on 11.330MHz and possibly a quick burst of the Australian Flying Doctor service on the same frequency.

However, the real catches come with the McMurdo Centre on 8.897MHz (2205) and British Antarctic bases on 9.106 (2105) who have the best callsigns and ship supplies. This is the first time anyone has submitted logs to the column with these catches even though I know a number of readers have tried hard without success. Sadly, Mike, your first prize bag of genuine Antarctic snow was ruined when some fool left it out of the fridge and the cat licked up the resulting water.

Ron Galliers has had little luck lately but can across a station calling NUC and calling November 391 for test purposes. Apart from being certain that the station was British and military Ron wonders who. So do I, so will add it to my list of frequencies to check occasionally. Ron's only other entry of note was Air Force One with Andrews a.f.b. on 11.209MHz.

Callsigns are another issue that have cropped up lately with several readers asking where they can get lists. First of all, Stephen Legg has been keeping an eye on Air Force One and other entries of note was Air Force One with Andrews a.f.b. on 11.209MHz.

Who needs Megabucks?

Finally, an interesting letter from Mr C Vasili of London who was using an Icom R71 attached to a well known and quite expensive active antenna (not Datong). The set-up gave poor performance with high noise levels. He then bought and bought a Sangean ATS-803A and a 20m long wire and to his surprise found a massive increase in performance. He then tried the long wire with the R-71 and again found reception was fine. I am happy to believe this letter because it provides two points that frequently stress to beginners: An active antenna, no matter how good, is a last resort for people who cannot put up a long wire or dipole and you do not need an expensive receiver to enjoy our hobby.

Happy listening until next month.
Hello again! As I sit down to write this piece, I’m shaking off the ‘dreaded lurgy’ which visited this QTH in its ‘large extra potent’ form... so if the column doesn’t make sense blame the gent with the callsign who brought it back from Arizona!

Why do we seem to see a peak in conditions around the spring and autumn equinoxes? Basically, the earth wobbles, a bit like a child’s top that it runs down. At the equinox, sunrise/sunset occurs at the same time everywhere, so the output from the sunspots gets the best chance of working on the ionosphere. In mid-winter our day is shortest, the antipodean mid-winter our day is shortest, the sunspots gets the best chance of working on the ionosphere.

Turning to his list, Viv listened on 3.5MHz sideband for CN8AP, C31HK, C31SP, 2E2L, FMSDM, FY5F, G6FSC, JT6AJ, JWSVDA, JX3EX, D5Z22, TLAZW, TAA, T70A, T77T, T4CF, VPZV2, VPZ2EY, XE1ABA, SA2AULU, 8V1XQ, 9K2VA, ZLS, JAS & WS. 14MHz was sounded for CN8FR, EA8KB, JA2FG/P1, other JAS, LU2DFJ, PT7BZ, TX8R, PY2D0U, 4X6J5, 9PP9M, various VK2L and the smaller fry. A flip to 18MHz found JAS, KL7XQ, OJ2O1HR, PJ6AD, T26V, VES, VKS, ZL4AG, W0KXK & 52AZM. Up again and 21MHz showed AP4J, CN4HB, EA8P5, HL5FXP, JA1MAO, WITQ & 3X0HNU.

Leighton Smart (Treleven) found time to dash off a top-loaded vertical for the 28MHz band in his loft. Having spent 10p to make it (for the connector to join the feeder to the antenna) it was tried out and promptly produced UPS, HK6, SV1 and some Yanks. On Top Band, Leighton originally thought he wouldn’t get out of the valley, but to his surprise some forty countries are now in the log.

Contests are always a good time for new countries, points out Eric Masters in Worcester Park. Eric always felt his c.w. wasn’t good enough for this, but he has realised that the call and the contest exchange are all that you need, and the listener can of course lock on to these over a period of more than one QSO.

Next it’s Luciano Marcquardt in Hereford, G3LS, in response to his reports have been received from C31SD in Andorra, heard on 3.5MHz, plus H5SA, J1H4AV, T545KI, 329WU, all reported to on 14MHz, and 4N7DO from 21MHz. The list of stations includes IK0AUDA & AP2KAH on 28MHz, 3X0HLU working PY2ZZ on 24MHz, and A92B, ZB2JL, 7D7JL, UV1AD, 5NOABA, ZD8VJ & PY0FM chatting to L5HSH. On 14MHz Luciano booked in JWF7D, VP3MR, A61AO, CRE7EDX, UH4, UJ8, AP2JZB, 8P6AE, ZL3APW, RX3A & VK4CY on Lamb Island; 5B4ES, KV5USB & CM6V0D represented Forty, and the C31SD mentioned before was doubtless gladdening the heart of his contact KD2ZB.

‘Who or what was SORASD?’ enquires Tim Allison of Middlesbrough in a first letter. S9 is the prefix for Western Sahara that lies on the mainland close by EA8 and expeditions and operations from there are handled by Llynx DX Group, via EA2JG. Tim adds a note that the Desert Storm net now gathers at 1700 on 14.280MHz ± the QRM on Tuesday and Saturday.

Another first letter comes from Andy Wright who is in Sawley, Notts. Andy has a Kenwood R2000, and 28m 24m of end-fed wire tuned-up by an antenna tuning unit. At the back-end, he operates an audio filter, type BP9. Favourite bands are 3.5, 7, 14 & 21MHz, which get a working-over most days. On Eighty, Andy noted PJ2MJ (0206UTC), VPZVA (0341UTC), T4CF (0426), HCBA (0530), D44BC (0504), VP5JM (0532), C01HJ (0413), HK0DHL (0411), PJ2EL (0444), KG4CW (0350), HR2MDP (0550) & HR2BCD at 0655. 7MHz was represented by VK7AA at 2029, and on 14MHz Andy noted U2UYK & 9HT1F. A flip to 21MHz saw 9ASV, IABDA3A, DLZDG3/M on the coast of Israel & CY2TPB, 28MHz logged ZP1HV. I have shown times for the 3.5MHz loggings just to rub home the effect a different listening time on a band can have - and of course on Eighty, the sideband DX can appear right at the top of our band, or even higher - the Americas have up to 4MHz.

Gerald Bramwell only notes on c.w. contact, UH2E/UC2LBS on 14MHz. On RTTY he found U32CDA on 3.5MHz, EN8Q & U29CWA again on 7MHz, CN8FR, XX6L, KE28K, EA8RA, HK4OTF, WL3VQ, KPN2, 4M5KWS, L6UFEM, H21AB, 4M5RY, PY2R0 & KB2VO on 14MHz, 21MHz giving VE2EWD, W4ADDH2, R0BHZ, W6KNF, WF8T, N86SD, D0SPL, NVSP5, N7KA & WAT9FKV. Gerald’s other mode is sideband listening, and here there are so many I will have to pick out the tops. On 28MHz most of Eastern USA and Canada are noted, on 24MHz I note 5B4/G3KXO, 7X2VXK, various CIS stations and Ws. On 21MHz one could say almost ‘everything bar the kitchen sink’ in the way of DX and the same goes for 14MHz. Perhaps the pick on the 7MHz were YI1BSD & A29BE, while on the 3.5MHz band all continents are represented!

Now to Birmingham where John Collins has an Eddystone 870A receiver and an antenna tuning unit. Amateurs noted include G0W0SSB, a GP ON5LS, JA80C, JA8NFN, TUI4EG, TAJ1, VP8T S01DJ, P43A (Aruba’s local radio club), P3A/M, VPZ2E, HC1NND, H10LT, JU9DH, H8KONZY, A92BE, N900/S/T5, 9K2ZZ, 3A2LU, JA8ADQ, and an assortment of smaller fry.

Another first-timer is Gordon Robertson in Saltash, Cornwall. On the receive side there is a Sony ICF SW-55, and a Marconi B28 perhaps better known as the CR100. Some 20m of wire are strung around the loft, and tuned by way of one of the Joymatch antenna tuning units. On 14MHz PM5AA, PY1FC, KP4GV, ZP7, LBFDZ, HC7J5K & YV5SM were noted - the last noted one being an oddity - has anyone else any knowledge? 21MHz managed BV4AS, VP5PP/N4AOPUJ, UX3G, VI03M, HS1CDX, DU1GWD, P26VHR, V85BJ & JH4TEW. Going down again to 14MHz I note VU2AU, PZ1EL, JR4ASAY, VY5ENI, CN86G, 2Z7TX & EP2MVH. Down again to 7MHz where PZ1EL, CX5FH, L5U9QD, PY1R, CE97DZ, K1ZSO, 3X0HLU, VK7AAB & A61AD were booked in. Finally, on Eighty we note ZL4BD, PZ1EL, YC3AJ, 9V1XQ, PY0MM & T32CE on March 19, being a ‘special for the Council of Europe’.

Finale

Letters, addressed as usual to the Box number above, to arrive please at the beginning of the month. By then, maybe I’ll have shaken off the ‘flu, and have U8BC0S visiting too.
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73 Elaine

Amateur Radio Communications Ltd

Short Wave Magazine, June 1993
Topical news from a contact in the RAF (Oxford) concerns the future of Halton aerodrome, Buckinghamshire, and the Rothschild family donated the land to the RAF. They were far-sighted enough to stipulate that it could only be an airfield. Luckily, this prevents any get-rich-quick property development scheme. As the Technical School is closing, there won't be a supply of willing apprentices to run future airshows, so this year's will probably be the last.

Flying will continue. The Flying Club and the Chiltern Gliding and Shooting Club are expected to remain based there as is 813 Gliding School. A game of pass the parcel has ensued following the closure of nearby Abingdon, Oxford and London University Air Squadrons and 6 Air Experience Flight have been displaced from Abingdon and are now at Benson; this in turn has meant pushing out 612 Gliding School and temporarily re-housing it at Halton! I'm glad I'm not the one responsible for supervising all the upheaval!

Information Sources

Airport Timetables UK is now available in the Summer 1993 edition. For each UK airport, all scheduled flights are listed in day and tour order. The exception is Heathrow where only overseas airlines are listed. I'm writing this review prior to publication date, but the one in previous years has been to show point of origin, flight number, aircraft type, configuration. Time of seat, etc. outbound destination, flight number, validity period and tour operator. It is made clear if flights night-stop at, or commence their day's work from, the aerodrome under consideration. For Heathrow, it costs you £11.50 including UK postage. Make cheques payable to Airtime Publishing Limited and send orders to 13 The Hollows, Long Eaton, Nottinghamshire NG10 2ES Tel: (0602) 73698 (evenings). New from the same people is Airport Timetables Dusseldorf and Frankfurt which will cost you £5.85.

Have you got the latest edition of Airband Factsheet yet? Issue 2 is available from the Broadstone Editorial Offices and all you have to do is send a reply-paid, self-addressed envelope capable of holding one A4 sheet. Mark 'Airband Factsheet' clearly on your request and remember that this is available from Broadstone and not direct from me here at the Museum.

Given the Selcall of an aircraft, the most likely registration can be looked up. Take an example from R. Keary (Manchester) DL-BJ turns out to be B.767 VH-EAN. Simple - when you've got a copy of High in the Sky by Davies, Barker and McKenzie (The Aviation Hobby Shop, 4 Horton Parade, Horton Road, West Drayton, Middlesex UB7 BEA, Tel: (0895) 442123).

Finals

There aren't many people whom I personally now who have later had obituary published in one national press. Monique Agazar was an exception - in fact much of her aviation career was exceptional. On page 11 of the April 1990 issue is a picture of me having a flying lesson with her in the GAT-1 Simulator. Monique started her flying by delivering various military aircraft types from their factories during the war. I remember her teaching style as being one of definite confidence, achieved not by her subject being merely familiar, but having become second nature. Her death was not due to a flying-related cause.

Happy Hols

On page 2 of the April issue, Terry Broadhead (Rotherham) asked about taking radio receivers on foreign holidays. Whereas I will leave the precise legal situation to the experts, here are some practical suggestions of mine. Remember, whatever radio you have, listen with an earpiece if the sound would otherwise be likely to disturb others. People stay in hotels for a quiet rest - and many such places have thin walls!

First stop is the security check. There's no fixed rule about this, and perhaps that's the trouble with these checks. The staff seem to have too little idea as to what they are looking for. It is sensible to be able to demonstrate that electronic equipment actually works because this suggests that the apparatus and its batteries are real. Equipment that has been tampered with could contain something nasty. The security staff might be further reassured if you carry a screwdriver and open the case of any electrical device. Having said that, I was once stopped for carrying a screwdriver which goes back to the point about security stuff having inadequate guide-lines as to what's dangerous and what isn't.

On board the aircraft, operation of any electronic equipment risks interfering with essential navigation systems. The a.d.f. is particularly vulnerable, but there have also been reports of flight management systems failing when passengers operated lap-top computers. If you take a radio receiver on board, ensure it is switched off and with the earpiece removed. If the on/off switch is separate from the other controls, open the squeal and turn the volume to maximum. If the radio accidentally comes on in flight, you stand a better chance of hearing it and hence knowing to switch it off again.

Some countries (even one or two in the EC) are less tolerant of certain sightseeing activities than is the UK. There may be restrictive laws about the photography of military installations that might include bridges as well as aircraft! Plane spotting, viewing with binoculars and recording information such as a list of registrations, has been mistaken for spying in some cases. Foreign customs can pose a further problem although the rules are more relaxed in the EC (go through the blue channel if eligible). Certainly take the equipment's receipt with you. If you can prove you own the equipment and that you bought it in your home country then there is less chance of being accused of importing the apparatus by way of business or otherwise. Finally, it no longer surprises me as to what some people attempt; do not try to operate a cellular telephone from within an aircraft! This is not only a risk to the aircraft itself, it also jams the telephone network as so many cells are in line-of-site radio range all at the same time!

News from Abroad

One popular holiday destination is the island of Malta, served by Luqa Airport. A report from resident Joe Lewis Smith also mentions the Malta Air Charter helicopter service which connects Luqa and the neighbouring island of Gozo. Around April, when Joe wrote, flights to the island were increasing and Swiss Air were using the runway for touch and go training. Living only two miles away, Joe sees all this with his binoculars! Frequencies at Luqa are 118.3 (Ground) 121.0 (Radar) and 128.7MHz. (Approach, this one not being listed in my copy of the Aerad En-Route Supplement). The Area Control Centre is on h.f. 5.661MHz. u.s.b. Runways are 14/32 (the most likely for commercial movements) and the shorter 06/24.

Air Malta celebrates its 20th anniversary this year and took delivery of new B.737-300 9H-ABR in March. The postage stamp on Joe's letter also showed some aviation history: a Vanguard in BEA livery. My experience of the type is limited but I can tell you that the controls are quite heavy and the slightest attempt to roll into a turn results in a startling loss of height if you don't do something about it! To compensate, engine power is prodigious making engine-failed performance much less frightening than might otherwise have been the case. I did fly to Malta in 1973, and although this was Air Malta's first year I actually went by BEA Trident.

Continued on Page 63
**The new AR2000**

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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 Amtor 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 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 £329!
My thanks to all the readers who have taken the trouble to write, FAX or phone me with comments relating to the legality of using scanning receivers and the possible introduction of new laws relating to their sale and usage. The danger is that over-zealous legislators may not be able to draw a distinction between monitoring cellular telephone calls, the emergency services, local taxi ranks, aircraft communications or short wave transmissions.

Father and son John & Tony Bidgood thought that the best way of promoting scanning was through the 'self training' aspect of the hobby. John has tried to acquaint his son with the use of a radio as an aid to communication skills at his son's school, as he feels it can be usefully incorporated into several different subject areas.

Paul Beaumont of London made several interesting points in his letter, the main one being that it is possible to monitor transmissions such as cordless phones or baby alarms without the use of a scanner simply by listening with the base unit turned off. In the case of cordless phones it is even easier to listen by tuning a domestic receiver to the high frequency end of the medium wave band. If scanning receivers were banned it would not prevent people gathering information, as they were determined to listen to various transmissions from doing so by other means. He also makes the point that the existing laws are very ambiguous in this respect and are not applied. For example the DTI Radio-communications division make it quite clear that listening to civil aircraft communications is illegal unless permission has been granted by the user of the service being monitored. Paul wrote to the Civil Aviation Authority in order to obtain permission but was told that permission could not be granted, however prosecution would not be carried out against persons who monitor transmissions as part of their hobby, i.e. for no commercial gain.

Several readers said that they thought that a licensing scheme for scanners would be a good idea, a few even suggested that this would actually be a way of helping the DTI Radio-communications division to 'police' the airwaves by getting licensed listeners to report specific users or frequencies.

Jon Newman was keen on the idea of some form of licensing system - he also thought that banning scanners was more a case of 'shooting the messenger' than actually dealing with the problem of insecure transmissions. He was 'very dis-chuffed' at the thought of a blanket ban on all scanners simply because someone had been caught 'with their pants down'. Jon was one of many readers who agreed with the point I made regarding the misuse of other modern technology such as message pagers, FAX machines, cellular phones and computers. He also wonders if the situation would change if the press ever reported a story along the lines of 'scanner user tunes into criminals'. Where a robbery is prevented or crime solved as a result of someone overhearing some, they shouldn't have been listening to.

Bernard Greatrix thought that scanning as a hobby was in danger of coming included in changes to privacy laws as a result of the recent spate of newspaper stories, which seem to directly relate scanning activities to crime, including monitoring police transmissions, tapping private cellular telephone conversations and bugging. He likened the situation to computer hacking, where just a few individuals had given computer hobbyists a bad press.

Judging by the newspaper clippings you have sent me I would guess that in 90% of all the stories relating to cases where criminals have been caught in the act of monitoring police transmissions, the scanning receiver had been bought (or stolen) from a well known chain of high street electronic shops. If scanners had only ever been sold to hobbyists by specialist dealers the current situation may never have arisen. That's not to say that all criminals obtain their equipment from the high street, but that the easy availability of equipment makes even petty criminals aware of the potential for misuse.

Along similar lines Roy Tait sent me an amusing press cutting from his local paper The Inverness Courier. This relates the sorry tale of an attempted break into a local golf club by two men. They triggered the alarm and ran off, however when the police arrived they found the footprints the men had made in the freshly fallen snow on the golf course. After a couple of miles they found them hiding under a bridge, one of the men had a scanning receiver but the batteries were flat. During the court case the defence made the point that "the expedition was a non-starter as far as getting away with it was concerned" but that they would not have been caught so easily if the receiver had been working. He also added that scanners were readily available and that the report features comments were made breaking the law but had been asked to keep a register of people buying them.

As a final note, in addition to the other crime one of the men also pleaded guilty to 'using a scanning receiver with intent to obtain information for which he was not authorised'. It is interesting that this is one of the few cases which has come to court where this law has actually been applied. Another cutting came from Alan Bellomy, this was an unlikely tale that had been printed in the Leicester Mercury regarding the arrest of five 'Radio Hams' in Warrington. According to the report the men had arrived at a particular location after the local police had transmitted a message reporting a flying saucer crashing in the area. I would treat this story with a fair amount of scepticism as it seems remarkably similar to an incident which was supposed to have occurred in Holland some time ago that has already become part of scanning folklore. Can anyone supply more accurate information relating to this incident? Alan also sent me another cutting from the same paper - I wonder if the reporter uses a scanner or if there is one in the newsroom? This time the article focuses on the use of scanning receivers by racing enthusiasts during the European Formula One Grand Prix at Donington race track. The receivers were courteously given to enthusiasts at the race, a spokesman for the DTI Radio-communications Division and a couple of the racing teams who were using radio equipment. The bottom line was that listening was illegal, the teams considered the information being too high in value to be confidential and that several of them used different methods to prevent eavesdropping. Once again, can anyone supply additional information?

Whatever the outcome of recent events and their effect on any new legislation, I am sure that it will have very little influence on the use of scanning equipment in connection with criminal activities. However it will almost certainly have the undesired side effect of outlawing a large number of respectable enthusiasts from the hobby.

Frequency Counter Modifications

My thanks to reader Ted Seward of Surrey who FAXed me details of his experiences in modifying an Optoelectronics 2300 hand-held counter following the information given in the March column. He found that the pre-scaler i.e. gave out a large amount of spurious noise causing the circuit to operate continuously producing a random count. He was able to correct this by adding a resistor between pin 28 of the main i.c. and the input of the new circuit. Providing the value is chosen correctly this doesn't effect the sensitivity but it does stop it operating on random noise. Ted found that a value of about 47kΩ gave the best compromise, with 100kΩ being too high in value and preventing the correct operation and 20kΩ having little effect. I have his modification and found that 82kΩ give satisfactory results, a lot would seem to depend upon the gain of the
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Receiver Control Software

Good news for owners of Icom IC-R7100 scanners, someone has at last produced a PC-based program to remotely control and log signals heard with the receiver. The program is called 'Transcan' and provides the following features:
- the ability to search for any disk new active frequencies, complete with date, time and signal strength, the creation of 'memory' bank files containing comments; a "flag" permitting the selective scanning of the bank, facilities for the up and down loading of internal memory contents; the ability to produce a simple spectrum analyser type display. All that is required in addition to the program is a suitable interface, such as the Icom CT17, to connect the PC to the computer. The cost of the program is likely to be in the region of £65.00 and further details can be obtained from Midic Systems, 33, Cannon Lys, Galleywood, Chelmsford, Essex CM2 8PQ.

 Owners of AOR AR-3000 or 3000As needn't feel left out as a new PC-based control package is now available from Nevada. The software is similar to that being offered by ACE communications in America where it is advertised as being used by the allied forces during the recent Gulf Conflict. Although the program may not appear to be particularly interesting when first used it is easy to operate and I believe one of the best currently available for the AR-3000/A that I have seen. The only minor criticisms are that I would have liked to have been able to specify a duplex frequency as well as the main frequency and have the ability to import/export information from the logbook to an external database. The program contains several memory banks and search banks that can be interlinked as required. It also contains a large logbook which can be used to maintain a master frequency database, the contents of which can be exchanged between memory banks. During operation information contained in the logbook is displayed when the scanner is tuned to a frequency previously listed. Other features include a storage spectrum analyser type display which can be switched to display either signal strength or the number of active passes. This is very useful if you want to identify new frequencies within a particular band. If you want to try the program you can obtain a demonstration version for £1.00 from Nevada Communications, 189 London Road, Portsmouth PO2 9AE.

Once again my thanks to all those readers who have sent me information during the past few months, all of which have been gratefully received. I hope to feature many of your ideas, comments and suggestions in future columns. If you have any information that you feel other scanning enthusiasts would be interested in, why not pass it on. Don't forget that you can either write, phone or FAX (0703) 262246 details to me and I am particularly interested in obtaining a.m. modifications for the Tandy PRO 35, 37, 38 and 41 and the Bearcat 50 and 105XL. Until next month - Good listening.

Frequency and Operational News

These changes have been listed for the first time in GASIL from the CAA (see March 1993 edition of the leaflet). Birmingham Radar is on 118.05 and 131.325MHz. Here as in all cases, hand-offs from one controller to another are always "as directed"; the aircraft is told which frequency to contact next and the pilot must read this back correctly before changing to the new station. At Gatwick, 126.825 replaces 125.875 (Zone/Radar) and 118.95 replaces 118.6MHz (Radar/Approach). At Woodford, two frequencies have swapped their function. Approach is now 130.75 and Radar 130.00MHz, it having previously been the other way around. CAA AIC 32/1993 introduces Cat II ILS at Luton (previously Cat III).

AIC 31/1993 quotes the new D117 Perivale DANGER Area Activity Information Service Frequency as 122.75MHz (Pembrey Range) or, outside hours of watch, London Information 124.75MHz. Aalborg D201, D201A and D201B has a Danger Area Cross Service Contact Aberporth Control 133.5, Aberporth Information 122.15 or London Military 135.15MHz. Inchevert DS14 has been withdrawn.

New losses of ATZ and MATZ apply to Bentwaters and Woodbridge, while Gonchester loses its ATZ. Due to the lead time in preparing 'Airband' the information is only intended as a guide for enthusiasts. If you are responsible for flight planning or navigation then you must refer to up-to-date NOTAMs.

According to the radio-navigation charts, the ident of the Shetron v.o.r has changed to SNN (di-di-dit, di-di-dit, di-dah) from SNM.

You Write

Antennas were a problem for Reg Phillips (Kendal) His quarter-wave vertical is made of wire supported by an old billboard cue. For a ground-plane, the back of an old washing-machine finds a fresh lease of life. Despite any theoretical drawback to the use of steel as the groundplane, a 27MHz version was tested and the s.w.r. was less than 2:1.

Thanks to Mrs. B. for sending an Easter card from Man. Hubby obviously tolerates her wife's aviation interest since he has built her a desk complete with storage for backnumbers of SWM - how thoughtful! Her teenage son is looking at careers in the aircraft production industry and has so far visited Aero Designs (part of Shorts) who were involved in the Sherpa and a Learjet project, and also Dowty who produce parts for the A.340. Mrs. B's younger son interrupts her efforts at hanging out the washing with his shouts of "Planel! Planel! Quick!" which I know is very distracting if you're an aviation enthusiast trying to concentrate on some mundane task.

The next three deadlines (for topical information) are June 4, July 9 and August 6. Replies always appear in this column and it is regretted that no direct correspondence is possible. All letters to 'Airband', c/o The Godfrey Manning Aircraft Museum, 63 The Drive, Edgware, Middlessex HA8 5PS. Genuinely urgent information/enquiries: 081-958 5113.

A PC-based program has, at last, arrived for the R7100.

Abbreviations

A. • Airbus
a.d.f. • automatic direction finder
AIC • Aeronautical Information Circular
ATZ • Aerodrome Traffic Zone
B. • Boeing
BEA • British European Airways
CAA • Civil Aviation Authority
GASIL • General Aviation Safety Information Leaflet
h.f. • high frequency
i.s. • instrument landing system
MATZ • Military Aerodrome Traffic Zone
MHz • megahertz
NOTAM • Notice to AirMen
Selcall • Selective Calling
s.w.r. • standard wave ratio
u.s.b. • upper sideband
v.o.r. • very high frequency
omni-directional radio range

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DXR10 Electronics kit for SSB/AM receiver with 1W AF output £27.50

DCS2 “S Meter” accessory kit – driver module and custom meter £10.90

HA10R Hardware (case, tuning cap., dial, knobs, nuts and bolts etc.) £19.90

Total cost of receiver (as pictured above) in kit form: £58.30 plus £4.00 P&P.

Other Receiver Kits DXR3 single band SSB/AM £27.50, DXR4 single band SSB/AM £27.50, DXR5 single band SSB/AM £27.50.

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73 from Dave G4KQH, Technical Manager.
A t mid-April, for several weeks now the only CIS operating WXSAT has been METEOR 3-3 on 137.85MHz. This is in a morning descending pass, so we have heard it passing over Greenland, Iceland, then Britain, then moving south. From mid-March the north pole has been seen from again, so the satellite transmits visible-light images well over Greenland.

Dr. E. Duncan of Fife sent me a largeformat print taken from METEOR 3-4 last August, using his Timestep PROsatll system, as the WXSAT meteor passed over his land on Greenland - see Fig. 1. These regions show up extremely well in METEOR images and this particular image shows the detail available. Dr. Duncan tells me that he seldom obtained a clear view of Iceland in 1992 because of the cloud cover, and points out that his image shows "the permanent glaciers are predominant features". The detail along the coastline reveals individual icebergs. Around mid-March, NOAA 10 was switched off for a few days during its coincident passes with NOAA 12 which uses the same frequency - 137.50MHz. Similarly, NOAA 9 has just stopped transmitting for a few weeks.

I noticed an unusual event on 10 March when NOAA 12 was travelling north at 1945 UTC over Britain and switched over, as expected, from visible light to infrared, as it entered twilight. To my surprise it then switched back to visible light for a minute or two, and again back to infra-red! I haven't seen this happen before; perhaps it was due to some brighter cloud catching the sensors in the twilight, and temporarily triggering a switch back to visible.

**METEOSAT 3**

I can still hear this geostationary WXSAT from its location at about 73°, though it is only about 4° above my horizon and out of sight from Devon. Anyone wanting a transmission schedule should send me an s.a.e. with one extra stamp towards printing costs.

**Forthcoming Launches**

The latest information on the Russian GOMS geostationary WXSAT indicates a May launch. The next American polar orbiter NOAA 13 has been also been re-scheduled for a late May launch. The operational satellite GOES-7 is now midway over the United States and the next GOES launch is projected for April 1994 with a second GOES launch one year later.

**Other Sats**

Other (non-WXSAT) signals heard recently in the 137MHz WXSAT band include MOS-1 and 1B on 136.11MHz, TRANSIT 5BN-5 on 136.05MHz and PROSPERO (K3) on 137.56MHz. If you want to tune in to even more satellites, remember the COSMOS navigation and military satellites that operate in the 1500MHz band. You can hear several transmissions on frequencies including 149.91, 149.84, 149.97, 150.00 and 150.03MHz. Try your hand scanner outside - no Kepler elements are needed - just wait for up to twenty minutes!

**Space Activities in Very Low Gravity Conditions**

Subsequently the aquarium will be used for tests for orbital laboratories of the future. There will be full-scale mock-ups of METEOR and EOS to illustrate ESA's continuing interests, and illustrations of the future polar platform, now called ENVISAT.

**The Maiden Flight of Ariane-5**

Ariane-5 is scheduled for autumn, with ESA's main interests including the exploitation of space; there is to be a 1:10 scale model of the launcher. Other programmes in which ESA is involved include SDHO (solar observations) - launch scheduled for 1995 and ISO (infra-red space observatory) with launch due in 1994, and there will be full-scale mock-ups of both craft.

Computer image decoding systems, such as the Timestep PROsatll and PC GOES/WEFAX system (and others - see elsewhere in this column) can use the synchronising tones associated with WXSAT images to produce a nicely framed image on the screen.

**For Satellite Operations**

Sometimes, as with PROsatll, there is a facility to delay image capture if you are not going to be present when the satellite passes by. This can result in image capture occurring during a noisy patch while the satellite is still at a low elevation angle. The system may just produce the software into causing a slight mis-synchronisation of the picture, even if only by a few pixels.

**On Selecting Temperature Slice**

The software looks for the calibration markers on the side of the image. If these are slightly out, it may not find them, hence the message "temperature calibration not available".

**The Answer is to either record**

the image on a suitably adjusted cassette recorder for later playback - this allowing complete control over synchronisation, or try setting a longer delay before image capture starts.

Routine, professional satellite operations, it is normal practice to start commanding only after the satellite has risen by several degrees; this minimises the risk of corrupt signals reaching the satellite's decoder. Temperature slices convert specific bands of temperature into different colours on the monitor. This shows areas of similar temperature in a very dramatic manner, otherwise just slightly different shades of grey. PROsatll lets you define your temperature slice boundaries, and so seasonal changes can be monitored.

Dr. Tony Batchelor of Truro used his PC GOES/WEFAX system running on an ALT-386SX computer to capture a picture of the record breaking Norway last January, the GOES/WEFAX seen by METEOR 3-5 - Fig. 2. Tony saved the image as a high-resolution GIF file, exported it to Corel Draw on a second computer (and had a slide made by a bureau!)

Two hours after the pass, the storm blew down his turnstile antenna.

Tony is using a narrow band GaAlAs e.t. amplifier at the aerial and a Videolabs wideband amplifier, the combination giving him virtually horizon to horizon cover without having reflectors fitted to his crossed dipole.

Tony asks about the availability of technical details about
GMS Primary Data

Steve Rawdon of the Meteorological Office at Wellington Airport, New Zealand, has sent me some high resolution pictures from NOAA WXSATS. He also sent some information regarding the geostationary GMS WXSAT, of the south west Pacific ocean - see Fig. 3. This is positioned at about longitude 140°, over New Guinea. I had to check this with my tracking program, never having seen any GMS pictures before! The picture shows the eastern coast of Australia, New Zealand and temperature profile calibrations at the top left.

GMS transmits 28 sets of images per 24-hour cycle. Of those, 24 are hourly observations and the other 4 are half-hourly observations made for the purpose of getting accurate wind-speed readings. Each image set consists of two pictures: one IR and one VIS. The IR images have a resolution of 5km while the VIS images have a resolution of 1.25km. Because of the size of the VIS images, they are sampled down to a resolution of 5km; i.e., made to match that of the IR resolution.

Shuttle Transmissions

Some months ago I listed the RSGB as providing a re-broadcast transmission from the American shuttle for British listeners. A reader has kindly pointed out to me that this item was in error because the RSGB do not re-broadcast shuttle transmissions. I must apologise for this, but point out that the information was obtained from an American Bulletin Board that is usually reliable.

New Products

A number of readers have requested reviews of WXSAT products. Michael Smith of Sherbourne has helpfully suggested a number of points that he would like to see included in such reviews. I am more than ready to provide these. Could I suggest that those wanting to see more reviews should write to the Editor, who decides what is going to appear in SWM? I am happy to receive requests from readers and I will do my best to influence him!

I've spent a pleasant week or two trying out a WXSAT decoding board and software from TH2 Imaging, a Margate company. The system includes hardware on an expansion card which slots into an IBM compatible computer and decodes the signal from your WXSAT receiver. The software caters for all types of WXSAT and I shall be submitting a review shortly. Briefly, the product includes a comprehensive, well written manual, software which is able to collect images either live or in your absence, and show pictures at full satellite resolution. Quick details from TH2 Imaging on (0643) 229331, or watch this space!

Kepler Elements

Hugh R of Great Missenden noticed an error in a batch of elements from me, in which the decay rate of METEOR 3-5 was wrongly printed at 0.00000759 - a high value. In fact the data is extracted from a BBS which regularly includes NASA Kepler data, but occasionally a mistake slips through. I correct these when I notice them.

Ron Harvey of Weston-super-Mare asks how Kepler elements are actually obtained. The usual method of measuring the exact position of a satellite and its direction of motion, is to transmit a radar signal towards it and detect the reflection.

By analysing this, the exact distance of the satellite can be calculated to high precision, and the spread of frequencies that are returned allow its motion to be determined.

Complications arise because of other influences that might be temporarily acting on the satellite. The most common influences are those of the sun and moon, solar activity can dramatically affect the upper atmosphere, near to where many satellites orbit.

NOAAs 9, 11 a.p.t. on 137.82 MHz; NOAAs 10, 12 on 137.50 MHz; METEORS on 137.30, 137.40 or 137.85 MHz; FENGYUN 1-3 monitor 137.06 and 137.80 MHz.
PROsat II is used by most leading Weather Satellite enthusiasts. Lawrence Harris, Mark Pepper, Roger Ray and Brian Dudman are just a few who have come to rely on the vastly superior features of PROsat II. Features such as 1,000 frame full screen full colour animate, 3D, direct temperature readout and Windows export make Timestep products preferred by most users. All satellites are catered for including the awkward Japanese GMS and the very infrequent Soviet Okean series. All current SVGA cards are supported. NOAA images contain full resolution visible and infrared data in a stunning 2.4Mb file!

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A full range of separate Antennas, Preampilifiers, Cables, Receivers and accessories are held in stock.
Mr E. Dickson of Glasgow writes with a very good question concerning receiver frequency display. His current AAR currently uses a Roberts RC-818 that only shows the frequency with a resolution of 1KHz. However, he notes that stations are often listed with a resolution of 100Hz. He asks if this really makes any difference. The answer really depends on the tuning display resolution of your receiver. If your receiver can only show the frequency to a resolution of 1KHz, then clearly the 100Hz figure becomes largely irrelevant. If, on the other hand, you have a display that shows 100Hz or less, the extra digit can be very useful.

The real value comes if you operate your receiver under some form of computer control. Here you can display the precise frequency and so avoid the need to tune around. This comes into it’s own for the advanced listener who does a lot of unattended operation. A typical example would be the FAX enthusiast who wants to catch those late night charts. By combining computer control and precise frequency information you can sleep while your system grabs those rare charts. It’s also useful to be able to store the precise frequency in the receiver’s own memories.

Next, I have two letters from Amiga users asking for help. Mr A. Cooke from Grimsby and Mr G. Rowlands from Colwyn Bay have Amiga 4000 and Amiga 500 computers respectively. Both would like to be able to decode a range of utility signals, but have been unable to find any suitable software. Unfortunately, I am unable to offer any help as this computer is not well supported. The best I can offer is to suggest they look at using one of the intelligent decoders such as the PK-232, Kantronics KAM, etc.

For a cheaper option, the ERA Microreader is a very popular choice. With all of these units, the computer is used mainly as a dumb terminal to display the recovered text. If anyone out there knows how to get a source of utility software for the Amiga range, please drop me a line with the details.

Another plea for help comes from Mr I. Smith of Rotherham. He has an Atari 520STE and wants to receive AMTOR, c.w., RTTY and FAX. Fortunately, I can offer some help here. For AMTOR, c.w. and RTTY reception, Grosvenor Software should be able to help. For more information the contact details are: 2 Beacon House, Seaford, East Sussex BN28 2JZ, Tel: (0322) 883378. For FAX reception the only software I’m aware of is that produced by Decode reader Rob Margrave of Leamington Spa. The only snag being that a Kantronics KPC2 terminal is required to handle the decoding. As with the Amiga problem, if anyone has any better ideas I’d be pleased to hear from you.

Roger Rowthorn of Southampton is a member of a postal computer club and has written asking for help with decoding hardware and software. As a newly licensed amateur, he is keen to encourage the use of computers with radio. Whilst the Beeb is quite well supported, a finish commercial decoding software such as the excellent Technical Software range, I’m not so sure of the position with public domain material. There used to be an abundance of PD software available but I don’t have any up-to-date contacts or product lists. Now I’m sure that there are many listeners using Beeb’s that could drop me a line and point me in the right direction. I’d be particularly interested to hear from anyone running a Beeb user group.

Just to finish off the letters section I’d like to mention the World Radio and Television Handbook Equipment Buyers Guide. The title’s a bit of a mouthful but the content is excellent. I receive many letters from newcomers asking me to advise them on the building of complete stations. The Equipment Buyers Guide goes a long way to answering many of the listener’s questions. In addition to excellent coverage of all the main receivers, the book deals with a good range of peripheral equipment. This includes such areas as antennas (active and passive), splitters, pre-amplifiers and pre-selectors. There’s even a comprehensive section dealing with radio related software.

For most people the main section of interest is receiver reviews. A wide range of receiver types are covered and the reviews are written in simple language. The accent is always on the points that are directly relevant to the listener rather than a lot of technical hot air!

I would strongly recommend that anyone contemplating buying a new receiver should make sure they read this before parting with their money - it’s a sound investment of £15.95. If you would like a copy, it’s currently available from the SWM Book Service.

**Featured Station**

The photo for this month comes from Bill Clark of Aspatria in Cumbria. Those who follow the column closely will recall that Bill is an amateur meteorologist and frequently provides answers to readers meteorological questions. As you can see from the photo, Bill runs a very neat station, which is clearly split into radio and meteorological sections. The equipment shown gives Bill access to both h.f. FAX and satellite images and provides much of the raw data for his meteorological activities.

**JVFAX**

The general computer theme of this month’s column is continued with some details of a very effective FAX package. It’s neither shareware or freeware, but is distributed at zero cost via a number of international bulletin board systems. The program has been written for IBM PC compatibles running DOS 3.0 or higher and the review copy was at version 5.0. Like many free distribution products, JVFax is supplied in compressed form using the popular PKZIP format. When uncompressed, the package comprises the program plus configuration file, English and German manuals and a sample ‘date file’ for unattended reception. The manuals were extremely comprehensive with the English version being some forty-six pages long.

Once the program had been installed on my hard disk, the next stage was sort out the type of interface to be used. There were a number of options ranging from a simple comparator on the serial port to a sophisticated external unit supporting sixty-four grey levels. For most operators, the simple comparator is the first choice. A diagram for this easy to build unit is included with the manual. The circuit used a 741 op-amp and a few resistors and capacitors to make a simple comparator. To keep the connections simple the unit takes its power from the serial port and the whole unit could be housed inside a standard D connector. I would add a word of caution for those that use the simple interface on a slow computer. You may well find that the program hangs on the higher resolution modes. This should only occur on 4.77MHz 8088 and 8MHz 8086 based machines.

The next stage was to set up the configuration file to match your computer’s hardware. This was made very easy thanks to the menu driven set-up screen. I was very impressed with the support provided by the program. A wide range of printers and video systems were supported including HP Laserjet printers and the latest local bus.
(VESGA) SVGA cards. To confirm that all was set correctly, you could run printer and video test routines from within the program.

The receptions modes provided by JVFAX were very comprehensive with line rates of 48, 60, 90, 120, 180 and 240 and 10cs from 255 to 576. In addition to conventional h.f. FAX signals, this program could also handle the a.m. polar orbiting satellites. Full Automatic Picture Transmission (APT) facilities were also included so unattended operation could be used. For the licensed amateur, there was even a transmit facility that could be used to send GIF format files.

Once the FAX receive mode has been started you are presented with a blank screen except for a small status box. This indicated all the key receive parameters plus a very effective spectrum analyser display. This showed the dispersion of the signal between full black and pure white. In addition to displaying the received image on the screen or printer, you could also store images on disk. The format used for this was the popular GIF system. Once the image had been stored you could also carry out a wide range of image processing. Included within this was a zoom facility that enabled sections of an image to be enlarged and stored, displayed or printed.

As if all this wasn't enough there was even a SSTV receive only option included.

It's not really possible to do this program justice in the space available here but I hope I've given you a useful insight. Having been impressed with the program I've written to the author asking if I can distribute copies via the column - I'll print an update later. In the meantime my thanks to Ian Maciver for supplying my copy.

**XLATE**

Something a little different for you this month! Jack Bird has been a contributor to the column since its early days and has recently sent me an interesting computer program. Although the program is based around the IBM PC, the programming idea could easily be applied to many other computers. The program has been written for Jack by Don Ward GOMDO to help him with the interpretation of foreign language RTTY transmissions.

The original intention was to help translate RTTY messages from the Baodot Cyrillic equivalent. For those that are new to foreign language reception, I ought to add a short explanation of the problem. The standard International Alphabet No 2 (ITAZ) provides the look-up table for converting the standard alphabet into RTTY five unit codes. However, if you want to send a message in the Russian language, using the Cyrillic alphabet, there are insufficient codes available. The solution is to increase the number of available codes by adding a third shift character. You will remember that the standard alphabet uses two shifts - letter and figure. When we add the extra shift, the codes become known as the third shift Cyrillic code.

Whilst this is fine as a coding system, it does present a few problems for the vast majority of us who have systems set up to receive the ITAZ. In practice, when you tune into a station using a non-standard alphabet such as Third Shift Cyrillic, you get what appears to be garbage printed on the screen. In fact, all the information is there but incorrectly decoded. If you have the patience you can go a long way to decoding the signal manually. To do this you need a form of look-up table that will convert your 'jibberish' into the appropriate Russian word. However, this can be taken a step further and convert direct into the English equivalent of the Russian word. If you want to try your hand at this there are some excellent Arabic examples in the Kligenfuss Radioteletype Code Manual.

Having explained (I hope!) the problem I'm sure you can see that this is a situation that's crying out for a computer based solution. That is precisely what Don has done. In his program, a file of received text is compared with a dictionary of translations to produce a translated output file. Anyone who has dabbled in translation will be aware that life is never that simple and words often have multiple meanings depending on the context in which the word is used. This program makes no attempt to tackle this or to correct grammar. However, in practice the program forms a very useful tool that adds another dimension to RTTY listening. One of the great benefits of the program is its flexibility as it can work with any number of translation dictionaries. In fact, Don has written a support program called CYRIL that enables the operator to create and amend dictionary entries.

At present the program is still in the development phase but I'm sure Don would be only too pleased to hear comments from readers. If you would like to comment to Don please direct your letters via me with the appropriate postage. My thanks to both Jack and Don for this information.

**Frequency List**

This month's list (below) has been compiled from the following readers logs: Day Watson, Geoff Crowley and Patrick McKeever. If you would like a copy of either my Decode list or the Day Watson Beginners list, please send three first or second class stamps to the address at the head of the column. It would also be helpful if you could include a return address label and mark you letter BEGINNERS or DECODE.

**User Groups**

You will no doubt have noticed from the earlier sections of Decode that I'm frequently asked for sources of radio-related software for a wide range of computer systems. The only problem is I don't have an up-to-date listing of the various user groups and suppliers of public domain software. I think the time is right to correct that situation and put together a new list. Once it's complete, I can publish it through the column for all to use. So what I need from you is details of any software or hardware systems that may fall into this category. Don't worry if the information seems a little dated as I'll check out the suppliers before they get included in the list. If you can help in any way, please write to the address at the head of the column.

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**Frequency List**

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<td>Germany</td>
<td>10000000</td>
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<tr>
<td>871</td>
<td>Bremen</td>
<td>Germany</td>
<td>10000000</td>
<td></td>
</tr>
</tbody>
</table>

### Notes:
- Indicated stations were logged in during daylight only and at other times noted.
- Indicated stations were logged in during daylight only and at other times noted.

---

### Long Wave Reports

Note: I.W. & m.w. frequencies in kHz; s.w. in MHz; Time in UTC (+/- GMT). Unless stated, logs compiled on the four weeks ending April 3.

In some locations it is not possible to hear the signals from the distant stations that share a particular channel because they are masked by a local transmission. However, unusual circumstances may allow that a temporary break of the BBC Drobotic 500kHz transmitter on 18kHz helped Eddie McKeown (Newry) to receive BBC-R4 via Westerglen’s SINPO 5555 at 1825. He also took the opportunity to monitor 252kHz when Atlantic 252 (1500/1000kHz) was "off the air" for Long Medium & Short

---

70 Short Wave Magazine, June 1993
**Local Radio Chart**

<table>
<thead>
<tr>
<th>Freq</th>
<th>Station</th>
<th>City, Country</th>
<th>Power (kW)</th>
<th>Listener</th>
</tr>
</thead>
<tbody>
<tr>
<td>153</td>
<td>Dresden</td>
<td>Germany</td>
<td>1200</td>
<td>E.A.</td>
</tr>
<tr>
<td>153</td>
<td>Breslau</td>
<td>Germany</td>
<td>800</td>
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</tr>
<tr>
<td>156</td>
<td>Augsburg</td>
<td>Germany</td>
<td>500</td>
<td>B.K.</td>
</tr>
<tr>
<td>157</td>
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<td>Germany</td>
<td>1 M</td>
<td>D.I.</td>
</tr>
<tr>
<td>158</td>
<td>Nuremberg</td>
<td>Germany</td>
<td>400</td>
<td>R.W.</td>
</tr>
<tr>
<td>161</td>
<td>Leipzig</td>
<td>Germany</td>
<td>300</td>
<td>H.K.</td>
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<td>Germany</td>
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<td>R.C.</td>
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<td>8000</td>
<td>E.G.</td>
</tr>
<tr>
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<td>Wiesbaden</td>
<td>Germany</td>
<td>3000</td>
<td>F.J.</td>
</tr>
<tr>
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<td>Germany</td>
<td>1500</td>
<td>E.L.</td>
</tr>
<tr>
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<td>Germany</td>
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<tr>
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**Long Wave Chart**

<table>
<thead>
<tr>
<th>Freq</th>
<th>Station Name</th>
<th>Country</th>
<th>Power (kW)</th>
<th>Listener</th>
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<tr>
<td>152</td>
<td>Dover</td>
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<td>1000</td>
<td>E.A.</td>
</tr>
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<td>United Kingdom</td>
<td>800</td>
<td>F.J.</td>
</tr>
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<td>Ramsgate</td>
<td>United Kingdom</td>
<td>500</td>
<td>B.K.</td>
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<tr>
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<td>Deal</td>
<td>United Kingdom</td>
<td>300</td>
<td>D.I.</td>
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<td>R.W.</td>
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<td>H.K.</td>
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<td>United Kingdom</td>
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<td>F.J.</td>
</tr>
<tr>
<td>152</td>
<td>Culver</td>
<td>United Kingdom</td>
<td>5</td>
<td>F.J.</td>
</tr>
</tbody>
</table>

**Medium Wave Reports**

The most often heard transatlantic signals during March came from CjyD in St John's, NF on 980, YQAR Mount Pearl, NF on 1210 and R.Globo in Rio, Brazil on 1220, but several others were logged, see chart.

Some signals from stations in N.Africa and the M.East also reached the UK after dark. In Congleton, Tim Bucknell heard Islamic type music with singing on 1402kHz at 0114. No ident was obtained, but it may have originated from Iran via Rasht (800kHz) on 1404kHz. Roy Patrick (Derby) found the signals from Saudi Arabia via Dammam (1600kHz) became audible on 1440 when RTI switched off at 2205, rated 2422. At 2300 he logged Dubs, Saudi Arabia on 1521 (2000kHz). Several stations in N.Africa were heard by George Millmore in Wotton, WO. The reception was good, but some hearer previously with an inaudible.

Radio 1, the first national commercial m.w. station in Britain, carried out engineering tests prior to the launch of the service on April 30. Six high power transmitters at Brookmans Park* (125kW), Droitwich* (105kW), Linsagervay (185kW), Westafford (100kW) and Westerglen* (100kW) share 1215kHz. In addition, twenty one low power fill-in transmitters are employed. Those at Brighton (1.1kW), Dartford Tunnel (0.004kW), Fareham (1.3kW), Hull (0.3kVW), Plymouth (1.1kW), Poole (2.1kW), Redwood (2.3kW) also share 1215kHz. Those at Cheltenham (1kHz), Chesterton Fan (0.25kW), Fern Barnow (0.5kW), Hoo (2kW), Kings Heath (0.5kW), Oxford (5.5kW), Torbay (1kW), Trelow (1kW) and Wallasey (2kW) are on 1197kHz. Those at Dundee (1kW), Sheffield (1kW) and Stockton (1kW) use 1242, but Manningtree (10kHz) and Wallasey on 1224kHz. * Directional antenna. # Power may be increased.

The introduction of this 24 hour service may pose problems for DXers who search for m.w. transatlantic signals at night, also for those who enjoy logging local m.w. stations. No doubt Virgin will welcome reports on their transmissions. Send them to Virgin Radio, No.1 Golden Square, London W1R 4DJ.

*Whilst checking the local radio scene in E.Grinstead, John Wells heard test tones on 75 and 819kHz. A fluffy fade was evident on the latter, similar to that noted on the signal from the late Hereford & Worcester transmitter, so he is wondering if it is being tested for R.Maidwyn or Head of Valleys. The bearing and signal strength were also similar. On 603kHz he heard the station identifier "CD 002". Any information about them would be welcome.*

**Short Wave Reports**

Although conditions in the 25MHz (11m) band have varied from day to day, R.Australia's early morning broadcast to NE.Africa via Darwin on 25.750 (Eng 0800-0855) has usually been heard here. Under favourable conditions it rated 35333 at 0800 by Chris Haigh in Huddersfield.

A deterioration in the reception of UAE R, Abu Dhabi on 25.690 (Ar to Far East 0900-1100) has been observed here. A 24542 rating at 0915 was noted by David Edwards in Walsend. Still taking advantage of the band was DW from Julich 25.740 (Ger to E.Asia 1100-1350), logged as 15332 at 1115 by Eric Shaw in Chester; also RFI via Isouudun 25.820 (Fr to Africa 0900-1400) as 2422 at 1200 by Rhoderick Illman in Oxford.

R.Australia has also been reaching here in the 21MHz (13m) band. The Darwin broadcast to SE Asia 21.525 (Eng 0200-0800) was logged as 45333 at 0714 in Huddersfield and to S.Asia on 21.725 (Eng 0800-1300) as 54433 at 1035 by Ronald Kliger in Co.Londonerry, Carnarvon to Pacific areas on 21.595 (Eng 0100-0900) as S10333 at 0830 by Cyril Keilm in Sheffield.

 maintance, but co-channel Tipaza, Algeria (1500/750kW) proved to be barely audible, rating only 15211 at 0557.

**Long Medium & Short**

**Short Wave Magazine, June 1993**
Tropical Bands

<table>
<thead>
<tr>
<th>Station</th>
<th>Country</th>
<th>UTC</th>
<th>Difer</th>
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<tr>
<td>2210</td>
<td>ABC Aliança</td>
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<tr>
<td>2140</td>
<td>ABC Alvorada</td>
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</tr>
<tr>
<td>2240</td>
<td>ABC Tupi</td>
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<td>2180</td>
<td>RNO</td>
<td>110</td>
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</tr>
<tr>
<td>2200</td>
<td>ABC Terra</td>
<td>110</td>
<td></td>
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<tr>
<td>2155</td>
<td>ABC Rondônia</td>
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<td></td>
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<td>2150</td>
<td>RPO</td>
<td>110</td>
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<td>2125</td>
<td>ABC Santa Casa</td>
<td>110</td>
<td></td>
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<tr>
<td>2100</td>
<td>RBS</td>
<td>110</td>
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<tr>
<td>2050</td>
<td>ABC Letícia</td>
<td>110</td>
<td></td>
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<tr>
<td>2025</td>
<td>ABC Arapuanã</td>
<td>110</td>
<td></td>
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<td>2000</td>
<td>ABC Paulista</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>1950</td>
<td>ABC Aparecida</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>1900</td>
<td>ABC União</td>
<td>110</td>
<td></td>
</tr>
</tbody>
</table>
Wye; R.Nederlands via Bonn 17.605 (Eng to South Africa 0800-0955) S10343 at 0800 in Rowley Regis; R.Austria Int via Deanovec 9.515 (Eng to Europe 0700-0930) 33332 at 0800 in Sheffield; 5.880 to Asia via Macclesfield; 5.955 at 1235 in Swindon.

Later, R.Nederlands via Lelystad 6.165 (Eng to South Africa 0700-0930) 33333 at 0700 in Wallsend. Also noted were SRI via Lenk? 6.165 (Eng to South Africa 1700-2000) 55554 at 1700 in Woking; R.Japan via Sackville 5.960 (Eng to South Africa 1700-2000) 55555 at 1700 in Woking. In Hafnarfjordur it peaked 23343 at 1457.

Also noted were R.Australia's 6MHz (49m) broadcast to Asia via Carnarvon 7.260 (Eng to South Africa 2100-2200) S10222 at 2119 in Gibraltar and 44444 at 2155 in St.Andrews; AIR via Basingstoke 6.130 (Eng to South Africa 2100-2200) 55554 at 2155 in Swindon.

Transatlantic DX Chart

Short Medium & Short Wave Magazine, June 1993
The UK Scanning Directory

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airly stable propagation conditions were observed during daylight by Dennis Beattie in Bridgewater. He added that Estoril Estoril beacon (GA) on 209.5 to his growing list. Checks were also made during daylight by John Wells in Gristead. Although he heard the Pt de Barfleur (CT) on 298.5 for the first time the total number of beacons logged was less than hitherto.

Rather weaker signals than usual were noted by Vic Bridget in Gurnislake, nevertheless he compiled an extensive log by day and at night. Jim Edwards (Wigan) added many beacons to his database. The Morse decoder used with his NRD-535 receiver would not resolve the weaker signals, so he used a Morse table instead, but he can now recognise some letters without reference to it!

Despite the high level of electrical interference in E.Grinstead, Patrick McKeever has compiled a remarkable number of beacons in the evenings between 1900 and 2200UTC. When searching for the weaker signals he now uses a pair of inexpensive stereo headphones. He also uses the Loewe HF-225 receiver. He intends to add an audio filter in the near future.

When checking the band in E.London, Phil Townsend has found it advantageous to use a home-built loop and audio filter with his HF-225 receiver. Because the filter bandwidth is only 30Hz it is necessary to tune the receiver and adjust the loop very carefully for best reception of a particular beacon. Once the settings have been optimised Phil enters the frequency into the receiver memory bank. Upon recalling a beacon all that is required is to adjust the loop. This technique works well with the known beacons and allows him more time to search for unknown ones.

Up in Huddersfield, Chris Haigh used his new Drake R8E receiver to check the band - it helped considerably! He selected the a.m. mode, set the bandwidth to 1.8kHz, the noise blanker at narrow and the notch filter on. Using the beacon chart in the March '93 SWM as a guide, he compiled an interesting log. Following the publication of that chart Kenneth Buck (Edinburgh) kindly sent me some detailed information about the beacons operating around the northern coastline of Iceland. Apparently they all radiate a keyed modulated carrier (n.c.m.w), which was the system in general use prior to April last year. Two letter calligns are allocated to the marine and aeronautical beacons, so DXers may well have difficulty in establishing their role. The following are maritime radio beacons.

<table>
<thead>
<tr>
<th>Freq</th>
<th>Callign Station Name</th>
<th>Location</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>291.1</td>
<td>Reykjavik</td>
<td>RN</td>
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<tr>
<td>293.0</td>
<td>Djupivogur</td>
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<td>Malarrif Lt</td>
<td>MA</td>
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<td>305.7</td>
<td>Dalatriag Lt</td>
<td>DA</td>
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<td>Skardhafjara Lt</td>
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<tr>
<td>316.0</td>
<td>Ingolfshollin Lt</td>
<td>IN</td>
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</tr>
</tbody>
</table>

When searching for these beacons it is necessary to set the receiver to the a.m. mode. Kenneth has found that this results in so much interference from local beacons on very similar frequencies that is unable to receive any of them. Whilst his Loewe HF-225 receiver was set to the c.w. mode he compiled an extensive list of other beacons for the chart.

Several Icelandic beacons were received in Inverurie by Chris Edwards, see chart. Although Hornbjarg (HO) on 298.9 and Rauðhöfnr (RJ) on 301.1 have been included I am unable to confirm their status. Quite regularly Chris hears a beacon (HH) on 297.3, which was included in the March '93 chart along with (RK) on 350.5, but both are now known to be aeronautical beacons. He has noticed that Dunansby Head (DY) on 299.5 has been inaudible since mid-January.

A beacon signal (MA) on 290.8 was noted in several reports, but it does not originate from the Dunansby Head lighthouse which radiates the same ident (MA) on 304.3. The latter was logged by Geoff Crossley in Harfnerjord as a potential SIO555 at 1350. However, the Dunansby Head (DY) beacon on 299.5 has been inaudible since mid-January.

A beacon signal (MA) on 290.8 was noted in several reports, but it does not originate from the Dunansby Head lighthouse which radiates the same ident (MA) on 304.3. The latter was logged by Geoff Crossley in Harfnerjord as a potential SIO555 at 1350.
Fill in the order form on page 84 in BLOCK CAPITALS - up to a maximum of 30 words plus 12 words for your address - and send it, together with your payment of £2.35, to Trading Post, Short Wave Magazine, Arrowsmith Court, Station Approach, Broadstone, Dorset BH18 8PW. If you do not wish to post your copy of SWM, or do not wish to use the order form provided, you must still send the corner flash from page 76 of this issue, or your subscription number, as proof of purchase of the magazine. Advertisements from traders, or for equipment which it is illegal to possess, use or which cannot be licensed in the UK will not be accepted.

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Electro-magnetic models 77WR, 770W/12, 730/4, £35 each, £105 for cash. Postage extra. Peter Lapino. Tel: (0374) 218701 or FAX (0372) 434831 Surrey.

Edystone receivers, all v.g.c., £10/15 £75, 770W/12, 730/4, £95 each. Cash plus p.w.o. carriage extra. Peter. Tel: FAX (0372) 454381. Ref: 1485. Thank you.

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