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Ham Radio

TODAY



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pocket-sized
scanner**

**Amateur Radio
CD-ROMs
reviewed**

Visual Communicator

1st UK Review of Kenwood's VC-H1

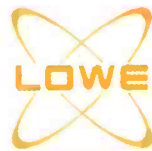
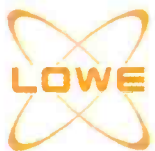
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regular columns

book browser	18
The best Amateur Radio publications available to <i>Ham Radio Today</i> readers	
'tone' burst	21
Take an oblique look at the world of Amateur Radio with	
net communication	36
Jeremy Boot, G4NJH, looks at Amateur Radio contest and antenna Internet pages	
data connection	38
Chris Lorek, G4HCL, with more news and tips from the world of datacomms	
satellite rendezvous	40
More from AMSAT-UK, including news of a new UK satellite to be made at the University of Surrey, compiled by Richard Limebear, G3RWL	
qrp corner	42
Dick Pascoe, G0BPS, with some ideas for you to have yourself a very QRP Christmas	
vhf / uhf message	44
This month Geoff Brown, GJ4ICD, concentrates on 70MHz records and news	
hf happenings	46
World-wide Amateur Radio activity, reported by Martin Atherton, G3ZAY	
the help files	49
Our regular feature for beginners explains dummy loads and auroral zones	

news and views

radio today	5
The latest Amateur Radio news	
trade topics	8
Hot news from the Amateur Radio trade	
leicester amateur radio show report	10
Don't be left in the dark, read our illuminating report on this year's brightest Amateur Radio show!	
letters	20
<i>Ham Radio Today's</i> readers have their say - no censorship here!	
ham radio this month	22
The latest events and rally news for your diary	
rsgb hf and iota convention report	34
Here's what you missed if you didn't make it to Windsor this year!	
this month at the clubs	52
Details of club events round the country, plus useful contact information	
free readers' ads	55
For Sale, Wanted or Exchange, published free	



ham radio today **contents**
 volume 16 no.12, december 1998

reviews

cd-rom reviews	19
Software author Alan Jubb, G3PMR, reviews the RSGB's Christmas CD-ROMs: <i>Callseeker 99</i> and <i>RadCom 97 on CD-ROM</i>	
icom ic-r2 communications receiver	24
Is this the smallest communications receiver ever? <i>Ham Radio Today</i> Editor Steve Telenius-Lowe, G4JVG, looks at Icom's pocket-size wonder	
kenwood vc-h1 visual communicator	27
Once upon a time, slow scan TV required large clumsy apparatus. Now Kenwood has launched a <i>handheld</i> SSTV unit, reviewed by Chris Lorek, G4HCL	

features

ham radio today 1998 (Vol 16) index	12
Which issue was the FT-847 reviewed in? What about the <i>JVComm32</i> software? Here's the full Volume 16 index.	
all in a day's work	16
More 'hints and kinks' from the workshop of Harry Leeming, G3LLL	



readers' information

subscription form	48
advertiser index	58
editorial & reader services contact information	58

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Ham Radio TODAY

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tion may be reproduced in any form
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This is the last issue of *Ham Radio Today* of 1998, so perhaps readers will permit me the indulgence of looking back over the year before we look forward to 1999. This time last year, I was working on *RadCom* magazine and although by then I knew that Sheila Lorek, G8IYA, had resigned as Editor of *Ham Radio Today*, I had no idea I would be editing it just a few months later.

interesting times

"May you live in interesting times" is said to be an old Chinese curse, and certainly it's true to say that this *has* been an interesting year. I wouldn't say we have been cursed, though; on the contrary, it has been a very successful year for *Ham Radio Today*. We took over with the March issue and in the seven months (at the time of writing) since then, the number of subscribers has gone up by an astonishing 30%.

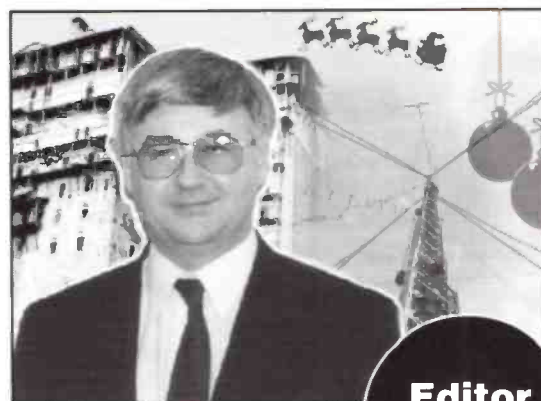
We pride ourselves on being first with reviews. A long list here would be boring; suffice to say that the majority of reviews pub-

ago I wanted the smallest and lightest HF rig possible for my travels and so bought what was the most portable transceiver available, only to discover that the Kenwood TS-50 was launched a few weeks later.

Not only was it half the size and weight, but it was also a lot less expensive than the rig I bought. I would have been very grateful - and several hundred pounds better off! - for information that Kenwood was about to launch a new mini-mobile transceiver.

this year

So what else has *Ham Radio Today* done this year? We have carried on the tradition, started by the previous editor of bringing you the latest Amateur Radio software, free of charge. But these days, instead of giving away a 3.5in floppy, we have increased the amount of software several hun-



Editor
G4JVG

Feedback from readers in letters and in person at shows suggests that we're setting the agenda on this subject.

A full index to Volume 16 can be found on pages 12 - 13, so new readers can see what they've been missing.

next year

It's not all been 100% positive. We are aware that it is still not as easy as it should be to find *Ham Radio Today* on newsagents' shelves. We know about this and have taken it up with our distributors.

There has been some criticism mainly - I think it is fair to say -

Onwards and Upwards

Ham Radio Today Editorial by Steve Telenius-Lowe, G4JVG

lished in *Ham Radio Today* this year - whether of equipment, antennas or software - have been UK firsts. We even had a world exclusive, where thanks to JRC (UK) and Lowe Electronics (no relation!) we were able to carry out the very first independent review in the world of the JRC NRD-545DSP receiver, a piece of equipment that Technical Consultant Chris Lorek, G4HCL, described as "the very best HF receiver I've ever had the pleasure of using".

Thanks to regular correspondents in Japan and elsewhere, and our excellent relations with the trade, we are often able to bring you details of new equipment even before the news is officially released in the UK. A case in point is the Yaesu FT-100 'mini-mobile' HF / VHF / UHF transceiver, which we previewed as long ago as July. The FT-100 is still not available here (again - at the time of writing) - but why should readers want to know about something that's not even in the shops yet? Well, I believe that if you are thinking of buying a new rig you will want to know about what is *likely* to be available in a few months. I know this to my cost; some years

dred fold by putting it on CD-ROMs; we're the only UK Amateur Radio magazine to provide free cover-mounted CD-ROMs.

I know from experience on the *Ham Radio Today* stands at shows and exhibitions that the issues containing free CD-ROMs are extremely popular, and although we do get more copies of the magazine printed when there's a CD-ROM on the cover, the March 1998 edition has now almost sold out (a few back issues are still available - see page 58 for details).

We've had competitions with some really terrific prizes, including the Icom IC-746 HF / 6m / 2m transceiver - worth nearly £1700 - which was reviewed way back in March.

We have also continued to campaign to liberalise access to the HF bands, support the RSGB's new-found policy on mandatory Morse code testing, improve Novice licence privileges, make the RAE more relevant, and make it easier and cheaper to take the RAE. We would like to see volunteer RAE (and NRAE) examiners - it works in the USA and it works here as regards Morse testing, so it should work for the RAE too.

from some of our more senior readers, about the page design and layout of the magazine. I'm pleased to be able to be the bringer of glad tidings here (well, it is the Christmas issue!) Starting with the next issue we will be introducing a new page design which will address some of the criticisms which have come our way during the year.

In fact, *Ham Radio Today* will look very different from the January 1999 issue. It will also be bigger and better. We're adding eight more pages, so as to be able to bring you additional features, and we're also increasing the number of full-colour pages (gone will be the 'spot' colour pages which readers tell me they don't like).

We'll be continuing with free CD-ROMs during the year (when? - we're not saying: you'll have to buy the magazine to find out!)

And, of course, we intend to continue being first with reviews of new equipment, just as soon as they become available.

The *Ham Radio Today* team of Designer Dani Angel, Technical Consultant Chris Lorek, G4HCL, and I would like to wish all our readers a very Merry Christmas.

hats off to hatfield!

cutting the ribbon



Hannah Rudd (left) and Vicky Goodwin cut the ribbon.

Young Vicky Goodwin and Hannah Rudd, daughters of proprietors Dennis Goodwin, G4SOT, and Andy Rudd, G6MRI, performed the official opening ceremony of Universal Radio Communications (Unicom) in Herne Bay on 5 September. Around 60 people attended the opening day celebrations, and were offered a glass of bubbly and light refreshments. Seven lucky visitors went away with valuable prizes donated by the major Amateur Radio importers and suppliers, including a Yaesu VX-1R handheld, a Hora 70cm handheld and Kenwood, Icom and Nevada jackets or sweatshirts.

The RSGB National Mobile Rally is moving to a new venue. After 38 years at Woburn, the 1999 event will take place in the grounds of historic Hatfield House, home of Lord Salisbury. The 1999 RSGB National Mobile Rally takes place on **1 August** - put it in your new 1999 diary *now!* - and will include not only a large trade show in spacious marquees, but also a large car boot sale and flea market, an 'antenna park' with expert advice at hand, a radio-controlled model display, craft stalls, ARDF hunt, children's entertainment, refreshments and a beer tent. With Hatfield House and its extensive grounds to tour, it sounds like being a great day out for the whole family - bring a picnic for the park. There's easy road and rail access to Hatfield House. For further details tel: 01707 659015.

hams in georges emergency

US Radio Amateurs offered essential emergency communications back-up when Hurricane Georges battered the USA's central Gulf coastline at the end of September. The hurricane, sweeping in at more than 100MPH, slammed into Alabama and Florida, causing extensive damage. Radio Amateurs were kept busy before, during, and after Georges' arrival. Several US Amateur Radio groups joined forces to provide communications support to Red Cross and emergency management agencies. The Hurricane Watch Net, on 14325kHz, remained active for some 10 days as Georges moved from the Caribbean to the Gulf of Mexico. They passed on weather-related information, via W4EHW at the National Hurricane Center in Miami.

radio today radio today

latest news on ham radio today

(... to talk to someone around the corner)

Czech hams Slavomir (Slavek), OK1TN; Vlada, OK1VPZ; Lada, OK1DIX; Lada's wife Majka, OK1DYX; and Jarda, OK2GG, travelled by road all the way from the Czech Republic to the village of Toft Monks on the Suffolk / Norfolk border to take part in the IARU UHF contest on 3 / 4 October. The group, which used the callsign G0/OK2KKW, operated from the car park of the Toft Lion pub, where the landlord is Giles Mortimer, G8DWQ.

Slavek, OK1TN, later reported that conditions on 432 and 1296MHz were very poor throughout the weekend, although on 432MHz their best DX was with OK1DFC at over 1000km. They were using a new Yaesu FT-847 transceiver with a home-made 500W amplifier to a 32-element Yagi at 50ft.

Jarda, OK2GG; Vlada, OK1VPZ; Majka, OK1DYX; and Slavek, OK1TN, at the Toft Lion. In the caravan, Lada, OK1DIX, is on 432MHz.



Season's greetings!
This Santa Claus has everything he needs for a Merry Christmas, with his rig, logbook - and copy of Ham Radio Today at hand.



Photo by Henryk Kotowski, SM0JHF

The City & Guilds reports on the Radio Amateurs Examination and Novice Radio Amateurs Examination are now being uploaded to the Internet.

rae on the web

licence revoked

The RA has written to inform us that the licence of Mr T Croft, G1BRN, has been revoked. They were unable to provide any further information.

The index to the reports can be found at: www.kippax.demon.co.uk/c-and-g/index.htm, whereas the individual reports are at the same URL, but with index.htm replaced by rae0598.htm or nrae0698.htm as appropriate.

news

kind-hearted club



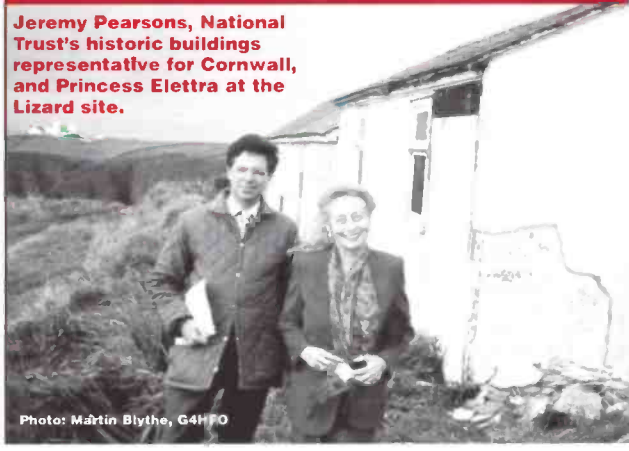
The Cockenzie and Port Seton Amateur Radio Club recently presented the British Heart Foundation with a cheque for £873. The money was raised by the club during the previous year from their junk sales, raffles, and other events. The next major junk sale at the club will be held on 13 August 1999, for further details contact Bob Glasgow, GM4UYZ, on tel: 01875 811723.

Iain Lewis, Director for Scotland, British Heart Foundation; Ron Brown, GM4IKU; Wallace Moodie, MMOAMV; Margaret Chalmers, GM0ALX; and Bob Glasgow, GM4UYZ.



Graham Patterson, G4TJB, of QSL Communications in Worle, Weston-Super-Mare, is now the proud owner of the one of the first batch of callsign car registration plates.

The National Trust in Cornwall has announced a £100,000 project to restore and reinstate two timber huts on the Lizard peninsula which were used by Marconi. The huts were used as accommodation and as a transmitting room for a number of experiments, including a transmission to the Isle of Wight, 160 miles away. Marconi's daughter, Princess Elettra, recently visited the site for the first time and said she looked forward to returning when the work was complete. It is hoped to use the huts for radio transmission work in the future.



Jeremy Pearsons, National Trust's historic buildings representative for Cornwall, and Princess Elettra at the Lizard site.

Photo: Martin Blythe, G4HFO

nt money for radio restoration

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latest news on ham radio today

into the next century

December 1998 marks the end of the first century of Amateur Radio. In 1898 M J C Dennis set up in London what he described as the world's first non-professional wireless experimental station, a claim that was never challenged. Colonel Dennis, as he later became, was licensed first as DNX and then in Ireland as EI2B and was elected a Vice-President of the Radio Society of Great Britain in 1930.

On 1 January this year, the Yeovil Amateur Radio Club launched the centenary year by staging working demonstrations of pre-WWI receivers. This was particularly apposite, as there had been a Radio Amateur in Yeovil as early as 1913.

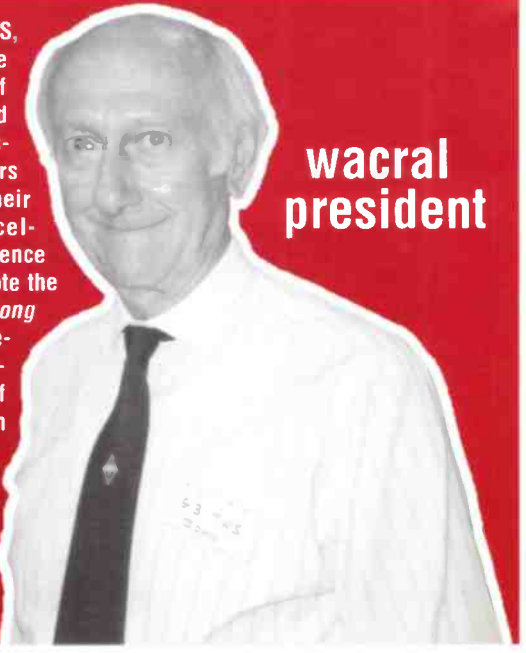
An anniversary dinner organised by the RSGB was held on 25 September, which included a speech by Louis Varney, G5RV, who joined the Society as a young man an incredible 72 years ago. A full report can be found on pages 10 / 11.

The Barry Amateur Radio Society will be operating from South Foreland Lighthouse near Dover from 17 December until Christmas Eve, when they will re-enact in period costume Marconi's ship-to-shore transmission of 24 December 1898, which was received at South Foreland.

It is also 75 years ago that the first two-way transatlantic radio contacts were made from the USA, first with France, then on 8 December 1923 with the UK. The Yeovil club will be rounding off the year on 29 December with a vintage radio evening, including a demo of a 1920s 0-V-1 receiver similar to that used to make the historic contact.

equipment confiscated

The RA has informed us that on 7 July at Thames Magistrates Court, Terence George Croft, a licensed Radio Amateur, pleaded guilty to the charge of unlicensed use of wireless telegraphy apparatus and possession of restricted CB apparatus. He was fined £30 and his radio apparatus was ordered forfeit by the court.



John Corbett, G3TWS, was invested as the third President of WACRAL, the World Association of Christian Radio Amateurs and Listeners, at their 40th anniversary celebration and conference in October. John wrote the article *HF Radio Along the Congo River*, describing his pioneering work in relief communications in Africa, for the September 1998 issue of *Ham Radio Today* and is also the author of the book *Where There is no Telephone*.

wacral president

vips at ses



Special event station GB350BOP, organised by members of the Central Lancs Amateur Radio Club (CLARC), and which was on the air from several historic sites commemorating battles in the English civil war 350 years ago, was visited by a number of VIPs. The station in Preston was attended by the Mayor of Preston, Councillor Rose Kinsella, the Leyland station was visited by David Borrows, MP, and the Mayor and Mayoress of South Ribble Borough Council, councillor Jim Owen and Mrs Joan Owen, visited the station at Bamber Bridge on 17 August, the anniversary of the battle. GB350BOP made around 4000 contacts with 146 countries, and the organisers would like to thank Martin Lynch and Sons, who sponsored the station's QSL cards.

Brian Bolton, GOUTJ; Brian Birkby, GONEI; Cllr Jim Owen, Mayor of South Ribble Borough Council; Joan Birkby, GOKMU and grandson, and Mrs Joan Owen, Mayoress.

super dx

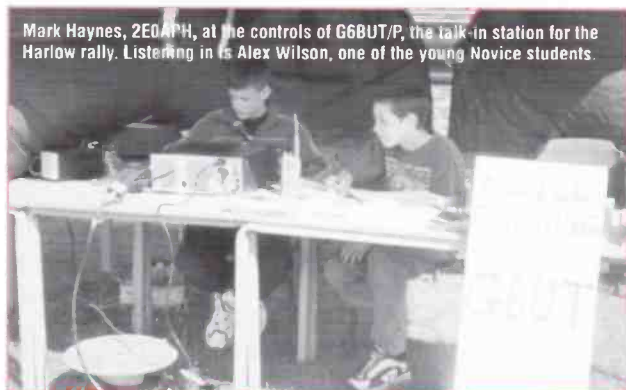
Scientists in the USA have requested input from Radio Amateurs following a rare astronomical event. A gamma ray burst occurred at 1022UTC on 27 August from a neutron star 15,000 light years away. Experimental physics VLF monitoring circuits maintained by Stanford University recorded absorption down to tens of kilohertz and scientists believe there was an almost total blackout on mediumwave and on frequencies up to 40m, for several minutes or longer. Paul Harden, NA5N, of the National Radio Astronomy Observatory at Socorro, New Mexico, has requested data from any amateurs who were lucky enough to be on the air during this rare occurrence.

how about this for field day?

The photo shows the 500kW generator provided by the East Midlands Electricity Company which powered the entire Donington Exhibition Centre following a major power failure there during the Leicester Show. For a full report on this year's show, see pages 10 / 11.



radio today radio today
latest news on ham radio today



Mark Haynes, 2E0APH, at the controls of G6BUT/P, the talk-in station for the Harlow rally. Listening in is Alex Wilson, one of the young Novice students.

new blood 1 . . .

Like many clubs, the Harlow & District Amateur Radio Club has a dedicated core of active members who were aware that there was little 'young blood' coming into the hobby. However, in April, Mark Haynes, 2E0APH, asked the club if a Novice licence training course could be established, as he had two school friends who wished to become Radio Amateurs, but had nowhere to study. Mark provided the impetus for four members to become Novice instructors and for the club to set up a Novice course, which commenced in September. Mark's school friends are not the only students - four other prospective Radio Amateurs also joined the course.

More details about the Harlow club - and some 100 others - can be found in *Ham Radio Today's* 'Month at the Clubs' feature in each issue - see page 52.

Scheveningen Radio, the Dutch maritime station, is to close down on 31 December. The station, callsign PCH, is well known by generations of British as well as Dutch Radio Amateurs, as it operated on a number of CW and phone (originally AM and later SSB) frequencies in the shared 160 and 80m bands.

To mark the closure, there will be a unique cross band event linking the maritime and amateur services. This will take place from 0900UTC on **19 December** for 24 hours, on CW as follows: 4250 / 3525kHz; 8622 / 7025kHz; 12799.5 / 14050kHz and 17198.9 / 18085kHz. In addition, PA6PCH will operate from the Scheveningen site on 3687kHz and on VHF from the coastguard station in nearby IJmuiden.

The Radio Officers Association will be activating GB0GKL to exchange greetings and join in with this unique event.

end of an era

. . . new blood 2

When a Jamboree on the Air station was being run for the 2nd Chelmsford Scout Group in 1996, four of the Scouts asked for a Novice course to be established for them. The Chelmsford Amateur Radio Society did this, with Christopher, G0IPU, and Jeff, G4JJH, the two tutors. In March this year the four Scouts, plus Christopher's wife Rhona, all passed the exam and have now received their callsigns. All are active on 70cm FM, with one also on 6m looking for the DX.

Standing: Jeff, G4JJH; Rhona, 2E1GQL; Christopher, G0IPU. Seated: Gary, 2E1QQB; Christopher, 2E1GPT; Daniel 2E1GQA and Matthew, 2E1GOK, the 2nd Chelmsford Scouts Novice class of '97 - '98.

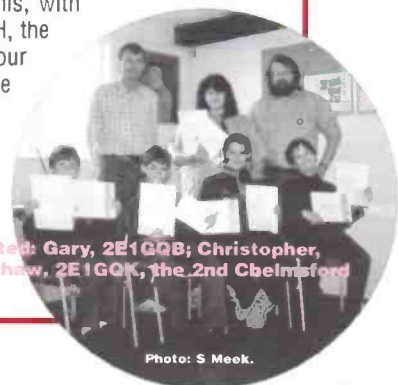


Photo: S Meek.

trade topics



new from icom

When we brought you news of the Icom IC-706 MkIIIG transceiver in the November edition of *Ham Radio Today*, Icom (UK) were unable even to confirm that this rig would be available in the UK. They have now officially released news about this amazing new transceiver.

As we revealed exclusively last month, the IC-706 MkIIIG is a 160m - 70cm transceiver in an identical-looking package to the IC-706 or IC706 MkII. The power output on 70cm is 20W, and thanks to the use of power mosfets in all PA sections, the power on 2m has been increased to 50W, with 100W output on the HF bands and 6m.

The rig now has a side carrying handle, individual band change key, narrow-deviation FM (for 2m 12.5kHz channels), and the detachable front panel features illuminated keys for easier operation in low light conditions.

Icom (UK) Marketing Manager, Dale Blackman, told *Ham Radio Today* that the IC-706 MkIIIG would have DSP receive facilities fitted as standard in the UK. He said, "The success of the 706 series is astounding and we believe that the new 'G' version will further enhance this family. The new features include many that customers have asked us for."

The IC-706 MkIIIG made its first appearance in this country at the Leicester Show [see pages 10 / 11 - *Ed*] and should be available from UK dealers shortly.

Icom (UK) has also recently released the IC-R2 pocket-sized MF / HF / VHF / UHF scanner, and this is reviewed on pages 24 / 25 of this edition of *Ham Radio Today*.

Icom (UK) Ltd, Sea Street, Herne Bay, Kent CT6 8LD; tel: 01227 741741; fax: 01227 741742; Internet: www.icomuk.co.uk

RS Components' catalogue is now on the Internet at <http://rswww.com> You can order any of the thousands of components direct from the web site. As RS say, "Ordering will never be the same again".

The main advantage of ordering components direct from the Internet is that it is cheaper and quicker, particularly for commercial customers, who no longer need to generate requisition paperwork or match invoices. However, 10% of RS customers are private individuals and RS's Bernard Hewitt says that thanks to the Internet they "are able to maintain a personalised relationship with tens of thousands of customers".

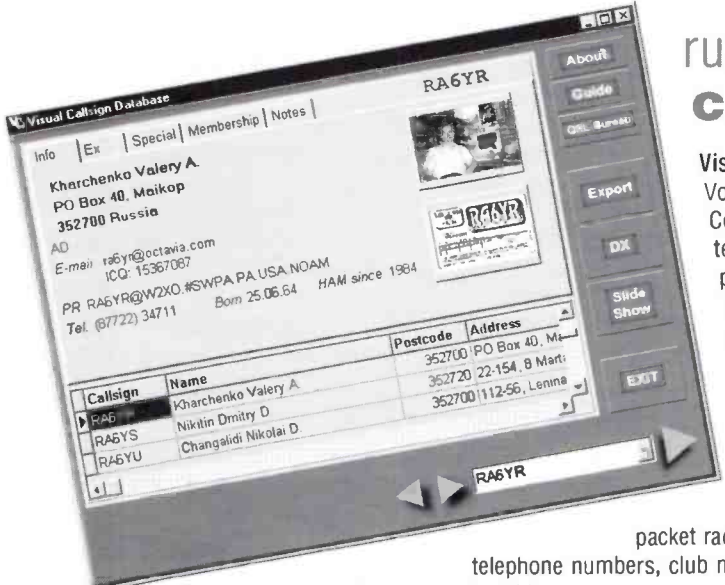
There have already been over 280,000 visits to rswww.com



rs components

trade topics trade topics

the following information is based upon submissions by suppliers we cannot be responsible for false or



russian callbook cd-rom

Visual Callsign Database (VCD) CD-ROM Vol 2 has been released by the Octavia Company Ltd, a developer of Radio Amateur software since 1991. VCD is a comprehensive source of Commonwealth of Independent States (CIS) callsign information and will help hams with successful QSLing from CIS countries. VCD covers current, contest, special event calls, clubs, silent keys, and nearly 13,000 cross references from old to new calls. In addition to postal addresses, VCD provides e-mail and packet radio addresses, WWW URLs, over 4000

telephone numbers, club membership, full date of birth and year

first licensed, and grid locator.

It covers all the CIS and provides instant access to over 62,000 licensed Radio Amateurs in Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, the Ukraine, Uzbekistan, Tajikistan and Turkmenistan.

The new 32-bit version has a new interface and lots of new features. The following system configuration is recommended: any 486/33 or higher PC; Windows 95 / 98 / NT; CD-ROM drive; 8MB RAM; 3MB free hard drive space; VGA or SVGA (strongly recommended) video adapter.

Visual Callsign Database CD-ROM Vol 2 costs US\$30 inc P&P from retailers listed at www.octavia.com/sales.htm or by direct purchase from Octavia's web page at www.octavia.com/vcd.htm

wh westlake

In addition to the vast range of cables for all occasions, W H Westlake Electronics is extending the range of adapters held in stock to one of the largest available in the UK. They also stock numerous RF plugs and sockets to suit all cables.

The new range of cables, plugs, sockets and adapters will be on show at the W H Westlake Electronics stand at the London Amateur Radio and Computer Show 2 at 'Picketts Lock', North London, on 28 / 29 November.

A free catalogue will be available at the show, or can be obtained by post by sending a 30p stamp to: W H Westlake Electronics, West Park, Clawton, Holsworthy, Devon EX22 6QN; tel: 01409 253758; fax: 01409 253458.



digital radio

Readers will probably be aware that the BBC is already transmitting digital radio broadcasts. But what do you receive them on? Arcam of Cambridge has just released the world's first home digital radio tuner, the Alpha 10 DRT. It's a stand-alone component which will connect easily and simply to existing hi-fi systems. The cost is £799.90 and there is more information on the Internet at www.arcam.co.uk

A & R Cambridge Ltd, Pembroke Avenue, Denny Industrial Centre, Waterbeach, Cambridge CB5 9PB; tel: 01223 203200; fax: 01223 863384; e-mail: custserv@arcam.co.uk

roberts radio

A new Roberts Radio always creates a lot of interest, and the R881 Stereo World Band radio should be no exception. Covering medium wave, short wave and VHF / FM stereo, and with 45 memory channels, the R881 costs £79.99. Tel: 01709 571722 for your nearest stockist.

linear amp uk

In addition to the Hunter Six, shown in the October *Ham Radio Today*, Linear Amp UK has released two new versions of their Challenger HF amplifier. The Challenger-2 series have been redesigned with a 'sleeker' appearance and quieter internal fan. Although both models provide 1500W output from around 60W drive, their internal circuitry is entirely different, as the Challenger-2E uses a pair of Eimac 3CX800A7 triodes and the Challenger-2S uses Svetlana 4CX800 tetrodes. They cost £2095 and £1895 respectively.

Linear Amp UK's Ranger 811H uses low-cost Svetlana 811H valves to provide the full UK legal limit for a budget price of £895. It uses no-compromise switched positions for all bands between 10 and 160m, including the three WARC bands.

Full details from: Linear Amp UK, Field Head, Leconfield Road, Leconfield, Beverley, E Yorks HU17 7LU; tel: 01964 550921; e-mail: peter@linearampuk.u-net.com



trade topics

liars, and is not necessarily endorsed by ham radio today. misleading claims by suppliers.

trade topics

baygen puts sparkle into christmas

We've often mentioned the revolutionary BayGen wind-up radio in the pages of *Ham Radio Today*; now BayGen has released a limited edition festive silver finish



radio. In addition to the Freeplay® generator, which provides sufficient power for one hour's use at a time, this radio incorporates a solar panel, allowing virtually unlimited use - even in winter!

Covering medium wave and VHF / FM the radio has an RRP of £59.95. To order, contact BayGen Power Europe on tel: 01285 659559 or e-mail: baygen@lneone.net

new from walford

Walford Electronics has released three new kits in their 'Somerset' range. The Langport (top right) is a two-band SSB / CW superhet transceiver for 20 and 80m. The tuned FET output stage produces 5W and costs £128 plus £1 P&P.

The Wellington (top left) is a 5W CW-only transceiver for any single or pair of bands from 10 - 160m. The two-band version costs £79 plus £1 P&P.

The QRP Booster (centre) is a 1.5W in / 20W out amplifier for 20 to 160m, with a 10dB receive amplifier. It costs £49 plus £1 P&P. All three kits are supplied complete with all parts and hardware as shown.

For full details, please send an SASE to: Tim Walford, G3PCJ, Walford Electronics, Upton Bridge Farm, Long Sutton, Langport, Somerset TA10 9NJ; tel: 01458 241224; fax: 01458 241186; e-mail: walfor@globalnet.co.uk





Sartorial elegance? Chris Lorek, G4HCL, in full evening dress - minus shoes.

Busy times on the Ham Radio Today stand.

Black Friday. Bargain-hunters found their way round the stands with torches.

This year's Leicester Amateur Radio Show, which took place on Friday 25 and Saturday 26 September, will be remembered by all who attended for a very long time. After 26 years at the Granby Halls which, it must be admitted, were beginning to look a little beyond their 'best by' date, the show was held at a new venue - the more modern Donington International Exhibition Centre. But the first day of the show will go down in the annals of Amateur Radio history as Leicester's 'Black Friday'.

At 1.00pm the lights went off, plunging the huge exhibition hall into darkness - and the electricity remained off for the rest of the Show. Strikalite, mainly selling batteries and torches, did a roaring trade, but some of the other traders were complaining of a drop in takings. After a while it became apparent that there was a major electrical problem, and electricity board men were working up

poles and down large holes in the ground throughout the weekend to discover the cause. All credit, then, to the organisers of the show for arranging the delivery of a large generator by late Friday afternoon. By opening time on Saturday morning another generator had been brought into service, and this provided sufficient power for normal lighting of the hall.

new offerings

The stars of the show could be found on the stands of 'the big three': Yaesu, Kenwood and Icom.

On the Kenwood stand, a lot of interest was shown in the VC-H1 'visual communicator' which is being reviewed in this issue of the magazine. Over at the Yaesu stand, shown for the first time in the UK, was the tiny FT-100 transceiver, which provides 100W on HF and 6m, 50W on 2m, 20W on 70cm - and DSP on receive. The transceiver was first previewed in *Ham Radio*

Today in the July issue, when we predicted that it would make its debut at Leicester.

Meanwhile, Icom introduced their new IC-706 MkIIIG. I feel this should really have been called the Mk III, as there have been considerable changes made. There's an extra band added - 70cm, with 20W output - increased power on 2m (now 50W) and a number of other smaller enhancements. Like the MkII - and the FT-100 - the MkIIIG will have DSP fitted as standard in the UK.

It's going to be quite a race to see whether it's the FT-100 or the IC-706 MkIIIG which is on the market first in the UK, but whichever it is, *Ham Radio Today* expects to be the first UK magazine to carry full reviews of both transceivers, just as soon as the first production models are available.

dinner time

Friday night saw the '100 Years of Amateur Radio' dinner, or-

ganised by the RSGB, at the nearby Donington Thistle hotel. It was in 1898 that an M Dennis (later DNX and EI2B) set up the world's first non-commercial experimental wireless station in London and kicked off the hobby of Amateur Radio. *Ham Radio Today* was represented at the dinner by Editor Steve Telenius-Lowe, G4JVG, and a sartorially-challenged Chris Lorek, G4HCL, who had kindly loaned his car to Bob Coleman, G0WYD, who drove off before Chris had a chance to collect his shoes from the car. Chris caused considerable amusement by arriving in full 'Red Sea dress' - and white trainers!

Around 60 people sat down to a four-course dinner, and were entertained by speeches from four generations of Radio Amateurs. Louis Varney, G5RV, brought along a CW transmitter he made in 1927 which, he said, was still stable enough to be used today. Speaking for around 20 minutes without

Leicester An Show I

Icom's Mark Jarvis proudly displays the new IC-706 MkIIIG.

Jean-Marie Gaucheron, F3YP; John Hall, G3KVA; Louis Varney, G5RV; Ian Kyle, M10AYZ; Emma Constantine, 2E1BVJ; Ian Poole, G3YWX.

notes, Louis gave a fascinating insight into the early days of Amateur Radio and concluded his speech by saying that, although he only ever used CW, "I understand those who don't want to learn or use Morse; these people should be allowed to use the bands and modes they want - but please do keep a section of the bands for those of us who love Morse code."

Taking up where Louis left off, Ian Poole, G3YWX, gave a thorough history of Amateur Radio from early times to the present day. He was followed by the 1997 - 98 Young Amateur of the Year, Emma Constantine, 2E1BVJ, who issued a challenge to groups or individuals to produce a simple practical phone project that a Novice can build for less than £40. Emma said, "Six metres is the ideal band for my project, because it's open to everyone and has good range with only 3W. . . One suggestion is for something like a two-channel crystal transmitter,

whip antenna and a basic, tuneable receiver . . . There aren't any good, low-cost, projects around like this, which means that you have to have the money to black box operate, or you wait and learn CW. What I need now is a sponsor for this competition, and if there are any lottery winners or sympathetic dealers here this evening, please see me later!"

Jean-Marie Gaucheron, F3YP, the President of the French national society, REF, spoke about the first transatlantic contact made 75 years ago between 1MO in the USA and French station 8AB, and said that an attempt would be made to recreate the contact on the exact anniversary, 27 November. Winding up the speeches was John Hall, G3KVA, with his usual acerbic wit. It was a pleasure to see John, who has been through some very serious surgery in the last few years, back in 'rude' health once again and entertaining his audience until

late into the night with a series of witty stories.

saturday

Back at the show on Saturday morning, fully illuminated once again, trading was brisk and attendance good. There were even times when it appeared a little crowded, though not as crowded as in previous years, thanks to the more spacious venue.

It was a pleasure to meet so many *Ham Radio Today* readers at the stand - a big thank you to all who came along to say hello, to say how much they liked the magazine, or to make critical comments. Thanks in particular to all those who took out an annual subscription to the magazine at the show.

There was a series of lectures in the nearby conference centre and the Millecom presentation in particular was well attended, with a lot of interest shown. Millecom is a project to introduce youth world-wide to

hobby radio communications during the year 2000, about which we will hear a lot more in the run-up to the new millennium.

I managed to slip away from the stand for enough time to make a quick tour of the exhibition on the Saturday afternoon. The girls on the RSGB stand reported buoyant book sales, and the *Callseeker 99* CD-ROM, reviewed on page 19, was a particularly good seller. Those traders I spoke to said that takings had been very good, with one saying it was probably the second best Amateur Radio show he had ever attended. Certainly many people were seen walking around with new Yaesu FT-847s and Icom IC-746s tucked under their arms!

After two days of glorious weather, the heavens opened just as the traders were packing up on Saturday evening, and most went home soaking wet, but looking forward to next year's show.

Amateur Radio Report

Don't be left in the *dark*, read this *illuminating* report on this year's *brightest* Amateur Radio show, by Steve Telenius-Lowe, G4JVG.

Ham Radio Today 1998

If you're a recent convert to *Ham Radio Today*, here's what you've been missing for the past year! If anything takes your fancy, back issues are available from *Ham Radio Today Sales* - details on page 58 (at the time of going to press the June 1998 edition has sold out, and there is only a very small stock of the March 1998 edition remaining.)

A smart hard-cover binder is available from *Ham Radio Today Sales* to keep your copies of *Ham Radio Today* looking pristine for posterity. To order, see *Book Browser* on page 18.

Please note that the first two issues of this year are referred to as Vol 16 No 1 and No 2, from the third issue onwards they are referred to by the month of issue.

Equipment (Transceiver / Receiver / Amplifier) Reviews

Hora C-150 2m handheld	November, 10
Hora C-408 70cm handheld	March, 19
Icom IC-746 HF / 6m / 2m base station	March, 10
Icom IC-2100H 2m mobile	June, 31
Icom IC-Q7E dualband handheld / scanner	July, 26
Icom IC-R2 pocket communications receiver	December, 24
Icom IC-T8E 6m / 2m / 70cm handheld	March, 24
Icom UT-106, DSP Add-On Unit for IC-706 MkII	July, 31
JRC NRD-545DSP receiver	April, 10
Kachina 505DSP Computer-Controlled transceiver	June, 26
Kenwood TM-G707E dualband mobile	May, 32
SGC SG-2020 QRP transceiver	April, 25
Standard C710 2m / 70cm / 23cm Handheld	November, 27
Yaesu FT-100 Preview	July, 24
Yaesu FT-847 HF - 70cm base station	August, 27
Yaesu FT-847 Preview	March, 9
Yaesu Quadra VL-1000 HF / 6m Linear Amplifier	September, 12

Equipment (Accessories / Antenna / Hardware) Reviews

Carolina Windom Antenna	September, 24
Cushcraft R6000 HF / 6m Vertical	October, 24
Cushcraft X7 'Big Thunder' Beam	May, 25
Kenwood VC-H1 'Video Communicator'	December, 27
Lake NRF2 Filter	October, 19
MFJ-969 HF to 6m ATU	July, 19
SMC Multimodo Modem	Vol 16 No 1, 24

Software Reviews

Callseeker 99 CD-ROM	December, 19
HAMCALC version 35	September, 26
Journal PC-based Logbook	Vol 16 No 2, 9
JVComm32 - the new 'JVFax for Windows'	August, 11
RadCom '97 on CD-ROM	December, 19
RadioMax Radio Control / Scanning Software	November, 12

Ham Radio Today Coffee Table (Book Reviews)

CQ-GTZM: Diary of a Maritime Radio Officer	October, 34
Ferrell's Confidential Frequency List	July, 12
LF Experimenter's Source Book	July, 12
Radio Amateurs Examination Manual, 16th Edition	August, 10
RSGB IOTA Directory and Yearbook 1998 / 99	July, 13
RSGB Yearbook 1999	October, 34
Shortwave Receivers Past and Present	July, 13
The VHF / UHF DX Book	August, 10
World Radio TV Handbook 1998	July, 12

Rallies and Exhibitions (inc 'Rally of the Month')

Dayton Hamvention - Wish You Were There?	July, 25
Drayton Manor Radio and Computer Rally	May, 23
Friedrichshafen HamRadio 98	July 23; September, 34
Leicester Amateur Radio Show	September, 22; October, 11
Leicester Amateur Radio Show report	December, 10
London Amateur Radio and Computer Show ('Picketts Lock') guide	March, 27, 28, 34
London Amateur Radio & Computer Show report	April, 19
London Amateur Radio & Computer Show 2 ('Picketts Lock') Preview	November, 20
Longleat Amateur Radio Rally	June, 23
RSGB HF / IOTA Convention	October, 21
RSGB HF / IOTA Convention report	December, 34
RSGB National Mobile Rally, Woburn	August, 23
RSGB VHF Convention	April, 45
Yeovil Amateur Radio Club QRP Convention	April, 47

Construction

Antenna Matching Pre-Selector Unit	June, 10
Build Your Own 50MHz Mobile Antenna	May, 24
CTCSS Encoder Unit	September, 10
Minitenna - a Desktop Active Antenna	October, 12
Multimode Data PC Interface	July, 10
RF Noise Filter for Your PC	Vol 16 No 1, 33

Editorials

The Best Just Got Better	March, 4
Help us to help you!	April, 4
Get active and save our bands	May, 4
Support your local club this summer	June, 4
A new UK licence category?	July, 4
Blowing our own trumpet	August, 4
What is all the Fuss About?	September, 4
Amateur Radio For All	October, 4
Making RAE More Accessible	November, 4
Onwards and Upwards	December, 4

Features

9MOC Spratly Islands DXpedition	April, 27
Beginner's Guide to Operating Abroad	May, 10
Coaxial Plugs and Connectors	August, 24
Computer Contacts	Vol 16 No 2, 46
Getting Ready for VHF Field Day	June, 18
H40AB Temotu Province DXpedition	August, 12
HF Radio Along the Congo River	September, 27
HRT 1998 Contest Calendar	Vol 16 No 2, 12
Introduction to Japanese Awards	Vol 16 No 2, 28
NCDXF / IARU Beacon Network	November, 24
On the Air from Mykonos	Vol 16 No 2, 33
Our Ham in Havana	July, 34
RA Open Forum on 24 July	October, 5
Riding White Water Rapids with Amateur Radio	October, 27
Russian Around on the Bands	Vol 16 No 2, 14
World Wide Amateur Radio Science Lab	August, 25

Competitions

Cushcraft R6000 HF / 6m Antenna	October, 26
Hora C-408 70cm handheld	March, 8
Icom IC-746	March, 8
JRC NRD-545DSP	April, 23
Royal International Air Tattoo tickets	June, 13

98 (Volume 16) Index

Regular Columns

Each issue of *Ham Radio Today* contains the following regular columns:

All in a Day's Work (Harry Leeming, G3LLL)

Book Browser (Amateur Radio books available from *Ham Radio Today* sales; from March)

Data Connection (Chris Lorek, G4HCL)

HF Happenings (Don Field, G3XTT: Vol 16 No 1 - July; Martin Atherton, G3ZAY: August - December)

Net Communication (Jeremy Boot, G4NJH)

QRP Corner (Dick Pascoe, G0BPS)

Satellite Rendezvous (AMSAT-UK, compiled by Richard Limebear, G3RWL)

The Help Files (Beginners' guide; from October)

VHF / UHF Message (Geoff Brown, GJ4ICD)

Free CD-ROMs

Free cover-mounted CD-ROMs covering the following themes:

Equipment and Operating

Data modes

Antennas and Propagation

March

July

October

Miscellaneous

Readers' Software Offer

Trade-In Market Place

Vol 16 No 1, 44

Vol 16 No 2, 30



Yaesu FT-847 HF / VHF / UHF transceiver: the UK's first full technical review - August, p27.



World exclusive review of the JRC NRD-545DSP receiver - April, p10.



9M0C: the UK's biggest-ever DXpedition - reported first in *Ham Radio Today* - April, p27.



First UK review of Standard's C710 handheld covering 2m, 70cm and 23cm - November, p27.

Authors (of features and reviews)

Beattie, Don, G3OZF (Yaesu Quadra VL-1000 HF / 6m Linear Amplifier)	September, 12
Bowyer, Peter, G4MJS (Getting Ready for VHF Field Day)	June, 18
Cheadle, Neville, G3NUG; Brimson, Marcia, 2E1DAY (Dayton Hamvention - Wish You Were There?)	July, 25
Corbett, John, G3TWS (HF Radio Along the Congo River)	September, 27
Cramond, GM4NHI (Cushcraft X7 'Big Thunder' Beam)	May, 25
Dale, Michael L. (Riding White Water Rapids with Amateur Radio)	October, 27
Evans, Mel, GM6JAG (Minitenna - a Desktop Active Antenna)	October, 12
Field, Don, G3XTT (9M0C Spratly Islands DXpedition)	April, 27
Field, Don, G3XTT (Kachina 505DSP Computer-Controlled Transceiver)	June, 26
Haigh, Raymond (Antenna Matching Pre-Selector Unit)	June, 10
Hoshi, Kouji, JQ1HBT (Introduction to Japanese Awards)	Vol 16 No 2, 28
Jubb, Alan, G3PMR (<i>Callseeker</i> 99 CD-ROM)	December, 19
Jubb, Alan, G3PMR (<i>RadCom</i> '97 on CD-ROM)	December, 19
Kotowski, Henryk, SM0JHF (Our Ham in Havana)	July, 34
Little, Andy, G7EYV (RF Noise Filter for Your PC)	Vol 16 No 1, 33
Lorek, Chris, G4HCL (CTCSS Encoder Unit)	September, 10
Lorek, Chris, G4HCL (HAMCALC version 35)	September, 26
Lorek, Chris, G4HCL (Icom IC-2100H 2m mobile)	June, 31
Lorek, Chris, G4HCL (Icom IC-746 HF / 6m / 2m base station)	March, 10
Lorek, Chris, G4HCL (Icom IC-Q7E dualband handheld / scanner)	July, 26
Lorek, Chris, G4HCL (Icom IC-T8E 6m / 2m / 70cm handheld)	March, 24
Lorek, Chris, G4HCL (Icom UT-106, DSP Add-On Unit for IC-706 MkII)	July, 31
Lorek, Chris, G4HCL (Journal PC-based Logbook)	Vol 16 No 2, 9
Lorek, Chris, G4HCL (JRC NRD-545DSP receiver)	April, 10
Lorek, Chris, G4HCL (JVComm32 - the new 'JVFax for Windows')	August, 11
Lorek, Chris, G4HCL (Kenwood TM-G707E dualband mobile)	May, 32
Lorek, Chris, G4HCL (Kenwood VC-H1 'Video Communicator')	December, 27
Lorek, Chris, G4HCL (Multimode Data PC Interface)	July, 10
Lorek, Chris, G4HCL (RA Open Forum on 24 July)	October, 5
Lorek, Chris, G4HCL (RadioMax Radio Control / Scanning Software)	November, 12
Lorek, Chris, G4HCL (SMC Multimode Modem)	Vol 16 No 1, 24
Lorek, Chris, G4HCL (Standard C710 2m / 70cm / 23cm Handheld)	November, 27
Lorek, Chris, G4HCL (Yaesu FT-847 Preview)	March, 9
Lorek, Chris, G4HCL (Yaesu FT-847 HF - 70cm base station)	August, 27
Nichols, Steve, G0KYA (NCDXF / IARU Beacon Network)	November, 24
Nock, Ben, G4BXD (Russian Around on the Bands)	Vol 16 No 2, 14
Simpson, Paul, G0RUR (Computer Contacts)	Vol 16 No 2, 46
Smith, Jim, VK9NS (The H40AB Temotu Province DXpedition)	August, 12
Telenius-Lowe, Steve, G4JVG (Beginner's Guide to Operating Abroad)	May, 10
Telenius-Lowe, Steve, G4JVG (Carolina Windom Antenna)	September, 24
Telenius-Lowe, Steve, G4JVG (Hora C-150 2m handheld)	November, 10
Telenius-Lowe, Steve, G4JVG (Hora C-408 70cm handheld)	March, 19
Telenius-Lowe, Steve, G4JVG (Icom IC-R2 pocket communications receiver)	December, 24
Telenius-Lowe, Steve, G4JVG (Lake NRF2 Filter)	October, 19
Theasby, Geoffrey, G8BMI (Coaxial Plugs and Connectors)	August, 24
Thomas, Colin, G3PSM (Cushcraft R6000 HF / 6m Vertical)	October, 24
Wade, Mike, G8OGO (World Wide Amateur Radio Science Lab)	August, 25
Webb, Tony, G3KCJ (Build Your Own 50MHz Mobile Antenna)	May, 24
Whitchurch, Phil, G3SWH (On the Air from Mykonos)	Vol 16 No 2, 33

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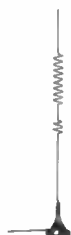
Skyscan DX-V1300 base disconne – Most disconnes only have horizontal elements and this is the reason that they are not ideal for use with a scanner. Most of the transmissions that you are likely to receive on your scanner are transmitted from vertically mounted antennas. The DX-V1300 has both vertical and horizontal elements for maximum reception. Constructed from best quality stainless steel and aluminium and comes complete with mounting pole. **£49.95** + £3 P&P.



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feature

All in a Day's Work

More episodes from life in Ham

I am not terribly familiar with Trio-Kenwood equipment, but the TS-680 I took in part exchange seemed a very nice piece of kit. 100 watts on HF, full general-coverage receiver, plus 10 watts on the 6 metre band, but for some reason or other it refused to sell. At last Peter made me an offer, and I waved it a cheerful farewell.

A few days later he was back. "It's great on HF, but it goes into oscillation on 6 metres if I advance the mic gain control." A quick check on a dummy load seemed to show that everything was perfect, and so presuming that it was a case of RF feedback, I sent Peter home with ferrite rings to put on the power and microphone leads. I also advised him to try connecting a few quarter wave, or three-quarter wave, long counterpoise earth wires.

A couple of days later he phoned to say that the rings and earths had helped considerably, but that he had found that he still had to keep the mic gain low to avoid trouble. He had, however, been reading the instruction book, and had found a cure himself. Inside the TS-680 is a pre-set mic gain control, Peter had found that

if he backed this off ever so slightly, the feedback problems disappeared. Presumably doing this placed a resistive element in the audio path, enabling the microphone circuit decoupling capacitors to operate as a more effective low pass filter.

I once more mentally waved it goodbye, but it was not to be.

The rig gave Peter good service for a couple of weeks during a 6 metre opening, and he was highly delighted, until the tuning dial seized up solid! I didn't know just what was behind the tuning mechanism on this rig, but it looked rather like the photo interrupter on an FT-757. I wondered?

I removed the tuning knob, stood the set upright on my bench and then applied the standard FT-757 treatment. I applied a little WD40 to the spindle and gently pulled, pushed, and twisted the control with a pair of pliers until it came free, as the lubricant worked its way in. I then finished the job off by spinning the control while gripping the spindle with a hand drill. After this I was glad not to see this particular rig any more.

bill's shout

Bill was reaching round the back of his FT-901 when he received an

almighty clout. He sat down white faced and shaken with a nasty burn on his finger, wondering what had happened.

On quite a lot of the Yaesu FT-101 / 101ZD / 901 and 902 models there is a 900 volt output pin on the auxiliary socket, and this must be treated with the greatest of respect. I get quite a few of these rigs in for service where owners have not bothered to fit the cover on the auxiliary plug, little realising that this leaves a highly dangerous voltage point for any finger to touch. Bill refitted the plastic cover on his auxiliary plug and did not make the same mistake again.

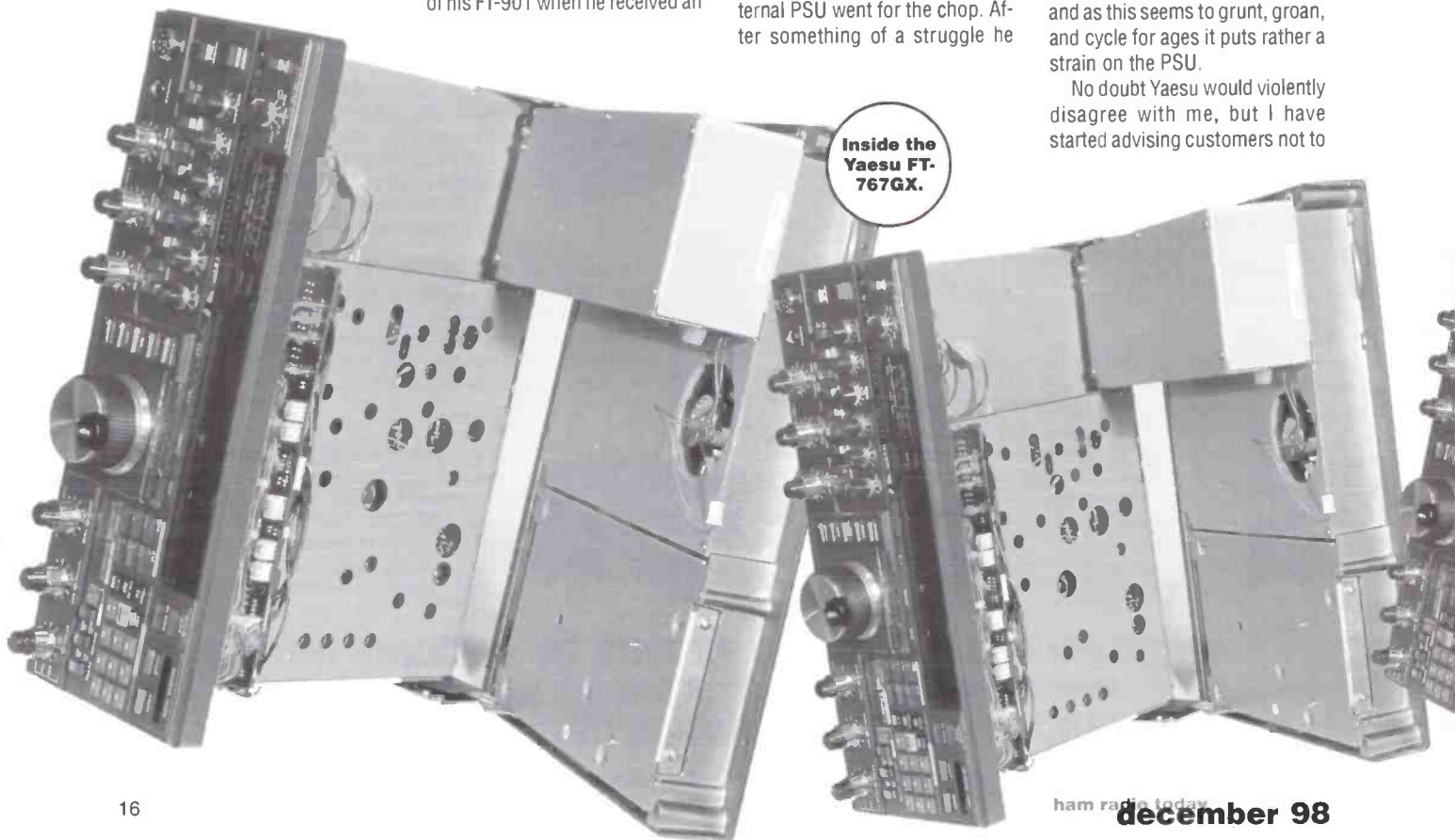
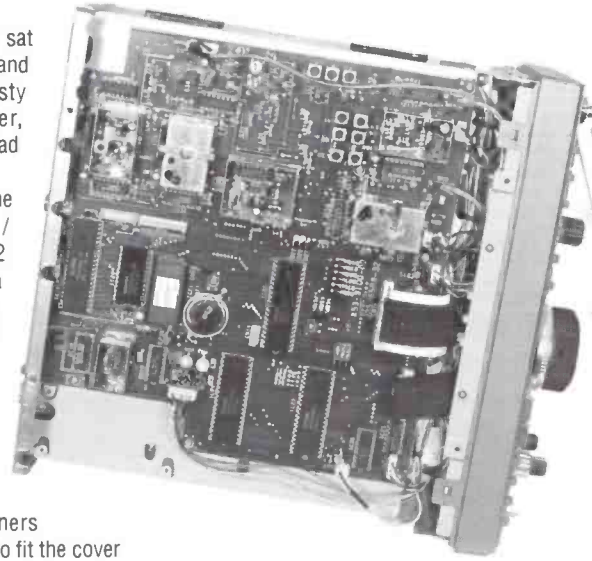
trouble with ft-767

Charlie often called in for a chat, but usually did his own repairs. Recently he came by a second-hand FT-767 that he enjoyed using for a few weeks, until the internal PSU went for the chop. After something of a struggle he

managed to replace the offending devices in the PSU, but he now had some doubts about the alignment of the rig, and wondered why the PSU had blown up in the first place.

To my mind the FT-767 is a very nice rig, but I have had quite a bit of trouble with the compact internal PSU, and suspect that this may have some connection with the rather sluggish automatic ATU fitted. The instruction booklet suggests that the rig be run at full power when the ATU is tuning up, and as this seems to grunt, groan, and cycle for ages it puts rather a strain on the PSU.

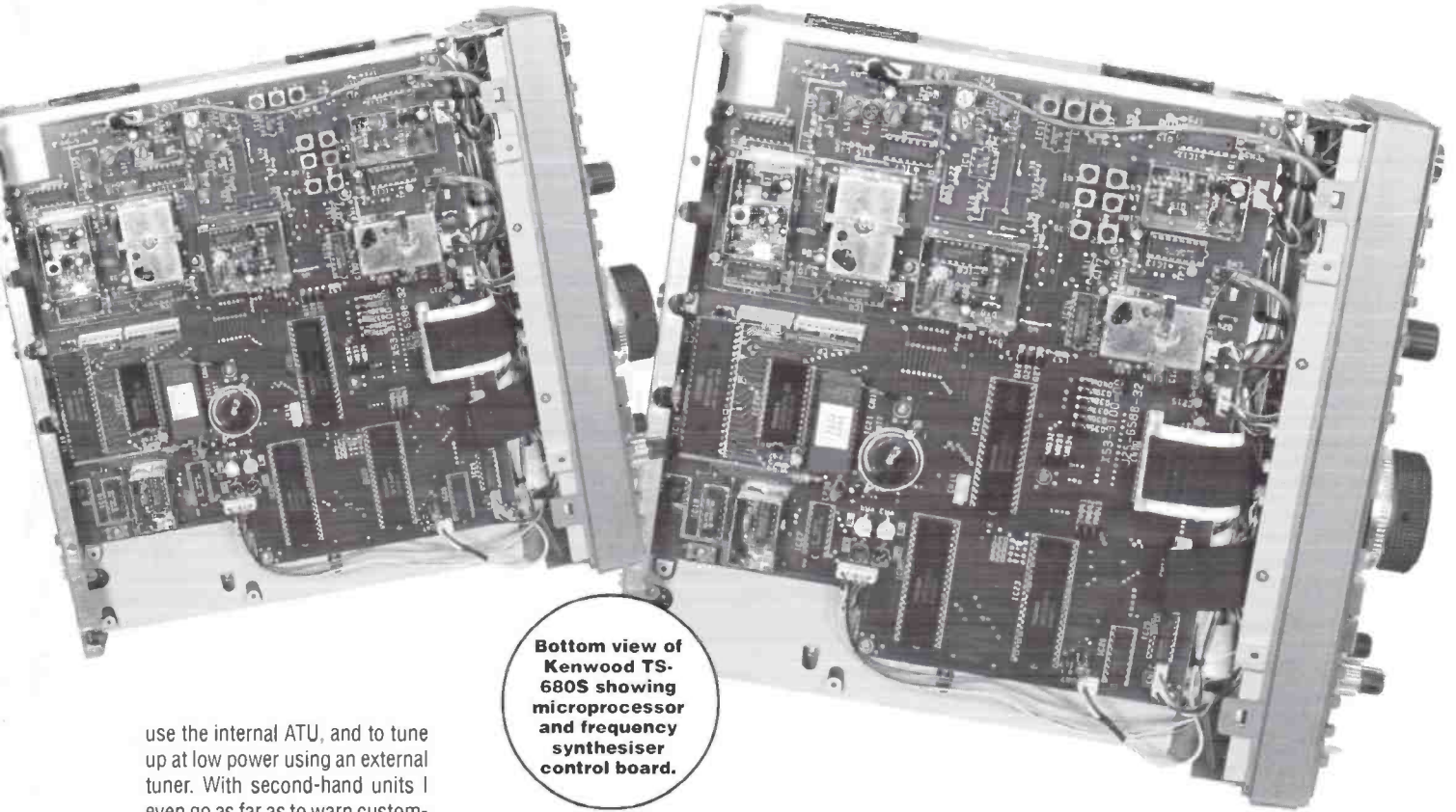
No doubt Yaesu would violently disagree with me, but I have started advising customers not to



Inside the Yaesu FT-767GX.

All in a Day's Work

by Leeming's, G3LLL, workshop



Bottom view of Kenwood TS-680S showing microprocessor and frequency synthesiser control board.

use the internal ATU, and to tune up at low power using an external tuner. With second-hand units I even go as far as to warn customers that if they use the internal ATU, any guarantee from me is void!

Regarding Charlie's alignment problem I told him that I had just the same trouble myself after carrying out FT-767 PSU repairs. There are two output voltages from the FT-767 PSU and Yaesu instruct in the service manual that these should be set at 24 and 13.5 volts. The exact voltage on the 13.5-volt rail very much effects the alignment of the shift circuit, and some FT-767

units seem to have been aligned in manufacture with a different voltage on this rail. If an FT-767 was known to be working OK with the shift control central in USB and LSB prior to a PSU fault, I try adjusting the 13.5-volt rail in the range of 11 - 14 volts. I take the correct voltage to be that which brings the shift control to a central position on both sidebands in the receive mode. I then check to see that the transmit audio sounds correctly balanced when listened to on a monitor receiver. Whilst a perfectionist might want to set the voltage at 13.5 volts, and then realign the synthesiser unit, this is making hard work of the job, and doesn't restore the unit to the state in which it appears to have left the factory.

cooked pa valves

Why do so many people want to look for complicated technical reasons for a fault, when a simple obvious cause of the trouble is staring them in the face? John had been having trouble with his Yaesu FT-102 in that the PA

current gradually increased, and if he was not careful, it ran away, blowing the main fuse. The standard cure for this not uncommon fault on the FT-102 is to fit a new set of valves. John did this, but the set was little better, the PA current still gradually increased during an over, and so he decided to bring it in to me.

It didn't need Sherlock Holmes to look at the set to deduce that John smoked, and that his shack was rather dusty. The fan and the ventilation grill were almost solid with fluff, how could he expect the valves not to overheat? A spring clean of these was all that was needed, for the PA current to remain stable.

dc conversion

When I was in my teens in the radio and TV trade some areas of my patch were still on a 220 volt DC mains supply (no need to get out the calculator - I'm 61). When the mains supply was upgraded to 240 volt AC we had of course to reset everybody's telly, and then the fun started. Within weeks the TVs were breaking down, and the common faults were either that a valve heater had gone open cir-

cuit, or that a smoothing capacitor had gone short circuit. Also we heard that whilst many people had been using 240 volt electric lamp bulbs for a year or so in anticipation of the change-over, these soon started popping.

What's all this got to do with ham radio? Recently I have come across the opposite story. George had had an FT-101 since he bought it new in the early 1970s. He had always used it on the AC mains supply, but now he had a caravan, and only a large 12 volt battery. He managed to find his DC lead, wired up the rig, switched on the receiver section first and all was OK. He then switched the heaters on, which brings into action the chopper transistors to generate 50Hz using the mains transformer as an oscillator transformer. There was then a bang and the rig issued forth a puff of smoke.

Examination showed that one of the main smoothing capacitors had gone short circuit. There was no obvious reason why, but apparently like people, electrical components 'get set in their ways' and object to a sudden change in life style!



Book Browser

Ham Radio Today's great new service to readers. You can order by e-mail, phone, fax or post. See below for details.

Radio Communication Handbook

edited by Dick Biddulph, G8DPS

A comprehensive guide to the theory and practice of Amateur Radio communication. If you're into Amateur Radio, this is the book to buy!

6th Edn, 763 pages £21.00 (plus P&P)

PMR Conversion Handbook

by Chris Lorek, G4HCL

Private mobile radio (PMR) equipment rapidly appears on the surplus market and can be acquired very cheaply at rallies. Often it can be converted to amateur bands quite easily and without expensive test equipment. This book tells you what to buy and how to convert it.

1st Edn, 192 pages £15.28 (plus P&P)

VHF / UHF Handbook

edited by Dick Biddulph, G8DPS

Guide to the theory and practice of Amateur Radio reception and transmission on the VHF / UHF bands including antennas, EMC, propagation, receivers and transmitters, together with constructional details of many items of equipment. One of the most complete guides around for VHF / UHF operators. See the review in *Ham Radio Today* December 1997!

317 pages £18.80 (Plus P&P)

VHF / UHF DX Book

edited by Ian White, G3SEK

VHF / UHF DX is one of the growing points where Amateur Radio shows that it still has a real future - that's what this book is all about. See review on page 10.

1st Edn, 447 pages £18.00 (plus P&P)

Amateur Radio Operating Manual

edited by Ray Eckersley, G4FTJ

This book covers the essential operating techniques required for most aspects of Amateur Radio, taking the reader from the principles of basic contacts right through to the secrets of working DX and winning contests.

4th Edn, 249 pages £12.23 (plus P&P)

RSGB Yearbook 1999 - NEW

Edited by Mike Dennison, G3XDV

The UK Call Book and Information Directory has been redesigned and further enhanced with the inclusion of a colour section. Includes UK and Eire callsign listings plus 144 pages of essential Amateur Radio information.

1999 edition, 464 pages £14.50 (plus P&P)

RSGB Callseeker '99 CD-ROM - NEW

Complete 1999 UK and Eire callsign listings. Plus RSGB information pages. For system requirements see page 35.

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by Colin Redwood, G6MXL

How to set up a station and get on the air as cheaply and effectively as possible. It covers all bands, with special emphasis on VHF / UHF. A 'must' for everyone who has just passed the RAE or NRAE. (See the review in *Ham Radio Today* December 1997!)

1st Edn, 124 pages £5.74 (plus P&P)

Your First Packet Station

by Steve Jelly, G0WSJ

How to set up a basic packet radio station and enter the world of data communications from your shack. Explanations are kept as simple and non-technical as possible, making this book an ideal choice for the beginner.

1st Edn, 76 pages £5.74 (plus P&P)

Radio Amateurs Examination Manual - NEW

by John Case, GW4HWR, and Hilary Claytonsmith, G4JKS

This edition has been completely revised to take account of the changes in the RAE. In addition, it now incorporates many sample questions originally published in *How to Pass the RAE*. See review in August issue.

16th Edn, 172 pages £12.93 (plus P&P)

Practical Wire Antennas

by John Hey, G3BDQ

A 'down to earth' guide to the construction of many different types of wire antennas, ranging from simple dipoles to ingenious multi-wire systems. Boring and unnecessary theory is kept to a minimum - instead the author shares his years of experience, offering advice for beginners and enthusiasts alike.

1st Edn, 96 pages £8.92 (plus P&P)

Practical Receivers for Beginners

by John Case, GW4HWR

Contains a selection of easy-to-build receiver designs suitable for amateur bands, together with simple 'fun' projects and test equipment. This book is of value to anyone building receivers for the first time, or considering moving up to micro-waves.

1st Edn, 165 pages £12.50 (plus P&P)

CQ-GTQM Diary of a Maritime Radio Officer - NEW

by Ross Bradshaw

This book provides a wealth of detail on the activities of maritime radio officers, the equipment that was used during the 1970s, and detailed technical information about the equipment. It is also a record of a way of life that was quite unique.

240 pages £12.95 (plus P&P)

RSGB IOTA Directory and Yearbook 1998 / 99

edited by Roger Balister, G3KMA, and Martin Atherton, G3ZAY

The Directory lists thousands of islands group by continent and, new this year, indexed by prefix. It also details the award rules and contains the application forms needed. See review in July issue.

1998 Edn, 112 pages £8.95 (plus P&P)

RadCom '97 CD-ROM - NEW

All copies of 1997 RadCom, including text, diagrams, illustrations and adverts are included and searchable. The latest version of Acrobat Reader is included to enable you to search the text. For system requirements see page 35.

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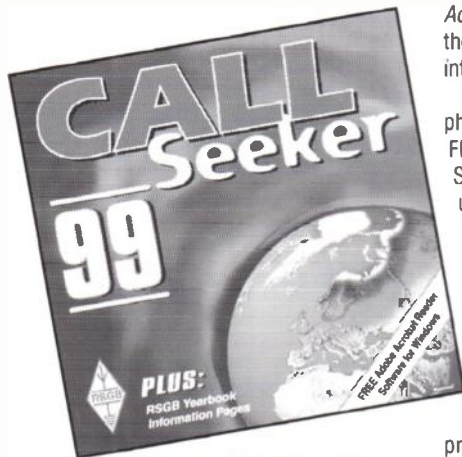
Ham Radio Today Software Review

CallSeeker 99 CD-ROM

CallSeeker 99 gives PC users access to the entire contents of the new *RSGB Yearbook*, as well as a searchable UK and Republic of Ireland callbook. The CD-ROM is in two parts, the Yearbook itself, which is accessed by *Adobe Acrobat 3* (included on the CD-ROM), and the UK Callbook, which is accessed by the *CallSeeker* software, also provided.

system requirements

The information on the CD-ROM insert states that *CallSeeker* requires Windows 95



(Win 95) or later, or Windows NT Workstation (NT) version 4.0 or later. The readme.txt file, which comes on the CD-ROM, also states that the CD-ROM will run under Windows 3.1. For this review, I was using Win 95. Required disk space is 10 - 15Mb, and recommended memory is 32Mb for Win 95, or 64Mb for NT. The recommended processor is a 486 or higher; the readme.txt file says that a 386 system could be used, although not recommended.

Installation is very straightforward and only takes a couple of minutes.

Open the file Welcome.PDF in *Acrobat 3* to read the Welcome.PDF file. This file provides a one-page description of the basics of finding information in the Yearbook.

navigation

Navigating around the Yearbook is very easy. The easiest way to go directly to a section is to click on the entry for the section on the contents page. This takes you directly and quickly to the appropriate place in the Yearbook - what could be simpler? Alternatively, there is a number of ways of browsing the Yearbook. To move to another page, simply click on the appropriate thumbnail, select 'Go to page . . .' from the VIEW menu, use the scroll bars, the PAGE UP and PAGE DOWN keys, or the click the page icon in the bottom left of the window.

searching

One of the powerful features of *Acrobat 3* is the ability to search the entire document for items of interest.

To search for specific words or phrases, you can either use the FIND command or if the *Acrobat* Search plug-in is installed, you use the SEARCH command. *Acrobat* was already installed on my PC, but I did not have the search plug-in installed, and it was initially not particularly clear to me that I needed it. However, after some digging through the help system, I realised that this was the

problem, and re-installed *Acrobat 3* from the *CallSeeker* CD-ROM. All was then well.

Before you can use the search facility for the first time, you need to attach the index file supplied on the CD-ROM to the document. The Welcome.PDF file states that the index file is called YEARBOOK.PDF, whereas it is actually called INDEX.PDF.

contents

The Yearbook contains an absolute wealth of information, and is an invaluable reference work. Apart from reference information such as band plans, awards, beacon lists, repeaters, trophy winners, contest rules, SWL e-mail addresses etc, there are also a number of articles of great interest, eg *The Amateur Radio Year Reviewed* and *Amateur Radio - the First 100 Years* etc.

callseeker

To me, the most valuable feature of this CD-ROM is the *CallSeeker* program, which enables the UK and Ireland callbook to be searched. The callbook contains calls up to MOBWR, M1DJN, 2E0ASG and 2E1GUH.

You can directly find details of amateurs matching a particular callsign, post code, or surname just by entering the callsign etc that you are looking for. Alternatively, you can easily build more powerful searches, for example if I wanted to find all the licensed amateurs living in the village of Great Gransden, I would enter a query "ADDRESS LIKE *Great Gransden*" - the asterisks being wild cards. Using this search, I discovered the existence of a Radio Amateur living about 400m away from me who I was completely unaware of!

One feature that I found most useful in *CallSeeker 98* was the provision of WAB and Locator information for each amateur - this has been dropped in *CallSeeker 99*, which is disappointing.

conclusion

In spite of a few niggling documentation and file naming problems, PC users will find *CallSeeker 99* a most useful addition to their shack. I thoroughly recommend it. [*CallSeeker 99* costs £14.50 plus P&P - see *Book Browser* on page 18 - Ed.]

Alan Jubb, G3PMR

RadCom 97 on CD-ROM

If you are short of space for back issues of *RadCom* in your shack, one way to alleviate the problem is to replace them with the *RadCom 97* CD-ROM. [Since *RadCom* is not available at newsagents, it's also one of the only ways for non-members of the RSGB to see that magazine - Ed.] This CD-ROM contains all of the words, diagrams and photographs (in colour where appropriate) as well as news and reviews published in the twelve editions of

volume 73 (1997). It also contains the major advertisements (but not the classified advertisements).

System requirements are similar to those for *CallSeeker 99* - see above.

Adobe Acrobat 3.01 is again provided to enable you to browse and find information. Each of the twelve editions of *RadCom* is provided as a separate .PDF file.

However, it would be a mistake to think that the only reason to buy this CD-ROM is to save space in your shack. With this CD-ROM, the SEARCH facility of *Acrobat 3* really comes into its own, because, whereas the FIND command is restricted to searching a file at a time, SEARCH can search across all twelve files in one operation.

Thus, if you wish to find all references to the Chiltern DX Club, just type 'Chiltern DX Club' into the search query dialogue box, press SEARCH, and in no time at all you will be presented with a list of *RadComs* which contain this reference. You can then display the pages containing the references by using the appropriate toolbar button. See Fig 1.

conclusion

If you frequently look for information in back issues of *RadCom*, this CD-ROM will be invaluable, will save you a lot of time, and could turn up references you missed before - it did for me! [*RadCom 97 on CD-ROM* costs £19.95 plus P&P - see *Book Browser* on page 18 - Ed.]

Alan Jubb, G3PMR

Fig:1 One of the results of the query for 'Chiltern DX Club'.



Do you have something constructive to say on the state of amateur radio today? Perhaps you'd like to put your viewpoint to the readers, get some discussion going, or give an answer to one of the issues raised?

We'll pay £10 for the best letter we publish each month (paid 6-8 weeks following the publication date). So write in with your views to; Letters Column, ham radio today, Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE or send an e-mail to hrt@rsgb.org.uk We reserve the right to edit letters for length, grammar and clarity for publication. Letters must be original and not have been sent to any other magazines, and must include name and address plus callsign if held (name and callsign will be withheld from publication if requested). Reader's views published here are not necessarily those of the magazine.

Dear Ham Radio Today,

I purchased your magazine this month after a break of some years (not bad I thought) till I realised you seem to have caught the 'Can't do morse, won't do morse' bug - most likely picked up off the 'Gang at Potters Bar. G4JVG says it would be great to allow thousands of Op's loose on the HF bands, what a load of rubbish!, the bands are crowded enough, mind you a few thousand copies of HRT extra, more RSGB members, more HF rigs sold would certainly increase some people's salaries. I was licensed some 18 years ago, I had my G6 license 6 months I will not talk about my radio achievements, around that time I sometimes asked G6 G8 three letter calls why do they not want to go HF, invariably the reply was no interest, we prefer VHF UHF! that is till the present time. I am sick of all the G8 G6 three letter calls, whinging letters in many publications. Your star letter this month HRT G8GSQ when he finished telling us what a great designer and home brewer of equipment he is, and talking of dedication commitment and practise well if he had used those qualifications to increase his morse speed by one word a minute per year over the last twenty five years he would be eligible for full membership FOC. Fangio, Hill, Clark were great drivers but would still have to take HGV-PSV tests. The present CW test of 12wpm is an ideal way of showing those qualities G8GSQ talks about. It does not matter if you are an electronics engineer or labourer it still requires the same commitment for all, I did it why not you! it is out-dated, this is not the point. If access to the HF bands is made easier it will not be appreciated by many, so I suggest we keep the 12wpm test, also introduce a further RAE type test that requires the same amount of effort, say 3 months study, operators who take the CW test would have access to both CW and telephone frequency, those taking the HF RAE would be allowed on HF telephony parts of the bands rather like the american methods. This should satisfy both camps.

Yous Faithfully,

G4ZCG

PS I will purchase my next HRT if this letter is printed unedited. Can not do morse mental block take HF RAE. Can not do HF RAE not electronic capable take morse. Can not do either *** off and get CB licence.

Editorial comment:

We reserve the right to edit letters for length, grammar and clarity, but agreed on this occasion to accede to G4ZCG's challenge to print his letter unedited. We do not censor readers' letters and although I do not agree with G4ZCG's comments, he is, of course, entitled to his views - Ed.

letters letters letters

£10 for letter of the month

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Dear Ham Radio Today,

With reference to the thoughts you expressed in the October *Ham Radio Today* editorial, I put off writing to you until today. This was so that I could attend the Scunthorpe Steel Amateur Radio Club meeting where Mr Peter Kirby, G0TWW, General Manager of the RSGB was our guest speaker.

In the course of his talk, Mr Kirby told of a conversation he had with a group of eminent long-established amateurs who were saying that they remained sceptical about the value of, and training offered in, the NRAE course. He asked if any of them had ever seen an NRAE paper, which they had not. Mr Kirby was in a position to provide such a paper which they agreed to 'sit'. All of them would have failed the examination!

I came to Amateur Radio in my late forties with a working life far removed from electronics or radio. Had it not been for the NRAE, and the help of my friends running the course, I would never have progressed beyond being a listener.

Because I would like greater access to the bands I am now having to study for the full RAE. My experience is that you need to be very determined and have some money to spare to do this. Having contacted the colleges within a reasonable travelling distance, I could not find one offering the RAE. I decided therefore to undertake a correspondence course at a cost of £180 + exam fees. I have no dispute with the college providing the course, but for many people that cost would present an insurmountable problem. The next difficulty is to find somewhere to take the exam. If a college doesn't run a course, they don't provide exam facilities!

Seems to me little wonder that the numbers of amateurs is falling when it is so difficult to progress, particularly with the Internet available to anyone with a cheque book.

My own experience with the NRAE is that it provides the ideal way into the hobby, not only for the young, but also for those with no previous knowledge of the subject. Quite frankly, I doubt the worth to me, and probably many others, of the very technical, theoretical, mathematical parts of the RAE which I am currently trying to work through.

The NRAE taught me practical skills, which the RAE does not. It taught me operating techniques, which the RAE does not, and it brought me into the world of Amateur Radio via my local club who ran the course.

One last thought. For some time there has been talk about making people re-sit their driving test when they reach a given age. How about making everyone with a callsign more than ten years old take the exam again - maybe not, whilst it might arrest Amateur Radio's slow decline, it would probably wipe it out overnight!

Alistair Butler, 2E1FKS

month letter of the month letter of the month letter of the month

"TONE" BURST

by GIMMEN



Dear Ham Radio Today,

As a CB user some 15 years ago, I got interested in the workings of radio. It was when I lived in Australia talking to CBers and ham enthusiasts I became interested in the ham radio side of things. I think that as an Amateur Radio licence holder now I should only have to pay for the one licence that covers the use of Amateur Radio, and also includes CB equipment that got me in the hobby in the first place.

As a member of a local ham club, I have noticed the amount of ex-CB users, only because they do not want to buy two separate and expensive licences, as they are basically paying twice as much for the same thing but a different frequency.

Maybe if CB was included in the amateur licence we ham enthusiasts could attract CB users that want to know more about the hobby, and the hobby will not slowly die due to lowering numbers and the more up to date computer and Internet. As most amateurs have use of more than one frequency band, why is 27MHz not included?

CBers would still have to get a licence to use amateur equipment as I did, and sit an exam, and CB equipment will still have to meet the current requirements - power output etc.

Name, callsign and address supplied

Dear Ham Radio Today,

I must say that *Ham Radio Today* has been a lot of help to me in our hobby. Keep it going. I have been licensed for just over one year now and love the hobby. I have now just purchased a Yaesu FT-726R and have had my first contacts on the 6 metre band. This was on 8 September, contacting YU7AU, YU1HQR, S57AC and 9A1ALC. All were contacted within about one hour of the first contact. If there are any amateurs that turn their beams towards Northern Ireland they will get a shout back.

I hope that this small piece of information may be of some interest to some amateurs in 'GI-land'. Look forward to the next issue to see if this gets a mention.

Chris, MI1BOQ

letters letters letters

£10 for letter of the month

Dear Ham Radio Today,

With reference to your editorial in the October edition of *Ham Radio Today*, I rather disagree with your assumption that pensioners who left school at 14 with only an elementary knowledge of maths would find great difficulty in passing the RAE. Falling into that category myself, I managed to pass both sections at one go - the part which includes some maths with credit.

This was done at 69 years of age and without attending classes or doing postal courses. The secret is to buy as many books as possible on the subject, especially those with example exams and study them assiduously. This is not meant to be boastful, only to show that passing the RAE is possible for anyone of any age, provided the necessary commitment is shown.

One need not be a maths whiz to tackle the questions which arise in the RAE. A short lesson on exponential etc from my younger son was all that was required in my case.

A much greater potential stumbling block for elderly people like myself with no previous electronic experience is the reading of circuit diagrams. It is all very well knowing how to work out a problem, but not much use if you cannot figure out whether components are connected in series or in parallel.

One thing I strongly believe, however, is that there should be no lowering of standards whether for financial considerations or otherwise. Other countries which have taken this course have had cause to regret it.

A short comment on mag content. I enjoy Harry Leeming's articles [*All in a Day's Work - Ed*]. As well as being very interesting and informative they serve to illustrate the enormous gulf which exists between amateurs like myself who have not long sat the RAE and practical men of experience.

William Tait, MMOBHY

Editorial comment:

Congratulations to Mr Tait for passing the RAE at the first attempt at the age of 69, without a correspondence course or attending classes. I would suggest that he is an exception, not because of his age, but within any age group. I did not intend my October Editorial to imply that I regard retired people as being less capable in any general sense than younger ones, merely that a 17-year old who has been studying maths and physics recently is bound to find it easier to pass the RAE than a 70-year old who may have forgotten much of his knowledge on these subjects in the 50-odd years since he last studied them; also that it is generally accepted that youngsters find it easier to assimilate new knowledge than older people. One of the many great things about Amateur Radio is that, no matter how many years you have been involved with it, you are always learning - Ed.

Dear Ham Radio Today,

I was 2E1BIP and now hold G7VNP. I am trying to learn Morse for the test at the time of writing and have been for the last few years. I have followed the Morse debate for some time now and was interested in the view of Fred Ward, G2CVV. I quote, "Gentleman the time has come . . . the Morse test should be scrapped."

Why not take a vote on this matter? If the poll was carried out whenever a licence is renewed by Subscription Services Ltd and the results passed on to the RSGB and the RA. The question could be, "Do you as a Radio Amateur wish to scrap the Morse test?" Yes or No.

But keep Morse as part of the bandplans. If 60% said yes, 40% said no, then we as Radio Amateurs would go forward into the 21st century. As a G7 I can use the Net and get world-wide contacts.

My answer would be 'yes'. My computer can send and receive at 25WPM with no mistakes. I can send at this time at 7WPM and receive at 7WPM.

Hope you print this letter in your magazine. Let's go forward with Morse as a mode if you want to. But let's all vote on this soon.

Kevin Knights, G7VNP

ham radio today event news

rallies

7 / 8 November

North Wales Radio and Electronics Show, North Wales Conference Centre and New Theatre, Llandudno Promenade. Doors open at 10.00am, entrance fee £2.00 (children under 14 free). Over 65 exhibitors and large bring and buy stall. Further information from Muriel Mee, GW7NFY, on tel / fax: 01745 591704, or Greg Robbins, GW7NAU; tel: 01492 878288.

8 November

MARS Birmingham 10th Radio and Computer Rally, Stockland Green Leisure Centre, Slade Road, Erdington, Birmingham, organised by Midland Amateur Radio Society. Doors open 10.00am - 4.00pm. Admission £1. Trade stands, local clubs, special interest exhibits, free draw. Traders please contact Norman Gutteridge, G8BHE, on tel: 0121 422 9787; further information from Peter Haylor, G6DRN, on tel: 0121 443 1189.

14 November

AMS (All Micro Show) '98 Computer & Electronics Show, Bingley Hall, Staffordshire Showground, Weston Rd, Stafford (A518 Stafford - Uttoxeter Rd). Featuring many trade stands covering radio, computing and electronics, plus large bring and buy. Doors open 10.00am to 4.00pm. For further details contact Ray Gamble or Sharon Alward at Sharward Promotions, tel: 01473 741533; e-mail ray@sharward.co.uk, or see www.computerfairs.co.uk

22 November

Bishop Auckland Radio Amateurs Club Rally will take place at a new venue - the Spennymore Leisure Centre. With radio, computer and electronics dealers and bring and buy stalls, the new venue boasts good parking and easy access for the disabled visitor. RSGB Morse code tests will be available on demand. There's lots to do at the leisure centre for family members not interested in radio! Doors open at 11.00am (10.30am for disabled visitors), and admission is £1 (under 14 free of charge with adult). Talk-in will be on 145.550MHz FM and further details can be obtained from the organiser, Keith Hopps, MOBLN, tel: 01388 601401 (mobile 0374 417660).

Bridgend and District Amateur Radio Club Radio and Computer Rally, Bridgend Recreation Centre. Complete radio / computer systems, software, electronic components, second hand equipment, bring and buy. Restaurant and bar. Other facilities at venue include indoor swimming pool and fun pool. Doors open 10.30am (10.15am for disabled visitors). Talk-in on 145.525MHz - please note that due to extensive road works in the town it is recommended you approach from M4 junction 35, from where there will be signposts to the rally. Details from Maurice Randall, tel: 01656 864579.

Red Rose Rally, Horwich Leisure Centre, Horwich, Bolton, off M61 junction 6. Organised by West Manchester Radio Club. Usual stands, bring and buy just £2 to enter and no sales fees. Doors open 11.00am (10.30am for disabled visitors), cost £1.50 (£1 OAPs). Details from Bob Lowe, G0FRL, tel: 01204 494308.

Coulsdon Amateur Transmitting Society November Bazaar at 4th Purley Scout Group, access via public car park in Lion Green Road, Coulsdon, Surrey. Free parking. Doors open 10.00am to 1.00pm, more information at www.geocities.com/SiliconValley/Lab/7009

28 / 29 November

London Amateur Radio & Computer Show 2, Lee Valley Leisure Centre, Picketts Lock Lane, Edmonton, London N9 0AS. Large trade show with bring and buy, licensed bar and catering. *Ham Radio Today* stand - come

and say hello! RSGB Morse code tests on demand. Free parking for 2000 cars. Admission £3.00 adults, Concessions £2.00. Doors open 10.00am - 5.00pm each day and talk-in will be provided on 2m and 70cm. Full details (including a location map and floor plan) were published in the November 1998 *Ham Radio Today* or contact Radiosport on tel: 01923 893929, fax: 01923 678770; or e-mail: bookings@radiosport.co.uk for more information.

5 December

Rochdale and District Amateur Radio Society (RADARS) fourth annual 'Traditional Radio Rally', at a new larger venue, 2 miles NW of Rochdale on the A680 Rochdale to Edenfield Road at Cutgate - look for the orange arrows. Components, 'junk', and vintage radio section with spares and valves in a 'computer-free zone'. Talk-in on 145.550MHz, large car park. Details from John Cannell, G7OAI, on tel: 01706 376 204 (evenings); mobile: 0973 689077; or e-mail: johng7oai@which.net

13 December

Leeds and District Amateur Radio Society Christmas Rally, Pudsey Civic Centre (Dawson's Corner), all usual traders. Doors open 11.00am (10.30am for disabled visitors). Details from John Mortimer, M1CAI, tel: 01943 874650.

1999 Rallies

At the time of going to press, we have been advised of the following rallies and shows scheduled for 1999. Obviously, this list is by no means complete.

- 17 January Oldham Amateur Radio Club Mobile Rally, Oldham, Lancs. tel: 01706 846143.
- 24 January The Lancastrian Rally, organised by the Central Lancashire ARC, at Lancaster University. tel: 01772 621954.
- 7 February South Essex Amateur Radio Society Radio Rally, Canvey Island, Essex, tel: 01268 697978.
- 7 February Harwell ARS Radio & Computing Rally, Harwell (between Oxford and Newbury) tel: 01235 816379.
- 14 February Wakefield & DRS Northern Cross Radio Rally, tel: 01924 893321.
- 14 February Cambridge & District ARC rally tel: 01223 872258.
- 21 February The Barry Amateur Radio Society Radio and Computer Fair, tel / fax: 01222 832253.
- 27 February Tyneside Amateur Radio Society annual rally, tel: 0191 276 6279.
- 21 March Bournemouth Radio Society's sale and rally, tel: 01202 887721.
- 3 May Dartmoor Radio Rally, Tavistock, Devon, tel: 01822 852586.
- 9 May Drayton Manor Radio and Computer Rally, Fazeley, Tamworth, Staffs, tel: 0121 443 1189 (evenings).
- 16 May The Northern Mobile Rally, Great Yorkshire Showground. tel: 01765 640229.
- 20 June Newbury Radio Boot Sale, tel: 01635 826019.
- 10 July Cornish Radio Rally and Computer Fair, Truro. tel: 01209 820118.
- 11 July Sussex Amateur Radio and Computer Fair, Brighton Racecourse, tel: 01903 763978 (evenings).

ham radio today this month

To include your rally in this section, please make sure you send us details of your event in time: the deadline for the February issue is 7 December; for the March issue 18 January, and for April 8 February. The address for submissions is: The Editor, *Ham Radio Today* (Rallies), RSGB Publications, Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE; fax: 01707 645105. We would be grateful if *Ham Radio Today* readers would ask their local rally organiser to send information on their rally to this address. If you're travelling a long distance to attend rallies, we recommend you contact the organisers of the events first, to check if there has been any changes since this magazine went to press.

rally of the month

There are relatively few rallies during the run-up to Christmas, and it's fair to say that the 'big one' in this period is the London Amateur Radio and Computer Show 2 at Picketts Lock, which we featured in the November issue of *Ham Radio Today*. Of the smaller rallies, a popular one at this time of year is the Verulam Rally, organised by the Verulam Amateur Radio Club. Although 'Verulam' is the old Roman name for St Albans, the rally actually takes place at the Watford Leisure Centre, Horseshoe Lane, Garston, in nearby Watford.

ML&S (Martin Lynch and Sons) will be among the traders, plus there's a large bring and buy stand organised by the club. The rally also features a large number of national affiliated societies and special interest groups, such as the Worked All Britain (WAB) group, Raynet group, GB3BH repeater group, Radio Amateur Invalid and Blind Club (RAIBC), and the Royal Naval and Royal Air Force Amateur Radio Societies (RNARS and RAFARS).

There's a cafe and licensed bar on the premises and the rally is open from 10.00am to 4.00pm. Further details can be obtained from the rally organiser, Ben Bennett, G4WDZ, on tel: 01923 777258.



A festive look at last year's Verulam Rally.



ham radio today
this month
ham radio today event news

Verulam Rally 13 December

Ham Radio Today Diary

Your guide to what's on - and what's coming up - in the Amateur Radio world

1998

- 6 November
- 13 November
- 14 November
- 27 November
- 27 November
- 28 / 29 November
- 4 December
- 5 December
- 5 / 6 December
- 6 December
- 8 December
- 9 December
- 24 December
- 26 / 27 / 28 / 29 December
- 29 December

- RA Roadshow, Perth. Details tel: 0171 223 9006.
- RA Roadshow, Leeds. Details tel: 0171 223 9006.
- RSGB Club Calls Contest (160m SSB / CW, 2000 - 2300).
- RA Roadshow, Bath. Details tel: 0171 223 9006.
- 75th anniversary of first transatlantic QSO, between USA and France. Recreation attempt to be made.
- CQ World Wide DX CW Contest (10 - 160m, 0000 - 2400UTC).
- RA Roadshow, Cardiff. Details tel: 0171 223 9006.
- RSGB AGM, Central London. Details: 01707 659015.
- WAB HF Phone Contest (1200 - 1200UTC). Details from G8UYD QTHR.
- RSGB 144MHz Fixed Station and Affiliated Societies Contest (0900 - 1700UTC).
- 75th anniversary of first USA - UK QSO.
- Ham Radio Today* January 1999 publication date.
- Re-enactment in period costume of Marconi's ship-to-shore transmission of 24 Dec 1898, South Foreland Light-house, Dover.
- RSGB Christmas 'Fun' Cumulative Contest (50, 70, 144, 432MHz, 1400 - 1600UTC).
- Vintage radio evening, Yeovil, Somerset. Details Mike Smith, G7SDD, tel: 01963 250594.

Icom IC-F Communicati

Is this the smallest communications receiver yet? Steve Tele

The Icom IC-R2 is a tiny scanner with very wide frequency coverage. It looks remarkably similar - in fact, almost identical - to the Icom IC-Q7E dualband handheld, reviewed in the July 1998 *Ham Radio Today*. Because of its appearance, there's a temptation to think of the IC-R2 as an IC-Q7E without the transmitter, but this would be wrong. In fact, the IC-R2 has a wider frequency range than even the 'Q7, covering 0.495 - 1309.995MHz and, at 400, double the number of memory channels.

The receiver comes complete with an 18cm-long rubberised antenna, a very comprehensive 38-page instruction manual, wrist strap, belt clip, and a credit card-sized *aide memoire* basic operating guide, so you don't need to refer continually to the more detailed instruction book. The antenna, which screws into the set using a 50Ω SMA socket, is used throughout the frequency range - the IC-R2 is far too small to contain the ferrite rod type of aerial usually used for medium wave reception!

The IC-R2 is a minuscule 58W x 86H x 27Dmm and weighs just 170g - and that includes the antenna and battery.

coverage

I've already alluded to the wide frequency coverage of the IC-R2. But what does this mean in practical terms? What can you receive on this set? The answer is virtually *anything!*

All MF, HF and VHF amateur bands are covered, as well as 70cm and most of 23cm on UHF, plus the medium wave broadcast band *and* all the HF (short wave) broadcast bands. You want to listen to aircraft coming into Heathrow? The IC-R2 covers the right frequencies. You live on the coast and want to listen out for your friend with the yacht as he calls the harbourmaster before berthing? Again, the IC-R2 covers the right frequencies. That's quite some coverage!

The frequency range is covered by nine bands, which are cycled through by pressing the 'Band' button. By simultaneously pressing the band button and turning the channel knob you can also step down through the bands. The frequency ranges covered by the nine bands are shown in Table 1.

Tuning steps of 5, 6.25, 9, 10, 12.5, 15, 20, 25, 30, 50 and 100kHz can be selected. The default, usefully, is 9kHz on medium wave, 5kHz on HF, 20kHz in the 30 - 108MHz band, and 25kHz elsewhere.

Three receive modes are provided, AM, FM, and WFM (wide FM), and FM is the default mode for all bands other than those starting at 0.495, 1.625 and 108MHz, where it is AM. In fact, AM is the *only* mode which works between 0.495 and 1.625MHz (ie on the medium wave band), but at all other frequencies any of the three modes can be selected. There is no provision for receiving SSB or CW signals.

memories & scanning

400 memory channels are provided in eight 'banks', labelled 0 - 7. Each memory stores the frequency, mode, tuning step, CTCSS frequency and more. 50 more memory channels are provided to set 'band edges' for programmed scanning ranges.

As you would expect, there are numerous possibilities for scanning with the IC-R2. It will scan the entire frequency range 0.495 - 1309.995MHz (though I didn't try this, so I don't know how long it would take!); band scan - the same, but within one of the nine bands only; up to 25 programmed scan ranges, where it will scan repeatedly between two user-programmed frequencies; and memory channel scan, within all the programmed channels or within a memory bank. Each scan can have 'skip channels' programmed, so that the receiver does not stop each time on signals which are always present.

other facilities

A CTCSS (sub-audible tone) decoder is fitted as standard, to allow you to monitor a frequency silently whilst awaiting a call from a station with a known CTCSS tone. Using the 'Tone scan' facility, you can use the IC-R2 to check which CTCSS tone is being used. The set can even be used as a pager, and will 'beep' at you for 30s if you are called by a station using the correct sub-audible tone.

Squelch works on all three modes and can be set to nine different levels plus 'Auto' (automatic level adjustment using a noise pulse count system), and 'Open'. The squelch can also be opened momentarily by pressing a button where the PTT switch would be if this was a transceiver.

There is a 10dB attenuator intended to prevent overload distortion or breakthrough if, for example, you live close to a high-power broadcast station.

The display is backlit for nighttime operation. The backlight can be turned on or off permanently, but the default is for it to operate for five seconds after any button is pressed, or when the frequency is changed - a nice touch.

There is an auto power-off function, user-selectable from 30 to 120 minutes, to prevent your batteries from becoming exhausted too quickly.

A 'cloning cable' is available as an option which allows copying of all the programmed contents to another IC-R2.

in use

The IC-R2 is very easy to operate in 'manual' mode. The band change button, frequency selection knob, mode button and volume up / down controls are all obvious, and it was simple to navigate around the whole enormous spectrum provided, without even looking at the handbook.

Inputting frequencies into the memory banks and then initialis-



IC-R2 Pocket Communications Receiver

by **Paulinus-Lowe, G4JVG**, with the first UK review of Icom's new scanner



ing the various scanning routines took a little more getting used to, but the instruction book is so clear and well written that there shouldn't be any problems even for beginners.

The last-used frequency in each band is recalled after the band is changed. This is a useful feature; with some of the bands hundreds of MHz wide, it prevents a lot of unnecessary knob twiddling in order to get to the part of band which interests you each time you change bands.

The speaker in the IC-R2 is relatively large, considering the overall size of the unit, at 36mm diameter, and provides good 'communications' quality, albeit a little 'toppy' for listening to VHF / FM music stations in the WFM mode.

How does such a tiny receiver perform? In a word, 'excellent' on VHF and UHF. The 18cm long antenna is fine for receiving local stations, but because it is non-resonant at most frequencies, performance can be improved by using an external antenna. For example, I live on the edge of the service area of Jazz FM on 102.2MHz. It was only just audible, and very 'scratchy', on the set-top antenna. Connecting an external antenna (a random-length wire) brought it in crystal clear, with no trace of background noise or breakthrough - in fact, considerably stronger and clearer than on my hi-fi using a resonant dipole! The same increase in performance was noted on the airband at 118MHz, and 2m repeaters which were inaudible on the set-top antenna could be received, albeit weakly, with the external wire (I do live in a VHF / UHF 'black hole'!).

On medium wave and HF the performance was somewhat less impressive. On these bands, only the stronger stations could be heard and it was neces-

sary to switch the squelch to 'Open' to prevent them from dropping out. Adding the external wire antenna brought in plenty more stations, but also introduced breakthrough (several 100kW+ stations at Brookmans Park are not very many miles away). However, numerous medium and short wave broadcast stations were received, some with good reception.

The selectivity, given in the manufacturer's specifications as "more than 15kHz / -6dB" - whilst perfect for FM - is just too wide for AM reception, where around 6kHz at -6dB is a reasonable compromise between audio quality and adjacent channel rejection. The effect of this was that often two or even three short wave broadcast stations, each separated by 5kHz, were received at the same time.

The wide selectivity and lack of SSB / CW re-

ception make this receiver impractical for listening to amateurs on HF. The exception would be on 10m FM, or if you have a local 160m AM net.

conclusions

The IC-R2 is a remarkable scanner. But is it a 'communications receiver', as labelled on the front of the radio?

That depends on your definition. Yes, it does receive 'communications', as opposed to merely high-power broadcast stations, but most people's definition of a 'communications receiver' would include the ability to receive SSB or CW signals on HF and to have tight filters to reduce adjacent channel interference. Am I being unfair? Yes, probably - what the IC-R2 does, it does very well, but calling it a 'communications receiver' is perhaps stretching the definition just a little.

It's excellent for listening to lo-

cal amateurs, aircraft, marine communications and everything else on VHF and UHF, but it isn't much use for listening to amateurs on short wave. Nevertheless, it does receive medium wave and short wave AM broadcast stations reasonably well and its size makes it absolutely ideal for taking with you on holiday, so that you can keep in touch with home by listening to BBC World Service. The IC-R2 should be thought of as being an excellent VHF / UHF scanner, with the added bonus of covering medium wave and the whole HF spectrum too.

The IC-R2 is available from Icom dealers throughout the UK. Thanks to Martin Lynch & Sons (tel: 0181 566 1120), who provided one of the first samples in the country for review. At just £139 inc VAT, the IC-R2 is excellent value for money for any scanner, let alone one which covers such a wide frequency range.



Frequency bands	0.495 - 1.620, 1.625 - 29.995, 30 - 107.995, 108 - 135.995, 136 - 255.095, 255.1 - 382.095, 382.1 - 769.795, 769.8 - 960.095, 960.1 - 1309.995MHz.
Modes	AM, FM, WFM
Number of memory channels	450 (400 regular, 50 scan edges)
Tuning steps	5, 6.25, 9, 10, 12.5, 15, 20, 25, 30, 50 and 100kHz
Power supply requirement	2 x AA nicad or alkaline cells
Current drain (at 3V DC)	rated audio 170mA typ standby 100mA typ power saved 41mA typ
Receive system	Triple-conversion superheterodyne
Intermediate frequencies	1st IF 266.7MHz 2nd IF 19.65MHz 3rd IF 450kHz
Sensitivity	(FM at 12dB SINAD) 30 - 117.995MHz 0.2µV 118 - 174.995MHz 0.18µV 175 - 329.995MHz 0.22µV 330 - 429.995MHz 0.25µV 430 - 450MHz 0.22µV 450.005 - 469.995MHz 0.25µV 470 - 999.995MHz 0.28µV 1000 - 1309.995MHz 0.45µV (WFM at 12dB SINAD) 76 - 108.0MHz 0.71µV (AM at 10dB S/N) 0.495 - 5.0MHz 1.3µV 5.005 - 30.0MHz 0.79µV 118 - 136.0MHz 0.63µV
Selectivity	FM, AM More than 15kHz / -6dB Less than 30kHz / -60dB WFM More than 150kHz / -6dB

Table 1: Manufacturer's specifications, adapted from Icom IC-R2 instruction manual.

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My wife thinks I sit around all day, but wait until she hears this! I've been up and down the country looking for

the best deals and this one beats the lot! A batch YAESU FT-847s (yes I said 847) for the incredible price of £1295! No catch and full warranty. The previous owner wanted more shelf space so I obliged!



Who said never VOLUNTEER for anything? Well this one defies that rule. I'll have to do these jobs around the house before too long so if you have any good quality pre-used equipment for sale, just give me a call. It'll save my shoe leather and it'll provide you with the best prices available

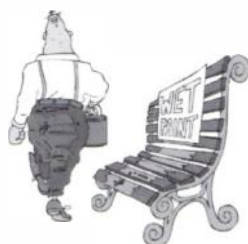
YAESU

FT1000D	£1395
FT1000MPAC	£1495
FT1000DC	£1295
FT920	£995
FT900AT	£699
FT847	£1195
FT840	£499
Fi890	£699
FT747	£399
FT80C	£399
FL7000	£1095
FP757HD NEW!	£165
FP700 NEW	£125
FC700 ATU NEW!	£100
FC 10 ATU	£150
FC1000+NEW!	£350
FT736R+6+23	£1499 NEW
FT7200H NEW!	£265
FT 690MkII	£295
FL6020 NEW!	£100
FT 7025 NEW!	£125
FT290i	£150
FT290ii	£265
FT50R	£195
FT10R	£125
VX1R NEW!	£199
KENWOOD	
TS940S	£795
TS570D	£750
TS50+ATU	£650
TS790E	£895
TM732E	£395
TM 701E	£250
TS440SAT	£495
TS140S	£495
TR9000+	£300

TR9130 £295

ICOM

IC735MKII	£450
IC725+FM	£395
IC726+6	£495



The choice for me was simple. Do the decorating or search for more superb bargains. I think this list shows quite clearly what I decided to do!

IC781	£2250
IC756 NEW!	£1495
IC746 NEW!	£1495
IC706	£595
IC575H	£795
IC505+FM	£350
IC275E	£595
IC490E	£275
IC290D	£275
ICT8E	£265
IC207H	£299
ICT7E	£199
IC21E	£225

ALINCO

Dx70	£495
DJG5EY NEW	£220
DJ580E	£150
DR610E	£400
DR605E	£300
DJ190E	£100
DJ180E	£90
DJC4	£90
AKD 4001	£125
AKD 6001	£125
AKD HF3	£125
30AMP PSU	£79.95
TOKO HL2K	£12.95
Fi707+Accessories	£495
Fi707+Accessories	£445
FT902DM Accessories	£500
AT250	£150
SP930	£65
SP230	£100
KW109ATU	£65
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SP20	£80
SM8 NEW	£100
MD10.8 MIC	£50
ADONIS 708	£100
ADONIS 608	£65

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Interactive Visual Communicator

KENWOOD VC-H1

Chris Lorek, G4HCL, with the first UK review of this new unit which makes portable SSTV a reality

We live in an increasingly visual world. The term 'multimedia' seems to be on virtually everybody's lips, and what was novel some years ago, like being able to chat to someone distant over Amateur Radio, is now nothing more than ordinary to the 'man in the street'.

On the amateur HF bands, slow scan television (SSTV) has recently caught on in a big way. This mode was once the domain of only the specialists, using their long-persistence VDU screens and green phosphors to receive pictures from a small but select group of other specialist amateurs. 'Robot' equipment was used for fast to slow scan converters, if you could afford it, otherwise it was a case of 'build your own' with boards full of memory ICs - again a specialist art.

SSTV programs eventually became available for some early personal computers, such as the Sinclair Spectrum, and amateurs could, then more easily, and cheaply, send and receive pre-stored pictures. Then came the IBM-compatible PC, and eventually the evolution of programs such as the hugely popular JVFAX, written by amateurs.

These can use just a very simple interface, one that can be built in less than an hour and which cost less than £5 in components between your PC and receiver. We even had a front-cover mounted PCB for a receive version of this in *Ham Radio Today* a couple of years ago. Others can use a PC sound card as the interface, and offer full-colour SSTV transceive capabilities.

Suddenly, amateurs who'd never thought of SSTV communication were sending and receiving pictures of themselves, their shacks, QSL cards, and plenty of other images. There are now a number of SSTV repeaters in operation, not only on HF but also cross-linking from HF on to 2m and 70m, again using readily-available amateur-written software.

Now, all this is fine for when

you're in your shack with your PC in front of you, or possibly out portable with a laptop from a field-day site or whatever. But how about 'real' handheld portable SSTV operation? Just a year ago, most people would have said "You've got to be kidding". Images of Dick Tracy with his wrist-watch visual communicator would come to mind - one day maybe, but not right now.

But now Kenwood have sur-

prised the world with their handheld VC-H1 'Interactive Visual Communicator'. Whilst it isn't *quite* as tiny as wristwatch-sized, - more like the size of a VHF / UHF handheld of a couple of years ago - it plugs into your handheld, mobile, or base transceiver and does indeed add colour SSTV transmit and receive capabilities to your station. What's more it does it easily, just push a button and you're off!

Chris Lorek takes a picture of the VC-H1 taking a picture of Chris Lorek ...





sstv modes

The VC-H1 is compatible with eight popular SSTV modes, and is capable of receiving and then replying in Robot (colour) 36, Robot (colour) 72, AVT90, AVT94, Scottie S1, Scottie S2, Martin M1, and Martin M2 modes.

It can also transceive using the newly-developed 'Fast FM' mode on suitably-equipped VHF / UHF FM radios via the 9600 baud packet port on these rigs.

image storage

The top section of the VC-H1 contains the CCD camera unit, which plugs into the lower case section. The camera unit can rotate through 360 degrees, so you can, for instance, use it as a 'normal' camera to capture what's in front of you, or rotate it round to capture a picture of yourself, or indeed move it to any angle.

The 46mm TFT colour LCD shows you the actual picture from the camera, and a press of the 'S' button above the PTT bar at the side of the VC-H1 then captures this, to be stored ready for transmission. There are ten memories in the VC-H1, each capable of storing a different picture for transmission, or for storing received images when you're out and about. For the technical types amongst us, the image memory

transceiver interface

The VC-H1 contains all the interface equipment required for SSTV, with a built-in scan converter, CCD (Charge Coupled Device) colour camera, and an LCD colour monitor. There's a 'curly cord' connection lead provided to connect the unit with the speaker / mic connections (3.5mm and 2.5mm jack sockets) on a Kenwood handheld, and the VC-H1 also contains its own speaker / mic and PTT bar so you can use it for normal speech communication as well, without the need for plug-swapping.

Optional leads will also be available from Kenwood for their mobile and base rigs, and the user manual also gives pin-out details for the data port socket so you can make up your own if you wish. The unit is otherwise fully self-contained, being powered from four AA-sized alkaline cells, which fit into the rear of the case, just like in a handheld transceiver.

For home use, the VC-H1 could also be powered by a plug-in 6V DC mains adapter, a DC lead is also available for powering the unit from an external 6V DC source.

is one display buffer of 175kbytes non-compressed data, and a maximum of ten JPEG compressed image stores.

You can, usefully, also couple the VC-H1 up to your PC, and an RS-232 expansion port is fitted so you can upload and download JPEG images via the COM port on your PC (115kps, 8 bit, 1 stop bit, no parity). If you have an NTSC (ie US / Japanese format) video terminal or camera, you can also couple this up to the VC-H1.

The VC-H1 comes supplied with a carrying strap, user instruction book, handheld connection cable, a lens / LCD cleaning cloth and a hand-carrying strap. Optional soft and hard leather carrying cases are available as options.

in use

The VC-H1 was first demonstrated at the German C-Bit exhibition earlier this year, and the first time it was seen in operation in the UK was at Kenwood UK's stand at the Leicester Amateur Radio Show at Donington in September, where David Wilkins, G5HY, of Kenwood UK was proudly demonstrating the unit. I was very pleased to leave the show with this very same sample unit. The very next day (it was 3.00am when I finally got to bed after the show ended) I was up and running with the VC-H1, testing it on UHF using my Kenwood 70cm FM handheld, and on 80m and 20m by coupling the supplied handheld lead (with a croc-clip arrangement) to my HF transceiver.

A slider switch is used to switch the VC-H1 on and off, the side-mounted 'S' button being used to activate both the monitor and camera. After capturing an image, a press of the 'TX' button transmits the image, this automatically keying the transmitter PTT. While it's transmitting, a thin horizontal line scrolls downwards to show you the progress

of the SSTV image transmission. I found a typical Robot 32 colour image took just under 40 seconds to transmit.

2m and 70cm are not exactly jam-packed with SSTV activity in my area, although there is a regular gathering of SSTVers, including Novice operators, each weekend in my locality on 70cm: very useful! Even so, putting an SSTV call through my local UHF repeater did create some interest. An initial speech identification followed by 30-odd seconds worth of a colour SSTV frame must, I'm sure, have caused a number of casual listeners to fire up their JVFAX programs. Being able to receive high-quality repeater-relayed signals from somebody having fully portable SSTV facilities, with virtually 'live' pictures of activity in the local town centre, was certainly something different in my area!

callsign id

The VC-H1 has the useful facility of being able to superimpose a prominent digital callsign at the lower section of each captured and transmitted frame, which I found very useful. This can be up to eight characters, including the '/' symbol, so "G4HCL/P" was a common sight in my area. The ID can be switched on and off very easily through a power-up button-pushing operation.

In normal use, ie through the speaker / mic connections on a VHF / UHF handheld or HF rig, the VC-H1 will always generate an SSTV transmission in Robot 32 mode. This isn't the most common mode used by amateurs, many for example use Martin or Scottie modes, so I eventually learned to be careful to state the transmission mode first to prospective listeners if I was calling 'CQ' or was otherwise sending out 'blind'.

Linking the VC-H1 up on HF receive, it received pictures quite well, and each received image could be stored into the next of the 10 available memories with a press of the 'MR' button. Despite the Robot 32 'default', a very useful facility was that it would auto-detect, and display, any of the Robot / Martin / Scottie etc formats it was capable of using, and then, on sending a reply



to the received signal, it would automatically default to sending it in that format, until the VC-H1 was switched off then on again. I initially found this to be a limitation on a quiet band, and felt it would be useful to manually select the transmission mode, which the VC-H1 isn't capable of doing. But a quick initial 'hard-wire linked' single-frame transmission to the VC-H1 from my PC's sound card, eg using JVFX32 on my PC, would then switch the VC-H1 into that mode. This was fine for home use, but rather limiting when out portable.

For VHF / UHF use, a 'fast FM' mode is available, which uses the 'flat audio' facilities on an FM rig, ie the 9600 baud packet port, for speedier high-quality transmission. I found this transmits a picture in around 15 seconds, rather than about 40 seconds. Unfortunately I couldn't test this as no-one else in my area used this mode, and I currently know of no PC software to emulate this, maybe one day...

The user instructions say that the VC-H1 should be used only with alkaline AA batteries, ie not rechargeable types, likewise the supplied AC adapter doesn't act as a charger. However, I found the unit would work fine when fitted with either nicads or Nickel-Hydride rechargeable cells, although I understand there's no over-current protection here. A warning also in the manual is that the upper camera unit mustn't be removed, eg to connect an external video source, when the VC-H1 is switched on - something that's physically easy to do and possibly easily forgotten. An internal fuse within the main unit can blow here, which means a return to the dealer and quite probably a fee for repair, so do be careful.

When I was using the VC-H1 outdoors, I found the contrast range to be rather limited in normal daylight (even in October in the UK), a typical picture of my

face often being 'washed out' with brightness, although for indoor use I found it to be fine. As well as having no aperture control for this, there's also no 'zoom' facility, so including a background as any significant part of my transmitted picture usually required someone else to hold the VC-H1 rather than myself, even at arm's length. Although excellent indoors, I found the LCD was rather difficult to see outdoors due to lack of contrast and brightness, although from my experience this is common with most colour LCD systems.

For 'large screen' monitoring, apart from PC JPEG systems the VC-H1 can only interface with NTSC, ie non-UK standard, video monitors. Although we in Europe use PAL or SECAM video formats, many modern video recorders offer NTSC playback facilities, so this was a 'way around' to monitor received images on a TV screen.

With alkaline batteries fitted, the VC-H1 will operate for around 50 minutes with the camera on, for two hours with the camera off but with the monitor on, and for six hours with the monitor off. There's a useful 'battery save' facility, which switches the unit into standby mode where the camera and monitor are deactivated if you haven't operated the unit (eg by pressing any buttons) for 30 seconds - this can be switched off if you wish.

A possibly useful added facility is that of 'Auto Transmit', where you can leave the VC-H1 set up and it will automatically capture and then transmit the captured image every three minutes. This could be quite useful for remote repeater systems, or indeed se-

curity applications on commercial frequencies - the VC-H1 certainly isn't limited to just Amateur Radio use. [I would imagine it would also be very useful during Raynet® exercises or in genuine emergency situations, where it is necessary to *show*, rather than describe verbally, a situation - Ed.]

conclusions

The Kenwood VC-H1 is a unique concept, in offering SSTV transceive facilities on HF, VHF or UHF, not only for use in the shack but also out portable with just your handheld transceiver. It's fully compatible with popular amateur software use

including JVFX32, GSH-PC and EZSSTV. I found the unit a pleasure to use, it certainly brought an added 'dimension' to my contacts over the air!

The VC-H1 has a recommended retail price of £399.95. Thanks go to Kenwood UK for the loan of the first-available sample in the UK for review.

The upper camera unit is easily removed, eg to connect an external video source - but don't do this with the VC-H1 switched on!



The VC-H1 is linked to any transceiver using the curly lead provided to make a really neat SSTV set-up.



The VC-H1 can be run from an external 6V DC source, or from batteries.





Donington - V

For those of you that came to the new Leicester show at Donington (and so many of you did) ever held for Amateur Radio. Despite disaster on the Friday (someone didn't put a shilling in booking for next year before they had even finished. If you missed it in '98

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I'm writing this copy the week of the HF/IOTA convention. Funny that. Most of the chaps visiting already have one! The FT-1000MP. still the worlds best selling H.F. Base. Check out the finance package this month. I probably won't be able to repeat it....



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What a Show!

I, I'm sure you will agree it was one of the best organised, best attended and nicest venues the meter and the lights went out... the show was a total success with most of the traders make sure you don't in 1999 - the Radio Show of the year without doubt.



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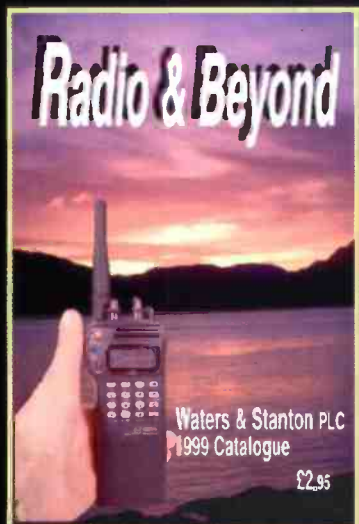
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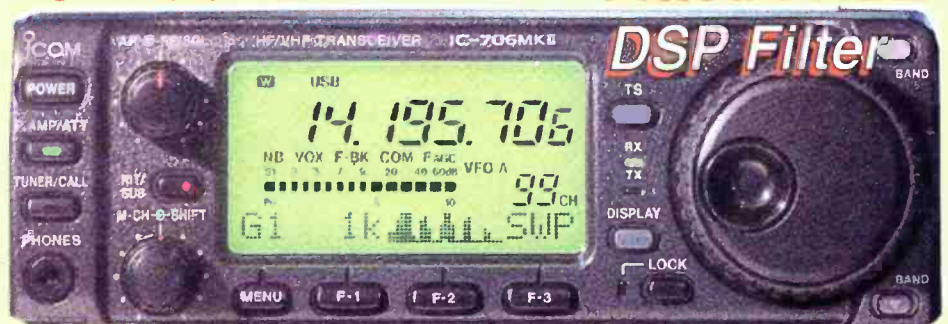
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It was standing room only for most of the presentations. Here, Willy Reusch, HB9AHL, gives a talk on the 3B7RF DXpedition to St Brandon in the Indian Ocean

The RSGB International HF and IOTA Convention took place at the Beaumont Centre in Windsor from 9 - 11 October. It was standing room only for the presentations covering subjects as diverse as linear amplifier design, DSP devices, the solar cycle, tower maintenance, receiver design, DXCC and IOTA DXpeditions.

But it's not just HF at the convention. Once again this year there was a large contingent of LF operators (that's *real* LF: 136kHz not 1.8MHz!) with the LF Forum attended by most of those active on the band in this country, plus experimenters from the USA, Germany and Israel. At the other end of the spectrum, the UK 6m Group also had a stand at the show.

A special event station, GB4RS, ran on 40m using a replica of one of the 9M0C Spratly stations, from the rig (FT-1000MP) through to antenna (four quarter-wave verticals). There was an SWL bookstall and 'SWL surgery' manned by top listeners.

Some of the wide variety of other events taking place at the convention can be seen in the photos on this page.

One of the great things about Amateur Radio, and HF radio in particular, is the international friendship it engenders. This was amply demonstrated by delegates from the USA and Ukraine, Israel and the Sultanate of Oman, Ireland North and South, the Netherlands and Belgium (Flanders and Wallonia!), and even Scotland and England, all of whom enjoyed a great weekend of socialising. Callsign badges from Barbados, Germany, Portugal, Malta, Cyprus, Jersey, Switzerland, Australia, Wales and Japan were also spotted. Marty Miller, NN2C, flew in especially from New York for the seventh year in a row - and says he'll be back next year too. It's just that sort of event.



There were five superb main prizes (plus many others) in the raffle. This year's star prize winner was Ian Philipps, G0RDI (right), who was presented with a Yaesu FT-900 transceiver by Neville Cheadle, G3NUG.

Well-known HF operator Peter, DJ8WL, became even more well known by being the only licensed German station on 136kHz, as DA0LF. It is hoped that all German amateurs will soon be granted access to this band.

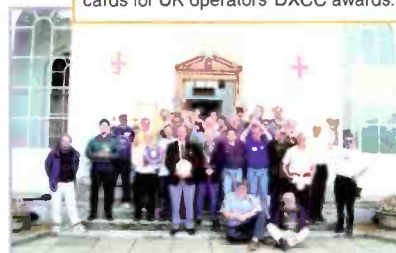


Bill Kenner, K5FUV, concentrates on the task of checking numerous QSL cards for UK operators' DXCC awards.

RSGB HF and IOTA Convention Report



Wayne Mills, N7NG, delivered an inspiring presentation on the H40AA Temotu DXpedition. The operation made over 67,000 QSOs from this new DXCC entity in the southwest Pacific.



The annual RSGB HF contests trophies are presented at the convention. All the trophy winners celebrate outside the magnificent Beaumont building.

A pictorial report on this year's main event for HF - and LF - operators



The main room where convention visitors gather - the bar. It also contained the RSGB book stand, Martin Lynch's display of the latest HF equipment, and RSGB HF Contests Committee, IOTA, UK 6m Group, and CDXC stands. This photo was taken from the Minstrel's Gallery, from where special event station GB4RS was on the air.



The 9M0C Spratly operation was by far the largest UK-organised DXpedition. All team members were presented with CDXC Awards of Merit "in recognition of an outstanding contribution in the field of Amateur Radio DXing". Here's team members Neville Cheadle, G3NUG, and Don Beattie, G3OZF.



Martin Lynch, G4HKS (left), one of the sponsors of the convention, being thanked by Glyn Jones, GW0ANA, for his generosity in financing a replacement bronze plaque commemorating Marconi's transmissions between Lavernock Point and Flatholm Island. The original plaque, which had remained in place for 50 years, was stolen earlier this year.



The 1998 - 99 Young Amateur of the Year presentation was made at the convention. L to r: Hazel Canter, Director of Spectrum Services Executive, RA; Mr Shepherd Snr; Mark Shepherd, M0AGQ, the new Young Amateur of the Year; Peter Evans, M0BOO, Young Amateur runner-up; Mr Evans Snr; Mrs Evans; Ian Kyle, M10AYZ, President RSGB.



The RSGB Rally for all those interested in VHF/UHF and Microwave operation - be sure to mark your diary so you don't miss all the excitement!

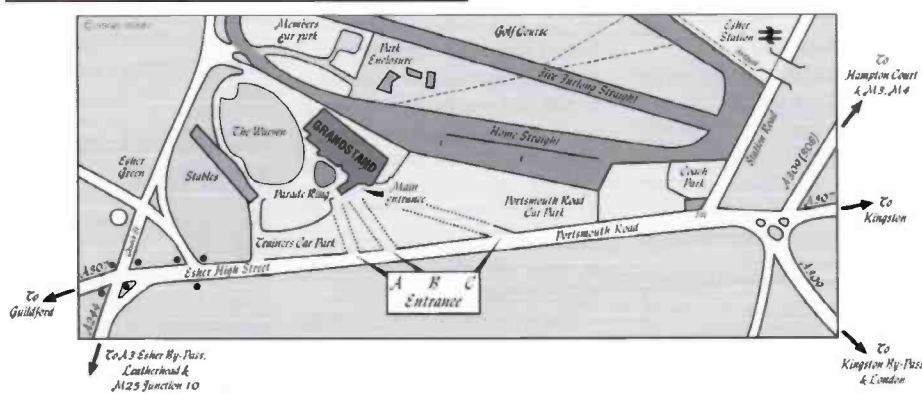
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tel: 01277 225563

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Net Communication

"You can't have one without the other," as the song says about something entirely dif

Although I am writing this near the CQ World Wide contest, it won't be the contest season when this is read by you, dear reader, but at a point close to Christmas. Think of this then as an escape from all those office parties and grossly over-expensive meals.

Contests remain an unfailingly major part of our hobby for some of our colleagues. I say 'some', because others of us have never taken part properly in a contest and wouldn't thank you for doing so. Some adore them: for others they are a noisy non-event.

cameraderie

Personally I have long wondered whether contests are really in the

spirit of the hobby. Should we set ourselves one against another? But my views are doubtless too simplistic and in any case they have softened over the years. One person who instructed me in the errors of my ways was a French station with whom I was in contact. He said that the *cameraderie* (well, he was French) of teams working together, the preparation and the buzz they got from it, combined with a sense of achievement, was incomparable.

Contesters don't just dig out the largest linear they can find and push it twice as hard as it should go and drive it through an enormous antenna: they do work to a set of rules and discipline themselves to these, to say nothing of

planning, hard work, late nights and, one hopes, high-class operation. It takes guts to do this. I take my hat off to them. If in the process they get a buzz and achieve something, good luck to them. If as a result some of us work some DX on the fly, even better.

room for all

There is fun to be had for everyone and anyone can take part in a contest, just with an exchange or two. It gives the opportunity to hear and possibly work by voice or CW rare and exotic locations; see how the propagation is working - real DX on a band you thought was dead come to life. And it can't be just the linears, if you too can successfully get back to them with your own humble G5RV or mini-beam.

Some people also are drawn to competition. They thrive on stress and challenge. Only when they are thumping out the CW to a rare DX station, ahead of their colleagues by a mile, as the hour strikes two in the morning in a howling gale, do they get that certain sense of achievement. Perhaps they are right. In short there is room for everyone, fan or not, on a contest week-end. So let's enjoy it.

vhf / uhf

The nature of contests as I have just outlined may give the impression of HF frenzy alone. In fact there are contests on most bands (excluding the three HF WARC bands) and the nature of UHF contests I have heard, for example, is quite different in tone. Still the

same setting up, still the same teamwork no doubt, but much more laid back on the whole - at least on UHF and above - than on HF. There is usually less QRM for a start, but digging out weak or marginal signals takes good filtering, antenna construction etc. I rather enjoy hearing UHF SSB or CW come to life, the ordinary activity on those bands being somewhat less without these intermittent bursts of activity. In fact, this is why contests were *originally* invented, unless I am far off the mark.

contesting on the net

So, at last, to the point of this article: what can we find on the Internet to help us with contests? I expected to find various pages with nothing but rules and regulations. Not very interesting. Anyway, how do you know they are accurate? I recommend you check the official pages of any contest first. The RSGB site does publish up to date rules and regs and contest news. You should start there particularly for UK information. In fact that's a golden rule generally: verify what you see on a site if it really matters and go to the authoritative source. I hoped to find pages which meant something to the newcomer too. I am not sure I did always, however.

The **National Contest Journal** page was one of my first ports of call. It "... is a bi-monthly magazine dedicated to covering the competitive aspects of Amateur

Links:

Shane-Anthony D'Arcy, G6VYS: <http://www.g6vys.demon.co.uk>
Andy Gayne, G7KPF: kama/hamlinks.htm
G4NJH Pages: <http://www.innotts.co.uk/~asperges/>

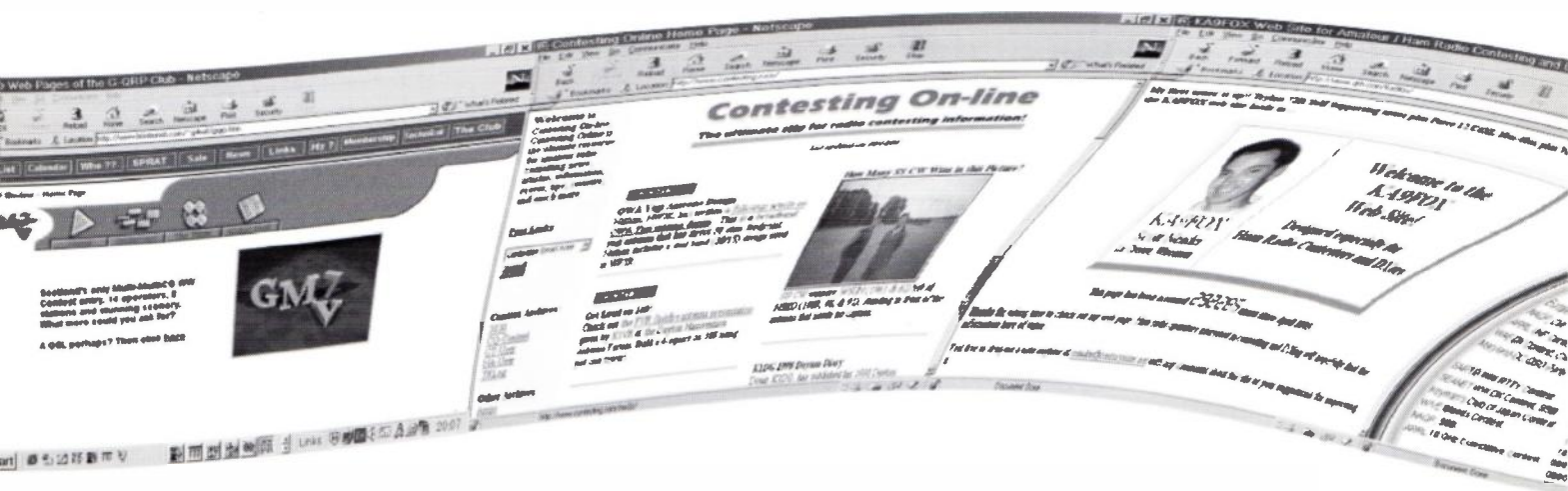
Contests:

The National Contest Journal: <http://www.waterw.com/~ncj/>
Black Sheep Contest DX Group: <http://www.blacksheep.org/>
Contesting Online: <http://www.contesting.com/>
ARRL Contest Results Page: <http://www.arrl.org/contests/results/>
QRP Contests & DX information: <http://www.barville.demon.co.uk/>
G-QRP Page: <http://www.btinternet.com/~g4wif/gqrp.htm>
GM7V Scottish Contesting: <http://www.odl.co.uk/gm7v/>
KA9FOX Site: <http://www.qth.com/ka9fox/>
DXCC List: <http://www.arrl.org/awards/dxcc/listmain.html>
IOTA List: http://www.systemtechnik.tu-ilmenau.de/ham/ham_iota.html

Antennas:

GW0TQM's STL site: <http://www.ambrosia.demon.co.uk/csl/magloop.htm>
GM4NHI's Review: <http://www.gm4nhi.demon.co.uk/>
Antenna Design: <http://www.contesting.com/nw3z/>
Armscroft Pages: <http://www.armscroft.demon.co.uk/techinfo.htm>
Tonna: <http://www.tonna.com>
Cushcraft: <http://www.cushcraft.com>

Table 1: URLs used in this article. Thanks to Andy Gayne, G7KPF, and Shane D'Arcy, G6VYS, for their help with links.



Net Communication

ferent - Jeremy Boot, G4NJH, looks at contesting and antenna sites on the internet

Radio. Each issue is loaded with information of interest to contesters, from casual observer to hard-core competitor, from little pistol to big gun. But you don't even have to consider yourself to be a contester to enjoy reading the magazine." You will need to subscribe though to get all the updated information. The last listed activities were last month's, so not much good for forward planning.

Black Sheep Contest DX Group has links to things of interest to them: ie VHF contesting. You can even download the stationery you will need for RSGB contests. Read how to prepare for a contest. You can read of forthcoming events and results from previous contests. Links are strictly contest-based, though one caught my eye . . .

. . . **Contesting Online**, which is the sort of page I hoped to come across: informative, welcoming and aimed not only at established contesters. There are amusing contest stories (rain, storms and howling gales figure heavily) and links to antenna design, since they, like me in this article, see the link between the two. In fact their archive of antenna design is remarkable.

The **ARRL Contest Results** page is extensive. Interestingly the results of the *Feedback* column to appear in *QST* is published on the Internet before its publication in print. I like the principle of this. The Internet is an immediate medium, outweighing magazines in some respects. There isn't a deal of info on these pages though for a newcomer. I am still feeling that contest pages tend to be for contesters, not visitors.

The **QRP Contests & DX Information** page by Peter Barville, G3XJS, is brief but provides some useful links, including a link to the **G-QRP** page which has a list of QRP contests.

GM7V Scottish Contesting page is stylish, but very much for people into contesting too. Javascript work is striking. One feature is the ability to search a database for a QSL they may owe you from a contact. Now that's clever. I am years behind with my QSLs. An inventive use of the Internet, I wonder if I could bribe them to do mine!

A site full of interest, which does include something for the beginner is the **KA9FOX (Scott Neader) Web Site** which is written with enthusiasm and has a wealth of useful links especially in the contest / DX library. I have also quoted a couple of Scott's links to IOTA and the DXCC list, which I have included in the list of URLs.

antennas

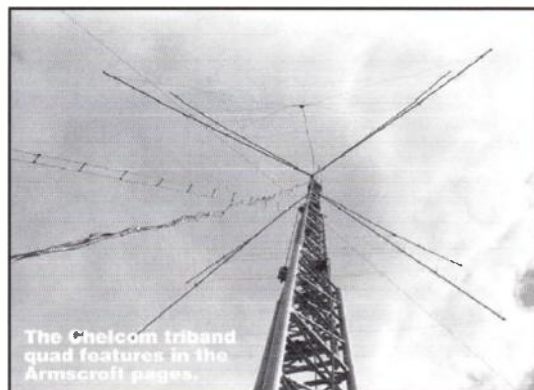
On then to antenna construction. The construction of antennas came a step closer with the easy availability of software for computers. The old days of slide rules and endless maths should make the 'suck it and see' less necessary, although, as we all know, the theory and practice of antennas is not always the same thing.

Looking for suitable examples, I thought I should start with British pages. The magnetic loop has always interested me, though I have never used one; they are intriguing devices. So I was glad to stumble on **GW0TQM's STL** site. I was impressed by the wealth of detail and the obvious prowess

and knowledge of the writer. There is feedback from users too, programs to calculate various aspects of the design and even some maths: "*The radiation resistance of the loop is $31171 (\pi \text{ to the fourth power } \times 320) \text{ multiplied by the Area squared } (A^2), \text{ divided by the Wavelength to the fourth power } (W^4)$ ". Er - I knew that! . . . so maths isn't quite dead after all.*

Passing briefly to admire the detail of **GM4NHI's Review** of the Cushcraft X7 [also published in *Ham Radio Today*, May 1998 - Ed] - which would upset the neighbours (the antenna, not the review), I visited the **Armscroft** pages which have a magnificent picture of the Chelcom triband quad as well as of various other commercial antennas.

Tonna's site is best described as 'minimalist' but is useful in its way. It appears in French and English (annoyingly referred to as 'US'), mostly a list of models and outlets. The **Cushcraft** site is much more stylish and somewhat fuller and includes some pictures sent in from amateurs, so there is an attempt at community spirit. There are articles attached to the pictures and an extensive range of the goods we all know so well. Read Ivan Mastilovic's, 9N1LA, account of the Nepal expedition. The site contains both amateur



and professional equipment. Definitely worth a browse.

I was a little disappointed not to find more amateur pages dealing with antenna design, since most of the above are commercial, but I shall keep digging away to include in another article.

Thanks to all the readers at this year-end who have supported these pages with links or helpful remarks. Just a little while ago, speaking of the Internet and Amateur Radio in the same breath was near heresy. Now, most would accept that one can help the other and that there is a meeting-point possible between the two. If you are wondering what to ask Santa for Christmas for the computer, may I suggest memory SIMMS, DIMMS or whatever? It makes a big difference to performance. I wish everyone a Merry Christmas and a prosperous and DX-filled 1999. One year to go to the millennium: hardly seems possible. Happy surfing meanwhile. See you in the New Year.

Jeremy Boot, G4NJH, e-mail: asperges@innotts.co.uk, Internet pages: <http://www.innotts.co.uk/~asperges/>



Data Connect on Data Co

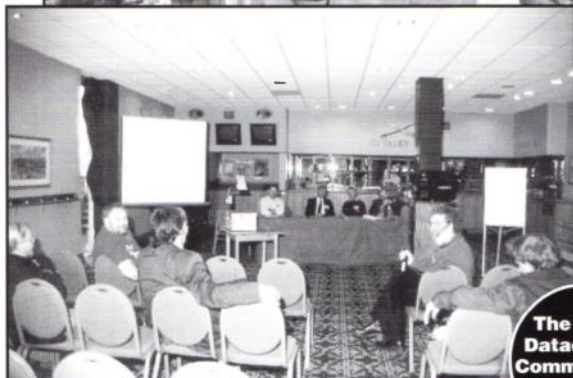
Chris Lorek, G4HCL, brings the latest



Leo Labutin, UA3CR, with a copy of his favourite reading matter! He's seen here with former editor Sheila Lorek, G8IYA.

complete design for a replacement circuit on Andy's, SP3EJJ, Internet site at <http://www.kki.net.pl/connect>

Andy runs his own data company, ZE Connect, and supplies multimode modems for amateur use for RTTY, SSTV, fax and packet. For details on the FX614 modem Andy can be contacted with a packet message to SP3EJJ@SR3DZG.ZG.POL.EU or for commercial enquires by post to Andrzej Lenica, ul Nad Lakami 1, 65-212 Zielona Gora, Poland. If you don't have Internet facilities, Ian, M1BGY @ GB7KLY has encoded the new FX614 chip BayCom circuit into eight 7+ messages called NEWBAY.ZIP on the UK packet network, which becomes a GIF file when uncompressed showing all components on the new modem [img24.gif](#) by SP3EJJ.



The RSGB Datacomms Committee at DataStream '98.

My thanks to the many amateurs who came along to my talk at this year's 'DataStream 98' at the BARTG (British Amateur Radio Teledata Group) rally. The rally wasn't as packed as it has been in past years, probably due to the Donington Park exhibition due to take place two weekends later, but there were plenty of bargains to be had.

The DataStream 98 lecture series kicked off with Ken, GOPCA, who gave an excellent introduction to getting going on RTTY the easy way. This was followed by an RSGB Data Communications Committee panel who were open to questions from visitors. Unfortunately this was attended by only a handful of amateurs, but at least the DCC were there in an open invitation to be 'grilled'!

John, GW4SKA, then presented a talk on Data Comms Contesting, to be followed by *Ham Radio Today* Satellite Rendezvous columnist Richard Limebear, G3RWL, on

Phase-3D and Rudak, and finally my own talk on 'Getting Going on Multimode Data Modes at Low Cost'.

My thanks to BARTG and in particular Ian, G4EAN, for his sterling efforts in organising DataStream '98, which I'm sure was enjoyed by all who attended.

leo ua3cr silent key

I've had the pleasure of meeting Leo Labutin, UA3CR, in the past at several AMSAT-UK Colloquiums, as well as keeping in touch by phone and fax at other times. I don't have many 'heroes', but Leo was one of them.

In the December 1992 issue of *Ham Radio Today* he wrote an excellent article on the RK3KP Moscow Adventure Club's station and the packet radio network in Moscow. I also featured his TNC design in the magazine a little later. I'm sad to report that Leo

recently passed away at the age of 70.

I'll hand it over to Mike, UA9CIR, who sums up Leo's achievements in much better words than I could hope to do: "First licensed 52 years ago, Leo pioneered many ham radio innovations in Russia. He was among the first SSB operators, amateur satellite stations, packet BBS SysOps, to name just a few. Leo was an active expeditioner, he was the chief operator in several North Pole expeditions. He was the father of packet radio in USSR / Russia, all BBS SysOps will never forget his helping hand. He ran Satellite Gateway, serving part of Russia and nearby countries. Leo was also the father of amateur satellites. Without him, no RS birds would have been launched. As a real 'Elmer', Leo gave a good start to many new hams. He was an active member of many Amateur Radio organisations and honoured by the government for his tireless efforts to advance Amateur Radio. Leo will be hard to replace, he will be sadly missed by the Ham fraternity. RIP."

modem ic

I've now collated more information on the useful FX614 as a replacement for the now hard-to-get TCM3105 modem IC. There's a

software sources

I'm often asked, usually many times each month, "Where can I get such-and-such a program, I'm not on the Internet". From recent packet messages, Glen, M0BQR, asks where he can get BPQ4.08a; Ken, 2E1GBI, asks about APRS software; Bart, ON4CCS, asks about SSTV software for use with a soundcard; Paul, M1CXZ, enquires about SSTV software for use under *Windows 95*; and Tom, GM4PRO, is looking for SSTV software to run under *Windows 95* or *98*.

Take a look at the July 1998 issue of *Ham Radio Today* [still available as a back-issue - *Ed*] because on the front cover of that issue there was a free CD-ROM packed with all this, indeed with virtually every known freeware, shareware, and public domain data-over-radio related software for amateur station use.

My wife Sheila, G8IYA, compiled this (with, I must admit, help from myself regarding software choice), and each month she also compiles a CD-ROM absolutely full of the very latest Amateur Radio software available. Right now I have over 2Gb of just Amateur Radio software on my PC's hard disk, and I'm always pleased

ect'o Data Connection

ews from the world of data over radio

to offer a copying service for amateurs. The idea of shareware is a 'try it to see if you like it', you don't need to 'buy' the software at £40, £60 or whatever only to find it's not to your liking. Drop me a packet if you need a specific program including any I mention in my columns, or give me a call on tel: 01703 263429 evenings / weekends and I'll try my very best to help.

rig mods via packet

Mike, G8AMG, has had a cleanup in the RIGMODS directory on his BBS, and has done a new 'TREE' to include recently added files. The list includes ex-PMR details for rigs including those from Dymar, Pye, Motorola, Maxon, Nova and Tait, NJ8822 synthesiser programming, and a number of Icom and Kenwood amateur rig mods. All files are available by standard REQFIL request, ie SP REQFIL @ G8AMG (Standard BBS message header), then RIGMODSFilename (Standard BBS message title) followed by Control Z (or /EX) (Standard BBS message termination). Check that your BBS WP knows where G8AMG is first by the I G8AMG command. If not, the message header should be SP REQFIL @ G8AMG.GB7LWB.#27. GBR

gb7bip news

Richard, M1BNG, sent me his latest GB7BIP TCP/IP packet newsletter, saying TCP/IP has slowly been gathering users, mainly as a way of linking chat systems. There have been some changes in the configuration of GB7BIP since its initial run, and it now runs on one computer running Linux. However, there are two TCP/IP stacks on this - Linux kernel (linux.gb7bip.ampr.org [44.131.219.240]) and TNOS (gb7bip.ampr.org [44.131.219.196]).

Linux controls the 433.625MHz and 144.925MHz ports, while TNOS controls the 144.975MHz port as this is used for AX25 / Netrom linking to the Pompey node. This is also GB7BIP's mail feed. As a result of this configuration, it is necessary to use 44.131.219.240 as a gateway to 44.131.219.196, to access TNOS

facilities such as the BBS and converse server.

GB7BIP currently has the following ports: 433.625MHz: 1200 baud TCP/IP, callsign GB7BIP-5, 144.925MHz: 1200 baud TCP/IP, callsign GB7BIP-6, and 144.975MHz: 9600 baud AX25, Netrom, callsign GB7BIP. To use AX25/FBB mail on GB7BIP, packet bulletins can now be accessed on GB7BIP in the 'bulls' area (type "a bulls"). Personal mail sent to user@GB7BIP.#48.GBR.EU will find its way to area 'user', so GB7BIP can be used as a home BBS. Mail can be sent with the normal SP command from the TNOS system. Alternatively, you can experiment with setting GB7BIP as the SMTP server / mail exchange on your machine, so messages can be written locally. They'll then be forwarded as necessary by GB7BIP. You can get more information from Richard with a message to M1BNG@GB7BIP.#48.GBR.EU

aprs

Ciemon, G0TRT, dropped me a message to say, "Thanks for the continued coverage of APRS (Automatic Position Reporting Sys-

tem) in *Ham Radio Today*". Ciemon says he's now well and truly settled into his new QTH in Suffolk and he's starting to make APRS maps of the area. He adds that there is a lot of initial interest in his area, and a number of stations there including BBS either have or are changing their beacons to help out those testing APRS.

A few amateurs have asked whether the APRS software can, or will in the future, support BayCom modems or BPQ. The answer to this is 'no', you do need a TNC coupled to a PC or Mac, although the Tucson Amateur Packet Radio (TAPR) group's 'MicEncoder' is another possibility. This is a stand-alone hardware unit that's used together with a 'normal' FM speech Amateur Radio transceiver, and automatically transmits an APRS packet mes-

sage at the end of each speech transmission as well as automatic periodic location and status transmissions.

I've recently been helping out the Kendal Mountain Rescue team who are testing Windows APRS with a TAPR 'APRS MicEncoder' which I've supplied to them, this being an excellent example of how Amateur Radio technology is being put to good use in saving lives. If you'd like more details on how APRS can be used in situations like this, do drop me a message and I'll be pleased to help if I can.

ctrl-z, end of message

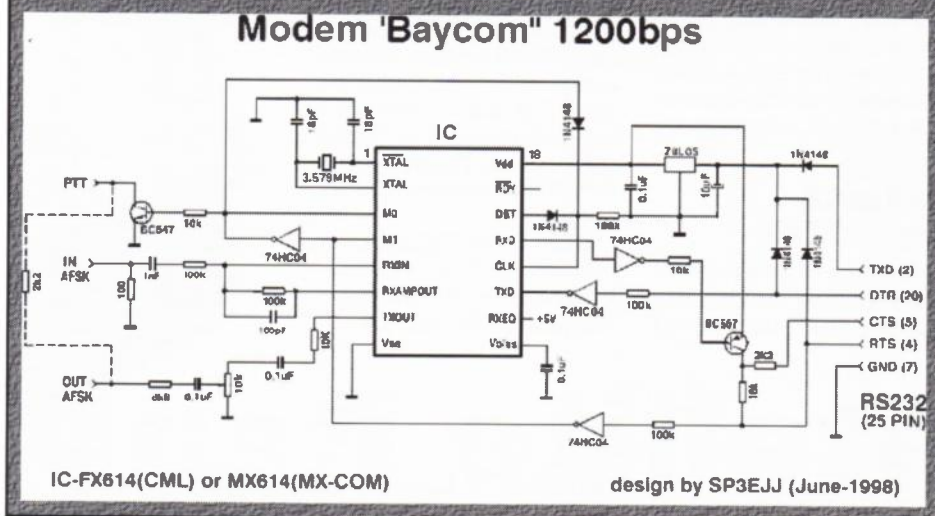
I'm always pleased to hear from readers, so do get in touch, my contact details are given in the Regular Contributors section of the magazine each month.

Visitors to the BARTG rally snap up the bargains.

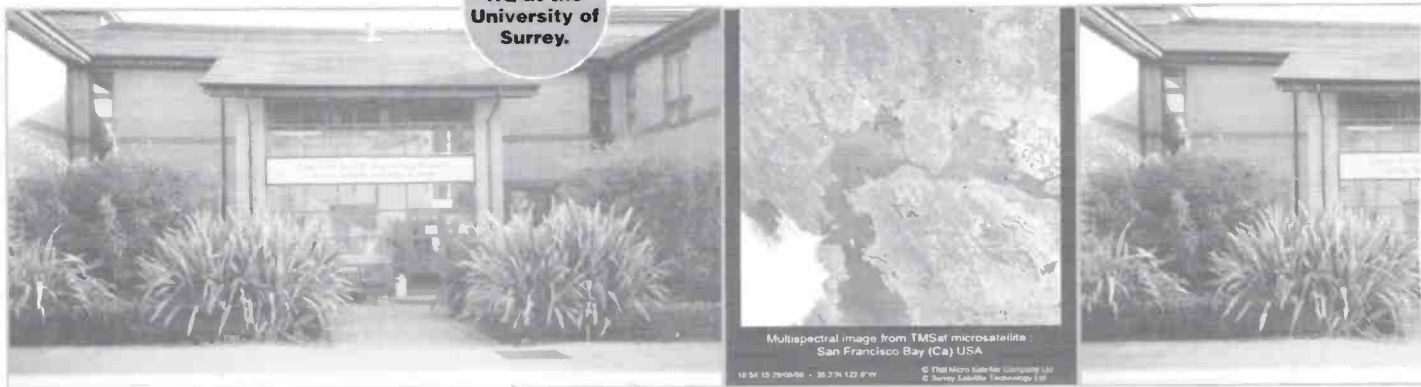


The FX614 circuit by Andy, SP3EJJ, from Andy's web page.

nie lata w technice modemów P...
...nie produkcji i jego brak na rynku...
...Pomysłowe rozwiązanie modemu Packed Radio z wykorzystaniem tego ukł...
...dzięki udostępnieniu materiału przez firmę CML (Consumer Microcircuits Limited)
...z Wielkiej Brytanii.



The SSTL
HQ at the
University of
Surrey.



Multispectral image from TMSat microsatellite
San Francisco Bay (Ca) USA

18 Oct 19 29:04:00 - 38.2°N 122.8°W
© TMSat Micro Satellite Company Ltd
© Surrey Satellite Technology Ltd

Surrey Satellite Technology Limited (SSTL) has signed a contract for the first commercial launch of the Russian / Ukrainian Dnepr launch vehicle which is based on the SS-18 ICBM; said to be a highly reliable launcher. The basic version of the Dnepr launch vehicle can place a payload of up to four metric tons into near-earth orbit. If necessary, it can also be equipped with an extra upper stage for larger payloads and / or higher orbits.

The vehicle will be used to place the SSTL designed and fabricated UoSAT-12 mini-satellite into earth orbit. UoSAT-12 is an experimental and educational mini-satellite designed, manufactured and owned by SSTL to demonstrate advanced low earth orbit (LEO) communications and earth observation payloads. It also carries novel propulsion, attitude control, and navigation experiments and has a five-year design life.

Launch is scheduled for the second quarter of 1999 from the Baikonur cosmodrome in the Republic of Kazakhstan.

oscar 10

AO-10 has been pretty poorly recently; this is presumed to be because of the decrease of its spin which means that its orientation is unstable and the solar panels are hardly receiving any illumination. It went through a period where signals were barely detectable, but seems to be improving slightly with time.

russian satellites

Information received via Pat Gowen, G3IOR, indicates that there has been a change in the

Russian command stations, leaving the commanding for all the RS satellites entirely to Alex Papkov in Kaluga, south of Moscow.

RS-12 was changing modes in September and RS-13 has also been heard - so it appears that the new command station is familiarising himself with the status of the satellite - we hope to hear more once the exercise is finished.

Mir has been up and down too; it appeared on 145.935MHz for a few days before returning to its more normal 145.985MHz frequency. The cosmonauts currently in residence speak only Russian so there's less promise of voice QSOs, but the packet PMS is available to everyone (when switched on).

digital satellites

G3CWV reports that September was another uneventful month for Oscar-11 with normal signals from the beacons and nominal telemetry. The battery voltage continues to improve, averaging 13.8 volts, with values ranging from 13.6 to 13.9 observed. Internal temperatures slowly increased and were 6.6 °C and 4.8 °C for battery and telemetry electronics respectively at the end of September, showing an increase of about 3 °C during the month. This is due to the decrease in solar eclipse times, which is improving the power budget, without creating excessive internal temperatures. Reports of the mode-S beacon have also been received.

LUSAT-Oscar-19 experienced a software crash a couple of months ago; and its beacon was saying that the BBS is off

and an On Board Computer reload is in progress. The Digipeater is switched ON and several people have been using it for 'ordinary' QSOs.

UO-22 commander G7UPN requests that we use the 145.975MHz uplink frequency for the time being as the 145.900MHz uplink is not working due to a software 'hiccup'. This is not uncommon and it is likely that it will start working again after the next software reload; it's just that G7UPN is fairly busy with TM-Sat at present and doesn't have time to reload UO-22.

KO-23 went through one of its periods of no eclipses; when this happens the internal temperature rises above 50 °C and a fault causes the transmitter deviation to increase, which makes it unusable to some users. This period was due to end around the end of September so normal operations should have resumed by now.

phase-3d

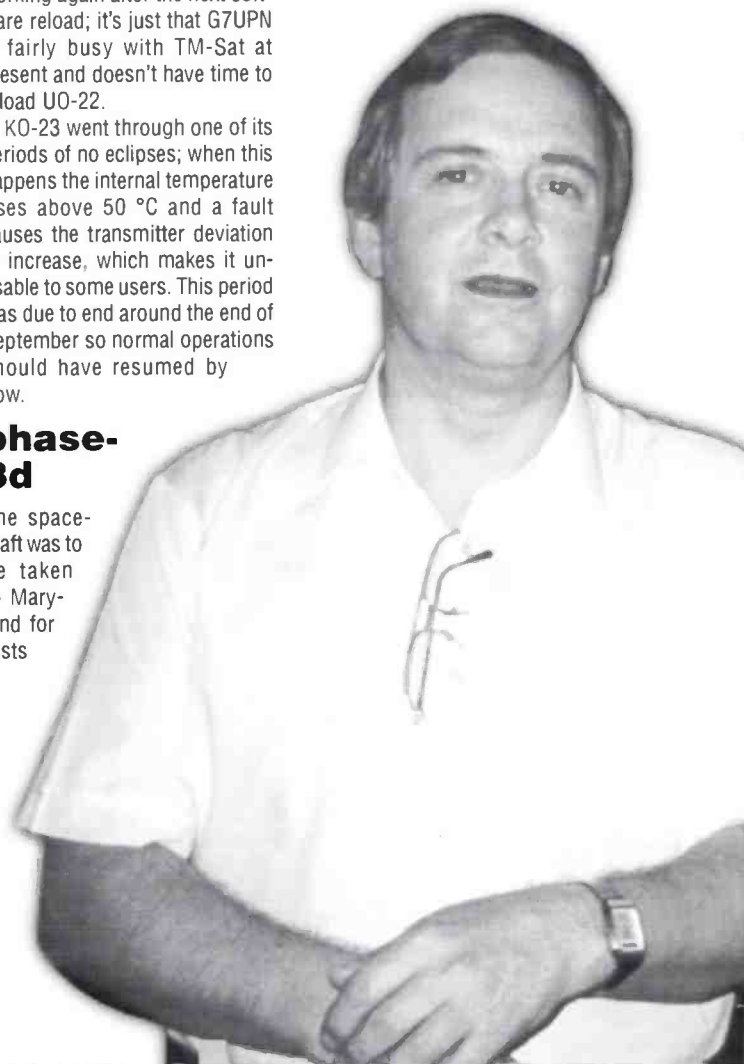
The spacecraft was to be taken to Maryland for tests

in mid-October. At the time of writing there was no hard and fast information about Phase-3D, but all appears to be on schedule.

The Ariane-503 target launch date is now Tuesday 20 October 1998, with a window opening at 1600UTC.

tm-sat

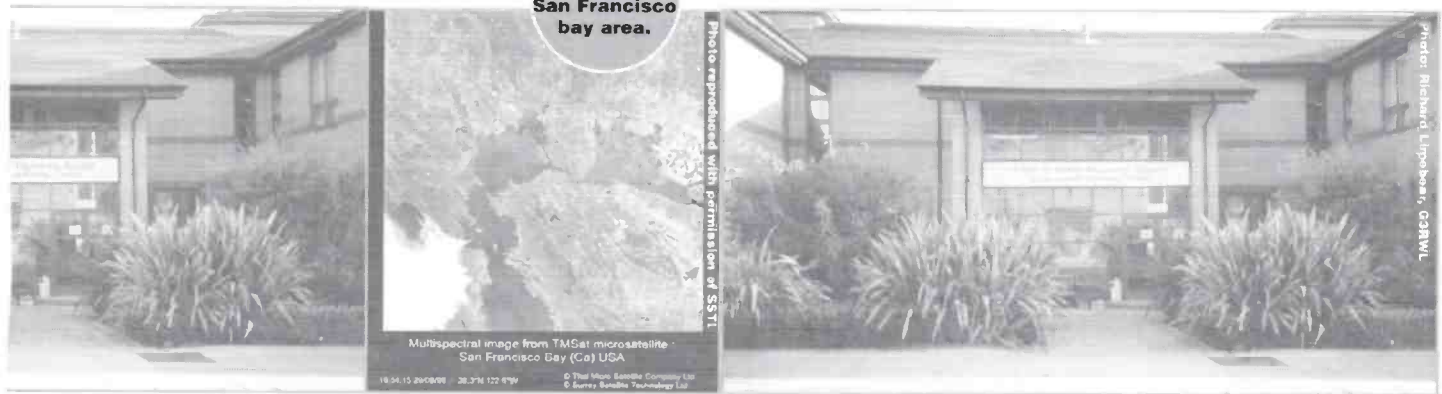
Chris Jackson, G7UPN, reports that TM-Sat-1 commissioning has



Satellite Rendezvous

Richard Limebear, G3RWL, with news of a new British satellite

**TM-Sat-1
image of the
San Francisco
bay area.**



largely been completed and the satellite is in very good shape. The team have been concentrating on testing and calibration of the multispectral imaging system and a number of very good image sets have been downloaded from the satellite.

G7UPN also reports that, shortly after launch, an anomaly was observed with the satellite's downlink transmitter, causing the ground operations team to take a cautious attitude to operations. Apparently the downlink power occasionally drops to less than one watt. Ground control stations are not certain as to the cause of this condition and tests are continuing to try and find an answer to the problem.

Image sets from TM-Sat-1 are being posted to the web at <http://www.ee.surrey.ac.uk/EE/CSEER/UOSAT/amateur/tmsat/index.html>

No information about the Israeli Techsat satellite has been released.

short bursts

Sad news first: AMSAT members world-wide were saddened to hear of the death of Leo Labutin, UA3CR; a major player in the Russian Amateur Radio satellite scene. Leo died on September 10 at his summer residence near Moscow, reportedly suffering a heart attack. He was 70.

I also heard that Marjorie Gee, widow of Arthur, G2UK, died a few weeks ago.

FO-29 is only operational in JA (voice) mode.

The SedSat 1 launch could happen as early as 15 October on NASA's DS1 mission. SedSat will be going into an elliptical orbit of about 28.5° inclination; this means that, although it will occasionally be visible from Britain (at apogee) we will not be the main users of the satellite, which will probably gain the name of SedSat-Oscar-33. SedSat is said to have both transponders and digital systems aboard; the frequencies published over a year ago are:

Mode A: Uplink: 145.915 - 145.975MHz 'standard' linear transponder, Downlink: 29.350 - 29.410kHz

Mode L: Uplink: 1268.250 - 1268.100MHz, Downlink: 437.850 - 438.000MHz.

It is also said to contain digital equipment using 9.6, 19.2, 38.4 and 56kbps. Hopefully some more information will become available by next month.

The first component of the International Space Station, the Zarya Control Module, is scheduled to be launched from Baikonur on 20 November.

AMSAT Argentina, along with the University of Cordoba, is in the planning stages of a spacecraft called Globe 4, an Amateur Ra-

dio space probe. Besides communication experiments, the flight vehicle will carry GPS, an imaging device of some sort and a number of tomato seeds. The seeds will be carried into space and then returned to earth and planted by various schools across Argentina.

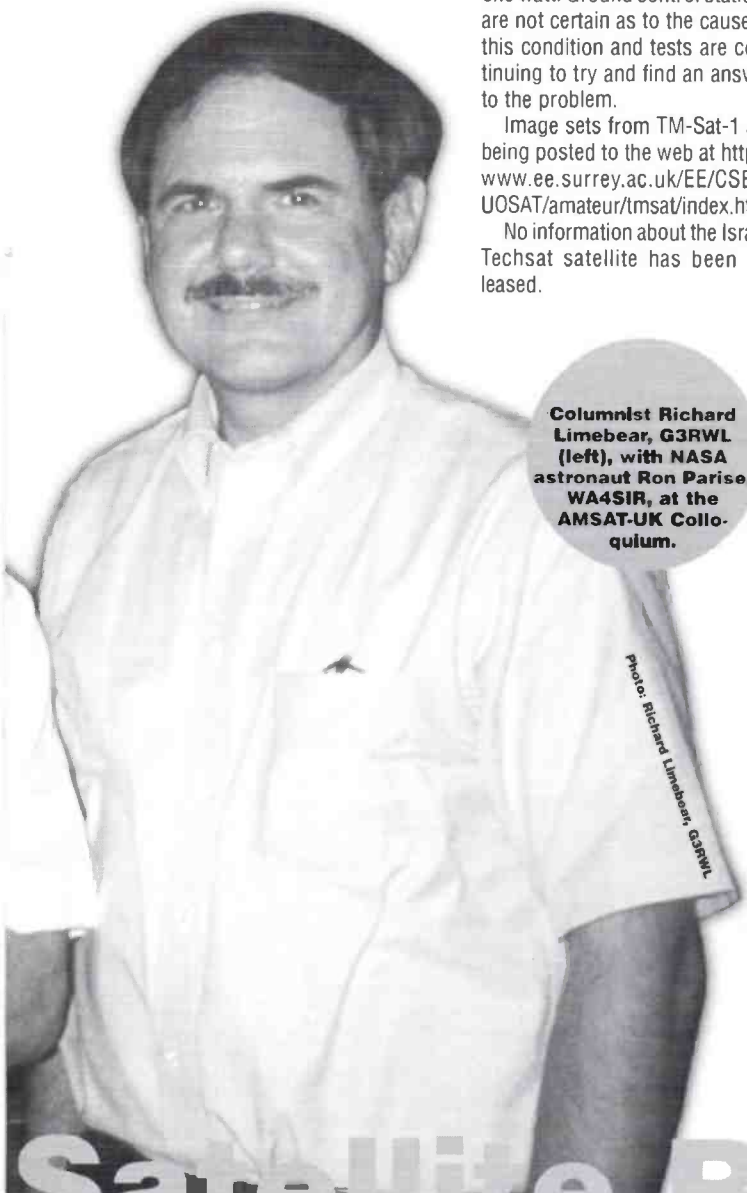
A new battery technology being developed for military use holds the promise of longer operating times for all sorts of equipment including amateur radio satellites. The new battery weighs half as much and generates nearly three times the specific power of nickel-hydrogen technology, or about 150-watt hours per kilogram of battery weight. The sodium-sulphur design costs half as much as nickel-hydrogen and is reported to be more reliable due to simpler design.

AMSAT-NA Board of Directors election results. A total of 1238 members cast ballots in this year's election. The results are that W3IWI, KB1SF and W5ACM were elected to serve on the AMSAT-NA Board of Directors for a two-year term.

The Station Program and all its associated files were evicted from their home web-site. They can now be found on the AMSAT-NA web site: <http://www.amsat.org/amsat/ftpsoft.html#windows>

A copy of the latest keplers is available on request by mail or packet; my mailbox is GB7HSN but please note that AMSAT-UK keplers are put out on packet weekly anyway and sent to KEPLER@GBR. When asking me for keplers please say which satellites: 'all' means about 250 satellites, but "all amateur sats" is adequate if that's really what you want.

More from the world of space and satellites next month.



Columnist Richard Limebear, G3RWL (left), with NASA astronaut Ron Parise, WA4SIR, at the AMSAT-UK Colloquium.

Photo: Richard Limebear, G3RWL

Satellite Rendezvous

and the usual round-up of other AMSAT-UK satellite and space news

Well, Christmas fast approaches and this is the season of goodwill to all men (and women), with the exchange of presents. If your household is like mine, often the spouse of the amateur will have difficulty in finding a gift to give. Perhaps now is the time to leave those ham magazines lying open on the dining or coffee table - open at a particular page, of course.

There is a multitude of bits and pieces available to the low power enthusiast, as a browse through any magazine will show. The range of rigs available to the QRP'er has never been better.

The 25-year long partnership of Jeff Waters and Peter Stanton may be unusual in today's hustle

Do beware of the clip on the bottom of these band modules; they can break, making it difficult to get the modules out. The junior version of this rig without the PA was called the Argo 556, a nice rig with all of the good parts and the bad of its bigger brother, minus the PA and producing just 5 W.

What must also be remembered is that even some of the older, bulkier commercial rigs can still provide huge amounts of fun at low power levels. The elderly FT-7 from Yaesu gave me my contact into the Åland Islands, on SSB and whilst mobile! Even the FT-757 and companion rigs from Icom and Kenwood can provide lots of fun, many being found at sub-£400 prices. The FT-7 now

tions equipment! Alan Lake of Lake Electronics is well known for providing 'the kits with all the bits'.

Tim Walford of Walford Electronics has some excellent kits, which includes a 160m to 6m SSB / CW transceiver. David Reid of GOBZF u-Kits provides a range of small kits based on the PIC IC. John, G8SEQ, of Sequence Electronics provide a range of simple kits both for HF and VHF. C M Howes is also a well-known supplier of kits that cover almost all aspects of the hobby. I must also finally make mention of Kanga Products who also supply a good range of kits [modesty, Dick! - GOBPS runs Kanga Products - Ed]. See Table 1 for the addresses of these kit manufacturers.

winter sports

Having made noises and pointed hints about the new toy requested for the sock hanging on the mantelpiece, there is the opportunity to put it to use after all the Christmas pud. The G-QRP Club's Winter Sports start on Boxing Day and run right through until New Year's Day. I must stress that this is not a contest, but a chance to get more QRP'ers on the air and give them an excuse to avoid relatives for an hour or so. All you have to do is get on the bands, preferably about the centres of activity such as 3560, 7030 and 14,060kHz and call "CQ QRP". Don't forget the WARC bands too, give 10,116kHz a try or even go up to 10m on 28,060kHz: you may be surprised what you bag. Please don't act in 'contest mode'; use this as a chance to have a 'ragchew'. Although there is a 'winner', it will almost certainly not be the op with the most number of contacts; it will be the one with the most interesting bag! There are no time limits other than the one above

Hands Electronics, Tegryn, Llanfyrnach, Pembrokeshire SA35 0BL; tel: 01239 698427.

Lake Electronics, 7 Middleton Close, Nuthall, Nottingham NG16 1BX; tel: 0115 9382509.

Walford Electronics, Upton Bridge Farm, Long Sutton, Somerset TA10 9NJ; tel: 01458 241224.

GOBZF u-Kits are available from Syon Trading, 16 The Ridgeway, Fetcham, Leatherhead, Surrey KT22 9AZ.

Sequence Electronics, 124 Belgrave Road, Coventry CV2 5BH; tel: 01203 617367.

Kanga Products, Seaview House, Crete Road East, Folkestone CT18 7EG; tel: 01303 891106.

Table 1: Contact information for UK QRP kit manufacturers.

QRP Corner QRP Corner

Dick Pascoe, G0BPS, dons red cloak and white beard!

and bustle, but they do have a huge range of stock, which includes the MFJ range of small QRP rigs. These single-band rigs have a huge following in the USA with their own news group on the Internet and even their own journal and club.

Ten-Tec is another concern known for QRP rigs. With their venture into the kit world they are producing a good range of equipment that also has a following in the USA, and I hope to have their 20m transceiver for review soon.

For those with a little more to spend, the SGC SG-2020 rig (see picture) is recovering fast from its bad publicity when it first appeared. Watch this space for another review soon.

Even the second-hand, or 'pre-enjoyed', rigs can provide a nice gift. The Index QRP Plus can be found for about £300 (make sure you get the later model with the modifications, though). The Ten-Tec Scout 555, a QRP rig with a 50-watt PA can be found at a fair price, often as low as £200. This price will depend on the plug-in band modules that come with it.

occasionally changes hands at under £150!

qrp kits

Talk of QRP rigs cannot miss out the range of kits available. Sheldon Hands of Hands Electronics provides what must be the very best of high-end kits. He even supplies the Arctic adventurers with their communication -



about dates. Any band may be used and any modes, so go on, try SSB too! Remember, that even a 2m handheld counts as long as the power limits are observed. Remember, our definition of QRP is 5 watts for a carrier signal (CW, FM etc) and 10 watts for a non-carrier signal such as SSB.

the last hw9?

There has been much jocularly on the gqrp Internet reflector, with one GM claiming for some time to have the last HW9 to be built. He got the kit not long ago and proudly announced his purchase, telling all that this was the very last one. He even has a part on his Internet signature stating he has the last HW9 to be built. Oh, poor man, how unfair. I am sorry to tell him he doesn't have the last one. I have!

Readers will remember that I reported the loss of Ian, G00KY, one of the G-QRP Club officers, who died recently. In amongst the huge amounts of equipment, components and unbuilt kits was

a boxed HW9 with PSU and QRP power meter. I have this unit at home now.

Shame on me, knocking a poor GM off his pedestal. He will have to remove part of his Internet signature too. What's the saying, he who laughs last etc. So, I have the last unbuilt HW9 . . . unless you know better, of course.

rallies

There have been comments that the G-QRP Club is not seen at many rallies, including Leicester. Having a booth at this huge rally would seem to make sense. We have often discussed it and each time put it off, as the club's own mini-convention is so close.

We have been to Picketts Lock but we considered that the income / interest generated by attending this show was insubstantial. We have also been to Brighton and Brats with some limited success.

Remember there are odd advantages of running a club table at a rally. The main ones are that you get to enter the venue very

early and often there are a few entry tickets thrown in with the table too. The bargains are often found before the real punters arrive; this was the very best part of the show as far as I was concerned when I was trading at the rallies. Many bargains found and enjoyed. Avoid the traders' tables, as they are there to make money too, but go for the club stands or the individual who is having a clear out. Usually bargains galore are to be had.

We would love to have a club

ple of members of the club are willing to travel to foreign rallies, or to any rally, at their own expense I believe we should support them. If members wish to see the club at other rallies, volunteers are needed to put on the show and promote the club, as George and I do at Dayton etc. We do make a profit for the club too, club sales usually being in excess of the cost.

Because of these remarks I will reiterate my oft-said comments, I pay for my flight to Dayton with my own money, I pay my share of

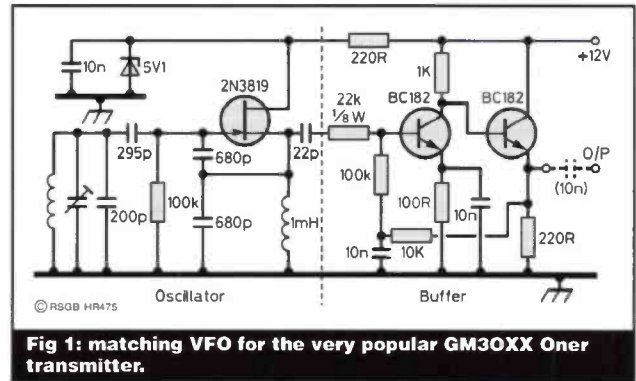


Fig 1: matching VFO for the very popular GM30XX Oner transmitter.

QRP Corner QRP Corner

to bring you some ideas for QRP Christmas pressies

stand at other rallies, preferably in the spring to balance the convention. Two things are needed, an organiser to book the table and co-ordinate helpers, and of course the helpers.

One member commented that perhaps members should forego Dayton or Friedrichshafen and do a British rally instead. He may well have a point, but if a cou-

the car hire halved with George. I pay for my own hotel bill. The club only pays for the stand at the show. George pays the same. Neither of us profits from club sales; in fact quite the reverse, we often find bargains for the club such as the 9MHz CW and SSB filters.

vfos

One part of homebrew that many builders seem to have trouble with is the VFO (variable frequency oscillator). We have been experimenting with varicaps for some time now but no matter what we try, they still have more drift than the standard variable air-spaced capacitor.

These are becoming more difficult to find, but can still be spotted at rallies if care is taken as you poke amongst the piles of goodies. The VFO shown in Fig 1 is the matching unit for the GM30XX Oner transmitter, so popular with club members.

For small size the coil can be wound on a T37/2 and even a trimmer capacitor used. For greater stability, use a decent former and variable capacitor.



VHF / UHF Message

Geoff Brown, GJ4ICD, says

Following on from last month's reports, a very large Sporadic E (Es) opening occurred on 15 August on 50, 70 and 144MHz. Six metres opened very early throughout Europe, and almost every European country was worked or heard in the UK. This was by far the biggest opening this year, and yet so late in the season!

Martin, G3VOF (Essex), reported working UA9SIX (LO91) at 1118UTC which was a new country. PE1PZS also worked the UA9 a little later, as did G3WOS, G3FPQ, G3HBR, GJ4ICD, G4CCZ, F6IFR and many more. The distance is around 4000km, which indicates double hop Es. There are some interesting facts here though! The UA9S prefix is issued to European Russia, however, the station was located in Omsk which lies east of the Urals, which split Europe and Asia and are quite clearly defined in the Times *World Atlas* as the border. At the time of writing we are sure (on information received) that UA9SIX was a special experimental test station. It was on a fixed frequency of 50.188MHz and never moved.

Dave, G4RGK, was in on the Es opening and reported the following on 144MHz: "It all started here about 0940UTC with LZ1AG (KN22), YU7KB (JN94) YU7ON and YZ7NOU (JN95). Heard about 10 other YU stations, last signals heard were at 1000UTC and 6m was going mad all morning". Romania, Yugoslavia and Bulgaria were also worked in the Channel

Islands on 144MHz. Al Harvey, GU7DHI (IN89), reported working YO4FRG/P.

70MHz was also wide open. John G0JL (in IO83, Lancs) reported working S51DI on SSB, CW, FM and AM. Dennis, GJ3YHU, also worked S53X and S51DI on the band for the first-ever 70MHz QSOs with GJ.

At 1650UTC LU3EJW (Argentina) was coming into Europe big time on 6m, several Gs were worked including G3WZT, G4RQI, G6IJJ and GM3POI. His best DX was OH2BC at over 12,800km! Eight countries were worked in Europe. A little later the ZD8VHF Ascension Island beacon on 50.0325MHz was copied by Al Harvey, GU7DHI, and yours truly.

On the 16th, Dave, N5JHV (DM62, New Mexico) had a 50MHz Es pipeline into the UK at 1745UTC. Dave worked several G stations at over 8000km, and later the same day Bill, GM4DGT, pulled off S51DI (Slovenia) on 70MHz (perhaps the first GM to S5?). At 1820UTC GD4XTT had an

Es opening on 144MHz to the Czech Republic, OK, and Jon, OY9JD (Faroe Islands), managed to work 7Q7RM in Malawi on 50MHz for a first between those two countries.

Whilst everybody was watching the BBC 9.00pm news on the 17th Larry, TZ6VV (Mali), had a 30-minute 50MHz opening

ONs, PAOs and GWs.

Laurence, GM4DMA, sent in a report of his 5X (Uganda) trip during mid August. The only signals he heard were from the S55ZRS beacon on 50.014MHz

Val, UN3G, from Kazakhstan - the only licensed station on 6m in that country.



into Europe via Es. Larry worked 35 grid squares, 11 countries, and completed 60 QSOs with many UK stations such as Mike, G3OIL; Trevor, G3ZY; and

on the 20th at 1845UTC and weak 49MHz TV video was also copied but not identified. Laurence was monitoring 50MHz for up to 18 hours a day!

Late August finally saw the Es season deteriorate. Jim, G0OFE, in Dorset was one of the very few people to catch a double hop 50MHz event on the 20th to OD5 (Lebanon).

From then on things just went downhill, as to be expected. A small Es opening on the 23rd provided a 'top end link' (F2 to Spain then Es to the UK), with Peter, PY5CC (GG54) in Brazil working 35 stations in ON, DL, SP, F, PA, G and GW in the opening which started at 2000UTC. His best DX was GM3POI.

Station A	Locator	Station B	Locator	Mode	Date (YYMMDD)	Distance (km)
Tropo						
GJ3YHU	IN89WF	GM3WOJ	IO77WS	?	980809	960
G4PIQ	JO01MU	GM4DHF/P	IO89QC	SSB	970810	840
GM3WOJ	IO77W0	G4RFR	IO90AS	SSB	880918	774
G4FRE/P	IO70PP	GM4ZUK/P	IO87WB	SSB	860921	734
G0EHV	IO94FW	G8KQW/A	IN69UV	SSB	880918	647
Aurora						
G3SHK	IO90DX	GM3WOJ/P	IO89KB	CW	820811	904
Sporadic E						
GW4ASR/P	IO82JG	5B4AZ	KM64MR	CW	810607	3465
GM4DIJ	IO85JW	ZB2BL	IM76HD	SSB	830603	2206
G0EHV	IO94FW	ZB2IQ	IM76HE	SSB	880603	2105
Meteor Scatter						
GJ3YHU	IN89XI	GM3WOJ/P	IO89KB	SSB	820812	1083

Table 1: 70MHz Records

VHF / UHF Message

'The DX Continue!' on 6, 4 and 2

aurora

Solar storms were in action on the 26th and 27th, with the 'K' index rising to a massive 8, this produced a widespread aurora on all VHF bands. On 144MHz stations as far south as JN33 (Mediterranean area) were worked by UK stations.

Several UHF operators made contacts via aurora on 432MHz, although this was mainly confined to the more northerly latitudes.

John, G4SWX, reported 144MHz auroral contacts with Lithuania, Italy and Croatia during the late afternoon of the 27th. Laurence, GM4DMA, reported the event as visually spectacular in the early hours of the 27th.

ZS on 6m

Early on 28 August, at 0600UTC, 50MHz beacons ZS6DN and ZS6TWB

Ivo, ZS6AXT, who is located in Pretoria, worked I, EH1, IS0, 4Z, F, EH3, EH5, SV, S5, YU on the 29th, whilst the 30th produced TZ6VV into Europe. This was a very widespread Es event with Larry working over 100 stations. Later in the day Argentina (LU) was worked in F / GJ.

solar flux

Into September now; 1 September recorded an SFI (Solar Flux Index) of a massive 179, this was the highest recorded so far in cycle 23, but beware! Solar flux does not always indicate good conditions on the VHF bands, by this I refer to F2 / TEP openings on 50, 70 and 144MHz.

During the last cycle some very intense observations and data were recorded in respect to openings versus solar parameters. On many occasions openings transpired during high geomagnetic / solar ac-

back to 6

Martin, G3VOF, In Essex reported a good opening on 6m on the 3rd, signals were copied from Z22JE (57) and 7Q7RM (579) in the 1700 - 1800UTC time slot. Martin runs a Yaesu FT-920 and a 3-500 amplifier from Linear Amp UK.

Cliff, G110V, caught a small Es opening on the 6th to Portugal, Finland and Estonia, and later in the day he also heard the 7Q7 beacon on 50MHz. Paul, ZS6PJS, in Pretoria reported some good DX on the same day on 6m, with JY9NE, SP6ASD, S59, DL, 9A2, SP2, SP8, LZ2, SV0, HB9QQ, PA0 and SP4 all being worked.

Poor conditions materialised for the 144MHz Trophy contest on the 5th and 6th. Howling gales, rain and very poor tropo were reported by many of the contesters.

Some very serious complaints of poor signal quality were heard on the band. However, I noted that most of the complaints came from people using FT-290s as receivers.

Sadly these radios are not 'bomb proof' when a station down the road is running 400 watts to a stack of four Yagis which will produce some 16 to 20kW ERP!

un3g update

It was widely reported during June that UN3G (MN83KF) worked into Europe on 50MHz via Es. Several stations in the UK claimed a contact with Valery, UN3G, in Kazakhstan, near the Chinese border.

Valery kindly sent this news via e-mail on 15 September: "I am starting my first steps on six metres from 31 May 1998. During the period 31 May to 11 June I have had 50 QSOs with 18 countries as follows: UR, EK, YU, GJ, I, YO, LZ, UT, SP, DL, PA, 5B4, 9H1, OK, G, OH, OD, Z31 in 34 grid squares. I have heard VR2 (Hong Kong), EA, TA, and F stations and my personal DX record is 5932km with GJ4ICD on 1 June at 1755UTC. The only other G station I have

worked is G4HBA (I081) on 2 June at 1624UTC. I am using an Alinco DX-70 with only 10 watts output and a four-element Yagi. I have a special 50MHz licence dated from 10 September 1995 to 10 September 2001."

Valery has been licensed since 1967 and has been very active on 144MHz Es, MS and satellites before turning to 50MHz this year. He said he had not added any more stations to his 50MHz log this year as of 15 September, but this poses the question of who really was the 'UN3G' who many worked? Well, it certainly was not Valery, I'm afraid, but one of our European jokers! Valery sent a copy of his special permit for 50MHz, and it is the only current permit in Kazakhstan.

70MHz news

David, GM4WLL (I085), reported his DX on the band during the August Trophy contest. David made 35 QSOs with his 20 watts and 4-element Yagi. Best DX was G4ZAP/P in IO70 at a distance of 646km. He worked a total of 21 squares and four countries.

On other information received it shows that 53 stations were active during the event, which for a 70MHz contest is pretty good.

GM7TKA/P also operated during the event and worked G4ZAP/P at 666km with just 1W power after an equipment failure.

No news has been received of any two way contacts with South Africa on the band as of yet, ZSS have not yet reported hearing any UK beacons or stations from Slovenia.

It may well be another year before we see the first 70MHz UK to ZS QSO, however keep a watch on the band especially around the equinox times.

Table 1 this month shows the 70MHz 'records' listing which had been postponed due to lack of space in a previous *Ham Radio Today*.

That's all for this month, please send snail mail to my new address: Geoff Brown, GJ4ICD, Rockdene, La Rue du Rondin, St Mary, Jersey, Channel Islands JE3 3EA, or via e-mail to: equinox@itl.net

Frank, 9Y4VU, in Trinidad, uses a converted PMR rig for his 50MHz activities. He was worked extensively in Europe during the last solar cycle.

were copied in Europe. This opening is most interesting, as on 28 August 1988 the first ZS6 to G / GJ QSO took place on the band. It seems quite incredible that a repeat some 10 years later has occurred exactly to the day! Later, at 1810UTC, ZS6AXT was 539 in Jersey and stations in Argentina were worked in France.

tivity periods, on other occasions no openings transpired when the solar flux levels were at their peak. So don't get caught out, watch the trends on 28MHz, and especially on 14,345 and 28,885kHz where a dedicated group of VHFers passes information around the world.



The Monastery of Simon Peter in Mt Athos.



Late summer saw a massive increase in the solar flux index to around 170 and this produced some of the best HF conditions I've heard in the last five years. During the mornings the HF bands all the way up to 28MHz were opening to the Pacific area - not just the western Pacific zone (around Guam and the Mariana Islands) which is the first to appear under marginal conditions, but also the central Pacific around Fiji which is a much tougher path. The reason the central Pacific is tougher can be found in the geometry of the various radio wave tracks. To reach Fiji a signal has to go directly over the north pole, whereas the route to Guam stays in lower latitudes where the incoming solar radiation levels are higher and the ionosphere is denser.

And speaking of Fiji; Roberto, EA4DX, generated a lot of excitement in August and September by his excellent operating skills as 3D2DX from both the main group of Fijian islands and the separate DXCC entity of Rotuma. Roberto managed to find virtually all the HF openings to Europe and was also extremely active on the 'LF' bands.

The general HF propagation pattern at sunspot maximum (and *could* come as early as next year) is for the HF bands above 14MHz to open in the morning to the western Pacific, and for signals to move progressively around via the north pole to the eastern Pacific (Hawaii and French Polynesia) in the late afternoon and evening. Openings to the south can occur at almost any time, though Africa tends to fade out in late afternoon and South America peaks in the evening. The situation on 14MHz is a little more complicated because the openings around mid-day can be limited by absorption effects and thus



the band is best in the morning and afternoon.

During December and January, the long path, a year-round phenomenon on 14MHz, may also extend to the higher bands as the southern hemisphere receives increased levels of ultra-violet. The last few years have seen good openings to Japan on 21MHz over South America around 0700UTC and occasional sounds from Hawaii via the Indian Ocean a little later.

'lf' peak season

The winter period around Christmas is when the so-called 'LF' bands (1.8, 3.5 and 7MHz) really come into their own. Pacific stations are audible on 7MHz just after sunrise in the UK - often peaking around 0645UTC - and from shortly before sunset in the UK through to Pacific sunrise. Remember that no US stations can operate phone below 7150kHz (General class cannot come below 7225) but they are often listening down in our band and looking for split frequency QSOs.

Fred Laun, K3ZO, has pointed out that there are many Chinese

Novice stations operating CW between 7050 and 7070kHz. This is a phone band for most people in Europe and Asia but it may be possible to hear one or two of these stations if you listen carefully. On 21MHz the Chinese Novice frequencies are 21,110 - 21,150kHz.

On 3.8MHz, throughout the festive season, the band is open to DX from around 1430UTC (Asia, western Pacific, and north-west USA) to 0800UTC (east / west coast USA, South America, eastern Pacific). The International Amateur Radio Union has designated the 3775 - 3800kHz window - known as the *DX window* - "reserved for intercontinental working" in order to keep this part of the band relatively quiet. It is impossible to hear any DX if a large number of local QSOs are taking place but sadly there are always a few selfish individuals who choose to 'ragchew' in the DX window just because it is a relatively quiet spot. And an equal nuisance to my mind are the people who use this section for talking about DX rather than working it. I recall several wasted openings when I was on Lord Howe Island trying to make myself heard while peo-

HF Happenings HF Hap

This month Martin Atherton, G3ZAY, takes us to Mt A

ple in Europe were bragging non-stop about what they'd worked earlier! On CW the equivalent DX part of the band is from 3500 - 3510kHz, but here the official wording says that intercontinental QSOs only have priority rather than being given a reserved space. Again, as with 7MHz, the US allocations are a little different and although the Advanced and Extra Class licensees can come below 3.8MHz, the Generals are confined above 3850kHz. It is often worth checking just above 3.8MHz as some DXpeditions, in countries with an appropriate allocation, will operate just above our band and listen down.

It is worth keeping these DX windows on 3.5 / 3.8MHz clear around the clock in December and January - not only around the hours of darkness. We may not be able to hear any DX at mid-day in the UK, but our friends in Scandinavia can find Pacific and Asian stations coming over the north pole at any time and do not appreciate QRM from us in the 'south'.

KL7ZZ, KL7XX, AL7R and AL7O are active during their spare time from the emergency communications module at the ARCO Alaska base camp from the Arctic north coast of Alaska. They plan to concentrate on 80 and 160 metres during the autumn and winter: look for them at 0300 - 0600 and 1900 - 2100UTC. They could be quite easy to work in the UK as the Arctic Ocean coast is north of the local auroral zone and signals from that area in previous years have been many 'S'-units up on stations further south in Fairbanks and Anchorage.

curio of the month

In previous issues I have described some of the odder DXCC entities like the ITU buildings and the Sovereign Military Order of Malta. Recent activity from one of the oddest locations prompts me to mention it this month. The autonomous Greek area of Mount Athos is a remote peninsula in north-eastern Greece under the total control of the Orthodox church and governed by a council of monks. The only inhabitants are associated with the monasteries and are all men - even female animals are banned!

According to the Constitutional Charter of the Holy Mountain, which is enshrined in the constitution of Greece, Mt Athos is a self-governed part of the Greek state which is spiritually subject to the Patriarchate of Constantinople. The Holy Community is the government of the Mountain and comprises the twenty representatives of the monasteries, who are chosen, one from each monastery, for a one-year term. Executive authority rests with a Holy Supervisory Committee.

Recent activity has been by Monk Apollo, SV2ASP/A, but Dominik, DL5EBE, visited Apollo in September and attempted some 160m activity. The QSL route is: Monk Apollo, Dochiariou Monastery, GR-63087 Mount Athos, Greece.

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dxpedition news

Alex, KH6HE, is now stationed on Johnston Island for the next year or so. He will be operating as KH3/KH6HE from the well-equipped club station and says he will be on the air daily on 14,240kHz around 0500UTC. It might also be worth checking 28,450kHz which he has designated for working US Technician class licensees. This is quite a rare one as it is a military island and is rumoured to be the site of a chemical weapons incinerator - clearly not the regular holiday location.

Bruce, WD4NGB; Bill, W4WX; Bob, W6RJ; Rob, W6KR; Zorro, JH1AJT; Nellie, XE1CI; Vince, K5VT; Joe, KO4RR; and Vance, N5VL plus a few others hope to be QRV from Eritrea (E3) in the first half of November as E31DX. This obviously depends on the political / military situation in the area which has been far from safe in recent months. The group will have on-line logs, with daily updates and has set up three web pages. <http://qsl.net/eritrea> or http://members.xoom.com/eritrea_ or http://members.xoom.com/space_a/eritrea.htm. Eritrea is number five on the



ARRL DXCC list of most wanted entities.

Den, J11FLB, plans to operate again from Ogasawara as J11FLB/JD1 from 30 December to 3 January.

Dan, K8RF, reports the upcoming DXpedition to Navassa Island is still waiting for landing permit approval. He expects to hear something soon and is hoping to get the expedition on the air in November or December.

voodoo contest group

The Voodoo Contest Group really is 'the big one'. Eleven operators - seven from the UK - will activate 5V7A from Togo, West Africa, with seven one-kilowatt stations and 17 antennas in November. This will be the third consecutive 5V7A entry to the CQ World Wide CW Contest by the Voodoo Contest Group. Some 15,000 CW contacts are expected on the six non-WARC bands during the weekend of 28 / 29 November. A few days before and after the contest the operators will be active (including WARC bands and possibly RTTY)

Andy Chadwick, G4ZVJ, part of the Voodoo Contest Group, which is operating from Togo, West Africa, at the end of November.



with personal callsigns from Togo and possibly also from Ghana as follows:

Roger, G3SXW (5V7A, 9G5SX); Steve, G3VMW (5V7VM, 9G5SW); Bob, G3ZEM (5V7ZM, 9G5ZM); Fred, G4BWP (5V7??, 9G5??); Cris, G4FAM (5V7FA, 9G5CH); Andy, G4ZVJ (5V7VJ, 9G5VJ); Rob, GM3YTS (5V7RF, 9G5RF); Vince, K5VT (5V7VT, 9G5VT); Jim, K7GE (5V7JL, 9G5JL); Mike, KC7V (5V7MF, 9G5MF); Lee, KY7M (5V7??, 9G5??).

QSLs go to the home callsign, except 5V7A which is via GM4FDM. E-mail requests for 5V7A bureau replies are encouraged via 5v7a@voodudes.com, or via the bureau, or direct to: Tom Wylie, GM4FDM, 3 King's Crescent, Elderslie, Renfrewshire PA5 9AD.

This year the Voodoo Contest Group offers a new and exciting Internet web page which all are invited to visit, at <http://voodudes.com>. The site will include a simple electronic form which can be used for QSL requests via the bureau, or to see if you are in the 5V7A log. The site also contains propagation guidance and how best to work the group on the various bands. From the UK this should be a simple chip-shot on all bands.

Please let me know what you would like to see in this column. How about letting me know what you find on the 'LF' bands - 160 - 40m - over the Christmas period. 73 de Martin, G3ZAY (e-mail: G3ZAY@dial.pipex.com)

penings HF Happenings

thos and visits Togo with the Voodoo Contest Group

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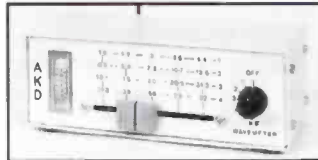
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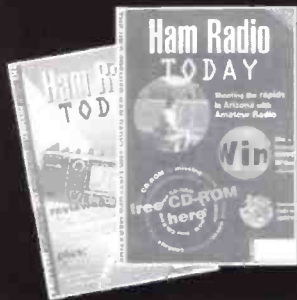
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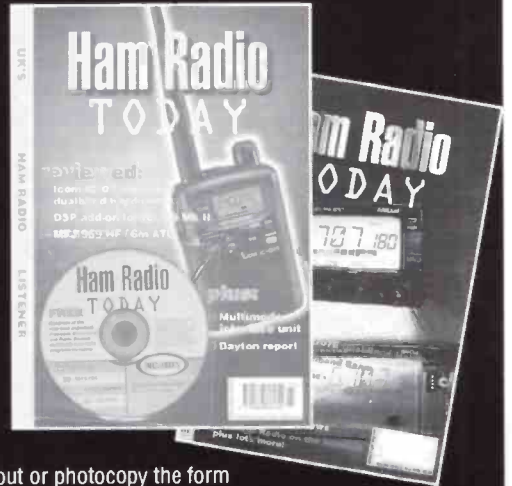
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All hobbies have their own jargon, and Amateur Radio is no exception. The Help Files are designed to help beginners understand some of the terms and unusual 'Amateur Radio-ese' used in Ham Radio Today. We hope you find this page useful.

Page 10 - Leicester Amateur Radio Show Report. This show, and many others like it throughout the year and throughout the country, provide an ideal opportunity for beginners to get a 'hands-on' look at new equipment. New equipment is usually launched in time for the Leicester show in the autumn, or the London show in March. For beginners who want to learn more about the hobby there is always the opportunity to talk to experienced amateurs and representatives of the Radio Society of Great Britain (RSGB), the country's national Amateur Radio society. We thoroughly recommend everyone tries to attend at least one such show each year.

Page 16 - All in a Day's Work. A dummy load is an 'artificial

tune your receiver to the CW (lower-frequency end) of the HF bands to hear the amazing amount of activity! Whilst such contests are incredibly popular with the thousands who participate, and with many thousand more 'casual' operators too, many others dislike them because they find it difficult to find an operating frequency for their 'normal' (non-contest) contacts. However, by gentleman's agreement, contests do not take place on the three 'WARC' bands, 10, 18 and 24MHz, leaving these free for non-contest activity.

Page 42 - QRP Corner. In this month's column, Dick Pascoe, G0BPS, describes a number of commercial transceivers suitable for QRP operation. The term 'QRP' is one of the 'Q'

levels. Turning down the microphone gain control on SSB is unsatisfactory, for although the total power transmitted decreases, the residual carrier remains at the same level, thus decreasing the amount of carrier suppression to an unacceptable level. The transceivers listed by Dick either operate at around 5 watts output or are capable of having their power level varied down from 100 watts to around the 5 watt level. The **Variable Frequency Oscillator (VFO)** is the part of a transmitter or transceiver which enables the equipment to operate over a wide range of different frequencies. A VFO is not strictly necessary: a crystal or series of crystals may be used, although this will restrict the use of the transmitter to a single fre-

quency or series of single 'crystal-controlled' frequencies.

that country obtained access to the band, but there is a race on to see who will make the first British Isles to South Africa contact on 70MHz. Our columnist Geoff Brown, GJ4ICD, is predicting the first such contact will be made next year.

Page 46 - HF Happenings. Solar flux is a way of indicating the amount of solar activity. The solar flux is measured at a frequency of 2800MHz (10.7cm) at observatories all over the world. Measurements at an observatory in British Columbia, Canada have been made daily since 1947. Generally, the higher the figure, the better HF propagation is likely to be - though, of course, it is never quite as simple as that!

Auroral zone. Whilst VHF operators like the aurora, as VHF

The Help Files

Ham Radio Today's guide for beginners to Amateur Radio

antenna', consisting of one, or a series of, resistors with an identical impedance to the output of the transmitter being tested, ie usually 50Ω. Using a dummy load instead of a real antenna means that adjustments can be made to the transmitter without any interference being caused to other users on the band. It is often necessary to make transmitter adjustments with a known load of 50Ω impedance, and often a real antenna, whilst nominally 50Ω, may be anything but!

Page 36 - Net Communication. The **CQ World Wide** contests are the biggest Amateur Radio operating events of the year. Many thousands of stations around the world compete to see which can make the most contacts with the most countries as possible during a weekend. The 'phone' (to all intents and purposes this means SSB) contest is during the last full weekend of October and the CW (Morse code) contest is the last full weekend of November, ie **28 / 29 November** this year. Just

codes, originally used as question and answer abbreviations on Morse code. "QRP?" means "Shall I reduce power?", whilst "QRP" (without the question mark) means "Reduce power". However, it has now come to be used to mean simply 'low power operation'. The definition of what is 'low' power is given in the column. Some Radio Amateurs enjoy operating at low power to see just how far a signal will go with 1 watt or 5 watts power. It is said that there is more skill involved in making a contact using 1 watt than there is in making the same contact with 100 or 400 watts power (although arguably the *most* skill is required by the *high-power* operator, who has to receive the QRP station's weak signals!) QRP to QRP contacts, where *both* sides of the contact are using low power, require more skill still. Many commercial transceivers are unsuitable for QRP operation, as they operate at around 100 watts output and have no means of easily reducing the power to QRP

levels. Turning down the microphone gain control on SSB is unsatisfactory, for although the total power transmitted decreases, the residual carrier remains at the same level, thus decreasing the amount of carrier suppression to an unacceptable level. The transceivers listed by Dick either operate at around 5 watts output or are capable of having their power level varied down from 100 watts to around the 5 watt level.

Page 44 - VHF / UHF Message. Some readers have asked why world-wide stations are reported from the UK on 50MHz, but only a handful of countries on 70MHz (or 4 metres). There are two main reasons for this. Firstly, propagation is different on the two bands. Although 'only' 20MHz apart, F2 and Es propagation is far less common at 70MHz than at 50MHz. More important than this, however, is the fact that very few countries have an amateur allocation at 70MHz. Apart from the UK, the only countries which have, or have had, licensed stations on 70MHz are the Republic of Ireland, Gibraltar, Cyprus, and the British Sovereign Bases in Cyprus. Recently Slovenia and South Africa have also licensed amateurs on 70MHz (it is hoped that this is part of a growing trend and that gradually more countries will licence amateur operation on this band). Contacts were made with Slovenia almost as soon as amateurs in

signals can be reflected from the auroral curtain to provide exciting long-distance contacts, HF operators do *not* like auroral activity. HF signals which have to pass through the auroral zones are attenuated considerably, or often do not make it at all. From the UK, it is more difficult to contact Japan than Australia, although Japan is closer, because the great circle (direct) path which radio waves follow passes through the northern auroral zone, which sits close to the north pole. The auroral zone is roughly oval in shape, and varies in size depending on the amount of geomagnetic disturbance. However, it does not (usually) cover the north pole - some signals can therefore pass *to the north* of the auroral area, and thus remain unattenuated by it. This is why stations in the north of Alaska are often able to make contacts which stations further south in Alaska are unable to, and why stations in northern Alaska can be much stronger than those further south.

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Aberdeen ARS

Meets Fris. 6 Nov junk sale. 13 Nov AGM. 20 Nov address by AARS new president. Details from Robert Duncan: 01224 896142.

Appledore & DARC

7.30pm 3rd Mon of month at the Appledore Football Club room. 16 Nov quiz. 21 Dec Christmas party. Brian Jewell: 01237 473251.

Aylesbury Vale RS

8.00pm on 1st & 3rd Wed of month at Hardwick Village Hall, 3 miles north of Aylesbury on A413. 4 Nov computers and how they work. 18 Nov discussion evening. 2 Dec G6NB construction contest. Secretary Gerry, G7VVF: 01296 432234.

Ayr ARG

7.30pm fortnightly Fris. 6 Nov Antiquan antics, GM3FDM. 20 Nov Video editing at Craigie Campus. 4 Dec

your QSL cards, Jean, G0AWX. 2 Dec club darts match, Fred, G7LPP. 9 Dec club forum, Jean, G0AWX. 16 Dec Christmas social, Muriel, G4YZR. 23 Dec Christmas greetings, Dave, G7PKJ. 30 Dec New Year greetings. Jean Fletcher, G0AWX: 01275 834282

Bromley & DARS

7.30 for 8.00pm on 3rd Tue of month, at Victory Social Club, Kechill Gardens, Hayes, Kent. 17 Nov Internet, Graham, G4NPD, & Alan, G0TLK. 15 Dec mince pies. Alan Messenger, G0TLK: 0181 777 0420; e-mail: alanmg@clara.net

Bromsgrove ARS

8.00pm on 2nd & 4th Tue of month at Lickey End Social Club, Alcester Rd, Burscot, Bromsgrove. 10 Nov video. 24 Nov Christmas meal. 8 Dec discussion, night on air. 22 Dec informal. A Malcolm, G8DEC: 01527 875573.

Bury Radio Society

7.45 for 8.00pm Tues at Mosses Cen-

Cheshunt & DARC

8.00pm Weds at the Church Room, Church Lane, Wormley, Herts. 11 Nov open. 18 Nov AGM. 25 Nov members' forum. 2 Dec on air. 9 Dec open. 16 Dec Christmas party. 23 Dec no meeting. Details John Crabbe, G3WFM, 47 Torrington Dr, Potters Bar EN6 5HU or at GB7HSN.

Chester & DARS

8.00pm 1st, 3rd & 4th Tues. 10 Nov bring & tell. 17 Nov surplus equipment sale. 24 Nov club DXpeditions. 8 Dec construction contest. 15 Dec Christmas social. G Landen-Turner, G00XA, 0151 608 3229.

Colchester Radio Amateurs

7.30pm Main Building, Colchester Institute, Sheepen Road. 12 Nov club videos. 26 Nov visit to W&S at Hockley. Brian, G0GGM, 01206 822547.

Cornish RAC

7.30pm on 1st Thu of month at

Denby Dale (Pie Hall) ARS

8.00pm Weds at the Pie Hall, Denby Dale. 4 Nov 'Yorkshire from the Air', Trevor Cunningham. 18 Nov talk & slide show, Huddersfield Astronomical Society. 25 Nov visit Huddersfield Observatory. 2 Dec Power Point demo, Kevin, G1FYS. Tony, G4LLZ, 01484 664360.

Dorking & DRS

7.45pm 4th Tues at the Friends Meeting House, South St, Dorking (opposite the Spotted Dog). Informal meetings on 2nd Tues at various venues. 24 Nov antenna symposium, Chairman John Greenwell, G3AEZ. 4 Dec annual dinner at Dukes Head, Leatherhead (contact Julie Weller on 01372 813418). 15 Dec Christmas get-together. John Greenwell, G3AEZ: 01306 631236.

Dundee ARC

7.00pm Tues at Dundee College, Graham St, Dundee, *unless otherwise*

This Month at the Clubs

ham radio today latest club news

Phillips Corporation, GM3AXX. 18 Dec Christmas party. Peter Sturgeon, MM0BQP, 01292 282597.

Bangor & DARS

8.00pm on 1st Wed of month at Clandeboye Lodge Hotel, Bangor, Co Down. 2 Dec rig clinic. Fri 11 Dec Christmas dinner (same venue). Roy Finlay, G10WVN: 01247 460716.

Barry ARS

Tues at Sully Sports & Leisure Club, South Road, Sully CF64 5SP. 10 Nov prize radio quiz, Glyn, GW0ANA. 17 Nov on air. 24 Nov 'computers in radio', John, GW0ACH. Richard Montimore, GW4BVJ, 01656 658600.

Bristol (RSGB) Group

7.15 for 7.30pm last Mon of the month at Avon Combined Services Club, St Pauls Rd, Clifton, Bristol. 30 Nov homebrew competition. 14 Dec Christmas party. Robin Thompson, G3TKF: 01225 420442; e-mail: robin@g3tkf.demon.co.uk

Bristol (South) ARC

7.30pm Weds at Whitchurch Folkhouse Association, Bridge Farm House, East Dundry Road, Whitchurch, Bristol. 4 Nov 160m on air. 11 Nov, Christmas raffle, Steve, G0UQT. 18 Nov AGM. 25 Nov show

tre, Cecil Street, Bury, Lancashire. 10 Nov surplus equipment sale (biggest ever!) 8 Dec AGM. Keith Rothwell, G8EAP, keith@g8eap.demon.co.uk

Buxton Radio Amateurs

2nd & 4th Tue of month. 10 Nov AGM. 24 Nov video. 11 Dec social. 22 Dec no meeting. Derek Carson, G4IHO: 01298 25506; G4IHO @ GB7DAD

Chelmsford ARS

1st Tue of month. 1 Dec Marconi Wireless Telegraph Company, Tim Wander. Charles Shelton, G0GJS: 01245 256654.

Cheltenham ARA

7.45 for 8.00pm on 1st Fri of month at Prestbury Library, The Burgage, Prestbury, Cheltenham. 6 Nov Richard, G4ERP, head of electronics Benetton Formula on radio & motor racing. 4 Dec AGM & social. Details from the Secretary, Mrs Patricia Thom, G1NKS: 01242 241099 (9.00am 9.00pm); e-mail: g1nks@g3nks.demon.co.uk

Chesham & DARS

8.15pm Wed at The White Hill Centre, Chesham. 11 Nov technical topic. 18 Nov quiznight, Liz, G0ETU. 25 Nov AFS planning. 2 Dec AGM. 9 Dec members' memoirs, Phil, G8BLB. 16 Dec Christmas party. 23, 30 Dec no meetings. Terry Thirlwell, G0VFW, 01582 427883.

Perranwell Village Hall, near Truro. 6 Nov surplus sale. 3 Dec Christmas party. Robin Worsley, G0MYR: 01209 820118.

Coulsdon ATS

7.45pm on 2nd Mon of month at St Swithun's Church Hall, Grovelands Road, Purley. 9 Nov digital TV, Tim Trew, G8JXV. 14 Dec AGM, cheese & wine. Andy Briers, G0KZT, 01737 557198.

Coventry ARS

8.00pm Fris at Binley Church Hall, Brinklow Road, Coventry. 6 Nov Guy Fawkes supper. 13 Nov on air. 20 Nov visit TBA. 27 Nov on air. 4 Dec talk / egg race. 11 Dec on air. 18 Dec Christmas social evening. 25 Dec no meeting. Robin Tew, G4JDO, 01203 673999.

Cray Valley RS

8.00pm 1st & 3rd Thus of month at Progress Hall, Admiral Seymore Road, Eltham, London SE9. 5 Nov Unicom, Dennis Goodwin, G4SOT. 19 Nov QRP, Dick Pascoe, G0BPS. 3 Dec test equipment, Chris, G0FDZ. 17 Dec Christmas curry. Tony Fishpool, G4WIF: 0171 739 5057 (office hours).

Crystal Palace & DRC

4 Nov valve receivers, G300U, G1PKS. 21 Nov surplus sale. V H Johnston, G1PKS; tel: 0181 653 2946; e-mail: vjohns653@aol.com

specified. 10 Nov club night. 17 Nov Cameron McKinnon telephone systems. 24 Nov club night. 1 Dec Breaking the Enigma Code Part 2, Ken McConnell, at Melrose Terrace Lecture Theatre. 8 Dec club night. 15 Dec Christmas surprise, Alan Martin, GM7ONJ. 22, 29 Dec no meetings. Ray Bennett, GM0PTP, 01382 817206.

Dunstable Downs RC

8.00pm Fris at Chews House, 77 High Street South, Dunstable, Beds. The club has 'library nights' on 1st Fri of month, plus: 13 Nov Junk sale. 27 Nov on the air / open night. 18 Dec Christmas party. Paul McVay, G7TSJ: 01582 861936.

Exeter ARS

7.45pm 2nd Mon of month at Moose International Centre, Blackboy Road, Exeter. 3rd Mon is committee / open meeting. 9 Nov, 14 Dec TBA. Theo, G3EQM: 01392 875498.

Fareham & DARC

7.30pm Weds at Portchester Community Centre. 4 Nov 'Know your Ferrits', Andrew, G0AMS. 11 Nov Restoring the Marconi 52 Set, Steve, G7HEP. 25 Nov review of year's RAE / NRAE questions, Dave, G8IOJ. 9 Dec modern rig theory 4 - VHF / UHF Tx, Mick, G4ITF. 16 Dec steam video, Dave, G3VXM. 23 Dec Christmas get-together. 30 Dec no

meeting. Andrew Sinclair, G0AMS: 01329 235397.

Felixstowe & DARS

8.00pm at Orwell Park School, Nacton, Ipswich. 16 Nov Internet home page competition. 14 Dec Christmas videos, mince pies. Paul, G4YQC: 01394 273507.

Gloucester AR&ES

Mons. 9 Nov 136kHz listening. 16 Nov on air. 23 Nov Morse practice. 30 Nov on air. Tony Martin, 01452 618930 office hours.

Hambleton ARS

7.30pm at Allertonshire School, Northallerton. 12 Nov talk. 26 Nov ATV demo. 10 Dec video. John Hampson, G0VXH: 01845 537547, or packet: G0VXH @ GB7CYM.

Harlow & DARC

Tues at Mark Hall Barn, First Avenue, Harlow. Novice course Mons at same venue. Len, G7UFF, 01279 832700.

Hastings Electronics & RC

7.30pm on 3rd Wed of month at West Hill Community Centre, Croft Road, Hastings. 18 Nov I K Brunel, Keith Ellis, G8GM. Doug Mephram, G4ERA: 01424 812350.

Hereford ARS

Fris. 6 Nov repeater logic, Geoff

Ipswich Radio Club

Meets Weds. New Sec: Keith Gaunt, G7CIY, 01394 385431, e-mail: keith.gaunt@bt.com

Keighley ARS

8.00pm Thus at Ingrow Cricket Club, Hainworth Rd, Ingrow, Keighley. 1st Thu is on air night, except where shown. 12 Nov natter night. 19 Nov video. 22 Nov Keighley Christmas, Ian Dewhurst. 12 Dec Christmas buffet. 17 Dec Bradford Industrial Museum, E Nicholson. Ann, MOBLLZ: 01274 499733.

King's Lynn ARC

26 Nov surplus equipment sale at 19th King's Lynn Scout HQ, Chequers Lane, North Runcton, at 7.30pm. Refreshments. David Hackett, G0WDK, Habitat, Station Rd, Walpole St Andrew, Nr Wisbech, Cambs PE14 7LZ.

Leicester Radio Society

Mons. 16 Nov quiz, Ken Kaminsky, M1BWY. 23 Nov collecting & caring for books, David Siddons. 30 Nov constructors' competition. 14 Dec quarterly progress. 21 Dec mince pies & sherry. 'On air' nights are held on Mons not shown above. John Alexander, G7GCK: 0116 231 3194.

Leiston ARC

7.30pm Leiston Town Athletic Asso-

ciation. 1 Dec 'back to school': propagation. 8 Dec on air. 15 Dec 'old computer night': bring that old computer or abacus! 22 Dec Christmas social, venue TBA. 29 Dec no meeting: on air 145.425MHz from your own QTH. Ian, G8SNF, 01509 218259.

Loughton & DARS

6 Nov Ordinary General Meeting. 20 Nov 'where silicon meets quartz', Marc, G0TOC. 4 Dec Christmas dinner. 18 Dec HF night on air. Marc Litchman, G0TOC, 0181 281 0886 (evenings); g0toc@ndirect.co.uk

Louth & DARC

8.00pm 1st Wed of month at Woodman PH, Eastgate, Louth, Lincs. 4 Nov furniture restoration, Julie Wilson. 2 Dec Christmas party. Roger Wilson, G4IPE: 01507 602220; e-mail: g4lrc@lincom.demon.co.uk

Malvern Hills RAC

8.00pm 2nd Tue of month at Town Club, 30 Worcester Road, Malvern. 10 Nov receivers, Roger Dixon, G4BVY. 8 Dec AGM. Secretary Dave Hobro, G4IDF, 60 Linksvie Crescent, Newtown, Worcester WR5 1JJ; 01905 351568 (evening / weekend), e-mail: DHobro@aol.com

Mansfield ARS

7.30 for 8.00pm 2nd & 4th Mons of

Newbury & DARS

7.30pm on 4th Wed at Memorial Hall, Upper Bucklebury, near Newbury. 25 Nov Newbury repeater, Roger Beck, G6IBI. 16 Dec Christmas social. Ian Trusson, G3RVM, 01635 826019, g3rvm@compuserve.com

Newquay & DARS

7.30pm 1st & 3rd Fri at Treviglas School. 6 Nov CW / repair evening. 20 Nov HF evening. 4 Dec RLO Eric White, G0RJI. 12 Dec Christmas Part at The Griffin, Newquay. 18 Dec packet radio, Roger, G4OCO. Clive, MOBGA, 01637 875848.

Norfolk ARC

7.00 for 8.00pm Weds at Ugly Bug Public House, Colton. Informal evenings, including night on air, construction QRP, & Morse practice, on 1st, 3rd & 5th Weds, plus: 4 Nov science for all, Arnold, G3PTB. 18 Nov library night: bring your favourite radio book and explain why. 2 Dec construction contest / VFO competition. 16 Dec Christmas dinner. Hon Sec, Sandra Simpson, 2E1F0F.

Nunsfield House ARG

Fris at Nunsfield House Community Association, 31 Boulton Lane, Alvaston, Derby. 6 Nov 'This is Your Life?' 13 Nov junk sale. 20 Nov Ernst

This Month at the Clubs

Anderson, G3NPA. Eddy, G0UDF: 01432 263575.

Hoddesdon Radio Club

8.00pm alternate Thus at Conservative Club, Rye Road, Hoddesdon, Herts. 12 Nov *Ham Radio Today* Editor Steve Telenius-Lowe, G4JVG. 26 Nov AGM. Don, G3JNJ, 0181 292 3678.

Horndean & DARC

7.30pm 1st & 4th Tue of month at Lovedean Village Hall, 160 Lovedean Lane, Lovedean, Hants. The 1st Tue is usually a social evening. 24 Nov data transmission, Phil Bridges, SMC Ltd. 1 Dec social. 22 Dec video. Stuart Swain, G0FYX: 01705 472846.

Hornsea ARC

4 Nov 'activity'. 11 Nov debate. 18 Nov new PC technology, G8EQZ. 25 Nov AGM. 2 Dec 10GHz ATV repeater, G3RMX. 9 Dec committee meeting. 16 Dec party. 6 Jan 'activity'. No details of venue given. Contact secretary J R Thompson, G0TPS, 01964 562258 for details.

Horsham ARC

8.00pm on 1st Thu of month at Guide Hall, Denne Road, Horsham, West Sussex. 5 Nov digital video, Tim Trew, G8JXV. Details from David Miller, G4JHI, tel: 01403 252101, e-mail: g4jhi@dmiller2.force9.co.uk Internet: http://www2.prestel.co.uk/jelley/harc

ciation. Victory Rd, Leiston. 1 Dec 'convivial soiree'. John Rabson, G3PAI: 01394 460298; fax: 01394 420795; e-mail: word.factory@zetnet.co.uk

Lincoln Short Wave Club

7.45pm Weds at Railway Sports & Social Club, Ropewalk, Lincoln. 4 Nov junk sale. 7 Nov club contest. 11 Nov committee meeting. 18 Nov 'an inside view', Nigel, G7KIE. 25 Nov construction contest. John, G1TSL, 01522 793751.

Liverpool & DARS

8.30pm Tues at Churchill Club, Church Road, Wavertree, Liverpool. 10 Nov on air. 17 Nov amateur satellites. 24 Nov surplus sale. 1 Dec QRP. 8 Dec on air. 15 Dec Christmas social. Publicity Officer, Ian Mant, G4WWWX: 0151 722 1178.

Lothians Radio Society

7.30pm on 2nd & 4th Weds of month at Orwell Lodge Hotel, Colinton Road, Edinburgh. 11 Nov slide show. 14 Nov Indian meal. 25 Nov minitalks. 9 Dec history of telephone, Sandy Ness. Tommy Main, GM4DCL: 0131 663 8501.

Loughborough & DARC

Mons at Science Lab, Hind Leys Community College, Forest St, Shepshed (when college open) for general meetings & Tues as follows: 10 Nov on air. 17 Nov computer workshop. 24 Nov

month at Debdale Sports & Recreation Club, Debdale Ln, Mansfield Woodhouse. 9 Nov audio-visual evening with Horace Dove. 23 Nov shack construction. 14 Dec Christmas social. David Peat, G0RDP, 01623 631931.

Maxpack

Midlands AX25 Packet Radio Users Group. No details of venue given. 7 Dec Christmas natter night. Ed Loach, G4ZXS, 01902 741877 (evenings), g4zxs@gb7max.#28.gbr.eu

Medway AR&TS

7.30pm Fris at Tunbury Hall, Catkin Close, Tunbury Ave, Chatham, Kent. 6 Nov 160m antennas, Colin, G3VTT. 13 Nov homebrew equipment, Peter, G0GIR. 20 Nov fish & chip supper. 18 Dec Christmas party. Mrs Gloria Ackerley, G3VUN, tel / fax: 01634 710023.

Mid Sussex ARS

Fris. 13 Nov Basic Packet, Darren, G4VTQ. 27 Nov photo competition. 4 Dec Christmas dinner. 18 Dec Grand Christmas quiz, mince pies. Phillip Baldwin, G3LCF, 01273 557878.

Mid-Warwickshire ARS

10 Nov slide show, Bill Ford. 24 Nov introduction to DAB, Ken Turner, G7RYO. 15 Dec Christmas meeting. Don Darkes, G4CYG, 01926 424465.

Krenkl, RAEN, talk by Mike Hewitt, G4AYO. 27 Nov packet radio for beginners. 4 Dec mince pies. 11 Dec shack tidying. 18 Dec on air. Neil Davison, M1AFB: 01332 736362.

Poldhu ARC

7.30pm 2nd Tue of month. 10 Nov tricks with diodes, John, G0GUO. 8 Dec history of Poldhu, Davey, G3AGA. David Barlow, G3PLE: 01326 240738.

Pontypool ARS

7.00pm Tues at Great Western Staff Assn Club, Griffithstown, Pontypool. RAE course available; all welcome. Details David Giles, MW1CVM, tel / fax: 01495 758533; e-mail: david@mw1cvm.freereserve.co.uk

Radio Society of Harrow

8.00pm Fris at Harrow Arts Centre, Uxbridge Rd, Hatch End, Middx. 13 Nov construction contest: 'fabulous prizes'. 27 Nov video. 11 Dec Christmas social. 18 Dec scouting and radio, David Talaber, G0CAG. Jim Ballard, G0AOT: 01895 476933 (evenings / weekends) or 0171 278 6421 (day).

Reading & DARC

8.00pm 2nd & 4th Thus at the Pavilion, Woodford Park, Woodley, Reading. 12 Nov linear amplifiers, Peter

Chadwick, G3RZP. 10 Dec AGM, construction contest, cheese & wine. Chris Nunn, G0MZN: 0118 987 4870.

Salisbury ARC

2nd & 4th Tues. 10 Nov microwave operating, Martin, G80FA & Neil, G4LDR. 24 Nov HF operating, mock RAE. 8 Dec PIC micro controlled Morse tutor, Brian, G0UKB. 15 Dec Christmas meeting. E J Donaghy, G7WAA, 01722 334935.

Shefford & DARS

8.00pm Thus at Church Hall, Amptill Rd, Shefford, Beds. CW practice from 7.30pm. 5 Nov Morse quiz. 12 Nov junk sale. 19 Nov talk. 26 Nov challenge briefing, Paul, G1GSN. 3 Dec lo fi speaker challenge. 10 Dec technical discussion. 17 Dec mince pies. Derek Clarkson, G4JLP: 01462 851722.

South Birmingham Radio Society

8.00pm 1st Wed of month at West Heath Community Centre, Hampstead House, Fairfax Rd, West Heath, Birmingham. The club is "generally" open Mons, Thus & Fris from 8.00pm. 4 Nov AGM. Fri 11 Dec Christmas party. Don Keeling tel: 0121 458 1603.

South Coast AR Events Group

8.00pm 2nd Mon in Eastbourne area.

Way, Stevenage. 10 Nov 20m on air. 17 Nov soldering. 24 Nov video. 1 Dec HF operating. 8 Dec video. 15 Dec Christmas supper. No meetings between 16 Dec and 12 Jan. John Churchill, M0ARQ, 01462 684962.

Stourbridge & DARS

8.00pm on 1st & 3rd Mon at the Radio Shack, Oldswinford Hospital, Heath Lane, Stourbridge. 16 Nov surplus sale. 7 Dec on air. 21 Dec Christmas festivities. Gordon Bryant, G0TZV: 01384 395206.

Stroud RS

7.30pm alternate Weds at Minchinhampton Youth Club, nr Stroud, Glos. 11 Nov video. Stuart, G0GNM: 01453 752411; e-mail: stuart.g0gnm@gifford.co.uk

Surrey Radio Contact Club

7 Dec 160m kite aerials, L Atkinson. No details of venue given. Bernard Wynn, G8TB, 0181 660 7517.

Sutton & Cheam RS

7.30 for 8.00pm on 1st Thu (natter night) & 3rd Thu (formal meeting), at Sutton United Football Club, Borough Sports Ground, Gander Green Lane, Sutton, Surrey. 19 Nov junk sale. 17 Dec Christmas buffet. John Puttock, G0BWW: 0181 644 9945.

Torbay ARS

7.30pm Fris at ECC Social Club, Highweek, Newton Abbot. Informal meetings most Fris & talk / event once a month. 20 Nov steam trains, A Matthews. 18 Dec Christmas party & quiz. Peter Tanner, G4VTO: 01803 864528 (working hours).

Trowbridge & DARC

8.00pm 1st & 3rd Wed of month (3rd Weds usually 'natter nights') at Southwick Village Hall, Southwick, on A361 Trowbridge / Frome road. 4 Nov constructor's cup. 18 Nov open meeting. 2 Dec Christmas party, presentation night. Ian Carter, G0GRI: 01225 864698 (evenings / weekends).

Verulam ARC

7.30 for 8.00pm at RAF Association HQ, New Kent Road, St Albans. 8 Dec Easter Isd DXpedition, Wes Lamboley, W3WL / MOBLA. 15 Dec Christmas celebration. 25 Dec Christmas nets 10.00am 2m, 10.30am 14295kHz. Walter Craine, G3PMF, 01923 262180.

Wakefield & DRS

8.00pm Tues at Community Centre, Prospect Road, Ossett, West Yorks. 10 Nov Talk by Bob, G3WWF. 17 Nov on air. 24 Nov TBA. Ian Roberts, M0BFO, 01924 216502.

nity Centre, Church Lane, Bradwell. 13 Nov AGM. 20 Nov talk TBA. 27 Nov operating & construction. 11 Dec operating & construction. 18 Dec Christmas party. Tony Besford, G3NHU, 01493 721173.

Yeovil ARC

7.00pm Thus at the Red Cross Centre, Grove Avenue, Yeovil. 5 Nov foreign phrases for QSOs, G3KSK. 12 Nov the Langport transceiver, G3PCJ. 19 Nov station controls, G7SDD. 26 Nov on air / committee meeting. 3 Dec spectrum analysers, G8AWB. 10 Dec practical fault diagnosis, pt 2, G3TSK. 17 Dec mince pies on the air. 24, 31 Dec no meetings. Mike Smith, G7SDD, tel: 01963 250594.

Ynys Môn AR Users Group

No details of meetings received. Tony Anziani, GW4ZWN, Ty Coch, Penrhyd, Amlwch, Ynys Môn (Anglesey).

National and International Groups

Amateur Radio Caravan and Camping Club (ARCC)

For further details please contact the Hon Sec, Mrs Norma Jackson, 41

This Month at the Clubs

ham radio today latest club news

SCAREG is a new club organising special event stations with charity theme, educational workshops, Novice instruction. Contact Stuart Constable, M1BWU, 01435 863020 for details of venue.

Southgate ARC

7.30pm on 2nd & 4th Thu of month at Winchmore Hill Cricket Club, The Paulin Ground, Firs Lane, Winchmore Hill, London N21. 12 Nov G6QM construction contest. 26 Nov demonstration of construction contest winners. 10 Dec AGM. Bernie Godfrey, G4AOG, 01923 674542.

South Notts ARC

7.00pm Weds at Fairham Community College, Farnborough Rd, Clifton, Nottingham. 11 Nov on air. 18 Nov ropes & knots for Amateur Radio, David, M0BWW. 25 Nov on air. 2 Dec mini talks. 9 Dec members' forum. 16 Dec sherry & mince pies. 18 Dec Christmas dinner, venue TBA. 23, 30 Dec no meetings. Vice Chairman tel: 01509 672846.

Spenn Valley ARS

Bradford. 5 Nov junk sale. J R Wilde, G0FOI, 01274 875038.

Stevenage & DARS

7.15pm Tues at the Day Centre, Chells

Swansea ARS

19 Nov radio & the Spanish civil war, GW3INW. D Williams, GW4BNJ, 01792 519046.

Swindon & DARC

5 Nov RTTY, Ian Dredge, G4DIE & Ben, M1CWN. 12 Nov informal. 19 Nov used equipment sale. 26 Nov computing, Den Forrest, M0ACM. 3 Dec Christmas dinner. 10 Dec quiz. 17 Dec informal. Den Forrest, M0ACM, tel / fax: 01793 822705.

Telford & DARS

8.00pm Weds at Community Centre, Bank Road, Dawley, Telford. 4 Nov on air. 11 Nov junk sale. 18 Nov Peter Groves, G3MWQ, entertains. 25 Nov test your rig. 2 Dec on air. 9 Dec rally group AGM. 16 Dec annual dinner. 23 Dec club net on 144.6 / GB3TF. 30 Dec 'Black Flag' evening. Mike Street, G3JKX, 01952 299677.

Thornton Cleveleys ARS

Meets Mons. 9 Nov sunspot cycle video. 16 Nov on air. 23 Nov transmitter testing. 30 Nov meteor scatter. Jack Duddington, G4BFH, duddington@wavenet.co.uk or 8 The Grove, Thornton Cleveleys, Lancs FY5 2JD.

Welland Valley ARS

7.15pm 1st Tue of month at Great Bowden village hall, The Green, Great Bowden, Market Harborough. 1 Dec make your own PCBs, G3WKR. Maurice Goodwin, G3WKR, 01536 730809.

Weston-Super-Mare RS

7.30 for 8.00pm 1st & 3rd Mon at Woodspring Inn, High St, Worle, Weston-super-Mare. 23 Nov workshop night. 7 Dec homebrew evening. 21 Dec workshop night. Graham Pinder, G8WAR, tel: 01934 415700.

West Somerset ARC

7.30pm 1st Tue of month in Room GB7, Gibbs Block, West Somerset Community College, Minehead, Somerset. 3 Nov the deer hunter. 1 Dec quiz night. Alan Elliott, M0AOJ: 01643 707207.

Wimbledon & DARS

2nd & last Fri of month at St Andrews Church Hall, Herbert Rd, Wimbledon SW19. 13 Nov surplus equipment sale. 11 Dec Christmas social. J Gale, G4WYJ: 01737 356745.

Yarmouth RC

7.30 for 8.00pm Fris exc no meeting 1st Fri of month, at Bradwell Commu-

Creswell Farm Drive, Stafford ST16 1PG.

British Amateur Radio Teledata Group (BARTG)

has a quarterly magazine, *Datacom*, and holds a rally and HF RTTY contest each year. For more details about the group contact Membership Secretary Bill McGill, G0DXB, 14 Farquhar Road, Maltby, Rotherham, S.Yorks S66 7PD, tel: 01709 814010 (Tues, Thurs & Fri, 7.00pm to 9.00pm. Sat/Sun before 9.00pm). or via GB7WRG. Internet: <http://www.bartg.demon.co.uk>

British Amateur Television Club (BATC)

produces a quarterly magazine, *CQ-TV*, and holds its own rally each year. BATC has an Internet site at <http://www.batc.org.uk> For details contact: Dave Lawton, G0ANO, Grenehurst, Pinewood Road, High Wycombe, Bucks HP12 4DD.

CDXC (Chiltern DX Club) - the UK DX Foundation

membership is open to all amateurs and SWLs who have worked (or heard) more than 100 DXCC countries. It is

continued on page 56

for sale

- **PYE M290** series hi-band VHF ex-PMR rigs with info for modifications. £10 inc postage. Tel: 0141 632 5408 (Glasgow).
- **KW-2000A SSB** CW transceiver 1.8 - 28MHz with power supply unit. KW E-Zee Match ATU, mic. circuits, service and instruction manual, £100 ono. Neville, tel: 01438 229332 (Stevenage).
- **FIVE REELS** concert recording tape, 1.0 mil, 7in reel, 1800ft. Each reel new, boxed. £80 ono. Tel: 01767 677070 after 6.00pm (Beds).
- **LOWE HF-150** with backlight, keypad, IF-150 computer interface and software. In excellent condition. £200. Bob. tel: 01440 708493 (Suffolk).
- **TEN-TEC CORSAIR** with matching PSU, extra filters,

- **FT-726R TRANSCEIVER** with 2m / 70cm / HF and satellite modules, vgc, boxed, with manuals £450. Prefer buyer inspects and collects. Tel: 01705 255459 (Hants).
- **KENWOOD TS-930S** with SP-930 £495. Yaesu FT-101ZD and FV-101Z VFO £260. Yaesu FL-2100Z linear amplifier £350. Yaesu FRG-8800 receiver £185. Daiwa CNA2002 ATU £150. Ham Jumbo base transceiver £95. Kenwood MX60 microphone £50. Reasonable offers considered. Tel: 01636 830057 (Newark).
- **SCANNERS AR-1000** with all accessories and manual £150. PRO32A USA version 30 - 54, 108 - 174, 380 - 512MHz AM / FM with nicads, charger, manual £100. PRO2025 basic 16ch VHF / UHF mobile with mtg bracket and manual £50. FRG-7 HF rx £140. Tel: 01225 704280 (Melksham, Wilts).

disc programs. £40 ovno plus postage or buyer collects. GOEMQ QTHR, tel: 01736 795860 (West Cornwall).

- **FT-101E INC** CW filter. Full working order. £200. FT-270R 25W FM mobile Full working order £120. Bob. G4KSG, tel: (work) 0121 356 6001 (Birmingham).

wanted

- * **INSTRUCTION HANDBOOK** or copy for Tandy Micronta LCD bench top digital multi-meter cat no. 22-195. Expenses paid. Tel: 01395 265059 (Exmouth, Devon).
- * **WANTED POWER** supply for WWII Tx (TCS-12) 220V @1A, 440V+ @ 1A. home-brew. why? Will pay P&P. contact Peter, works QTH 9am - 5pm tel: 01287 634397 (Yorks).
- * **FRONT PANEL** for TS-430S in vgc please. Your price paid

budget. Please call Roger on tel: 01202 470134 (Christchurch).

exchange

- ◆ **XPLORER OPTI** months old with leather case, boxed as new. For a complete AOR8000 and Scout Model 40 plus all manuals. Straight swap. Ring any time, phone or fax: 01473 785203 (Suffolk).
- ◆ **ICOM IC-706** Mk1 with extras and box. exchange for a VHF / UHF all mode base station. M1CWV QTHR, tel. 01332 741564 (Derby).
- ◆ **AOR 900 SCANNER** 108 - 950, 5 10 12.5 25kHz steps. 100 channel all usual controls. Swap for Eddystone 888, 940 or 960, or Trio or Yaesu receiver, or Realistic DX394 or AKD HF3 or similar. Moving soon, must go. Tel: 01493 700162 (Norfolk).
- ◆ **DATONG AUTO** RF speech processor, select dB gain steps

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boxes and manuals, exc cond, £400. Tel: 01708 250578 evenings and weekends (Essex).

● **AUTECH RESEARCH** RF analyst model RFI. new, unmarked. with extras and instructions £90 (list £159.95). KW-107 ATU unmarked with instructions £75. RSGB 1998 *Yearbook* £5. All plus postage. Tel: 01795 873100 (Kent).

● **ICOM IC-28E** 2m mobile, good condition, £50. Sony ICF-2001D general coverage receiver, vgc, boxed £125. Also B40 receiver with photocopy handbook £100. IC-4SRA handheld UHF / wideband receiver, boxed, vgc, £75. Tel: 0181 690 9913 (office hours).

● **ICOM IC-706** Mk II DSP unmarked, boxed, as new £700. Autech Research RF analyst RFI (list price £159.95) with accessories and manual, new, £90. Datong FL-3 £70. All ono plus postage or collect. G2HKU. tel: 01795 873100 (Kent).

● **YAESU FT-101ZD** Mk III. WARC. fan. CW filter. mic. 12V DC unit. handbook. spare set valves. gwo. £290 Also ext VFO FV-901DM with handbook. boxed. leads etc, £85. Can be seen working. Brian. tel: 0121 458 2946 (Birmingham).

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☺ **NEED HELP** to reduce SWR on a Diamond CP22E 2m 5/8 wave stacked GP antenna. At present it's about 3:1. Any ideas would be appreciated. Also, where would I find the address of Diamond Antenna Corp? Ron Archer. G6WXS. e-mail g6wxs@cableinet.co.uk

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← continued from page 54

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G-QRP Club

publishes a quarterly journal, *SPRAT*, devoted to low power communication. For membership details, contact their Secretary, Rev G Dobbs, St Aiden's Vicarage, 498 Manchester Road, Rochdale, Lancs OL11 3HE; tel: 01706 31812 or see their web site at <http://www.btinternet.com/~g4wif/gqrp.htm>

International Short Wave League (ISWL)

who, as well as running an international QSL bureau for amateurs and SWLs, has a monthly magazine (*Monitor*) and regular get-togethers at their rally stands plus on-air nets on HF and VHF. For more details send an A4 sized SAE to: ISWL HQ, 267 Pelham Road, Immingham DN40 1JU. Internet: <http://www.aber.ac.uk/~srj5/iswl.htm>

Irish Radio Transmitters Society (IRTS)

publishes regular newsletters giving details of local activities, and the yearly IRTS Callbook. They also have a video library. For further details of IRTS, contact Joe Ryan, EI7GY; tel: (Eire) 01 2854250 or by e-mail: jryan@iol.ie Book Sales: Dave Moore, EI4BZ, 12 Castle Ave, Carrigtwohill, Co Cork.

Radio Amateurs' Emergency Network

can be contacted at Hunters Moon, Newton-le-Willows, Bedale, N Yorks DL8 1SX. 24hr emergency national contact line: tel: 0141 621 2121; Raynet supplies enquiries: tel: 0141 620 1000; Training Team, PO Box 2, Chinnor, Oxon OX9 4SR; Packet BBS: GB7NRC; Telephone BBS: +44 (0) 1296 393737; Internet web site: <http://www.sgi.leeds.ac.uk/raynet/>; HF news net: Sun 0830 local, 3663kHz.

Radio Amateur Invalid and Blind Club (RAIBC)

is a registered charity which raises money for radio / computer equipment, and audio cassette courses for home study, for blind, deaf and disabled amateurs. The club attends rallies throughout the year, and collects surplus equipment for resale. Please

contact Honorary Treasurer / Membership Secretary Mrs Shelagh Chambers, 78 Durlley Ave, Pinner, Middx HA5 1JH. Web site address: <http://www.gurney.co.uk/raibc>

Radio Amateur Relief Expeditions (RARE)

is a registered charity made up of radio amateurs and friends who take aid to Eastern Europe and organise summer camps for young people to learn about amateur radio, English language and life in the UK. New members are required to support this work both at home and by taking part in expeditions. Please contact: The Secretary, RARE, 1 Allfield Cottages, Condover, Shrewsbury SY5 7AP; tel: 01743 873815; fax: 01743 874729; packet: G6FHM@GB7PMB; e-mail: rare@donsun.demon.co.uk

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is the licensing authority for all UK radio amateurs. They have a large number of free publications, including the booklet *How to Become a Radio Amateur*, and their *Novice Licence Information* sheet and can offer advice on many aspects of licensing. New Kings Beam House, 22 Upper Ground, London SE1 9SA. Amateur Radio line, tel: 0171 211 0160. General enquiries,

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Radio Society of Great Britain (RSGB)

is the internationally-recognised national society, which has been representing UK Radio Amateurs and short wave listeners for 85 years. Members of the RSGB receive a 100-page colour magazine sent to their home each month, and also have the advantage of free QSLing, entry in RSGB contests, and help in obtaining planning permission for antennas. A network of over 2000 volunteers is on hand to help the Radio Amateur and short wave listener with any enquiry. Lambda House, Cranborne Road, Potters Bar EN6 3JE; tel: 01707 659015; Internet site: <http://www.rsgb.org> and e-mail: info@rsgb.org.uk

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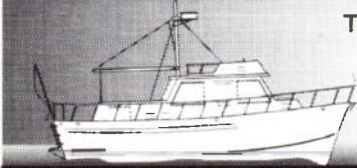
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advertiser index

3TH Ltd	57
AKD	48
Amateur Radio Communications Ltd	57
Essex Amateur Radio Services	26
G2DYM Aerials & Projects	57
G3RCQ Rigs of Distinction	50
GWM Ltd	51
Jaycee Electronics	57
Kanga QRP Kits	57
Kenwood Electronics	IBC
Lake Electronics	50
Lowe Electronics Ltd	IFC
Martin Lynch & Son	30, 31
Multicomm 2000	57
Radio Society of Great Britain	35, 51
Ronal Computers	50
Skywave Marine Services	57
SRP Trading	14, 15
The Shortwave Shop	50
WACRAL	57
Waters & Stanton plc	32, 33
Wilson Valves	57
Yaesu UK Ltd	OBC

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