

# Ham Radio TODAY



**reviewed:**

**Yaesu FT-847: we bring you the UK's first detailed technical review**

**New radio software and books reviewed plus:**

**Travel to Temotu in the South Seas with Jim Smith, VK9NS**

**Coaxial plugs and cables**

[www.rsgb.org/hrt](http://www.rsgb.org/hrt)





## Clear Digital-Sound with the NEW JRC NRD-545 DSP Receiver

The latest model in the JRC range, the new NRD 545, which is their first receiver using DSP (Digital Signal Processing) from the IF stages onwards.

The DSP enables a wide choice of digitally implemented filters to be provided, together with IF shift and continuously variable passband width. The combination of these facilities gives the NRD 545 a level of performance than has previously been unheard of in a receiver costing less than £10,000.

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- DSP Noise reduction
- DSP Beat Canceller
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- DSP Notch Filter
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- DSP BFO
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- DSP Squelch
- DSP Tone Control
- DSP S-meter
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- Wide Dynamic Range
- Variable Tuning
- Multiple Scan Modes
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- Sleep Timer
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### What Chris Lorek, G4HCL says about the NRD-545\*

"sometimes has a dream, and it came true when he tried the NRD-545 in his shack"

"I believe the NRD-545 to be the very best HF receiver I've ever had the pleasure of using in my amateur shack"

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"being able to narrow the IF bandwidth right down gave superb results"

"exceptionally good filter responses"

**"Ham Radio Today Review", April 1998**

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## NEW CATALOGUE

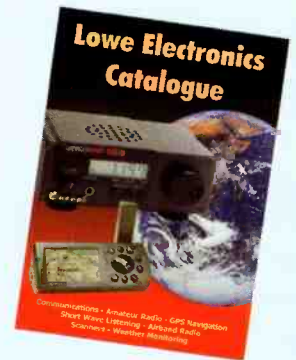
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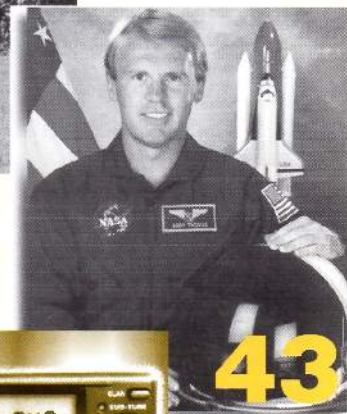
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Ham Radio  
TODAY

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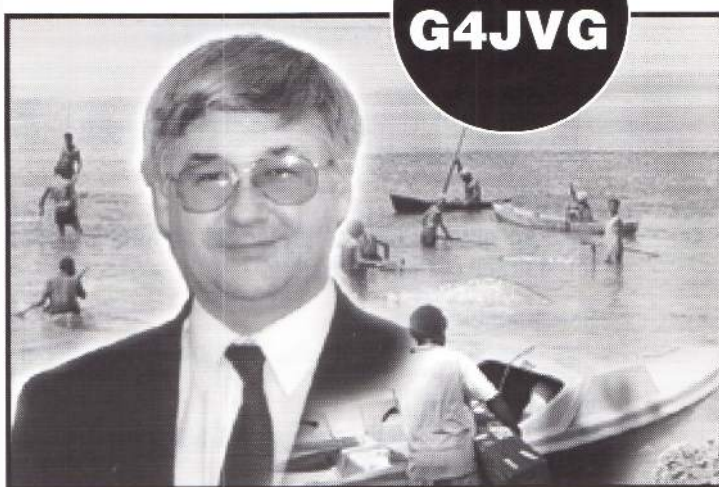
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tion may be reproduced in any form  
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Here at *Ham Radio Today* we strive to bring you the very latest and best Amateur Radio news and reviews. In our first six months we have been fortunate to bring you a number of 'firsts': we have the UK's first monthly column about the Internet and Amateur Radio, we're the first UK Amateur Radio magazine to bring you free cover-mounted CD-ROMs, we brought you the first UK previews of the Yaesu FT-847, the SGC SG-2020, and the FT-100, and we even had a 'world exclusive' - the world's first full technical review of the JRC NRD-545 DSP receiver.

Lucky *Ham Radio Today* readers have won an Icom IC-746 HF / VHF base station transceiver (at £1700 the most valuable Amateur Radio prize offered in a UK magazine), an NRD-545 DSP receiver, a Hora C-408 UHF handheld - and five pairs of tickets to the Royal International Air Tattoo. There'll be more competitions with valuable prizes coming up soon.

This month, I'm pleased to be able to bring you two more 'firsts'. We have a report by Jim Smith, VK9NS, on his operation from Temotu Province in the Solomon Islands. I believe this to be the world's first report on the recent



Editor  
G4JVG

ways use a loudspeaker and *never* monitor their own transmitted SSB signal. Therefore whether or not a rig has a 'monitor' facility would be important to me, but not perhaps to many amateurs. Secondly, if I was about to spend £2000 of my money (or even £200) on a piece of new equipment, I would want to know what an independent person thought of the equipment - before I parted with my cash!

So what happens if a reviewer finds something substantially

the customer often gets a better quality product as a direct result of the review.

## down to earth

I'm aware that I could be accused of 'blowing my own trumpet' rather too much in the foregoing. I'm therefore grateful to a couple of correspondents who have recently brought me back down to earth. I have included the letter from one of these readers on page 20. He pointed out that, as an

## Blowing our own trumpet

Ham Radio Today Editorial by Steve Telenius-Lowe, G4JVG

expeditions to this remote area in the South Seas, which is likely to become the newest DXCC entity. The other is the first UK full technical review of the long-awaited Yaesu FT-847 HF to UHF transceiver. This remarkable new rig is the most talked-about piece of Amateur Radio equipment for years and is likely to become a 'classic' rig in the future.

## reviews

Sometimes Amateur Radio magazines are criticised for their reviews. I have often heard it said that reviews consist only of advertiser's 'puff' and that they gloss over equipments' failings.

Well, modern Amateur Radio equipment usually *is* very good. Criticisms of the equipment are often minor, and either of the 'niggling' or 'personal preference' variety. There is also a limit to the amount of detail which can be fitted into the available space. In many cases what one reviewer likes or dislikes, another reviewer may not consider important at all. For example, I always use headphones and monitor my own SSB signal (so that I can be certain that I do not have any RF feedback or that I am not using too much speech compression). Many al-

wrong with a rig he is reviewing? Well, he *could* simply report the fault in the review. In many ways this is the easy option: readers believe that they are not having the wool pulled over their eyes, so they're happy (unless they have just bought the rig in question). But in reality the reviewer would be doing the reader a disservice. What if the fault was just on the particular example being reviewed? It certainly wouldn't be fair to damn a rig because of one rogue individual.

Or what if the fault was indeed a genuine one, but easily fixed? In many cases, magazine reviewers are the first independent people to 'get their hands on' the equipment, and consequently they sometimes *do* find design problems which had escaped the manufacturer's attention. In these circumstances, the only sensible thing to do is to confer with the manufacturer or importer *before* the review is published. Almost always, the manufacturer is pleased to find out what it is that has caused the problem and to remedy it before large stocks appear on the market.

In this way, reviews in Amateur Radio magazines help both the trade and - more importantly - the customer, as at the end of the day

absolute beginner, he found some of the jargon used in *Ham Radio Today* difficult to understand. As a result, I have decided to include a page for beginners each month, starting next month, which I hope will go some way to explain 'Amateur Radio-ese' for those who, each month, may pick up *Ham Radio Today* from their newsagent's shelf for the first time.

My other correspondent pointed out that there is little in *Ham Radio Today* for listeners, as opposed to licensed transmitting Radio Amateurs. Whilst I agree that there is little *specifically* for listeners, I would argue that very nearly *all* the content of the magazine should be of interest to both transmitting amateurs *and* listeners. In the current issue, arguably the only item which may not really be of interest to listeners is the Yaesu FT-847 review, and I make no apologies for including that. Nevertheless, as a result of the reader survey which appeared in the April issue of the magazine, I am aware that we have a high proportion of listeners amongst our readers and therefore I am planning to include a few more features specifically for them in the magazine in future.

# k7uga sk

Former US Senator Barry Goldwater, K7UGA, died on 29 May at the age of 89. Barry Goldwater stood for President of the USA in 1964 but retired from politics in 1986. He was first licensed in 1921 and used his position to benefit the hobby by working on legislation to set up reciprocal licensing facilities with other countries; Goldwater himself was one of the first foreigners to operate from Taiwan, as BV0BG. In 1982 he was instrumental in setting up the Volunteer Examiner programme and the 10-year licensing term enjoyed by American amateurs. The Goldwater name will continue to benefit Amateur Radio as, in 1983, the \$5000 Goldwater Scholarship was founded. It is awarded by the ARRL each year to a deserving Radio Amateur to encourage a spirit of achievement and dedication in the field of communication.



BV0BG

The Beaumont Conference Centre, venue for the HF and IOTA Convention.

**hf convention**

Photo: Ien Trusson, G3RYM

All who operate on any of the HF bands - and all who aspire to do so - will find something of interest for them at the RSGB HF and IOTA Convention. It takes place over the weekend of **9 - 11 October** at the Beaumont Conference Centre, Old Windsor, in Berkshire. A full lecture programme has already been scheduled, including presentations on solar cycle 23, tower safety and maintenance, digital signal processing, Islands on the Air (IOTA) presentations, the 9MOC and 3B7RF DXpeditions, an HF Committee forum, and much more. A tour of newly-refurbished Windsor Castle is being organised for those less interested in HF matters!

Day visitors are welcome, but if you wish to participate in all the activities, accommodation is available on site. For full information, including booking forms, contact Fay Huxley, 2E1EUA, at RSGB headquarters, Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE; tel: 01 707 659015; fax: 01707 645105; e-mail: sales@rsgb.org.uk

## 'ppe returns

Following a very successful operation in May [see *Ham Radio Today* May page 5 - Ed], special event station GB2PPE, celebrating the life and work of wireless pioneer Peter Pendleton Eckersley, is due to be back on the air from **4 to 31 July**. Special QSLs signed by PPE's son, Myles Eckersley, will be available via the bureau.

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## dx cyclists

A 1000-mile cycle ride from John O'Groats to Land's End is being attempted by Clive Ellis, G4NVX, and Ron Cartin, EI4FWB. The cycling duo set off on 17 June, equipped with FM handheld transceivers for the 2m and 70cm bands. They intend to complete the journey in three weeks, and their proposed route takes them through the Galloway Hills, the Lake District, along the Welsh border country, and across the Severn Bridge into the West Country.

## wrc-99 postponed

The 1999 World Radio Conference has been postponed until April 2000. The International Telecommunications Union (ITU) has accepted the invitation of the government of Turkey to host the conference. This suggests that WRC-2001, where Article S.25 of the Radio Regulations on Amateur Radio is scheduled to be discussed, will also be delayed.

## new px for pitcairn

Pitcairn Island, the lonely British outpost in the middle of the Pacific Ocean, has a new Amateur Radio prefix: VP6. Pitcairn was formerly VR6, but the prefix block VRA - VRZ has been ceded to China as part of the reversion of Hong Kong (VR2) to Chinese sovereignty.

## young woman engineer of the year

Nominations are invited for the 1998 Young Woman Engineer of the Year, an award by The Caroline Haslett Memorial Trust and The Institution of Incorporated Engineers (IIE) in electronic, electrical and mechanical engineering. The award is made to a woman under the age of 30 on the closing date, 9 October 1998, who is engaged in electronic, electrical and mechanical engineering. The award brings with it a cash prize of £1000, with £600 for a runner up. For further information please contact the IIE, Savoy Hill House, Savoy Hill, London WC2R 0BS; tel: 0171 836 3357; fax: 0171 497 9006; e-mail iie@dial.pipex.com



**1997 Young Woman Engineer of the Year Claire Drew, a Systems Engineering Manager at GEC Marconi Avionics working on helmet mounted sighting systems for RAF Jaguar aircraft.**

**new uhf repeater**

GB3CM is the callsign of the new 70 cm repeater operated by the Carmarthen Amateur Radio Club. It operates on 433.200MHz and, thanks to its location at Peniel, north of Carmarthen, has excellent range from Cardiff to Ilfracombe to Pembroke. For more details please contact the chairman of the club, Roy Holt, GW6OLS, tel: 01792 875501.

**how many hams?**

According to the IARU, there were 2,777,000 Amateur Radio operators in the world in 1997 (The ARRL Letter Online).

**yaoty**

No, it's not a new callsign from Afghanistan - YAOTY is the Young Amateur of the Year, and there's still just time for you to nominate someone for this prestigious award. The award is open to any Amateur Radio enthusiast under the age of 18 at the closing date - **31 July 1998**. They don't need to have an Amateur Radio licence, but the following areas of activity are taken into account when applications are assessed: radio construction, radio operation, community service (eg helping the disabled or assisting in emergency communications), encouraging others (eg through the Novice licence scheme), and school projects.

The Young Amateur of the Year and the runner-up will be presented with their prizes at a special ceremony at the RSGB HF Convention in October. Prizes include cash sums and Amateur Radio equipment from the RA, RSGB and the radiocommunications industry, as well as invitations to tour the RA's radio monitoring station at Baldock.

If you would like to nominate a young amateur for this prestigious award, please ask Marcia Brimson, 2E1DAY, for an application form. Contact her on tel: 01707 659015, or write to YAOTY, RSGB, Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE.



The 1997 - 98 Young Amateur of the Year, Emma Constantine, 2E1BVJ, being presented with one of her many prizes by Ham Radio Today Technical Consultant Chris Lorek, G4HCL.

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**world amateur radio day**

World Amateur Radio Day, an annual event organised by the International Amateur Radio Union, takes place this year on **Saturday 19 September**. This year the theme is 'communicating worldwide for three-quarters of a century', which commemorates the first two-way trans-atlantic contact between stations in France and the USA on 27 November 1923.

IARU Region 1 will be broadcasting a special programme from high-power (250kW) transmitters in South Africa on World Amateur Radio Day. The programme will be beamed to Europe at 1300 - 1355UTC on 21545kHz and at 1900 - 1955UTC on 15205kHz. The programme will trace the early history of shortwave communications and the contributions Radio Amateurs have made to the development of radio science and the understanding of radio propagation.

In the UK we are also celebrating the 100th anniversary of Amateur Radio itself this year, and a special event station, GB100AR, will be on the air from RSGB headquarters between 17 and 24 September.

On World Amateur Radio Day itself the RSGB HQ building will be open to visitors between 10.00am and 2.00pm. Everyone interested in Amateur Radio is welcome to attend, at Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE. In addition to the GB100AR station, the bookshop and National Amateur Radio Museum and Library will be open, and Morse tests will be available on demand (11.00am - 12.30pm only). For further details please contact Marcia Brimson, 2E1DAY, tel: 01707 659015 (office hours).

**nrae to rae in nine weeks**

Just nine weeks after sitting the Novice Radio Amateurs Examination (NRAE), 50+ year-old David Bryan, encouraged and helped by Alan Gardner, G0NTH, sat and successfully passed the full RAE. Two other Amateur Radio newcomers also passed the NRAE after attending the same course as David. The course was run by Mike Shepherd, G0SEB, at the Brickfields Amateur Radio Society on the Isle of Wight.

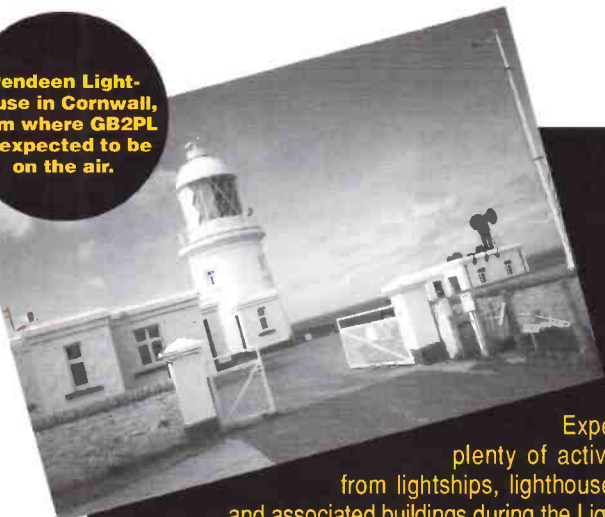
**revoked**

**licence**

A letter from the Radiocommunications Agency dated 3 June states that "the Agency has revoked the following Amateur Radio Licence: Mr R D Hall, GW7TKZ." The RA is unable to provide any further information on this case.



**Pendeen Light-house in Cornwall, from where GB2PL is expected to be on the air.**



**lighthouse / lightship weekend**

Expect plenty of activity from lightships, lighthouses, and associated buildings during the Lighthouse and Lightship Activity Weekend on **22 / 23 August**. Nearly 100 stations in countries all over Europe and as far afield as Argentina and Australia have expressed an interest in taking part in the event. In the British Isles there are expected to be around 25 stations on the air.

**the low-down**

If you thought the 73 and 136kHz bands were low frequency... A special transmission from station SAQ in Sweden was made on **17.2kHz** on 28 May. The signals were received by Derek Atter, G3GRO, in Crawley at good strength. This frequency corresponds to a wavelength of 17,442 metres!

**signalling on mains electricity**

The RSGB has raised a "very robust" objection to commercial proposals for HF signalling using the mains electricity network.

'Mains signalling' is a cable system transmitting and receiving data using RF frequencies under 10MHz to and from remote 'direct to line' connected terminals. The current commercial proposals require considerable transmission bandwidth and unless the mains cables used for this are suitably screened, terminated and filtered, signals cannot be confined to power distribution cables alone and so will be radiated by all connected wiring. If the proposals are accepted, parts of the HF spectrum would become permanently unusable.

A position paper prepared by the RSGB's EMC Committee states that "The Society will take all measures open to it to oppose the introduction of mains HF signalling. The RSGB considers the potential permanent loss of a significant and important part of the HF spectrum as being of far greater international importance than the short term commercial benefit of mains signalling in the HF spectrum.

"The Radio Society of Great Britain recommends that all proposals for mains signalling in the High Frequency spectrum be firmly rejected unless they can be shown to comply with existing standards for mains conducted emissions and immunity."

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**astronaut**

NASA astronaut Don Thomas, KC5FVF, will be giving a talk at this year's AMSAT-UK Colloquium. This, the 13th annual Colloquium, takes place between **31 July and 2 August** at the University of Surrey, Guildford, and is open to all - you do not need to be a member of AMSAT-UK.

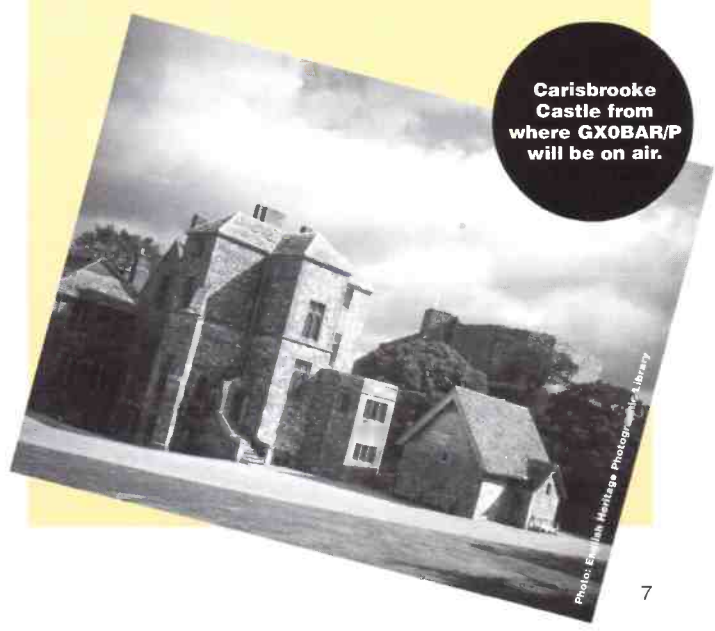
This year's lecture programme has been enlarged, with an extra 90-minute session on the Friday evening, to accommodate the extensive response to the call for papers. In addition to the presentation by Don Thomas, KC5FVF, highlights include: command station visits; annual dinner and auction (bring something to sell); AMSAT-UK AGM; microwave equipment testing; Friday evening barbecue in the University grounds; and a space-oriented Pub Quiz in the bar.

Subject to space, unregistered day attendees are welcome, but to be sure of attending, you are advised to book. Contact the AMSAT-UK office *urgently* on tel: 01273 495733; fax: 01273 492927; e-mail: g6zru@amsat.org or write (enclosing an SASE) to: AMSAT-UK (Colloquium), 40 Downview, Small Dole, W Sussex BN5 9YB. Note that bookings received later than 15 July attract a 15% surcharge. Information about the Colloquium is on AMSAT-UK's Internet site at <http://www.uk.amsat.org/>

**at colloquium**

**carisbrooke castle on the air**

English Heritage has given permission for members of the Brickfields Amateur Radio Society to operate a special event station from Carisbrooke Castle on the Isle of Wight. The station, using the club callsign **GX0BAR/P**, celebrates the 100th anniversary of the first public museum on the Isle of Wight, which is still an independent charitable trust. The station will be active on **8 / 9 August** from 1000 to about 1700 each day.

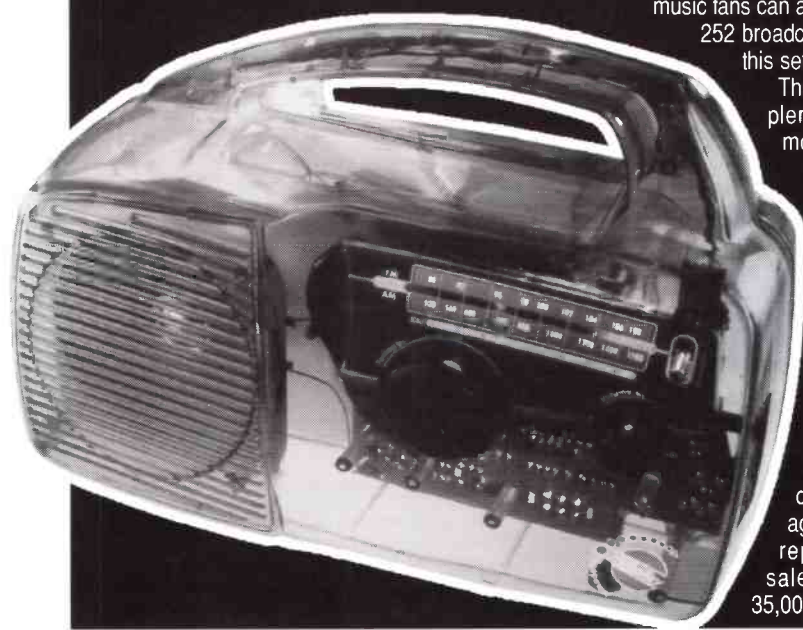


**Carisbrooke Castle from where GX0BAR/P will be on air.**

# trade topics

## new baygen radio

There's a new version of the now famous Baygen clockwork radio. Baygen Power have just released a special edition of their Freeplay wind-up radio, which covers long wave and VHF / FM, at £59.95. This summer's cricket test match commentaries are broadcast on long wave only, so cricket fans will be able to tune in wherever they are, without having to worry about batteries fading! Pop music fans can also tune into Atlantic 252 broadcasts from Ireland on this set.



The LW Freeplay complements the standard model which receives medium wave and VHF / FM. Also new is the Baygen translucent MW / VHF see-through radio which benefits from a solar panel, making it ideal for the summer season. The wind-up radio idea has really caught the public imagination, with Baygen reporting worldwide sales of more than 35,000 units per month.

## professional

Motorola has launched a GPS receiver and antenna in a single package, intended for the precision timing and frequency industry. The Oncore Remote GPS Precision Timing outputs a serial data stream and a highly-accurate one-pulse-per-second signal. For full details see the Internet site at: <http://www.oncore.motorola.com> or contact Motorola's automotive, components, computer and energy sector, 27 Market St, Maidenhead, Berks; tel: 01628 763260; fax: 01628 637059; e-mail: 100307.2360@compuserve.com

# gps receiver

# trade topics trade topics

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

## alinco c5 a big hit

Alinco USA say they sold more than 200 of the new C5 'credit card' size dualband handhelds during the Dayton Hamvention in May. Director of Alinco Japan, Mr Suzuki, said that the C5 was 'the first in a new range of innovative products from the Alinco stable.' In the UK the Alinco C5 is available from Nevada.

Nevada, 189 London Road, North End, Portsmouth, Hants PO2 9AE; tel: 01705 662145; fax: 01705 690626.

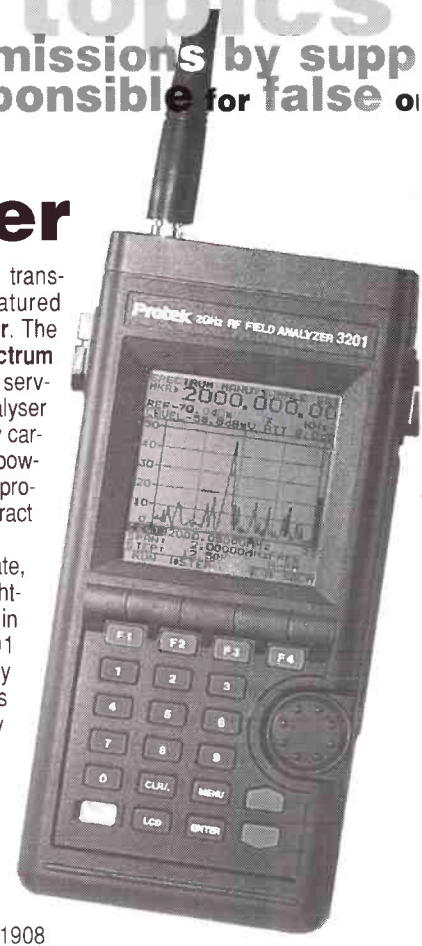


Mr Nakata, Manager of Alinco, USA; and Mr Suzuki, Director of Alinco, Japan; demonstrate the Alinco C5 to Mike Devereux, G3SED, Managing Director of Nevada, Alinco's UK distributor.

# handheld spectrum analyser

You've all seen the handheld transceiver, now here's a full-featured handheld spectrum analyser. The Datalines 3201 portable spectrum analyser is aimed at providing service personnel with a 2GHz analyser in a package that can be easily carried in one hand. The 3201 is powered by AA sized batteries and produces clear plots on a high-contrast LCD.

The unit is simple to operate, with parameters set by a straightforward menu system stored in non-volatile RAM. The 3201 comes supplied with a carry case, antenna and mains adapter. An optional battery printer allows plots to be recorded on site. The unit costs £1295 plus VAT. Further information from Datalines Communications Ltd, Sherwood Place, 155 Sherwood Drive, Bletchley, Milton Keynes MK3 6RT; tel: 01908 370011; fax: 01908 376799; e-mail: 101546,3567@compuserve.com





## impedance analyser

The AEA CIA-HF Complex Impedance Analyzer is a handheld unit designed to assist in the designing, tuning and troubleshooting of antennas, baluns, tuned feedlines, filters and duplexers. It works from 400kHz to 54MHz and will measure SWRs in the range 1:1 to 20:1.

AEA say the CIA-HF picks up where their SWR-121 leaves off. In addition to SWR and return loss displays, it provides several new measurement modes, including absolute impedance graphical mode. A curve is drawn on the display to indicate the absolute impedance of an antenna or tuned circuit relative to frequency. The CIA-HF also displays reactance, resistance and vector impedance.

In the lab it will also function as a direct reading capacitance meter, inductance meter, Q meter, grid dipper and as a stable single or sweep frequency signal generator.

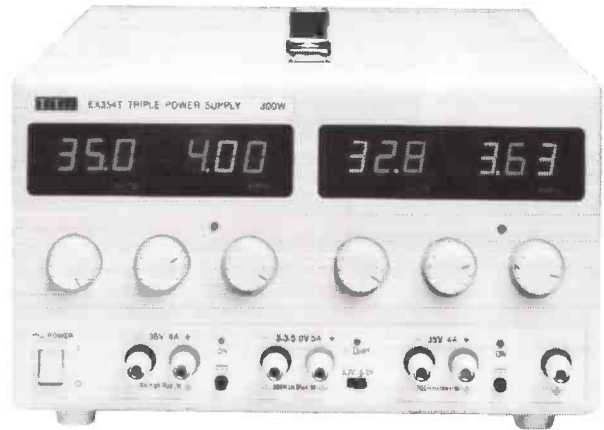
The AEA CIA-HF Complex Impedance Analyzer costs around £389 and is available in the UK from Nevada, 189 London Road, North End, Portsmouth, Hants PO2 9AE; tel: 01705 662145; fax: 01705 690626.



## dual and triple psus

Two new TTI bench DC power supplies are available from Feedback instruments in Crowborough. The EX354D and EX354T are dual and triple output supplies respectively. The dual unit can deliver up to 280 watts and the triple 305 watts. Both units have high-resolution controls which make possible precise setting of voltage and current levels. The EX354D has two independent and isolated outputs each with a 0 - 35V, 0 - 4A capability. The outputs can also be wired in series or parallel to provide voltages up to 70V and currents up to 8A. The triple power supply has an additional 'logic voltage' output with a 3.3V or 5V, 5A output.

Feedback Instruments Ltd, Park Road, Crowborough, East Sussex TN6 2QR; tel: 01892 653322; fax: 01892 663719; e-mail [feedback@fdbk.demon.co.uk](mailto:feedback@fdbk.demon.co.uk); Internet: <http://www.fbk.com>



trade topics **trade topics**  
 liers, and is not necessarily endorsed by ham radio today.  
 misleading claims by suppliers.



"I'll take it!" Young and old alike snap up the bargains at the W&S annual open day in June.

## W&S open day

Waters & Stanton PLC say that their Open Day, which took place on 6 June, was as busy as ever, despite the date clashing with the National Field Day weekend. A huge marquee was erected in the W&S back yard for the event. Some tremendous deals were available and Peter Waters told *Ham Radio Today* that in particular they sold a lot of surplus equipment and end of line stock at bargain prices. He said that next year they will try to schedule the event on a non-NFD weekend!

## ten-tec kits

"While the ham / electronics world has been lamenting the grand old days of kit-building, the Ten-Tec team of hams, engineers and technicians has been working to bring those days back to you!" So says the new 'T-Kits' catalogue, available from Waters & Stanton PLC.

Ten-Tec, the well-known US manufacturer of Amateur Radio transceivers and linear amplifiers, have now introduced their series of kits into the UK. They include everything from a broadband RF preamp at £10.95, through an HF / VHF SWR meter kit, 20m and 40m CW transceivers, to a portable shortwave receiver and a 2m FM transceiver kit, each at £189.95.

For further information contact Waters & Stanton PLC, 22 Main Road, Hockley, Essex SS5 4QS; tel: 01702 206835; fax: 01702 205843; e-mail: [sales@wsplc.demon.co.uk](mailto:sales@wsplc.demon.co.uk)

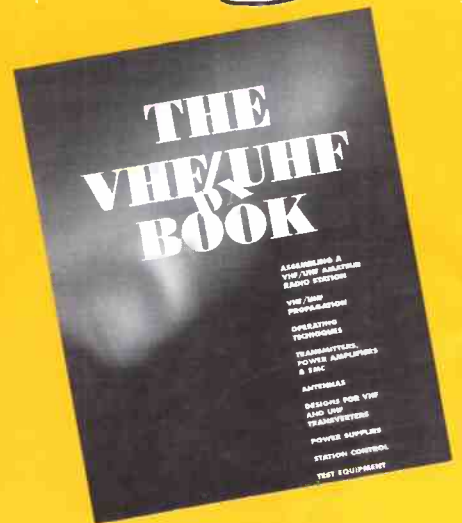
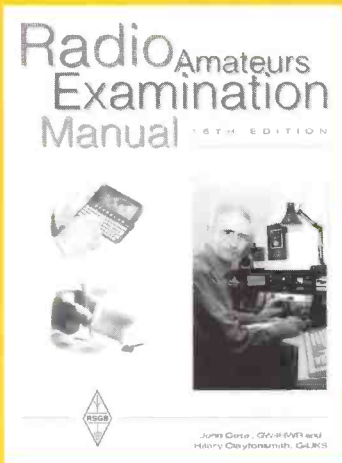


# Coffee Table

These books are available from the *Ham Radio Today* 'Book Browser' service (see page 18)



The Ham Radio Today



## Radio Amateurs Examination Manual, 16th edition (RSGB)

This book is *the* standard textbook for courses leading to the City & Guilds Radio Amateurs Examination (RAE). A pass in the RAE is, of course, necessary in order to obtain either a full Class A or Class B Amateur Radio licence.

This, the 16th edition, has been edited by John Case, GW4HWR, and Hilary Clayton-Smith, G4JKS. They have completely revised the book to take account of changes to the RAE which were introduced with the May 1998 examination. The book also incorporates many hundreds of sample RAE questions previously published in a separate volume - *How to Pass the RAE*.

The *Radio Amateurs Examination Manual* takes the candidate step-by-step through the new RAE syllabus. Material which is helpful in gaining an understanding of the syllabus - whilst not strictly a part of it - has also been included, but has been marked as such. In this new edition of the book, the chapters have been re-ordered to follow the syllabus more closely. They are: Licensing conditions; Operating procedures and practices; Electronic principles and practice; Receivers, transmitters and transceivers; Transmitter interference; Electromagnetic compatibility;

Propagation and antennas; Measurements.

At the end of each chapter is a set of practice questions, similar to those in the exam itself, to test candidates' understanding of the subject matter and their own progress towards the exam. A guide to licensing conditions, originally published in the booklet *A Closer Look at the Amateur Radio Licence*, has also been included.

There are four appendices, including radio circuit symbols, mathematics for the RAE, and answers to the practice questions at the end of each of the eight chapters. The fourth appendix is particularly useful: this is a complete sample examination paper which will help to familiarise candidates with the format of the real-life exam.

Looking at the *Radio Amateurs Examination Manual* again for the first time in many years brought home two things to me. Firstly, that even if you have already passed the RAE, the *Radio Amateurs Examination Manual* is a superb reference book which provides the answer to almost every conceivable Amateur Radio question you may have. The second point is a consequence of the first. Because the book is so comprehensive, it may initially appear rather daunting to the beginner - particularly one with little or no knowledge of radio or electronics. It should be pointed out most emphatically that it is *not* necessary to know *everything* in this book in order to pass the RAE!

The 16th edition of the *Radio Amateurs Examination Manual* is so new that at the time of writing (June) no price had been set. It is due to go on sale in July, in good time for RAE courses which start in the autumn term. Whether you are attending a course or studying by yourself, the *Radio Amateurs Examination Manual* is the one essential book you will need to help you through the RAE - and beyond.

## The VHF / UHF DX Book (DIP £18.00)

OK, so you've passed the RAE. What next? Many newly-licensed amateurs start on one of the VHF or UHF bands. Most of them, it is fair to say, operate using relatively low power, on FM or packet, to vertical antennas. The distances worked range from a kilometre or two up to perhaps a hundred kilometres or so. That's all very well and good, but there's a whole additional world of VHF / UHF operating out there, and that's where *The VHF / UHF DX Book*, edited by a top practitioner of the art, Ian White, G3SEK, comes in.

A quote from the Introduction illustrates this point nicely: "If you are a newcomer who seldom works as far as the next county, a 200km contact is genuine DX. But if you're keen you will grow in confidence and competence until you're nonchalantly chatting with Continental stations every evening - and keeping a keen lookout for 'some real DX'!"

Many VHF / UHF operators' first experience of DX is when, unexpectedly, they are called by a Continental station whilst working through their own local repeater. This is caused by a so-called 'lift' - tropospheric propagation - and distances of around a couple of *thousand* kilometres are perfectly possible by 'tropo' on the VHF and UHF bands. A whole chapter of *The VHF / UHF DX Book* is devoted to the various modes of propagation which make this possible, from F2 to aurora, Sporadic E, TEP, and our old friend tropo.

Some of the UK's and Europe's top experts in VHF and UHF DXing have contributed to the 447 pages of this book. They include Dr Geoff Grayer, G3NAQ; David Butler, G4ASR; Günter Hoch, DL6WU; Sam Jewell, G4DDK; Dave Powis, G4HUP; and Dave Robinson, G4FRE / WG3I. The editor himself contributes sections on 'Assembling your Station', a low noise 432MHz GaAsFET preamplifier, and (together with John Nelson, GW4FRX) an article on the K2RIW 432MHz power amplifier.

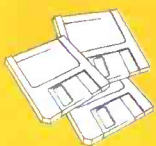
Separate chapters devoted to 50 / 70MHz, 144MHz, and 432MHz look at DX techniques specific to those bands, and all three chapters conclude with an in-depth look at DX antennas for the appropriate band.

Other sections cover transmitters, power amplifiers, power supplies / control units, test equipment / station accessories and the important subject of EMC (electromagnetic compatibility).

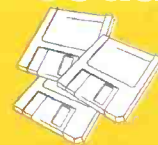
*The VHF / UHF DX Book* is written by real experts whose DX success on the VHF / UHF bands speaks for itself. It will be of interest not only to everyone who operates on VHF and UHF, but also to anyone with a general interest in propagation, antennas, or construction techniques. For those already active on VHF / UHF who wish to expand their horizons, or for those who have 'worked 'em all' on HF, DXing on VHF or UHF will offer a new challenge. There could be no better way of approaching the subject than by buying a copy of *The VHF / UHF DX Book*.

ham radio today  
WEEKLY

# The Ham Radio Today



## Ham Radio Today takes a look at the latest Amateur Radio software



### JVComm32 - the new 'JVFX for Windows'

Take a listen in the SSB sections of 80m or 20m and you'll often hear SSTV (Slow Scan Television) in use. Many amateurs as well as listeners also like to couple their receiver up to a PC to download weather fax pictures, either 'direct' on 137MHz or 1691MHz, or when re-broadcast from various ground stations on the HF bands.

What must be the most popular shareware PC program for both of these modes has been the DOS-based JVFX, written by Eberhard Backeshoff, DK8JV. If you read last month's *Ham Radio Today*, you will have seen that rumours of a Windows 95 version of JVFX are true, and the 0.91beta version of JVComm32 was included on the front-cover CD for you to evaluate. It's a time-limited version which expires on 29 July 1998, so - depending on when you read this - there's probably still time for you to give it a try. The version 0.93b demo program is now available, which expires only at the end of 1998.

### what is jvcomm32?

It's a Windows 95 program for transceive operation on SSTV, operating on all the commonly-used modes including the new high-resolution P3, P5 and P7 variants. It can also demodulate

HF FAX weather charts, weather images from low earth orbiting satellites (eg NOAA), and geostationary weather satellites such as METEOSAT. For other applications, JVComm32 can be used as a program launcher that optionally first sets the interface to the appropriate mode of operation and then runs the application (eg a packet radio program).

Besides your transceiver or receiver, you'll need a PC running either Windows 95 or NT 4.0 - it won't run under Windows 3.1 or 3.11. Your PC as a minimum will need a high colour graphics card with a resolution of at least 800 x 600 and a 486DX266 processor and 16Mb of RAM; a Pentium 133 with 32Mb of RAM is recommended. You'll also need an interface, which can either be your PC's sound card or a selection of external interfaces.

### running jvcomm32

The software comes as a self-installing file, INSJV32.EXE. The first thing to do after installing and running the program is to set the configuration to suit your interface. In the 0.93b version, the sound card sampling rate can be switched between 8kHz and 11kHz; you should use 8kHz unless you find problems with receiving with your sound card, in this case you can change to 11kHz.

Taking SSTV as the first example, after having selected this as the active mode, the control

buttons for selecting the desired SSTV transmission mode appear together with the SSTV receive window. After you've tuned in a signal (there's a handy audio 'spectrum scope' to help you here), received SSTV pictures are displayed in the SSTV receive window, which usefully automatically resizes according to the resolution of the received SSTV mode. The catalogue window contains seven tab sheets and serves as a visual folder for pictures, storing 15 on each. The first tab sheet is reserved for the next 15 received pictures, and the next five tab sheets are free for you to add your own pictures. On the air, a slant correction feature can be used where the program calculates the actual data rate of your interface and adjusts automatically.

For fax reception, after you've selected the correct mode JVComm32 works entirely automatically under good reception conditions - you don't need to wait and start it manually. You'll only need to select the correct mode, which should be HF-FAX for transmissions on shortwave, 'Geostationary' for METEOSAT and other geostationary satellites, or one of the NOAA or METEOR modes for orbiting satellites. JVComm32 then waits for the start of a new fax picture, steps through the phasing sequence and starts displaying the received picture.

There's also a '100%' zoom facil-

ity which gives you full screen width when receiving fax pictures if you wish. As soon as the transmission is over, it stores the received picture on your hard disk, and it's then ready for the next one. Thus, you can leave the program to run while you're away at work, and come back and view what it has received to see if the weather's likely to be OK for your evening out!

### obtaining jvcomm32

You can get the latest version of the software from the Internet (it's a 1.7Mb compressed file) at <http://pobox.com/~JVComm32>. It's not free; you receive a demo version of the program, which is fully functional but all of the received or transmitted pictures will be stamped with a 'Demo' logo. Registration with payment of 120DM or US\$66 to the software author removes this limitation. If you don't have a 'net connection, you can contact the author directly; Eberhard Backeshoff, Obschwarzbach 40a, 40822 Mettmann, Germany, tel: +49 2058 910572 or for queries by e-mail: E.Backeshoff@pobox.com

The latest version is also on the QSP73 CD-ROM. Details on how to obtain this are on last month's *Ham Radio Today* free front cover CD-ROM, or tel: 01703 263429 for more information.

Chris Lorek, G4HCL



## feature

Changes to the ARRL DXCC 'Rules for Country Criteria', which became effective on 1 April 1998, were released early this year. One change was in the unit of measurement used to determine the 'separation by water' between two areas: the unit was changed from the mile to the kilometre and 225 miles became 350 kilometres. This had the effect of reducing the old distance requirement by a small factor and raised the possibility of the Santa Cruz Island group (Temotu Province) of the Solomon Islands becoming a new DXCC entity.

### nendo or pigeon?

The Santa Cruz group is over 350km from Guadalcanal, the main island of the Solomons, and the largest island in the group is Nendo. Its capital is Lata, where there is a small grass air strip served from Honiara on Guadalcanal two or three times a week.

Well-known DXer Martti Laine, OH2BH, and a group of other

The H40AB station: TS-690S, IC-706 MkII, FL-2100Z, MFJ keyer.



Photo: J B Smith, VK9NS

come into effect. By the time I had unloaded my 85kg of baggage and radio equipment and got settled in, it was already dark with no hope of erecting the antenna. The generator was running, giving me light and power in my accommodation, so I unpacked the Kenwood TS-690S and Icom IC-



Temporary power: Subaru Robin generator charging the battery.

PIGEON ISLAND  
REEF ISLAND GROUP

IOTA OC - 065

H40A

TEMOTU PROVINCE SANTA CRUZ I  
SOLOMON ISLANDS

HEARD ISLAND DX ASSOCIATION

# The H40AB Temotu

## World famous DXer Jim Smith, VK9NS, of the Heard Island DX Association

DXers chose to operate from Lata with the callsign H40AA. My reasons for my choosing Pigeon Island instead were fairly straightforward; it made no sense for two groups to operate from Lata, and for the RSGB IOTA programme Pigeon Island is part of the Reef Group, OC-065, which I needed. IOTA rules allow me to claim OC-065 for myself if I activate it. Nendo Island is OC-100, so amateurs had the possibility of working two IOTA island groups as well as perhaps one new DXCC entity.

The Reef Island group consists of several islands and lies about 75km NNE of Nendo. The trip is a three hour journey across open water by ribbed 6.5m (20ft) fibreglass canoe driven by outboard motor. The trip is quite an experience and not for the weak or squeamish; the journey over to Pigeon Island was fine but the trip back a couple of weeks later took over four hours in rough seas.

### problems arise

My arrival at Pigeon Island was just on dusk a couple of days before the important date of 1 April, when the new H40 callsign would

706 MkII rigs and PSU. A quick switch on proved that the TS-690S, keyer, etc were all OK and none the worse for the trip from Norfolk Island. I unpacked the Yaesu FL-2100Z linear, fitted the 572B valves and put the lid back on, then called it quits for the night. It must be explained that my TS-690S is powered via a homebuilt unit with an Icom PS35 switched mode power supply and Icom keyer board inside.

Earlier, the PSU had often had an erratic start up, but I purchased a backup PS35 in Brisbane on my way through, so was happy: if the unit quit, I had a fix, merely having to change over PS35s.

Next morning I proceeded to set the station up properly. The generator had been moved nearer to the operating position for easier refuelling. My trusty Butternut HF6V multiband vertical antenna was soon erected and I was more or less ready to go. When I switched on, there was a sharp 'crack' from the power supply and then nothing! I had that sinking feeling and diagnosed (incorrectly) that finally the cause of intermittent starting had come to light. No problem. I went to work and had soon fitted the replacement PS35. This time, on switch-

ing on, there was a much bigger 'bang', and again silence. Now I really had a problem with no 13.8V DC for the rigs.

On checking the output of the generator, I found it was pushing out 320 volts: the previous evening the output had come via at least 100m of wire and the voltage drop had saved me. I had no immediate fix and felt very much down in the dumps. There seemed to be no solution. I went to the owner of the island and spelt out my predicament and she suggested that I borrow one of their 12V batteries. What batteries? There, in a cupboard under the island's radio equipment desk were two 150Ah, 12V batteries connected in parallel. They used solar panels with an occasional full charge from the generator to keep things in shape. In any case, the batteries looked brand new and one soon found its way down to my 'shack'. It was a lucky break.

### h40ab is qrv

The battery, generator with its 12V 20 amp charging outlet, and a couple of solar panels helped me to float charge the battery. The rig worked very well and signing H44/VK9NS I started to put QSOs in

my log. However, the bad news was that this generator was only a couple of metres away from me and it is understood that my signal was very distinctive on SSB, with its loud background noise. One station was quite excited as he told me how lousy my signal sounded. Then, on CW, which I tended to use more and more, it is said that my signal had a distinctive chirp. Well, why not? In a few cases, reports of 575, 598 etc were received.

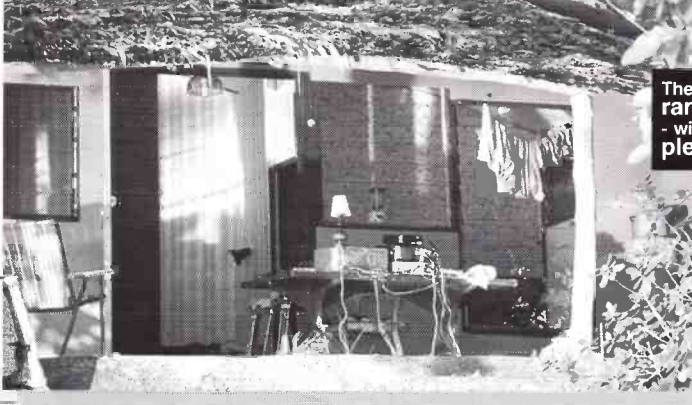
It didn't worry me a bit, although in the old days we used to give 559c and left it at that.

The Yaesu FL-2100Z linear was soon in service using a second generator (which was fairly new and had excellent regulation). I ran it at very modest power, but it allowed me to back off the TS-690S output, thus conserving battery power. I ran all day with the



Photo: J B Smith, VK9NS

J B Smith, VK9NS



The station was located on the veranda of the accommodation unit - with good air conditioning, but plenty of mosquitoes.

From then on I was in business and most of all, the lack of that charger generator noise was a major plus.

The FL-2100Z linear amplifier hiccupped with a failed plate parasitic suppressor. My solution was to pinch the 572B 22Ω grid stoppers and use them to make two identical plate suppressors. I used two 100Ω resistors (from the two defunct Icom supplies) for grid stoppers. For absolute stability, the grids really need 22Ω resistors and 100Ω is too high a value, but in any case the amplifier kept going.

**out & about**

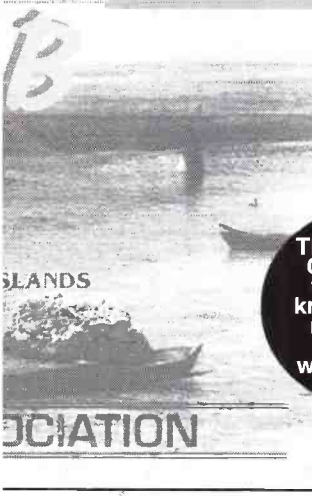
The H40AB station was set up outside under my covered veranda with super air conditioning, but it was a pity about the mosquitoes at night. The station had to be moved inside the last couple of days due to a big change in the weather conditions. I had a good view of the water and soon

with light from 'that' generator. The accommodation and food were excellent, I ate rice twice a day and a variety of vegetables and fish. Plenty of water laced with lime became a daily requirement and there was even a kerosene fridge running for my use. There's a trade store on the island, plus a small school, several out-buildings and a few residential buildings. I purchased the petrol from the store and hand pumped it into a plastic container.

**qso totals**

These days DXpeditions' higher QSO totals are the result of improving band conditions. It's great to be able to work 10m during the day once again. On both 10 and 12m I had some tremendous openings which helped to increase available operating slots.

I also had the opportunity to use the Icom 706 MkII which I brought as backup. It is a great rig and several stations commented on the excellent audio quality on SSB. Just how did Icom manage to get so much into such a small package? The function programming is fairly easy to use once one gets used to it.



The H40AB QSL contains acknowledgements of thanks where due.

ing battery power at night was a big limitation.

In the meantime I arranged for my heavy-duty Kenwood 13.8V DC transformer PSU to be sent to me from Norfolk Island. This became a copybook transaction: Brisbane - Honiara; Honiara - Lata; rushed through customs with a large 'MUST GO' label (bless you Solomon Airlines!) Then followed a six-hour round trip from Pigeon to Lata and return by canoe to pick it up. I'll remember the smile of Dawoo for a long time as he waded through the water carrying my precious power supply. Come to think of it I felt pretty happy myself!

**Province DXpedition**  
**DX Association (HIDXA), takes us on a trip to the South Seas**



Loading the gear at Lata airport on Nendo island, Temotu province.

got used to recognising daily events like local fishing, seabirds catching their breakfast and so on. Pigeon Island does have pigeons by the way, plus two or three varieties of lizards, a species of small parrot and a humming bird. A type of land crab is also plentiful as well as the coconut crab. There is of course fish, fish and more fish.

Pigeon Island is not very large and I got around quite a bit, took lots of photographs and quite a bit of video. I joined the family for the evening meal around 6.30pm

Loading the canoe for the trip to Pigeon Island.

I also tried 6m a couple of times as the band was reported to be open by several JA stations, but without success. This was almost certainly due to antenna problems. I never did get on 160m, but frankly, my activities on 80 and 40m gave me little time. Perhaps next visit!

My rough log total count shows that almost 15,800 QSOs were made from H40AB. All in all this is a very satisfactory total, with another 800 plus QSOs as H44/VK9NS. Murphy, despite his cardinal effort against all DXpeditions, had failed once again.

Thanks are due to many, especially HIDXA members and in particular to my wife Kirsti, VK9NL. Kirsti should have been with me but she fell a couple of days before the planned departure and her knee was badly bruised, so it was better that she stayed at home, just in case of infection.

This HIDXA DXpedition has been dedicated to Ken Stevens, VK5QW, who recently became a Silent Key. Ken was a staunch supporter of HIDXA and I have a feeling that he would have been happy with the results of H40AB operation.



Photo: J B Smith, VK9NS

battery and charger generator and then just before dark had to relinquish it to the islanders. I then continued with the second generator (without a charger) for the linear and lights until the battery was too flat to carry on. Meanwhile the DXpedition routine soon set in and despite various challenges my QSO total really started to build up. But that steadily fail-

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# SRP TR

**(COM213)**

**100 CHANNEL SCANNER**

A high-specification scanner offering 100 channels in 10 banks, with 1 Priority Channel in each bank. For speed and ease of use it offers Jetscan, which can scan 100 channels per second, and also Jetsearch, which can search at up to 100 steps per second. It also features programmable band search, lock-out for up to 10 frequencies, channel look-out, 2 second scan delay, data noise/birdies skip, a key lock and a green back-lit display. 66-88, 108-174, 406-512, 806-956.

**£119.99** + £5 P&P.



**(COM102)**

**10 CHANNEL SCANNER**

This state of the art 10 channel scanner is fully programmable and can receive a variety of PMR communications. It is robustly designed and offers a full frequency LCD display for ease of use. Also features an in-built circuit for recharging Nicad batteries. 66-88, 137-174, 380-512.

**£49.99** + £5 P&P.



**(COM205)**

**400 CHANNEL SCANNER**

The B111 is the last word in programmable scanners. A free standing desk top unit covering nine radio bands in the 25-512MHz and 806-1300MHz ranges. Operates from AC mains or car cigar lighter via suitable adaptor. It incorporates a microprocessor avoiding the need to change crystals and gives special functions such as scan delay, memory back-up, priority channels and many more.

**£249.99** + £5 P&P.



**(COM215)**

**200 CHANNEL SCANNER**

A highly-featured desktop scanner offering 200 channels arranged in 10 scanning banks, with one Priority Channel in each bank. For ease of use it offers Turbo Scan at 100 channels per second max with Autosort for maximum scan speed and Turbo Search at up to 100 steps per second. Other features include direct search programmable band search, auto station program mode, lock-out for up to 10 frequencies, manual frequency sort, programmable auto-recording and optional CTCSS tone squelch. The unit is powered by AC mains or 13.8Vdc. 66-88, 108-174, 216-512, 806-956.

**£219.99** + £5 P&P.



**SANGEAN ATS 909 FM-Stereo/MW/LW/SW PLL Synthesized receiver**

**The ATS-909 is a continuously tunable receiver from 153kHz-29999kHz. This receiver is capable of receiving and tuning all the short wave bands and any stations in between**

■ 307 memories (261 in SW, 18 each in MW/FM, 9 in LW plus priority station)

■ Five tuning methods – direct frequency tuning, auto scan, manual tuning, memory recall and rotary tuning

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■ FM stereo via earphones

■ 29 pages SW stations name memory, 9 memories in every page

■ Automatic search strongest signal station within SW station pages

■ SSB (USB/LSB) 40Hz/step on fine tuning

■ AM RF gain control

■ Built-in 42 world cities time plus D.S.T. device

■ 3 individual timers

■ Adjustable sleep timer

■ Alarmed by radio or HWS (Humane Wake System) buzzer

■ Battery and signal strength indicator

■ Direct key to recall favourite station in one button

■ Dual conversion device

■ REC out and standby control output

■ Pre-programmed station name and frequency according to customer's requirements before ex-factory

■ AM wide/narrow filter and FM mono/stereo selector

■ Optional features for European market

■ RDS (Radio Data System) on PI, PS and CT for station name and clock time

■ Size in mm: 215 x 133 x 37.5

■ Weight: 850g without batteries



**£169.95** + £5 P&P.

- ★ Free batteries
- ★ Free SW frequency book
- ★ Free SW antenna
- ★ Free headphones

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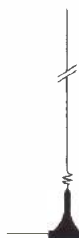
**Super Syncro 1100** – 1100mAh Nickel Metal Hydride (NiMH) AA size rechargeable cells. No memory effect. Twice the capacity of NiCds. **£3.00** inc P&P.



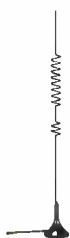
**Skyscan DX-V1300 base discone** – Most discones only have horizontal elements and this is the reason that they are not ideal for use with a scanner. Most of the transmissions that you are likely to receive on your scanner are transmitted from vertically mounted antennas. The DX-V1300 has both vertical 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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# All in a D

This month, tips on coaxial cable and the

Arnold phoned me to ask where he could obtain an MCF6034A voltage regulator for his FT-101E. Many people make the same inquiry, and once again I had to say that I had no idea. Fortunately, however, I was able to advise him how to do without it.

Fig 1 shows the circuit of the VFO stabilised supply in which the regulator is used. The preset potentiometer is used to set the rail, which it labelled '6 volts'. In practice, it is found that FT-101s perform better if the voltage is set a little higher than this, and so Fig 2 shows how a standard 5 volt regulator can be used to achieve this. The circuit is simple and I was able to describe it over the phone, so Arnold went off to his local Maplin store to get a suitable regulator.

## noisy 12v fan

Trevor bought himself a rather nice 13.5 volt power supply at the rally, and came in boasting about what a bargain it was. A few weeks later he wasn't so happy. "Harry, the fan is driving me mad, how do I make it run more quietly?" He went on to explain that the fan only came on intermittently, but far from being a quiet whisper, it sounded like a vacuum cleaner. He had tried connecting a resistor in series with it to slow it down a little, but if he made the resistor high enough in value to make the noise bearable, the fan was then reluctant to start.

Starting an electric motor needs much more current than it does to sustain rotation at a reasonable speed. How about a resistor that is automatically variable? The answer is to connect a small pilot lamp in series with the fan motor. When the lamp is cold it has a low resistance, and this gets the motor going at switch on. As the lamp gets hot the resistance increases, and so the motor is slowed down a little, and the fan runs quieter. I advised Trevor to try a few different current ratings of 6 or 8 volt lamps, and later on he called in to say that this had done the trick.

Whilst this small modification will work wonders at quietening electric motors and fans, it does have its down side. With the fan blowing only gently the PSU will get hotter, and this should be born in mind. If you wish to run the PSU at its full rating, you will have to put up with the full noise of the fan. If, however, you are under-running it, and you check that the

temperature does not rise too much, there is no harm. (Incidentally, hi-fi fans might like to know that this trick using a suitable voltage of lamp, also works with the older gramophone turntable motors, and reduces mechanical noise, and radiated hum.)

## joe's lost order

Joe Smith came in moaning about an order he had sent to an electronic component supplier. "They cashed my cheque, and after a few days I rang them up to ask what was happening. Whilst I was on the phone they looked through their files, but said that they definitely hadn't got anything under my name. The same day, however, the parts I had ordered turned up - sounds like they are in chaos."

Thinking of past mix-ups in my own company's filing system, I asked Joe how he had sent the order, and then what he had written it on. Joe informed me that he had written it out very clearly on RSGB notepaper, thereby indicating to me how the confusion had probably arisen.

At busy times many companies take in temporary labour, and a filing clerk not familiar with the Amateur Radio trade would have filed Joe Smith's letter, not under 'S' for Smith, but under 'R' for RSGB. RSGB notepaper is very attractive, and nice to use when writing to other radio hams, but if you use it when writing to a business, make sure you write your own name in large letters above the heading, and so avoid the correspondence going astray.

## unbranded 6146Bs

Tony came in with his FT-101ZD which had gone out of action with a cloud of smoke. A quick examination showed that it was fitted with a 5 amp and not a 3 amp fuse, and that one of the unbranded PA valves fitted had gone short circuit. This combination had burnt out the PA anode choke, and the mains transformer- end of story!

A couple of years ago I obtained a quantity of economically-priced 6146B valves of Chinese origin. They seemed very good, and gave slightly more output than the American GE valves that I nor-

mally used. To try them I put them in a couple of second-hand rigs. After a short time the rigs came back with short circuit PA valves, resulting in general burn-outs which I had to stand the cost of under guarantee. I decided that using these valves was a very ex-

pensive way to save money, and sold them off cheaply with dire warnings.

To be fair, one can't really blame the makers. If you look up the specification of the 6146B in an old copy of the *ARRL Handbook* you will see quite clearly that it is

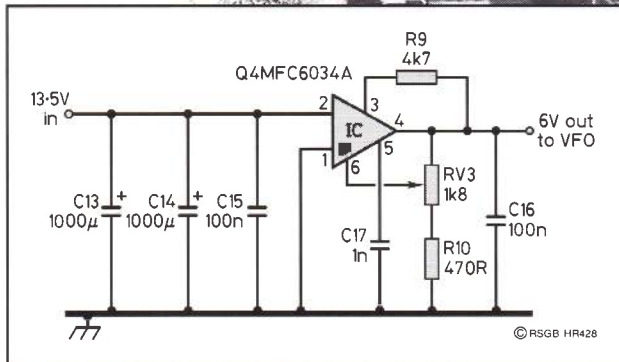
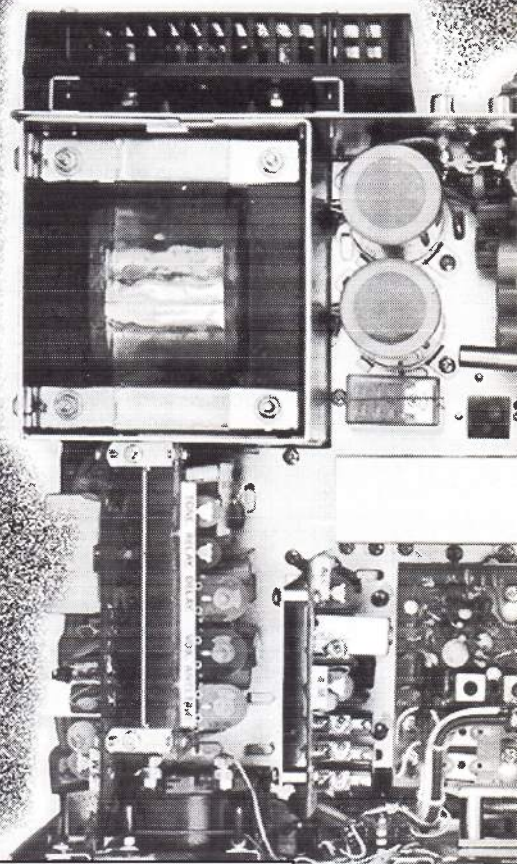


Fig 1: the stabilised supply of the VFO for early FT-101E and late FT-101B. The MCF6034A voltage regulator is now hard to find.



# ay's Work

## FT-101 range from Harry Leeming, G3LLL

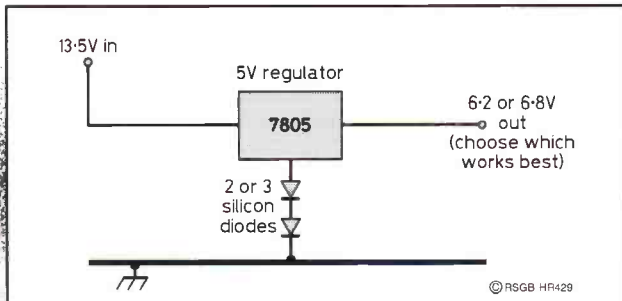
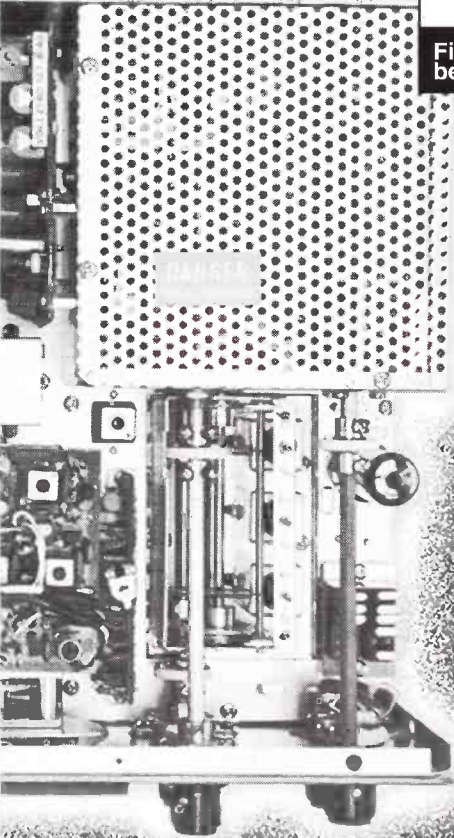


Fig 2: a standard 5 volt regulator such as the 7805 can be used instead of the MCF6034A voltage regulator.



Top view of the popular 1970s transceiver, the Yaesu FT-101.

rated at 600 volts. Most amateur rigs use close on 1000 volts, and were designed to be used with the Japanese S2001, which seems to have been a higher-rated equivalent to the 6146B. When this went out of production American 6146Bs were substituted by Yaesu and Trio. When fitting these, one ends up in the ridiculous situation that as soon as the equipment is switched on the guarantee is void, as the valves are being used way outside the manufacturer's specification. So what can you do? The best advice I can give is to fit *branded* American valves, but to be certain

to also fit a 'quick blow' mains fuse of an *absolute maximum* value of 3 amps. If the rig will run on a 2 amp fuse, better still - fit this instead. Also test any spare valves you obtain so as to be sure that they will operate satisfactorily.

### low drive, sticky relay

Terry rang up to ask if I could give him a little advice regarding his FT-101E, which was working reasonably well, but was a little on the low side regarding drive. He had tried a new driver valve, checked the voltages around this, and gone through peaking up the alignment. The drive was only slightly low, and he found that he

could just about get full output on 20, 40 and 80 metres, but not enough to move the ALC meter much. On 160 and 10 metres he was down to not much over 40 watts, but try as he would he could not find a fault. I asked a few questions and it transpired that he also had another, ostensibly unrelated, problem. The antenna change-over relay would stick sometimes.

This combination of faults is not that uncommon on the early FT-101s, and is caused by the 13.5 volt rail being somewhat low. This rail also feeds the pilot lamps and it does happen sometimes that these are accidentally short circuited. The result of this is that either one or two of the full wave rectifier diodes in the 13.5 volt supply is blown. If only one is blown, or the strip of PCB feeding it fuses, the voltage of the 13.5 volt rail falls to around 12 volts. This one fault can cause the antenna relay to stick, and also the drive to be on the low side at the same time.

Terry rang back a little latter to say that he had replaced both diodes, and that he now got full output, and the relay no longer gave trouble.

### faulty coax?

George had been 'making do' with an old piece of RG-58 coax on his 2 metre antenna for many years, when he happened to read an article about losses. A quick calculation convinced him that of the 25 watts he was putting into the feeder, less than half was coming out at his antenna, and so he came in and bought 15m of good-quality RG-213.

A couple of days later he was back clutching the coax. "This feeder you sold me is faulty, the SWR with the old RG-58 was less than 1.5:1, now it's over 2:1."

With great difficulty I tried to explain to him that probably there was something wrong with his antenna system. The figure one reads on an SWR meter is a comparison of the difference between the outgoing power, and the reflected power. If the cable has a high loss, very little power will be left to be reflected, and so the *poorer* the cable is, the *lower* the SWR will be. To take an extreme case; if one connects a 70cm rig to a 100m coil of RG-58 the SWR will be almost 1:1 even with nothing connected at the other end, as nearly all the power will disappear as losses.

George went back and found that the arch enemy of antenna systems had been at work, and that his collinear was full of water and was corroded. Replacing this, and fitting his new feeder gave a new lease of life to his rig, with several 'S' points of improvement on both transmit and receive.

### 'dead' frg-8800

Tommy thought he had made a good buy at the bring and buy stall and came home with a Yaesu FRG-8800 receiver. He used it for a few days, and then disaster - the display went blank. It wasn't long before he was in my shop asking, had he been 'done', and how much would it cost to put it right? To his surprise I informed him that, more than likely, there was nothing at all wrong with the unit except for flat batteries.

The FRG-8800 has rather a peculiar memory backup arrangement. If the receiver is operated without batteries everything works OK, except of course that data stored in the memories, and the time keeping of the clock, are lost when the unit is disconnected from the mains supply. The current required by the backup is rather on the high side, however, so that if batteries are fitted, they go flat in a few days when the receiver is not powered up. With flat batteries fitted the microprocessor locks up, and so the unit will not work at all, unless the batteries are removed or replaced with good ones.

The only real solution to the problem is to fit new batteries, and leave the FRG-8800 permanently connected to a live mains socket (with a low value fuse in the plug for safety). Alternatively don't bother with memory backup, and omit the batteries.

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Dear Ham Radio Today,

The newer form of the magazine is quite pleasant and easy to read except in one thing - at least to me. Quite a few pages now have a wide gap half way down, with a large print title or similar in the clear white gap. I find this most off-putting as I invariably go to the next column on reaching this gap. On some pages of course, which have various items, this doesn't matter.

I wonder how many others find this a problem? Thank goodness you have avoided a current trend of using black print on a dark background, which is quite difficult to read.

**Alan Sammons, G0HBC**

**Editorial comment:**

*When we took over the magazine in March our Designer was given a brief to make the magazine look younger, brighter, and 'fresher' than the old-style Ham Radio Today and I think by and large we have succeeded in this. Of course the magazine must still be easily readable and we have taken your comments on board. What do other readers think? - Ed.*

Dear Ham Radio Today,

I bought a copy of Ham Radio Today at Dayton - interesting layout, which I kinda like . . . I attach one of the pictures that I took at Dayton; the third member of the team is Rosemary, GONDB, my XYL. This and other Dayton pictures are on my web site which is at: <http://home.earthlink.net/~ve6dxx>

Hopefully my first mast will go up this summer. I need a permit for my masts, but not actually planning permission as you have in the UK. On the property here, eight acres some 18 miles south east of Edmonton. I only need planning permission if my masts exceed 150ft in height. My first mast will be near the house at 64ft for VHF antennas and the second mast will be about 150ft from the house at 88ft. The 150ft rotatable mast will be way down the field at about 1000ft from the house - but I need to save up for the feeder first!

**David Evans, VE6DXX / G3OUF,**  
Edmonton, Alberta, Canada.

# letters letters letters

£10 for letter of the month

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

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month letter of the month letter

Dear Ham Radio Today,

I have just decided to join your ranks and obtain a licence. As a starter, I have just bought myself a Yupiteru MVT-9000 in order to break myself in slowly to the arcane mysteries of Amateur Radio. I am on my second edition of your magazine, which I suppose is quite good, if I could understand what everyone was talking about.

There appears to be a lot of discussion about the dwindling numbers in your ranks. Could this be because when someone picks up an Amateur Radio magazine, they are met with articles discussing ATUs, AFSKs and the like? - a complete foreign language.

Would it be possible for a section of your mag to be dedicated as a tutorial? I for one would greatly appreciate it. My knowledge of this subject is as basic as it gets and therefore any help would be greatly appreciated. Maybe I have missed the boat and this subject has already been covered in earlier editions. If this is the case, could you recommend some suitable literature, as in *Dummies for Windows* etc?

Anyway, I shall persevere with my July edition. I suppose it will all become clear eventually.

**Alan Wilson-Bowen.**

**Editorial comment:**

*Every hobby has its own jargon and I suspect if I decided to take up, say, yachting, I would be just as confused with the jargon sailors use. However, I would be the first to admit that Amateur Radio has more than its fair share! Ham Radio Today must cater for everyone, from absolute beginners through to seasoned Radio Amateurs with decades of experience. Whilst I feel we cater well to the latter (eg with our detailed technical reviews) your letter was a welcome reminder that perhaps we do need to do more for the absolute beginner. I am therefore planning to introduce a 'beginners start here' page which perhaps will explain a little about our articles in very basic terms. You already have a receiver, and a very good way to learn is simply to listen to what Radio Amateurs are talking about. Another good way is to join your local radio club. There is a Novice Amateur Radio Licence scheme which enables absolute beginners to take out a Novice licence after following a course - and learn a lot about Amateur Radio in the process. Many local radio clubs holds these courses and the Amateur Radio Department of the RSGB (tel: 01707 659015) will be able to give you a local contact number if you wish to follow this up. The RSGB also publishes numerous books, several of which are suitable for beginners (eg Amateur Radio for Beginners, for absolute beginners, £3.50 from the Ham Radio Today Sales Department, tel: 01707 853300).*

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

# "TONE" BURST



Dear Ham Radio Today,

Regarding the microwave report in *Ham Radio Today* [VHF / UHF Message, July pages 38 - 39 - Ed] I know most of the credit for microwave designs must go to the German stations, ie DB6NT, DC0DA, DJ6EP to be the first amateurs to move from waveguide to printed circuit board, not only on 3cm but also on 6 and 9cm - also DL7QY for a horn feed for 6, 9, 13 and 23cm. We have always been a year or two behind them in designs. It was always a laugh because we could never get the watts out that they could - so we asked if it was German watts or English watts output!

When you look back to 2m AM days, PAOs and DLs all had VFOs before we did. I do, however, give credit to G3WDG, G4DDK, and G3JVL for their designs, plus many others who spend their time on hilltops trying the gear out.

I take the *Microwave Newsletter* and think that activity news should have a space in *Ham Radio Today*, so the outside world knows what can be done on those bands.

**John Tye, G4BYV**

Editorial comment:

*We agree with you John, and Geoff Brown, GJ4ICD, our VHF / UHF Message columnist, is always pleased to receive reports on the microwave bands.*

# letters letters letters

£10 for letter of the month

Dear Ham Radio Today,

Over the past few weeks, I have quietly telephoned about, asking if Amateur Radio retail shops, both large and small (ten shops across the UK) had in their second-hand stock, one or other of two HF, one 2m, one dualband FM, one auto HF ATU, one manual HF ATU, a Parka PK232 MBX, and an all-mode active filter.

Then, after quite an expensive telephone information-gathering exercise, I was surprised to find that there was less than 2% difference in the sale price of every item, from all 10 shops. My next exercise, was to try and part exchange these items, in single, or multiple packages, for up-to-date HF + 6m equipment and second-hand 6m equipment. I was offered less than 50% of the retail price that they had quoted for the self-same equipment on their second-hand list.

However, I give full marks to all the small independent retailers, for each of them placed more emphasis on me trying to sell the items first, for a better price than they could reasonably afford. The larger and more extensive retailers, made no attempt to persuade me to seek a better price, via the second-hand sales in the amateur magazines. The best offer, after all was said and done, came from RAS in Nottingham. Unfortunately I was only doing some research, otherwise I might just have been tempted!

It's a sad state of affairs when people, for whatever reason, will only offer less than 50% of the retail price that they intend to sell the second-hand equipment on for. I've hung on to my radio equipment, all of which is at least five years old, and some of it more than ten years old, on account of the fact that, even though I have kept the equipment clean, well-maintained and spent money on having all my equipment regularly serviced, I cannot obtain a fair price for any of it on a part exchange deal - even for a 6m multimode, which is seven years older than the oldest piece of equipment that I own and that I offered in one for one swap.

That is another bone of contention to my mind. Just what sort of person asks £395 for a 6m 10W multimode, that has not been made, or on sale new, for the better part of 10 years, then has the cheek and audacity to offer £125 for a 100W 80 - 10m HF mobile multimode, £45 for an HF auto ATU and £20 for an all-mode active filter? If the shop in question had been local or an independent one, I could have accepted their lack of a higher price, but this particular concern is both large and well known.

My personal opinion is that the decline of the small local and independent retailer has been a sad loss to amateurs in this country. Whilst some might say that there is more purchasing power, on the wholesale side, with larger importer / retailer outlets, I for one dislike their greed in both the retail and wholesale markets. Especially when one is told that there is a price-fixing cartel inside Amateur Radio, and that if a retailer undersells the recommended retail price, that person can and does often face a rather hard time obtaining further equipment from the importer.

**J Davies-Bolton, G4XPP**

Editorial comment:

*Surely the reason you were offered only 50% of the price when you were selling, rather than buying, second-hand equipment was because you were dealing with commercial businesses? It's exactly the same in other areas of business: have you ever tried to sell a used car to a car dealer, for example? Your car will be sold on at around twice the price you were paid. That's how they make their money, and that seems fair enough to me.*

# ham radio today event news

ham radio today this month

## rallies

### 11 July

Cornish 35th Radio Rally and Computer Fair at Penair School, Truro. Large hall, bring and buy stand, Morse code tests etc. Doors open 10.30am and talk-in on 145.550MHz FM. Further details from Robin Worsley, GOMYR, tel: 01209 820118.

### 12 July

The Horncastle Amateur Radio, Electronics and Computer Fair, Horncastle Youth Centre, Lincolnshire. Amateur Radio, computer hardware and software, surplus equipment and domestic appliances. Doors open 10.30am. Information from G6CZV, tel: 01507 522482.

Sussex Amateur Radio and Computer Fair, Brighton Racecourse, East Sussex. Doors open 10.30am. Information from Ron Bray, G8VEH, tel: 01903 763978.

### 18 July

RSGB Headquarters Summer Saturday Opening, Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE. RSGB bookshop, GB3RS station, National Amateur Radio Museum and Library. Morse tests on demand (11.00am to 12.30pm only). Doors open 10.00am - 2.00pm. Details: Marcia Brimson, 2E1DAY, tel: 01707 659015.

### 19 July

The McMichael Mobile Rally, the Haymill Youth and Community Centre, 112 Burnham Lane, Slough. Includes car boot sale at £10 per pitch on the day (no advance bookings). Doors open 10.00am. Admission: adults £1.50, children accompanied by adult: free. Talk-in on 145.550MHz. Trade bookings to Min Standen, G0JMS, tel: 0118 972 3504. Further details from Dave Chislett, G4XDU, tel: 01628 625720.

Humber Bridge Radio and Computer Rally, Costello Sports Stadium, Boothferry Road, Hull. One large hall with bring and buy, Morse tests. Details tel: 01482 837042.

### 26 July

Colchester Radio and Computer Rally, St Helena School, Sheepen Rd, Colchester. Adjacent to Colchester bypass, Avenue of Remembrance. Wide range of radio and computer traders in two halls, Amateur Radio car boot sale, bring and buy, Morse code tests on demand (two passport size photos required). Free tea and coffee. Doors open 10.00am to 4.00pm. Admission £1.50, free parking, good access for disabled visitors. Details from David Mageehan, 2E1FRO, on tel: 01206 369226.

Rugby Radio Rally at the BP Truckstop, A5 Watling Street, near Rugby. Details from Arthur, M0ASD, tel: 01788 550778.

### 2 August

RSGB National Mobile Rally, Woburn. See 'Rally of the Month' opposite.

### 9 August

Flight Refuelling ARS Hamfest 98, at Flight Refuelling Sports Ground, Merley, Wimborne, Dorset. Usual mix of traders, bring

and buy, car boot sale, craft exhibitors and field events. Camping facilities available Saturday 8 Aug. Doors open 10.00am - 5.00pm and talk-in on 145.550MHz FM. Further details from Richard Hogan, G4VCQ, on tel: 01202 691021.

### 15 August

RSGB Headquarters Summer Saturday Opening, Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE. RSGB bookshop, GB3RS station, National Amateur Radio Museum and Library. Morse tests on demand (11.00am to 12.30pm only). Doors open 10.00am - 2.00pm. Details: Marcia Brimson, 2E1DAY, tel: 01707 659015 (office hours).

### 16 August

9th Great Eastern Radio & Computer Rally, Wallington Hall, nr Kings Lynn, Norfolk. Amateur Radio, computer and electronic component exhibitors, a bring and buy stand. Doors open at 10.00am (9.45am for disabled visitors) and talk-in on 145.550MHz FM. For further details call Ian, G0BMS, on tel: 01553 765614.

Cardiff Amateur Radio and Computer Fair at the Star Sports and Recreation Centre, Splott, Cardiff. The fair is open 10.30am - 3.00pm. Further details from Stuart Robinson, GW0WMT, tel: 01222 613070. Stroud Radio Society radio rally at Main Hall, Archway School, Paganhill, Stroud, Glos. For more details contact Stuart Goodfield, G0GNM, tel: 01453 752411 (24hrs).

### 23 August

The Telford Rally, Telford International Centre. Dealers, flea market, bring and buy stall. Good disabled access, plenty of space to move around, catering, Morse testing and good local attractions including the famous Ironbridge Gorge Museum. Contact Jim, G8UGL, tel: 01952 684173 or Tony, M0AMP, tel: 01743 235619, e-mail: zeroamp@hotmail.com

### 30 August

Galashiels and District ARS Open Day and Rally will be held in the Volunteer Hall, St Johns St, Galashiels, Scottish Borders. Traders, bring and buy stand, refreshments. Doors open 11.00am. Further details from Jim Keddie, GM7LUN, on tel: 01896 850245, or via packet GM7LUN@GB7JED.

Torbay Amateur Radio Society rally, at Churston Grammar School, nr Brixham (please note this is a *new venue*). Doors open at 10.00am and talk-in will be on 145.550MHz. For further details tel: 01626 369212 or e-mail: rally@eclipse.co.uk

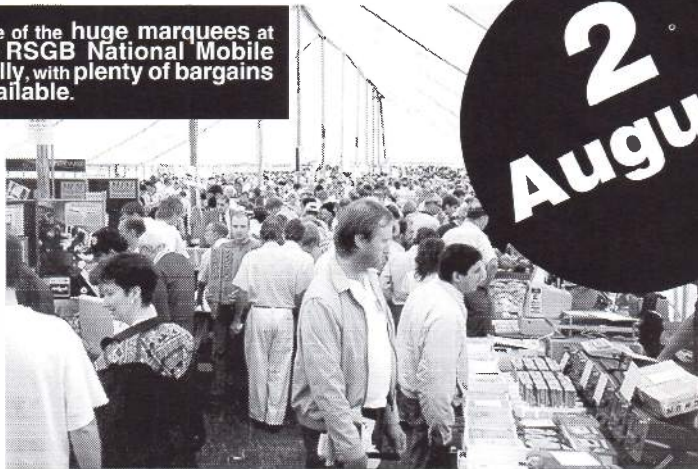
### 31 August

Huntingdonshire Amateur Radio Rally - this annual August Bank Holiday Monday rally takes place at Ernulf Community School, St Neots, Cambridgeshire (near Tesco superstore on A428). Features hall and car boot sale. Doors open 10.00am - 2.00pm and admission is £1. Talk-in on 145.550MHz. Details from David Leech, G7DIU, tel: 01480 431333 (9.00am - 9.00pm).

**To include your rally in this section, please make sure you send us details of your event in time: the deadline for the October issue is 14 August; for November, 10 September, and for the December issue, 9 October. 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

One of the huge marquees at the RSGB National Mobile Rally, with plenty of bargains available.



2 August



The RSGB National Mobile Rally, at Woburn in Bedfordshire is this edition's 'rally of the month'. This is the only 'traditional' annual mobile radio rally organised by the RSGB itself. It takes place in the beautiful grounds of historic Woburn Abbey in Bedfordshire, with plenty to do for the family, even if they are not interested in Amateur Radio!

For the radio ham, there's a large trade exhibition, covering some 23,000 sq ft, and all under canvass. It including a large RSGB bookstall and membership information stand, and a 'members' mart', with tables costing £3 per hour. The tables are available on a first come, first served basis. In addition to the trade marquees, there's a refreshment marquee and a 'hospitality marquee', with a meeting point to enable long-lost friends to get together.

Visitors should note that Lord and Lady Tavistock do not permit any trading outside the marquees, so - if you have anything to sell - please respect this and book one of the tables.

There's limited overnight caravanning possibilities at just £5 per night. The Woburn Safari Park is close at hand, as are all the other Woburn attractions (at a small additional fee). There's information about Woburn on the Internet at <http://www.britain.co.uk/pages/W/WOB30TPa.html>

Admission to the rally itself is free of charge, but all visitors must pay for entrance to the grounds of Woburn Park, in which the rally takes place. This costs £5 per car, including all passengers, or just £2.50 for a vehicle with single occupant.

Please note that the rally is in Woburn Park, and you should follow the brown tourist signs to Woburn Abbey, *not* the Safari Park. If coming from the M1, leave the motorway (whether coming from the north or south) at junction 13, and *not* junction 12 as signposted. Follow signposts through the village of Husborne Crawley to Woburn Abbey. Do not enter the park gates at Ridgmont and Husborne Crawley - these entrances are for the Safari Park.

For trade booking or any further details about this event, contact Norman Miller, G3MVB, 180 Warley Hill, Brentwood, Essex CM14 5HF; tel: 01277 225563.

## other events

- 11 / 12 July IARU HF Championship (10 - 160m SSB / CW, 1200 - 1200UTC).
- 12 July RSGB 2nd 50MHz Backpackers Contest (1100 - 1500UTC).
- 12 July WAB 50MHz Phone Contest (0900 - 1500UTC). Details from G8UYD QTHR.
- 18 July RSGB 144MHz Low Power (max 25W) Contest (1400 - 2200UTC).
- 18 July Special event station GB350BOP, 350yrs English Civil War. Details: Peter, G3UCA, tel: 01772 494474.
- 18 / 19 July Special event station GB4HMM at Holyhead Maritime Museum, Anglesey. Details: Secretary, Ty-Coch, Penrhyd, Amlwch, Ynys Môn LL68 1XX.
- 18 - 20 July Special event stations EI1M at Dun Laoghaire, celebrating 100th anniversary of Marconi's experiments in Dublin Bay. Details Sean Donelan, EI4GK.
- 19 July RSGB 432MHz Low Power (max 25W) Contest (0800 - 1400UTC).
- 24 - 31 July National Guide Jamboree, Wirral, inc special event station. Further details from John Phillips, G3PXX, tel: 0151 336 4452.
- 25 July Waters & Stanton PLC 25th anniversary sale, 22 Main Road, Hockley, Essex; tel: 01702 206835.
- 25 July Special event station GB350BOP, 350yrs English Civil War. Details: Peter, G3UCA, tel: 01772 494474.
- 25 / 26 July RSGB IOTA Contest (10 - 80m SSB / CW, 1200 - 1200UTC).
- 31 July - 2 August AMSAT-UK Colloquium, University of Surrey, Guildford (details: Fred Southwell, G6ZRU, tel: 01273 495733.)
- 2 August RSGB 4th 144MHz Backpackers Contest (1100 - 1500UTC).
- 2 / 3 August Special event station GB350BOP, 350yrs English Civil War. Details: Peter, G3UCA, tel: 01772 494474.
- 5 August *Ham Radio Today* September publication date.
- 8 / 9 August Special event station GB350BOP, 350yrs English Civil War. Details: Peter, G3UCA, tel: 01772 494474.
- 9 August RSGB 70MHz Trophy Contest (0900 - 1500UTC).
- 15 / 17 August Special event station GB350BOP, 350yrs English Civil War. Details: Peter, G3UCA, tel: 01772 494474.
- 17 August RSGB 144MHz CW Cumulative Contest (2000 - 2230 local time).
- 20 - 24 August Svalbard Polar YL '98 Convention, Longyearbyen, Svalbard (details: Ruth Tollefsen, PO Box 17, Tveita, N-0617 Oslo, Norway; tel: +47 2226 9330; fax: +47 2226 9712; e-mail: jetpro@sn.no).
- 21 - 23 August 1998 Amateur Radio Festival, Tokyo, Japan. Probably the biggest Amateur Radio event in the world.
- 22 / 23 August International Lighthouse and Lightship Weekend, details from OZ7DAL, DK-8400 Ebeltoft, Denmark.
- 23 August RSGB 432MHz Fixed Station Contest (1700 - 2100UTC)
- 28 August German-Dutch Radio Amateur Festival, Bad Bentheim, Germany.

ham radio this month

ham radio today event news

# Coaxial Plugs and Connectors

Think you know your N types from your SMAs? Geoffrey Theasby, G8BMI, describes some of the most common connectors found in Amateur Radio circles and gives some tips on how to fit them to cables

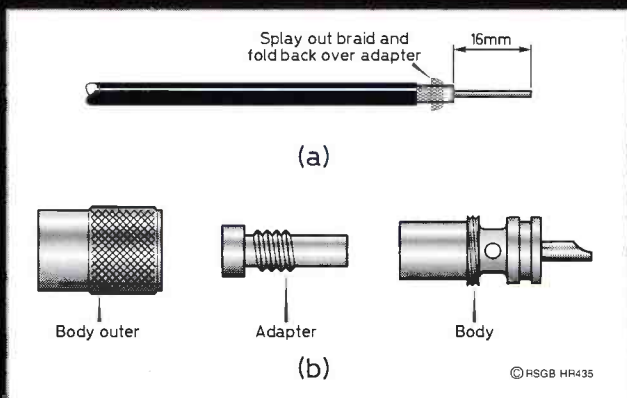


Fig 1: The UHF connector. (a) Preparing RG58, UR43 or UR76 cable, and (b) the PL259 plug.

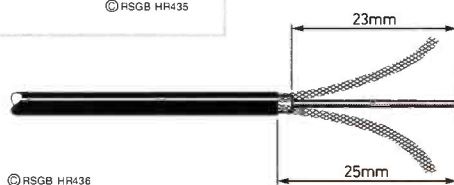
up to 100 watts. Do not mix the 50 and 75Ω types. The 75Ω types are found in test gear, scope probes etc, and are the kind you get from Tandy. If in doubt, ask; if they don't know, go elsewhere! It is weatherproof, but add more weatherproofing to be certain.

To assemble, fit the nut,

washer, gasket and clamp to the cable, then strip the cable as shown in Fig 3, solder the pin, then assemble the body to the cable and screw up the nut. Do not rotate the body on to the nut or you will twist the cable. Line sockets are dealt with similarly.

The TNC type connector is simply a threaded version of the BNC connector.

Fig 2: The 'quick and dirty' way to prepare cable when assembling a PL259 plug.



## n type

Developed by the engineer Neill of BNC connector fame, the N type connector is good up to 11GHz and is easy to assemble, providing you have the drawing for the end of the cable preparation. Decent connectors come with a cable preparation diagram. It is easy to fit to RG8 cable and to others with special connectors, although

This article describes the type and history of the various plugs and sockets currently used in the Amateur Radio world. Most of them have been developed since WWII, in parallel with the growing use of coaxial cable.

## uhf

First the so-called 'UHF connector', the PL259 plug and SO239 socket combination. The UHF connector has been used since it was developed for use with the atom bomb project in WWII and is only good enough for use up to 30MHz, despite many manufacturers fitting them to 2 metre rigs, and above.

Its characteristic impedance is about 25Ω and it will introduce a mismatch into any system, getting worse with increasing frequency. Also many 'cheap and nasty' examples are available, with insulation known to the cognoscenti as 'moulded mud', and just about as useless. Contact with the mating connector is haphazard and dependent on lack of corrosion, and cleanliness. They are not weatherproof.

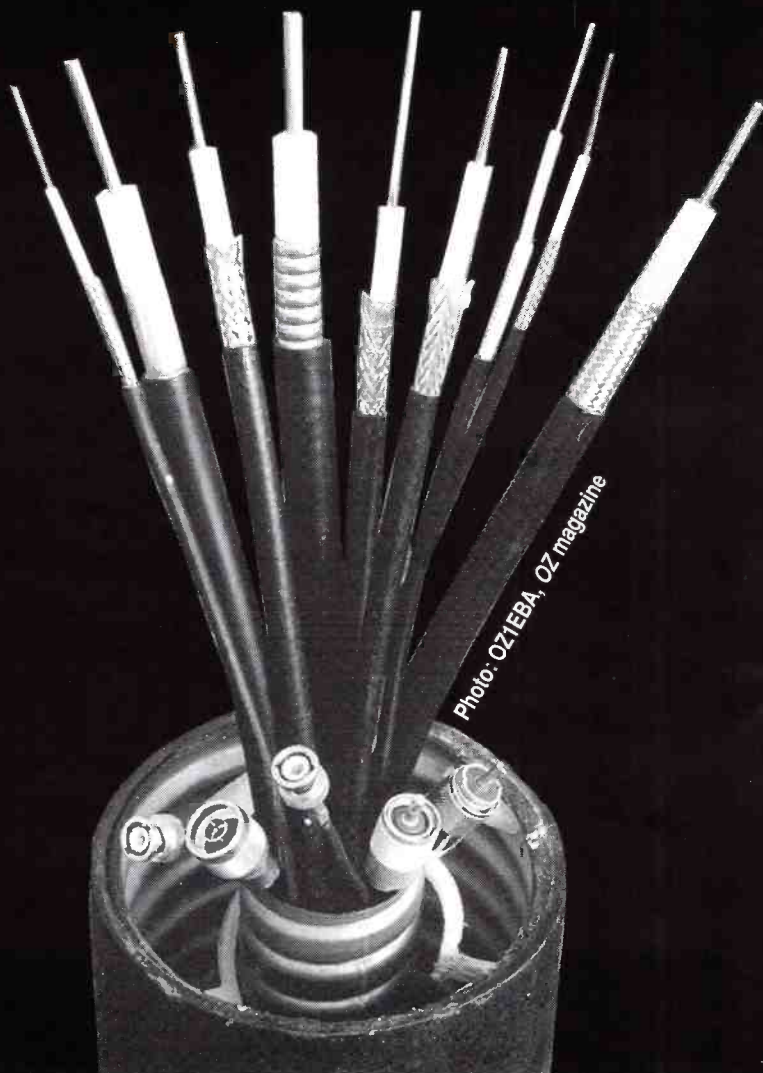
To assemble, place body outer and adapter on the cable, then strip as shown in Fig 1, fold braid back over adapter and assemble body to cable, solder pin and solder braid through holes in body.

For a 'quick and dirty' way to

assemble a UHF plug see Fig 2. Place the body outer and adapter, if required, on to the cable, then strip as shown in the drawing. Make two pigtails, each 25mm long or more, and then turn the ends outwards and tin them. Assemble the body carefully on to the prepared cable with the pigtailed inside, until they emerge from the holes near the pin (this is easier to do if you use the type with the two elongated soldering holes, rather than four round ones). Then draw the pigtailed through these holes until the cable inner engages with the pin and the cable is snug up to the inside of the body. Cut off the excess of the pigtailed and the inner and solder. Screw on the body outer and the job is complete. If you use nickel plated connectors it is easier to file off the nickel plating to reveal the brass below.

## bnc

Developed by a pair of engineers called Neill and Concelmann, of Bell Laboratories, after the war, the Bayonet Neill Concelmann (BNC) connector is good up to 4GHz and is easy to fit to RG58 cable. It can be fitted to other cables with special connectors. The BNC connector can handle power





# World Wide Amateur Radio Science Lab

Mike Wade, G8OGO, shows how Amateur Radio is used to make learning fun for pupils in the UK and Germany

The 1998 ICARE (International Council for Amateur Radio in Education) conference is being held this month in Berlin. It is being hosted by the German youth organisation Technischer Jugendfreizeit und Bildungsverein eV, who are also holding a week of activities and workshops for 100 pupils and their teachers from around the world. The annual ICARE meetings provide a forum for reporting and discussing educational Amateur Radio activities in those countries attending.

ICARE conferences started following discussions at an AATiS (Arbeitskreis Amateurfunk und Telekommunikation in der Schule eV) meeting in 1994 in Goslar, in the Harz mountains, which was attended by members of STELAR (Science and Technology through Educational Links with Amateur Radio), led by Richard Horton, G3XWH.

I attended the 13th annual AATiS congress at Goslar in March. It's a teachers' group, led by Wolfgang Lipps, DL4OAD, which organises Amateur Radio activities in German schools. The AATiS group is made up of teachers in many areas of Germany, and electronics engineers from industry, who provide technical support and advice.

## at the congress

The process of encouraging scientific enquiry through practical projects begins with a number of simple starter projects which show the principle of a basic circuit or component in action. The interest is generated by the pupils seeing their own work operate successfully. This is followed by projects that build on that initial interest, by enabling pupils to use their newly-acquired practical skills to complete more complex work, such as receivers. These continue to hold the interest because they are part of organised school projects with data feedback, and which are reported as magazine articles.

Two students, Thea Beer, DG3MMH, and Andreas Schweizer, DK2GS, described a

series of projects using weather balloons which, instead of the normal meteorological radio payload, carried an educational Amateur Radio payload. An insulated container housed a specially-made transmitter connected to sensors and a GPS receiver via a micro controller. Building the payload was, of course, a project in itself.

Launches take place so that a number of schools can take part in tracking the balloon. A school which only has a receiver can still pick up the GPS position in digivoice and track this manually on a map, whilst other schools may be able to receive the co-ordinates as data with flight tracking automatically on their computer screen map, using the right software. The tracking of the flight across the country generates considerable inter-school radio traffic in order to co-ordinate retrieval of the radio package after the parachute descent.

## packet transceiver

One of the key activities at Goslar involved teachers and pupils building a special 70cm packet transceiver operating at 1200 bps and 9600 bps. Kits were supplied by the engineer in charge, Gunther Borchert, DF5FC, who then checked the alignment of the constructed units with test gear. The standard of construction required was high, with magnifying glasses sometimes being used to ensure correct component placement, but the length of time devoted to the activity enabled complete working transceivers to be produced.

There was a lecture stream which included talks on the different types of lightning discharge, and how to locate spacecraft and satellites visually from Kepler elements.

A series of handbooks, called *Praxisheft*, produced to a very high standard by AATiS in time for the main March weekend meeting each year, give teachers the choice of which projects they wish to pursue for their class.

Back up, in the form of weekend seminars on the 9600 bps

transceiver, is provided, and launches for the balloon project are organised in different areas for schools, some carrying Amateur TV cameras on the 13cm band, showing the view from the balloon itself.

## in the uk

In June last year an open day was held at Thomas Mills High School in Framlingham in Suffolk. Over 40 pupils from schools in the area came together for a 'Radio Awareness Day', a whole Saturday of practical workshops organised by the BT Living Science & Technology (BTLST) project, headed by Dave Powis, G4HUP. It is part of the BT Schools Liaison Programme, managed by Marilyn Mackley for BT Laboratories at Martlesham.

The BTLST project supports the Novice Radio Amateurs Examination (NRAE) licence course at local schools, with BT engineers helping licensed teachers to run radio clubs. Many of the pupils attending the open day were themselves Novice licensees who had taken their NRAE at Farlingaye High School, which is an examination centre for the area.

## open day

The day started with antennas being put up and tables being kitted out with soldering irons and materials, ready for the different project workshops. The rooms soon filled to capacity with pupils busy at the tables, each activity guided by a licensed teacher or BT engineer.

The range of activities included some outside, with pupils launching a kite aerial and receiving a signal from it. This became really exciting when some distant clouds darkened and the signal voltage being demonstrated became audible even without the receiver, so the kite was lowered to protect it and us for the time being!



Paul Bloom, 2E1FSS, and Bill Rothwell, G0VDE, working on converting 49MHz handhelds to 6m.



Dave Powis, G4HUP, sets up the 70cm antenna test range.

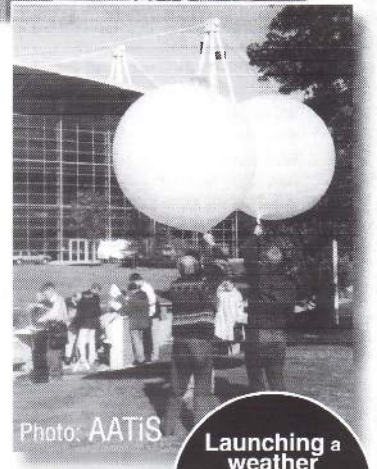


Photo: AATiS

Launching a weather balloon containing an Amateur Radio payload.

Safety advice was also in evidence in the training being given on how to erect antennas, by using examples of different designs of mast clamps and brackets. Pupils were shown how these worked, how to assemble them securely and how to connect feeders to ensure a completed aerial installation works efficiently and is weatherproof and safe.

Dave Powis, G4HUP, had set up an antenna test range operating on 70cm, with a signal transmitted by a fixed antenna being received on the beam antenna under test on a rotator. This allowed the signal level received by the beam to be plotted on circular graph paper every 10 degrees of

**25** rotation, so displaying the complete polar diagram after 360 degrees. Enthusiastic pupils added to this demonstration by showing how interference could be created between a direct signal and one reflected from themselves as they walked across the test range, leading to signal readings having to be taken when these free extra demonstrations were not taking place! A number of different types of beam aerial were displayed by Dave to explain their operation and their likely gain over a reference dipole.

### practical workshops

HF and VHF stations were being operated, as was a packet station, but it was noticeable that most pupil interest throughout the day was focused on making their own equipment, which they could then use as part of their own Amateur Radio stations. Even the outside activities seemed to be chosen by a minority of pupils compared with the practical workshop activities.

The main activity took place indoors in the practical workshops.

Five or six pupils at each table, led by a licensed teacher or engineer, were making items for their own Amateur Radio stations. One group made 70cm ground plane antennas by soldering wire elements to SO-239 panel sockets. Another group made 70cm J-pole antennas with plastic support blocks being drilled on which to mount the completed elements. Another group made SWR bridges for their stations, whilst the Novice 6m band was supported by groups making wire dipoles for that band.

The BTLST project had earlier installed a 6m repeater, GB3EF, at Martlesham, and repeater keeper Bill Rothwell, G0VDE, led a group busily converting 49MHz Tandy Handy Talkies on to the repeater channel. CTCSS circuits were also made to complete the conversions to allow them to access the repeater.

### success

The success of both the groups in Germany and the UK is because they supply an essential component that is often missing from information that is supplied about Amateur Radio in schools. This is the practical detail of how to be-

come involved in organised projects that utilise the scientific freedoms of enquiry under the Amateur Radio licence. This leads to multiple school involvement on a sustained and co-ordinated basis.

ICARE conferences, such as the one being held this month in Berlin, provide a unique opportunity for a broad range of educational Amateur Radio activities to be compared. They also allow for a study of educational activities that have used the scientific freedoms available with Amateur Radio to encourage a co-operative spirit of scientific enquiry by pupils - regardless of their national origin or background. Discussion is now possible between members from countries formally divided by the Cold War and by differing levels of industrial development. The meetings seek ways of advancing educational and sci-



**Pupils from Thomas Mills High School demonstrate their soldering skills to Marilyn MacRley, the BT Schools Liaison Manager.**

entific co-operation in order to deal with problems that their pupils are going to face in the years to come.

If successful, they will play a part in rebuilding the international scientific ethic that drove the original Amateur Radio experimenters to set up scientific co-operation via the International Amateur Radio Union in 1925.

**24** the ones for Heliac are very expensive. The N type connector can handle quite high powers, well beyond the UK legal limit. Do not mix the 50 and 75Ω types.

Interestingly, an N type plug will mate with a BNC socket in an emergency, since the locking arrangement is not part of the coaxiality of the connector. Unlike the UHF (PL259) connector, it is weatherproof, but again add more weatherproofing to be sure.

N type connectors are fitted to many 70cm rigs and to Tonna antennas, amongst others.

The N type is assembled in a similar way to the BNC connector. Fit the nut, washer, gasket and clamp to the cable, then strip the cable as shown in Fig 4, solder the pin, then assemble the body to the cable and screw up the nut.

Neill's colleague Concelmann also invented the C type connector, but this is not met with in Amateur Radio circles.

### sma, smb, smc

The SMA is a professional connector, of the screw-on type, usually with PTFE insulation, and is good up to 18GHz. It is often found at rallies and is used with RG174 and RG316 cable, as well as semi-rigid cable. RG174 cable has polythene insulation, which melts on soldering; RG316 has PTFE insulation which doesn't. It is ideally assembled to its mating

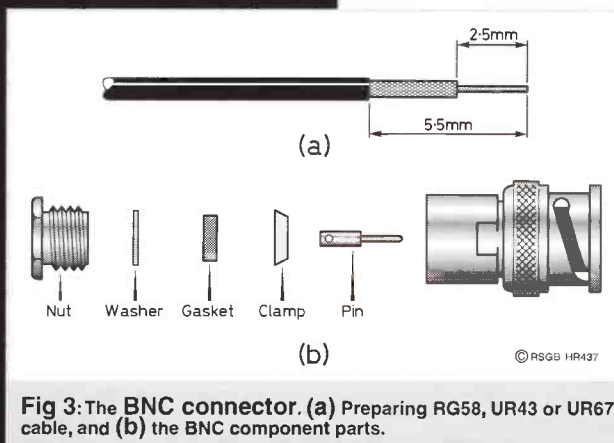
connector with a torque wrench. You need good eyesight and a small soldering iron to assemble these.

The SMB is another small connector used up to 4GHz and is of the push-on type. It is used with RG174 and RG316 cable.

The SMC is a threaded version of the SMB.

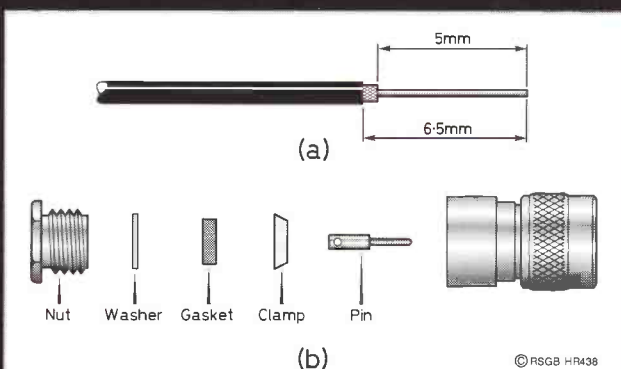
### belling lee

The Belling Lee, or 'TV connector', is another push-on connector with a torque wrench.



**Fig 3: The BNC connector. (a) Preparing RG58, UR43 or UR67 cable, and (b) the BNC component parts.**

tor. Whilst normally a 75Ω connector, it is surprisingly good at 50Ω, and introduces very little loss. Normally available in polythene insulation, which melts easily, it is low loss up to well in the VHF region, although being alu-



**Fig 4: The N type connector. (a) Preparing RG8 or UR67 cable, and (b) the N type component parts.**

awkward to assemble and unreliable, even at audio frequencies (and even the gold plated ones).

### f connector

The F connector is used mainly in satellite TV, and is often available at rallies. The inner of the coax forms the pin of the plug, and the outer is a screw-on only. For this reason I dislike it, although it seems to perform well at 1GHz.

Reading the professional catalogues there are many other types of connector, but these are the ones you are likely to find at rallies, on Amateur Radio equipment and on computers with video cards.

minium it does tend to corrode very easily. It is therefore best used indoors only.

### phono

Phono connectors should be avoided like the plague. They are



It's the transceiver that many amateurs around the world have been waiting for. Having been publicised for several months before it became available, many amateurs had already put their deposit down to be certain of being one of the first. Being an equipment reviewer sometimes has its benefits!

In the FT-847, Yaesu have come up with a carry-around sized set giving multimode transceive operation on HF, 6m, 2m and 70cm, including full-duplex satellite ca-

than the transceiver, as it's specified as requiring 22A for 100W RF output.

### dsp

No transmitter is any use without a good receiver, and the FT-847 really scores here in terms of operating features. As well as having an IF shift and switchable attenuator, slow / fast AGC, IF noise blanker and RF amplifier, in common with Yaesu's other recent top of the range models an audio-based DSP (Digital Signal

### satellite mode

With its built-in 'satellite mode', Yaesu refer to the FT-847 as an 'Earth Station'. It gives you full-duplex crossband transceive, ie simultaneous transmit and receive between bands, and the push of a button allows your uplink (transmit) and downlink (receive) frequencies to track each other. As some satellite modes use inverting transponders, you can also select 'reverse tracking'; the sub-tune knob also gives you the capability of manual adjustment of your uplink.

select either 1200 or 9600 baud operation on a band-by-band basis. Each VFO, A and B, can also store the baud rate setting and this is preserved if the frequency is stored into a memory channel register. There's no dedicated packet mode on the front panel, instead whenever the transceiver detects a PTT control command on the packet connector this mode is recognised.

The three-pin 'data' connector lets you use other modes such as RTTY, AmTOR, PacTOR and SSTV, even weather-fax receive, in manually-selected SSB or AM / FM modes, also high-speed meteor-scatter CW using audio-keyed SSB. If you've connected your data unit's PTT line to the packet PTT line, the set's front panel mic audio is automatically muted on transmit.

### connections

Also on the rear panel are separate antenna sockets for HF, 6m, 2m and 70cm, and you can select the HF socket to also be used for 6m, for example if you're using a compact HF / 6m Yagi.

The dedicated 'Tuner' socket interfaces with Yaesu's optional

# Yaesu FT-847 reviewed

The first UK full technical review, by Chris Lorek, G4HCL

pability between band ranges. On transmit it offers 100W output on HF and 6m, with 50W output on 2m and 70cm, plus receive coverage across 100kHz - 30MHz, 36 - 76MHz, 108 - 174MHz and 420 - 512MHz. Not only that, but models supplied to the UK market have also had 4m transmit capability added; more about that later.

The set's packed full to bursting with operating 'bells and whistles', and many amateurs have naturally been attracted to the set as a 'do-everything' rig for their shack. Could this ideal be a reality? Let's find out...

### dimensions

When you first cast eyes on an FT-847, you'll probably be surprised, as I was, with its size. It's rather smaller than you'd imagine, especially when compared with Yaesu's other base-station models. It measures just 260W x 86H x 270Dmm, ie less than a normal 30cm-long ruler wide or deep.

Operating from a 13.8V DC supply, and thus without an internal mains power supply unit, the weight is also kept down to a reasonably light 7kg. Your power supply will certainly weigh more

Processor) system is included.

This offers continuously variable low and high-cut audio filtering for speech modes and selectable 25, 100, 200 and 400Hz audio bandwidths on CW. There's also a DSP noise reduction mode, plus an automatic digital audio notch with the capability of notching multiple tones at the same time.

Ceramic IF filters are used for all modes, with available bandwidths of 2.2kHz (SSB / CW and Narrow AM), 9kHz (AM and Narrow FM) and 15kHz (FM). Optional Collins mechanical filters are also available, one for CW, giving a 500Hz bandwidth, and one for SSB which gives the same 2.2kHz bandwidth, but with a better passband response.

On transmit, a built-in CW keyer and an RF speech processor for SSB are fitted; an audio monitor lets you hear what your transmitted signal sounds like at any time. An optional voice synthesiser can be internally fitted, which gives speech readout of the operational frequency at the press of a button, which is naturally useful for visually-impaired operators.

Dual frequency displays show you exactly where you are at any time, and there's a dedicated satellite 'memory' VFO system which can store up to 12 operating modes into different memories, eg for different satellites and modes. There's also an 'alpha-tag' facility for these, where you can give a short name to each memory, which shows on the sub-VFO display each time you switch between satellite memories, reverting to the operating frequency after a couple of seconds.

### data

Dedicated sockets on the rear panel are fitted for both packet and data. The 'packet' socket is dedicated to packet radio, and you can

FC-20 external tuner, or their ATAS-100 auto-tuning antenna system. The 'Stby' socket carries separate TX switching lines for each band range for use with separate linear amplifiers. An RS-232 CAT socket allows remote control of the rig, using one of the many readily-available amateur logging and rig control programs.

A small rear-panel mounted fan works in conjunction with a larger internal fan to keep the set's internal PA circuitry cool, the air being blown along an internal PA heatsink.

### powering up

Connecting my 13.8V supply and switching on brought up a very readable blue



# Yaesu FT-847 reviewed

The first UK full technical review of this new all-band

backlit display, which includes a curved bargraph indication of S-meter level and transmit power output. On FM it also produced a handy centre-zero discriminator meter - especially useful for 9600 baud digital microsats. Transmit ALC can be shown in place of the power output if you wish.

Although I was 'up and running' very quickly with the FT-847, I found a good read of the 100-plus page manual was essential to get the best out of the

transceiver. After almost every few pages I thought, "now isn't that a good idea", as Yaesu seem to have added plenty of useful operating functions to the set. For example, a press of the 'Fast' button, besides speeding up the VFO tuning, also changed the 'band' up / down to instead switch between 6m, 2m, 70cm, and just the last-used band on HF, rather than cycling through every HF band as well.

On 2m and 70cm, low-noise

internal preamps are switched in with the 'preamp' button, this can instead be programmed to supply DC voltage on to the antenna connector on either or both bands for powering a masthead preamp, as used by many VHF / UHF DX chasers. Many operating modes and settings, eg noise reduction level, CW delay time, DSP CW filter bandwidth etc, are controlled by a 'menu' system. There's a useful double-sided A4 card with a complete list of the menus supplied with the operating manual.

this (a touch too much and I was several MHz away!) I found this very useful as a 'lazy' way of tuning around looking for activity.

I'd quickly programmed the set's memories with my local VHF / UHF 'chat channels', as well as HF net frequencies and a number of satellite modes. It might seem ironic, with the FT-847 being an 'Earth Station', that on the very first evening with the receiver listening to my local 2m repeater frequency whilst I was reading the manual, an end-stop S-meter signal with Russian speech came up, several times. No, it wasn't a 'lift', it was one of the cosmonauts on the Mir space station. It certainly woke a few locals up who initially couldn't work out what was happening! Switching in my azi / ele controlled 2m and 70cm crossed Yagis and selecting 'Mir' from my PC tracking program confirmed this - although I needed the FT-847's attenuator switched in to bring the S-meter level down to below 60 over 9!

I really appreciated the front panel control capabilities of the set, which

## on the air

Concentric to the main tuning knob is Yaesu's 'shuttle jog', a spring-loaded tuning ring which automatically steps up and down for you. The further you turn it the faster it tunes. After I'd got used to



Rear panel. Note use of N-type antenna socket for 430MHz.



Close up showing setting of menu parameters.

## laboratory

### rece

All measurements carried out on 21.4MHz in SSB mode, with DSP, attenuator and 13.8V DC using supplied length of

### sensitivity:

Input level in  $\mu\text{V}$  pd required to give 12dB SINAD, measured in standard bandwidth with internal preamp both off (Normal) and on (Preamp)

Freq MHz	SSB / CW		AM		FM	
	Normal	Preamp	Normal	Preamp	Normal	Preamp
1.8	0.52	0.24	1.52	0.73	-	-
3.5	0.36	0.18	1.10	0.52	-	-
7.0	0.26	0.13	0.89	0.51	-	-
10.1	0.34	0.18	0.93	0.48	-	-
14.0	0.34	0.18	0.90	0.54	-	-
18.1	0.38	0.17	1.00	0.52	-	-
21.0	0.36	0.17	1.04	0.50	-	-
24.9	0.40	0.16	1.02	0.47	-	-
29.0	0.35	0.15	0.96	0.48	0.24	0.19
51.0	0.17	0.13	0.63	0.27	0.23	0.18
70.2	0.53	0.32	1.50	0.89	0.74	0.44
145	0.12	0.09	-	-	0.18	0.12
432	0.13	0.11	-	-	0.21	0.16

### selectivity:

Measured using standard filters and with optional Collins CW and SSB filters fitted

	CW / SSB	AM / FM Nar	FM	Optional CW	Optional SSB
-3dB	2.07kHz	9.27kHz	11.76kHz	527Hz	2.58kHz
-6dB	2.45kHz	10.77kHz	13.68kHz	569Hz	2.75kHz
-20dB	2.84kHz	13.09kHz	19.33kHz	749Hz	3.19kHz
-40dB	3.16kHz	15.47kHz	22.37kHz	1.07kHz	3.98kHz
-60dB	4.63kHz	18.10kHz	25.41kHz	1.89kHz	4.19kHz

### Blocking:

Measured as increase over 12dB SINAD level of interfering signal, unmodulated carrier, causing 6dB degradation in 12dB SINAD on-channel signal, measured with preamp off (Nor), and on (Preamp)

21.4MHz:	Nor	Preamp
+/-50kHz:	99.7dB	99.7dB
+/-100kHz:	102.6dB	102.3dB
+/-200kHz:	104.2dB	103.6dB

51MHz:	Nor	Preamp
+/-50kHz:	100.0dB	101.6dB
+/-100kHz:	102.9dB	102.9dB
+/-200kHz:	104.2dB	103.1dB

### image rejection:

Increase in level of signal at the first and second IF image frequencies, and the first and second IF, over level of on-channel signal, giving identical 12dB SINAD signal

Freq MHz	1st Image Rej	1st IF Rej	2nd Image Rej	2nd IF Rej
1.8	101.0dB	71.6dB	>110dB	>110dB
3.5	80.7dB	61.2dB	>110dB	>110dB
7.0	78.7dB	59.9dB	>110dB	>110dB
10.1	89.2dB	66.1dB	107.6dB	>110dB
14.0	85.7dB	64.7dB	99.6dB	>110dB
18.1	77.3dB	67.8dB	100.7dB	>110dB
21.0	83.9dB	69.4dB	98.8dB	>110dB
24.9	109.3dB	81.4dB	92.2dB	>110dB
29.0	101.7dB	80.8dB	92.0dB	>110dB
51.0	97.9dB	89.9dB	87.7dB	>110dB
70.2	74.9dB	88.7dB	83.5dB	>110dB
145	64.9dB	57.6dB	89.4dB	>110dB
433	68.3dB	81.2dB	>110dB	>110dB

# Yaesu FT-847 reviewed

all-mode transceiver, by Chris Lorek, G4HCL

give the operating flexibility of an up-market HF transceiver on VHF / UHF bands as well. The two VFO frequencies, A and B, are both displayed and switching between these was very easy, for example I often used them to quickly flick between two frequencies on a given band. There's also a pair of 'QMB' (Quick Memory Bank) buttons which would quickly store and recall an interesting frequency I'd found on an initial tune around.

As well as having many

contacts on the HF bands with the set, I managed to enjoy plenty on 6m, 2m and 70cm as well. Until a couple of years ago I owned an FT-736 for some time and grew to appreciate its satellite capabilities, but the FT-847 goes one better, with its extra operating functions such as the built-in 9600 baud data capability and satellite name-tagging. It's a pity that the FT-847 doesn't have the facility of adding 23cm; there's no separate low-level transverter output, so you'll need

to use one of the antenna ports, eg 2m, for an external transverter (be careful of the 50W max 2m power output) and relinquish that band for any full-duplex satellite work.

With my 'critical' hat on, I noted a slightly 'boxy' receive audio on all modes. Plugging in an external speaker or headphones gave the same result, and eventually I just became used to it.

On FM, the 'Nar' button on the front panel usefully reduces transmit deviation, as well as reducing

the bandwidth on receive. Testing this through my local 12.5kHz-spec 2m repeater certainly showed the difference, from badly distorted audio on the 'wide' setting to excellent audio in the 'Nar' mode.

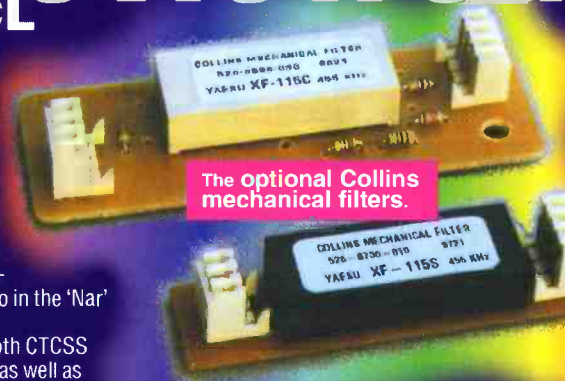
The FT-847 has both CTCSS and DCS capabilities as well as a 1750Hz toneburst, it can also be used as a cross-band repeater if you wish, either carrier squelch, CTCSS, or DCS activated.

## filters

On HF SSB and CW, I found the supplied IF filtering wasn't really up to what I've become used to on £1000-plus HF rigs (the FT-847 is priced at £1695 at the time of writing). Although I often found adjacent-frequency splatter coming through, the low / high cut DSP audio filtering helped very well if the QRM wasn't too strong. On CW, the pre-set bandwidth narrow DSP audio filter worked very well indeed, although CW

enthusiasts and DX chasers would probably still wish to add the optional filter.

A call to Yaesu UK promptly brought the optional Collins CW and SSB filters through my letterbox, and fitting them took just a few minutes. The CW filter was a vast improvement for this mode. Coupled with the even narrower DSP filtering, and judicious use of the RF gain and DSP noise reduction, it allowed the rig to pull out otherwise unreadable signals, not only on HF but also for weak-signal VHF / UHF use. I'd certainly recommend this if you're planning to try things like meteor scatter or even moonbounce operation



The optional Collins mechanical filters.

Underside view from rear, before the optional filters were fitted.



## Test results

Preamps disabled, with supplied IF filters and with set powered from stabilised DC lead, unless otherwise stated.

## Transceiver

### 3rd order intermodulation rejection:

Increase over 12dB SINAD level of two interfering signals giving identical 12dB SINAD on-channel 3rd order intermodulation product, measured with preamp off (Nor), and on (Preamp)

21.4MHz:	Nor	Preamp	145MHz:	Nor	Preamp
10 / 20kHz spacing:	70.7dB	66.5dB	10 / 20kHz spacing:	69.1dB	63.5dB
20 / 40kHz spacing:	91.5dB	86.5dB	20 / 40kHz spacing:	79.4dB	73.4dB
50 / 100kHz spacing:	90.1dB	84.9dB	50 / 100kHz spacing:	79.0dB	73.8dB
100 / 200kHz spacing:	88.9dB	84.7dB	100 / 200kHz spacing:	80.3dB	75.0dB
51MHz:	Nor	Preamp	432MHz:	Nor	Preamp
10 / 20kHz spacing:	71.2dB	66.2dB	10 / 20kHz spacing:	67.8dB	60.3dB
20 / 40kHz spacing:	92.8dB	84.2dB	20 / 40kHz spacing:	91.8dB	86.9dB
50 / 100kHz spacing:	88.4dB	83.3dB	50 / 100kHz spacing:	86.9dB	82.2dB
100 / 200kHz spacing:	86.7dB	82.4dB	100 / 200kHz spacing:	83.7dB	80.7dB

### s-meter linearity:

Measured at 14.25MHz

Indication	Sig Level	Rel Level
S1	2.61 µV pd	-28.4dB
S2	3.34 µV pd	-26.2dB
S3	4.51 µV pd	-23.6dB
S4	6.46 µV pd	-20.5dB
S5	9.40 µV pd	-17.2dB
S6	13.6 µV pd	-14.0dB
S7	22.0 µV pd	-9.8dB
S8	36.1 µV pd	-5.6dB
S9	67.9 µV pd	0dB ref
S9+20dB	193 µV pd	+9.1dB
S9+40dB	1.04 mV pd	+23.8dB
S9+60dB	186 mV pd	+68.7dB

### s-meter s9 level:

Freq MHz	Sig Level	
	Preamp Off	Preamp On
1.8	109.1 µV pd	29.9 µV pd
3.5	85.6 µV pd	22.7 µV pd
7.0	90.2 µV pd	24.2 µV pd
10.1	84.0 µV pd	23.3 µV pd
14.0	67.9 µV pd	18.3 µV pd
18.1	64.0 µV pd	17.8 µV pd
21.0	63.4 µV pd	17.2 µV pd
24.9	60.5 µV pd	16.8 µV pd
29.0	67.2 µV pd	18.1 µV pd
51.0	47.8 µV pd	12.9 µV pd
70.2	119.0 µV pd	38.8 µV pd
145	28.1 µV pd	9.7 µV pd
432	24.7 µV pd	7.4 µV pd



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**6**

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**2**

### IC-821H

The IC-821H has proved to be the best performance 2/70 Base Station money can buy. Whilst the new breed of 'Super-Rigs' offer every frequency from DC to blue light, they obviously compromise on performance somewhere. The IC-821H has been specifically designed for users who want the best on two bands - 144MHz and 432MHz. If you are serious about VHF operation then the IC-821H is for you.



RRP £1595 ML Price: **£1295** or **£14.99 deposit & 54 x £35 p.m.**

**7**

### STANDARD C156

Compare the quality of the new Standard C156 with the rest of the 'budget' handies and you can see why people choose this one every time!



RRP £149.95 ML Price **£129.95**

**3**

### STANDARD C5900

Still the only Triple Band mobile on the market with all three bands fitted as standard! 2m, 6m & 70cm with the power output to match. Superb engineering with remote head capability.



RRP £799 ML Price **£599** or **£16.99 deposit & 29 x £25 p/m**

**8**

### ALINCO DRM-06

The only 6m FM 20W transceiver available on the market. No frills, simple in operation & which is all you need to get on Six Metre simplex or through the ever-growing array of repeaters.



Available now! Only **£239**

**4**

### KENWOOD TMG-707

Dual Band 2/70 Mobile. Fantastic display. Nice 'n' Easy to use in the car. 180 memories and Remote Head.



RRP £349 ML Price **£329** or **£24.15 deposit & 12 x £28 p/m**

**9**

### ICOM IC-207

A very compact Twin Band mobile that works well in the car or the shack. Remote Head (surprise surprise) Loads power on both bands!



RRP £389 ML Price **£339** or **£34.15 deposit & 12 x £28 p/m**

**5**

### ICOM IC-T8E

FREE FINANCE on this product

The only TRIPLE BAND 2/6/70 Handie on the market. Fortunately it's brilliant.



RRP **£349** or **£49 deposit & 12 x £25 p/m**  
**ZERO FINANCE CHARGES**

**10**

### YAESU FT-8100

A full Dual Bander (i.e. you can receive two bands at once), Remote, 50W on 2m \* 35W on 70cm. One of the best in the RX division too!



RRP £449  
ML Price **£399**  
or **ZERO DEPOSIT!** & **18 x £25 p/m**

**140-142 NORTHFIELD AVENUE, EALING, LONDON W13 9SB**



# Our Radio Chart

## Call now 0181-566 1120

### VHF Top Ten

**1** **YAESU FT-847GX**

Calling all Earthlings. We've developed a Transceiver that does everything except make your British cup of tea. We think that the radio will be so much fun you'll probably forget about drinking anyway. HF + 6m + 4m + 2m + 70cm



RRP £1699 **ML Price £1599**  
or £35.86 deposit & 60 x £40 p/m

**2** **ICOM IC-746**

We like this one. Huge display, brilliant DSP and 100 Watts on HF + 6m + 2m. We've also crammed in an auto ATU to save you twiddling your fingers more than usual.



RRP £1695 **ML Price £1595**  
or £31.86 deposit & 60 x £40 p/m

**3** **FT-1000MP/AC**

Yaesu's best selling HF Transceiver since the FT-101ZD. The ultimate R.F. performer now available on Interest Free.



RRP £2499 **ML Price £2199**  
or £183 deposit & 18 x £112 p/m  
**ZERO FINANCE CHARGES.**

**4** **FT-920AF**

If it's good enough for the Spratly Island Expedition it's good enough for you. Excellent value HF + 6m at 100 Watts. Now fitted with AM/FM options.



RRP £1499 **ML Price £1299**  
or £18.99 deposit & 54 x £35 p/m

**5** **IC-706mk11 DSP**

Attention anyone out there that does not understand that this little box REALLY IS an HF, Six Metre & 2 Metre wireless. We won't mention the DSP, wide band FM and extended receive coverage and optional SSB and CW narrow filters. Still doesn't make Tea.



RRP £1099 **ML Price £999**  
or £22.03 deposit & 60 x £25 p/m

**6** **FT-900ATC**

Built like a brick out house, if you just want good H.F. performance in one compact (but not micro) package then order an FT-900ATC. HF, auto ATU & 'Collins' SSB filter fitted as standard.

RRP £949 **ML Price £799**  
or £15.53 deposit & 43 x £25 p/m

**7** **IC-775DSP**


The flagship 900 Watt Bruiser. Built in PSU and ATU, if you only want HF operation and can live without every other band between DC & Blue light place your order now!..



RRP £2995 **ML Price £2795**  
or £187.33 deposit & 50 x £75 p/m

**8** **KENWOOD TS-870S**

Still the reigning DSP Base HF Transceiver. Get used to the operation of the Digital machine and you won't want to go to bed. Unless there is a 6' 2" blue eyed blond waiting for you.



RRP £1999  
**ML Price £Phone and ask for 'wilky' special!**

**9** **Linear Amp U.K. Ranger 811**


Easy to tune minimum 400 Watts out (upto 800!) HF Linear Amplifier. Includes built in PSU and metering. Better still it's made in Great Britain.



Priced at Only **£895**  
or £25.77 deposit & 50 x £25 p/m.

**10** **YAESU FT-100**

Although at our No. 10 slot this is primarily due to its non-availability until the end of '98. Once again we're asking for a £25 deposit to secure earliest delivery, just like all of you that placed a deposit for the FT-847GX and got ahead of the rest of the suppliers! HF + 6m + 2m + 70cm (4m ?? Don't know!) All in a package the size of a Dual Band mobile.



## ACCESSORIES

A full range of accessories for all main equipment is always in stock or on order with the manufacturer. You can include a selection of filters, a power supply or Tuner in the new finance deal.

## WIDEST CHOICE

As the official U.K.'s largest dealer of Yaesu, Icom, Standard & Kenwood products, you'll find everything you could ever dream of under one roof. Our friendly (and non pushy) sales team will be delighted to show you around and supply you with as much coffee as you can drink.

## SELLING YOUR EQUIPMENT

We're always short of good quality used gear and currently have £150,000 to spend on increasing our used stock. So if you're wanting to sell your current transceiver (or accessory) for cash we would be pleased to hear from you.

## FIVE YEAR EXTENDED WARRANTY

ML&S was the first company to introduce a meaningful 5 Year cover plan for your equipment. Don't let high servicing costs put you off!

## £25 DEPOSIT

Most of the products advertised by ML&S are available from a small £25 deposit and if you choose to pay more you can enjoy a reduced monthly payment.

## DELIVERY TO YOUR DOOR

Our next day couriers are waiting to safely deliver your new purchase direct to your door, anywhere in the U.K. or most overseas locations.

## FLEXIBLE FINANCE

Let our professional sales team tailor a finance package to suit your individual requirements. Our super new Budget Plan makes paying for your new purchase so much easier.

## PART EXCHANGE

We desperately need your part exchange right now - top prices paid. Don't let it depreciate over another twelve months, we'll take your current transceiver now at an agreed CASH price and still have your new rig on finance if you wish!

## CASH-IN

If the value of your part exchange is greater than the value (or deposit) of the new purchase, we'll give you back the difference! Turn the value of your old gear into cash for the start of the year.

## DIAL-A-DEAL

Call any of our sales hot lines now - we're eagerly awaiting your call - everything sorted over the phone, model, trade-in, collection, delivery and finance! Even if you do not live locally you can still have the peace of mind feeling when dealing with ML&S!

## OPENING TIMES

Open 6 days a week - 9:30-6.00



**CORPORATE SPONSOR OF THE SPRATLY ISLANDS EXPEDITION**

Martin Lynch can also offer finance terms up to 60 months. Deposits from a minimum of £25. We welcome your part exchange against any new (or used!) product, provided its clean and in good working order. Call the Sales Desk today. APR: 19.9%. Payment protection is also available up to 36 months. All units are brand new and boxed and offered with full manufacturers RTB warranty. All prices quoted for cash/cheque or Switch/Delta card. No additional charges for credit cards. Martin Lynch is a licensed credit broker. Full written details are available on request. Finance is subject to status. E&OE. £10 p&p on all major items.

\* Budget Plan requirements: Full time employment (or disabled/retired), over 18 and below 71, Current bank account (or building society). For instant finance please ensure you have UK driving licence and cheque guarantee/credit card or Electricity/Gas/BT bill with your current name and address. Finance subject to status. APR 19.9%.

(watch out for the Doppler shift).

Moonbounce may seem to be 'pie in the sky' for some, but a couple of long Yagis and an add-on solid-state 'brick' amplifier, and you'll be well equipped to work some of the 'big gun' stations active on this mode. The FT-847 user manual even gives you some handy operating hints for this and other advanced VHF / UHF operating modes.

With its flatter response, the Collins SSB filter cleaned up the received SSB audio, but on crowded bands, such as 40m and often 20m, I'd have liked to be able to switch in a narrower SSB filter as well. The transceiver uses two identical SSB filters, one for the transmit path and one for the receive path (remember that it can transmit in crossband full-duplex mode), and you can fit the optional SSB filter in either path, or indeed one in both. But at just under £100 each, you'd have to think carefully about doing this!

## lab tests

The results show that the FT-847 is a reasonable 'all-rounder' in technical respects. Although - possibly naturally - not having the performance of a top-flight dedicated HF transceiver, for the set's size the designers have managed to squeeze a lot in.

The receiver uses a dual conversion superhet with IFs of

45.705MHz and 455kHz, and I noticed that, although the 1st image rejection was excellent on HF (this image falling in the Band II FM broadcast band) through the HF port, being above 100dB in each case, it was degraded when measured through the 70cm port; the figures in the test results table show this. But this should only be a limitation if you're in the rare position of being on the doorstep of a nearby Band II FM station and using a wideband VHF / UHF antenna without a diplexer / splitter on the 70cm port.

On transmit, the set was capable of being turned down in power from the front panel to less than 3W on any band, which QRP enthusiasts will appreciate, as many 100W transceivers only go down to 10W.

The 'far out' SSB inter-modulation products were well suppressed, giving a fairly clean, splatter-free, signal. Apart from the tabulated harmonics which were reasonably suppressed (and 4m, see below), on the 10 and 14MHz bands I noticed some spurious around 5MHz at around -46 to -48dBc, and around 12.5MHz when on the 24.9MHz band at -42dBc.

## 4 metres

Going back to my first day of testing, I found that on 4m, the trans-

ceiver gave around 35W output, but that it drew over 18A from my power supply. A check with my spectrum analyser showed that the transmitter was generating a significant amount of unwanted spurious here, a check on another set showing the same. However, a further set checked was reasonably clean and yet another checked was again fine if the transmit power was kept to 10W or less, although the current drawn was still rather high on this band for the achieved power output. Yaesu have never specified 4m transceive coverage in their FT-847 product information, and tell me they have only enabled transmit facility on this band on their dedicated UK models as a 'bonus' for UK amateurs. I'm told the internal circuitry of UK sets is slightly different for the 4m addition, so it looks like they really are giving us a 'bonus' here! Yaesu UK tell me they naturally can't guarantee performance on this frequency range, but they strongly suggest the transmit output power is kept to 10W or less if the transceiver is used on 4m, which I'd agree with.

## conclusions

Yaesu have managed to cram an incredible amount of bands and operating facilities into a compact

box, and VHF / UHF enthusiasts, especially satellite operators, will no doubt have an FT-847 high up on their 'wish list'. It does of course give you a wide range of operating facilities on HF as well, and although it's arguably not up to the HF 'contest standard' of much larger HF-only transceivers, I'm sure many FT-847s will be used as a 'do-everything' transceiver in shacks throughout the world. I found the VHF / UHF performance and flexibility to be excellent, the designers seem to have thought about almost everything. It's also a reasonable 'carry-around' size and I can see it being used on many weekend hilltop-operating sessions. I really did enjoy using the transceiver in my shack, and I'm sure it will be an extremely sought-after set. UK models uniquely have the 70MHz transmit facility enabled, which can also be extremely useful for DX *PacketCluster* access, but remember to keep your transmit power down to 10W or less on this band to minimise any potential spurious problems.

My thanks go to SMC Ltd (tel: 01703 246222) for the loan of one of the very first FT-847s to arrive for sale in the UK, and to Yaesu UK for their help in loaning optional filters and in answering my many queries in the preparation of this review. The recommended retail price of the FT-847 is £1695.

# transmitter

## transmitter power and current consumption:

Measured under normal front panel selection

Freq MHz	Max Power	Min Power
1.8	98W / 17.9A	2.3W / 5.6A
3.5	112W / 16.5A	2.5W / 5.4A
7.0	110W / 17.1A	2.5W / 5.6A
10.1	110W / 15.2A	2.5W / 5.2A
14.0	109W / 17.9A	2.5W / 5.5A
18.1	108W / 15.9A	2.5W / 5.2A
21.0	109W / 18.5A	2.5W / 5.6A
24.9	108W / 17.5A	2.6W / 5.5A
29.0	107W / 17.6A	2.6W / 5.4A
51.0	96W / 16.8A	1.8W / 5.3A
70.2		See text
145	53W / 10.3A	2.9W / 4.2A
433	48W / 13.7A	2.5W / 5.0A

## harmonics:

Freq MHz	2nd	3rd	4th	5th	6th	7th
1.8	-66dBc	-61dBc	-74dBc	-69dBc	-72dBc	-73dBc
3.5	-52dBc	-64dBc	-74dBc	-74dBc	<-80dBc	<-80dBc
7.0	-68dBc	-62dBc	-73dBc	-66dBc	-75dBc	-74dBc
10.1	-63dBc	-58dBc	<-80dBc	-73dBc	<-80dBc	-75dBc
14.0	-67dBc	-62dBc	-73dBc	-68dBc	<-80dBc	<-80dBc
18.1	-62dBc	-62dBc	<-80dBc	-73dBc	<-80dBc	-61dBc
21.0	-61dBc	-60dBc	-70dBc	-72dBc	<-80dBc	-74dBc
24.9	-55dBc	-54dBc	-75dBc	-74dBc	-73dBc	-70dBc
29.0	-52dBc	-69dBc	-65dBc	-64dBc	<-80dBc	-75dBc
51.0	-68dBc	-67dBc	-68dBc	<-80dBc	<-80dBc	<-80dBc
70.2				See text		
145	-70dBc	<-80dBc	<-80dBc	<-80dBc	<-80dBc	<-80dBc
433	-64dBc	<-80dBc	<-80dBc	<-80dBc	<-80dBc	<-80dBc

## ssb imd performance:

Measured with a two-tone AF signal, results given as dB below PEP level, measured at onset of ALC with RF processor off, and at mid ALC with processor on

	3rd Order	5th Order	7th Order	9th Order	11th Order
<b>21.4MHz:</b>					
ALC Onset	-25dB / -29dB	-44dB / -43dB	-50dB / -49dB	-53dB / -55dB	<-60dB / <-60dB
Proc On (Mid ALC)	-20dB / -22dB	-34dB / -38dB	-50dB / -50dB	-54dB / -51dB	-54dB / -51dB
<b>51MHz:</b>					
ALC Onset	-26dB / -32dB	-41dB / -41dB	-44dB / -44dB	-53dB / -53dB	-60dB / -58dB
Proc On (Mid ALC)	-27dB / -34dB	-43dB / -38dB	-48dB / -43dB	-58dB / -52dB	<-60dB / -58dB
<b>145MHz:</b>					
ALC Onset	-28dB / -28dB	-49dB / -47dB	-52dB / -48dB	-55dB / -54dB	-56dB / -60dB
Proc On (Mid ALC)	-21dB / -22dB	-33dB / -33dB	-48dB / -49dB	-55dB / -52dB	-65dB / -53dB
<b>433MHz:</b>					
ALC Onset	-20dB / -21dB	-31dB / -33dB	-47dB / -44dB	-55dB / -51dB	-56dB / -57dB
Proc On (Mid ALC)	-18dB / -19dB	-26dB / -28dB	-35dB / -39dB	-53dB / -52dB	-56dB / -54dB

# WANTED: Young, talented Radio Amateurs



**REWARD OFFERED: Cash and Industry Prizes to winner and runner up**

The great hunt has begun for this year's Young Amateur of the Year. Sponsored jointly by the Radiocommunications Agency and the RSGB, exciting prizes are awarded to both the winner and the runner up - the lucky pair will be invited to visit the Agency's Monitoring Station in Baldock, Herts, and will receive other prizes from the RA, RSGB and from industry.

This highly prestigious and coveted award is presented at a special lunch at the RSGB's HF & IOTA Convention in October 1998.

So if you are under 18, keen on amateur radio and are helping to get other people interested in the hobby, send for an application form *now* from Marcia Brimson, 2E1DAY, Radio Society of Great Britain, Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE, or tel: 01707 659015, e-mail: sales@rsgb.org.uk

- Must be under the age of 18 on 31 July 1998
- Resident in the UK, Channel Islands, or the Isle of Man
- Must be nominated by an adult sponsor
- Must have shown a talent in any of the following areas:
  - DIY radio construction
  - Operation of radio
  - Community service (eg helping in emergency comms or helping disabled people)
  - Encouraging other radio amateurs into the hobby (eg through the Novice Training Scheme)
  - School or club projects
- Applications must be received by 31 July 1998



## RSGB National Mobile Rally

**SUNDAY 2 AUGUST 1998** **Open 9am to 5.30pm**

- ◆ Large Trade Exhibition (23,000 sq ft)
- ◆ Large RSGB Bookstall
- ◆ All Under Cover
- ◆ Members' Mart - Tables £3 per hour (First Come Basis)
- ◆ Refreshment Marquee
- ◆ Hospitality Marquee with meeting point

The RSGB makes no charge for entrance to the rally but all visitors must pay for entrance to Woburn Park, in which the rally takes place, at £5 per vehicle (including passengers), or £2.50 per vehicle (with single occupant).

Would visitors please note that Lord and Lady Tavistock do not permit trading outside the marquees.

Limited overnight caravan stay at £5 per night.

All the normal Woburn attractions will be available at small extra charges.

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**All enquiries regarding this event should be made to Norman Miller, G3MVV, 180 Warley Hill, Brentwood, Essex CM14 5HF; tel: 01277 225563.**

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**WOBURN ABBEY, BEDFORDSHIRE**

### WOBURN ABBEY

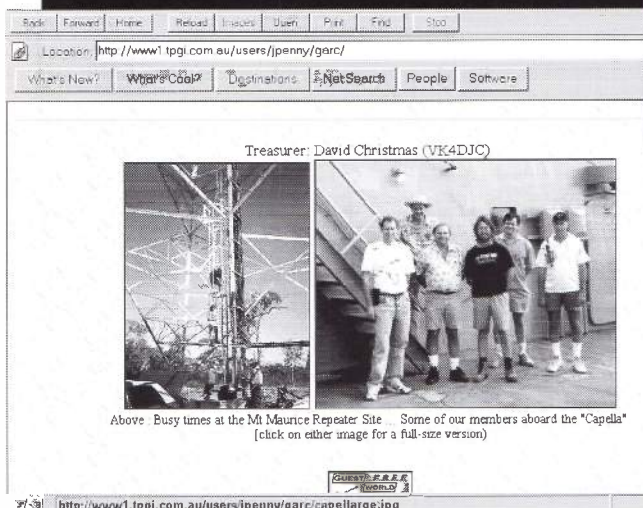
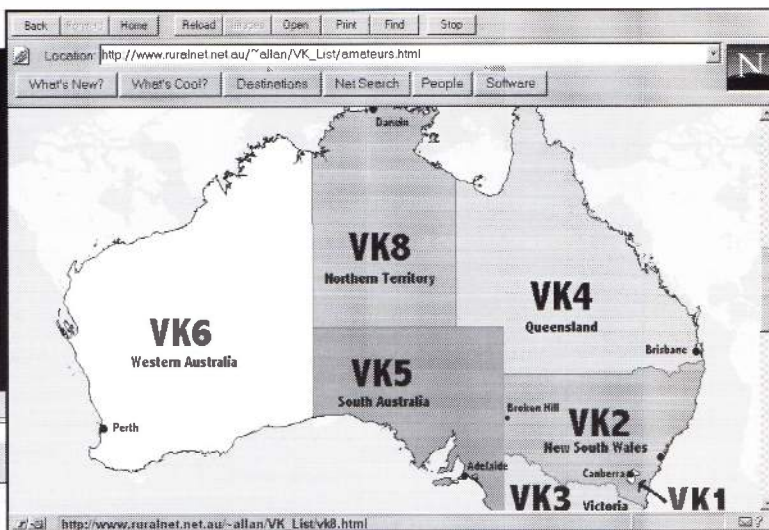
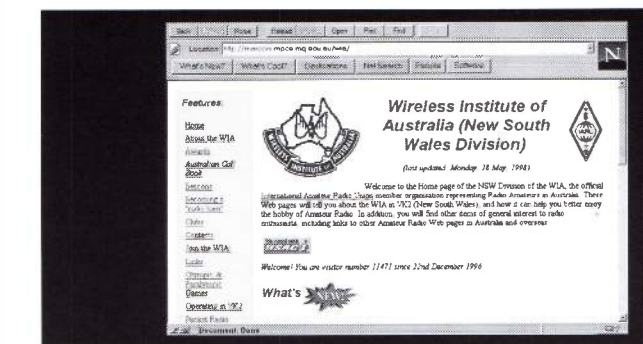


**HOW TO GET THERE**

Via the M1 - leave the M1 from north or south at junction 13, not 12 as signposted, and then follow signposts through Husborne Crawley to Woburn Abbey.

Avoid routes sign-posted to the Woburn Safari Park and *do not* enter the park gates at Ridgmont and Husborne Crawley marked Woburn Safari Park. The rally takes place in Woburn Park, and please therefore follow the brown tourist signs to Woburn Abbey.

ham radio today **august 98** 35



The Gladstone Amateur Radio Club site includes pictures of their members' activities

# Net Communication

Jeremy Boot, G4NJK, relives childhood r

As a child I used to listen to the BBC Home Service's broadcasts of the *Flying Doctor*. I listened to that classic dialogue: "Flying Doctor to Waramboola Base . . . Ah Jeez, Doc, it a bad one, she's goin' fast . . ." - lines not to repeated until they invented the adverts for a certain amber nectar some years later! Since those childhood days of innocence, I was intrigued by Australia and what it might be like. As a short wave listener (SWL) I used to listen avidly to Radio Australia and the VK hams. It was in fact my first VK station as an SWL that spurred me on and eventually I struck up a friendship some 18 years ago with a VK4 whose home I later visited in 1985. By that time I was licensed myself and had my present call. With the sunspots a deal higher than they are now, the daily VK sked was as important as the bowl of Frosties over which the skeds took place.

## reciprocal licence

Applying for a reciprocal licence before I left was a matter of filling in a lengthy form, which served

not only for Amateur Radio but also for a myriad other purposes, in fact everything from a power boat radio licence to a business use radio: "How far will you wish to transmit?" it asked reasonably. Well, I thought, long path is a fair distance, so I wrote "15,000 miles."

"We got a right one here," opined some official. "Another Pommy wanting to be smart," so they gave me the callsign VK4FPB. This didn't strike me as the least bit funny or odd, but the Australians either roared with laughter, or challenged it. It was a wonderful conversation piece. 'PB' is an abbreviation for 'Pommy B\*\*\*\*d', the accepted Aussie lingo for 'our dear cousins from the Motherland'. Waking up in the morning, in glorious wall to wall sunshine, I would be hauled out of bed and propped up against the FT-902 my friend had, and, conditions allowing, I would be speaking back home to the eager Gs wanting to work me from Queensland. I was pleased to note it was cold and miserable back home and they were suitably impressed that I had hand fed kangaroos, conversed with

emus and held in my arms a very bored koala.

## the radio man

One of the many characters I met in VK was the local radio inspector. He would turn up (usually at meal times) from time to time, down a couple of stubbies, and invite my VK friend to monitor such and such a frequency which he had just allocated to the local crocodile farm or to some party they both knew. Often these frequencies would be distance matched, so depending on the need, the band most suited would follow. A popular allocation in those parts seemed to be between 5 and 8MHz. Police cars would have enormous fishing-rod type antennas, and this seemed very odd compared with the UHF systems we had here.

The locals thought the idea of UHF quite laughable. "Not much b\*\*\*\*\* good out here, mate: wouldn't get to the end of the road." And it wouldn't, of course, given that the road might be several hundred miles long, much of it dust.

There was no UHF repeater network in the those parts at that

time, but 2m was used, and as far as I could see, because of the frequent, stable, and persisting high pressures that often dominated huge chunks of the Australian continent, contacts across several hundred miles were not uncommon. Certainly the flat band conditions we all know and love so well here were not at all the norm over there. There was also an extensive use of commercial (business) radio, even amongst small firms or shops. For this there was a UHF allocation.

Operating practices as I experienced them were of good standard. Radio was not a toy or a hobby thing, but something which was necessary, saved lives, or might be the only means of communication in very remote communities. No doubt this is now varying a bit, some 14 years on with satellite feeds, improved telephones, mobile phones etc.

## oz and the internet

So what can we find on Internet about Aussie radio? Well, I started with the **Wireless Institute of Australia's** page (for all URLs see

Table 1). They are well put together and very extensive. They also publish articles that have appeared in their house magazine. Some useful stuff here, including an explanation of the functions of the (new) **Australian Telecommunications Authority**, operating modes, the uses of Amateur Radio, clubs, contests, the call book, operating guides and the usual things. Visitors will wish to note the page for their reciprocal licences. The UK licence gives you an unrestricted licence in VK. Incidentally, I see the fee for a ham radio licence is now \$50. Seems a bit steep compared with ours, doesn't it? [AUD50 is £20, so it's not too bad - Ed]. I downloaded a map of Queensland from the WIA (Queensland) pages for old time's sake - I was staying in Rockhampton.

Those involved with Raynet and equivalents here, may be interested to read how the **Wireless Institute Civil Emergency Network (WICEN)** works. Read about the Bungonia Cave Rescue Exercise '96, the 1996 Colo River Horse Enduro, but by the time this

article is published, you'll be too late to sign up for the Wilderness Rescue Navigation Shield (Rogaine) on Saturday 27 / Sunday 28 June. Never mind. There are some good pictures on these pages which you will enjoy.

The WIA page has a link to the **Citysearch** page. I'm not sure why, but it's worth seeing and very well put together. It seems to me quite acceptable when visiting VK, even on Internet, to take time off for a little exploration!

The **AMSAT Australia** pages are worth a visit with lots of information and a good gallery of pictures. The **Outbacker Antenna Sales International** page is worth a visit [Outbacker make big mobile antennas similar to those fishing-rod types Jeremy referred to earlier - Ed], as is the **Sphere Communications** page. They manufacture "sophisticated, yet easy-to-use, weather monitoring systems and other innovative products".

From my own links, I also visited **VK3NDS's** pages - very well set out and interesting. It includes all sorts of interesting links to other and international pages.

Don't miss **Gladstone Amateur Radio Club** (click on the mud crab to enter. . .) "one of Australia's biggest sea ports. It is an industrial city with links by sea and air to the Great Barrier Reef" and the **Moorabbin and District Radio Club** "one of Melbourne's oldest and largest clubs, M&DRC has in excess of 180 members and is well known throughout Australia and overseas. . ." Look at **VK2TJO's** page too. I looked at **VK3ABC's** page; you can download the **VK3CHP Easylog** program from his pages. There are plenty of listed amateur's personal pages and I leave you to explore them.

## abc & radio australia

I must touch upon the **ABC (Australian Broadcasting Corporation)** pages. They have undergone a considerable change since I last visited them, stylishly updated in much the same way as the BBC did theirs. Much tidied up and redesigned, they give a very broad insight on everything from broadcasting schedules to the local

weather. The **Radio Australia** page gives details of programmes and frequencies and will be familiar to short wave listeners. Allow yourself time for these big pages. Like many of the broadcasters, there is almost too much to take in.

## the real flying doctor

But I must end as I began, by mentioning the **Royal Flying Doctor Service**. Have a look at their pages, and read the real story, rather than, like me, remembering the BBC Home Service version. You can also download a table of their frequencies used on HF. I suppose in theory under the right conditions, we could receive them here.

I have enjoyed this brief tour of Down Under. I have stuck to Australia rather than include New Zealand sites in this article. There is not surprisingly rather more of VK than ZL, because of the greater number of hams, but I may investigate the ZL aspects of the Internet on another occasion. Happy Surfing!

# Net Communication

### Wireless Institute of Australia:

<http://marconi.mpce.mq.edu.au/wia/>

### Australian Telecommunications Authority:

<http://marconi.mpce.mq.edu.au/wia/federal/aca.html>

### Australian Reciprocal Licences:

<http://www.aca.gov.au/support/pubs/info/visiting.htm>

### WIA (Queensland):

<http://www.wiaq.powerup.com.au/>

### WICEN:

<http://www.nsw.wicen.org.au/>

### Citysearch:

<http://sydney.citysearch.com.au/>

### AMSAT Australia:

<http://www.physics.usyd.edu.au/~ptitze/amsatvk/index2.html>

### Outbacker Antenna Sales International Page:

<http://www.outbacker.com.au/>

### Sphere Communications:

<http://www.world.net/sphere/>

### VK3NDS's pages:

<http://www.tbsa.com.au/~dsimp/>

### Gladstone Amateur Radio Club:

<http://www1.tpgi.com.au/users/jpenny/garcx.htm>

### Moorabbin and District Radio Club:

<http://www.netSPACE.net.au/~pgirling/vk3apc.html>

### VK2TJO's Page:

<http://www.qsl.net/vk2tjo>

### VK3ABC:

<http://www.netSPACE.net.au/~berkhout/>

### VK3CHP:

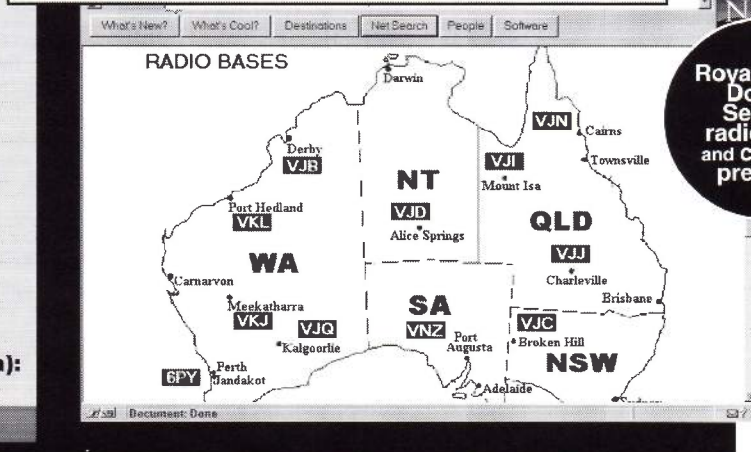
<http://users.netconnect.com.au/~vk3chp/>

### Royal Flying Doctor Service Frequencies:

<http://hannan.ludin.com.au/~roblee/freq.html>

### ABC Pages (Broadcast - include Radio Australia):

<http://www.abc.net.au/>



**Royal Flying Doctor Service radio sites and call sign prefixes.**

Table 1: URLs of sites referred to in article

During May conditions seemed to be poor with respect to Sporadic E (Es) openings, and even amateurs in the USA were not reporting the usual big openings on 50MHz. There were a few brief openings in the UK, but I received many e-mails to say that it was the worst year so far. Ted Collins, G4UPS, commented that he had never known things so bad, whilst Neil Carr, G0JHC, in Lancashire also noted that things were very poor in the north of the UK at the beginning of May.

At 2000UTC on 1 May there was an F2 opening from Brazil to Spain on 50MHz. This then coupled up with one of the few Sporadic E openings, when stations in Germany worked PP1CZ in grid square GG99. The opening then became a little more widespread and other stations in France, Belgium, the Netherlands and also here in Jersey joined in the fun. Peter, PY5CC, was also worked in Europe during this event, and that night CN8LI and EA9AI were reported being worked in the UK on 6m.

By 2140UTC the opening had finished into Europe. Nothing had

with the usual Italians and stations in Malta. There was also a little 50MHz Es in Europe, and UK stations worked several stations in Estonia during the morning.

The next day improved somewhat and John, GW3JXN, worked into 5B4 (Cyprus) during the morning (double hop 50MHz Es), whilst ON4KST had an opening to EK6AD (Armenia) in LN20 via multi-hop Es, giving him country number 146. This is a new station on the band and will be a new DXCC entity for everyone on 50MHz. EK6AD currently uses 10 watts to a quad antenna. If you're lucky enough to work him, QSL to: Evgeni I Kurgin, ul Tamanceneri 18-56, 375000 Erevan, Armenia.

SM3VEE in JP81 reported the V51VHF/B beacon on 50.018MHz on 7 May - a very long distance report. This beacon was also copied in France and Jersey at 1800UTC.

Things then went downhill, with very little copied in Europe, although a report came in from Japan to say that JA stations had 144MHz Sporadic E openings on 1 and 8 May: some people have all the luck!

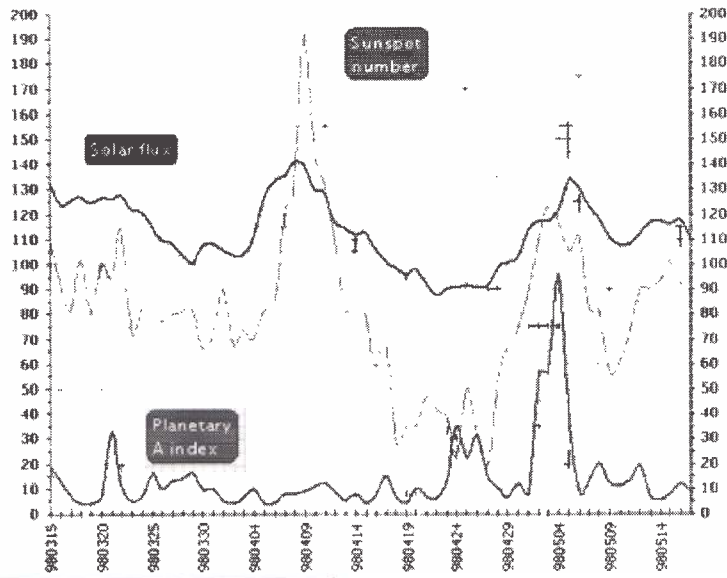


Fig 1: Current cycle news showing monthly peaks of high sunspot numbers, which seem to correspond to the F2 / TEP openings on 50MHz.

on 14 May produced a selective opening to the north of the UK. Neil, G0JHC, in Lancashire worked a station in EA8 for a new square on 50MHz, however, there was nothing reported in the south of England.

Things built a little over the next few days: on the 17th there was over 12 hours of Sporadic E within

Japan) followed by another seven Okinawa stations, all on CW.

The following day, 11 April, the opening started at 0954UTC on SSB, with VR2ZYW and a pile-up of VR stations (Hong Kong). He worked V73AT (Marshall Islands) on CW at 1016UTC and another pile-up of VR2 stations until 1159UTC on SSB and CW.

On 12 April from 1132 - 1213UTC Tony worked four VR2

# VHF / UHF Messa

Geoff Brown, GJ4ICD, laments a poor start globally to the Sporadic E season

been heard of the PYs on the UK mainland. Later, however, the PYs were worked by K1TOL in Maine, USA.

Aurora was reported by many on 2 May, this was not a large affair but lasted between 1130 and 1730UTC on both 50 and 144MHz. More Aurora was reported on the 3rd.

Arne, SM7AED, reported the following on 4 May: "Strong aurora this morning, I discovered it at 0500UTC and most of it was over at 0600UTC. I managed to work on 50MHz: PA0TAU J033, DK2UA JN59, and GW3JXN I072. G4UPS was 59 on SSB after his daily sked with G3CCH at 0735UTC."

Steve, VK30T, in Victoria, e-mailed us with news that he had worked VK2 / 3 / 4 / 5 / 6 / 7 / 8 areas via Aurora and said it was the biggest event in Australia since 1989.

Mike, ZL3TIC, also noted that New Zealand TV on 48MHz was very strong via Aurora, which is not very common in New Zealand.

Over to South Africa now and ZS6PJS worked some nice 50MHz DX on 5 May. At 1303UTC he worked YU1VG and YT1AU, at 1436UTC UR5ZEL (all on CW), and at 1531UTC LZ1DP on SSB,

The next report of any interest was on 10 May, when Lefty, K1TOL, in Maine, USA; Bob WA10UB in FN43; and Mike, VE9AA, in New Brunswick, Canada, reported video signals at 2100UTC on 48.250MHz from Spain and Portugal. That report is quite early for multi-hop Es across the Atlantic; trans-atlantic reports are usually in early June.

Peter, PY5CC, had another 50MHz F2 opening on 11 May and worked the following stations: 9H5EE, 9H1EL, 9H1XT, 9H1ET, SV1AHP, SV1EN, SV2DFA, SV1COA, IW9DOH, IS0QDV, IW9ELR, IK5YJY, IT9RDG, IS0AGY, IK50EA, IK50NY, I5ECY, IK5FTQ, IK4DRY, IZ4AIB and finished with EH7CD at 1951UTC.

Eric, TT8JE (F5JJK), left Chad on 14 May, having worked over 40 countries on 50MHz during his stay. His only UK contacts were with Mike, G30IL; Norman, G3NVO; and Nick, G3KOX - this was a bitter disappointment for many in the UK who needed Chad for a new one. If there had been more European Es I'm pretty sure that most of the UK would have worked him. Let's hope that he returns to Chad in the future.

A double hop Sporadic E event

Europe. The best DX worked in the UK on 6m was Z22JE in Zimbabwe, JY9QJ (Jordan), OD5SIX was heard extensively on 50.078MHz, EW8CD in KO52, and CN8LI in IM64. The 3C51 beacon was also heard in Europe, though not in the UK.

A graph of the sunspot number, solar flux and geomagnetic A index for the period 15 March - 15 April is shown in Fig 1.

## a45zn report

Tony Selmes, A45ZN, sent the following report to Ted Collins, G4UPS. Ted says that he has now full details of A45ZN's 6m activities. Tony is employed by the Royal Omani Amateur Radio Society (ROARS) and official permission for his 6m experimental licence dates from 25 March 1998.

His first 6m QSO was with Dudley, Z22JE, in Harare, a 59 / 57 SSB QSO which took place at 1410UTC on 28 March 1998. The next opening was on 5 April, when Tony worked five VR2 (Hong Kong) stations, the first of which was VR2XMT. All these were on SSB. This was followed by another opening, this time on CW on 10 April, which started at 0944UTC to JS6CDB (Okinawa,

stations, all SSB, and on 13 April from 0800 - 1000UTC he worked a mixture of JR6 and VR2 stations on SSB and CW, a total of 22 stations.

The last entry in the current log is for 18 April, between 1115 and 1127UTC he worked three VR2 stations on CW and SSB. In all, Tony has worked four countries: Z2, JR, VR2 and V73. In the logs so far received he has had 69 50MHz QSOs.

The QSL information for A45ZN is: Ted Collins, G4UPS, 27 Parklands, Hemyock, Devon EX15 3RY.

## region1 dx records

This month I have included an updated list of IARU Region 1 firsts for 6m (Table 1). These lists are produced by John Morris, GM4ANB, the record keeper. This makes good reading as to what can be, and has been, worked on the VHF / UHF / SHF bands.

Next month's Ham Radio Today will include the 70MHz list: I'm sure that this band will be better activated with the arrival of the new Yaesu FT-847 which includes the 4m band.

If you have any additions for the lists, please forward them to John Morris, GM4ANB, 35 Main St, Hillend, Dunfermline KY11 5ND.

**beacon news**

A new Italian beacon came on the air on 8 May. It is IOJX and is located in Rome, power output is 4W and the frequency is 50.004MHz. Note that this frequency is outside the recommended IARU Region 1 bandplan, as beacons should be located between 50.020 and 50.080MHz.

South African beacon ZS5MTL on 70.005MHz is now operational with 50W out into an omni-directional antenna, and is located in KG50IG.

Although the full 70MHz band in South Africa will not become available until the end of 1999, it is being said that a small allocation has been granted and that several QSOs within ZS have already been made. Thanks to Allan, GM4ZUK, for this information.

LA5TFA writes, "I'm sad to say that 50MHz beacon LA7SIX is again QRT. I worked hard to find a place to install the beacon and I was happy when I got permission

Station A	Locator	Station B	Locator	Mode	Date YY-MM-DD	Distance km
<b>Tropo</b>						
G4UPS	IO80JV	SM7AED	JO65NI	CW	93-12-16	1197
GJ4ICD	IN89WF	OZ5W/P	JO64GX	SSB	96-06-01	1188
ZS2FM	KF26TA	ZS6PJS	KG46RC	SSB	95-03-27	1178
ON4ANT	JO20AR	OZ5W	JO55UL	CW	96-04-23	736
<b>Aurora</b>						
G0JHC	IO83PR	OH7AXB	KP32XH	SSB	89-03-13	2022
OH2TI	KP20KE	GI4OWA	IO64IX	CW	89-11-17	1987
ES1CW	KO29HK	GW0GEI	IO73TG	CW	97-08-03	1901
ES1CW	KO29HK	G3NVO	IO91IK	CW	94-02-06	1850
GJ4ICD	IN89WF	SM3EQY	JP81MM	SSB	98-03-21	1816
<b>Sporadic E</b>						
JY7SIX	KM71WX	WD4KPD	FM15	CW	94-06-09	9674
IOJX	JN61GW	W5EU	EM120M	CW	95-07-07	9059
G4UPS	IO80JV	K7KV	DN16AB	CW	89-06-24	7577
GM1PKN	IO75EJ	WC5E	EM02DO	SSB	95-07-07	7338
GJ4ICD	IN89WF	DL3ZM/YV5	FK60MM	CW	88-06-07	7309
<b>Meteor Scatter</b>						
G4IGO	IO80NW	SV1OE	KM17VX	?	90-08-12	2542
G0JHC	IO83PR	OX3LX	HP15MP	CW	98-08-11	2296
GJ4ICD	IN89WF	OH3MF	KP20LC	SSB	90-04-22	2102
SP6GWB	JO80HK	OY/G4WKN	IP61	?	94-08-12	1829
ZS5DJ	KF59ED	7Q7JI	KH74MF	SSB	93-03-28	1737
<b>EME</b>						
OZ5IQ	JO65AO	W6JKV	CM87MM	CW	93-10-10	8841
GD0TEP	IO74SD	K6QXY	CM88QL	CW	98-09-17	8169
GD0TEP	IO74SD	K6MYC	DM06DX	CW	98-11-21	8168
<b>F2</b>						
ZS6LN	KG46RC	KH6IAA	BK29LA	SSB	79-04-15	19305
EL2AV	IJ46	H44PT	RI00AO	SSB	82-04-04	18873
GJ4ICD	IN89WF	VK2FLR	QF56OB	CW	91-10-14	17243
GJ4ICD	IN89WF	VK3AKK	QF21CV	CW	91-10-18	17067
GW3MFY	IO81FL	VK3OT	QF12AG	CW	91-02-19	16927
<b>TEP</b>						
G4IGO	IO80NW	CE8BHI	FD46	?	91-11-02	13117
G0JLJ	IO83PT	LU8YYO	FF50	SSB	89-08-24	12031
G0JHC	IO83PR	LU8YYO	FF50	SSB/CW	89-08-24	12025
GJ4ICD	IN89WE	LU8YYO	FF50	SSB	89-07-23	11716
CX8BE	GF15XC	G0JHC	IO83PR	?	89-07-23	11078
<b>Auroral Es</b>						
SM3EQY	JP81FI	VE8HL	FP53	SSB	95-06-14	4018
OH2TI	KP20KE	OX3LX	GP44EG	CW	94-06-07	3761
OH5LK	KP30ON	OX3LX	GP36NP	CW	90-07-01	3748
SM3EQY	JP81FI	OX3LX	GP44EG	SSB	94-06-07	3320
UA0/GB4MSS	NQ59OM	SM3JGG	JP71WJ	CW	90-04-17	3092

Table 1: 6m IARU Region 1 'firsts'.

**sporadic E season**

to set it up on the site of the Auroral Observatory, University of Tromsø. It has been on the air for three weeks now and it has been reported on the cluster. I received a phone call from my contact person at the observatory and sadly we had to close the beacon down as it makes much trouble for the



Jeff Morris, 9H1EL, from Rabat, Malta, has already been worked in the UK on 6m this season.

boys in the lab. More news later when / if I find another site."

Another new beacon to hit the scene is YO3KWJ (Romania) on 50.075MHz. Located in KN43BJ, it runs 10W to a vertical antenna and transmits the following information: "V V V DE YO3KWJ QRA IS KN34BJ".

**uhf atv**

Steve, GJ6WRI, mentioned that he will be active on 70cm ATV soon. Steve has a good location and take-off in Jersey, and should have no problem in getting signals into the UK under normal

propagation conditions. Keep a look out for him on 144MHz SSB or FM to arrange a sked. It has been many years since ATV has been operational from the Channel Islands.

That's all for this month. Even though there has been a poor start to the season, let's hope that June produces more in the way of Es openings on 6 and 2 metres. News and views, especially on the higher bands, please to: Geoff Brown, TV Shop, Belmont Rd, St Helier, Jersey, Channel Islands JE2 4SA, or via e-mail to: equinox@itl.net

The Dayton Hamvention never fails to amaze me. It is not just the staggering amount of equipment for sale at silly prices, when compared with the UK. It is not the huge number of visitors (30,000 plus); it is the huge flea market with over one thousand spaces. Yes, some are doubled up, but a lot are just single vehicles with a pile of goodies just aching to be bought and cherished.

The town of Dayton is situated in the mid west of the USA, in the southern part of Ohio. Just across the interstate (motorway) from the Wright-Patterson Air Base that saw the meetings that resulted in the 'Dayton Accord' last year. This Air Base is also the home of a large museum of flying machines which is about to also include the President's plane previously known as 'Air Force 1'.

The whole of Dayton is overtaken by the hamfest with every hotel room in the town booked months in advance. Restaurants look forward to the weekend and

cent eatery. We all try to get some sleep on this first night in readiness for the following nights, when sleep is difficult to come by.

Thursday starts at 0700 - yes, you do read this right, coffee and registration start at seven in the morning for the QRP symposium. Introductory remarks were made by Bob Gobrck, N0EB, on behalf of the ARCI to welcome visitors and all the speakers.

This year there were six talks on subjects as varied as 'A dozen ways to see and love your feed line' by L B Cebik, a well-known antenna expert, 'Stalking the ideal QRP tins' by Rex, W1REX, all about the tiny tins the Americans love to build things in, George, G3RJV, spoke all about his 'Six Pack', a collection of six units that can be built in an hour each. A new boy this year was speaking on 'Alternatives to the PCB': yours truly, G0BPS. One nice thing this year was that the organisers gave each of the speakers a certificate of thanks.

The first day of talks finishes

These evenings get later and later and set the pace for the rest of the weekend. Early starts and late finishes. Beds are often not found until after midnight, and remember, we started at 7am!

The Hamvention flea market opens to the public at 0800, with the main halls with the inside traders not opening until 1200. Our hotel, the Days Inn, South Dayton, is 45 minutes from the arena, so another 0700 start is needed. Our G-QRP Club 'booth' (stand) is next to the Michigan QRP club and the QRP ARCI. The stand opposite is usually taken by PW but this year they were not in attendance and their stand was taken by the RSGB. British flags stood out well.

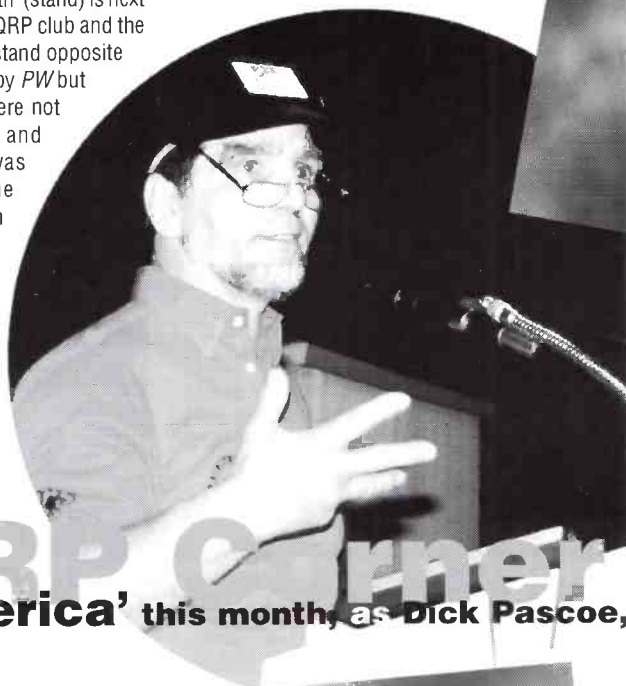
The general public flood the halls as they open, with many actually running to our

we make a good profit for the club too.

## qrp banquet

The main halls close at 1800 and again there's a dash back to the hotel with a quick change ready for the banquet at 1900. This is a very a quick dash too, as the timings will show.

Over 210 amateurs, all of whom are QRP enthusiasts, attended the banquet this year. Sev-



# QRP Corner QRP Corner

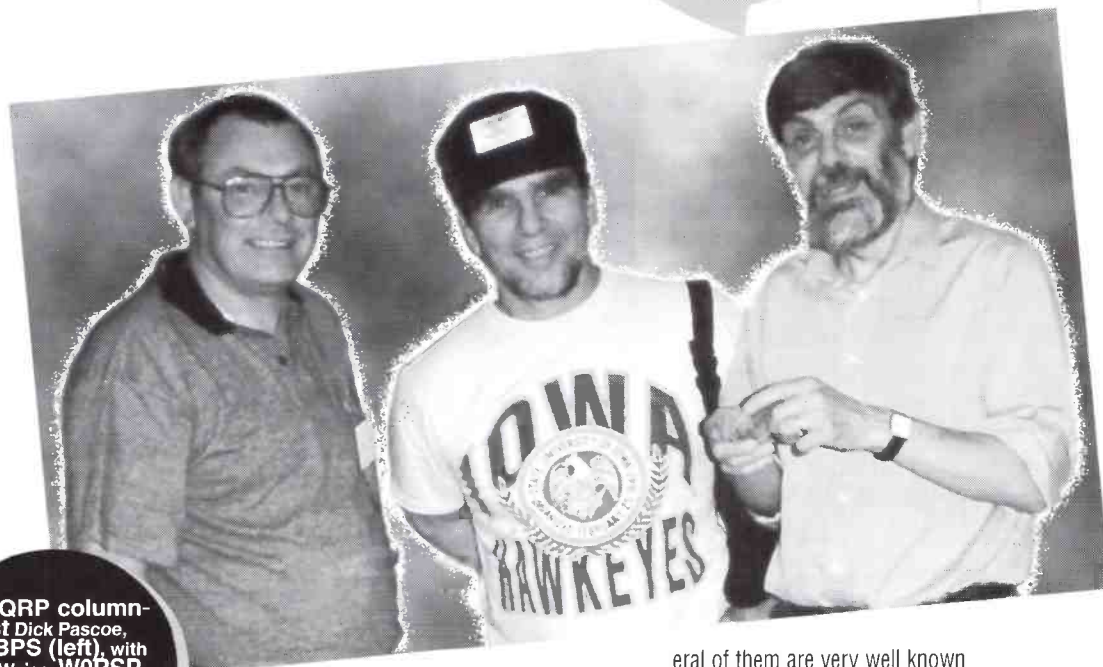
A 'Letter from America' this month, as Dick Pascoe,

take on more staff. One we visit every year is a 'Lone Star' restaurant, where we were told "us American waitresses know how to move - we shake it!" And off they went to prove it, with all the staff joining in with their version of American line dancing between the diners' tables. I jest not, this does happen several times each evening. Huge steaks that melt in the mouth with sweet potatoes and awful Texas beer make up the menu.

These delights only complement the highlight of the weekend. The QRP 'Four Days In May', this year organised by the American QRP ARCI (Amateur Radio Club International). These four days are the main reason for my visit to Dayton. Yes, I enjoy the Hamvention and meeting lots of friends, but it all pales against the QRP gathering.

## early start

Most of the gang arrives at the hotel on the Wednesday, meeting in the Foyer prior to finding a de-



Our QRP columnist Dick Pascoe, G0BPS (left), with Ade Weiss, W0RSP, and George Dobbs, G3RJV, in the Dayton hospitality suite.

at about 6pm, but it's not over yet. A quick dash out for a meal and it all starts again in the hospitality suite. Not formal talks, but lots of talking, as we meet old friends and make a few new ones.

booth along the isles to check out the rare stuff we bring over. The club usually manages to take on new members and renewals through the weekend, as well as sell club books, copies of *SPRAT*, badges, kits and similar stuff. As long as we cover the club expenses we are happy, but often

eral of them are very well known 'big guns' ['QRP big guns'? - Ed] in their field. UK visitors this year included Peter, G7JAB, and wife Jenny; Chris, G3TUX, with wife Elise; Marcia, 2E1DAY, the RSGB and *Ham Radio Today* Marketing and Sales Manager; Tony, G4WIF; Graham, G3MFJ; George, G3RJV and myself.



Gus Taylor, G8PG, was inducted into the QRP Hall of Fame. Here, George Dobbs, G3RJV, receives the trophy on his behalf.



Ade Weiss, W0RSP, presenting his lecture on the history of QRP in the USA.

club members. (The current British members are G3RJV, GM30XX and GOBPS).

So the banquet is over, and all of the diners now head for the hospitality suite to chat and look over the goodies on sale from the QRP-related vendors. Yes, the G-QRP club has a table selling books, magazines etc. Not everyone finds us at the Arena but they sure find us in the hotel. Bed looks wonderful as the clock hits midnight again.

### a new day dawns

By 0715 we are on the road again heading for the show. Today, Saturday, the doors open to the public at 0800. Nothing like the British timings here. But there is one good part, the coffee and donuts are free in the traders' room.

closes at 1400. Many of the QRP visitors stop by and say goodbye - until next year of course.

We wind down by closing the booth, and storing the backdrops and banners until next year. Another restaurant is selected and we sit with Roy Lewellan, W7EL, and enjoy a quiet (quality) beer and a huge salad. Kentucky, Virginia, Tennessee and the Cumberland Gap calls for a couple of days before the long flight home. Even longer in my case, as the plane was delayed by six hours.

### any volunteers?

Tony, G4WIF, and Graham, G3MFJ, had come three years before for a 'once in a lifetime' trip. Three years later they agreed that it needed three years to absorb the ambience of the show. This was their final year, they said (oh yeah, tell me another). I do know they plan on the Texas HamCom next year. But this leaves a vacancy for G-QRP club

# QRP Corner QRP Corner

## GOBPS, recounts extracts from his Dayton diary

The highlight of my weekend was meeting one of my heroes: Ade Weiss, W0RSP. Author of *The Joy of QRP* and the *History of QRP in the US*, Ade is one of the very best known QRPers in the USA, if not the world. Together with Mike, WA8MCQ, he compiled and wrote the *Milliwatt Journal* which started in the 1960s. I know that George, G3RJV, got started partially because of Ade and this booklet. Ade has reprinted his book *The Joy of QRP* and I was lucky enough to get a free, signed copy from him during the weekend.

The banquet always has a well-known speaker, last year it was Martin F Jue of the well-known MFJ company (check the initials). Ade was this year's speaker, and he kept the audience entranced for almost two hours as he recounted the history of QRP in the USA.

The final part of the evening's dinner is the presentation of the annual American QRP ARCI 'Hall of Fame' awards. There are 18 holders in the world of this prestigious award and I am delighted to say that yet another member

of the G-QRP club was honoured with elevation to the Hall of Fame this year. Gus Taylor, G8PG, is another of the unsung heroes of our club and has worked quietly away on his own for many years. Mike, WA8MCQ, summed it up in his report. "When Gus's name was mentioned I thought mmm, yes, but of course."

The other recipients were Chuck Adams, K5FO; Jim Cates, WA6GER; and Wayne Burdick, N6KR. Chuck set up and runs the qrp-l reflector on the Internet; Jim, WA6GER, was, with Doug Hendricks, KI6DS, one of the co-founders of NorCal, the Northern California QRP club; whilst Wayne Burdick, N6KR, also of NorCal, is a prolific author of great QRP circuits which he shares. Watch this name. He is currently producing a QRP rig that will knock the spots off most of the competition. More on this rig next month.

One of the nicest things about the Hall of Fame awards is that of the eighteen recipients there are four British holders. Think of it, over 20% are non-American. Just shows what they think of G-QRP

As there are four of us, George, G3RJV; Tony, G4WIF; Graham, G3MFJ, and myself, we can work shifts. We share the time off in both the flea market and the inside halls. Fighting your way round is fun (?), but some of the bargains are better. The new Alinco DJ-C5 dualbander selling for just £120; a used handheld GPS for £60, clean and boxed; 32MB of RAM for £25; internal ZIP drives for £55 and free baseball caps on the Yaesu stand. What more could you wish for?

The show closes at 1700 on the Saturday and another dash back to the hospitality suite via another huge steak for the NorCal 2N2222 building contest. I really should have taken some photographs of these, as most were fantastic, but as chief judge, ably assisted by Wayne, N6KR, we had to spend an hour judging the NorCal paddle contest, the 2N222 projects and the overall 'anything goes' construction contest. Back to the room and bed - nice and early this time at 2345.

Sunday is the wind down day, the show opens at 0800 again and

members to join us next year. The only benefit is free entry to the show at Dayton. The remainder you have to pay for yourself, at no time does any member travelling to Dayton receive any payment for going. We pay our own way for flights, hotels and car hire etc.

The benefits also include expert advice on what to buy, where to buy it etc. We can show you the delights of Dayton and where to get the least amount of sleep and introductions to some of the best known QRPers in the world. I don't primarily go for the HamVention for the bargains. I go for the hospitality suite and the great camaraderie at the hotel. I highly recommend it. If you are toying with the idea, give me a ring if you need more information on tel: 01303 891106 during business hours.

That's it for this month, news and views to me via the editor, via packet to GB7RMS, e-mail to: dick@kanga.demon.co.uk or 'snail mail' to Seaview House, Crete Road East, Folkestone CT18 7EG.

The 13th AMSAT-UK Colloquium takes place at the University of Surrey, Guildford, between 31 July and 2 August.

Here's the current line-up of presentations: ZS5AKV / VK5AGR - IARU Forum; UoS speakers; W5IU - Educational use of satellites; RSGB Microwave Committee - TBD; W1VF - Software Radios; 4X1GP - Proposal for resources to overcome escalating costs; G3CDK Memorial; Astronaut presentation - Don Thomas, KC5FVF; DB2OS / ON6UG / S53MV - P3D (maybe scheduling debate too); KA3HDO - International Space Station; 4X1KX - ASUSat-1 overview; G0MRF - Microwave subject (probably 5.6GHz); VK5AGR - Automatic doppler correction for analogue transponders; Geoff Perry - Russian Retrograde Launches; W3XO - What to do over the next 10 years; 4X1AS - Techsat; ZS5AKV - Sunsat; S53MV - Microwave equipment (specific); OZ1MY - 23cm PA and Front End; G3RUH - Experimental IHU-2 on P3D.

whenever it's going to occur - and no alert has been received yet.

There are still only rumours about the AR503 launch situation. The good news is that Eutelsat's HOTBIRD-5 will *not* now be launched on AR503. Earlier this month we heard that Eutelsat III-F2 might now be launched instead on AR503. There *may* still have been enough room for P3D on the '503; it depends on the weight of the Eutelsat...

Then they had a fire in the integration room of Arianespace in Cannes. A different Eutelsat was seriously damaged by water from the sprinklers and needs to be cleaned up; it was to be launched on the next Ariane 4. As a consequence Eutelsat have also given up the launch on AR503; probably they cannot afford the risk of losing another satellite. So everything is wide open at the moment; fingers crossed is the suggestion, with the hope of seeing a final decision in the next few weeks.

Of course, the longer P3D

which will be fixed to and launched with P3D. AMSAT-NA is suggesting cards be sent in as soon as possible. They suggest a minimum donation of US \$25.00. Cheques or money orders should be made out to 'AMSAT' (please do not send cash) and sent to 'Fly Your QSL on Phase-3D', c/o AMSAT-NA, 850 Sligo Avenue, Suite 600 Silver Spring, MD 20910-4703, USA.

### mir school day

Here's a summary of the April Mir space station 'School Day' test. The purpose of the test was to allow schools and students an opportunity at successful packet exchanges with Mir and to demonstrate the use of UI Digital Bulletins for communicating MIREX information to all monitoring stations. Other objectives were to demonstrate the use of Internet-linked ground stations to merge data into a common feed and to demonstrate the use of ground

passes the following day. A total of 27 schools or other participating stations were successful during the day after test. All stations reported their position and status and there were several messages exchanged. Most stations reported receiving the Mir bulletins and the Mir position packets. These results were (and are) posted on the MIREX web page.

### oscar 10

Command station W4SM reports that AO-10 downlink signals have improved considerably in the last two weeks. QSOs are now taking place again and the solar illumination should continue to improve.

The low point of this illumination cycle appears to have been around 24 April, although the beacon could still be barely heard with deep QSB at that time. He has revised his guesstimated ALON / ALAT to approximately 100 / 25 based on these observations. A bit more information is available at: <http://www.cstone.net/~w4sm/AO-10.html>

# Sate lite Rendezvous

Richard Limebear, G3RWL, with the latest r

Yes - we have astronaut Don Thomas coming; I understand he will be there for the whole event. Other (usual) events include a Lakeside Barbecue; Microwave workshop (both on the Friday evening); and the regular Saturday evening dinner and junk sale. Microwave testing is expected to be available throughout.

For any last-minute bookings, please contact Fred Southwell, G6ZRU, tel: 01273 495733 as soon as possible.

### phase-3d

There's not much information around about the hardware preparations; the guys are too busy to report, unfortunately.

There is some conjecture about the launch though: apparently, AMSAT-DL will get a warning time of four and a half months before the launch,

stays on the ground the more it costs AMSAT-World, so there is another funding scheme going on: putting your QSL card into orbit. AMSAT-NA are now collecting QSL cards, which will be scanned and converted into digital images. These images will then be saved on to a CD-ROM,

station generated GPS positions digipeated by the spacecraft in real time.

The Mir TNC was not operational for the day of the announced test, but was operational for three early morning

### russian satellites

The RS-12 uplink (145.910 - 145.950MHz) and downlink (29410 - 29450kHz) is operational, mode KA. Recently the downlink on RS-12 was distorted but the beacon was perfectly clear. The interfering warbling signals seemed to affect only 2m uplink signals. My understanding is that the parent spacecraft is a NavSat which transmits around 150MHz. It's not uncommon for an in-orbit spare to be turned on, and this may be what has happened; the 150MHz transmitter so close to a 146MHz receiver causes the problem. But the problem seems to have stopped now.

Pat Gowen, G3IOR, reports that RS-15 seems to have lost its TLM beacon but the transponder

Chris Jackson, G7UPN (left) delivering a lecture at the 1996 AMSAT-UK Colloquium. Standing on Chris's left is Fred Southwell, G6ZRU.





Dr Andrew (Andy) Thomas, KD5CHF / VK5MIR, the Australian-born astronaut who was on Mir for five months.

tioned). The spacecraft is now complete and is in the final stages of testing. It will carry a Mode-L digital transponder as well as a Mode A analog transponder. SEDSAT will fly as a secondary passenger along with the JPL 'Deep Space One' mission. The launch was to have taken place in July, but was postponed to October because of delays associated with the primary payload (actually the truth is that P3D and SEDSAT are in a heated race to see which can win the coveted 'Most Delayed Spacecraft' award).

The *AMSAT-NA Journal* is putting together a list of all satellite projects, from proposals that are looking for help to get going, to satellites that are going together and / or are ready to go. If you're involved

made Y2K compliant, *QuikTrak* and *WiSP16*. *WiSP32* for *Windows 95* is already compliant. As a result, AMSAT-NA has ceased offering *QuikTrak* as of a few months ago. Chris Jackson, G7UPN, says that it will be a lot of trouble to rewrite the algorithms for *WiSP16* (for *Windows 3.1*) and that he would rather devote the time to *WiSP32*. So what they're going to do is to leave *WiSP16* as it stands, but with a disclaimer about Y2K compliance. This way users might become used to operating *WiSP* and migrate to *WiSP32* when the Y2K transition happens.

The AMSAT-NA Annual Meeting and Space Symposium will be held 16 - 18 October at the Park Inn International in Vicksburg, Mississippi. This is the second call to authors who wish to present papers at the Symposium. Papers will also be printed in the official *Proceedings* document. The subject matter of the papers should be topics of interest to the Amateur Radio satellite service. Proceedings of the

# Satellite Rendezvous

Round-up of satellite news from AMSAT-UK

is still on and working perfectly. The space shuttle *Discovery* was five days late picking up Dr Andrew (Andy) Thomas, KD5CHF / VK5MIR (see photo), the Australian-born NASA astronaut who had been on board *Mir* since January. US space agency officials decided to delay the launch of *Discovery* from 28 May to 2 June because launch preparations were running late. They had a very tight schedule and it was decided to allow some extra time.

## digital satellites

DOVE is currently non-operational. WDOE tells me that initially they had no luck getting it to respond to resets or attempts to load software. Presently all the people who could work further with it are tied up on Phase-3D or other activities. They are not ready to call it dead, but just have no time to further diagnose the problem. Consequently he can give no estimate on getting either transmitter back on.

This is a pain for folks with

Drake converters to test because most testing is done with Dove's strong 2400MHz signal. An alternative is to use UO-11's beacon on 2401.500MHz which is polarised LHCP and reportedly about four S-points weaker than Dove.

WEBERSAT is also non-operational, being in MBL mode after a software crash. Attempts are being made to find and correct the cause of the suspected seasonal crashes. Additional information is not available at this time.

IO-26 (ITAMSAT) is reported to be operational. Listen for telemetry on 435.822MHz at 1200 baud PSK.

Some time ago KO-25 went temporarily 'deaf'. Not only is it back now, but *both* uplinks are on (that's 145.870 as well as 145.980MHz) - make the most of it. No information about the problem has been given out.

## short bursts

SEDSAT-1 is now scheduled for launch sometime in October this year (23 October has been men-

with such a project, the *AMSAT-NA Journal* would like to hear from you. Send your information, such as name of satellite / group, proposed mode(s) of operation, frequencies, special features and launch date or plans, to Andy Reynolds, WD9IYT, at: wd9iyt@amsat.org

US astronauts Winston Scott and Daniel Tani are newly licensed. Scott is KD5DXD, and Tani is KD5DXE.

*MacDoppler* is a new Macintosh software package providing both antenna pointing for Yaesu G-5400 rotors and doppler correction for Icom IC-821H, Yaesu FT-736R or AOR A3000A rigs. This is a very sophisticated package that handles both analog and digital satellites. Complete information will be available from AMSAT-NA soon.

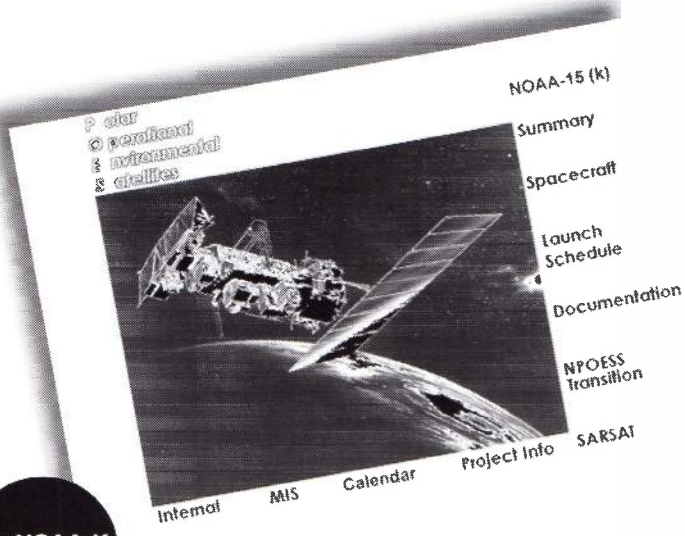
WOSL has been chasing down the Year 2000 ('Y2K') compliance of the software that AMSAT-NA offers. There will be a publication of the findings and status later this year. During the research, he found that there are two programs that will probably not be

Symposium will be printed (as usual) by the ARRL and made available during and after the meeting.

Information regarding Vicksburg area attractions and details on arrangements for the 16th AMSAT-NA Annual Meeting and Space Symposium can be found at the following URL: <http://pages.prodigy.com/DXHF93A>

UK amateurs who missed the first and second chances to obtain the Drake 2400MHz converter for about £25 may still be able to get it; a third batch is likely to be ordered. The best thing from now on is to telephone (or e-mail) Peter Day, G3PHO, for the latest information - tel: 0114 2816701 or e-mail: g3pho@qsl.net or g3pho@geocities.com

There is now a new update to the *Guide to Oscar Operating*, available from the AMSAT-UK office; price £1. New purchasers of the *Guide* will receive it free. I expect to rewrite the *Guide* later this year but this will only happen after I've written the Phase-3D technical manual (ongoing).



The NOAA-K satellite.

The first image received from the new NOAA-K satellite.

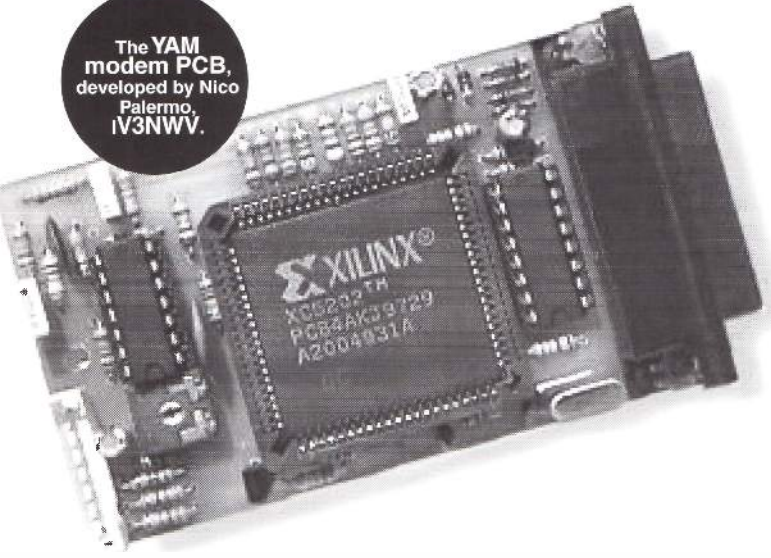
First NOAA-15 Image taken 13 May 1998 - 20:50 UTC



AVHRR Image of a Portion of the Kamchatka Peninsula

Photo: NOAA

The YAM modem PCB, developed by Nico Palermo, IV3NWV.



If you thought that 9600 baud packet operation meant an expensive TNC, or a fast high-spec PC with sound-card capability of modem emulation, think again. There have been a number of 9600 baud modem kits available, such as the popular BayCom PAR9600 available from MaxPak and NWPUG. There's now a further design available to amateurs, the YAM ('Yet Another Modem'). It's an FPGA-based FSK modem for packet radio, and has been developed by Nico Palermo, IV3NWV.

The modem is capable of 9600 bit/s operations and interfaces directly to the PC's serial port, from which it is also powered. Apart from needing a 16550 UART on the serial port of your PC (it won't work with an older 8250 type) you don't need a super-fast PC. It has a built-in HDLC controller, which simplifies the development of driver software and allows fast and reliable HDLC frame synchronisation. It uses a GMSK - or cosine NLF - G3RUH compatible modulator, a powerful

**bbs news**

GB7YEO became operational on 26 May from Yeovil in Somerset (IO80QW). The SysOp is Lee, G70GG, who says that at the moment the BBS covers an area from Cardiff to Dorchester. Lee says that the routing comes from GB7TJF in Taunton, so please send any unknown routes there. More information from G70GG@GB7YEO.#45.GBR.EU or e-mail: gb7yeo@tritechuk.com

Phil, G3WEG, the SysOp of GB7SOU in Chandler's Ford, southern Hampshire (my local BBS), is looking for someone to take it over. Phil feels he is unlikely to have sufficient time to devote to it over the summer months. Although the BBS is currently located in Chandlers Ford, Phil has suggested that someone with better coverage of the main Southampton area would possibly be preferable. GB7SOU currently has about 43 users, but if it moved to a better location it may also be able to serve a proportion of the 144 users that use GB7SUN

**Data Con**  
Lorek, G4HCL, brings news of a low-C

hardware digital carrier detector and a high resolution RX clock recovery circuit.

The modem itself is built on a single-sided PCB, and around the main IC, nominally low-cost components are used which you should be able to source for around £25 total. The PCB and the main IC (an XC5202-6PC84C) can be sourced direct from Nico if you wish. The latest modem hardware was released just a few weeks ago and a lot of software still needs to be written, although there's plenty right now with drivers available for PC / Flexnet, TFPCX V2.71 and the 32-bit AGW Packet Engine which lets you use the modem with programs such as WinPack under Windows 95. All Nico's construction documentation and software is provided for Amateur Radio use totally free of charge, although publication and / or redistribution and any commercial use is not allowed without Nico's written permission. You can get all the latest information including diagrams, parts list, software etc (there's a lot of it!) from the net at: <http://www.microlet.com/yam/>

in Portsmouth, and thus balance the load better. Phil is willing to provide assistance to any new SysOp to ensure a smooth transfer and maintain the service to the users.

I'm personally also able to help with hardware such as transceivers, antennas etc but unfortunately my work commitments, which often take me out of the country, don't allow me to successfully SysOp a BBS (although I have in the past, it takes regular dedicated effort). If anyone is interested in taking up this challenge, please contact Phil G3WEG @ GB7SOU in the first instance. If there are no volunteers the BBS will close in mid-July.

Alex, M1BSX, is currently working on setting up the TCP-IP user ports at GB7BIP in Portsmouth. Alex asks that if anyone who's interested in becoming a user on 433.625 or 144.925MHz to contact him so that he can get an idea of the coverage needed. He's also just received a block of IP addresses so will need to locate numbers to any prospective users. More information from M1BSX@GB7BIP.#48.GBR.EU or

e-mail: alex@mayfamily.demon.co.uk

If you're not active on air, maybe a listener, and would like to sample packet activity, 24 hour modem access is available on GB7SYP, in Barnsley South Yorkshire, on tel: 01226 779991, with available modem speeds up to 33,600 baud. All new users are limited to read-only access, although licensed amateurs can upgrade to TX / RX facilities. Further information from the SysOp Dave, G6TVA, either via the BBS or e-mail: d.biram@virgin.net

## datamodes news

A message from Pablo, LW7EDS, in Mar del Plata, Argentina (locator GF11GX) says that over there they have a network running together with Brazil, Puerto Rico, Venezuela and Bolivia and some European stations, at 1200 bps LSB on 28180kHz. On this frequency there's the DX *PacketCluster* LW7EDS-5 and the 'JERRY' node, both operational

and calling every day on 1200 baud PSK packet between 0800 and 1800UTC on 10144 and 18102kHz USB as well as on 10148kHz LSB. He's looking out for contacts, so if you have this capability, try giving Rene a call. For skeds you can contact Rene with a packet message to F6CDD @ F6CDD.FMLR.FRA.EU or e-mail: Cestdaidai@aol.com

Steve, G4FPV, has just released a new issue of his UK node maps, which were compiled during the spring of this year. They can be downloaded using the 7SPERV facility on GB7GLO, the file is: C:\MAPS\CDRMAPS.ZIP. This file contains 10 map files in *CorelDraw* format covering the whole of England and Wales, nine regional maps and one showing the main trunk links.

Mike, G0OPC, has made some enhancements to his WINPLOG software for packet, and has now released Version 1.2. The new features in this release are: Some of the colours can now be changed; the Winpack AUTOLOG.TXT can now be dissected into 500 line

the directory named WIN PACK. You can also e-mail Mike directly for a copy via the net, to: mike@g0opc.demon.co.uk

## noaa wxsat

For weather satellite data listeners [eg using the *JVComm32* program on last month's free CD-ROM and reviewed this month - *Ed*], a new orbiting 137MHz satellite has just become operational, NOAA-K. It's the first in a series of five new satellites with improved imaging and sounding capabilities that will operate over the next 12 years. It's a polar orbiter, so just leave your system in listening mode and it will automatically receive FAX images from the satellite whenever it's in range of your station.

## tiny-2 & agw packet engine

There have been a number of bulletins from amateurs who've reported problems in getting a Tiny-2 TNC to work with AGWPE.

an alternative firmware, the switch should be in its normal position - as you would use it if you were using it with WinPack with host mode set to none.

2. The Tiny-2 should be switched on when you start AGWPE. The Packet Engine will put it into KISS mode as it starts up, and the LEDs on the TNC will flash three times as that happens. The Packet Engine takes it out of KISS mode when you close it down.

3. The cable between the TNC and the PC should connect the handshaking lines, a three wire cable will usually not work. AGWPE detects the presence of the TNC from the handshaking lines.

4. In the AGWPE set up screen, the settings you should use are;

*TNC Type* - TAPR TNC2

*TNC Sub Type* - KISS Simple

*IniKiss1, 2, 3 and ExitKiss* - the defaults

*SerialPort* - whatever port you are using.

# ection Data Connection

## ost build-it-yourself modem for 96600 baud packet

24 hours a day. Pablo says the link and conditions on the network are really good. Also, they have a four-way gateway operating 10kHz lower in frequency (28170kHz LSB) with a cross-band BPQ node with the alias 'ECOSSE'. The callsign is LW3DGP-0 and the node is LW3DGP-4. After connection to the node, you can cross-connect to the local VHF and UHF packet network, as well as to a 14MHz HF port.

Pablo says that they need European stations that can operate a forward link or a cluster link to South America. He tells us, "Beam your antennas here and call at the 28MHz frequencies. We are waiting for you!"

You can get further information from Pablo with a packet message to: LW7EDS@LW7EDS.MDP. BA.ARG.SA or e-mail: lw7eds@htc.statics.com.ar

A little closer to home, Rene, F6CDD, says that he's operational



**If you're having problems getting a Tiny-2 TNC to work with AGWPE, our tips should help.**

segments and saved for future reference (WINPLog gives each segment a name made up from the first date of the segment that has been dissected); there's a method of looking at and printing the old segments at a later date; and the basic statistics of each screen can be viewed.

Mike has released this by 7-plus on packet, addressed to the WIN7 newsgroup. The 7-plus parts can also be REQFIL'd from GB7ATC.#22.GBR.EU - they are in

I use WinPack here which has support for the AGW Packet Engine, and the WinPack program author, Roger, G4IDE, says that he's tested AGWPE with Tiny-2 firmware versions 1.1.6 D4, 3.1, 3.2.9 and the current E5.0.0, all working fine. If you're having problems, the hints below might help, and my thanks go to Roger, G4IDE, for this information.

1. The Tiny-2 should be in normal terminal mode. If you've got a switch on the back that selects

*SerialPort BaudRate* - whatever terminal baud rate your Tiny-2 is jumpered for. Note that you don't set this to 1200, just because you are using 1200 baud on air!

*OnAir BaudRate* - 1200 (unless you've got an RUH modem or something similar fitted in the Tiny-2). Leave 'Program adjusts Parameters' checked.

*TXDelay* - whatever is adequate for your radio. The units are msec x 10, so 50 is 500 msec.

*TxTail* - leave it at 4.

## ctrl-z, end of message

That's it for this month. Please do drop me a packet, e-mail, letter or fax with details of what you or your group is doing on data modes, or indeed what you'd like to see covered in this column in the future. My contact details are given every month in the 'Regular Contributors' contact information' section on page 58.

# HF Happenings HF Hap

This month we introduce a new HF Happenings column

Martin has been DXing from the moment he was licensed in 1970. His first DX QSOs were made with 100W to various dipoles but he soon realised the need for something better. Homebrew quads made from garden bamboos and Araldite were the answer and even though they had an average lifetime of a few months they were cheap to replace. He is now based in Cambridge where, as a Life Member of the University Wireless Society (a qualification he shares with Don Field, G3XTT), he has access to rather better facilities on University premises.

Martin has worked almost all the current DXCC 'entities', but admits that he was not one of the lucky few to contact the North Korea demonstration by OH2BH, and also missed the recent Marquesas operation because of poor propagation conditions. As well as keeping current with DXCC, Martin is an enthusiastic IOTA island hunter and expeditioner. He can often be heard in the summer months from northern climes as NU2L/VE8 when he tours the Canadian Arctic islands. Some readers may also have his cards from Greenland as OX3/G3ZAY and his Lord Howe operation with G3CWI as VK9LX in the mid '80s.

Martin was co-editor of the RSGB's DX News Sheet (with G3XTT) in the 1980s and was an occasional contributor to this magazine on the subject of DXing. We welcome him back - Ed.

July and August see us well into summer conditions, with the northern hemisphere ionosphere bathed in ultra-violet for most of the day, and the higher bands open for long hours. Sun-

spot numbers are steadily climbing back with the new cycle but it is still a case of two steps forward and one and a half backward as the solar flux figure - a high number is usually a good indicator of conditions - is still regularly dropping back to doldrum levels. On very good days we can now expect 15m propagation across the north pole into the Pacific region during the morning, and across the USA towards Hawaii in early evening. LF conditions by contrast will be restricted by the short nights and by increased static from thunderstorms.

## ncdxf beacons

As the bands continue to improve I recommend monitoring the global beacon network set up by the Northern California DX Foundation (NCDXF) as a way of tracking propagation. This is a truly amazing system with 18 planned beacons operating on 14100, 18110, 21150, 24930, and 28200kHz. Each beacon in turn comes on 14100kHz for 10 seconds to send its callsign at 22WPM, followed by four one-second dashes at power levels of 100 watts, 10 watts, 1 watt, and 100mW. It then QSYs to the next higher band and repeats the sequence. After the 28MHz transmission it pauses for a little over two minutes before returning to 14100kHz and starting all over again. The equipment at each location is a Kenwood TS-50 and a Cushcraft R5 vertical. The cycle currently repeats every three minutes and a time slot is reserved for temporary beacons carried by

DXpeditions. Synchronisation is achieved with a GPS receiver at each location. Not all the beacons are in place yet, but the majority are up and running on all bands.

More details about this system can be found on the web at <http://www.ncdxf.org/beacon.htm>. The page also has links to sites where you can download software to display the identity of the beacon transmitting (and next to transmit) on each band. The NCDXF deserves great praise for sponsoring such a valuable operating and research tool.

## new dxcc entities

The interpretation of the new DXCC rules is now becoming clearer and we are probably left with just three new 'countries' (or 'entities' as we now have to call them). These are the Temotu area of the Solomon Islands, H4, and both the Austral and Marquesas island groups in French Polynesia, FO (Fig 1) [a map of the Temotu islands was in *HF Happenings* in June - Ed].

The change of title from 'country' to 'entity' is long overdue. It was always difficult to explain to non-DXers how a sandbank like Sable Island or Kingman Reef could be considered a separate 'country'. And government officials overseas could easily be of-

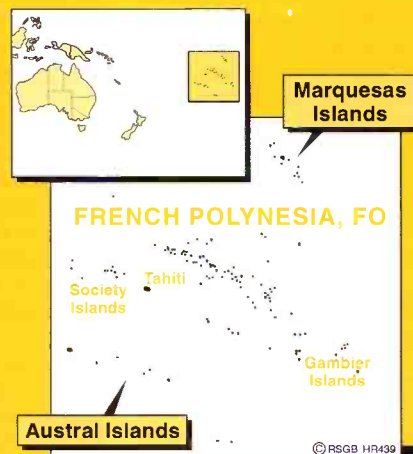


Fig 1: The Marquesas and Austral Islands in French Polynesia are both likely to be added to the list of DXCC entities.

fended by suggestions that harms thought parts of their countries were independent!

As Don Field, G3XTT, has already reported, a number of well-known DXers were quick off the mark with the new rules. Martti Laine, OH2BH, led a major expedition to the Temotu islands which started up at 2359 on 31 March (carefully timed to avoid any suspicion that it might be an April Fool's Day hoax) and Jim Smith, VK9NS, headed off single-handed to another part of the Temotus [see article on pages 26 - 27 - Ed]. Kan Mizoguchi, JA1BK, made a quick trip to the FO islands as FO0MIZ, and Bob Ferrero, W6RJ, with his son Bob Jr, W6KR, spent seven days on each of the FO new ones. The two Bobs did an incredible job during their visit; judging by reports on the Internet cluster, each

**G1MOC**

**PUAU LAYANG LAYANG**  
LAT: 7° 25' N LONG: 113° 48' E

CO ZONE 28  
ITU ZONE 50  
IOTA AS-051  
LOC: QJ67X1

CDXC  
CHILDREN ON THE AIR  
TOURISM MALAYSIA

## SPRATLY ISLANDS 1998 65,500 QSO's

EQUIPMENT		CUSHCRAFT	A3WS
YAESU	FT-1000MP Transceivers x 4	GLADIATOR	40m f
YAESU	FT-920 Transceivers x 2	GLADIATOR	80m f
YAESU	VL-1000 Amplifiers x 4	TITANEX	80/40
CUSHCRAFT	203CO 20m 3-element monoband Yagi	BATTLE CREEK SPECIAL	
CUSHCRAFT	A3S x 2	BUTTERNUT	HF6V

NEVADA YAESU AEA TIMEWAVE

# openings HF Happenings

host as Martin Atherton, G3ZAY, takes over from Don Field, G3XTT

of them must have been operating simultaneously on two bands for 24 hours a day!

From the UK there seemed to be good propagation for the Temotu and Austral expeditions, but the bands were pretty much wiped out by geomagnetic storms during the Marquesas activity, leaving that one still needed by many UK DXers. There was a short opening on 20m one morning mid-week and conditions were a little better for those with good 40m antennas, but in general it was a washout here. The good news is that the islands are not difficult to get to by air so I am confident there will be more expedition activity. There are even a few resident hams: F05QG on Nuku Hiva has been reported around 14122kHz on a number of mornings and you can be confident of getting a QSL from his manager Luis, XE1L. Other Marquesas hams include F05DS, F05LZ, and F05MK - though you may need fluent French to track them down if they are 'ragchewing' in a net.

Propagation to the Marquesas area at this time of the year tends to come in from the west (over the USA) in the morning around 0700UTC on 20 metres, in the evening around 1800UTC on 15 metres when conditions are good, and a little later again on 20 metres. I have also heard long-path openings from the east around 1530UTC on 20 metres. Both openings need to be checked, because the islands are volcanic peaks - rising steeply out of the sea - and stations there typically find their ra-

dio takeoff blocked by a wall of rock for at least 180 degrees around the horizon. If they have long path takeoff they will probably not be able to see the short path, and vice versa.

The Ferreros chose to operate from the airport on the north side of their island and lived on a diet of airport snack food plus whatever they could find growing wild during the seven days of their Marquesas stay.

## more expeditions

There was good news recently for those still needing Navassa Island - a DXCC entity owned by the USA between Jamaica and Haiti - when Murray Adams, WA4DAN, announced a major DXpedition with up to five operating stations, to follow on the heels of an environmental review of the island due in July. Until now the US Department of Insular Affairs has been refusing to grant landing permits to anyone until the review has been completed, but it seems the WA4DAN group is first in the queue. No dates yet, but I'll keep you posted. The call will be N1V. More information on Navassa (and other remote US islands) is on the web at <http://www.doi.gov/oia/oiafacts.html>

Of great interest to IOTA enthusiasts and DXCCers alike will be the Pacific expedition planned by husband and wife team Wolf and Ann, DL2SCQ and DL1SCQ. Their schedule is:

9 - 14 Aug Rarotonga, South Cooks (OC-013); 24 - 26 Aug Mangaia, South Cooks (OC-159); 16 - 21 Aug Penrhyn, North Cooks

(OC-082); 29 Aug - 1 Sep Mamanuca Islands, Fiji (OC-121); 4 - 7 Sep Yasawa Islands, Fiji (OC-156).

Barry, K6ST, and Tom, W6IXP, hope to be active in the RSGB IOTA Contest (25 / 26 July) from Little Diomed Island (NA-150) in the Bering Strait between Alaska and Russia. This island was seen on TV recently when it was the starting point for Michael Palin's Pacific Rim trip and is a notoriously difficult place to reach. Barry and Tom hope to hitch a ride on the weekly mail helicopter. As *Ham Radio Today* went to press they were still waiting for operating permission from the village elders and will activate another remote KL7 location if they are unable to get to Diomed.

The second CY9 operation of the summer may still be on the air when you read this, as VE9AA planned to be on the island until mid-July. CY9 is the prefix used from St Paul Island, a DXCC entity 25 miles north of Cape Breton Island in the Cabot Strait. It became a DXCC counter some years ago when the rules allowed places to count if they had a distinctively separate administration. Apparently the island was under Canadian federal jurisdiction rather than the local provincial administration and was deemed to count. Other oddities like Sable Island and Desecheo popped up on the list at the same time but sanity prevailed soon after and the rules were changed.

## contests

The next major dates for your diaries are the Worked All Europe contests sponsored by the Ger-

man national society, DARC. In these events Europe works the rest of the world and vice versa. The CW contest is the second weekend in August and the SSB event is the second weekend in September. The basic exchange is RS(T) + serial number, but the contest has a unique feature - the exchange of 'QTCs'.

A QTC is a report of an earlier QSO and can only be sent from a non-European station to a European station. It consists of the time of the QSO, the call of the station being worked, and the serial number received from that station. Each QTC received / sent counts as a QSO point. A QSO may only be reported once as a QTC and there is a limit of 10 QTCs that a competitor can send to each European station. In practice, this means that leading stations may make half their QSO score from actual QSOs and half from receiving QTCs.

For European stations the multiplier depends on the number of non-European DXCC countries worked on each band. On 14MHz and above, each country is two multipliers, on 7MHz it is three multipliers, and on 3.8MHz four multipliers.

Full details are on the web in a number of places. One location for WAE - and other contests - is <http://www.sk3bg.se/contest/waedxc.htm>

I look forward to hearing from any readers with questions, information, photographs, or feedback on this column. Please e-mail me at G3ZAY@ dial.pipex.com or write to me at 41 Enniskillen Road, Cambridge CB4 1SQ.

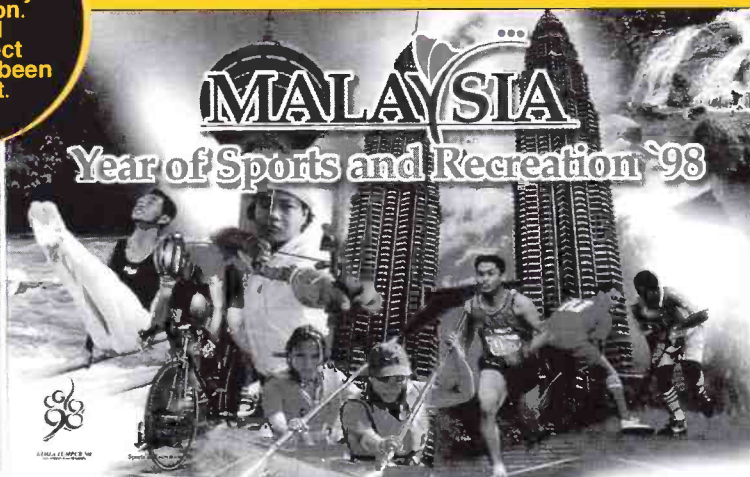
QSL of the February CDXC 9MOC Spratly DXpedition. Around 5000 direct QSLs have been sent out.

### EXPEDITION MEMBERS

9HTEL	Jeff Morris
9M6SU	Donald Soh
G0OPB	Tony Canning
G3NOM	Ray Gerrard
G3NUG	Neville Cheadle
G3OZF	Don Beattie
G3SED	Mike Devereux
G3WGV	John Linford
G3XTT	Don Field
G4JVG	Steve Telenius-Lowe
JAI RJU	Kazu Ogasawara
K5VT	Vince Thompson
N2QW	John Krzymuski

### SUPPORT GROUP

BRS32525	Bob Treacher (ISWL QSL Manager)
G3SWH	Phil Whitchurch (QSL Manager)
G3ZAY	Martin Atherton (Chief Pilot, EU Pilot & Web Master)
G4PDQ	John Clayton (EU Packet Cluster Server)
G4ZFE	Richard Everitt (EU QSO Server)
JP1NWZ	Yachi Sekurada (JA Pilot)
N1DG	Don Greenbaum (NA Pilot & NA QSO Server)



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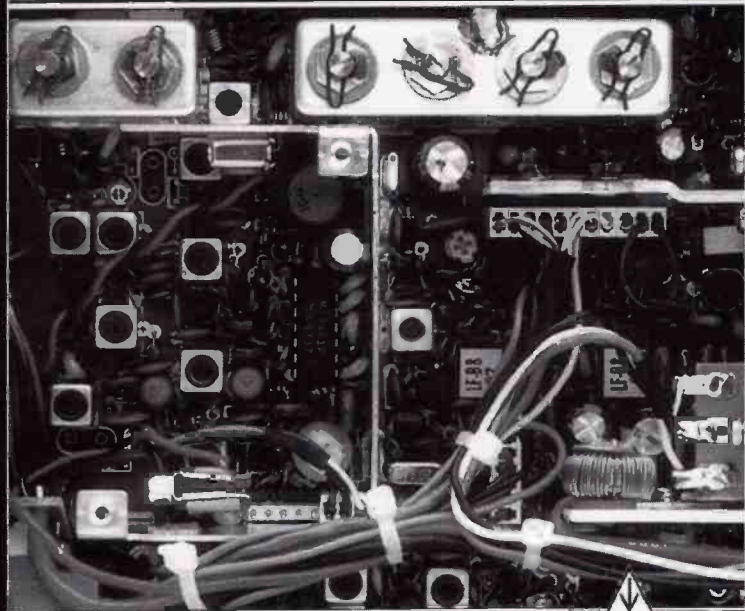
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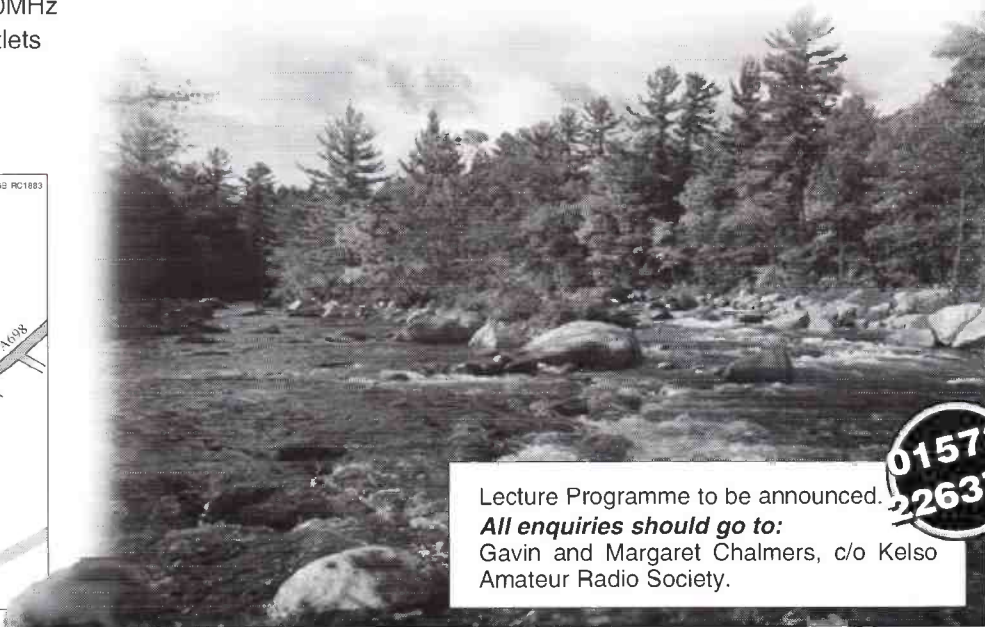
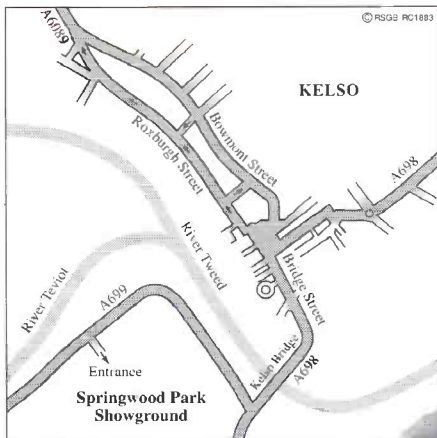
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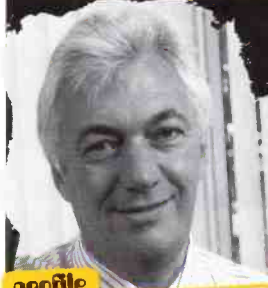
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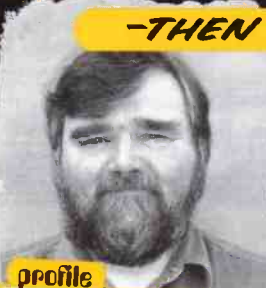
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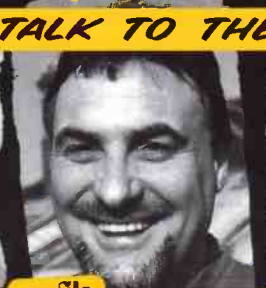
profile

**MIKE G3SED**.....our boss!  
is well known WORLD WIDE for his work on 6 metres and the LP Bands. He was a team member recently on the 9MOC and JY751X DXpeditions and worked on CAMEL TROPHY for five years.



profile

**GRAHAM G8HVY**  
- is a VHF specialist licenced for more than 25 years. Graham was one of the early pioneers of high power VHF/UHF DX'ing and satellite operation. He is also a keen 6 metre operator.



profile

**MICK G0ABB**  
- is an avid HF operator during the last 15 years. He has used and tested just about every HF rig on the market. His special interest is HF Mobile.



profile

**LLOYD G1JAR**  
is our resident DATA, SOFTWARE and COMPUTER expert. If you have a query on any aspect of Digital Communications - he's your man!



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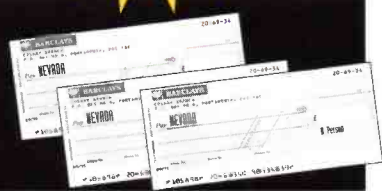


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**To include your club in this section, please make sure you send us your events details in time: deadline for October issue is 14 August, for November: 10 September; December: 9 October. We only list active clubs, ie those who send us their diary of planned talks / events. Send your club event details to: The Editor, Ham Radio Today (Club News), RSGB Publications, Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE; fax: 01707 645105.**

**Appledore & DARC**

7.30pm 3rd Mon of month at the Appledore Football Club room. 20 Jul BBQ & 'foxhunt'. 17 Aug astronomy. For details contact new Acting Hon Sec Brian Jewell: 01237 473251.

**Aylesbury Vale RS**

8.00pm on 1st & 3rd Wed of month, but *no meetings in Aug*, at Hardwick Village Hall, 3 miles north of Aylesbury on A413. 15 Jul discussion evening. Secretary Gerry, G7VVF: 01296 432234.

**Barking Radio & Electronics Society**

7.00pm Thus at Westbury Centre, Ripple Road, Barking, Essex. RAE course commences Mon 14 Sep - enrol on 3 or 10 Sep. Course details from Bill Chewter, 0181 478

Ian Daniels, G4VTD. 18 Aug barbecue. Alan Messenger, G0TLK: 0181 777 0420; e-mail: alangm@clara.net

**Bromsgrove ARS**

8.00pm on 2nd & 4th Tue of month at Lickey End Social Club, Alcester Rd, Burscot, Bromsgrove. 14 Jul night on air. 27 Jul on foot DF event. 11 Aug barbecue. 25 Aug mobile DF. A Malcolm, G8DEC: 01527 875573.

**Bromsgrove & DARC**

7.30pm Weds & Fris at Avoncraft Arts Centre, Bromsgrove. Weds are construction & operating nights, Fris club meetings. RAE / NRAE / Morse courses start in Sept. John Burford, G4OAZ, 01527 871903.

**Burnham Beeches RC**

8.00pm 1st & 3rd Mons at Farnham Common Village Hall, Victoria Rd, Farnham Common, Bucks. 20 Jul

**Chelmsford ARS**

1st Tue of month. 4 Aug presentation, Gwyn Williams, G4FKH. Charles Shelton, G0GJS: 01245 256654.

**Cheltenham ARA**

7.45 for 8.00pm on 1st Fri of month at Prestbury Library, The Burgage, Prestbury, Cheltenham. 7 Aug Rob Mannion, G3XFD, Editor *Practical Wireless*. 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. 15 Jul rally & contest planning. 22 Jul night on air. 29 Jul GPS, G6TSF. 5 Aug general meeting. 12 Aug members' memoirs. 19 Aug forum night. 26 Aug

Christchurch. Secretary K P Harris, G7WSN: 01202 484892 (evenings).

**City of London ARS**

RAE and Morse courses commence in Sep in Elephant & Castle area. For details contact Tony Hern, G1UFX, 0171 928 3481, e-mail: g1ufx@mcmail.com; or packet: G7UZN @ GB7HSN

**Cockenzie & Port Seton ARC**

has 'normal club nights' on first Fri of month at the Thorntree Inn, High Street, Cockenzie, from 1900 'till late'. 14 Aug annual junk night at community centre, South Seton Park, Port Seton, East Lothian. Bob Glasgow: 01875 811723.

**Cornish RAC**

7.30pm on 1st Thu of month at Perranwell Village Hall, near Truro. 3 Aug practical antenna design.

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4785. Sec Harry Coots, G7WJE: 01708 746731.

**Bolsover ARS**

Meets Weds. 22 Jul computer night. 29 Jul CW night, G0WLP. Colin, G0RXT, 01246 822856.

**Bristol (RSGB) Group**

7.15 for 7.30pm last Mon of the month at Avon Combined Services Club, St Pauls Rd, Clifton, Bristol. 27 Jul quiz chaired by G3RFX. 31 Aug video: Longleat Rally on BBC. 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. 15 Jul barbecue. 22 Jul bring & buy. 29 Jul home construction. Jean Fletcher, G0AWX: 01275 834282 (24hr answer phone).

**Bromley & DARS**

7.30 for 8.00pm on 3rd Tue of month, at Victory Social Club, Kechill Gardens, Hayes, Kent. 21 Jul practical electricity fundamentals,

digital TV. 3 Aug 'foxhunt'. Secretary G4XDU, e-mail: bbrc@argonet.co.uk

**Bury Radio Society**

7.45 for 8.00pm Tues at Mosses Centre, Cecil Street, Bury, Lancashire. 14 Jul pedestrian excursion with radios. 11 Aug vehicle outing with radios. Keith Rothwell, G8EAP, keith@g8eap.demon.co.uk

**Buxton Radio Amateurs**

2nd & 4th Tue of month. 28 Jul video. 25 Aug border hike discussion. Derek Carson, G4IHO: 01298 25506; G4IHO @ GB7DAD

**Cardiff RSGB Group**

2nd Mon of month. 13 Jul RSGB video. 10 Aug aerial debate. David Thomas, GW3RWX: 01222 620939.

**Carmarthen ARC**

7.00pm 1st & 3rd Tue of month at Hill House, Picton Terrace, Carmarthen. The club was formed in 1981 and has now grown into one of the largest in Wales: visitors welcome any club night. Islwyn Hughes, GW4ZXL: 01267 231359.

comp. P Blakeney, G8BLB: 01494 784811.

**Cheshunt & DARC**

8.00pm Weds at the Church Room, Church Lane, Wormley, Herts. 15 Jul member's forum. 22 Jul portable on Baas Hill Common. 29 Jul junk sale. 5 Aug night on air. 12 Aug portable on Baas Hill Common. 19 Aug members' forum. 26 Aug open. Details John Crabbe, G3WFM, 47 Torrington Dr, Potters Bar EN6 5HU or at GB7HSN.

**Chester & DARS**

Meets Tues (but not 1st Tue of month, and no meetings in Aug). 14 Jul video night. 21 Jul bring & tell. 28 Jul discussion night. G Landen-Turner, G00XA, 0151 608 3229.

**Chichester & DARC**

7.30pm 1st & 3rd Tue of month at St Pancras Hall, St Pancras, Chichester. 21 Jul: free / open evenings. John Stratfull, G3IJS: 01243 861578.

**Christchurch ARS**

8.00pm Thu in the radio club room, behind the Sports & Social Club, Grange Road, Somerford,

Robin Worsley, G0MYR: 01209 820118.

**Coulsdon ATS**

7.45pm on 2nd Mon of month at St Swithun's Church Hall, Grovelands Road, Purley. 13 Jul quiz vs other societies. 10 Aug barbecue at G4RWW & G6LX. Alan Bartle, G6HC: 0181 684 0610.

**Coventry ARS**

8.00pm Fris at Binley Church Hall, Brinklow Road, Coventry. 10 Jul DXing, Bob Nash, G4GEE. 17 Jul 2m DF. 24 Jul night on air. 31 Jul indoor DF. 7 Aug talk TBA. 14 Aug night on air. 21 Aug CW & computers. 28 Aug night on air. For further details contact the Secretary, Robin Tew, G4JDO: 01203 673999.

**Dover Radio Club**

8.00pm Weds during term time at Duke of York's Royal Military School, Guston, near Dover (Novice & Morse training classes 7.00 - 8.00pm). 22 Jul NTL Hougham visit. 5 Aug mobile operating at St Margaret's Bay. 19 Aug mobile operating at Samphire Hoe. Brian Hancock, G4NPM: 01304 821007.

**Dragon ARC**

7.30pm 1st & 3rd Mons of month at Ebenezer Hall, Foel Graig Lane, Higher Village, Llanfairpwll. 20 Jul hydroelectricity in N Wales, Dewi Thomas. 3 Aug TBA. 17 Aug QE2, Phillip Marriott. Tony Rees, GW0FMO: 01248 600963.

**Droitwich Spa ARC**

7.30pm on 1st Thu of month at Ye Olde Shoppe, 17 Ombersley St W, Droitwich Spa. Edward, G4PQZ, tel / fax: 01905 773181.

**Dudley ARC**

7.45pm at Dudley Central Library, St James Rd, Dudley. 27 Jul digital TV, Geoff Cooper, G0KVK. Tony, G4LVA: 01384 277925.

**Dundee ARC**

Details from Macdonald Black, GM0PIV, 01382 465771.

**Dunstable Downs Radio Club**

8.00pm Fris at Chews House, 77 High Street South, Dunstable, Beds. The club has 'library nights' on 1st Fri of month, plus: 17 Jul on the air. 28 Aug DF equipment check. 30 Aug DF hunt. Paul McVay, G7TSJ: 01582 861936.

exander Adam, GM0VFD, 01592 874374.

**Goole R&ES**

7.30pm Fris at West Park Pavilion, Goole. 10 Jul logfill. 17 Jul log fill. 24 Jul 'HF basics'. 7 Aug on air. 14 Aug history of GRES. 21 Aug contest debrief. G6YYN: 01757 638539.

**Halifax & DARS**

7.30pm on 3rd Tue of month at Tap & Spile Pub, Wards End, Halifax, for committee & Morse tuition. 21 Jul the sun, LM Dougherty. 18 Aug junk sale. D Moss, GODLM: 01422 202306.

**Hambleton ARS**

7.30pm at Allertonshire School, Northallerton. 16 Jul CB in '98, G0TYM. John Hampson, G0VXH: 01845 537547, or packet: G0VXH @ GB7CYM.

**Hastings Electronics & RC**

7.30pm on 3rd Wed of month at West Hill Community Centre, Croft Road, Hastings. 15 Jul auction. 19 Aug 'bring your thing'. Doug Mephram, G4ERA: 01424 812350.

**Hoddesdon Radio Club**

8.00pm alternate Thus at Conserva-

Worcs. Geoff Philpotts, G0RJP, tel: 01299 822206.

**Leicester Radio Society**

meets every Mon. 27 Jul fingerprinting, Leicestershire police. 17 Aug junk sale. 24 Aug history of radar, Bob James. 31 Aug Bank holiday. 'On air' nights are held on Mons not shown above. John Alexander, G7GCK: 0116 231 3194.

**Leiston ARC**

at 7.30pm at Leiston Town Athletic Association, Victory Rd, Leiston. 4 Aug wine & cheese party. John Rabson, G3PAL: 01394 460298; fax: 01394 420795; e-mail: word.factory@zetnet.co.uk

**Liverpool & DARS**

8.30pm Tues at Churchill Club, Church Road, Wavertree, Liverpool. 14 Jul night on air. 21 Jul Q&A. 28 Jul surplus sale. 4 Aug future of Morse discussion. 11 Aug night on air. 18 Aug stub matching, G8DEY. 25 Aug surplus sale. Publicity Officer, Ian Mant, G4WWX: 0151 722 1178.

**Loughborough & DARC**

at Science Lab, Hind Leys Community College, Forest St, Shepshed,

**Mid Sussex ARS**

Meets Fris. 10 Jul rally preparation. 17 Jul rally & NFD post mortem. 31 Jul annual barbecue. 7 Aug on air. 14 Aug quiz. 21 Aug VHF on air. 28 Aug Working with VHF, Derek, G3GRO. Philip Baldwin, G3LCF, 01273 557878.

**Milton Keynes & DARS**

7.30pm Mons at Faulkner House, Bletchley Park. The Society runs RAE, NRAE and Morse courses. Details from Dave McQue, G4NJU, tel: 01908 378277.

**Moray Firth ARS**

RAE and Novice RAE courses available. Geoff Crowley, GM7SJC, 01542 882818.

**Newbury & DARS**

7.30pm on 4th Wed of month at Memorial Hall, Upper Bucklebury, near Newbury. 15 Jul BBQ at G3LLK QTH. 22 Jul no meeting. 15 Aug Skittles vs Basingstoke ARC. 26 Aug no meeting. Ian Trusson, G3RVM, 01635 826019, g3rvm@compuserve.com

**Norfolk ARC**

Weds at Ugly Bug Public House, Colton. Informal evenings, includ-

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**East Cleveland ARC**

7.00pm Fris at Jubilee Hall, Gurney St, New Marske. No club meetings Jun - Aug; Novice class starts Sep. Alistair, G4OLK, 01642 475671.

**Edgware & DRS**

8.00pm 2nd & 4th Thus at Watling Community Centre, 145 Orange Hill Rd, Burnt Oak, Edgware. 23 Jul travels down the Nile, Dr P Newham. Julian, G4ZOD: 0181 958 6178.

**Exeter ARS**

7.45pm 2nd Mon of month at Moose International Centre, Blackboy Road, Exeter. 3rd Mon is committee / open meeting. 13 Jul mobile equipment evening. 20 Jul on air. 10 Aug visit to Stockland Hill transmitter. Theo, G3EQM: 01392 875498.

**Felixstowe & DARS**

8.00pm at Orwell Park School, Nacton, Ipswich. 27 Jul on air experience for RAE students, Paul, G4YQC. 10 Aug taking up Morse? Paul, G4YQC: 01394 273507.

**Glenrothes & DARC**

7.00pm Weds at the Football Pavilion, Station Rd, Thornton, Fife. Al-

live Club, Rye Road, Hoddesdon, Herts. 23 Jul First Aid in the shack. Don, G3JNJ: 0181 245 8119.

**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. 28 Jul American supper. 25 Aug TBA. Stuart Swain, G0FYX: 01705 472846.

**Ipswich Radio Club**

Meets Weds: 15 Jul kite antenna demo. 29 Jul Morse. 5, 19, 26 Aug Otley operational evening. Iain, G0OZS: 01206 396419.

**Keighley ARS**

8.00pm Thus at Ingrow Cricket Club, Hainworth Rd, Ingrow, Keighley. 1st Thu is on air night, except where shown. 16 Jul natter night. 23 Jul packet on air night. 30 Jul 'dead centre', talk / slides. 13 Aug video. 20 Aug air traffic control. 27 Aug RTTY on air night. Ann, M0BLZ: 01274 499733.

**Kidderminster & DARS**

8.00pm first Tue of month at Sutton Arms, Sutton Road, Kidderminster,

on Mon evenings (when college open) for general chat / operating & on Tuesdays as follows: 14 Jul 'radio ramble' (brings boots & handheld). 21 Jul on air. 28 Jul on air from Stanford Hall. 4 Aug DF. 11 Aug on air. 18 talk TBA. 25 Aug microprocessors, Barry, G0LCU. Ian, G8SNF, on tel: 01509 218259.

**Malvern Hills RAC**

8.00pm 2nd Tue of month at Town Club, 30 Worcester Road, Malvern. Club call is G4MHC. 14 Jul Micro Stamp Controllers, Mike Ward, G4GHL. 11 Aug VHF night on air. Secretary Dave Hobro, G4IDF, 60 Linksvie Crescent, Newtown, Worcester WR5 1JJ; 01905 351568 (evening / weekend), e-mail: DHobro@aol.com

**Mid Cheshire ARS**

8.00pm Weds at Cotebrook Village Hall on A49 north of Tarporley. 15 Jul 'foxhunt'. 22 Jul construction & VHF on air. 29 Jul video night. 5 Aug construction & HF on air. 19 Aug activity night. 26 Aug construction & VHF on air. Ted Bannister, G0RBA: 01606 592207; e-mail: G0RBA@aol.com

ing night on air, construction QRP, & Morse practice, on 1st, 3rd & 5th Weds, plus: 22 Jul surplus equipment sale. 5 Aug video the Blenheim story, Jack, G3NJQ. 19 Aug social evening / buffet. Hon Sec, Sandra Simpson, 2E1F0F.

**North Ferriby United ARS**

Thus, at the Football Club, Church Road. Note this a change of day. David, G7PER, 01482 656324.

**North Kent RS**

8.00pm 1st & 3rd Tue of month at Pop-in-Parlour, Graham Rd, Bexleyheath. 14 Jul barbecue. 21 Jul quiz vs Darenth Valley. Secretary G8MLQ.

**North Wakefield RC**

8.00pm Thus at East Ardsley Cricket Club, Wakefield. 16 Jul role of the RA. 30 Jul barbecue. Further details: 0113 253 9087.

**Nunsfield House ARG**

Fris at Nunsfield House Community Association, 31 Boulton Lane, Alvaston, Derby. 10 Jul VHF NFD *post mortem*. 17 Jul fire safety demo at Kingsway fire station. 24 Jul junk sale. 31 Jul great egg race, Ken Clarke. Neil Davison, M1AFB: 01332 736362.

## Oldham ARC

8.30pm at Moorside Conservative Club, 633 Ripponden Road, Moorside, Oldham. 23 Jul Radio Free Europe & Radio Liberty, Gordon Adams, G3LEQ. Geoff Oliver, G0BJR, 0161 652 4164; e-mail: oarc@zen.co.uk

## Plymouth Radio Club

7.30 for 8.00pm 1st & 3rd Tue (summer schedule until Sep). 14 Jul 7.00pm sharp visit N Hessary Tor. 21 Jul talk by Pat Marshall, harbour master. 23 Jul visit to Stonehouse Barracks 7.00pm sharp. 4 Aug talk on Fort Bouisand underwater centre. 11 Aug visit BBC studios. 18 Aug National Blood Transfusion Service. Fri 21 Aug visit HM Coastguard Brixham. 25 Aug visit Fort Bouisand underwater centre. Den Perryman, G7NMA: 01752 346158 (before 9.00pm).

## Poldhu ARC

7.30pm 2nd Tue of month. 14 Jul question time. 11 Aug operating practices & procedures, David, G3PLE. David Barlow, G3PLE: 01326 240738.

## Stevenage & DARS

7.30pm Tues at the Day Centre, Chells Way, Stevenage. 14 Jul 9MOC Spratly DXpedition, Steve Telenius-Lowe, G4JVG. Peter Bell, 2E1CRK: 01462 674505.

## Stourbridge & DARS

8.00pm on 1st & 3rd Mon of month (except Bank Holidays & no meetings in Aug), at the Radio Shack, Oldswinford Hospital, Heath Lane, Stourbridge. 20 Jul main meeting. Gordon Bryant, G0TZV: 01384 395206.

## Stratford upon Avon & DRS

7.30 for 8.00pm on 2nd & 4th Mon of month at Home Guard Club, Main Road, Tiddington, Stratford upon Avon. 13 Jul social evening. 27 Jul construction competition. Secretary Jeff Porter, G4OHJ: 01789 773286.

## Submarine ARC

Weds at RNARS HQ, HMS Collingwood, Hants (please note this is a new venue). Colin McLean, M1ANC, packet@GB7SUN.

## Sutton & Cheam RS

7.30 for 8.00pm on 1st Thu (natter night) & 3rd Thu (formal meeting),

Southwick Village Hall, Southwick, on A361 Trowbridge / Frome road. 5 Aug TBA. Ian Carter, G0GRI: 01225 864698 (evenings / weekends).

## Tynemouth ARC

Details from Harry Purves, G6UQX, 0191 262 7335.

## Verulam ARC

7.30 for 8.00pm at RAF Association HQ, New Kent Road, St Albans. 28 Jul barbecue. 25 Aug junk sale. Walter Craine, G3PMF: 01923 262180.

## Wakefield & DRS

8.00pm Tues at Community Centre, Prospect Road, Ossett, West Yorks. 14 Jul rally meeting. 28 Jul talk by Gordon, G0ISJ. 4 Aug on air. 11 Aug talk by Ian, M0BFO. 18 Aug Talk by John, G0MVA. 25 Aug on air. Ian, M0BFO, 01924 216502.

## West Somerset ARC

7.30pm 1st Tue of month in Room GB7, Gibbs Block, West Somerset Community College, Minehead, Somerset. 4 Aug talk on use of Amateur Radio. Alan Elliott, M0AOJ: 01643 707207.

## Yeovil ARC

7.30pm Thus at the Red Cross Centre, Gove Avenue, Yeovil. 16 July junk sale, G1PZK. 23 July 2m 'foxhunt'. 30 July on air night. 6 Aug DX crystal set, G7LNJ. 13 Aug noise temperature, G8AWB. 20 Aug 'a glance at yesterday's papers', G3CIO. Mike, G7SDD, tel: 01963 250594.

## National and International Groups

### 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 Farquahar 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 (BATIC)

produces a quarterly magazine, *CQ-TV*, and holds its own rally each year.

# This Month at the Clubs

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## Radio Society of Harrow

8.00pm Fris at Harrow Arts Centre, Uxbridge Rd, Hatch End, Middx. 18 Jul French evening, food & wine, F6KRK club sked. 24 Jul early communications, Eric Holt, G3MHQ. Jim Ballard, G0AOT: 01895 476933 (evenings / weekends) or 0171 278 6421 (day).

## Shefford & DARS

8.00pm Thus at Church Hall, Amphill Road, Shefford, Beds. CW practice from 7.30pm. 16 Jul mobile DF hunt. 23 Jul barbecue at Summerfield Farm. Derek Clarkson, G4JLP: 01462 851722.

## Southdown ARS

First Mon of month. 3 Aug 'talking machines'. Brian Gauntlett, G4LYU: 01323 840530.

## South Notts ARC

7.00pm Weds at Fairham Community College, Farnborough Rd, Clifton, Nottingham. 15 Jul on air. 22 Jul SSB Field Day preparation. 5 Aug foxhunt. 12, 19, 26 Aug, 2 Sep - no meetings. Vice Chairman tel: 01509 672846.

at Sutton United Football Club, Borough Sports Ground, Gander Green Lane, Sutton, Surrey. 16 Jul VLF operating, Derek Atter, G3GRO. John Puttock, G0BWV: 0181 644 9945.

## Taunton & DARC

Informal meetings only during Aug. Contact Bill Lindsay-Smith, G3WNI, e-mail: w.lindsay-smith@virgin.net for details.

## Thornton Cleveleys ARS

Meets Mons. 13 Jul surplus equipment sale. 20 Jul transformers, Charlie, G4FWM. 27 Jul mining experiences, Colin, G0EPY. J Duddington, G4BFH, 8 The Grove, Thornton Cleveleys, Lancs FY5 2JD.

## Torbay ARS

7.30pm Fris at ECC Social Club, Highweek, Newton Abbot. Informal meetings most Fris & talk / event once a month. 24 Jul Paul from Bekra Radio Control Models. 21 Aug barbecue. Peter Tanner, G4VTO: 01803 864528 (working hours).

## Trowbridge & DARC

8.00pm 1st & 3rd Wed of month (3rd Weds usually 'natter nights') at

## Wimbledon & DARS

2nd & last Fri of month at St Andrews Church Hall, Herbert Rd, Wimbledon SW19. 10 Jul 2-stroke engines, G7UVF. 25 Jul summer camp. 31 Jul on air from summer camp. J Gale, G4WYJ: 01737 356745.

## Wirral ARS

8.00pm at Club Room, Ivy Farm, Arrowe Park Road, Birkinhead, opposite Landican Cemetary. Activity nights 1st & 3rd Weds; 'natter nights' Tues from 7.30pm; Morse tuition Thus. 24 - 31 Jul special event station at National Guide Jamboree. Arthur Aspinall, G0NDM: 0151 678 8956, G0NDM@GB7OAR.#16.GBR.EU

## Wolverhampton ARS

8.15pm Tues at Wolverhampton Electricity Sports and Social Club. 14 Jul video, Gordon, G4DGM. 21 Jul DF hunt. 28 Jul social. 4 Aug committee meeting. 11 Aug video, Geoff, G3GZK. 18 Aug natter night. 25 Aug social. Joy Smith: 01902 751936.

BATIC 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 the UK's first and largest grouping of amateurs interested in HF DX / contesting. Internet site: <http://www.cdxc.org.uk> For prospectus and further details please contact the Secretary, Alan Jubb, G3PMR, 30 West St, Gt Gransden, Sandy, Beds SG19 3AU.

## G-QRP Club

publishes a quarterly journal, *SPRAT*, devoted to low power communication, and holds regular get-togethers at their rally stands throughout the country. 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](mailto:jryan@iol.ie) Book Sales: Dave Moore, EI4BZ, 12 Castle Ave, Carrigtwohill, Co Cork; tel: (Eire) 021 883555.

**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 Durley 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 con-

tact: The Secretary, RARE, 1 Allfield Cottages, Conover, Shrewsbury SY5 7AP; tel: 01743 873815; fax: 01743 874729; packet: G6FHM@GB7PMB; e-mail: [rare@donsun.demon.co.uk](mailto:rare@donsun.demon.co.uk)

**Radiocommunications Agency (RA)**

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, tel: 0171 211 0211. Answerphone service, tel: 0171 211 0591.

**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, automatic entry in RSGB contests, and help in obtaining planning per-

mission for antennas, and much other technical support. A network of over 2000 volunteers is on hand to help the Radio Amateur and short wave listener with any enquiry. Address is: Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE; tel: 01707 659015; Internet site: <http://www.rsgb.org> and e-mail: [into@rsgb.org.uk](mailto:into@rsgb.org.uk)

**Subscription Services Ltd (SSL)**

handles the issuing of amateur licences in the UK on behalf of the Radiocommunications Agency. SSL can help regarding enquiries concerning individual licences (rather than general licensing matters, which the RA handles, see above). Contact details: The Radio Licensing Centre, SSL, PO Box 884, Bristol BS99 5LF; tel: 0117 925 8333.

**United Kingdom Radio Society (UKRS)**

is a new society for UK Radio Amateurs. They can be contacted at Box 100, Meadow Street, Northwich, Cheshire, CW8 1FA. tel: 01606 783270, or 0115 925 6597, packet: [UKRS@GB7OAR](mailto:UKRS@GB7OAR), or e-mail: [admin@ukrs.org](mailto:admin@ukrs.org); Internet: <http://www.ukrs.org>

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- **AOR8000 WITH** opto-modification for sale. Mint condition used only indoors. Modification made by SMC. In October when I bought it. all original accessories included. Still under warranty. Test available. Initial price £275, negotiable. Konstantinos, tel: 01206 874842. e-mail: kbibis@essex.ac.uk (Colchester).
- **AOR8000 SCANNER** with charger and nicads 500kHz to 1.9GHz, no gaps, all mode, boxed, as new. £215 ono. Tel: 01778 426629 (South Lincs).
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- **HEATHKIT SB-101**, Heathkit SB-610 oscilloscope. Heathkit SB-600 speaker, Heathkit HP-23 power supply. VGC. no mic. PWO. Unknown value. open to offers. buyer collects or pays postage, complete line-up. Tel: 01383 831713, leave message. May swap - WHY?
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### wanted

- \* **WANTED ATU** balanced (not balun type) for topband doublet. Homebrew no problem. WHY? Also power plug for Collins TCS-12 transmitter. Tel: 01287 634397 9 - 5 works QTH. Ask for Peter. G4VUN, thanks.
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- \* **EDDYSTONE 1837** for spares or repair. any condition, complete or not. Also SSB IF filter IF frequency 1.75MHz. Tony, tel: 01905 641759 (Worcester).
- \* **VEHICLE ADAPTERS** x 2 for Philips / Simoco PRP76 handhelds. Must be clean and in GWO. Also good batteries for same. Contact Richard, G7EMC, tel: 0113 2584903 (Leeds).

### help needed

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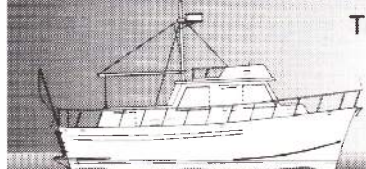
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