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CCCCC  A  M  M  BBBB  EEEEE  A  M  M
C      A A  MM  MM  B  B  E      A A  MM  MM
C      A  A  M M M M  B  B  E      A  A  M M M M
C      AAAAAA M  M  M  BBBB  EEEEE  AAAAAA M  M  M
C      A  A  M  M  B  B  E      A  A  M  M
C      A  A  M  M  B  B  E      A  A  M  M
CCCCC  A  A  M  M  BBBB  EEEEE  A  A  M  M
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## CAMBEAM

August 2005

Newsletter of the Cambridge and District Amateur Radio Club

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A great welcome to Peter M0DCV who joins the editorial team! Getting a volunteer is probably the best encouragement any project can ever hope for.

Elisabeth Stratmann 2E0DMR, Peter Howell M0DCV and Daniel Schlieper 2E0CAX  
c/o Daniel Schlieper, editor@cdarc.org.uk

>>> *The best way to secure your next CAMBEAM is to pay your subs.* <<<

As you doubtless know the committee puts in a lot of hard work to make things happen at the club. We all know that not every event interests everyone. I would ask you all to think about what *you* would like to do and see happen at club meetings. Are there any activities that you would wish to see outside of club meetings? Contributions of likes, dislikes and ideas are always welcome. So *please* contact a committee member and share your thoughts. Remember, this is OUR club and it is what we make of it.

Whilst on the topic of events, this September Field Day we will be allocating half the field to an HF Play Area! The intention is to get as many people on site with weird and wonderful antennas and other exciting radio related items. And, while you are on site, why not have a go at helping out in the 144Mhz Contest Station? So, get your thinking caps on and prepare for a fun and pleasurable weekend out.

73 de Mark – M1MPW, Chairman, contact@cdarc.org.uk

**Club Picnic 14 August 2005 +++ Longstowe Pavilion +++ from ~11.00 +++ Bring: your family, friends, enough picnic food, some radio kit, ants/bits of wire etc +++ Come and enjoy.**

### **3/4 Sept 2005 (1) Operators wanted for the 144 MHz Trophy**

The Beast is alive! David has done a fantastic job rebuilding the linear. It will be great to have a serious QRO station in the 144 MHz Trophy. Especially as the Big Linear is now producing a very clean signal. We need as many operators and loggers as possible. Have you got one or two hours to spare? Do you want to get on the operators' rota? Get in contact with David G6KWA or Daniel 2E0CAX, editor@cdarc.org.uk

### **3/4 Sept 2005 (2): HF Field Day/Experiments on HF**

We will not only have the loudest VHF station in East Anglia but we will also be going for some fun on HF. So bring your portable HF station with any portable antenna from proven design to the latest experimental idea. The bands will be quite busy then, as the contest is on that weekend. (So plenty of chances to give points away). There will be a catering tent with a two-fire gas cooker, pots & frying pans on site.

## ANNUAL DINNER

We plan to hold the Annual Club Dinner on Saturday, 19 November 2005.  
Please sign up as soon as possible or we are in trouble booking the room.

### CLUB PROGRAMME — Have your pick. Visitors welcome!

Club meetings are held (almost) every Friday from 7:30 to 9:30pm at the Coleridge Community College, Radegund Road, Cambridge. Talks start promptly at 8pm.  
A Morse Code class is available from 7.30pm.

See <http://www.cdarc.org.uk> for programme updates.

- |               |            |  |
|---------------|------------|--|
| <b>August</b> | 5          | IOTA, Martin G3ZAY   |
|               | 12         | Informal/HF operating evening in the club shack                      |
|               | 14         | Club picnic at Longstowe   |
|               | 19         | Optimum power to your antenna, Ian G4AKD                             |
|               | 21         | 70 MHz Trophy. Anybody interested?                                   |
|               | 26         | Informal/Contest preparation/PIC programming course (Lesson 4)       |
| <b>Sept.</b>  | 2          | Getting started on satellites, Carlos G0AKI                          |
|               | <b>3/4</b> | <b>144 MHz Trophy – and HF days. Time to fire up the Big Linear.</b> |
|               | 9          | Echolink refresher, Daryl G0ANV                                      |
|               | 16         | Upgrading the club's 2m linear, Dave G6KWA                           |
|               | 23         | Informal/PIC programming course (Lesson 5), Mike M0BLP               |
|               | 30         | Calibrate your gear with Mark M1MPW's network analyser               |
| <b>Oct.</b>   | 7          | Informal/Organising Quiz Night                                       |
|               |            | <b>7.30pm: Meeting of programme sub-committee</b>                    |
|               | 14         | Quiz Night   |
|               | 21         | Informal/PIC programming course (Lesson 6), Mike M0BLP               |
|               | 28         | How do computers work? Steve G4WSZ                                   |
| <b>Nov.</b>   | 4          | Equipment exchange. What do you have?                                |
|               | 11         | Repeater Group AGM. APRS, Rob Compton M0ZPU                          |
|               | 18         | Early valve manufacture & EF80 development, DVD, Ron G3KBR           |
|               | 19         | Annual Club Dinner   |
|               | 25         | Using MOSFETs, Mark M1MPW  |
| <b>Dec.</b>   | 2          | Video evening (title to be confirmed)                                |
|               | 9          | Assembling and calibrating Elecraft K2 transceivers, Bob G3PJT       |
|               | 16         | Christmas party  |

**Club closed until 6th January 2006**

**The PIC programming course** is a great success. Mike M0BLP is also working on a new club project: A PIC Morse reader (that will identify the beacons!).

**SUBSCRIPTIONS:** Are you a member, but have not paid your subs yet? It is only £5 – although additional donations are always welcome (contact John G0GKP).

**Visit the HAM RADIO Fair 2006!** The next HAM RADIO FAIR is going to take place in Friedrichshafen from 23 to 25 June 2006. It is probably the largest rally and trade fair in Europe. Thomas DL3SBB kindly invited the members of CDARC (say, a group of 6 to 8, maybe including partners). We could book Ryanair flights early enough to get them really cheap. Thomas offered help in finding accommodation and is also

willing to organise a supporting programme. I am sure he knows the right places for sightseeing (including the best brewery) around the Lake Constance. Anybody interested? More information: <http://www.hamradio-friedrichshafen.de>

**The VHF National Field Day on 2/3 July was good fun.** We had great luck with the weather and there was even a decent sporadic E event on 6m! John G0GKP gave an impressive demonstration of the power of CW (best DX on 4m). A big thank you to David G6KWA and all the others for the work they have put in. David also has put the pictures on our web server <http://www.cdarc.org.uk>

## Radio Astronomy



Many thanks to Ian G4AKD for organising the tour to the Radioastronomy site. It is an impressive collection of telescopes from the very beginning to the latest super high tech AMI array that is not even commissioned yet. AMI is the highly innovative Arcminute Microkelvin Imager, looking for the silhouettes of galaxies against the cosmic microwave background. Since the beginning the site was mainly used to develop prototypes which later were moved to or rebuilt at sites with better weather.

The photo is taken by John G0GKP, showing two historic dishes. They are impressively large! They are not used anymore, but fully operational and moving. Why don't we squat one? It must be fantastic to put a VHF/UHF/SHF transceiver into the focal point and work the world on moonbounce (no kidding). If you are interested in space and radio, check the programme: Carlos G0AKI is going to give a talk about satellite operation on 2 Sept 2005 (see Club Programme on page 2).

## Ofcom Licensing Consultation



As you may be aware, Ofcom has recently issued a consultation document concerning plans to reform amateur radio licensing.

On first viewing, the document appears quite innocuous but during one of the RSGB regional meetings on this subject, the RSGB expressed its many reservations.

Ofcom would like to give radio amateurs a "free license for life". However, the motivation for this may be due to the necessity to reduce financial overheads rather than to do radio amateurs a favour. The RSGB is cautious on this matter since this may lead

to total deregulation in a few years. Indeed, Ofcom has apparently sought legal advice on this, the response being that it would take some 5 to 7 years to unwind the numerous international agreements before deregulation could happen.

Deregulation may mean that you no longer need to pass a technical exam to be a radio amateur. Interference to other amateurs and other services from untrained operators could be a real problem. Also operation in foreign countries may no longer be possible since international standards may not be met.

As part of the partial deregulation, Ofcom would like to introduce electronic licensing. The RSGB is concerned that this may lead to an increase in piracy, as has been observed in Canada, where electronic licensing is already in place. Also, the onus would be on the radio amateur or next of kin to notify Ofcom of a change of status (e.g. change of address or death of licensee). This is not likely to occur in practice considering that up to 40% of people may not have advised the DVLA of any changes to their driving license! Other issues exist, including security.

The RSGB have a number of key objectives:

- To maintain the status of amateur radio and radio amateurs in the UK;
- To maintain the requirement for examination and to ensure the continued security and integrity of the examination and licensing systems;
- Ensure that the requirement to hold a license is maintained;
- Protect the integrity of the amateur radio license database;
- Safeguard the future of the hobby.

The RSGB would like as many radio amateurs as possible to participate in this consultation (see <http://www.rsgb.org.uk/news/q&aaug05.pdf>). You do not need to be a member of the RSGB and it is not necessary for you to share the views of the RSGB. More important is the need for you to contribute by replying to Ofcom.

**It has become evident to the RSGB that Ofcom has little understanding of what amateur radio is about and the many contributions that amateur radio makes. By not responding to this consultation, Ofcom may think that we do not care about our hobby.**

The consultation document can be ordered from Ofcom (020 7981 3000). They are legally obliged to send you a copy if asked. Indeed, this may be the first step in making the presence of amateur radio felt by Ofcom. Alternatively, the document can be downloaded from their website ([www.ofcom.org.uk](http://www.ofcom.org.uk)). Please note that the deadline for responses is 18th August, 2005.

You now have the opportunity to give something back to your hobby. Please respond to Ofcom.

### **EU Sprint: Contesting on a Level Playing Field**

**Daniel 2E0CAX**

In typical HF contests the bands are crowded with crocodiles (big mouth – no ears) and with a modest station it can be difficult to get some points. The EU Sprint Contests are different! The operators are on a level playing field whether they run 10W, 100W or full legal limit. How do the organizers G4BUO, I2UIY, OK2FD and 9A6XX achieve this small miracle? The trick is the QSY rule: if you find yourself a free frequency and call CQ, you are only allowed to work one station. After that contact, you have to leave “your” frequency to the other station. It goes like this:

CQ TEST I2UIY TEST

G4BUO G4BUO  
G4BUO I2UIY 12 PAOLO  
I2UIY 37 DAVE G4BUO

G4BUO now has the frequency, and calls CQ or QRZ, while I2UIY moves up or down at least 2 kHz. As can be seen, the exchange is slightly unusual: Don't bother with a signal report. The RST would be 59(9) anyhow. But do repeat the other station's callsign – that is mandatory. Then send a serial number and the shortest nick-name you can think of. These rules are simple but make a big difference. The speed of the exchange rate is breath-taking. It is called Sprint for a reason! There are no pile-ups: the calling station disappears after one contact. QRM occurs only for short periods. Once you have made a contact, you are hunted by the big guns: they want your frequency!

Three hours are enough time to work 304 stations. (At least that's the all time top score). However, the real challenge is not to make many contacts, but to be correct in sending, receiving and logging. Being absolutely precise here is essential. If you make any mistakes, the point is not only lost for you, but also for the other station. And there is no hiding: the adjudicators will publish all logs and errors. On the other hand, that kind of feedback makes this contest the perfect training opportunity for the National Field Day. The next contests are on 1 Oct 2005 (SSB) and 10 Oct 2005 (CW) from 1500 until 1859 UTC. Full rules and further information on <http://www.eusprint.com>

### **Linux software: Live CDs for Radio Amateurs – The Perfect Way To Get Started**

Since its start many years ago Linux is a great platform for program developers with many good programming tools and libraries. Also the source codes of most of the programs are freely available. So, if anybody wishes she/he is welcome to join a project. But what about those who are not (yet) Linux experts?

In the early days there was a lot to learn before the computer was even booting Linux. Not anymore! There are now Live CDs available - special CD-ROMs that are put in the CD drive. The computer is then restarted and boots from the Live CD firing up Linux using automatic hardware detection. The best is that the computer hard disks are not even touched! Boot the computer without Live CD in the drive, and Linux has vanished without trace. A great way to take your first steps in the Linux world. But these systems are more than that. Many come with most useful programs, like the OpenOffice suite that has a word processor, a spreadsheet and programs for drawing and running a presentation. But it gets better, some Live CDs go a step further and have many goodies for amateur radio, for logging, data modes, satellite prediction, SSTV, PCB design and much more. And they all are so reliable that they are used in major DXpeditions!

**How do I get started?** Look at <http://radio.linux.org.au/>, the award winning database with all the information on Linux software for the 'HamradioCommunity' Try:

<http://radio.linux.org.au/?sectpat=distribution&ordpat=title>.

<http://www.afu-knoppix.de/>

<http://hamshack-hack.sourceforge.net/>

[http://home.iae.nl/users/reinc/dxpedition\\_disk.html](http://home.iae.nl/users/reinc/dxpedition_disk.html)

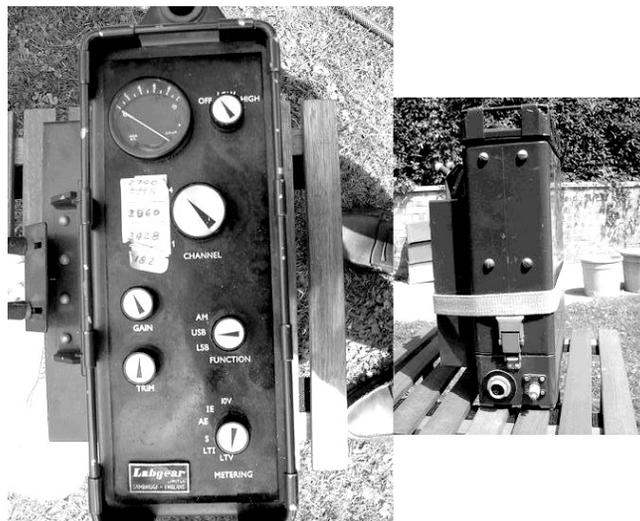
All of these have files ending .iso to download and burn a CD (shout if you need help). Once booting from this CD-ROM, there will be a welcome prompt. Press F2 for help or

type linux lang=uk to let the computer know that you have a British keyboard. Some systems expect 'knoppix' or 'morphix' instead of 'linux', but that will be obvious.

That's it! The computer will boot and after a short while you can explore what it has on offer. Try it out – and keep in mind: these projects need feedback from the users (you), so if you have questions or ideas how to improve the CDs, let them know. I really liked the DebianDXpeditionDisk, which comes with TLF, a powerful logging program. More about logging using Linux in the next issue of CAMBEAM.

**Club Nets** are run on Sunday mornings, 09:30–10:00 local time (calling on 144.300 and later moving to around 144.370 MHz USB) and from about 11:00 or 11:30 local time on 145.550 MHz FM. Meet you there! Anybody interested in a 3.6MHz LSB net?

### What Is It?



Manufactured by Labgear, khaki in colour. Military back pack in style. 4 crystal controlled channels, 2740, 3960, 3428 & 2182 kc/s. Functions: AM, USB LSB. Removable rechargeable battery pack with split voltages. No info or part number inside. Does anyone know the type? Where can one get the unusual connectors? Where can I get the circuit or info?

Roy M1GRT

**Interested in Amateur Radio?** It is the ideal way to have fun while learning more about a wide range of topics: Efficient communications, electronics, physics, maths, geography, foreign languages, computer and satellite sciences and much more. The Foundation Licence Course is the ideal way to get started. The entry level course is easy and designed for the whole family, from school kids to pensioners, from 8 to 108 years of age! Work the world on HF or keep in touch with your friends across town using powerful VHF or UHF handhelds.

Ask John G0GKP (g0gkp@cdarc.org.uk, about his award winning Foundation licence courses. One to one courses or small classes. Very low fees.

### For sale

Timewave 9+E DSP audio filter, noise reduction, automatic notch, band pass filters for phone, CW, data, good working order £40. Datong RF preamp £10 ono. 2 LNBS, offers? Daniel 2E0CAX, editor@cdarc.org.uk

Powerguard 500 W, Sine Wave inverter, 12 V DC to 240 V AC. Heavy unit, a bit inefficient on low loads. FREE to a good home (but buyer collects from Great Shelford). John G3UUT

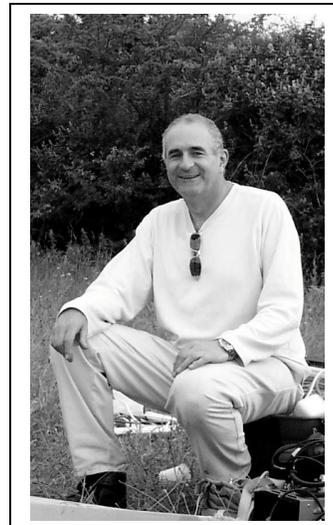
G2XV's Yaesu FR101D HF/VHF receiver. 1.8MHz, 3.5MHz, 7MHz, 14MHz, 21MHz, 28MHz, 50MHz, 144MHz plus broadcast bands, but no WARC (10MHz, 18MHz, 24.9MHz). Excellent solid state receiver for AM, SSB, CW, FM, with very low internal noise (VFO) and good strong signal handling. All bells and whistles: preselector, narrow crystal filters, noise blanker, attenuator, RF gain control, crystal calibrator, digital display, mains supply. Matching SP101 speaker. That speaker has a fantastic sound! Mint (as new) condition, box, original manual. £150 to club funds. Daniel 2E0CAX, editor@cdarc.org.uk

Have you got anything to sell? Is there anything you are looking for? Let us know – The editors.

### **HF DX and Space WX (From AMSAT News Service Bulletin 198.07)**

AMSAT-Italia is currently developing the “Ionosfera” project which aims at supporting the DX Community in predicting the ionosphere propagation conditions. The project is developed in the framework of European Space Agency's (ESA) programme on “Space Weather” and can be visited at: <http://esa-spaceweather.net/sda/ionosfera/index2.htm> Please have a look, make suggestions and forward the link to other potentially interested people. One of the things we are trying to do is to correlate the DX activity with the various Space Weather indices. For this we are looking for HF DX logs (best in electronic files) covering the period 01-Sept-2003 through 30-Apr-2005. Should you or your friends be active on HF DX, could you please support us by providing as many log files as possible? In addition to analysing the data globally, we thank our various contributors by characterising their own location with respect to the Space Weather conditions. Florio, IW2NMB, coordinator of the Ionosfera project.

### **Pictures from the VHF National Field Day**



*Pre-contest break, post-contest relief: Jean, John, Elisabeth, Ralf enjoying time off in the catering tent, and David tired but happy after packing up. For more pictures see: <http://www.cdarc.org.uk>, Contesting and Outdoor Activities section. A big thank you to David G6KWA for all the work he has put into the contest weekend yet again!*



*Contest site with 2m and 4m/6m stations. Notable sounds this year included: golf balls plopping in the background beyond the hedge, thousands of summer chafers at dusk in the hedges, no crickets though – but the pagers were quiet this year.*

### **Club Talks**

There is a host of interesting club talks programmed to be given by real experts in their field. If you always wanted to hear more about the topics below then this is your best opportunity. (And even if you haven't a clue about the subject you'll still want to come anyway because there's bound to be something that will make your station better.) You will not be disappointed! We are going to hear about:

- IOTA: Islands On The Air – that includes HF DX and DXpeditions;
- Antenna coupling;
- Satellite operation – and how to get started;
- Echolink: voice connection between Amateur Radio and the internet;
- How to tame a big VHF linear;
- Computers, and how they work, you know, the bits and bytes, and all that;
- APRS: Automatic Position Reporting System (see <http://www.aprs.net>);
- MOSFETs: e.g., build good solid state linear amplifiers using MOSFETs;
- K2, the high end HF transceiver from Elecraft that comes as a kit.

Additionally the programme includes: The PIC Course, Quiz Night, Equipment Exchange, Videos, HF Operating, Informal Evenings.

See for yourself. You can find the programme on page 2.

**STOP PRESS+STOP PRESS+STOP PRESS+STOP PRESS+STOP PRESS**  
Good news! The school is saved for the next five years hence we will have a home for that time. Let's hope the school will be running for much longer.