

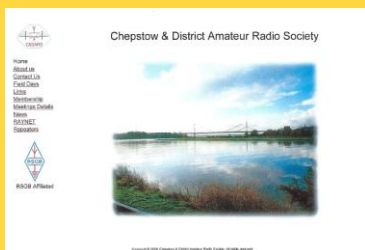
CHEPSTOW AND DISTRICT AMATEUR RADIO SOCIETY NEWSLETTER



March 2011

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Roy needs your input on the CDARS website



Roy our (Webmaster) is desperate for your input on the CDARS website which can be found here - <http://www.gw4lwz.org.uk/> . Please have a look at it and let him have your comments as to how you think we could make it even better. The impression our website makes is important because it is often the first point of contact newcomers have with our club. Contact Roy with your ideas via webmaster@gw4lwz.com

Diary dates for 2011

Sunday 3rd April Thornbury Rally (see below)

Tuesday 5th April Club night – Mobile phone forensics by Nick Glead

Tuesday 3rd May Club night

Tuesday 31 May Forest of Dean Amateur Radio Group talk on SOTA by Tom Read

Sunday 3rd April Thornbury and South Gloucestershire Radio Rally

Very conveniently located close to the cross-over of the M4 and M5 Motorways at the Avon Scouts Activity Centre, Fernhill, Almondsbury, BS32 4LX, the site has ample parking and support facilities including those for the disabled. The tables are all under cover and are spread between a hall and a covered courtyard. There is also space for 20 Car boots on a hard standing nearby, Entry is £2 per head. Talk in on S22. Location details @ <http://www.avonscouts.org.uk/woodhousepark/>

CDARS have booked a table at this rally to raise awareness of our club in the local area. CDARS members will also be able to dispose of any surplus equipment. So start sorting through your boxes of unwanted spares (and go to the rally to buy some more!). If you have kit to dispose of but cannot get to the rally let me know, we may be able to dispose of it on your behalf.

Annual subscriptions are due in April

Rod (our treasurer) will be collecting CDARS annual subscriptions at the April club meeting. Combined fees are as follows:

Ordinary members £15 (£10 Athletic Club, £5 C&DARS)

Over 60 £10 (£5 Athletic Club, £5 C&DARS)

Under 18 £7 (£2 Athletic Club, £5 C&DARS)

Dan Taylor - Magnetic loops for transmitting talk

At the March club meeting we had keen interest in Dan Taylor's (GW0EGH) talk on Magnetic Loops for transmitting and receiving and how he overcame his local noise problem. The following is part 1 of my summary of the talk – more in next month's newsletter.



Dan adjusting the simple feed loop on the receive antenna

The talk covered theory, construction, theoretical modelling, maximising efficiency, pros and cons. Dan brought along two examples of loops, his Mk2 14-21MHz transmitting loop made from heliax and a 7Mhz receiving loop he had put together for the evenings demonstration to show how effective they are in being able to null external noise.

Some of the key elements of the talk:

Magnetic loops are a high Q tuned circuit however this does lead to high currents and voltages within the loop. 100 watts feed can lead to 40 amps and 5kV and also strong electro-magnetic fields! The loops are typically less than one quarter of the design wavelength in circumference and as small as 10% for the best null. A major advantage is they can be mounted close to the ground and only occupy a small space.

Because of the high Q the loop has a narrow bandwidth and requires retuning as you move across a band. Dan went on to describe the various types of tuning capacitors that can be used, however it is quite a challenge finding a suitable one for the transmit loop because of the high voltages. As a result variable capacitors need widely spaced vanes and also solid construction to eliminate losses. The Rolls-Royce solution is a vacuum variable capacitor however they are expensive and fragile as they are enclosed in a glass envelope. Dan opted for a trombone or piston capacitor as it can be constructed from readily available plumbing pipe and handles the high voltages. The capacitance was determined by using the design software programme (see <http://www.aa5tb.com/loop.html>) and then he arrived at the correct lengths of copper pipe empirically, being the good experimenter that he is.



The trombone section is moved in and out by a threaded rod rotated by a small motor with a reduction gearbox. Dan is of the view that his motor is too low geared and it takes a lot of rotations to move the tuning capacitor a small distance although it is probably better this way than moving too coarsely. Dan is very happy to provide advice. More details of this design next month in part 2.



(See http://www.ajdesigner.com/phpcapacitor/cylindrical_capacitor_equation.phpcalculator for cylindrical capacitor formula and calculator)

Articles needed for newsletters. As you will already have spotted a lot of my interest is in antennas, I need your help to give the newsletter more variety. Has anyone built a project that they could share as an article with the other club members - I can help with pictures if needed. Or have you had an interesting QSO/contact?

TRAINING UPDATE

The next RSGB Advanced Licence exam date is Wednesday 6 April 2011 at 19.00 (These dates are set by the RSGB, unlike the other licence dates which can be selected by the club). We need to have submitted the list of applicants and associated paperwork in March. Best of luck to all CDARS members who have decided to take the exam.

Foundation training – Steve Trott is planning a different format for the next Foundation Licence training course. His intention is to hold it on a couple of weekends so that it can be completed more quickly for the benefit of trainees and Steve and Nick who have put in a vast amount of time training Foundation, Intermediate and Advanced licensees over recent years. (Many thanks to them for their hard work from all of us). So if you know anyone who is interested tell them to get in touch with Steve through the website.

Quiz question

Response to the “why 10.7MHz IF?” quiz question

The choice of 10.7MHz as an IF was settled on when the VHF FM band was introduced. It was a high enough frequency to avoid image problems, being approximately 1/10th of the signal frequency. They could not choose 10MHz because that was already occupied by Standard time signal transmissions. The manufacturers in Europe also had to avoid fixed frequency shortwave broadcast stations, and also worldwide stations that moved up and down the shortwave bands to make use of propagation to remote parts which were time and frequency dependant. Presumably 10.7MHz sits on a frequency which was not used by any large broadcast station due to variable propagation, nor swept by the stations that moved up and down.

I hope that helps, regards, Antony Nailer (*Of Practical Wireless fame*)

News from the RSGB...



Following the earthquake that hit Christchurch, New Zealand, a small team of amateur radio operators helped to keep the lines of communication open. Amateur Radio Emergency Communications team member Richard Smart, ZL4FZ said 10 radio amateurs were using their two emergency broadcast vans to keep rescue teams and Civil Defence staff in touch. He said one was at a major welfare centre providing portable communication so they could talk to Civil Defence and the other vehicle assisted search and rescue teams in an area where communications are poor. Richard, ZL4FZ said amateur radio operators from around the country volunteered to help out and others sent updates on the disaster to families of people in Christchurch who are overseas. The RSGB sent a message of support to the New Zealand Association of Radio Transmitters, the country's national body for radio amateurs.

What's wrong with being an engineer?

This made me laugh out loud:

<http://www.youtube.com/watch?v=KaHm1ecBCgw&feature=related>

Ideas for future talks:

We have promises of future talks by Nick Gleed on Mobile Phone Forensics and Henry Higgins on Communication and Electronics for Health. However there are still gaps in our schedule, if there is anything you would like to present on or hear about please let one of the committee members know.

Derby Wireless Club celebrates 100 years of operation

Derby Wireless Club was formed in 1911 making 2011 their centenary year. The club has existed continuously over 100 years without a break even during the war. As such, they believe they are one of the oldest if not the oldest local club in the world!



*Club night on the air - 1913
S.G.Taylor, TAX, & A.T.Lee, LYX,
operating Derby Wireless Club
station QIX, at Full Street
Clubroom, February 1913*

To celebrate this amazing achievement, they have planned a number of amateur radio events and have secured the call sign GB1OOD (Golf Bravo One Oscar Oscar Delta) for the whole year. Please click on "[100 Years Events](http://www.derbywirelessclub.org.uk/one_hundred.htm)" http://www.derbywirelessclub.org.uk/one_hundred.htm to see the programme of events. I understand they are trying to operate most weekends and heard them on 3.75MHz on Saturday afternoon.

They also support many of the amateur radio activity weekends and intend to continue this practice during the centenary year. Events include:

- International museums weekend
- Railways on the air weekend
- Churches on the Air
- Activity weeks

These days, Derby Wireless Club is incorporated into the Derby & District Amateur Radio Society ([DADARS](#)) - members of 'DADARS' are also members of 'DWC' as well. More information about the centenary celebrations and activities can be found at <http://www.derbywirelessclub.org.uk/index.htm>