

CHEPSTOW AND DISTRICT AMATEUR RADIO SOCIETY NEWSLETTER



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Reminder for annual subscriptions:

It is that time of the year again. Rod (our treasurer) will be collecting CDARS annual subscriptions at the club meeting on the first Tuesday of May. 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)

Roy has discovered there is an additional discount on the Athletic Club element if you live more than 20 miles away. Either that or it was a good con!

Diary dates for 2011

Tuesday 19th April informal get together, bring some kit along to play with. We'll probably have a demo on how to check a rig for out of band transmissions

Tuesday 3rd May Club night - Talk TBC but come and pay your subs!

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

Thornbury and South Gloucestershire Radio Rally

CDARS had a club table at the Thornbury rally and we had a steady turnover of people enquiring about the club and old friends. Rod had the adjacent tables selling all manner of bizarre items ranging from specialist antennas, aircraft navigation receivers, some sophisticated test equipment and what is best described as boxes of assorted junk, all of which sold well. Other stands included a number of the regular commercial traders, and a bring and buy section run by the South Glos. Club, this finished the day with two Naval B40 receivers, weight 114 lbs each! Also there were the RSGB book stall and a number of traders with tables of assorted items like Rod's. These are the ones I like best as you never know what you might find that you never knew you needed or else you find a bargain you have no use for but it's such good value. I ended up even spending my Severn bridge toll money on some old radio books and drove home via Gloucester! (I live in Lydney)



Dan Taylor - Magnetic loops for transmitting talk Part 2

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 2 covering some further aspects of construction, maximising efficiency and pros and cons.



The coupling coil is a small loop, typically one fifth of the diameter of the main loop, made from RG213 co-ax. The twelve o'clock joint in the loop is soldered co-ax inner on one side to the screen on the other then weatherproofed with self-amalgamating tape. The 6 o'clock joint is most easily made with a co-ax T piece wired the normal way. Dan cut and spliced his connection but this is trickier than using a T piece. He also coiled the coupling loop feeder to form a choke to prevent stray signal pick-up.

Efficiency issues: When you do the main loop design you find you are trying to compromise between a small loop size to maximise rejection and a large loop to maximise efficiency. (the latter also changes significantly with the loop material cross section diameter). Other factors affecting efficiency are the loop material, losses in joints, losses in the variable capacitor particularly if

using a conventional air spaced capacitor. Dan advises connecting directly to the plates rather than using the wiper, because of the high voltages circulating.

Pros:

Small physical size – good for limited space.

Does not need to be high above ground .

Can be reasonably efficient.

Cheap to construct.

Quiet on receive, interference can be nulled out and better for EMC issues

Cons:

Very narrow bandwidth – needs method for remote tuning.

Variable capacitor can be expensive.

Generally 2 S points down compared with a dipole.

Low frequency bands below 7MHz are physically more difficult. (A corkscrew loop with more than 1 turn is one possible solution).

Magnetic loops develop strong electro magnetic fields so people need to be kept away when transmitting.

Dan's best DX so far with his loop has been the USA. He has ideas to use the loop with a rotator but one of his problems is the dog chewing things in the garden! Overall the loop has been a success because Dan can now operate on HF from home whereas previously this was not possible because of the level of QRM.

News snippets...

Rod came across the following article about the results of tests on powerline adaptors:

<http://www.theregister.co.uk/2011/03/31/ofcom>

Also Jayne and Graham of QSL Communications (Weston) have decided to retire and spend more time with their grandchildren and using their motorhome. They will be closing their doors for the last time at 4pm on Thursday 21st of April 2011.

TRAINING UPDATE

Six CDARS members - Mike, Roy, Jim, Ryan, Dave and Paul sat their Advanced licence exam on Wednesday the 6th of April, after hours of training and revision. Mike, Steve and Hazel were present as invigilators/supervisors – many thanks to them. We wait in trepidation for the final results in about a month.

Foundation training – if you know anyone who is interested tell them to get in touch with Steve through the website. The intention is to run the course on a couple of Sundays.

SARA (Severn Area Rescue Association) Penallt repeater.



CDARS has a long association with SARA providing communications expertise to help them in their search and rescue activities. Recently Steve and Ade have been working at Penallt village hall (with repeater expertise from Tony, GB3AA keeper) to establish a repeater. This is to help with communications for SARA along the Wye valley between Penallt and Beachley which has been a problem in the past. The repeater operates on the Mountain Rescue frequencies - input 147.475 MHz, output 155.3MHz

Quiz question (prompted by a comment from Derek Emery – many thanks)

In an electronics context how big is a Jar and when did it drop out of common use?

The answer is not “it depends on how much jam is in it!”

Newport Amateur Radio Society “shack in a box” formally opened by Mayor of Newport.



Pictured above is Steve Williams, the NARS club treasurer, who put together the application for the lottery grant.

Last month representatives of CDARS visited Newport Amateur Radio Society (NARS) and attended the formal opening of the new shack by the Mayor of Newport. NARS had been successful in winning a lottery grant which had enabled them to purchase a Yaesu FT950 transceiver, an ACOM HF and 6 linear amplifier, an AT2K ATU as well as a professionally made secure cabinet in which to house the new equipment.

NARS are very lucky to have been at their existing QTH for some considerable time where they have the benefit of a tower and HF beam antenna.

Message received from MARS (Midland Amateur Radio Society).

As part of the 80th Year of MARS we are holding a 24 hour station over the weekend of 14th and 15th May 2011.

Please can you ask your members to listen out for us, we shall be using 80m, 20m, 10m, 6m, 4m, 2m and 70cm.

IDEAS FOR FUTURE TALKS:

We have promises of a future talk by 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.

Nick Glead - talk on Cell Site Analysis



At the April club meeting Nick gave an excellent talk on how cell site analysis (mobile phone forensics) can help both defence or prosecution cases in court. His talk started with a description of the recent history of cell site development, frequency allocations and pictures of typical cell sites from the largest masts to small vertical antenna used to fill in gaps in coverage especially in towns. He described the basic Cellular Network Infrastructure to set the scene for his description of live and historical site analysis and a case study to show how the analysis can be used. An interesting point was that the handset is very busy even when not sending or receiving calls. At very regular intervals when it is idle it is checking to see which is the best cell site currently, what are the strengths of adjacent sites and its sending a signal to say "I'm here". The maximum range for a handset is 36Km.

Pictured left is Nick with the CSurv units, kindly loaned by his employers CCI Forensics, used when doing site surveys in the field. (Photo courtesy of Roy)

There are two basic types of analysis - Live cell site analysis (used in the recent high profile case) to try and locate a missing person, with this technique it is possible to triangulate to 500 metres. The second type, which is what Nick mostly works on, is Historical Site Analysis where phone records up to 12 months old are analysed, compared with field surveys of cell site coverage and the results used to prove whether it was likely that an individual was or was not in a certain location when they said they were. He demonstrated the need to be very thorough in the field survey collecting a huge number of data points because the coverage can vary depending on the topography, location of large buildings and the volume of cell traffic.

We had a number of visitors at this talk from the Forest of Dean Amateur Radio Group and the Bristol RSGB group some of whom had known Nick and Steve from their days in the Shirehampton club (a long time ago – they are obviously older than they look or perhaps not!)