

DERBY AND DISTRICT AMATEUR RADIO SOCIETY

Incorporating Derby Wireless Club (1911)

EVENTS RECENT AND FUTURE

APRIL 2014

- 1st Junk Sale
- 8th Committee Meeting
- 15th Video Show
- 22nd Portable operating
a talk by Richard G3CWI
- 29th Night on the air

MAY 2014

- 6th Junk Sale
- 13th Committee Meeting

RADIO EVENTS - SUMMARY

MAY 2014

- 10th Fun Day at the
Ecclesbourne Valley
Railway. G2DJ
- 10th Nunsfield House
& Amateur Radio Group
11th Heage Windmill
- 24th, 25th Wirksworth Carnival
& Weekend. Operating
26th from a Guards Van sat at
the platform end of
Duffield Station on the
Ecclesbourne Valley
Railway. G2DJ

JUNE 2014

- 8th Junction 28 QRP Rally at
Alfreton Leisure Centre
- 14th, 15th Two weekend event.
21st, 22nd International Museum
Weekends – location/s
yet to be decided.

SEPTEMBER 2014

- 13th Churches on the Air.
& Station operated from
14th St Osmund's Church on
London Road, Derby.
Call GB1SOC.
Please note, operation
on Sunday 14th will be
the afternoon only.

DADARS Newsletter
April 2014

Introduction

Welcome to the April 2014 issue of the DADARS newsletter.

Club Talks

We look forward to a number of events including a presentation in the club room by Richard G3CWI on portable operating on 22nd April. Portable operation is favoured by a number of club members and so this event should be well received. Richard is a guest speaker so please make an effort to attend if you can.

Club Activities

The Club will support a 'Fun Day' at the Ecclesbourne Valley Railway on Saturday 10th May using the call G2DJ. This marks

from 10th to 11th May using the call sign GB5HW.

Later, on 24th to 26th May, which is Spring Bank Holiday, the club will operate a station from a guards van at Duffield Station in support of the Ecclesbourne Valley Railway Wirksworth Carnival Weekend. Trains will run from Duffield to Wirksworth and back throughout the day. For more details and ticket information, please see Richard G3VGW. It should be a nice day out for all the family and a chance to play radio. We need volunteers to help setup and operate the stations - please contact Dave G1VAB if you are interested.

International Museum Weekends extends



A very nice photograph of Heage Windmill courtesy of Dave G1VAB

the start of the DADARS 2014 outdoor activities. We also hope to support and join Nunsfield House Amateur Radio Group operating from Heage Windmill in support of "National Mills Weekend"

over two weeks in June starting on the 14th. At this time we have not decided on a location and would appreciate suggestions from the membership.

In the past we operated from the Silk Mill in Derby but this still remains closed.

Other events later in the year include:

June 8th : Junction 28 QRP Rally at Alfreton Leisure Centre. Volunteers are required to cover the event.

September 13th and PM only on 14th: Churches on the Air. The station will operate from St. Osmund's Church on London Road, Derby just next to Wickes store. We plan to use the call GB1SOC.

September 25th, 26th and 27th: National Ham Fest, Newark (25th=Set-up; Sales days=26th & 27th). We plan to run a trade stand all being well. Again volunteers are required to cover all three days.

September 27th and 28th: Railways on the air weekend. As usual, we plan to operate from the 'West Shed' at Swanwick using the call sign GB2WS. Note: this weekend overlaps with the National Ham Fest that runs on Friday and Saturday. Railways on the air is Saturday and Sunday.

October 18th and 19th: This is Jamboree on the Air supporting Belper Scout HQ. This may include operating over-night. More details will be available nearer the time.

November 1st: Bonfire in the Car Park. Combustible items are required mid-afternoon for an 18:00 local lighting of the bonfire. This is a good chance to clear out the garage and burn all that rubbish.

Annual General Meeting (AGM)

The club held the Annual General Meeting on 18th March 2014 and elected officers to serve for the year. The meeting was well attended and apologies received from members who could not attend. Details of the elected Committee members can be found on the DADARS website at: http://www.dadars.org.uk/about_us.htm For those without web access, the committee now consists of:

President Emeritus - Fred Tagg
President - Denis G8BAV
Chairman - Dave G1VAB
Vice Chairman - Jenny G4EYM
Treasurer - Martin G3SZJ
Financial Scrutiniser - Stuart G8BFA
Secretary - Chris G4AKE
Bill - 2E0PBB
Richard - G3VGW
Colin Baker
John - 2E0OJB

Radio Licence Reminder

This is just a reminder that you must update your Amateur Radio licence on-line if your circumstances change (i.e. name, address or gender). Even if your details remain the same, you must revalidate your licence at least every five years. Ofcom issued the 'lifetime' Amateur Radio Licence in December 2006 implying that the first validation should be 2012. However, Ofcom added a year of grace due to the 2012 Olympics hence you should have completed the first validation by 2013. You can of course, validate it whenever you want but leave it no longer than five years. The process is simple enough but a pain in the ass all the same - most people have no idea what password they used five years ago! I certainly didn't. I had to cycle through several email address until I found the correct one.

- Go to: <http://licensing.ofcom.org.uk/>
- Click on Amateur Radio

- Click either:
 - Amend your existing Amateur radio Licence details
 - Validate your existing Amateur radio Licence details
- Click continue
- This is where the pain starts: enter your email and password
- Click Validate

Job Done

Be careful: the 'Surrender licence' link is immediately below the 'validate' link. I could imagine people accidentally surrendering their licence during a senior moment. If you forget your password, there is a facility to reset it with the usual security questions (assuming you can pass them!) but if all else fails, call Ofcom on 0300 123 3333 or 020 7981 3040 Monday to Friday from 9.00 am to 5.00 pm.

Members Projects/Activities (G4AKE)

I thought it may be a good idea to include in the newsletter projects or activities undertaken by club members. Hopefully common interests may stimulate discussion and, maybe, even stimulate some home construction!

I thought I would start this off with a Hunter SDR kit that is currently under construction.

it is sort of home construction but avoids all the time consuming development work and stands a reasonable chance of working.

Details of the kit can be seen on <http://www.radio-kits.co.uk/hunter/>

I knew when purchasing the kit that it employed surface mount components. However, I did not realise they were so small - I can barely see them let alone solder them! It has



The Hunter SDR kit comes as a number of parts - Don't mix the bags, the capacitors have no labels!

For sometime I have wanted to build or purchase a Software Defined Radio (SDR) radio to play with. Most of the commercial offering are too expensive so I decided to build a well-trying and tested kit. This way

taken a while to collect illuminated magnifying glasses and a precision soldering iron but I am now ready to start.

If all goes well, I may write an update in a later newsletter.

Dave G8AXZ - Report on 2013 UKAC contests

Well it's been a year of learning. It's not as easy as it might appear, this contesting lark! To start with I thought I might enter them from home but then I started getting flack from next door because I kept switching his security camera on when I beamed anywhere between West and North on 2 metres, so that put a bit of a damper on things. I know it's not really my fault that his PIR sensor picks up my transmissions but I have to live next door to him.



Photograph of the Van

Next step was to try 2 metres from Alport Heights. A good site in many ways that would be so much better if the communication towers and associated equipment weren't there. They do kick up a bit of a racket when you beam through the masts. Working from there with a little 20 ft mast produced much better results and I also tried 6 metres. But it was not comfortable in the car and there wasn't enough room for a computer too. I was losing anything up to 8 contacts with mistakes during logging and transferring

paper logs to the computer back at home. So an upgrade was needed and the Transit van came along in September and with it another load of problems. Being able to use a computer definitely improved logging accuracy and the extra antenna height improved range, but though I could get the van up to Alport Heights during the summer by going up the back entrance, once the wet weather arrived I had to look for another site.

It's amazing what you can get if you ask nicely and all during the winter I've been working from a factory car park on top of a hill near Brassington. It's 1150ft asl and from there I'm on a level with the top of the masts at Alport Heights. It's still difficult to compete with the guys up at 2000ft or more but I'm doing quite well.

I've had some stupid problems too - I'm using N type connectors on RG213 as the feeder so when it gets cold and the coax gets stiff you've got to be very careful when screwing the connectors together that you don't put any turning strain on the connector to coax junction. If you do the cable either breaks or shorts out. I lost one 6 metre contest completely, didn't make a single contact. All that effort getting up there, mast and antenna erected and then get it all down again for nothing. Simple lesson learned the hard way. I now use Self Amalgamating tape to reinforce the cable entry and take much more care when connecting. I also check all the connectors every weekend.

I now use a rotator at the mast head and I have problems with that too. It gets out of sync and sometimes the controller produces quite a lot of noise especially on 6 metres. One day we'll get it resolved.

As to the telescopic mast - I rarely extend it to its full height. Most of the time it goes up to 50 or 60 foot. The bottom tube is 6 inches in diameter so the next 4 or five tubes are over 4 inches in diameter so it's quite stiff. It rocks the van about sometimes!

I'm still working on improvements to the van and I managed to buy a Microwave Modules 70cms 100 watt linear - good old Ebay. Amazingly it works fine and produces nigh on 100 watts. It'll get its first outing on the 70cms contest in March.

Now the weather is getting better I'll be doing some more woodwork to improve the bench/working area. The linear amps will probably be mounted in the van so I don't have to connect them up every time I start and I'll probably have a monitor mounted in there too for the computer. And so it continues!

Dave, G8AXZ - operating the RSGBs UKAC contests under the DADARS name.

Dave G8AXZ - Report on 70cm Contest March 2014

The 70cms contest on Tuesday 11th March was amazing, the best DX was SF6X at 1,002 km. I worked 5 stations in Denmark, 6 in Holland, 5 in Germany and 2 in Belgium. Two of the Danish stations were S9 + 20 all evening.

I'm 5th at the moment in the restricted class on the claimed scores. I've got the highest number of kilometre points but I was a bit short on multipliers. I didn't manage to pick up the squares along the South Coast, JO00, IO90, or IO80

And it was a very busy evening, I've seldom known 2.5 hours go so fast. AND it didn't rain, or snow, wasn't too windy but a bit cold towards the end.

Dave G8AXZ

2014 Massive Solar Event 25th February

The Aurora Borealis - or the 'Northern Lights' - gave a rare and spectacular displays over parts of the UK reaching as far south as Jersey on 25th February 2014. This produced



Impressive Auroral display in the North of England

a radio blackout at 0049 UTC and caused disruptions to amateur communications. The sun created a massive X4.9 class solar flare that erupted from an active sunspot, called AR1990.

Fortunately, the associated coronal mass ejection (CME) event was directed away from the earth but the event was still energetic enough to ionise the upper layers and create an impressive display.

Solar flares are characterised by the peak flux density measured in Watts/square metre ranging from A, B, C, M to X where X is the most energetic. The event on 25th

February was rated as X4.9 meaning it is approximately 4 times as strong as an X1 event.

In the past, some solar events have been much higher. The 'Carrington' event on 1st September 1859 is considered the largest in recent history and generated auroras down to latitudes as low as Cuba and Hawaii. Reports from the time stated that telegraph systems caught fire or worked without connected power, which gives an indication of the intensity. The X rating for that event is not known but is thought to be at least X40 and probably considerably more.

Lots of web sites monitor solar activity. It is useful to know when events occur and when to disconnect the antenna from that expensive radio. It will be interesting to know the affect on modern technology if the sun decides to throw another Carrington like event at Earth. Radio blackout may be the least of our problems!

Historic article from DADARS 1980 Edition

A suggestion was made at a recent committee meeting to include occasional historic articles from past DADARS newsletters that reflect changes. I found the two following articles in a 34 years old newsletter that raised a smile!

"Historic Section

It appears that with committee meetings on Mondays, Morse Classes on Tuesday and Thursday and the normal club meeting on Wednesday that the club room is vacant on Fridays. Some interest has been shown of late in the historic side of radio and it might be an idea to form an Historic section. If there is sufficient interest, perhaps a monthly meeting on Friday may make use of the spare night? Contact our own Ancient Monument, Fred G2CVV, if you are interested."

It seems the club was very busy during those times. Did that meeting ever happen?

"QSL Topics

If you maintain a supply of envelopes with your QSL manager, remember to send him some 2p stamps to cover the increase in postage of your envelopes. The latest addresses are in RadCom"

The rise in cost of a stamp to 2p was clearly outrageous!

Combat the QRN - G4AKE

It's a common problem. You erect a decent sized long-wire antenna in the garden for 160m/80m, tune it to resonant and connect the receiver only to find a constant noise level of 58 to 59 across the whole band both day and night.

That happened to me. In my case, a vertical antenna 60 feet high gave 59+ noise on 160m. An inverted 'L' Marconi antenna with a 100 foot horizontal top, 35 foot high, end fed by 70 foot of wire was slightly better resulting in only 58 - 59 noise!

Can anything be done? The answer is yes. Some years ago I acquired a 'Wellbrook' 1 metre diameter active loop antenna (www.wellbrook.uk.com) covering 50 kHz to 30MHz. This is an excellent example of a good receiving antenna fed by thin coax and powered from the shack via a coupler supplied by Wellbrook.

You don't have to buy a commercial antenna and it is not necessary to use active devices. I intend building a passive high-Q tuned loop of at least 2m diameter to see if that can perform better.

There is nothing special or magical about loops other than the null at right angles to the plane of the loop. Loops can be used to minimise noise emanating from a singular direction (Although most of the time, radiated noise sources do not emanate from the same direction).

I found that much of the strong 160m background noise at my home is radiated locally by the house wiring. The long-wire antenna is relatively close to the house and picks up the noise by simple capacitive coupling. The technical term for that is 'Near' Field interaction.

I presume that the source of the noise is the multitudes of signals from switch mode power units etc. that appear at low level on the AC supply where it enters the home. An interesting experiment would be to disconnect the AC power tails and earth connections feeding the house to see if the noise levels drop or not. Unfortunately, that's not very practical.

With the loop in the garden, 50ft away from the houses, the 160m noise in SSB bandwidths drops to about S1 on the meter of the FT-1000MP. Despite the low noise levels, it picks up wanted signals very nicely.

If I bring the loop inside the house then the noise increases to S8. This is why I think the house wiring is partially responsible for radiating the noise. You have to be very careful positioning the loop in the garden; not all positions are good! The long wire and earth-mat somehow re-radiate the noise in unpredictable ways. I found the best

position for the loop, in my case, was a bush at the side of the garden (away from the extent of the earth mat) approximately 2m off the ground - see the photograph.

The results seem to go one of three ways: Sometimes I hear



signals on the loop that are very clear with good signal to noise ratio that are totally unreadable on the long-wire. The difference is spectacular. On other occasions, the loop and long-wire present comparable results. Sometimes the signal is good on the long-wire but poor on the loop. This can happen due to the null of the loop, which is fixed in my case.

Hence the loop is not a magic bullet. For best results it is necessary to switch rapidly between antennas on receive and use the best option for a given contact. The results on 160m can be spectacular.

As expected, the benefit seems to decrease with frequency. The loop provides positive advantages on some signals on 160m and 80m but I find few cases where reception is better on 40m or above. Reception at MF is very good and I can hear Loran C on 100kHz.

An S1 noise floor on 160m makes the effort worthwhile!

73 Chris G4AKE - The next newsletter will be around July