

# Derby & District Amateur Radio Society

(Inc. Derby Wireless Club, 1911)

Affiliated to the R.S.G.B.

Call signs: G2DJ and G3ERD

## Newsletter - March 2013

Welcome to the March edition of the Derby and District Amateur Radio Society newsletter. The period over Christmas is always a little quiet but we still managed some interesting events:

Martin G3SZJ gave an excellent talk on Colditz Castle to a packed club room in January. He provided an insight into the organisation and conditions tolerated by the inmates during WW2. He outlined some of the more interesting escapes showing detailed plans and maps of the area.

In February, Colin treated us to an excellent talk on the WW2 '18 Set'. It was a fascinating insight into the practical use and history of the device. The evening ended with Colin demonstrating a fully working and complete 18 set.

Dave G1VAB and Dave G1VAC put on a special event station in January 2013 to raise money and to take part in the SOS Radio Week. The event was very successful and enjoyed by all those who participated. Dave G1VAB provided a full write up for this newsletter.

Looking ahead into 2013:

**Easter at Ecclesbourne Valley Railway:** We will put on a station from Duffield Junction over the Easter period. Richard has arranged access and we will operate either from a gazebo on the station platform or from a Brake Van positioned at the end of the platform. The dates are Friday 29<sup>th</sup>, Saturday 30<sup>th</sup> March and Monday 1<sup>st</sup> April. We require volunteers to help organise and man the station over the three days. Please let Dave G1VAB or Richard G3VGW know as soon as possible.

**Mills on the Air:** In the past we have been invited to assist the NHARG but as yet nothing heard for this year's event. (Sat & Sun 11 & 12 May 2013)

**J28 QRP Rally:** Sunday 9th June at Alfreton Leisure Centre. We require volunteers to organise and staff the stand.

**International Museums Weekend:** June 15<sup>th</sup> & 16<sup>th</sup>. The location is undecided. Details will be announced on the web site closer to the event.

**Beefstock:** (or should that be called Horsestock?) We are waiting for confirmation of the date but it may be July 13<sup>th</sup>. Details will be announced on the web site closer to the event.

### Derby & District ARS Future Programme

#### March

- 5th. Junk Sale
- 12th. Committee Meeting
- 19th. AGM (Please come)
- 26th. Night on the Air

#### April

- 2nd. Junk Sale
- 9th. Committee Meeting
- 16th. The work of the RAIBC  
An illustrated talk

#### Radio Events

##### March

- 29th. Friday - Duffield Junction
- 30th. Sat. - Duffield Junction
- 29th. Mon. - Duffield Junction

##### May

- 11th. Mills on the Air
- 12th. Mills on the Air

##### June

- 9th. J28 QRP Rally
- 15th. Int. Museums Weekend
- 16th. Int. Museums Weekend

##### July

- 13th. Beefstock

##### September

- 14th. Churches on the air
- 21st. Railways on the air
- 22nd. Railways on the air

**Churches on the Air:** Sat 14th September (and PM of Sunday 15th) operating from St Osmund's Church on London Road in Alvaston, Derby (near Wickes). As usual, we will apply for the call GB1SOC.

**Railways on the Air:** Operating from West Shed at Swanwick over the weekend of 21st and 22nd September. We require volunteers to help transport equipment to site, operate, log, and talk to the public. The hope is to operate on HF and VHF. Closer to the date we will apply for a GB call.

**Bonfire in the Car park:** Saturday, November 2nd with a fire-lighting time of 18:00. As this is a social event it is open to friends and family, especially those who bear food to share and fireworks to watch. Oh - and we'll want some wood too.

## AGM

You may probably be aware that the AGM takes place on Tuesday 19<sup>th</sup> March at 7:30pm in the club room at Carlton Road. This is a chance to elect or re-elect people into the roles of Officers or Management Committee. As an incentive, we will offer free coffee, tea and biscuits - a real enticement if ever there was one. The burning question is will the biscuits be chocolate? The Chairman, Dave G1VAB, made a very strong hint so I will assume that the answer is 'YES'.

It is an important event so please attend if you can. If you cannot, please send your apologies to the Secretary, Chris G4AKE.

## Club Nets

Over the Christmas period, the committee organised a number of club nets to generate interest and stimulate local activity on the amateur bands. These were well supported and a number of people came on for a natter. Other stations from the Derby area also joined in. For simplicity, we chose the frequency 145.450MHz and operating time 2.30pm. The dates for the past events were:

- Sunday 23rd December 2012
- Sunday 30th December 2012
- Saturday 26th January 2013
- Sunday 3rd March 2013

We propose making this a more regular event by meeting at 2.30pm on the first Sunday of each month on 145.45MHz. To help people remember, an email reminder will go out every month.

If members are interested, we can try a different band say 160m, 80m or 40m. Another alternative is to use vintage kit and adopt AM. This is a chance to try out that '*boat anchor*' in the corner of the shack. If you want to try this approach please inform a member of the committee.

## Website - Historic Content

Over the last year, a number of people have contacted the committee requesting information on past friends and relatives with reference to amateur radio. Some people found the club web site following a search for a name or callsign. Very little personal information from the 'early days' exists on the net making any scrap of information valuable.

With this in mind, it may be helpful to publish more of our archive on the Derby Wireless Club website. Any information or documents dating from the early days of radio is of interest. If you have such information, and would like to publish it please let me know (Chris G4AKE) or contact someone on the committee.

## Contest News

Although the DADARS contest calendar was a little thin the last three months, Dave G8AXZ had lots of fun entering contests on behalf of the club. Dave is using an FT221R and 100W amplifier to a horizontally polarised 12 element beam on 2 metres. Although a modest station, it certainly seems effective. He reported working Paris in pretty flat conditions and can nearly always work GM4PTT near Glasgow.

**Table 1 - DADARS Contest Result Summary**

Contests	Dates	Band	Position/Points	Stations Worked
VHF/UHF Christmas Cumulative	26 - 29 <sup>th</sup> December	2m only	12 <sup>th</sup> out of 55	-
VHF/UHF Christmas Cumulative	26 - 29 <sup>th</sup> December	2m, 70cm and 6m	27 <sup>th</sup> out of 65	-
2 Metre UK Activity Contests	January	2m	25 <sup>th</sup> out of 108	-
2 Metre UK Activity Contests	February	2m	49 <sup>th</sup> out of 116	-
6 Metre contest	22 <sup>nd</sup> January	6m	22 <sup>nd</sup> out of 82	-
RSGB 2 Metre Contests	2 <sup>nd</sup> - 3 <sup>rd</sup> March	2m	19,811 points	70

The two results for January and February put DADARS in 34<sup>th</sup> position out of 70 entries on 2 Metres. Dreadful weather meant that Dave could not get his mast up much above 15 feet.

Including the scores for 50MHz, 70MHz, 144MHz, 432MHz, 1296MHz and SHF (anything above 1296 MHz), the overall DADARS score is lying 42<sup>nd</sup> out of 76. Some clubs put in entries in for all bands. If more people from the club entered then their scores would be added to Dave's and we should be able to get quite a bit higher up the score board. The uploaded logs can be found on

[http://www.rsgbcc.org/vhf/kml\\_files/2013/0YeFD2vLtQnEJk5tYcQeb0cJJPOq4e4](http://www.rsgbcc.org/vhf/kml_files/2013/0YeFD2vLtQnEJk5tYcQeb0cJJPOq4e4)

During the March 2m contest, conditions were quite good but not superb. Dave managed to work 70 stations including Spain, Germany, France, Northern Ireland, Scotland, Belgium, Netherlands and an assortment of G, 2e0's and M's.

## Book Swap

An idea floated in a recent committee meeting is a book-swap evening. The idea is to share technical books magazines and publications. Most members possess a comprehensive library of interesting books spanning many years. These may be of considerable interest to others in the club. The exact detail of how the book-swap will work is yet to be decided - we are looking for ideas.

One possibility is a simple swap - one book for another. Another possibility is the lending library approach where a book can be 'borrowed' for a month and then returned.

If you are interested and have a good idea, please let the committee know.



## GB1LBD Lifeboat Station Report

By Dave Goodwill G1VAB

As you will probably be aware, Dave G1VAC and I (such good friends we have consecutive call-signs) ran a station GB1LBD for 24 hours in January as part of the SOS Radio Week where funds in aid of the RNLI are raised by sponsorship.

Obviously a location was needed that supplied security of the operators and radio equipment, a kitchen, toilets, mains electricity and space for aerials. A gazebo in mid-January didn't exactly fill either of us with any excitement so alternative locations were thought about. Insert one penny and watch it drop. A mention was made to the Church Elders about our using the Memorial Hall for the station, as in 2010 we used a smaller room and it was bit cramped.

DADARS Committee decided to help the two of us by picking up the tab for the gas and electricity which we would have to pay out of own pockets, and also gave the OK for us to use their aerials.



Figure 1 - Clive, 2E1HVZ logger; Dave G1VAB and Dave G1VAC

We applied for the callsign from Ofcom, registered ourselves with the "SOS Radio Week" folks, and then set about thinking what kit we were to use. For HF, I was to use my FT897 with a Heil headset with the HC4 mic insert with 40m, 20m, 15m and 10m on the Comet H-422 dipole and 80m using a half-wave wire dipole; whereas Dave G1VAC was on the 'VHF and up' side of the table with (big breath) 4m FM at 10w into a Sirio end-fed, 2m SSB at 25W into a 5 element ZL-special, and 70cms FM with up to 35w, 2m FM with 40w and 6m FM at 20w all going into the tri-band collinear aerial.

Friday afternoon saw us putting up a mast for the 2m beam with the 4m vertical atop of that and running the coaxes into the Club room, rolling out a carpet to put our feet on whilst operating, tables being put up,

mains leads being run in, psu's set up and rigs wired in. We ensured the kettle was in the room as well so it would save us going into a cold kitchen to boil up a tea. Gas heaters were put on and posters and information from the RNLI was put onto the panels and a white board was there to put live information on (number of stations worked, countries / counties, etc.) in case someone popped in. We had a sign outside advising of our presence. Saturday dawned. At 09:30 we arrived at the Church. First job of the day – put the kettle on and get the first cuppa into the system thereby setting the trend for the next 24 hours. Laptop set up next, then the psu's and rigs switched on. A quick listen round on 40m showed plenty of activity and one of them was worked just to ensure all was working. As the morning progressed we were joined by Clive 2E1HVZ who was logging for me (Thanks Clive – a cracking job as always!) and Chris G4AKE who was sat with Dave G1VAC and took a few pictures of the station layout.

As usual for these special event stations, HF seems to be THE place to be. Even though local clubs had been e-mailed to say we were on air and when, the local activity on VHF and UHF was, in reality, poor. Over the whole 24 hours, Dave made over 30 contacts on VHF with nothing on 2m SSB - disappointing to say the least. HF, as already said, was wide open on 40m and we managed to keep Clive's pencil-tip glowing red until about 3pm when the shutter was put into place and inter-G disappeared, only to be replaced with a 24 hour contest which was on all the non-WARC bands. The contesters didn't want to know GB stations – at least, not this one – and the WARC bands were virtually empty. During this protracted quiet spell the Chairman of the City of Derby RNLI Support Committee and his wife treated the two of us to our suppers. It went very quiet overnight and no, we didn't fall asleep either although to be honest I think it was a close call. A coffee sorted things, made a bit on the strong side.

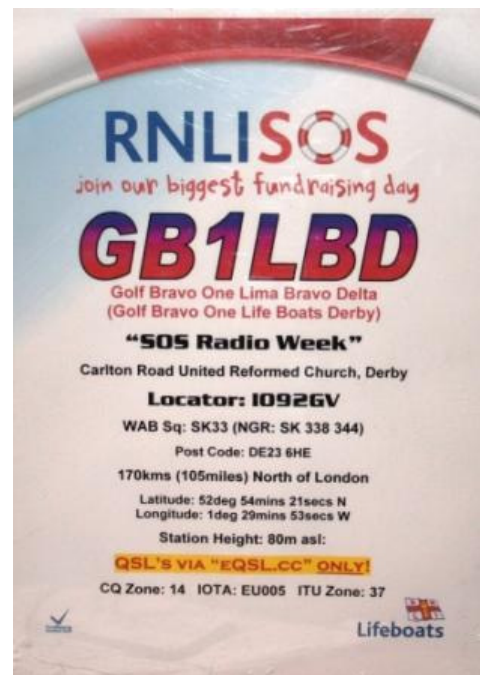
At 10:00 on the Sunday morning, two tired Daves had to disconnect everything, and pack away to leave the room tidy as the Church people had made the same room available to other users who were to move in at 4pm. Monday was a recovery day as well as resorting the equipment and putting away until the next time. Dave G1VAB set about doing some stats – of the 100 contacts made, 65 were using the HF bands and 34 on VHF and UHF bands. There had been 57 HF contacts in 5 hours, the remaining 8 being made in 19 hours!

Thanks from the two of us to all sponsors and donors; the Carlton Rd United Reformed Church in Derby for free use of their hall; DADARS for picking up the tab for the gas and electricity and allowing us the use of their aerials, and members for logging and assisting in many ways whilst GB1LBD was on-air; to the members of the City of Derby RNLI Support Group Committee for the information and help they supplied, and to the "SOS Radio Week" for organising the concept of raising money in aid of the RNLI through amateur radio.

Regards

Dave Allsebrook, G1VAC

Dave Goodwill, G1VAB



## Technical Article

### *Real High Power! - Some memories by Richard G3VGW*

We radio amateurs might think that if we run our HF rigs at 400 watts, then we are running really high power.

I used to work at the BBC transmitter site at Woofferton, on the Herefordshire and Shropshire border and there the transmitters (called 'senders' in BBC parlance) put out a formidable 250 kW on the shortwave broadcast bands. The P.A. stage of the 250 kW Marconi BD272 'senders' that were installed at Woofferton in 1963 but are still going strong.



**Figure 2 - The PA Compartment (25m Band)**

The copper tube in the centre supplies 11,000 volts to the centre point of the final anode coil. In this case the 'coil' (1 turn!) is for the 25 metre band. The coil connects to the anodes of the two BY1144 valves. The anodes sit in a tank of distilled water, the whole thing sitting at 11kV potential. The water in the tank is heated to boiling point by the waste heat from the valves and the steam produced is taken off to a heat exchanger which is cooled by ordinary water.

Under the anode coil you can see the coupling coil connected to the antenna feeder. The coil is mounted on a truck which can be moved by a motor back and forth, so the coupling can be adjusted from the front panel. The anode current taken by the valves is a modest 26 amps!

Figure 3 shows the coupling 'coil' (1 turn!) that connects to the antenna feeder via a very large TVI filter. The coil is mounted on a truck powered by a motor so that it can be moved back and forth to alter the coupling to the anode coil. Mounted on the truck are also some Jennings vacuum capacitors. You can see some have a 'knife switch' and are only in use on certain bands. Another thing you have to remember to switch when wave-changing the beast!

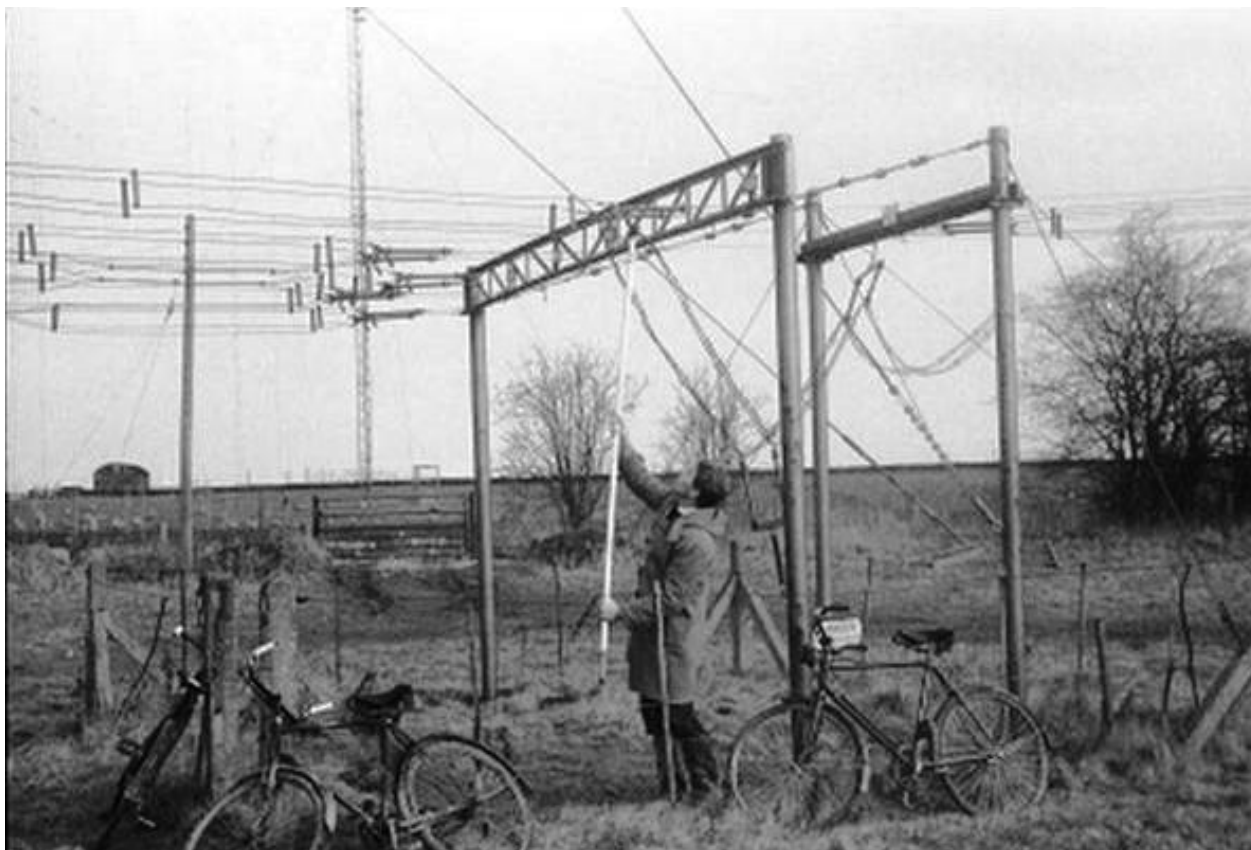


**Figure 3 - The PA compartment**



**Figure 4 - Plug-In coils for the other bands**

Figure 4 shows the other coils used in the BD272 senders, sitting waiting for the next wave change. The two on the left are the two halves of the anode coil for 41& 49 metres. They fit in place of the 31/25 metre band coil that was shown in the previous pictures. The fat coil to the right is the single coil for 41/49 metres that fits on to the truck that carries the coupling coil. The small coils on the right are used in the preceding 'driver' stage of the sender.



**Figure 5 - Changing the Antenna Configuration**

The photograph above, circa 1965, shows how to switch the antennas manually. Each array had 6 feeders going to it. Try to imagine an array having two separate curtains (called 'bays') connected together by a 'bay' feeder. Half a wavelength behind the front curtain is an identical one that acts as a reflector. If you feed the RF from the sender to the centre of the bay feeder, then the beam will be at right angles to the curtain. (This is much easier to explain with a diagram!)

If you instead feed the RF at a different point on the bay feeder, the beam will be offset to the left or right. You can therefore 'slew' the beam by about 14 degrees either side of the natural bearing. So an array intended for a bearing of 114 degrees (for the Middle East) can be slewed to 100 or 128 degrees. Then of course if you feed energy to the back curtain instead, the beam goes in the opposite direction, in this case 294 degrees. (For the U.S. eastern seaboard) Plus you can slew it to 280 or 308 degrees.

The man who was on aerial duties had to go out into the field, (on a bicycle!) and at night all the light you had was a lamp on your hat. Because of the way the schedule worked, quite a few arrays had to be switched at around 03.00 GMT when we stopped transmitting to North America and started to broadcast to the Middle East. Thus we needed to reverse the beam from 294 to 114 degrees.

You waited by a telephone out in the field until you were informed from the control room that the array was off power. Then you unhooked the flexible piece of feeder at the gantry, using a pole with hooks at the end and hooked it on to the feeder for the new bearing. You cannot leave the other feeders simply disconnected



as this would upset the array, so the unused feeders have a short circuit placed across them.

If you place a short circuit on a feeder, then a quarter of a wavelength away it appears as an open circuit, so is effectively invisible to the RF energy.

Doing this at night was quite tricky. To add to the problem, I got quite nervous out there as with the wind making weird noises blowing through the wires it was quite 'spooky' and to make it worse, sheep grazed in the field and your lamp lit up their eyes.

*Richard G3VGW*

### The DADARS Challenge

Thanks to Jenny G4EYM, we have an excellent radio centric crossword for this newsletter. No reward for completion other than the joy of thinking it through.

1		2		3		4	5			6
7				8						
9			10			11				
										12
	13					14		15		
16										
17								18		
19						20				

#### Down

- 1 Fathers radio club
- 2 Microwave frequency 0.39 - 1.55 GHz
- 3 Acoustic
- 5 Aerial
- 6 Not odd
- 10 Operating with no licence
- 12 Wind up your tower
- 14 Corrosion
- 15 Make a hole
- 16 National society

#### Across

- 1 The 4th phonetic
- 4 Electron tube
- 7 Width across a circle (abbreviation)
- 8 To speak with authority
- 9 Up to date wireless
- 11 Reduced information?
- 13 Amps x Ohm = ?
- 14 Radio direction & ranging (acronym)
- 17 Catchy ones sell
- 18 Electrical charged particle
- 19 Home brew is hand \_ \_ \_ \_ \_
- 20 Outburst (touch a hot iron)?

The solution will be issued in the next newsletter.

Last newsletter solution (October 2012)

	T	R	A	N	S	M	I	T	T	E	R	
	O			E		I			O		A	
	P	O	R	T		C			W	I	D	E
	B		I		D	R	I	V	E		I	
B	A	D	G	E		O			R	O	O	M
	N					P				X		O
	D	A	N	I	S	H		K	E	Y	E	R
			O			O		N		G		S
		L	O	R	A	N		O		E		E
			N			E	B	B	I	N	G	

The next newsletter will be issued around June/July 2013 - see you then.

**Chris G4AKE**