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**The Journal of**

**Horsham Amateur Radio Club**

**July 2010**

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**Cover photo: John G3WZT (left) and Janet handing the winning envelope to Bryn G3SWC**

# Editorial

The trade-in scheme of analogue radios where you get a discount when you buy a digital radio ended on 26th June. It appears that they were testing the market. Surely to encourage the public to upgrade this should have been ongoing. Yet another outing to the theatre and this time it was the Capitoli at Horsham Arts Centre.

A performance of Dad's Army took place and was very well received. In due course I will be creating an email address database of members based on this year's membership list (details elsewhere). The email list will only be available to committee members. I will be contacting any members who I don't have an email address. If you don't actually have one yet but do get one later on please let me know.

David G4JHI

# A Night Out

"August HARC meeting is cancelled due to the refurbishment of the Guide HQ in Denne Rd Horsham. In light of the fact that our usual meeting cannot now take place it has been suggested that we have a Curry Evening instead.

The previous Curry Night proved to be very successful and was enjoyed by all, so it has been suggested that we visit the Haldi restaurant in Southwater again. The details are:

Thursday 5th August.

Meet at the Lintot for 7:30pm for a swift half before going to the restaurant at 8pm.

Please can you contact Adrian if you would like to come along so an appropriate table(s) can be booked.

# HARC June Meeting:

## DXpeditions from Micro to Mega by Roger Western G3SXW

The June HARC meeting was by Roger Western G3SXW, his talk was entitled DX-peditions from Micro to Mega. Roger posed the question: What is a DX-pedition? The answer was that it could be anything from a Mega operation of 40 plus operators on site for a month or more, with the expectation of 150,000 plus QSOs that costs the equivalent of the GDP of a small country.

Alternatively, it could be a Micro operation that is as simple as going to your local hilltop with a handheld. However, most DX-peditions tend to be somewhere in the middle, 3-4 operators over a week or so with the expectation of 10,000 QSOs. Roger explained that with one of the mid range operations you could be operating for up to 15 hours a day resulting in a 1000 contacts, Rogers preferred mode of operation is up to 10 hours a day, 100 QSOs per hour.

As the years have passed by Roger now enjoys his own micro DX-peditions, but with a twist! He gave a few examples of some recent events over the past few years. The first of which was a day trip to the Vatican City to operate HV0A for an hour or so resulting in a pile-up, CW of course. It was a long day with an early flight; Roger was able to have six hours in Rome, taking in various sites, operation from HV0A all for a £41.00 return flight.

Although it did take a bit of organising to get the appropriate security access paper work arranged 3 months in advance. The only luggage required was a newspaper to read and his trusty keyer as the station equipment was already provided. Another such trip was a day trip to Sardinia to operate as IS0/G3SXW, again a cheap £34 day return flight, this time with hand baggage that contained a complete HF station (K2 HF

transceiver, keyer, aerial wire, co-ax feeder).

Once on the ground, hire car collected, then off to the operating site via a DIY centre to pick up a couple of wooden battens. Then on arrival at the operating site near the sea shore, tape the two wooden battens together to form a makeshift mast for a simple inverted V dipole.

Then hook the rig up to the car battery and aerial, you're on the air! As with all portable operations, location is key with small aerials, most important to have a clear take off by salt water as this gives an efficient ground. Roger Micro DXpedition baggage weighs no more than 12.2Kg and consists of the following:

Bag – 3 Kg  
100w K2 transceiver- 2.7 Kg  
PSU 1.4 Kg (optional if hire car battery is to be used)  
ATU 1.4 Kg  
Keyer 0.9 Kg (or Paddle)  
Headphones 0.2Kg  
Wire dipole 0.9 Kg  
100 foot of co-ax 1.7Kg

A complete station, including bag 12.2kg in total (now that might be interesting going through airport security). Roger then enlightened us to some of his other past and future West African DXpeditions with the Voodoo Contest Group. The Voodoo contest group was set up in 1994 to take part in the CQ WW CW contest.

By western standards, life is hard in the West African countries, wide spread poverty, country economies in collapse or non-existent, widespread corruption is rife. One DXpedition required protection by armed guards (provided by the government for \$100 a day per guard); Roger joked about the types of operators, 15m on CW or 9mm AK47 Kalashnikov!

But it is a different life, the people have different values

and above all are happy with their lot. However, for westerners it takes a while to come to terms with the area. Roger has written several books about his travels, just put G3SXW into Google. Hit the search key, you will then find a whole host of links to his books and the Voodoo Contest Group. ([www.voodoocontestgroup.com](http://www.voodoocontestgroup.com))

All in all an entertaining evening from someone with a passion for radio.

## HARC Forum

An Internet forum has been set up for the club by Steve M6ZOT. You may not be familiar with forums so here are details on what it is all about. It is basically a message board, and online discussion site. It originated as the modern equivalent of a traditional bulletin board, and a technological evolution of the dialup bulletin board system.

From a technological standpoint, forums or boards are web applications managing user-generated content. People participating in an Internet forum may cultivate social bonds and interest groups for a topic made from the discussions. At the forum you can read posts that have been made but in order to post messages and fully partake yourself you will need to register.

Before you do this PLEASE READ the section 'BEFORE YOU REGISTER'. Once registered an email will arrive confirming your username and password in the format of FIRST NAME and CALLSIGN then you await another email to advise when your account has been activated. This is done by Steve who is the Administrator for the forum.

The forum is aptly named 'Horsham amateur radio club Forum'. When you want to post you find the most appropriate section e.g. 20m where you will find messages about 14MHz. Perhaps you want to suggest something then you go to Suggestion Box.

Visit the forum: <http://horshamarclubforum.myfreeforum.org>

# Results of 2m DF hunt – Thursday 10th June 2010 by Bryn - G3SWC

The evening was overcast with light drizzle – not what one would have wished for! The hunt started from the QTH of G3OGP at The Haven and no less than nine teams took up the challenge after collecting a sealed envelope containing hidden station & post-DF pub details. The hunt was covered by Landranger maps 186 Guildford, 187 Dorking and Reigate & 197 Chichester & the South Downs.

What a shame the hidden station was on the edge of maps 186 & 187! G4HRS/P operated by Bryn/G3SWC & accompanied by Eva commenced transmission on the club frequency of 144.725 at 1930 for two minutes and thereafter repeated calls every ten minutes with the last transmission at 2130.

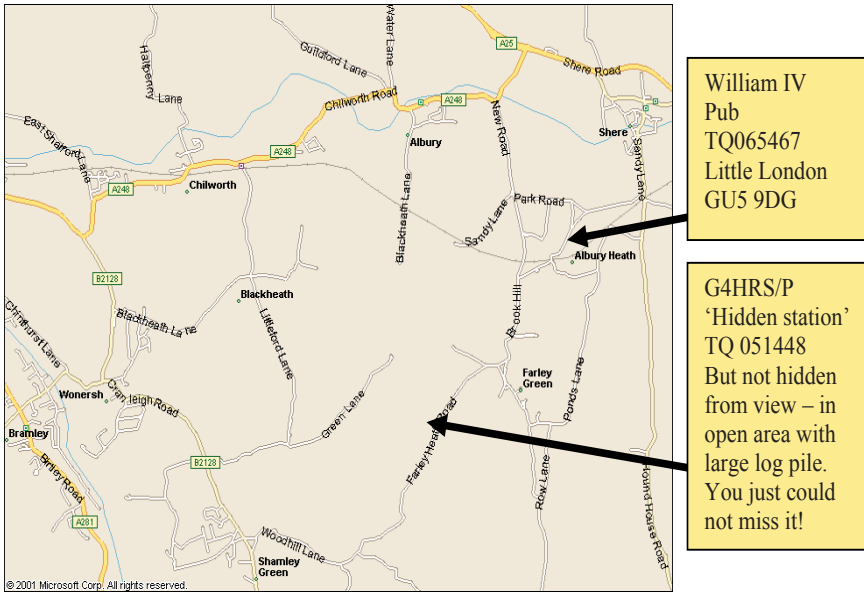
Clues were given during the last five transmissions but despite the final clue actually identifying the hidden station location, there were no new arrivals! The location was at TQ 051448 Farley Heath in a public parking area in full view of Farley Heath Road – see map.

Congratulations go to John & Janet as winners and a special pat on the back goes to relative newcomers Dominic & Alan for their very early arrival! The results were –

1. 2015Hrs John G3WZT & Janet
2. 2028Hrs Dominic 2E0DDW & Alan 2E0BTO
3. 2125Hrs Mick G4EFO

Robin G3OGP & Andrew M0GJH both had equipment failures, but Robin came to inspect the hidden station location on opening his envelope. Alister G3ZBU despite having grounded his car whilst doing a little "off-road" DFing didn't quite make it to the hidden station but was only a short distance away.

Steve G4TPO, Paul G4TMC and Adrian G4LRP all opened their envelopes. The occasion was rounded off by a few pints of T.E.A at the William IV pub located at Little London near Albury TQ065467. Thank you to all those that participated!



## Web Trawl

If you want to know about propagation conditions then take a look at Jan Alvestad's solar terrestrial activity report website. The information presented is partly based on his own observations and analysis and data from data sources such as NASA, SOHO-MTOF, SDAC amongst others.

There is a regularly updated Solar Terrestrial Activity Report chart an Active solar regions map and Monthly solar cycle data chart. Also information on Coronal mass ejections and Coronal holes. Head to: [www.solen.info/solar](http://www.solen.info/solar)

# VMARS - Vintage and Military Amateur Radio Society

## Ian Underwood - M0MYK (Part 2)

### **AR88 Receiver designed for Amateurs?**

The AR88D is believed by many to have been designed in America by RCA specifically for amateur radio use, hence the prefix AR, but many VMARS members are sceptical of this. It is very unlikely that RCA would develop such an expensive and sophisticated receiver for sale to amateurs at a time when the USA was just emerging from a massive depression.

There simply would not have been an amateur radio market for the receiver. More likely that it was a speculative development by RCA to meet the burgeoning worldwide commercial communications market, built largely to support the aviation networks (Air Radio?) and to tempt the US military market, which it failed to do.

At the outbreak of WWII the British government had an urgent operational requirement for a high specification receiver and placed an order with RCA for a substantial number of the AR88 receiver. It was not widely adopted by US forces, as a result of which they are much more common in the UK than they are in their country of origin.

The Royal Navy and Bletchley Park had an additional requirement for low frequency sets. They must be capable of operating down to 75KHz, prompting the introduction of the AR88LF, and the RAF designated them as the R1556 using a great number of the them as ground receivers.

This was for air to ground communications while the Royal Navy used Admiralty B40 receivers for ship-borne reception and the RAF used the R1155 as its airborne counterpart.

## **Modern Approach**

VMARS members are not wholly living in the past by any means. Many are avid constructors of modern AM equipment, notably using ultra-efficient FET-based Class E modulation. Also software defined radio techniques and what was initially designed by two VMARS members as a modern version of the Codar AT5 has been designated as the FAT5 (FET AT5) with an RF AM output of 30 watts.

This has now been further developed to produce 100 watts of AM of exceptional quality, stability and reliability. For information on this project visit the web site of GW4GTE. It may not be to the taste of vintage purists, but the spin-off from these projects has been useful in providing facilities to keep vintage equipment operating.

The Multi-Rock oscillator, a channelized VFO stabilisation system with programmable memories, which offers crystal bank functionality and stability and can be built for about £25, roughly the cost of having a crystal made to order. Integrated circuits like the Epson Toyocom SG8002 PLL crystal oscillator, which can be pre-programmed to operate at frequencies between 1MHz and 125MHz.

They are extremely stable over a wide temperature range and is used to make a very simple and reversible lower sideband modification to ex military Clansman equipment. Much of the later ex-army equipment had only usb/am capability and can be made to operate on lsb by substituting the carrier insertion oscillator with the appropriate frequency from the PLL oscillator chip which can be installed without any operational or cosmetic detriment to the equipment.

## **VMARS Activities**

For those interested in vintage radio equipment, VMARS have a very interesting web site where they maintain a comprehensive electronic library of manuals and circuit diagrams of a large variety of vintage military and amateur equipment.



Drake TR-4C transceiver  
80-10m in 600kHz segments 20 valves  
and 5 transistors. Transmitter input  
power 300W PEP on SSB, 260W on  
CW. Size 10.75 x 14.4 x 5.5 inches.  
Weight 16 lbs. The original US price  
in 1974 was \$700

This dates from the 1930's to the 1970's, most of which can be accessed and copied free of charge by members and non-members alike. Under the Freedom of Information Act, VMARS also obtained copies of most information in the form of manuals and circuits etc. of the complete Clansman range of equipment.

They also persuaded the MoD to lift the low level Restricted classification on the documents in order that they could be made available to VMARS members. At the moment, due to Crown Copyright, these documents are not yet available from the web site to non-members but can be fully accessed by members on the understanding that they are for "research".

VMARS have a presence at several rallies throughout the UK and is active at a number of events during the summer. A notable event this year is being organised by Bletchley Park over the weekend of 3rd and 4th July in support of the Armed Forces Weekend.

VMARS have been invited to provide a special event station at Bletchley Park and it is planned that some members will be bringing several fully functioning, radio equipped military vehicles dating from the beginning of WWII onwards. They will also be operating several types of vintage military radio equipment from the site.

Bletchley Park is also home to the National Museum of Computing and exhibits include the famous code cracking

“Bombe” and “Colossus” computers which will hopefully also be operating. Also the “Enigma” and “Lorenz” encoding machines that they were designed to outwit. Other exhibitions include an Aladdin’s cave of radio equipment in the Diplomatic Wireless Service hut and for those who have had enough of radio, a model railway.

Vintage and military equipment offers the experimenter, constructor, and radio restoration buff great opportunities to learn, build, and enjoy radio. AM was once the main voice mode in amateur radio. Now it is a well regarded specialty within the hobby.

AM offers a warm, rich audio quality that provides for more personal interaction and the simplicity of AM circuit design encourages hands-on restoration, modification and homebrew construction to an extent no longer found among contemporary radios.

From vintage valve-based gear, to military surplus and to modern homebrew, amplitude modulation is thriving in the UK and growing in popularity. Why not revive that piece of old AM valve equipment lurking under the bench or in the loft and pop in for a chat on 3615KHz?

Reference:-

VMARS

Louis Meulstee – Wireless for the Warrior (Wimborne Publishing Ltd)

Web links:-

**VMARS web site** .....[www.vmars.org.uk](http://www.vmars.org.uk)

**GW4GTE FAT5 AM tx site** ....[www.s9plus.com](http://www.s9plus.com)

**Whitams MoD surplus sales**....[www.mod-sales.com](http://www.mod-sales.com)

**Bletchley Park site**..... [www.bletchleypark.org.uk](http://www.bletchleypark.org.uk)

**Louis Meulstee site**..... [www.wftw.nl](http://www.wftw.nl)

**MoD Clansman info**

[www.mod.uk/DefenceInternet/FactSheets/EquipmentFactsheets/Clansman.htm](http://www.mod.uk/DefenceInternet/FactSheets/EquipmentFactsheets/Clansman.htm)

Brian, G3GDU advises the following information regarding the VMARS article part 1 last month. On page 12 it says that LORAN was an improved version of GEE. In fact, the two systems were actually complementary. Gee is high accuracy short (up to 250 miles) range whilst LORAN A, as it worked at much lower frequencies, gave ranges of 1000 miles plus at a lower accuracy.

The British radar pioneer "Taffy" Bowen went over to the USA to assist in the design of the LORAN display units with the result that the racks, cabling and displays for GEE and Loran are interchangeable. Long range aircraft frequently used GEE for the first part of their journey, and when at maximum GEE range, exchanged the units for LORAN until they came within range of GEE again.

There was also a version of LORAN (SS Loran) that used the sky wave and with transmitter stations in UK and North Africa were able to get a fix over Berlin and Eastern Germany. The accuracy, however, was only three or four miles.

Copy deadline for August edition 19th July

For items sent by email please send to this address:

[harc.news@g4jhi.co.uk](mailto:harc.news@g4jhi.co.uk)

### Membership List 2010

Many HARC members will have a copy of last years list of members with details of callsign, address and telephone number. Soon an updated list for this year will be distributed. If members have any amendments including specific details not to appear in print then now is the time to get in contact with either the Newsletter Editor or Treasurer. Email addresses are not included and the list is only distributed to members of HARC.

# Broadcast Listener

Gareth Mitchell travelled to Cape Town and presented the weekly programme Digital Planet broadcast on BBC World Service. This particular edition explored how digital technology is transforming people's lives. Gareth visited a town where two brothers have set up a range of internet cafes.

He also interviewed Mark Shuttleworth, the founder of Ubuntu, about the evolution of open source software in South Africa.

Digital Planet is in fact the sister to the TV programme Click and can be heard on Tuesdays at the following times: 10:32, rpt 15:32, 20:32, 01:32 (Wednesdays) BST and can be found on 648KHz Medium Wave, DAB, Satellite, Online and during the night on BBC Radio 4.

# Vanishing Times

There have been letters and articles in various technical magazines regarding the proposed demise of analogue radio transmissions. This could mean an end to AM on the Long, Medium and Short Wave in favour of DRM. The major Band II VHF/FM services would stop and continue on DAB using Band III leaving the vacated frequencies for local community stations.

These may be using FM or perhaps DRM or even DAB. Many have frowned on the idea of an almost complete move to DAB as the current system is already well out of date and there should be a move to at least DAB+ which is more efficient.

How might this effect the amatuer radio community you might ask. As an example if you were to construct a crystal set it wouldn't receive anything apart from perhaps a load of digital noise. Maybe we radio amateurs will be all transmitting in noughts and ones soon since we already have D-Star.

# TV Information and Shedule

Sky Sports News is to leave the Freeview platform and will in the future be only available to Sky and Virgin Media cable subscribers. In place will be Sky3 +1.

1st March 2012 Midhurst switches to fully digital.

30th April 2012 Crystal Palace switches to fully digital. On the same date all remaining analogue services on Astra 1 satellite at 19.2° east will end.

## Did You Know

Over the last four decades your Harcnews editor has not only been transmitting over the amateur radio airwaves and hospital Radio Forest (this was found out during a previous Bring, Show, Tell) but also on several other radio stations. Back in the day of BBC Radio London (now BBC London and before GLR) Sounds Good was a programme on Saturdays which was about Hi-Fi and technical issues.

One edition that featured technical calls from listeners 'David from Horsham' appeared having suffered trouble with reception in Stereo of some VHF/FM stations. The solution – get the aerial outside and up as high as possible. Another edition featured one and a half hours on amateur radio and the RSGB.

David has also appeared on quiz shows on the same station, Radio Netherlands and BBC Radio 1. LBC used to have a phone in with Robbie Vincent who had a technical section run by Barry Fox and David appeared on that twice. Other appearances were China Radio International, Radio Jackie, Crawley Hospital radio and the TV Programme That's Life.

# Diary

Jul 1st, Club Night: Goubau Lines and Other Small Aerials - Mike Underhill G3LHZ

Jul 3rd-4th, VHF National Field Day 15:00 - 15:00 (HARC not in attendance)

Jul 5th, 80m CW Club Championship 20:00 - 21:30

Jul 14th, 80m SSB Club Championship 20:00 - 21:30

Jul 15th, Social Evening - The Limeburners Arms - Newbridge, Billinghamurst

Jul 18th, McMichael Rally 09:30 [www.mcmichaelrally.org.uk](http://www.mcmichaelrally.org.uk)

Jul 22nd, 80m Data Club Championship 20:00 - 21:30

Aug 5th, Club Night: Curry Evening

Aug 12th, Committee Meeting - QTH G3ZBU

All above times are BST

Committee/Club Meetings and Socials start at 8pm

PARTICIPANTS	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE			JULY			TOTAL POINTS	%	MODE TOTALS		
	SSB	Data	CW	SSB	Data	CW	SSB	Data	CW	SSB	Data	CW	SSB	Data	CW	SSB	Data	CW	SSB	Data	CW			SSB	DATA	CW
G3LET Pete		437				882			886		619		623	1000		751			5198	7.9		0	2430	2768		
G3NPF Tony	884	528		458	485		779	611		599	765		521	737		631			6998	10.6		3241	3757	0		
G3OGP Robin		300	422	733	381	556	307	361	500		661	571		562	814		701		6869	10.4		1602	2404	2863		
G3PYC Ron	178			125			200			153			180						836	1.3		836	0	0		
G3SWC Bryn	578	515	428	369	613	675	592	610	736	670	606	778	762	582	746		831		10091	15.3		2971	3757	3363		
G3VQO Les		260	302			675	27	420	679										2363	3.6		27	680	1656		
G3WZT John						497			600		52	282		370	670				2471	3.7		0	422	2049		
G3ZBU Alister	567	645	339	715	663		293	93		560	851	504	534	834	670		821		8089	12.2		2669	3814	1606		
G4EFO Mick					145					259			216	158					778	1.2		475	303	0		
G4LRP Adrian	533	96		715	315		347			487	481		543	555		480			4552	6.9		2625	1927	0		
G4TMC Paul										10									10	0.0		10	0	0		
G4TPO Steve	606			236			892			432	161		658	146		330			3461	5.2		2824	637	0		
G7DFV Gavin										129									129	0.2		129	0	0		
G8CKT Mike	112	150		447	449	178	252	302	215	276	447	193	429	644	246				4340	6.6		1516	1992	832		
G8HJQ Barry	600			303	376	82	327	356		597	222		524	68		231			3686	5.6		2351	1185	150		
M0FRH Ian				85									153						238	0.4		238	0	0		
M0GJH Andrew	445		353	45	356		239	448	393	643	362		410			551			4245	6.4		1782	1361	1102		
M0YMK Ian	228			223			214			315			216						1196	1.8		1196	0	0		
2E0BTO Alan										202									202	0.3		202	0	0		
2E0DDW Dominic							62			184			162						408	0.6		408	0	0		

Mode totals	4731	2931	1844	4454	3427	3901	4531	3108	4102	5516	5227	2328	5870	4649	4214	0	5327	0	0	0	0	0	0	0	0	66160		25102	24669	16389
Month totals to date			9506			11782			11741			13071			14733		5327													
Contest dates/times	13th	21st	4th	1st	10th	18th	18th	1st	10th	14th	22nd	5th	3rd	12th	20th	24th	7th	16th	14th	22nd	5th	Start times are all 2000 clock time, ending 2130 local								

HARC overall position after above results announced **7/64 7/68 11/50 5/72 5/74 5/75 6/82 6/76 6/78 6/88 6/88 6/85 6/88 6/88 6/89 6/89** ← **HARC POSITION UNCHANGED since last report - see latest date.**

All entries to be uploaded with the Contest Robot at:- <http://www.rsgbcc.org/cgi-bin/hfenter.pl> Latest robot entries may be viewed at:- <http://www.rsgbcc.org/cgi-bin/hfposted.pl>  
 Contest rules:- <http://www.rsgbcc.org/hf/rules/2010/r80mcc.shtml>

WE ARE STILL MAINTAINING 6TH POSITION & MANAGING TO LEAVE A REASONABLE GAP BETWEEN OURSELVES AND GRIMSBY. WITH EFFORT FROM ALL 20 HARC PARTICIPANTS (& MORE IF THEY ARE OUT THERE) - WE COULD CLAIM 5TH PLACE. ONLY ONE MORE MONTH TO GO, SO PLEASE HAVE A GO. REMEMBER, ALL SCORES REALLY DO COUNT, SO DO NOT BE PUT OFF BY A LOW SCORE OR INABILITY TO BE AVAILABLE FOR THE FULL 90 MINUTES!

WELL DONE PETE G3LET FOR GAINING 1000 POINTS IN MAY CW - THIS IS THE FIRST TIME EVER THAT A HARC MEMBER HAS HAD A CONTEST WINNING SCORE. FROM THE JUNE CW ENTRIES IT LOOKS AS IF PETE HAS DONE IT AGAIN - WELL DONE! ROBIN - G3OGP ALSO MANAGED A HIGH SCORE OF 814 POINTS IN THE MAY CW WHICH ALSO HELPED TO BOOST OUR OVERALL SCORE.

OUR JUNE DATA TOTAL IS ALSO THE HIGHEST FOR THE YEAR - GOOD EFFORT.

THE TOP TWELVE CLUBS - out of approx 89 participating (data courtesy of RSGB website)					
Pos	Club Name	Total	CW	SSB	DATA
1	Bristol CG	111740	32595	42027	37118
2	Newbury & DARS	94942	32492	29702	32748
3	De Montfort Univ	87820	22035	22223	43562
4	Three As CG	70284	33659	20623	16002
5	Norfolk ARC	70280	21053	18571	30656
6	<b>Horsham ARC</b>	<b>66160</b>	<b>16389</b>	<b>25102</b>	<b>24669</b>
7	Grimsby ARS	61706	23752	14369	23585
8	Brimham CG	45828	16073	14091	15664
9	Tall Trees CG	38952	13540	8338	17074
10	Reading & DARC	37494	18416	11176	7902
11	RAF Waddington	35283	10752	11277	13254
12	Travelling Wave CG	28551	6983	9052	12516