



Newsletter of the Harwell Amateur Radio Society

Affiliated to the Radio Society of Great Britain
RSGB Regional Club of the Year, 2009 and 2011



QAV

No 437
September 2017

Ray, G3LQC - Silent Key



It is with great sadness that I have to tell you about the death of Ray, G3LQC. Ray passed away on Wednesday evening, 6th September 2017. Ray had been suffering with, as I understand it, lung cancer since last autumn and recently was admitted to the Oxford Hospice.

We offer our most sincere condolences to Julie and Rae, Ray's daughters and to Val.

No funeral details are available as I write this, but will be forwarded to members as soon as we know them.

Mike, G8CUL/F4VRB

Editorial Comment



As I write this Ann and I are coming to the end of a 10-week stay here in Normandy. It is hard to believe that we left Portsmouth 2 days after the VHF NFD weekend! Apart from the obvious work on the house we have managed to take part in some radio activities. These include taking part in the local club's 2m DF hunt which is run a bit differently than at home. They have an automatic transmitter that sends FM 'bleeps' for 20 seconds every minute over a 2-hour period. Unfortunately, the transmitter battery failed after about 45 minutes, so we all departed early for the QTH of Stéphane, F5UOW for a superb picnic held in his dining area. Well, it was raining!



Ann and I also held a summer BBQ where a number of HARS and Caen Radio Club members attended. We had a good time,

and we hope our visitors did too!

Other activities included taking part in two VHF/UHF contests with the local club - see RadioActive for more details!

Mike, G8CUL/F4VRB

Another over from the Chairman

Well I trust that you have all had a good summer break, played a lot of radio (if you were allowed to) and managed to catch up on some of those jobs that you have been meaning to do all year, I know that I fell into the trap of having time on my hands and ended up with not getting many of the jobs done, you know the old saying "Oh I will do that tomorrow" and when tomorrow comes along, something else nearly always crops up and before you know it, you have a list of jobs to do that is longer than it was a month before. I did manage to get some jobs done before we went out to Normandy for our holiday but only one or two were radio related.

In Normandy we had the usual Anglo/French BBQ at the QTH of Ann & Mike in Moncy, the WX was kind to us with the only real rain arriving the day before we came home. We also managed to visit the site of the Caen club's contest station, there are some pictures of this and the BBQ, on their web site, I think that most of you know where to find it but for those who don't, just Google F6KCZ to get to their web site, then click on "translate this page" and look at the news section.

On a different subject, I and the committee are finding it harder, as time goes by, to find subjects for our monthly meetings, whether it be a talk, demonstration or an outside visit/event, run by a club member or outside presenter. I would therefore ask you all to put your thinking caps on and see if you can come up with ideas for future meetings, anything at all, just have a word with any committee member.

73's for now.

Charlie Sierra Signal Report

Looks like July was holiday month with only the LNU's John and Marian turning up for CS but August was back to fine business with a more normal brace of ten. The usual wide range of topics of discussion, from Icelandic yoghurt to amateur radio, kept folk on their toes. The next gathering will commence at 10:45hrs on Friday 22nd September in the now usual venue of the Farm Shop cafe at Millets Farm. All are welcome to join us.

Kate G7DOF and Ron G7DOE

Radio Active

Alex, 2E0OXF - A fairly busy summer. As my trusty MacBook Pro finally died just before we headed to Vancouver for a fortnight I had to configure a raspberry pi 3 to be my machine for running digital modes. Rather than relying on a monitor I bolted on a cheap touchscreen and I was quite happily able to run wsjt-x and make a few contacts from the woods. However halfway through our fortnight there was quite a substantial seed change in digi-modes with the release of v1.8rc1 of wsjt-x. A new mode, FT8, was unleashed on an unsuspecting world.

Suddenly you could complete a contact in 60 seconds. The number of people using this new mode jumped from a few dozen on the first day, to several thousand by the end of the week. Now less than 2 months after its release people have already got DXCC, WAZ and WAS endorsements. It's a bit like shooting fish in a barrel, but if you like collecting wallpaper it's worth a go. Personally I've got 64 dxcc, and 30 WAS so far just in this mode.

If you'd like to give it a go, but need a bit of help then just drop me a line and I'd be happy to help.

Ron, G0BNC - July, I went to the very good NFD contest radio site and did a bit of operating, and left there after midnight, which worried the XYL Val. I managed 25 contacts on the RSGB 2m contest. I did the 70cm contest portable using the heavy duty drive on mast support I made. The site is 15m higher than my house, but still in

the same square, but I had no contacts north, which is my best direction from my house. I suspect it is closer to the higher ground in that direction. We did the DF hunt run by Dave, G8DVK, but I did not find him. I was not prepared to drive down the bridle tracks, of which there are many in the area. I managed to purchase a good quality UHF dummy load for about £6 at the Reading radio club boot sale.

August. I purchased a used VSWR/PWR meter, but when it arrived it did not work at all. The seller refunded me, and said I could keep it (it pays to be polite). Tests revealed the meter is faulty. I was unable to purchase one in the UK, so I ordered a few from China hoping I can make one fit. Made contact with Ann & Mike in Normandy 4 times. Have been working on the 70cm amp I am building but have modified it twice, and am waiting for some relays from USA, for hopefully the last mod. I have also almost completed another antenna sequencer, to save me removing mine each time I do a contest. I managed to get through the pile up to work Radio Caroline special event station. All radio related things have come to a halt, 2 weeks ago the gas board contractors called in and said they are changing the supply to plastic, without warning us. I spent 3hrs clearing the cluttered garage, so they could get to the pipe. This led to a lot of timber purchase to rack the garage out, then a rain bar has been fitted as there is a small slope to the opening, and the concrete also slopes inwards. This had to be chipped away with a lump hammer and chisel to get the slope to fall away. I then thought it may be good to be able to open the doors for the first

time in at least 20 yrs. So more mods until 9pm most nights. So only short pauses will be made for the radio related operation and projects, until this is completed, or I get fed up. (got to keep the body moving now I am 75).

Angus, G0UGO - No special activity over the summer holidays but did have a relaxing though eventful two weeks in France ending up in the Dordogne area. Not a fun place to be a goose! On the way home we paid a visit to chez F4VRB where we were given a tour of what work had been done since our last visit. In the evening we had a very pleasant meal with Ann, Mike and Ann's brother-in-law Ray at the hotel in Saint Germain du Crioult, less than 10 minutes drive from Moncy. If you are planning a visit out that way it is recommended as somewhere to stay. Rooms are very comfortable and breakfast will not leave you starving. As for radio, I was a bit confused when I started to see some weird lines appear on the digimodes waterfall and then I found out that in the middle of July a new operating mode had been set free into the wild: FT8. FT8 is similar to JT65, JT9, etc using the same QSO protocols except it is four times faster. It is so fast that once a QSO is started each over is controlled automatically by the software. This new mode has been a big hit globally and can pick out signals below the noise floor. So far 40 countries worked with five being new band countries.

John, G6LNU - Very little activity over the past two months apart for a few 6m contacts in Croatia, Italy, Sweden and Denmark in July, even though I took some radio gear to France with

me, I never really did any operating whilst there. One thing I did manage to do when I woke up early one morning, was to work GB5RC on 40m. For the less informed amongst you, GB5RC was the special event call for Radio Caroline, the old pirate radio station moored just off Mersea Island near Clacton-on-Sea.

Malcolm, G8NRP - managed to enter both the July and August 144MHz UKAC contests. Ten contacts in the July contest which is a record from my QTH. The August event only produced five contacts. It is a pity that we as a club don't work each other in a contest as that would boost the scores for everyone.

I really enjoyed two fairly long stints operating in the 2m section of the VHF Field day event from Hagbourne Hill. It was not like it used to be but I always enjoy operating from a good site compared to mine with some contacts made over huge distances.

The Tatty Piece of Paper award was a challenge with two contacts made, one on Skype, before my holiday in Germany. There was no opportunity to take radio equipment on holiday this time.

Martin, M0HAH - My mobile radio - the FTM-350R/E finally broke after the power cutting out for the last time and now appears dead. No luck (so far) on the fault finding, but I suspect one of the voltage regulators may have failed.

I now have a new radio to "fill the gap": a Yaesu FTM-400XDE, which is a 2m and 70cm radio with APRS functionality. As usual, I started with manually

programming this radio, which despite the touch sensitive screen, seems to take quite a long time. However, Yaesu do include a programming cable and programming software on the Yaesu-com site. The programming software is somewhat quirky, but it can be made to do what it's supposed to do with a bit of tinkering and changing the order that things are done in.

The new FTM-400XDE has now been fitted to the car, but it is running off of a separate 12v battery: the car power outlet seems to be at 17.5V when the engine is running, which is a bit high, and I suspect contributed to the demise of the previous radio.

I have also had time to play with a Freecom DVB USB stick to receive digital radio and TV, and I have been using Kaffeine application to control the tuning , timing, and recording of what is received. To get it to work with Linux, I had to find the appropriate firmware and copy it to the /lib/firmware directory - and the name of the firmware file has to match what the system reports in the output of a "dmesg" command. Recordings are made in ".m2t" format, but this can easily be converted to something a bit smaller in size by using the convert function in the "VLC" application, without losing too much quality.

Keith, M6GYQ - While away on holiday a couple of weeks back, I visited the excellent Norfolk & Suffolk Aviation Museum at Flixton, just outside Lowestoft. While it is predominantly aviation based, there are many exhibits worth closer scrutiny. For example, this Hallicrafter UHF Receiver S-27, an amateur set with 3 bands, 27 – 145 Mc/Sec,

according to the display description. Apparently the RAF bought all available sets at the beginning of WW2.



Also on display was this rather nice Stromberg-Carlson aircraft radio receiver, weighing in at 60lbs!



This Marconi R1155 civil receiver was modified for use in Lancaster bombers, and other aircraft still using radio operators. They were used into the 1960s.



TF15MOOT - Amateur Radio at the 15th World Scout Moot

We were invited to join the team running the Moot Amateur Radio and associated activities while in Iceland last year. When a small country runs such a large scale event all possible help is required. As we are now old hands at Icelandic Jamboree Radio we couldn't refuse, especially when Vala found herself in charge of all activities, not just the Radio Station.

We became honorary Icelanders and on the Moot Planning Team (MPT), a step up from International Service Team (IST) and avoiding any issues such as UK selection. This did create a problem when we requested UK contingent identifying gear such as neckers and badges but that was eventually resolved at the Moot.



Vala needed to gather a team able to provide a range of activities suitable for the Moot age range, 18-25, to try themselves and also to take back as ideas for their own younger Scouts as many of this age range are already leaders in their own right. Most of the Icelandic Radio Scouts were allocated to other jobs but Fred, who has helped us before and Elín a young YL were assigned to us and we recruited Claire, G8ULQ, from Solihull, a 'veteran' of three World Jamboree Radio Stations. Vala recruited Remko and his wife, Herma, from the Netherlands. They planned to drive to Iceland bringing plenty of kit for a wide variety of activities.

Those applying to be on the IST are asked to state any interests or qualifications, so Vala was busy combing the lists to recruit more staff. This gained us Chris, G8PJQ, and Ivanildo, PV8IG, a Brazilian who

clearly loved contests.

Others, with other jobs, also joined in to help. Andy, LA0HW, a Brit living in Norway who was in the Faith and Beliefs Zone and a Swiss who only answered to the name Hobbit. We also had Remko and Herma's son, Cyrille, who was just too young to be a participant or IST but old enough to be on the Úlfjótsvatn volunteer site staff for the duration!

Last year the mast and beam had been in need of repair. Some of the work had been done in the weeks before the Moot but the rotator had seized up and needed rebuilding. Although the rotten wooden cladding on two sides of the shack had been replaced, it still needed painting! We spent the days before the

participants arrived completing the jobs and starting to fill up the log. We soon learnt that although distinctive, TF15MOOT is a bit too long!



Each Participant spent the first half of the Moot at one of eleven Activity Centres before converging on Úlfljótsvatn for the final few days. With 5000 in total, the site was suddenly very full and the pace of life quickened. The Radio activities proved very popular and the construction project a runaway success. A small LED 'lantern' came on when you clapped or made a loud enough noise. It could be turned off using any remote control, something we all take camping! There were also games using walkie talkies, a phone app and DF hunting. More unusual, were putting the things in the microwave oven that your mum said should not go in and cooking sausages by passing mains current through them!

Back in the shack the team were dealing with the pile-ups. The Moot coincided with the IOTA weekend so we happily handed out multipliers and were duly thanked, the Newbury team on the Isle of Wight possibly being one of them. Brazilian Ivan PV8IG was filling up the log at one a minute but as he was not always easy to understand and his writing unclear, he needed a full time logger. His day was made when he contacted Brazil! We totalled 480 contacts - and as Scotland and Ireland are the nearest landfall, we were well on the way to working every Amateur in both places. The repaired tri-band beam worked well and in addition a 40m dipole and a second 40m folded dipole increased the possibilities. Once again the lack of 'noise' made for clear



contacts, much easier for the passing of messages by the inexperienced. There were plenty keen to find out more and to have a go on the mike. Encouragingly, there were participants holding Amateur licences who visited as well as more among the IST, such as Peter 2W0JZZ who is a qualified climbing

instructor with skills needed in the mountains.

The President of Iceland toured the site with minimal formality while the top brass from the World Scout Organisation breezed in, made their speeches and returned to their five star luxury accommodation in their limousines.

The theme of the Moot was 'Change', the dominant colour orange and apart from the themes of Ice and Fire, the puffin featured in many of the contingent badges including the UK. At the Scout Centre we didn't experience any Ice or Fire and it's not puffin territory. 'Change' might have applied to the Icelandic weather which is supposed to change every fifteen minutes but we enjoyed two weeks of sunshine with only a few hours rain early one morning.

Liz G0RJZ and Richard G0REL

60th Jamboree on the Air October 2017

This year it's 60 years since the first Jamboree on the Air and it is an achievement to celebrate. We have been asked to run the station at Youlbury for the second year as part of a day of activities and already 90 of the 100 places available are taken.



After our experiences last year, we were at pains to explain how the facilities offered were of limited suitability - mainly a lack of space with one very noisy room to accommodate everything. At a recent meeting, some solutions have been found and we hope we can give both the youngsters and the staff a better weekend. However, it will not work without help and we are appealing to HARS members to join us in encouraging a new generation to carry on the JOTA torch for the next 60 years.

For radio contacts we hope to position the aerials higher on the site, ideally the top field. The operator and listeners will all use headphones. The rest of the room will house the construction project, the claplight we made at the recent Moot. Radio orienteering and any introductory talk and explanations will be in an extra party tent erected outside the Classroom building and clothes and baggage will be left in the Activity Barn, leaving the Classroom and tent floors clear of clutter.

Jamboree on the Internet will again be housed in the Activity Barn giving each Scout a chance to try both aspects of the event. Tim Crew is bringing the equipment and should have more help than last year.

Each Scout has half a day at JOTA-JOTI and half a day on the site activities, such as the climbing tower and zip wire. If you can help for one or more of the Radio sessions you would be most welcome. The event received good feedback last year but we know the Amateur Radio side could be improved.

Your help and enthusiasm at any level of experience will be very welcome. JOTA/JOTI is over the weekend 20th—22nd October 2017.

73, Liz G0RJX & Richard G0REL

Radio Active (*continued*)

Ann, (G8NVI) and Mike, F4VRB/G8CUL - The Radio Club de Caen (F6KCZ) invited us to take part in two VHF/UHF Contests during our Normandy trip. We were utilised as a 'secret weapon' for the 2m, 70cm, 23cm and 3cm stations for the contest in early August, and for the 2m contest at the start of September.



Our 'raison d'être' (so to speak) was to work UK and other English-speaking stations during the contests. Our

ability to work UK stations quickly, and hopefully accurately, is not lost on our French colleagues who have embraced us over the last year as 'part of the team'. During both contests we operated for some 8 hours between us - each day being started and finished with a 50-mile drive between Chez Nous and the contest site on the Normandy coast. French contesting is very much a case of eating, drinking and socialising with some radio thrown in, and we are still considered as 'unusual' when we continue operating when everyone else stops for 2 hours for a meal!



Early indications are that F6KCZ/P have done quite well in both contests with a good number of UK stations contributing to the score. Thanks to all those who worked us on those contests, and thanks also to the members of the Radio Club de Caen for being prepared to take on a couple of 'étrangers' and entrust them with their contest stations!



Technical Corner

This month an interesting article from Roger, G3MEH.

Antenna-Amplifiers - PA5070-7-3

Introduction



The PA5070-7-3 from Antenna-Amplifiers is a 3 element 50MHz and 4 element 70MHz dual band antenna with a common feed. A choke balun is included together with a fixed socket, N as standard but SO239 (UHF series) is available as an option. The standard boom is of 40mm square aluminium tube but round tube is available as an option. A square boom better

holds the elements in alignment but gives more windage than a round boom when the antenna is broadside.

Construction

Ideally the elements would be of a single length of tubing, but with the longest more than 3 metres the cost of specialised carriage would be prohibitive. The 4m elements are of a centre section of 12mm diameter aluminium tube extended with 10mm tube. The 6m elements are of a centre section of 12mm



diameter aluminium tube extended with 10mm tube then further extended with 8mm tube. A pair of self tapping screws, at right angles, is used to hold the extension tubes in place. Although left open, there is no connection box for the feed point, the balun coaxial cable ends are pre-sealed with plastic.

In the picture the antenna is shown upside down, the balun and connector is intended to be underneath, and no connector protector is supplied.

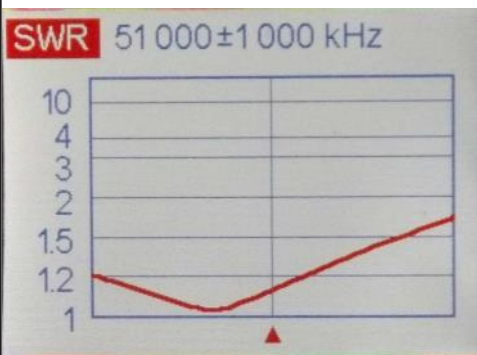
Assembly



Assembly is very straightforward because the various parts are clearly marked with matching identity labels for mating parts. A selection of hand tools is needed and a ratchet socket is very useful for tightening the boom to mast clamp because Nyloc type locknuts are supplied. If the antenna will be

removed from the stub mast from time to time it's worth fitting a pair of your own M8 bolts to hold the two halves of the clamp together and changing the nuts on the mast V bolts to ordinary M8 full nuts.

Test Results

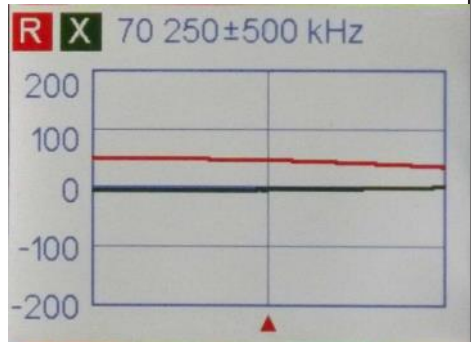
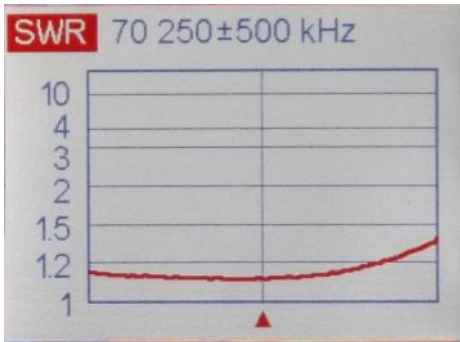


The online specification only rates the 50MHz coverage as 50.0 to 50.5MHz but the SWR looks to be very good up to 51.0MHz. It also seems acceptable over most of the upper 1MHz of the band, though the

gain and polar diagram may be slightly impaired.

See over the page for the 4m test results.

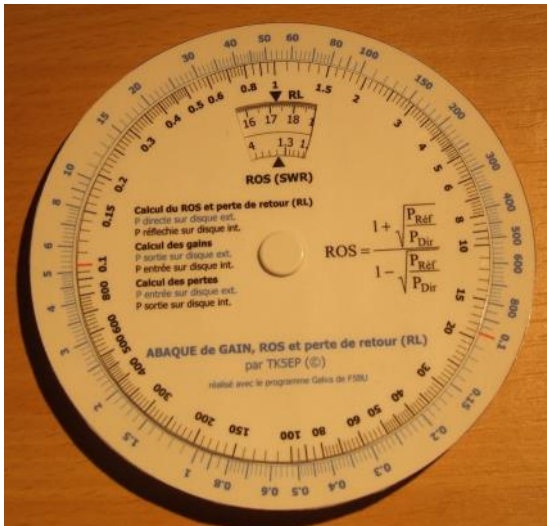




More details can be found at - <http://www.antennas-amplifiers.com/6m-4m-50-70MHz-dualband-Yagi-antenna-7el-PA5070-7-3>

G3MEH 27th May 2016

A note from Mike, G8CUL!



While away in Normandy, I was sent the information to make this “circular slide rule”.

By aligning the inner (reflected power) with the outer (forward power), the pointers to the little window give you SWR (or ROS in French!), Return Loss (RL) or gain. It is easily made by printing the file on A4 paper and cutting out the 2 discs. Laminating the paper also helps. The 2 paper discs are held together with a pin through the middle, and in typical French fashion part of a wine cork is used on the reverse to hold the pin in place!

The file is available at - [abaqueros.pdf](#)

I have found this a very useful tool!

Contest News

Forthcoming VHF/UHF/SHF Contests

17th September—2nd 70MHz Contest
7th October—1.2GHz/2.3GHz Trophy
7-8th October—432MHz-245GHz Contest

Forthcoming HF Contests

11th September—Autumn Series SSB
20th September—Autumn Series CW
28th September—Autumn Series DATA
8th October—DX Contest
9th October—Autumn Series CW and DX Contest

Full details of all forthcoming contests can be found on <http://www.rsgbcc.org/>

CQ Worldwide SSB Contest—28th October

We have booked Chilton Village Hall for the Saturday of this major HF Contest. We plan to operate through the day and share a takeaway meal during the evening. Please put this date in your diary and let us know if you would like to come along—all welcome!

VHF Championship

After 5 contests this year Harwell ARS are STILL in first position in the VHF Championship with 5000 points—this is a fantastic effort! The results of the 144MHz Low Power, 432MHz Low Power and 144MHz Trophy Contest are yet to be published but HARS put in strong teams on each occasion so there are grounds for further optimism!

The final Contest in this series is on the 7th October—1.2GHz/2.3GHz Trophy. If you have equipment for these bands, please go on and join in!

VHF NFD

HARS came 10th out of 15 stations in the Restricted Section of VHF NFD—a pretty good performance for our first venture into portable operation for some time—and we were only running 2 stations part time! We came 9th out of 21 on 144MHz and 5th out of 15 on 432MHz.

Those who came along and took part thoroughly enjoyed themselves and there are plans to take part in 2018—this time running all bands but still entering the Restricted Section. If you would like to take part next year, please put the first weekend in July in your 2018 diary!

Tatty Piece de Papier Award

A huge 'thank you' to everyone who took part in the 'Tatty' Award this year. The presentation will take place at the October meeting and a report will appear in October's QAV.

JUNE-AUGUST 2017 (overall position 5th)

	Callsign	Section	Position
70MHz (June)	G4BRK	AO	9th
	G3MEH	AO	10th
	G8CUL	AR	3rd
	M0IEP	AR	43rd
144MHz (July)	F8BRK	AO	9th
	G3MEH	AO	15th
	G0ODQ	AR	39th
	G8DVK	AR	40th
	G0BNC	AR	114th
	M0KEP	AR	115th
	G8NRP	AR	152nd
	F4VRB	AR	153rd
	G4BRK	AL	24th
	M0PXM	AL	47th
	M0CIW	AL	72nd
432MHz (July)	F8BRK	AO	6th
	G3MEH	AO	12th
	G0ODQ	AR	8th
	G4BRK	AR	10th
	G8DVK	AR	46th
	M0KEP	AR	87th
	F4VRB	AR	90th
	M0PXM	AL	36th
	G0BNC/P	AL	58th
50MHz (July)	G3MEH	AO	7th
	M0IEP	AR	42nd
	F4VRB	AR	64th
	G4BRK	AR	67th
1.3GHz (July)	G4BRK	AO	7th
	G3MEH	AO	10th
	G0ODQ	AR	19th
	G8DVK	AR	25th
	M0PXM	AL	45th
SHF (July)	-	-	-
70MHz (July)	G3MEH	AO	10th
	G4BRK	AO	13th
	G0ODQ	AR	18th
	M0IEP	AR	46th
	M0PXM	AL	18th

144MHz (Aug)	G3MEH	AO	13th
	F1BHL/P	AR	10th
	G0ODQ	AR	15th
	G8DVK	AR	41st
	F4VRB	AR	56th
	G0BNC	AR	95th
	G7IVF	AR	103rd
	M0KEP	AR	105th
	G8NRP	AR	152nd
	M0PXM	AL	40th
432MHz (Aug)	G3MEH	AO	8th
	G4BRK	AR	13th
	G0ODQ	AR	14th
	F4VRB	AR	45th
	M0IEP	AR	61st
	M0KEP	AR	73rd
	M0PXM	AL	41st
	G0BNC/P	AL	47th
50MHz (Aug)	G3MEH	AO	10th
	G0ODQ	AR	27th
	M0IEP	AR	31st
	F4VRB	AR	60th
	G8DVK	AR	78th
	G7IVF	AR	80th
	G0UGO	AR	101st
	M0PXM	AL	21st
1.3GHz (Aug)	G4BRK	AO	7th
	G3MEH	AO	9th
	G8DVK	AR	24th
	M0PXM	AL	53rd
2.3GHz (Aug)	G4BRK	SAO	3rd
	M0PXM	SAR	25th
3.4GHz (Aug)	G4BRK	SAO	1st

Rally News

Harwell Radio Rally – Sunday 11th February 2018

Next year's rally is now booked so please put this date in your diary – further information will follow.

RCE EXAM NEWS

Foundation Course

We are running a Foundation Course at Hagbourne School on Saturday 30th-Sunday 1st October. The course is full. Good luck to all the candidates!

HARS Annual Dinner

This will be held on the 12th May 2018 at the Cosener's House, Abingdon.

More details to follow nearer the time, but please put the date in your diary now!

CLASSIFIED ADS

Your advertisement can appear here *free of charge!*

Roger, G3MEH has sent me a list of radio items that he wishes to sell. The list is a bit big to put in here but it can be found at -

[G3MEH Sale Items 2017.pdf](#)

Please contact Roger direct on 01442 826651 or roger@g3meh.com

Paul, M0PXM has also sent me a list of radio items for sale. Again, the list can be found at -

[M0PXM Sale Items 2017.pdf](#)

Paul can be contacted on 01189 700612 or paul@kilyos.co.uk

DIARY

Thursday 14th September
Natter Night

Thursday 12th October
Angus, G0UGO - Digimodes

Thursday 9th November
Minos and ON4KST (with 6m)

Thursday 14th December
AGM

OFFICERS

Chairman: John Durban, G6LNU
Vice-Chairman: Ann Stevens, G8NVI
Secretary: Elle Frost, M0NRK
Treasurer: Angus Wilson, G0UGO

ORDINARY MEMBERS

Dave Aram, G8DVK
John Booth, G6ZHB
Angelos Gonias, M0XTR
Tim Keep, M0KEP
Roger Powell, G0A0Z
John Morris, G6PEP

CONTACT DETAILS

www.g3pia.org.uk
info@g3pia.org.uk

Opinions expressed in QAV are the personal views of the contributor and cannot be taken as reflecting the views of the society, committee or editor.

The deadline for the October QAV is 7th October 2016. Articles submitted after this date cannot be guaranteed to be included.

Contributions from all members are greatly welcomed. They may be submitted to ann.stevens@btinternet.com