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 461
November 2019

Editorial Comment

First of all please note that the AGM for 2019 has been moved to the 9th January 2020. This is due to the General Election on the 12th December when the Chilton Village Hall (will be in use as a polling station). There will be no meeting in December.

HARS took part in CQWW again this year, but at our QTH in East Hagbourne. Operating on HF contests is a fairly novel thing for me, being normally ONLY active on VHF and above. However, I have to admit to quite enjoying the experience! A report on this club event can be found on page 13 of this QAV. In fact, both Ann and I enjoyed it so much that we took part in the Autumn series 80m SSB contest a few days later! This series has recently changed its name having been the 'CC' (Club Contest) for many years. That was enjoyable too!

Are you a member of the RSGB? To me, the beneficial value of being a member far exceeds the actual cost, the latter being just less than 2 cups of Costa coffee a week! Being a member of the RSGB is not just about receiving RadCom each month. There are a lot of other services that we as members can benefit from such as the QSL bureau, EMC and Planning Permission assistance etc, etc. There are even new member discount schemes. For me, however, it is the fact that the RSGB is ***the*** National body that represents me and my Amateur interests at International level. That alone is worth the cost.

So, if you are not a member, go and join the RSGB. I don't think you'll regret it. Have a look at: https://rsgb.org/

73, Mike, G8CUL/F4VRB.

Another over from our Chairman

Clocks have gone back and the onset of the dark evenings should start opening the LF bands enabling plenty of DX contacts during the mid to late evening. Also early mornings can produce superb conditions along the grey line IE the point where both ends are just entering or leaving darkness.

Last month's meeting included an HF demonstration station to show how easy it is to get on the air without a huge complicated aerial system. The system used was a 128' ish end fed piece of wire at about 25' above ground. A wire laid *on* the ground outside from the ATU to the far rear corner of the hall was used as a counterpoise. It was good to see several people getting involved.

At the meeting Ann, G8NVI & Mike ,G8CUL presented the awards to those who had participated in 'Le Tatty Piece de Papier' activity during the summer when they operated from their French home in Normandy. There was an increase in the number of participants this year as the event is gaining popularity and achieving its objective of getting members on the air with the incentive of the now famous packet of biscuits! Our thanks go to Ann & Mike for organising this event again and giving up the time to operate in the late evenings considering they are one hour ahead of us in France.

160/80m Friday evening HARS club net - have you not called in yet? There are now a regular number of club members participating and it would be good to hear a few more, even if just to give out a few reports. If you find that the Friday evening is not a good time due to other social activities then please let us know as I am sure an alternative night could be arranged. Thanks to Roger G0AOZ for acting as net controller each week.

73, Dave,G8DVK.

AGM

Note that this year's AGM will be held on 9th January 2020! There will be no meeting in December.

Charlie Sierra Signal Report

Another very pleasant Coffee Shop meeting was held at Milletts on Friday 18th of October. This month was a new venture for us, as we thought it would be a good idea to send an invite to the Oxford and Newbury clubs to see if they would like to join us. It was good to report that 3 members from the Oxford club took up our offer and we were delighted to welcome Ken, M1SLH (Club Chairman) and his wife along with Graham, G8EWT (Club Secretary). There were 13 of our club members present, Keith, M6GYQ, John, G6PEP, Richard, G0REL, Elizabeth, G0RJX, Ron, G0BNC and Val, Angus, G0UGO & Elizabeth, Malcolm, G8NRP, John, G6LNU, Marian, 2E0LNU, Mike, G8CUL and Ann, G8NVI. Unfortunately, Richard & Elizabeth's Grandson was unwell and unable to attend, still it gave them more time to join in with the group chat.

Our next meeting will be on Friday November 22nd, usual time and place. This will be our last meeting this year as the next would be days before Christmas and you will not be able to move in Milletts. That said, if you feel that you need your fix of coffee and want to get some last minute gifts then I am sure they would be delighted to take your money. As a point I would like to tender our apologies for the November meeting as at that time we will be half way home from Singapore.

73, John, G6LNU.

Radio Active

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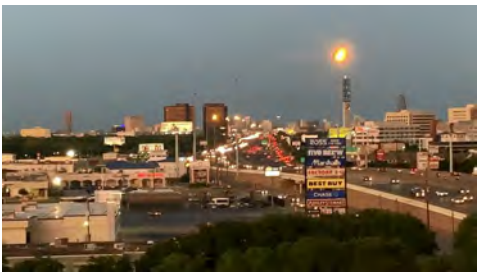
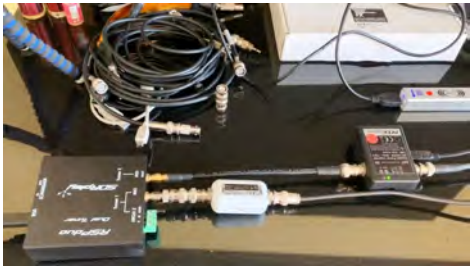
Clint, 2E0HTG - I'm sorry to have missed the club meeting in October - a business trip to Houston Texas put paid to that, although (as usual) during my ten days away, I managed to get some fairly serious Dxing done (RX only of course). Using an SDRPlay RSP DUO, Tecsun PL-880 HF portable and a Bonito MegaLoop FX magnetic loop antenna (draped over the handrail of my 9th floor hotel room balcony!) I managed to copy many ham signals - including the 'Gulf Coast Net' which was an interesting listen. I also copied and recorded several HF broadcast stations including The Voice of Korea (DPRK), a low-power station in Mexico City, a couple of low power Brazilian stations and Radio Verdad in Guatemala, amongst others. Upon returning home I was itching to get back on-air and to start with I got back onto the HARS Friday night net. I operated my station at home (Yaesu FT-991 + SE-X80 wideband vertical) which was essentially a test of the effectiveness of fitting about 18 ferrite cores to my neighbours' various bits of audio equipment - and my own ham gear of course. So far, no complaints, so I'm hoping the 'interference' issue is now resolved.



I only managed 4 HF QSOs during the month of October, primarily because of travel and then catching up in-between. I also remain active on FT8, but again not so much last month. Before I travelled, I did make it to the National Hamfest in Newark. My goodness that's a long old drive on a Friday morning lol, but we got there eventually. I bumped into two or three people that I know, including Dennis Walter, owner of Bonito who has been kind enough to give me equipment (mostly antennas) over the past few years free-of-charge, in return for testing and writing reviews. I have also drafted a three part article on mobile Dxing for Radio User magazine, the first of which will appear in the January or February edition.



My plan to return to Brazil with Andy Spencer G1ZMA has been thwarted by a more pressing need to be in India potentially, followed by a definite trip to Baltimore. Thus, our plans to set up a station in the Brazilian rainforest might have to wait a few more months! Planning and timing for these trips is usually in a constant state of flux, so all could change again. Fingers crossed we make it back to South America sooner rather than later. Having a full licence by then would also be very useful! In the meantime I look forward to seeing everyone at the club meeting next week.

Ron, G0BNC - Same old story - lots of work, but not a lot of it being radio. I did the 2m contest from my poor VHF home location due to bad weather conditions, and managed 24 contacts. On the 70cm contest I only managed 17 contacts from home with terrible conditions, which appeared to be general for most of the other entrants, with a few areas that did not appear to be affected. The 2 contests reminded me why I had been going out portable.

I ordered a Nano VNA vector analyser from Birmingham. It took 2 weeks to arrive, I could have crawled it quicker. I suspect it was sent from China. I have only had a little play with it, as it will be a steep learning curve for me as no instructions were supplied at all. Lots of research off the net, then the very thing I was trying to find arrived by email from Richard G0REL who has put together an excellent crib sheet which helps the non technical people like me.

Another nightmare job I had was to make up a lead to go with my voice keyer to my Kenwood TS711E, for the 2m contest. I stupidly used a 8 pin to RJ45 lead that I cut and lengthened it with 10 core cable, with every cable having different colours. The purpose and positions and voltages were different than the FT897D that I made the keyer for, and managed to get it wrong several times.

I have been having trouble with my G5RV since I changed the feeder earlier this year, so bit the bullet and went for twin coax feeder to replace the 450 ohm open wire feeder. When I took the G5RV down, one leg was only 3" short from the modified to ZS6BKW which I modified in 2010. I made the new open wire feeder with RG6 satellite coax with a velocity factor of 0.82 as I found on the net, because the maker didn't specify it. I used B&Q shelf fixers for the 1" spacers and drilled them out to be a nice tight fit. But I did get sore fingers pulling these onto the coax at 9" spacings for 40ft. The antenna appears to reduce the atmospheric noise slightly on 80m, and a definite improvement on 20m. It took a couple of days to remove the 450 ohm feeder and screw the new feeder to my house wall, with the screen strapped together top and bottom, and grounded at the bottom.

I went to Mike and Ann's house to show a presence (no operating) on the CQWW contest. Mike showed me his old Land Rover with the massive excellent restoration work he has done on it. Mike is looking for crinkle paint for the wipers motor to keep it original. I have details somewhere in my notes from several years ago. I spent 2-3 days looking for the notes and not found them yet.

When looking in my loft I found 4 panels of roofing felt torn. It was a nightmare job as the roof has a low pitch on it, and it meant laying flat out with my arms at full stretch to repair the panels. That means more radio and vector analyser time lost as I have now decided to fit high insulation panels in-between the rafters, as well as the original loft insulation. Lots of work cutting the 2400*1200mm panels outside and hoping they will fit properly when I crawl round my low height "A" frame roof to fit them.

Dave, G8DVK - With the onset of the winter months I hope to start chasing new countries on 80m. My last entry gave details of the magnetic loop I have been experimenting with. This is proving a very useful aid to help the

reception of week signals by its directivity thus enabling the reduction of QRN.

I needed a rotator to be dedicated for use with the experimental magnetic loops that I'm currently playing with. I found in the junk box my first acquired CDE rotator, the AR40, purchased in 1974, the control unit for which has long been discarded. The rotator having been stored without movement for 20 years and when previously in use turned two 16 element 2m yagis stacked, in-between those were two 21 element 70cm yagis, in-between those the 13cm horn fed yagi and finally topping the lot was the 23cm 55 element and on the same pole preamps for each array. This was a load that the poor old AR40 was never designed to rotate. The one saving grace was the inclusion of a top bearing thus reducing the horizontal load.

I considered it would probably be prudent to provide some maintenance to the unit and thus it was stripped down. I omitted to take pictures at that point, however, believe you me the grease had long solidified. The bearing

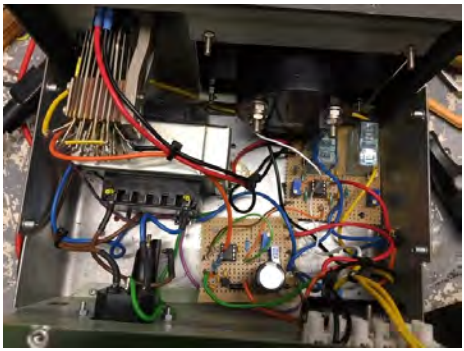
runs were cleaned and degreased as were the ball bearings. The unit has a 360 degree 1k Ohm potentiometer

connected to the rotating shaft, this was also cleaned with a lubricating switch cleaner. This potentiometer was

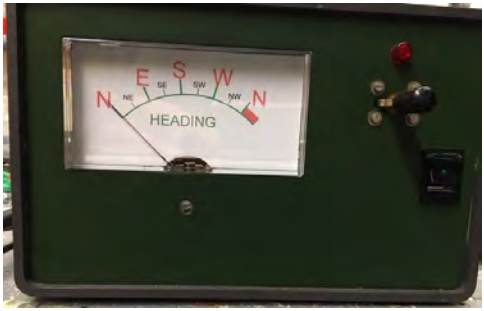
used in the original configuration to provide the azimuth heading back to the control unit and formed part of a bridge circuit. As the original controller had long since gone, a simple indication of azimuth was required. Suppling the 1k pot with a regulated 10 -volt supply would provide a voltage swing proportional to the heading. Basically, to retain linearity, an op amp is used having a virtual infinite input resistance to drive a 0-1mAmp meter. Other op amps have been used as comparators to provide end stop cut out points to prevent over rotation.

Pictures show the re furbished AR40 rotator, in sections. I use a lithium-

based grease for the bearings as it is more water tolerant.



Other pictures show the new controller – the meter scale is easily produced with software from Jim Tonne @ tonnesoftware called 'Meter' This is a very easy to use software package that once you provide the meter dimensions produces the scale required. Printed onto photo paper and, cut out it replaced the original scale.



For the new-comers to radio note that I have used 'veroboard' for the op amp circuit construction. http://www.bestsoldering.com/veroboard-advantages-and-disadvantages/

Malcolm, G8NRP - Unfortunately this month I was not able to take part in any of the UKAC contests. However, I did manage to attend the RSGB Convention at Milton Keynes. With such a wide range of lectures it is never easy to make choices for the topics that interest me most. There was a talk on Urban QRM which is mostly down to the VDSL modems that are installed in many households which can generate the most awful interference. I found the talks on the Es'hail-2 / QO-100 satellite. It is fascinating to think that a commercial satellite provider was prepared to accommodate an Amateur transponder in their payload. It was pleasing to see that HARS won a contesting award and that our G4DEZ award was presented to a single operator. I think the lecture on 2m Ionoscatter was the most fascinating and it was claimed that it was possible to work into Austria at virtually any time.

Ann, G8NVI/Mike, G8CUL - Although a lot of my time is being taken by the Land Rover restoration (it has moved under its own steam this month - still in the garage though!) we are still doing a number of radio-based activities.

The VHF contests come along thick and fast of course, but this month we have also sampled some HF contesting. The club took part in CQWW, this year from the G8NVI/G8CUL QTH (see page 14 in this QAV for more details). The following week Ann and I took part in the 3.5MHz Autumn series October SSB contest. At least in this we exchanged report (always 59) and a serial number. This lasted 1.5 hours and was pretty frantic. We managed 52 QSOs and got 56 points ending up 13th out of 18 - so not last! It was quite interesting and made me think how to improve the LF aerial system here.

I have also been testing some PAs for 1.3GHz and our 3 VHF bands, with

some success. See pages 8 & 9 in this QAV for more details.
I am also trying to improve the 9cms (3.4GHz) system. At present the whole system is in the shack with just a single coax to the dish. Even using LDF4-50 coax the loss at 3.4GHz is probably over 3db taking into account the rotator loop and connectors. This means that the 10W at the bottom produces less than 5W at the dish. Also this 3dB is added to the receiver noise figure, making quite a difference in receiver sensitivity.

The plan has always been to put both the preamp and the PA (and of course the coax relay) at the dish, thus not losing so much signal in the coax run up the tower. The transverter will stay in the shack and I will need two coaxes, (one for transmit and the other for receive) as well as control and power cables The PA has a lot of gain so can probably withstand more lossy coax on its input and the same is true (to a lesser extent) on receive as the preamp gain is quite high.

It is always nice to know that the PA is behaving itself while in use, so I have designed a telemetry system that will communicate information at the dish end down to the shack end so it can be displayed there. It works on the bench, but has yet to be installed on the tower! If only we didn't keep doing all these contests I'd have more time!

Tim, M0KEP - On writing this I have realised that I haven't made a QAV submission since June, so this is a bit of catch up! I was very pleased that in July I managed to get my DXCC certificate through. I have now worked 134 countries and I'm very pleased to do that during recent band conditions, even if most of them have been using weak signal digital modes! I'm sure many of you will regard that as cheating!


The American Radio Relay League, Inc.

DX CENTURY CLUB

This Certifies that

Tim Keep, M0KEP

Has this day submitted evidence to the American Radio Relay League showing two-way communication with other amateur stations in at least one hundred different countries. This certificate recognizes outstanding performance and attests to membership in the DX Century Club.

#64,934

July 14, 2019

Lots of changes are still taking place in the M0KEP shack, with a recent focus on audio quality and moving my sound system away from my computer. Since first getting on the air, I have regularly used USB microphones with computer audio processing, piping the audio into the radio USB audio interface or into the analogue inputs of my older radios. This does work quite well until the computer for some reason decides to get busy eating the CPU power and distorting the audio. I have therefore completed a move over to a separate mixer system, a Behringer XR16, with a new microphone (Shure SM7B) and wireless headset (Astro A50). I am very happy with the results and I am getting many compliments on my audio when rag chewing or contesting using the headset. The multi-channel mixer has allowed me to pre-process the microphone audio (adding a little compression and limiting) as well as take the audio output from 3 of my radios to feed into an external speaker. While not particularly complicated, if anyone else is thinking of coupling up similar systems to their radios, I plan to write up more information on each part of the system for inclusion in future QAV editions.

A New PA for 1.3GHz by Jacques, F1BHL

As many of you know, Jacques, F1BHL is pretty active on a number of the Tuesday night UKAC contests. He recently added 23cm (1.3GHz) to the 2m and 70cm events. We worked him for the first time on 23cm in September this year and then again in October. On neither of these occasions was Jacques a big signal as he was running the SG Labs Transverter 'barefoot' with only 2W output.

I know Jacques is planning on increasing the output power to 10W which will give a better signal going out while still remaining in the Low power section.

Just this morning, Jacques sent me a picture of his new 23cm PA which is planned to go up the mast at the aerial. 10W *at the aerial* is not to be sniffed at and it will make a big difference to his signal here in the UK.

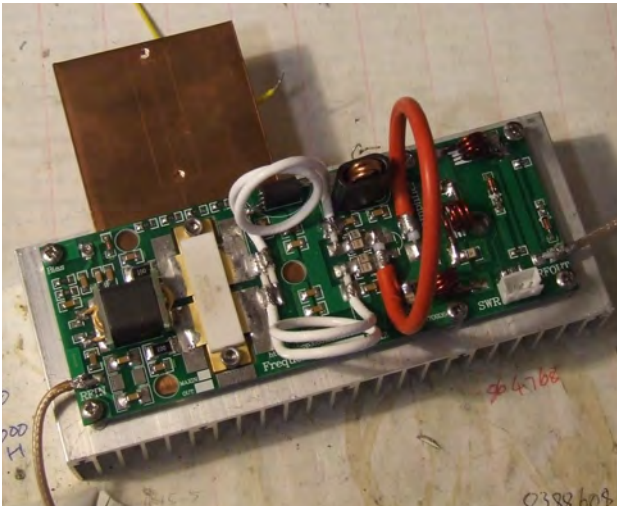
Note the attenuator on the input. These modern PAs do not require much drive power and the label at the input does say +10dBm. I am assuming this is the input power required for 10W output. This PA therefore has a gain of 1000 (30dB!)

Funnily enough, I have been playing with PAs in the last week, also on 23cm and then on VHF.

The 23cm PA was cut from a Docherty amplifier which I showed in QAV a few months ago. The original main chassis was large and about 20mm thick so cutting out the PA section was not a simple task but the angle grinder sorted it!

With +28V and 2W of drive the output is about 70W. With 5W of drive the output is about 120W but I suspect a bit non-linear. This with its 28V SMPSU is due to go to France to improve on the 10W we have there on 23cm.

The VHF amplifiers I have been looking at are the usual types that are available at low cost from China. However, I have substituted the PA device for an MRF9180. This is rated at 170W CW at 880MHz and 26V. The alternative device seems to just 'slot' into place on the board that comes with the kit and initial tests are very encouraging. At 144MHz, it easily achieved 150W output. As the SMPSU is only rated at 10A, any more output power than this made the PSU shut down. I have just received 2 new SMPSUs, each rated at 12V and 30A. The output voltages are adjustable so 2 of them in series should give 26-28V at 28 - 26A. The plan is to use divider and combiner networks on input and output to run a pair of these to hopefully achieve more than 300W.



I also tried this PA on 70MHz and 50MHz and again an output of 150W was easily achieved. All I have to do now is work out how to combine a pair hopefully in a frequency independent fashion! A common PA for 50 and 70MHz, followed by a suitably designed LPF, is ideal these days with many new rigs having a single aerial connector for both bands.

73, Mike, G8CUL

Contest News

Forthcoming VHF/UHF/SHF Contests

8th December - 144MHz AFS.
This runs from 1000-1600. Rules can be found at https://www.rsgbcc.org/cgi-bin/contest_rules.pl?year=2019&contest=afs144MHz . This is a team AFS contest so let's see if we can get at least 1, if not 2, teams together.

26th-29th December—50/70/144/432MHz Christmas Cumulative Contests
2 hours per day on up to 4 bands for 4 days! The perfect antidote to Christmas Pudding. More details in next month's QAV.

Forthcoming HF Contests

11th November—Autumn Series DATA
16th November—2nd 1.8MHz Contests
20th November—Autumn Series SSB
28th November—Autumn Series CW

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

Forthcoming AFS Super League Contests

8th December—144MHz AFS (see above)

Contest Results

70MHz AFS Contest

G8CUL	O	10th
G3MEH	SOF	5th
M0KEP	SOF	32nd

HARS are currently standing 7th in the General Clubs section of the AFS Superleague

144MHz Backpackers Championship 2019

G0BNC/P	25H	28th

Well done Ron!

VHF Championship 2019

1.3GHz Trophy

G8CUL	SOF	3rd
G3MEH	SOF	4th
G8NVI	SOF	6th
G0ODQ	SOF	10th
G8DVK	SOF	17th
G0MJW	SOF	25th
M0KEP	SOF	27th

2.3GHz Trophy

G8CUL	SOF	2nd
G8NVI	SOF	4th
G3MEH	SOF	10th

Many thanks to everyone who came on in these 2 contests. As a result HARS received 1000 points for each contest which helped us consolidate 3rd place in the 2019 VHF Championship. Analysis of the points indicates that if we could get a station or 2 on in the 10GHz Trophy Contest, and also increase our score in the 2m Low Power in August, we might be challenging for the top spot again!! Food for thought indeed!

HARS members receiving the VHF Championship Trophy for 2018 at the 2019 RSGB Convention, Thanks to Roger, G3MEH for the photos.

The trophy itself. It was first awarded in 2018 (for 2017) and again this year (for 2018), both times to HARS. Sadly, in 2019 HARS were third, but there is all to play for next year! What we really need is some 10GHz activity.

UKACs September-October (overall 5th)			
	Callsign	Section	Position
2.3GHz (Sep)	G8CUL	R	1
3.4GHz (Sep)	G8CUL	R	1
70MHz (Sept)	G3MEH	O	11
	M0KEP	O	21
	G8CUL	R	11
144MHz (Oct)	G3MEH	O	11
	F1BHL/P	R	2
	G8CUL	R	8
	G8DVK	R	20
	G0BNC	R	107
	G7DOF	R	129
	M0CIW	AL	43
	G6LNU	AL	51
432MHz (Oct)	G3MEH	O	9
	G8CUL	R	3
	G0ODQ	R	13
	G8DVK	R	17
	G7DOF	R	92
	G0BNC	AL	40
50MHz (Oct)	G3MEH	O	4
	G0ODQ	R	22
	G7DOF	R	81
1.3GHz (Oct)	G3MEH	O	7
	G8CUL	R	3
	G0ODQ	R	13
	G8DVK	R	19
	F1BHL/P	AL	10
	G7DOF	AL	57
2.3GHz (Oct)	G4BRK	O	3
	G8CUL	R	1
3.4GHz (Oct)	G4BRK	O	1
	G8CUL	R	2

HARS Sunday Lunch, Sunday 23rd February 2020

We are arranging Sunday Lunch at The Black Horse in Faringdon Road, Gozzards Ford, Abingdon, OX13 6JH for Sunday 23rd February. Further details and a menu will appear in QAV next month – choice of main meal will be required in advance. Sadly, their website is being updated at the moment and cannot be accessed!

Tatty Piece de Papier Award

For those who missed last month's meeting - here are the final results:

G8DVK	39 points
M0KEP	29 points
G0AOZ	24 points
G4CXJ	19 points
G0BNC	18 points
G3MEH	15 points
M0CIW	12 points
G4BRK	10 points
G0MJW	10 points
M7WBB	6 points
G0ODQ	5 points
F1BHL	5 points
G8NRP	4 points
2E0EYR	2 points
G7IVF	2 points
2E0HGT	2 points
G6SRX	2 points

Congratulations to Dave G8DVK who managed to contact us on each occasion we were on - a well deserved bottle of red! Thanks to all those who joined in this bit of summer fun. We hope you enjoyed your biscuits!

CQ Worldwide 26-27 October 2019

The CQ World Wide DX Contest (SSB Section) took place over 48 hours on the 26th and 27th October 6 bands: 1.8, 3.5, 7, 14, 21 and 28MHz.

General details of CQ Worldwide can be found here https://www.cqww.com/index.htm

It was very interesting to take part in the CQWW contest at the end of October. The club's HEXBeam was erected on the Saturday lunchtime and used for 10, 15 and 20m. We also used a 120' long wire for 40 and 80m already in-place at the G8NVI/G8CUL QTH. We operated until late on Saturday with a goodly selection of club members along to help/watch/chat and eat the Chinese take-away. We continued on Sunday until lunchtime when we took down the HEXBeam. In the afternoon, Ann and I continued on 40 and 80m but we also added 160m to the list. This meant we had a whole new band to make QSOs on and thus increase our score multipliers. In the end, Ann and I carried on operating until the end of the contest which was at midnight. The highlight for me was working Canada on 160m. First time ever from this QTH for us. Over the weekend we had over 600 QSOs with. It was all an interesting experience and I'm already thinking of how to improve the LF band aerials for next year!

The meal and wine were good!

Top left - the Hex Beam assembled. Now to pump the mast up!

Does this classify as Assisted Operating?

HARS LF Band Skeds

Mike and Ann's recent "Le Tatty Piece de Papier Award" incorporated the club's normal Friday night net on 160m and 80m during August, and it was pleasing to see a good number of club members taking part.

During our relatively short time on the air on Friday evenings, it is interesting to note that we often see propagation changes, including differing amounts of QSB on some signals at our relevant QTHs. We will doubtless see further changes as we head towards Autumn, with the evenings becoming dark by the time we commence our sked.

Many thanks to all the members who participate in this club event, and maybe in time we will attract even more people to have a go on the LF bands. If any club members need help getting going on 80m or 160m with aerials or equipment, please ask, and we will do our best to assist you.

We try and send out email reminders for the net during late afternoon/early evening on Fridays. If you're not already on the list, but would like to receive these weekly reminders, please contact me (rogerpowell200@outlook.com).

Roger, G0AOZ.

Other News

The Chippenham Amateur Radio Club will be holding an Open day and 'Bring and Buy' sale at the club's headquarters at the Kington Langley Village Hall (SN15 5NJ) on Saturday 30th November between 2pm and 6pm.

The club is opening their doors to anybody who would like to see how the club operates. On the day there will be demonstrations on all aspects of amateur radio, you'll be able to see how to communicate on HF across the world as well as exploring how new cheaper digital equipment can also give amazing results. The club will also be hosting a table top 'Bring and Buy' sale where you can sell any of your pre-owned radio equipment. This is purely on a 'first come first served' basis as places will be limited.

To keep you refreshed drinks will also be available. Entry to the open day and use of the Bring and Buy facility is free of charge. However, the club will be happy to accept donations on behalf of the Wiltshire Air Ambulance.

Everybody is welcome. For more information contact the club via the website at g3vre.org.

Rally News – Update

Harwell Radio Rally – Sunday 9th February 2020

Didcot Leisure Centre, Mereland Road, Didcot OX11 8AY

Saturday 8th February from 1600-0800 (setting up)

Sunday 9th February from 0800-1700

We now have over 60 tables booked! Please make sure you have the date in your diary!

Information and offers of help: rally@g3pia.net

More details next month.

CLASSIFIED ADS

Remember that you can advertise suitable radio equipment here for ***free***!

Wanted

Does anyone have any amateur band crystals HC25/U type that I can buy?

I need some to resurrect an old SSB military transceiver. 80,40,20 meter band preferred.

Please contact Dave Seymour, 2E0EYR Phone 01993 898164 or email seymourdavidqrp@gmail.com

DIARY

Thursday 14th November
Alan Watson - The Engima Machine

Friday 22nd November
CS at Millets

Thursday 12th December
NO MEETING IN DECEMBER

Thursday 9th January
AGM and Rally prep

Sunday 9th February
Harwell Radio and Electronics Rally

Thursday 13th February
Construction Contest

Sunday 23rd February
Sunday Lunch @ the Blackhorse

OFFICERS

Chairman: Dave Aram, G8DVK
Vice-Chairman: John Durban, G6LNU
Secretary: Ann Stevens, G8NVI
Treasurer: David Stevens, M6YHS

ORDINARY MEMBERS

David Seymour, 2E0EYR
Alex Comerford, 2E0OXF
Roger Powell, G0AOZ
Angus Wilson, G0UGO
John Morris, G6PEP
Ann Aram, G6SRX
John Booth, G6ZHB

CONTACT DETAILS

www.g3pia.net
hars@g3pia.net

The deadline for the December QAV is 4th December 2019. Articles submitted after this date cannot be guaranteed to be included.

Contributions from all members are greatly welcomed. They may be submitted to **qav@g3pia.net**.