

Editorial Comment

I'm trying to finish this edition of QAV the morning after the VHF NFD weekend, where we ran 3 stations on 5 bands over the 24 hour contest. These bands varied from 50MHz (6m) up to 1.3GHz (23cm). The weather was again fine and thankfully cooler than last year, although we did have a little rain overnight, Saturday to Sunday. There is a report elsewhere in this QAV about VHF NFD.

Although it all went well, and for a change without any equipment failures, we didn't really have enough operators to go around for all the 3 stations. Back when I was first licensed (in 1969!), VHF NFD was in September, and since most new Amateurs got their 'ticket' in August, VHF NFD was the first real test for them. Things were very different then with virtually all QSOs using AM or CW as SSB was very rare. Also the (valve) transmitters were crystal-controlled, so on a fixed frequency with the receivers being a simple (down) converter into a (usually) ex-military valve receiver. A CQ call was followed by the receiver being tuned up or down the band to find someone calling you. None of this single frequency stuff which we are now all used to. The whole QSO therefore took longer as you had to search for the calling station before you could start.

There was a band plan, with stations in the North encouraged to transmit in the higher part of the band and stations in the South in the lower part. Hence, if you were beaming North you'd call CQ and announce "tuning high end down", or "low end up" if beaming to the South. Or if you had 2 receivers, "middle out" or "both ends in"! How things have changed!



73, Mike, G8CUL/F4VRB.

Another over from our Chairman

It's been rather hectic over the past few weeks, the final part of the two-weekend intermediate course was held over the weekend of the 29th & 30th June with the exam the Monday following. I am very pleased to be able to congratulate all six candidates on passing the exam. The experience they gained over the four days has I believe kindled a keen interest to proceed further and meet the challenge of the advanced course. This is something now on the agenda to start as soon as possible whilst the enthusiasm still prevails. On behalf of the six candidates and myself thanks go to Richard, GOREL, John, G6PEP, Alex, 2EOOXF & Jim, MOIDC for giving up their weekends to provide the training. Also to Ann, G8NVI & Mike, G8CUL for running the exam.

The following weekend the club was involved in VHF NFD from Hagbourne hill to the south west of Didcot. This proved to be a

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No 458 July 2019 successful weekend with activity on five bands from 6m to 23cm. An event that seems to have been enjoyed by all involved. A short break in operation was made for the Saturday evening BBQ which although not as warm as last year went off well.

Next Sunday, the 24th July is the annual DF hunt commencing with transmissions from the fox at 10.00 with the last transmissions 2 hours later. We are returning to the original Sunday DF hunt in the hope that it will allow more members to enjoy the event whether DF'ing or just coming for the midday meeting and food to hear the usual tales of why they missed the fox etc whilst enjoying good company, food and refreshments.

I trust you all have a present and enjoyable summer and look forward to the next meeting in September.

73, Dave G8DVK

Intermediate Exam Success

Congratulations to our 6 Intermediate candidates who all passed the exam on 1st July. 2 of them had only just passed their Foundation exam so were doing a bit of fast tracking!

Pictured after the exam - left to right Andy, Harry, Jose, Logan, Clint and



Charlie Sierra Signal Report

Unfortunately, Marian and I did not make the start of the Coffee Shop this month due to an appointment at the JR, we arrived just as everyone was leaving, so I'm not sure if this was a sign that we had arrived or not. Anyway Bob, G0ADH did the honours and took charge of the register for me, thank you for doing that Bob. There was only 8 members this month maybe due to the holidays.

The next CS will be at Milletts on July 19th at the usual time of 10.45hrs.

73, John, G6LNU.

Radio Active

David, 2E0EYR - For many months I have been trying to join in on the Friday night skeds on 80m but, with one exception, I have not made contact. I managed to tail end one session and talk to Mike, G8CUL and, another time I think I was heard to some extent as my effort was commented on as continental QRM!

My shack / radio / hobby room is on the first floor so I knew I was always going to have some trouble trailing wires out of windows and especially with a radio earth. I have a thick cable earth out to a rod in the garden but it is obviously not a satisfactory arrangement.

Anyway, I was using a vintage style W3EDP antenna, something that George Dobbs had mentioned in one of his QRP books. This is a variant of the end-fed system being an 84ft wire tuned against a counterpoise which can be laid on the floor of the operating station and not requiring a ground system.

Well, the only way I could get this system to work was to use a tranzmatch manual tuner before my transceiver internal tuner would then kick in and join in the fun.

Something just had to be done, so out came the cutters and down came the W3EDP. I tried a dipole with mixed results and then I finally reached into my wallet and bought something! I bought an 80-6m end fed antenna from eBay after reading its reviews.

Not expensive, about £46, but well made and it works. The antenna is the same 84ft length and comes with a 9:1 UNUN and a 17ft counterpoise.

So what is the difference I wonder.

It can only be that the instructions that came with it state that it should be erected with a min of 1 counterpoise but preferably 2-4 of different lengths but they must all be ELEVATED and at least 1 foot off the ground!

So I fitted this antenna and put 3 different length counterpoises to insulated posts 3ft off the ground. What a difference that makes. I must admit I had never heard of ELEVATED counterpoises before.

Maybe my old W3EDP would be just as good if I had had the same elevated system.

Anyway, I live and learn.

Ron, GOBNC - Mixed fortunes this month. I changed all my portable coax, antenna, preamp connectors to "N" types to save fitting adaptors. On the 70cm contest I made 36 contacts in 11 squares. nearly crashed the lightweight antenna on the car when removing it, due to the extra torque with the rotator. This reminded me of my father in-law years ago, who did little jobs on his car when I was there for guidance. He went out with a 6" long 2BA spanner (roughly 1/4" diameter) He came back in saying oh oh oh, I broke the bolt, I didn't tighten it much. I had to advise him that he should have held the spanner near the bolt end to reduce the torque. On the 75th D-day celebrations I made a few contacts with special event stations, including Ann G8NVI who was operating the "D" day station from their French home, and some world cup cricket special event stations, including Denmark where our son lives

combined with the Practical Wireless one. Nightmare, I forgot the laptop, and Mic/Headset so I was not able to use the foot switch and CQ caller I made. I also started 2 paper logs not knowing I could use one. It took me a day to combine the score sheets and enter them, and my poor throat died after the backpackers part of the contests.

I had another nightmare on the 70cm contest. I go portable about 10 miles from my home, with 3 miles to go I found the road closed. I stupidly followed the signed diversion which turned out to be 21miles round country lanes to get 1 mile down the road. I then broke a director element clamp, and had to fabricate another, then shorted my inverter that I use for the rotator. I made 32 contacts after starting 50 mins late.

problem, I purchased Another Heathkit antenna noise bridge from an seller. described eBay as condition and working order. It was in good condition, but didn't work. managed to find the fault and replaced the IC. The seller said it worked OK with his receiver (you could get a tiny null in the noise). I had to advise him it doesn't make a lot of difference on a receiver. but is massive transmitter. My twin needle meter barely got off horizontal with the null available. He did pay for the part and postage.

I am late for every thing, Val and I went to the Millets Charlie Sierra meeting, nobody there in the restaurant or garden cafe, so I tried to phone John G6LNU, but all my phone contacts had been deleted, back to the car and my 2nd phone had Bob G0ADH number, a text to Bob who said they were in the

I did the backpacker contest that was normal place. Would you believe it, we had been the first to arrive, I will have to make sure that doesn't happen again. Val and our son are always early, but our daughter and myself are always late. Val sometimes tells me the arrival time that is 1 hour earlier so we arrive on time.

> Angus, G0UGO - I have spent most of the month getting used to the TS-890S which is not easy but I still managed 600 QSOs. I still have a lot of learning to do to optimise the rig with the various logging software that I use. One interesting thing is the ability to control the rig independently with two sets of software running. This is possible as the rig can be controlled both by the Microkeyer and the rig itself using different COM ports. remains work in progress. The other area I've been exploring is control of the rig for PSK and RTTY as it has specific functions for these modes. have really struggled with this and it could be due to the software I use not having a configuration for the TS-890S vet. However all is not lost as I can use USB-D mode to work PSK and RTTY in USB/AFSK.

> The countries list continues to grow and I have now applied for DXCC for 40m, 20m, 15m and 10m. (North and South) gave me the last two countries for 10m. On FT8 I now have 103 countries worked. Now I will have to wait until the 80m band picks up and make a push for DXCC and the 5-Band DXCC award.

> Other things were attending Microwave Roundtable which was very interesting especially the talk on the QO-100 satellite and then there was Newbury Rally.

Neil, G4BRK - Not much time to play radio in the last month as we were away in France with no rigs.

A CW touch paddle kit arrived from hamshop.cz - I could have made my own but I already have too many other projects. I tried touch paddles many years ago with poor results but this one uses a pair of tiny touch sensor chips to do the signal processing and seems to work very well. I now need to gather a keyer chip and other bits to make a complete new keyer.

The remaining parts to make a G8CUL power meter arrived whilst I was away so this project is ready to start.

A bit of tropo last week allowed me make quite a few DX contacts on 4m, 2m, 70cm and 23cm. As propagation moved I worked stations in SM, OZ, DL, PA and EA on 26-29 June. Mostly on FT8 but also some on CW and SSB.

VHF NFD will keep me busy for the next week or so. Hope to see plenty of members on site at the weekend.

Bryan, G4CXJ - From last months epic aerial improvement 'rumble in the jungle' in an attempt to improve signals on top band and 80m, I can now report made that the 'improvements' apparent difference. ummm... no Nothing heard on the Friday night skeds listening to top band, a bit of CW on occasions but that's it. On 80m, over nights I have listened. Dave. G8DVK is usually the best signal, Ron usually next. although below intelligibility and Howard. sadlv inaudible. Perhaps not surprising since I rely on ground wave and maybe the distance is just a little too far. For me unhappily, those two frequencies do not appear ideal.

Competitions and operating have been on my mind and how to set up a station to make the most of things. Traditionally, perhaps like most, I use a fist mic and headphones. This means that one hand is always busy with the PTT while the other is doing writing or entering info via a keyboard. This is not easy (at my age) and I fancied that headphones with a boom microphone and a foot switch would be much better

The Heil Pro-set 6 looked just right. They are well respected with a decent specification, the only drawback is the indecent price, £130 or so. On top of that, to make a station truly hands free, foot switch is also needed. Fortunately the latter is cheaply available on eBay for less than £4.00. problem solved, but the headset led to head scratching.

Surely I could make something from readily available products on the market? On reading and digesting information, a set of Sennheiser 'PC3 Chat' at £15 from CPC ought to do the job. These headsets are really intended for computer communications but with a swift change of plugs they ought to be ready to go? Er.... Sadly, no.

My real preference in microphones for communications is a dynamic mic, like



the ones used telephones in the old days, I still use since it's many times lower than the one of those modules now. The PC3 average audio signal. Scoping the information is a bit dire when it talks waveform showed that the condenser about the mic, indeed, I should say, mic had a much wider output (dynamic) non existent, but would seem to range than the dynamic mic. In other indicate that the mic module was words, the dynamic mic offered a dynamic. I noticed from the picture that degree of audio compression - by the boom mic was small and that comparison. Which is probably why should have rung bells. modules are usually large.

headphone part (a bit like the old style compression! walkman phones) worked very well although a bit hard on the ears An initial audio test using FM is useful compared to my comfortable fully enclosed Beyers. Surprisingly I quickly got used to them, they are not bad at all. The microphone however did not work. A look on the internet revealed a few moaners saving the same thing. I dismantled the boom and microphone section to find that, as suspected, the module was an electret condenser mic with absolutely nothing else between it and the plug. This was not mentioned anvwhere on Sennheiser's printed material.

mic socket and a 22k resistor to the 8 FMAC came on just as I finished input pin and it worked. I was not so happy with the sound which appeared to have too much bass, the blocking capacitor ended up as a 4.7n which removed a lot of the lower frequencies. (Heil make sure that you have the right adaptor for your rig because they too use condenser mics which require power, and they print the frequency falloff points too).

On test (a tricky thing listening to yourself), the PC3 seemed to have more base level noise but, at the end of

with Pye radio the day, this will not matter one jot Dynamic they were favoured a few years back. These days, with audio compressors built into most rigs, this does not count I duly purchased a set. On test the for much, just apply a bit more



since SSB can hide a poor response Easy to solve though, most rigs these and tend to upset local contest days have 8 volts or so available on the operators if the quality is naff. The 2m volt pin with a blocking cap to the audio soldering. F1BHL/P, Jacques, always a huge signal, kindly gave me a good audio report which is an excellent start. But if you hear me on the air, feel free to give me an audio quality report, good or bad!

> Ann, G8NVI and Mike, G8CUL -Most of the last month has been taken up with trying to get everything ready for VHF NFD - coming up over the weekend of the 6th-7th July. being involved with the 70cm and 23cm station this had involved borrowing some items from Mike, G0MJW (23cm

transverter, preamp and PA) and Neil, simple as the Versatower as the G4BRK (70cm preamp). All is now second tower is Rohn 25 and needs a assembled and appears to be working. fair amount of metal work to fit it to the Interestingly, the Martlesham beacon concrete base and also to the barn. I on 23cm (1296.830 MHz) is about the have managed to fight successfully same signal strength on the NFD with a free CAD package to produce station with the preamp in the shack as some drawings which are currently off the home station with the preamp at with the steel fabricator. the aerial. Hmm. Do these mast-head hoping that it will all come back in time preamps really make that much to be taken on the ferry! This second difference I wonder. Or maybe there's tower is intended eventually to support something wrong with the home station 6m 6 element and 10/15/20m 3 on 23cms!

One of this summer's projects in air. Normandy is to put up the 2nd tower, (having completed the 60' Versatower last summer). This is nothing like as

element beams. There is a lot of work to do before either of these will be on-

Some recent activities from David, 2E0EYR.

Apart from my antenna debacles, I have felt the need to get my fingers burnt and make a few things.

It seems that my hobby room / shack is just not right unless there is heaps of components, wire, plans and some sort of chaotic mess of a construction attempt in progress.

Well, for some time I have wanted to make another CW transceiver so I went ahead and made a kit from kanga products. I built a Foxx-3 miniature CW transceiver which fitted into an ALTOIDS mint tin which is what all the QRP guys



fit these things into. The mints are fab too! The transceiver has a 1W output and is crystal controlled with minimal VXO tuning so it is a very basic unit.



I decided to alter it by making and fitting a cheap "pixie switch" which is a small PCB allowing 4 different crystal frequencies to be selected. I fitted 3 crystals and allowed one set of contacts free for a VFO input. The basic transceiver is powered from a 9-12V battery, has frequency offset, volume and VXO controls. headphone and key jacks. With my mods it is even more useable.

I tend to use a £3 battery powered plug in speaker instead of the headphones and as you can see it all comes together to make a small CW station. With a small speaker wire dipole it works well.



Oh yes, I did burn my fingers. That's always the case with a soldering iron and me!

VHF NFD 2019

The annual VHF NFD took place over the weekend of 6th-7th July and again HARS took part from Hagbourne Hill Farm, by kind permission of Nicky Lay. We set up 3 separate stations, one for 6m (Saturday Only) and 4m (Sunday Only), the second for 2m and the third for 70 and 23cm. The 6m/4m station aerial and tent were erected on Friday evening with the other 2 stations erected on the Saturday morning. For once, just about all was set up and ready with at least 2 hours to go before the contest started! Also for once, I don't think we had any equipment issues, even the club generator functioned perfectly for the 24 hours.

The preliminary results for each band are shown in the following table - On the following pages you will find a number of photos of the weekend event

Band	QSOs	Best Dx Station	Locator	Best Dx distance
50MHz (6m)	70	GM4ZUK/P	IO86	604km
70 MHz (4m)	71	GM4ZUK/P	IO86	604km
144MHz (2m)	197	DL6IAK	JN48	766km
432MHz (70cm)	76	HB9AJ	JN37	794km
1.3GHz (23cm)	66	DJ5AR	JN49	694km



6m/4m station erected on the Friday evening





Minor adjustments to the 2m aerial required by John, G6LNU!

70/23cm aerials - going up!



2m station 'on-air'



70/23cm operational



All 3 stations!



Left to right, Roger, G3MEH and John, G0ODQ on the 6m/4m station



Left to right, Tim, M0KEP and Dave, G8DVK on 2m

Left to right, Neil, G4BRK and Mike, G8CUL on 70/23cm



All pictures taken by Ann, G8NVI



Some deep thought. Was the answer 42?

A pleasant and convivial evening

Saturday Evening BBQ





A huge 'thank you' to all those who took part or came and supported our efforts over the weekend. Around 25 club members and their families (and dogs) came along to help or just to see what it was all about. Special thanks to John, G6LNU for all the transportation of station equipment and the generator and for towing the mast; Dave, G8DVK for providing the entire 2m station as well as the caravan, and to Dave and Ann, G6SRX for providing the very excellent barbecue, with desserts made by Anne, M0NRP; Roger G3MEH and John G0ODQ for running 6m and 4m between them once again; Mike, G0MJW for lending his Land Rover to us for the 23cm and 70cm station and Neil, G4BRK, Mike, G8CUL and Mike, G0MJW for providing equipment and antennas for that station.

I think we all had a great weekend and I welcome any 'debrief' comments that will help for planning for next year!

Ann. G8NVI

Contest News

Forthcoming VHF/UHF/SHF Contests

21st July—70MHz Trophy Contest (VHF Championship)

3rd August—4th 144MHz Backpackers Contest

3rd August—144MHz Low Power Contest (VHF Championship)

4th August—432MHz Low Power Contest (VHF Championship)

11th August—70MHz Cumulative

7th-8th September—144MHz Trophy (VHF Championship)

Forthcoming HF Contests

21st July—Low Power Contest

25th July—80m CC DATA 27th-28th July—IOTA

7th-8th September—SSB Field Day

9th September—Autumn Series SSB

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

Forthcoming VHF Championship Contests

21st July—70MHz Trophy Contest

3rd August—144MHz Low Power Contest

4th August—432MHz Low Power Contest

7th-8th September—144MHz Trophy

I will try and send out a reminder about each of these contests over the summer to our usual contesters!

Contest Results

144MHz May Contest

A good turnout by HARS leaves us still in 2nd place in the VHF Championship. Congratulations to all who took part.

Single Operator Fixed—G3MEH 2nd; M3P (G3NVI) 3rd; G8CUL 5th; G4HGI 6th; G6LNU 17th

6-hour Single Operator Fixed—G0ODQ 5th; G4BRK 6th; M0KEP 21st; G8DVK 31st; G7DOF 45th

6-hour Open—F1BHL/P 7th

2nd 144MHz Backpackers Contest

I notice G0BNC/P took part in this contest and was 19th in the Hill Toppers Section. Well done Ron!

70MHz Cumulatives

I note that G4HGI, G4BRK and G8NVI have all been taking part in these contests and overall stand 12th, 13th and 14th respectively in the AO section. G4HGI is also 31st in the AL Section!

Comments received from Jacques F1BHL/P about the last 2m contest About Tuesday night it was ... crazy. I have never encountered such continuous pileups. The results are 133 QSO, 16 UK locators and more than

47500 points. My highest score so far.
I think that the location in La Hague [IN99]

... I think that the location in La Hague [IN99CQ] is a dream one for UK contests. But it is 1h45 far from my home. So on last Tuesday I decided to sleep into the van instead to drive back by night. It is much better.

I'm not sure I would drive nearly 90 miles to a contest site, but Jacques is an enthusiastic contester and is to be applauded for his efforts! Bravo Jacques!

Shack sharing

You may have noticed that Tim, M0KEP has been 'sharing' his shack recently with Malcolm, G8NRP in a quest to boost points for the club. Up to 3 callsigns are allowed to share a single set of equipment, as long as individuals do not make a contact with the same station at less than 15 minute intervals. Mike and I have also tried this on the 144MHz Championship —choosing to split the time we had available in 2 to maximise points for HARS. Is anyone else shack sharing?

Welcome back!

I'm sure you were delighted, as we were, to hear and work Kate, G7DOF on 23cm, 2m and 70cm contests recently with Ron, G7DOE, at her side. We hope to work you in the coming months Kate and we send our good wishes to you both.

Tatty Piece of Paper Award 2019

Please see elsewhere in this edition of QAV for details of this annual award—taking place in August!

UK	ACs May-June (o	verall 5 th)	
	Callsign	Section	Position
1.3GHz (May)	G4BRK	AO	6 th
, , ,	G3MEH	AO	9 th
	G8CUL	AR	3 rd
	G0ODQ	AR	12 th
	G8DVK	AR	19 th
	M0KEP	AR	24 th
	G8NRP	AR	26 th
	G7DOF	AL	50 th
2.3GHz (May)			
3.4GHz (May)			
70MHz (May)	G4BRK	AO	10 th
	M0KEP	AO	21 st
	G8CUL	AR	13 th
	G3MEH	AR	27 th
144MHz (June)	G3MEH	AO	8 th
, ,	F1BHL/P	AR	3 rd
	G0ODQ	AR	30 th
	G8DVK	AR	38 th
	F4VRB	AR	45 th
	M0KEP	AR	76 th
	G0BNC/P	AR	105 th
	G7DOF	AR	152 nd
	MOCIW	AL	36 th
432MHz (June)	G3MEH	AO	6 th
,	F1BHL/P	AR	1 st
	G00DQ	AR	16 th
	G8DVK	AR	21 st
	F4VRB	AR	31 st
	M0KEP	AR	50 th
	G7DOF	AR	98 th
	G0BNC/P	AL	27 th
50MHz (June)	G00DQ	AR	13 th
	G3MEH	AR	60 th
F	M	A	С
144MHz (June)	F1BHL/P	50W	2 nd
\-'	M0KEP	50W	18 th
432MHz FMAC (June)	F1BHL/P	50W	1 st
- (-)	M0KEP	50W	4 th
	G8DVK	50W	14 th

Le Tatty Piece de Papier Award 2019

Le Tatty Piece de Papier Award has now been running for 14 years and is open to members of Harwell ARS and anyone else who knows us! It is a bit of fun designed to generate activity on the amateur bands. We look forward to welcoming regulars but if you are new to it, please come and join in! Again, this year we will be operating from 'Le Vaucornet' our French home near Moncy in Normandy (IN98) and we will be QRV over 2 weeks on both the HF and VHF bands using F4VRB. If propa-



gation is poor on 80m or 40m on any evening and we cannot be heard, please QSY to the other band after 10 minutes and we will try there!

Points

Contacts on 2m, 70cm and 6m—5 points each Contacts on 160m—5 points each Contacts on 80m and 40m—2 points each

Please let us know by email if you are calling and we don't reply. We can try and listen a little harder. annstevens1256@gmail.com

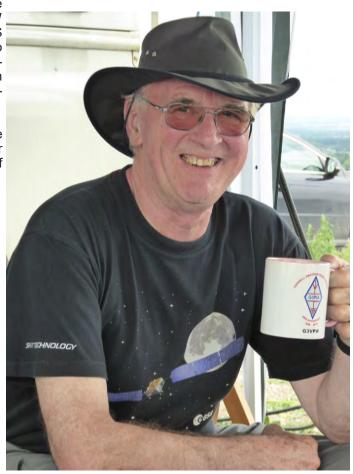
73 Mike (G8CUL/F4VRB) and Ann (G8NVI/F4VSO)

Date	Band	Time (BST)
Monday 5 th August	80m (3.700-3.710MHz)	2100
Tuesday 6 th August	2m (144MHz) UKAC	2000-2230
Wednesday 7 th August	40m (7.150-7.160MHz)	2100
Thursday 8 th August	6m (50MHz) UKAC	2000-2230
Friday 9 th August	160m (1.845MHz+/-)	2030
Friday 9 th August	80m (3.710 MHz ±)	2045
Monday 12 th August	40m (7.150-7.160MHz)	2100
Tuesday 13 th August	70cm (432MHz) UKAC	2000-2230
Wednesday 14 th August	80m (3.700-3.710MHz)	2100
Thursday 15 th August	40m (7.150-7.160MHz)	2100
Friday 16 th August	160m (1.845MHz+/-)	2030
Friday 16 th August	80m (3.710 MHz ±)	2100

Another 'Mug' shot!

I was pleased to see that John, G3VPW brought his HARS mug to VHF NFD so we took the opportunity to photograph him and it for posterity!

Let's have some more 'Mug' photos for future editions of QAV!



DF Hunt

This year's July DF Hunt will be organised by Paul (2E0PGY) and Steve, M0SMR and will be held on **SUNDAY 14**th **July**

Time: 1000-Midday Frequency: TBD

If you haven't got yourselves an envelope or would like to let Paul know that you will just being going to the pub lunch—please email Paul on phogwart@gmail.com or text him on 07920842790

CLASSIFIED ADS

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

FREE TO GOOD HOME 10ft x 10ft approx. (at base) Gazebo. Old multi-pole type but still in reasonable condition.

Complete with two as new side panels (see photo - on floor under gazebo). Ideal for keeping the direct sun off the radio when working - /P





Poles marked for ease of erection. Will deliver if required (within reason).

Email – Bob, G0ADH at r.razey@btinternet .com

DIARY

JULY No formal meeting

Sunday 14th July 2m DF hunt

August No formal meeting

Thursday 12th September Ciaran Morgan, M0XTD, ARISS and beyond

Thursday 10th October

Thursday 14th November Alan Watson - The Engima Machine

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

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 September QAV is 4th September 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.