



Medi / September 2020

Rhif / Issue 125

Cylchgrawn Clwb Radio Amatur Y Ddraig

The Journal Of Dragon Amateur Radio Club

Club Programme

October

Monday 5th 'Getting Started on 5.6GHz Using Drone Equipment ' Online via Zoom 7 for 7:30pm
Guest speakers Matt Porter G8XYJ and Dave Porter G4OYX.

Monday 12th Club NETs Online 7pm via Zoom, 8pm 2M on 145.550 and 9pm on 70cm via GB3AN.

Monday 19th Annual Construction Competition Online via Zoom 7 for 7:30pm.

Monday 26th Club NETs Online 7pm via Zoom, 8pm 2M on 145.550 and 9pm on 70cm via GB3AN.

November

Monday 2nd Online Club Night - Topic to be confirmed Online via Zoom 7 for 7:30pm.

Monday 9th Club NETs Online 7pm via Zoom, 8pm 2M on 145.550 and 9pm on 70cm via GB3AN.

Monday 16th **Annual General Meeting** via Zoom 7 for 7:30pm.

Monday 23rd Club NETs Online 7pm via Zoom, 8pm 2M on 145.550 and 9pm on 70cm via GB3AN.

Monday 30th Club NETs Online 7pm via Zoom, 8pm 2M on 145.550 and 9pm on 70cm via GB3AN

Thank you to the following who have contributed to this issue of Llais Y Ddraig.

Danny Shurmer GW7BZR,
John GW3VVC,
Cath Thorley MW7CVT.

**STAY HOME
AND
TURN ON
YOUR RADIO**

#coronavirus

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From the Chairman ...

A Few Words From The GRUMPY OLD Chairman... AKA Danny Shurmer GW7BZR



Welcome to the latest edition of Llais y Ddraig. The Coronavirus is still with us as we are all aware. We cannot meet in our usual club house so we have to do some events so people can meet up and also conform with regulations. These have been a success and we may have a few more of them in the pipeline. The club also runs nets and these have been on every Monday on 2m, 70cm and video. We shall continue these of course for the foreseeable future, but on some club nights we plan to try hosting some virtual online club nights with speakers, keep an eye on the club programme!

Intermediate courses are taking place and progressing well and hopefully everyone will pass. May I also remind every body that the dreaded subs are due again so get in touch with Cath the Treasurer or any committee member and it can be sorted out. May I wish you all the very best for the coming months with the hope that things improve soon.

73 Danny GW7BZR

From the Editor ...

Welcome to the Medi / September 2020 issue of the club journal Llais Y Ddraig. Whilst we continue to battle with the Covid-19 pandemic, it is pleasing to see that Dragon ARC continues to thrive. When restrictions relaxed in the summer we have managed to hold a few social events and special event stations; all outdoors and socially distanced, with cleanliness our top priority. Our club NETs have continued to attract up to 18 members, helping to keep our club community spirit alive; thank you to all who have taken part. As we head into winter and the likelihood of tighter restrictions, we are going to try and hold some club nights online via Zoom, with the first being held on the 5th October with guest speakers. This is a new venture for us, so please do your very best to attend. Invites to each Zoom club night will be emailed to members and be on Facebook a couple of days before the event.



This issue of Llais Y Ddraig is somewhat lacking in material, so please do let us know what you have been up to, tell us about your project, DX worked, anything!



I shall conclude by adding, please remember to renew your membership to help us to keep the club strong. Tell your friends and get them to join too!

So take care, wear your masks when in shops and get on that transceiver!
Simon MW0NWM

Gwynfor Roscoe (Ross) MW0BYT..... Silent Key

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By Danny Shurmer GW7BZRGwynfor Roscoe (Ross) MW0BYT

This is not a very pleasant task to write an obituary for somebody that you know, but I will try my best. Ross MW0BYT went Silent Key on September 18th at Ysbyty Glan Clwyd aged 82. Ross was from the Benllech area and worked with his father before eventually going to sea where he spent many years travelling the world. He spent many years in the quarry in Bethesda but alas this was cut short with the loss of one lung which led to retirement. Around this time Ross entered Amateur Radio and this is where he really enjoyed himself. Ross was a mentor to many people and was often the first person a trainee ever spoke to. This continued for many years and Ross could be relied on for a radio check and a chat any time of the day. He was a builder of dipoles and there are many of them hanging around and the club has one as well.

He did not suffer fools and could be grumpy at times but was still very courteous to everybody. We shall also miss the familiar call every day because he kept 2m alive. Ross became housebound during the virus but was still on the air but not as often. All of us will miss Ross and the club wishes to pass condolences to all his family.

**Silent Key**

RIP Ross MW0BYT SK from all your friends at Dragon Amateur Radio Club

Annual Construction Competition 2020—via Zoom!

On Monday 19th October, we are holding our annual Construction Competition, using the Zoom online chat facility. We are obviously holding the event online as the Covid-19 pandemic makes meeting indoors impossible at present.

The Construction Competition is to put beginners and experienced constructors on an equal playing field, so I urge you to have a go no matter how simple your build is. In previous years I have entered, a Slim Jim Antenna for 70Mhz, home-made 1:1 and 4:1 baluns and a HF Dummy Load, design courtesy of Ken K4EAA. Ken's design instructions can be found at:

<http://k4eaa.com/dummy.html>



The rules for this event are quite straight forward.

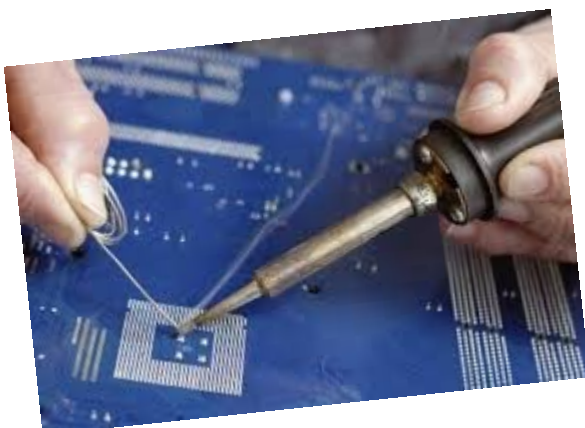
- 1) You can build whatever you like, no matter how complicated or simple.
- 2) The project can cost as much or as little as you like, but must be of an electronics, or radio related nature. Therefore you could even build an antenna!
- 3) The project must be constructed by yourself, but help and advice from more experienced constructors is to be encouraged!
- 4) You can build a kit, copy an existing circuit or dream up your own!
- 5) Using computers like the Raspberry Pie is acceptable.
- 6) Most important of all you must have FUN!

On the 19th October each entrant will show members their project, explaining what they have built, it's purpose and lessons learnt whilst building. After the show and tell session, each member will vote for their favourite project. There are no marking criteria, simply vote for the project you feel has most use or simply has stretched the abilities of the builder.

Voting will be by a show of hands on Zoom, if we have a tied vote, then a second vote may be required.

Please do not be shy to enter the competition, every entrant is appreciated and encouraged. Plus it makes for a more enjoyable evening for all! I also encourage the more experienced amateurs to support, encourage and mentor our newly licensed friends!

GOOD LUCK



Taming a Switched Mode PSU

John GW3VVC

I've often said that ALL switched mode power supplies (normally referred to as SMPS) should be put in a container and dumped at sea, then we can all go back to the good old-fashioned linear type. These infernal things are everywhere, they power cordless phones, routers, televisions, computers, monitors, mobile phone chargers, cordless drill chargers - in fact just about anything that requires powering from the mains supply. Last time I counted I had about 15 in this house with quite a few of them running 24/7, of these there were 8 in the shack alone... Virtually all ham shacks have a 12 power supply for running a 2 meter radio and various other auxiliaries and it will almost certainly be an SMPS.

Now you might ask what do I have against SMPS? Well quite simply because lots of them generate RFI – radio frequency interference that can adversely affect our ham radio enjoyment.

Let's briefly look at how power supplies work. In its most basic form a linear power supply has a step-down transformer, followed by a rectifier bridge and a reservoir capacitor. The output will be regulated by a power transistor which will maintain a relatively constant output voltage over a range of load current requirements. It has the benefit of being simple, easy to repair and does not cause RFI but is expensive to build as the transformer has to be large and heavy. The whole unit can generate heat, even when it is not delivering an output. An SMPS however operates quite differently. It initially rectifies the actual 240volt mains supply then chops or switches the resultant direct current at a frequency typically between 20 and 60 kHz. The circuit is considerably more complex and it will have much more going on inside than a linear power supply but what we are concerned about here is this switching. If we tune a receiver around the SMPS switching frequency when the SMPS is switched on, we will hear the rasping note that it causes. As we tune up in frequency we will hear harmonics of the basic switching frequency. Imagine the SMPS is switching at 50 kHz, we will hear it at 50 kHz, then multiples of 50 kHz, i.e. 100 kHz (50 x 2), 150 kHz (50 x 3), 200 kHz (50 x 4) etc. How loud these are and how high in frequency they extend will largely depend on how well the SMPS has been designed and built. A cheap amateur SMPS may well cause interference that can be heard well into HF. As we go higher in frequency the interference become less noticeable but on the lower frequencies it can be quite objectionable, especially when working weaker signals on for example 160 and 80 meters. Incidentally some SMPS have a front panel control that may appear to stop the interference, in reality all it does is change the switching frequency, you'll still get interference – but on different frequencies!

I recently acquired a QJE power supply. It's very small, light and on quick examination turned out to be a 'switcher'. Tuning around the lower frequencies confirmed this with S9 plus rubbish every ~63 kHz well into the higher frequencies. On removing the cover it was obvious that the unit was quite nicely built but very little had been done to minimise the interference that it was causing, presumably to keep costs down. Realistically many of these SMPS may be used where RFI is not an issue and the manufacturers may well feel that fitting any sort of RFI suppression is not necessary. However SMPS sold by ham radio shops should ideally have been checked and found to be interference-free. I've fitted suppressors to a couple of SMPS before so it only took a couple of hours one evening to effect an almost total cure to the QJE's nasty noises....

Taming a Switched Mode PSU

John GW3VVC

Firstly tune to one of the offending raspy notes on a convenient receiver, disconnect any outputs, i.e. so that the power supply is now connected to the mains, switched on but not actually powering anything. If the interference disappears or is considerably reduced that would indicate it is getting out of the SMPS via the output leads – they are acting like antennas and radiating the interference. The first step to try and reduce the interference is to use some ferrite beads, these are placed over both the positive and negative leads inside the unit. This will usually involve unsoldering one end of both the wires that go to the output terminals, thread them through the ferrite beads and re-connecting them after fitting the ferrites. You may have to slightly lengthen these two wires by soldering (and sleeving) small extensions to them before re-connecting them to the output terminals. From past experience I have found six **FB-73-2401** ferrites per lead to be adequate. There are no hard and fast rules on the number of ferrites to use, you might need a couple more for a really noisy unit. These ferrites are made by Amidon and should attenuate some if not most of the nasty noises. Incidentally amateurs often buy ferrites at Rallies without really knowing much about them, realistically unless we know what they are, they can be pretty useless. Ferrite beads are made of different ‘mixes’ of ferrite which can react differently at different frequencies – a ferrite bead designed to operate at VHF would be useless for what we want as the interference is at relatively low frequencies. If you have some ferrites in your junk box and are unsure as to what they are they’re often best left there... Twelve of these beads (six per lead) should cost ~£5 - £10 on Ebay. Incidentally the **73** refers to the mix and it is possible to buy beads with which will accommodate different size of wires. For more information Google is your friend! You should check that these beads will slip over the wires in your unit before buying. Remember ferrite is conductive and can cause shorts if a bead happens to touch something so I always slip a piece of heat shrink over the beads. The second step is to put some decoupling capacitors across the positive and negative output leads and between both the positive and negative leads and earth. I use 0.1 ufd ceramic capacitors rated at 50 volts, placing two in parallel. For the capacitors that go to earth, find a suitable mounting point, the mains wire coming into the SMPS should be wired to the metal case so you can use this or any other point where you can connect to the case. Keep the leads as short as possible and sleeve any bare wires. Both the ferrites and the capacitors can be wired to the output terminals with a bit of care. Once you’ve finished admiring your handy work, do a final check to ensure that there are no shorts then replace the covers, ensuring all the screws are in place and go looking for nasty noises, starting at the lower frequencies, they should either have disappeared or be waaaaay down the S meter... If interference is still present, not ‘very’ likely, another way to attack the problem might be to change the mains socket at the rear of the SMPS – assuming it has a mains socket, some cheaper SMPS mains leads are hard wired directly to the fuse and/or on/off switch. SMPS interference can get out of the SMPS into the mains supply. If your power supply does not have an IEC mains connector you can fit a suppressed one. These can be bought on Ebay for £5 - £10. This work involves re-routing the mains lead and maybe a bit of metal-work so if you are not confident you can do this ask a friend. This later mod assumes that the interference is getting out of the SMPS case via the mains wiring, the more common cause is via the output leads, so do this mod as a last resort. I have one occasion had to do this with a large 1Kw (24 volt 40 amp) transmitter power supply.

Taming a Switched Mode PSU

John GW3VVC



QJE SMPS suppression ferrites/capacitors

The 12 small ferrites are inside the blue heat-shrink, the left one is connected to the SMPS positive output on the terminal strip whilst the right one is connected to the SMPS negative output on the same strip. The small capacitors can be seen connected between positive and earth, negative and earth and across the actual output, i.e the positive and negative. Sleeve all the leads to avoid shorts, using colour coded sleeving if possible. In this case the mains earth was already connected to one of the terminals (fifth from the left) so this was used to connect the capacitors. I'd suggest disconnecting only one output lead, fit the ferrites then re-connect before disconnecting the other – that should ensure you don't get the positive and negative output wired incorrectly.

Incidentally whilst power supplies are normally earthed via the mains earth to the case, I always run a separate earth wire, as short as possible from the case to the station earth.

Happy soldering!



Annual Membership Renewal!

Cath Thorley MW7CVT

On behalf of Dragon Amateur Radio Club I'd like to thank all of our members for their continued support this year. It's been a difficult time due to the pandemic, but all the same our member numbers have increased.

Even though we haven't been able to have a club meet since February, we have still had some running costs to pay. The same goes for the next 12 months, so it is now more important than ever that we can continue to count on your support so that the club can keep going.

Subs are now due and it has been agreed by the committee to keep it at **£10** for the annual membership. As we cannot meet, there are one of three ways which you can pay.

Bank Transfer
Cheque
Cash

If you email me at knitterscarlet@aol.com letting me know how you wish to pay, I will reply with the appropriate details.

I personally, would like to thank you all for supporting the club. It is important that there are clubs like ours where anyone that is interested in Amateur Radio can come and get more information and the support they may need to get through their exams.

Take care and Stay safe

Cath – Treasurer – MW7CVT



Radio - Active August!

With Covid-19 restrictions easing enough to allow us to meet outdoors, we organised a series of outdoor activities, some of which were individual affairs and others meant we could meet as a socially distanced group. These events were well attended and also supported from home by those who were unable to get out and about. Thank you to all who took part and supported the club.

1st August GC4TTA/P from Parys Mountain

Over 20 members, family and guests visited our portable station from Parys Mountain. The event saw a little radio on HF and VHF, plus plenty of socialising as it was our first chance to catch up in person since March. Thank you to Karl 2W0FNA for arranging us exclusive access to the upper car park at Parys Mountain, although I don't think he can claim credit for the superb weather!



Radio - Active August!

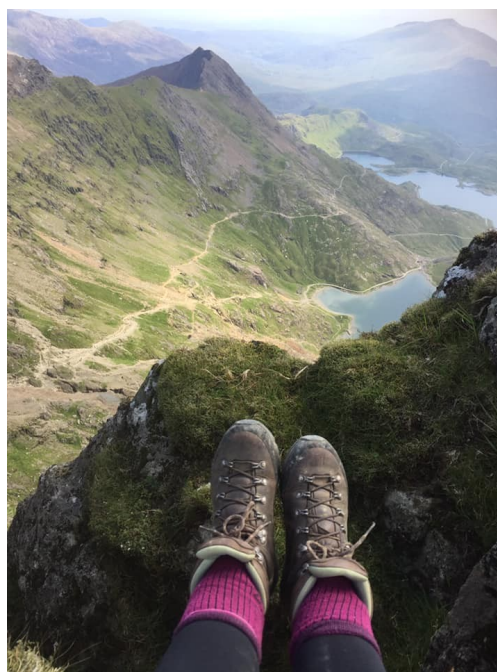
15th August - VHF/UHF Activity Day

With members taking part from portable locations such as Rhosgadfan, Great Orme, Snowdon and from their own homes, members operated various modes on 6, 4, 2 and 70cm. Dozens of contacts were made and great fun was had by all in yet more glorious weather!

Pictures from Rhosgadfan, where Simon MW0NWM, Danny GW7BZR and Jim GW0IAU operated as GC4TTA/P



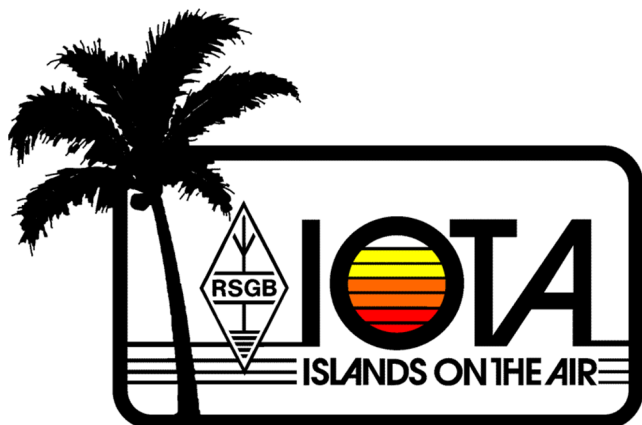
Janet, MW7JAB took part from the summit of Snowdon and did very well with her hand held on 2 metres!



WE have also had regular **club NETs** every Monday, online, 2 metres and 70cm, some members have continued to have QSOs in the **Ten Metre Challenge** and our final planned event at Melin Llynnon was unfortunately cancelled at the end of August due to poor ground conditions after the fine weather finally gave way to the 'WET STUFF'.

IOTA Contest

Cath MW7CVT



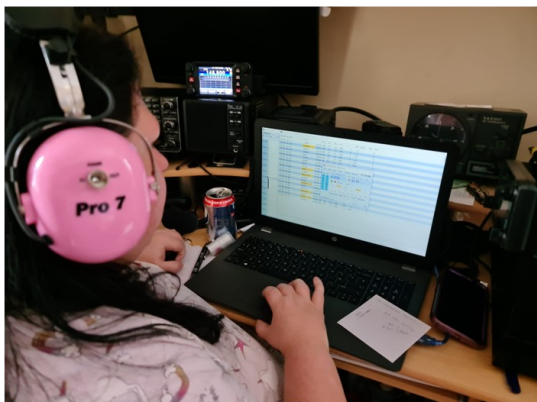
Back in July I entered my first contest, the IOTA, Islands on the Air contest. I live on Holy Island which is EU-124.

I used an Icom IC-7610, Heil Pro Head Set 7, Moseley TA-53 Beam, also a 40m Mono-band Wire Dipole. I worked 20m and 40m bands. For logging I used N1MM Logger+ software.

Due to my health I only managed to operate on the Saturday evening, but still managed 140 contacts which I was very pleased with.

I was very nervous when I began the contest, but after a few contacts my nerves disappeared and I began enjoying it. I took on my own channel and called cq, as I was operating from EU-124 and was the only operator on the island I was in high demand. I worked through quite a few pile ups, but everyone was very polite and patient.

My tips for working a contest are to stay calm, only go at your own pace, if you don't hear something ask for them to repeat it. If you take on your own channel, then just go at your own pace, it's your channel, so you're in charge. If you have a pile-up then listen for the callsign that comes through clearest, if you only hear part of the callsign, that is ok, just call out the part you hear and ask for them to repeat their callsign. Do this until you have worked through everyone. Make sure you log the callsign and your/their number correctly. Keep the qso short, just callsign, signal report and exchange of numbers.



There are many operators that are very strict and serious about contests and then there are operators like myself that do it for fun. Don't get me wrong, I still follow the contest rules and am very professional when taking part, but the moment I stop enjoying it is the time I switch off the radio.

I learnt a lot of things doing the contest and really enjoyed it, but I think in future I might take part in smaller contests as the IOTA Contest was a very big one so was full on. I came 13th in my category which I'm very pleased with as it's not all about winning, but about taking part and having fun.

Take care and stay safe

Cath – MW7CVT



Caption Competition!

The picture of our usually grumpy Chairman Danny GW7BZR, looking very happy with himself and his prize black pudding at our recent Churches event station at Bangor Cathedral.

What is your caption for this picture? There is a prize for the caption which makes me laugh loudest and longest! All entries to **darc.secretary@gmx.co.uk** no later than the end of November and the winner will be announced in the December issue of Llais Y Ddraig.

Good Luck!



Super September

Covid - 19 restrictions continued throughout September, still preventing us from meeting indoors. However the weather has continued to be relatively kind and we have enjoyed two special event stations, both of which have been quite well supported by those who felt able to come along under the current circumstances.

Saturday 12th August, Churches and Chapels on The Air.

Using the callsign GB0CBC (Cadeirlan Bangor Cathedral), we enjoyed an afternoon operating from the grounds of Bangor Cathedral. We contacted several other CHOTA stations and plenty of other amateurs too. Thanks to all involved, particularly Paul MW7KLJ who donned a hard hat and climbing harness to climb the cathedral tower for aerial erecting duties. We are also very grateful to the Dean of Bangor, Kathy Jones for allowing us access to the site. Fingers crossed next year conditions will improve and we can operate from inside the cathedral itself.



Above: Paul MW7KLJ hauling the end of a dipole to the cathedral roof

Left: Danny 'BZR interviewing a potential new member who has more hair than him, with our Treasurer Cath 'CVT about to pounce for the £10 membership fee!

Super September

19th September at Waunfawr

Using the callsign GB2VK, we spent a day at the old Marconi transmitting station at Waunfawr to celebrate the first ever radio transmission from the UK to Australia in September 1918. We had 11

members take part throughout the day and enjoyed making contacts on HF, VHF and UHF.



Left: Greg 2W0TWB and Jim GW0IAU enjoying operating from the salubrious surroundings of the rather damp and musty Marconi building.

Training Update

First of all congratulations to Martin MW7AUU, who passed his Foundation exam a couple of months back. Martin is a regular on the club 2 metre NET and if he cannot join us personally, takes part in our events from home by making contact with us.

Congratulations also to Greg who has been a member of Dragon ARC for a couple of years now. During lock down Greg has passed the Foundation and a couple of weeks ago passed the Intermediate exam and is now 2W0TWB. It was great to see Greg at the recent GB2VK event. Greg is now studying hard in readiness to sit the Full licence exam soon.

Finally, more congratulations to Si Keeble MW7KEE, who passed the Intermediate exam on the 29th September and at the time of writing was waiting to be issued with a call sign.

We are currently running our first online training course via the Zoom chat app. This Intermediate course has 13 students and they are all working very hard with their tutors, Simon MW0NWM, Danny GW7BZR, Karl 2W0FNA and Mark MW0RZS. Mark lives near to Aberystwyth and has kindly offered to help us with the course and join Dragon ARC. Welcome Mark!



Right: Mark MW0RZS

Notice of Annual General Meeting

The Dragon ARC Annual General Meeting (**AGM**) will be held online via Zoom on **Monday 16th November** starting at **19:30** with Zoom starting at 19:00.

If you have anything you would like discussed under **Any Other Business** please send an email to the secretary Simon Taylor MW0NWM at the email address below, no later than Monday 19th October.

darc.secretary@gmx.co.uk

AGENDA

- 1) Present
- 2) Apologies
- 3) 2019 Minutes
- 4) Matters Arising
- 5) Chairman's Report
- 6) Treasurer's report
- 7) Election of Officers:
 - Chairman*
 - Vice Chairman*
 - Secretary*
 - Treasurer*
- 8) Election of Committee Members (4 ordinary members)
- 9) Election of non committee roles:
 - Door / Subs*
 - Refreshments*
 - QSL Manager*
 - Equipment Officer*
 - Newsletter Editor*
- 10) Any Other Business

Please do your very best to attend this virtual AGM. The AGM is your opportunity to hold the previous years committee to account and also volunteer to help run the club in 2020/2021! Without volunteers our club would not continue to thrive.

Your invite to attend via Zoom will be emailed to all members a few days before the AGM

2 Metre Activity Day ... 27th September

On Sunday 27th September, members of Dragon ARC held a 2 Metre Activity Day from 12:00 - 16:00. Karl 2W0FNA headed out to the Great Orme, Danny 'BZR, Jim 'IAU and Simon 'NWM were once again situated on a hillside near Rhosgadfan; Kevin MW1CFA was out walking Cali the hound on Holyhead Mountain with a handheld, John MW7MON was out with a handheld on Parys Mountain and other members took part from home.

Conditions were quieter than the August VHF/UHF event, but dozens of QSOs were still made. Danny, Jim and Simon worked both FM and SSB and enjoyed QSOs in 8 different Maidenhead Locator squares, including 3 into Scotland; one of them into IO87 which is near Aberdeen. Not bad for 25 watts to a 3 element lightweight beam.

Altogether 11 club members took part from home or portable and thoroughly enjoyed the afternoon. Thanks to those who took part and hope we can have a similar event again soon!



Left: Karl 2W0FNA all set up and ready to go!

Below: Kevin MW1CFA Doggie Pedestrian Mobile!



Above: Col-linear and beam at Rhosgadfan

Right: The Rhosgadfan Shack





We are on the web!

<https://www.dragonarc.org.uk/>

Committee for 2020

Cadeirydd / Chairman

Is-Cadeirydd / Vice-Chairman

Ysgrifennydd / Secretary

Trysorydd / Treasurer

Danny Shurmer

GW7BZR

John Parry

GW3VVC

Simon Taylor

MW0NWM

Cath Thorley

MW7CVT

Aelodau / Members

Cliff Nicholls 2W0CBZ

Kevin Thorley MW1CFA

Stewart Rolfe GW0ETF

Karl Byast 2W0FNA

Non Committee-Unofficial Roles:

Door / Subs Beth Roberts

Refreshments Cliff Nicholls 2W0CBZ

QSL Manager (Position vacant due to Tony Wright GW0LIS going Silent Key).

Equipment Officer (Position vacant due to the resignation of Dylan MW1EPI)

All submissions for Dragon's Voice to the **Editor**, Simon Taylor MW0NWM at:

darc.secretary@gmx.co.uk

For further information about Dragon Amateur Radio Club and our training courses, please email the club secretary Simon Taylor MW0NWM at:

darc.secretary@gmx.co.uk

The next issue of Llais Y Ddraig / The Dragon's Voice, No. 126 will be issued in December / Rhagfyr 2020. Please do send material for inclusion.