



Medi / September 2019

Rhif / Issue 121

Cylchgrawn Clwb Radio Amatur Y Ddraig

The Journal Of Dragon Amateur Radio Club

Club Programme

2nd Sept	Practical Demonstrations	(soldering plugs onto coax, using multimeters and more)
7th and 8th Sept	SSB Field Day	(Danny GW7BZR)
16th Sept	Mon Search and Rescue Talk	(please do your best to attend)
21st—22nd Sept	Marconi VK weekend at Waunfawr	(Danny GW7BZR)
25th Sept	RF Voodoo ... a talk for North Wales Tech at M-Sparc	(Simon MW0NWM)
7th Oct	The Mystery of the G5RV	(Danny GW7BZR)
19th Oct	Jamboree on the Air—JOTA	(Simon MW0NWM)
21st Oct	GR2HQ the IARU Contest	(Stewart GW0ETF)
4th Nov	Annual Construction Competition	(Simon MW0NWM)
18th Nov	AGM	(please do your best to attend)
2nd Dec	Saunders Row Talk	(David Mills from Gwynedd Engineering Society)
16th Dec	Christmas Quiz and Social	(with our resident quiz master John GW3GUX)

*Please note, events marked in **RED** are activities not scheduled on our usual club night.*

From the Chairman...

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



Welcome to this edition of the club newsletter. You will notice a lot of changes have gone on in the club in recent years, some for the good and some definitely not. The start time of club meetings has been changed so that meetings start at 1930 local and there are no minutes. Committee meetings were held in the Four Crosses and were not to everybody's liking. There were quite a few resignations from the Chairman to committee members and this resulted in a lot of bad feeling in the club as well as bad attitude from some members. This was very detrimental to the club and we lost quite a few members who had been there for years and were valued members who between them had a wealth of experience. This was mainly because of the "politics" that seemed to have emerged and that a committee approval was needed before events were put on and so forth. The newsletter which had to be vetted by the committee was taken away from the bulletin editor and given to the editor from another club to write for us. Not a very happy state of affairs. A lot of money was spent on repairs to the trailer mast and also a new rig was purchased which has not proved popular with some club members. The antennas were in a state and so was some of the equipment.

So, what has changed and what will change in the future? One thing that has gone is the arguments and the politics. This was a friendly amateur radio club that had been taken to the point of closing by some members. They have gone and will not return. There will be no arguments or politics and members will have more say, as they used to have on things the club does in the future. Of course, the committee will still debate members wishes and decide whether it is feasible or not and all the committee minutes will be available for scrutiny. This is not parliament or some secret society as it seemed to have become. Anybody can see the minutes if they want you only have to ask. At the beginning of each meeting recently there was nothing said formally and it all seemed a bit haphazard. This will now change and we will take minutes at the beginning of every meeting. It does not take long and it is a way of passing information to members as well as checking if some are still alive. A lot of members cannot remember what happened in the previous meeting including myself so this is a good thing. It is you the members who wanted this back so now you are getting it.

From the Chairman ctd...

We have a new secretary Simon MW0NWM, who is also back again as the Bulletin Editor. Our treasurer is also taking a sabbatical because of family and our new treasurer Cath Thorley will take over at the next committee meeting. Cath is a bookkeeper by profession so our accounts should be no problem. She will serve until our AGM and then will be properly nominated then. Kevin Thorley MW5CFA will also join the committee. The vice chairman's post will be left vacant until the AGM. You will also notice that more special events are taking place and we hope this will continue into the future and also some interesting talks coming up. We are also able to conduct exams again and offer tutorials. More about this will be revealed later on Facebook. The website is running and we would like articles and photos to put on it.

Some new clubs or groups out there are run on a secrecy basis, membership by invite only and everything hidden away a bit like the Masons. This club has never operated this way and our Facebook page is open to everybody to look at. Our membership forms are freely available and membership is cheap at £10 per annum plus £1 per meeting door money. This pays for the hire of the hall and also tea and biscuits. We also have a free raffle on the first meeting of the month so I think it is good value

That's it basically in a nut shell. The club went down in the s*** and is now climbing up out of it. With the members help it can be achieved. Thank you for reading this. Any questions you have please ask but rest assured the only way this club is going is up and not the way some people seem to think.

GRUMPY CHAIRMAN DANNY GW7BZR.

Thank you ...

A huge vote of thanks to the following who contributed material for this issue of Llais Y Ddraig:

Danny Shurmer GW7BZY, Les Hayward MW0SEC and John Brimecombe GW3GUX.



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Notice of AGM ...

The Annual General Meeting of Dragon Amateur Radio Club will take place on Monday 18th November at Ebenezer Chapel Hall, Llanfairpg; starting at 19:30 prompt.

Please could all members do their best to attend and exercise their democratic rights!

If you would like to submit anything for discussion at the AGM, please send to the secretary by Monday 21st October. Please hand to the secretary on a club night or email to:

darcssecretary@gmx.co.uk

From the Editor ...

Welcome to the Medi / September 2019 issue of Llais Y Ddraig, it is great to be in the Editorial chair once again! After a period of uncertainty, the club is once again active with a series of interesting activities both on club evenings and weekends. We do hope that many of you will make an appearance at club, especially when we have visiting speakers. If we are not covering an aspect of the hobby you are interested in, do let us know.

Similarly, if you think you could help us out running a talk or activity, again don't be shy in coming forward!



Within this issue, you shall find reports on various special events we have run this year, plus reports from our esteemed GRUMPY Chairman and technical talk from John GW3GUX; not forgetting more fascinating tales from our resident expert les MW0SEC. Perhaps you have an idea for an article you would like to contribute to the December issue? Please do not be shy, come and speak to me and we shall make it happen.

Many of us in the club like to tinker in our shacks, using our soldering irons to good effect. I challenge you all to get busy and have something built to show us all at this November's Construction Competition. The rules are set so that both experienced and beginners compete on a level playing field. I for one are looking forward to seeing what you have all been busy building this year, be it aerial, balun or transceiver!

Finally, as we move into the autumn it is time for us to enjoy the propagation on the lower bands. If you have not already done so, time to get some wire in the air which will help you get onto the 80 and 40 metre bands, even 160 if you can.

Until next time, enjoy your radio and do support YOUR club.



Vy 73

Simon
MW0NWM

Editor Llais Y Ddraig

Aircraft

My part in avoiding their downfall

By Les (MW0SEC)

Apart from the life-jacket initiator which I briefly described in the last club talk, various other odds and ends relating to the aircraft industry were designed by me during the period of which I was technical director of a small electronics company operating from the odd but picturesque location of Corfe Castle Railway station.

Our principle customer in this line was the Martin-Baker aircraft company for which we produced in addition to the initiator, a broad range of strain gauges for testing the strain performance of ejection seat webbing, along with various wiring loom testers and timer/counters.

Another good customer in the aircraft industry was that of M.L. Aviation who operated from White Waltham airfield. It was from this company that we received an unusual request. They produced the 'Mu meter' which is a towed device used on both military and commercial airfield runways to measure the friction coefficient of the runway in various weather conditions. The readings thus obtained were relayed to incoming aircraft in order to allow the pilot to estimate the required landing distance in all weathers.

My part in this was to design a new calculator/printer and display, which took the pulse train from the towed vehicle and calculated the result in distance and friction. The reason being that their existing instrument which was based on early TTL logic, was out-dated in respect of replacement parts, particularly the printer, which was no longer obtainable. So far so good, but there was a slight catch. The replacement had to be designed such that the new PCBs could be used to replace existing boards and loom wiring in order to update older units. This led to some head scratching as to how to achieve it. In the end, I discovered that it could be done – *just*, with every wire in the loom being used!

This was the period before such useful devices as programmable interface controllers were available, so I opted for a Z80 processor with a 2716 eprom. Although the processor had to do some quite large number-crunching, I was able to do it all by making use of the Z80's registers – thus no external memory was required. The printer was simply replaced by a little modern dot-matrix type.

Aircraft ctd ...

I seem to recall that we ended up supplying at least twenty new units one of which I noted in a Land Rover at Stanstead airport.

So, if you are flying in a commercial airliner and coming down in appalling weather – think of my small part in avoiding your downfall!



The electronics unit for the Mu Meter. Note the legend 'Eastpoint' at bottom left, which was our company name.

International Marconi Day 2019**Danny GW7BZR**

This was the first event that I had put on for a long time and nobody else wanted to do so it, so I took it on. The site was visited and permission obtained from the owners to stage the event. The Nov (Notice of Variation) was sought and obtained and it was advertised in the club and many people said they were coming. The equipment that was needed was ordered and assured it would be available. What a surprise some of it was available and some of it not. This was because the equipment had not been returned to the equipment officer. The antennas we needed were either broken or in the case of the masts not available. It was decided to do the best with the stuff we had.

On a very cold Friday afternoon we set up a repaired doublet and an old vertical I had to pull out of my garden. It was decided that due to the weather we would not be able to put Carl PQQs Dx Commander because we might break members equipment and not the club's equipment. Everything was checked and seemed to be working after a fashion but not the best we wanted as everything seemed to be a compromise. It was getting dark and cold so it was decided to leave it till the morning,

The following morning, we started fairly early and managed a few contacts but suffered from one radio FTDX3000 not able to tune the antenna and rf disconnecting the computer. A manual tuner was tried and this was a bit more successful. We carried on like this for the rest of the day and part of the following day before we gave up and called it a day. The station was pulled down and all breakages were noted. All together we logged about 65 contacts which was quite disappointing but a lot of lessons were learnt. One of the main ones is that the equipment must be checked and kept in good condition. One should not have to change plugs on coax before an event and all the equipment should be available and not spread about all over the north west. My thanks to Jim, Karl, and Bryn for help in setting up and operating and also Carl, Paul and Jeremy who came to visit. Let us hope we do better next time!!



Museums on the Air 2019

Danny GW7BZR



Museums on The Air has been talked about at the club for a few years and it has been done before from the Holyhead Maritime Museum. I went there and approached the curator of the museum and after a brief and very informative chat we were granted permission to operate from the air raid shelter museum and to use their flagpole for the antenna. It was a bit cramped in this little museum but was adequate for our needs. I decided to use the club doublet antenna because there was enough room to put it up as a slightly inverted vee and whatever rig it worked best on and would connect to a computer.

Jim Evans and I started putting it all up Friday afternoon and we were helped by Kevin and Simon. It was all finished and it was left until the following morning to start operating.

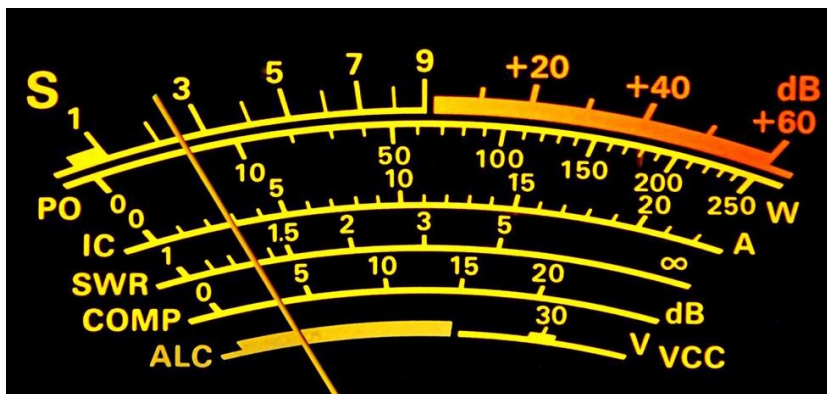
Jim and I started operating and we found the FTDX3000 would not connect to the computer so Jim operated and I computer logged manually. Jim left at dinner time and I was joined by Cliff and Simon who both did a bit of operating. When they left I carried on operating until the museum closed at 4pm.

The next morning, I started off on my own and was later joined by Seamus MM0CWJ from the Isle of Uist in the Outer Hebrides. He and I had a long chat and he commented on the lack of operators. I told him this was the norm these days and hoped it would change soon. I operated for the rest of the day on my own until the doublet snapped. During this time I contacted Argentina, America and Hawaii which was quite good. A total of 160+ contacts were made and could have been better with more operators. Perhaps they were more interested in a barbeque that was going on elsewhere else with another club. The station was dismantled with the help of Kevin and Simon and we all went home after thanking the museum staff for their hospitality and tea. It was a good event but rather disappointing in the lack of participants and it is hoped things do not continue like this, My thanks to all that came and helped.

Decibels De-mystified!

John B GW3GUX

The use of decibels in our hobby sometimes causes confusion or problems. Hopefully this short article will throw some light on what is quite a simple principle.



The most important thing to remember about decibels that they do not measure absolute values as in volts or amps, but are ratios referred to some initial starting figure. To add to the possible confusion, the initial reference figure and/or units is sometimes just implied by usage, or even worse, not stated, sometimes by less than frank manufacturers or sales people.

The Decibels is derived from the Bel (named after Alexander Graham Bell) and is calculated as a logarithmic ratio (using logs to base ten) remember logarithms from school-days and as far as we are concerned with this brief article, can be either voltage or power ratios. Being logarithmic they can be positive for increase or gain or negative for decrease or loss. The other thing to remember is that, being logarithmic, if there is more than one gain or loss in a series chain, they are always added arithmetically never multiplied.

An indication of the starting figure/units is usually given as a suffix to the 'db'. A few examples are:

'dbw' = power relative to one watt.

'dbm' or 'dbmw' = power relative to one milliwatt.

'dbμv' = voltage relative to one microvolt.

When referring to antennas, the two most common suffixes are 'dbd', when compared to a half wave dipole, and 'dbi', when compared to a theoretical point source in free space, known as an isotropic radiator. Some manufacturers quote the gain of their antennas (especially vhf/uhf yagies) in dbi as this makes them look to have a higher gain (approximately double) than quoting the gain relative to a dipole – there are some examples of this in RadCom advertisements. There is nothing 'wrong' in doing this, but it pays to look at the small print before you buy!

When using power ratios for gain or loss, the most useful number to remember is '3'. If this is +ve (the + sign is normally just implied), it indicates a doubling of power, conversely, if it is -ve, it shows a halving of power. As an example, if 5watts is fed into an amplifier with a gain of 3db, the output would be 10 watts, if the gain was 6db, the output would double again to

Decibels De-mystified ctd...

20watts. Similarly, 5watts fed into a feeder with a loss of 3db, the output at the end of the feeder would be 2.5watts, or 1.25watts if the feeder loss was 6db.

Feeder losses are usually quoted in dbs per specific length, at various specific frequencies.

As an example, a 10 metre length of RG58C/U, has a loss of 1.8db at 100Mhz, while at 1000Mhz the loss rises to 7.6db for the same length. If you double the feeder length, the loss is doubled.

Extending this example, if an amplifier with a gain of 6db is fed with 10watts, connected to an antenna with a gain of 3db via a feeder with a loss of 3db, the equivalent power radiated by the antenna would be 40watts, i.e. (+)6db – 3db + 3db = 6db or four times the original power of 10watts.

Other handy numbers, especially for power gains, are: 10 db for 10 times and 20db for 100 times. Thus a figure of 20 dbw (don't forget the suffix!), represents a power of 100 watts. Power figure columns in logbooks are very often printed as dbw, i.e. the power in use relative to 1 watt.

Just for the record, the formula for power ratio is: $db = 10 \log (\text{power 1} / \text{power 2})$.

If (power1 / power 2) is less than 1, this will represent a loss and give -ve number of dbs.

For voltage ratios the formula is: $db = 20 \log (\text{voltage 1} / \text{voltage 2})$.

With received signals, the calibration of the receiver 'S' meter up to a reading of 'S9' can sometimes be a bit arbitrary depending on the manufacturer, however, at HF the generally accepted input at the receiver antenna socket to give an indicated 'S9' on the 'S' meter is 50µvolts. Any increase in signal level above this figure is shown as '+db' and is compared with the input required to give an indication of 'S9', i.e. 50µvolts. Thus a reading of '10db over S9', would mean an RF input of about 160µvolts; similarly, an input of 500µvolts would give a reading of '20db over S9'. Don't forget, in this case we are using the voltage ratio formula. The calibration and sensitivity figures of receivers at VHF and above is different, but the principle is the same.

The decibel is also used to measure sound intensity, in this case the reference level of 0db is the standard threshold of hearing, but that's another story!



Dragon ARC and the Cricket World Cup Marathon

Simon MW0NWM

The Cricket World Cup Marathon was a special operating event organised by the Radio Society of Great Britain (RSGB) Contest Club and ran for the entire length of the Cricket World Cup from the 30th May until the 14th July. The event involved 31 different call signs allocated to the grounds used and teams represented in the tournament, plus a few overseas call signs. Whilst not a contest, there were certificates to be collected for contacting a certain number of stations and these call signs could be activated by individuals or clubs. Dragon ARC decided they would like to take part and I contacted Stewart GW0ETF for permission to use the special Wales HQ call of GB19CW over the weekend of 29th and 30th of June. Happily we secured use of the Holyhead Sea Cadet building which had served us so well last October for our part in the RMS Leinster commemorations.



Having found out that we could not put anything onto the grass area to the side of the building due to Cadets camping there, we decided to have one aerial only, which was the newly rebuilt doublet suspended from the trailer mast. The doublet had broken the previous weekend at the Museums

weekend which was held at the Maritime Museum a few hundred yards away from our current location. Being a multiband antenna, the doublet needs to be matched to the transceiver by an antenna matching unit (AMU), a simple job or so we thought! The set up crew of Danny 'BZR, Bryn 'DZO and I found that try as we might, the clubs relatively new transceiver, the Yaesu FTdx3000 simply could not match the antenna with its internal AMU. After some research we found that the internal tuner on this radio could only work with a mismatch of 3:1 or less, hardly useful for a doublet. Therefore after a cuppa and some head scratching, we swapped transceivers for our old faithful FT990. This old workhorse matched the doublet on all bands with the minimum of fuss! The computer was connected to the logging laptop and we were in business, all set up and ready for the Saturday morning.

Whilst band conditions over the weekend were appalling, we managed a very credible 700+ contacts over the weekend, mainly on 80, 40 and 20 metres. However we even made about a dozen contacts on 160 metres, which were requested by a number of operators chasing a contact on that band slot. This was most surprising when you consider the doublet was around 50% too small to work on this band and must have been extremely inefficient!

Dragon ARC and the Cricket World Cup Marathon ctd ...

During the whole event, there were 440,442 QSOs (contacts) made with the award stations, this being a record for any event organised by the RSGB.

I would like to thank Danny 'BZR, Bryn 'DZO and James 'JHC who along with myself were the main operators. It was also a sterling effort for Ross 'BYT to visit us on the Saturday afternoon having arrived directly from his latest stay in hospital! Thanks also to anyone else who paid us a visit, all moral and physical support was most appreciated.

Finally I think it was great that Dragon ARC took part in the event and that we equipped ourselves so admirably. I hope that we shall get involved in the next event of a similar nature and perhaps persuade a few more members to get on the microphone and experience the pile up of callers trying to work you.



INTERNATIONAL LIGHTHOUSE AND LIGHTSHIP WEEKEND 2019**GB2TD****Danny GW7BZR**

Left : Stewart GW0ETF using the new FTdx3000



Right: Carl MW6PQQ on his handheld

Every year the club organises this event at the lighthouse on Penmon Point . This is usually run and set up by John 'GUX but this year could not do it due to family commitments. John was able to do all the office work contact the Coastguard and negotiate with the gateman. It was decided to set up two stations if we could using an 80m dipole that Ross 'BYT had built and also the Dx Commander if the weather was favourable. The Nov was obtained and were in business.

On the Friday Jim 'IAU and I arrived to set up in the rain. It stopped when we got out of the cars and the halyard on the pole was changed very carefully. By this time Simon 'NWM and Karl' FNA had arrived and they set up the Dx Commander in the hope it would stay up. It did and it performed well. The two rigs as well as laptops were set up and all worked well and a few contacts were made to confirm this. The station was then left until the following morning.

The station was opened early in the morning by Simon and he made quite a few contacts. We were joined by Karl and Stewart 'ETF and made steady progress throughout the day. We had a visit from David Mills from the Gwynedd Engineering Society and we had a long chat as well as operating. We were also joined by John' GUX fresh from Point Lynas and he operated for a while. The station was closed down about 2030 until the next day.

Right: Beth 'NWM' , David Mills, and Simon MW0NWM



INTERNATIONAL LIGHTHOUSE AND LIGHTSHIP WEEKEND Ctd...

I opened the station the next morning and it seemed apparent that conditions had changed a bit but steady progress was made. We were visited by a SWL from Penraeth who had been tracking us all morning. He gave a very informative chat on binoculars and telescopes and also radio astronomy. We hope he can give a talk in the future..There was also a 2m station and it was used to contact local amateurs and as far as the Wirral and Cumbria. Visitors and operators were GW7BZR, MW0NWM, GW0IAU, GW3GUX, GW0ETF, 2W0FNA, MW6PQQ, Kevin 'CFA, MW1EPI, GW0ALF, MW6XWP, 2W0CBZ, and MW0BYT. Beth and two dogs!!

The station was closed down at 1530 and with the help of Cliff and Simon was soon put away. The heavens opened about 15 minutes later.

Including 2m and HF 320 contacts were made. There were no 59 bye bye contacts and most involved a chat. I think it was a very good event and I would like to thank every body that came and did their little bit. Let us hope that this will continue in future events.



Left: John Brimecombe working 40 metres.



Right: The WW1 transceiver brought along by David Mills for our interest.



Annual Construction Competition ... The Rules for 2019**Simon MW0NWM**

On Monday 4th November 2019, we are holding our annual Construction Competition. This is designed 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 recent years I have entered very simple items, a 4:1 balun, a Slim Jim Antenna for 70Mhz 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

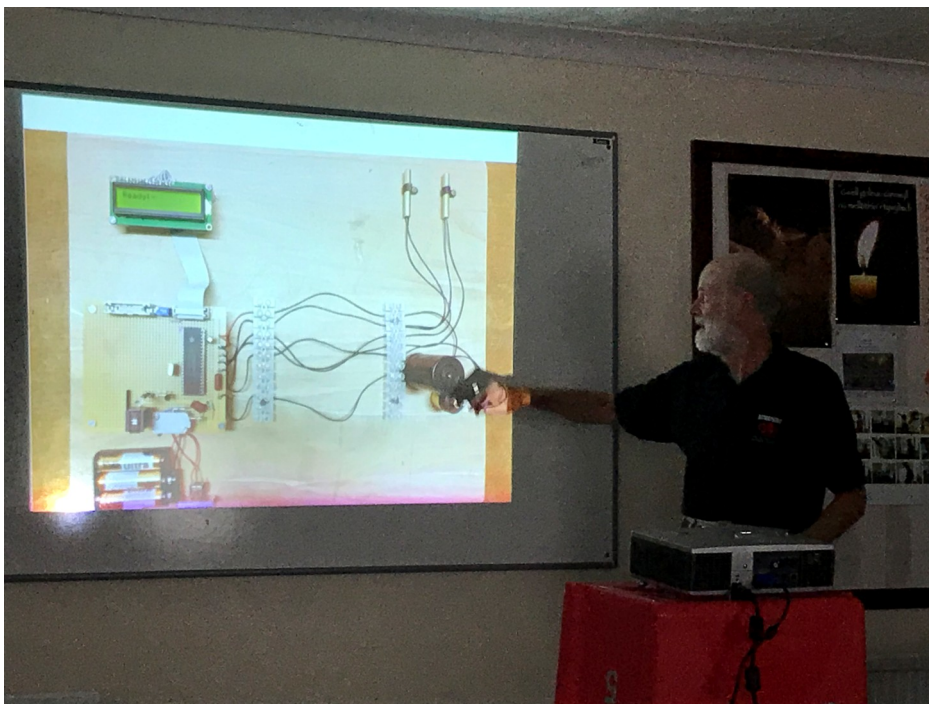
On the 18th September, each entrant will show members their project. After this all members can inspect each others projects before voting for their favourites. There are no marking criteria, simply vote for the project you feel has most use or simply has stretched the abilities of the builder.

Each member will have three votes. We will then count the first choice votes, and if there is no winner we then add the second choice votes and so on. There is a TROPHY for the winner!

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 licenced friends!

GOOD LUCK

Caption Competition ...



The picture above shows our good friend and fellow club member Les MW0SEC delivering a fascinating talk to us a few weeks ago.. (apologies about the poor picture quality)

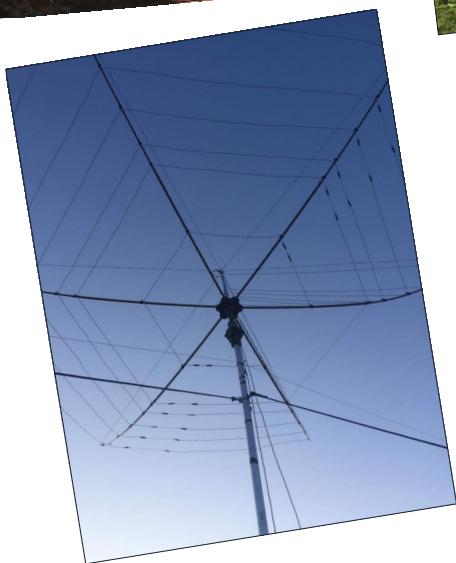
But what is Les saying? There will be a (very) small prize for the winning entry.

To enter please email your suggestion to the editor at: **darc.secretary@gmx.co.uk** by the 20th November.



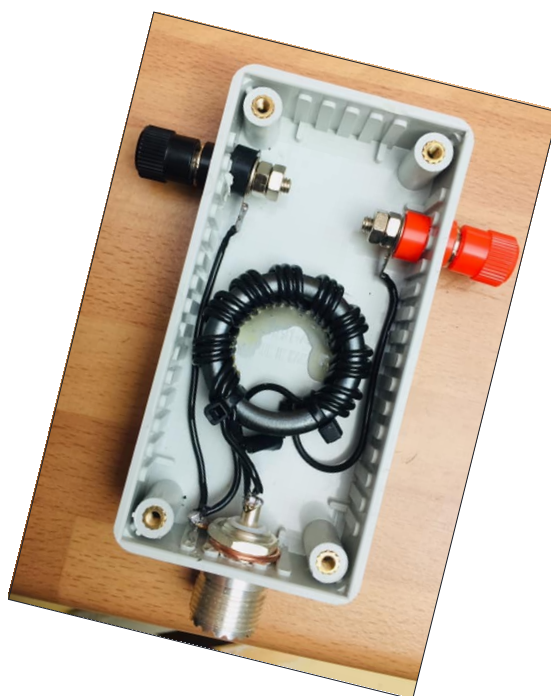
From our Facebook Group

Dragon ARC has it's own Facebook group, if you are not yet a member then where have you been? It is a great place to keep up with club messages, changes of programme etc. It is also a great place to post what you have been up to and to ask for help. The following are a few images and comments from recent posts:



Karl 2W0FNA said 'Busy day, new antenna' .
Hopefully we can persuade Karl to write a few words
about this for the next issue of Llais Y Ddraig!

John Byst posted this picture of his very tidy
9:1 UnUn that he built for his home antenna
system.



From our Facebook Group ctd ...

Stewart GW0ETF
described how he
Fabricated a tilt over
mast ready to erect a
top band (1.8MHz)
Dipole.



Fun on the beach in Pentraeth!



North Wales Tech ...

Year of Internet of Things
Simon MW0NWM

northwales.tech

On their website North Wales Tech is described as 'a bunch of like-minded people working in the IT and software development industries in North Wales'. They are also makers, tinkerers, local businesses and generally anyone interested in technology, not just computers. The group is run by several folk working in the area, including Carwyn Edwards who works for Bangor University. In fact some of you may remember Carwyn as he gave a talk to Dragon ARC about 4 years ago about the Maker movement.

North Wales Tech organise various talks from local businesses and techie folk on a variety of subjects and they prove to be very popular. These talks usually take place around Gwynedd and Anglesey, primarily in Pontio in Bangor and M-Sparc in Gaerwen. I shall add now that Carwyn is a clever chap and always manages to secure free food for their events, like pizza and curry!

During late spring of 2019, North Wales Tech and partners started a series of events titled 'Year of Internet of Things (IoT)', and their programme is crammed full of interesting events for techies and business people who would like to make use of IoT. But what I hear you ask is IoT? Wikipedia describes the Internet of Things as:

'a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction'.

Devices in the IoT network send and receive data using LoRa Wan. Again I am going to rely on my old and sometimes unreliable friend Wikipedia, who describe LoRa Wan as:

'*LoRaWAN* is a media access control (MAC) protocol for wide area networks. It is designed to allow low-powered devices to communicate with Internet-connected applications over long range wireless connections. LoRa is a spread spectrum modulation technique derived from chirp spread spectrum technology and is the first low-cost implementation of chirp spread spectrum for commercial usage. It was developed by Cycleo of Grenoble, France'.

But, I hear you ask, what has the IoT got to do with amateur radio?

Well think about it for a second. Lora Wan is a wireless network working at around 863 - 870 MHz in the non licensed spectrum, not too far away from our own amateur 70cm band. Therefore anyone using IoT and Lora Wan will be considering design of transmitters , receivers and aerials. Also as it is low powered data transfer. Finding a decent site for antennas and propagation need to be considered also if the system is to work effectively. Lots of stuff for a radio amateur to get their teeth into!

I have been invited to give a talk to North Wales Tech on **Wednesday September 25th, 19:00 at M-Sparc**. The title of the talk is 'RF Voodoo' , covering:

Propagation and environment

Which antenna to choose

Where to site your antenna - possible use of coverage tools

The basics of j pole, 5/8th verticals and simple yagi antenna designs.

There is an open invite to members of Dragon ARC to this event and indeed all North Wales Tech events. Don' t forget the free food and hot drinks! Personally I think that by interacting with the wider tech community, we can only promote our fine hobby and perhaps even learn a thing or two! So why not come along and perhaps even help me deliver the talk if you are interested?.. Let me know.

Further details on North Wales Tech can be found at: <http://northwales.technology/>

Book yourself into an event at: <https://www.meetup.com/NorthWalesTech/events/>
(This ensures they cater for you.... Mmm pizza / curry / deliciousness)

North Wales Tech Forum at: <https://forum.northwales.tech/>



(Me talking Marconi in Wales at the launch of Year of IoT .. April 2019)



We are on the web!

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

Cadeirydd / Chairman

Is-Cadeirydd / Vice-Chairman

Ysgrifennydd / Secretary

Trysorydd / Treasurer

Equipment / Officer

Danny Shurmer GW7BZR

Position Vacant until AGM

Simon Taylor MW0NWM

Cath Thorley

Dylan Williams MW1EPI

Aelodau / Members

Bryn Smiles MW6DZO

Cliff Nicholls 2W0CBZ

Jeremy Markham MW6XWP

Kevin Thorley MW1CFA

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 will be issued in December 2019. Please do send material for inclusion.