

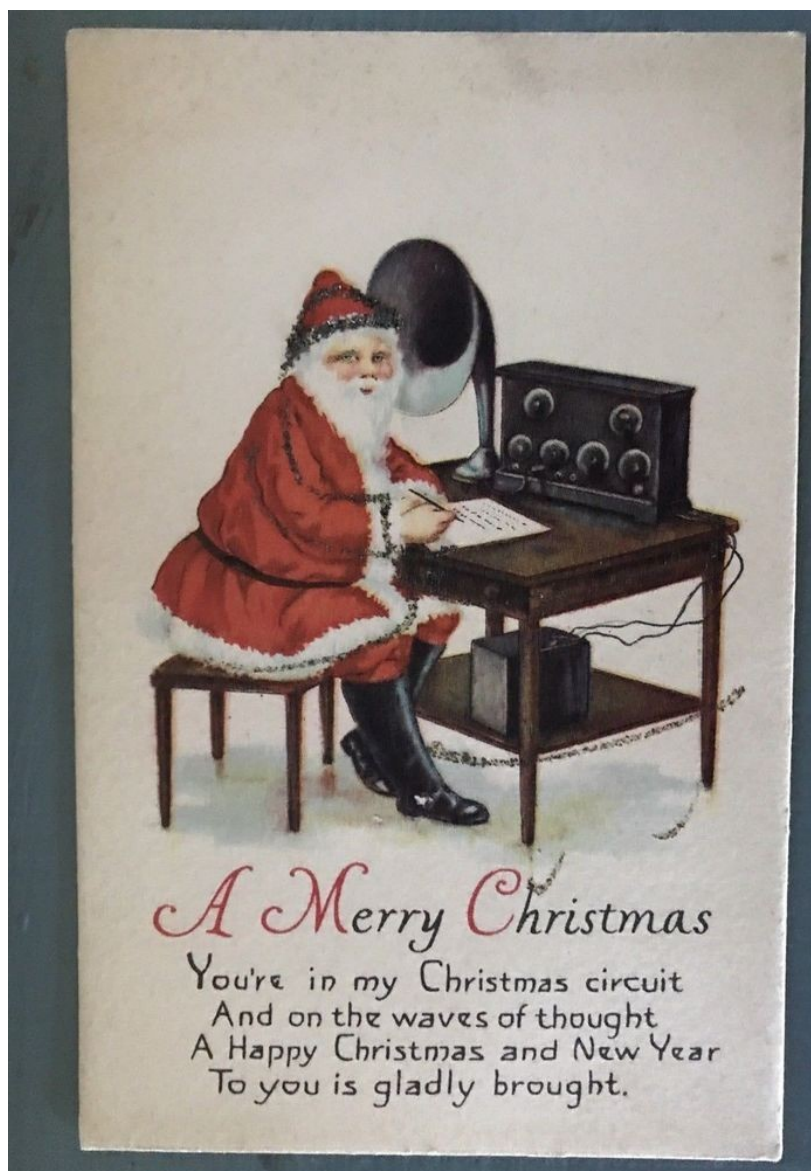


Rhagfyr / December 2019

Rhif / Issue 122

Cylchgrawn Clwb Radio Amatur Y Ddraig

The Journal Of Dragon Amateur Radio Club



**The Committee would like to wish a Nadolig Llawen /  
Merry Christmas to all club members and friends of  
Dragon Amateur Radio Club.**

## Club Programme

2nd Dec                    **Saunders Roe Talk** (David Mills from Gwynedd Engineering Society)

16th Dec                **Christmas Quiz and Social** (with our resident quiz master John GW3GUX)

The programme for 2020 will be decided by the new Committee and will be circulated to all members as soon as possible.

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## From the Editor ...

Dear Members and Friends of Dragon ARC.

Once again it is time to put pen to paper and once welcome you to another issue of Llais Y Ddraig. I hope that you will all find something of interest in this issue and if not, then please do think about contributing to the Mawrth 2020 issue.



Whilst the Sun continues to misbehave and not help propagation on the higher bands, perhaps you will attempt to work some DX on 40, 80 and maybe even 160 metres! Even with a small garden you can get on all these bands if you use a little imagination. A quick search of Google will come up with all manner of suggestions and designs for a suitable aerial. Now this design may not be a competition winner, of course it will be a compromise, but it will allow you to get on the air. I challenge any of you who wish to try it to have a go, perhaps you could send in a report of your activities to the editor.



Finally as I sign off for 2019, may I take this opportunity to wish you all a very Merry Christmas and a happy and prosperous New Year!

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

Greetings Members. By now you will have seen the results of the AGM on Facebook or by word of mouth. There is a bit of a change as you will notice. Some people have gone and we would like to thank them for their services and wish them the very best. I would also like to welcome the new officers and members of the committee and hope you will enjoy yourselves whilst you are part of it. A committee is something a club that is affiliated to the RSGB must have and we have fulfilled our obligation. It is also the core of the club that is needed to run it successfully and also to try and accomplish the members wishes. Every body has their own little job to do and if everybody does it we have harmony. Of course if the committee do not get any input from the members then of course they cannot function. So if you want us as a committee to do something be it a special event, demonstration or a special talk you have to tell any member of the committee. Only then will we know what you want from the club. We do have a few events lined up and these will be announced on our Facebook page and also hopefully in Radcom. We will of course be telling people over the air and word of mouth. I shall try and ask our esteemed secretary if we could email something to all members as they come up. Keep him working and he's happy.

This news letter that you are reading is compiled by one man and to do it he needs input. He wants articles off anybody. They don't have to be long or even a few photos of interest, old events or your next project. If he hasn't got anything to put in he has threatened to include knitting patterns!! At this moment we have a Foundation class running and I would like to wish them the best of luck in their forthcoming exams. We will be having more courses in the future.

Enough from me for this year!! May I the grumpy Chairman wish you all a Merry Christmas and a Happy New Year!!

Danny GW7BZR

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## Thank you ...

A big thank you to the following who have contributed material for inclusion in this newsletter:

Les MW0SEC, Stewart GW0ETF and Danny GW7BZR.

Perhaps you would like to see your work in these pages next time. Please do consider contributing!

**Amateur Radio News ...****Threat to 2metres - A Near Miss**

France Submitted a paper to a meeting of the CEPT WRC-19 Preparatory Group to take place last June 2019. "The list of bands that are proposed for study of possible new allocations to the aeronautical mobile service on a primary basis is revised by adding the band 144-146 MHz, the bands 5000-5010 MHz and 15.4-15.7 GHz being maintained."

"The decisions of previous conferences have introduced some restrictions to the use and have imposed constraints on the development of aeronautical mobile applications within some existing mobile allocations traditionally used by the aeronautical mobile applications.

At the same time, the number of manned and unmanned aircraft equipped with sensors has grown significantly in the past 20 years together with the need of bidirectional low to high data rate communications.

Aeronautical applications like fire surveillance, border surveillance, air quality and environment monitoring, traffic monitoring, disaster monitoring, terrain modelling, imagery (visible, infrared, radar, meteo), video monitoring require non -safety communications between various types of aeronautical platforms.

Consequently the need of non-safety data communications between various types of aeronautical platforms increases and so the need for new frequency bands" .

Following the Ankara CEPT Meeting, France/Thales were asked to rewrite their proposal with any mention of 144-146MHz to be removed.

While we have won this fight we should stay alert and we urge every radio amateur to use the VHF/UHF bands, stop complaining about other amateur' s activities, remain civilised in our conversations and to act as an Elmer for newbies. On 144MHz we have EME operators, CW, SSB & digital DX' ers, amateur satellite users, FM & digital voice simplex users and repeaters. Each of these amateur activities utilises the 144MHz band in a different way, but we all use it. The "use it or lose it" saying has never been so true.





**Amateur Radio News ...****Beginners License, A Solution?**

In October 2019, the RSGB VHF Manager John Regnault G4SWX discussed his own proposal for a 4th tier beginners amateur radio licence with Essex Ham, this can be found here:

<https://www.youtube.com/watch?v=EYGAmTClfzc>

*But what is John proposing?*

In summary, the proposal is for a low-power (5 watt) VHF/UHF (144/430 MHz) entry class 'Beginner Amateur' licence for use with unmodified equipment. A callsign and licence would be awarded after passing an online exam.

*Why would we need a new licence-level?*

There's currently some concern within the amateur radio community about the hobby's future, and this was a key topic at the recent RSGB Convention. For example 1,892 newcomers gained their Foundation licence in 2005 but there were only 1,366 in 2018 a drop of 28%. The RSGB's 2022 Strategy lists "Growth" as the top priority, and at the 2019 Convention, the target of acquiring 2,000 new RSGB members each year was set out. But where is this growth going to come from, and how do we halt the decline?

The idea of bringing in a fourth-tier licence has been proposed – this could open up the hobby to new potential markets, be more suited to the evolving maker/hacker communities, and remove the existing barriers to entry. It also potentially offers easier access to the hobby for youngsters and groups not previously served, and allows people to see if the hobby is for them before committing to Foundation-Intermediate-Full.

The idea of a new entry-level licence has been discussed before, and there were some references to the idea at the RSGB Convention, including a question from the audience during the RSGB's Exam Update session.

So what do Dragon ARC members think of this idea? Is a 4th tier beginners licence needed? Or do you have other ideas about how we can attract more people to our fantastic hobby? Please do let me know your thoughts at the editors usual email address:  
[darc.secretary@gmx.co.uk](mailto:darc.secretary@gmx.co.uk)



## Annual Construction Competition 2019

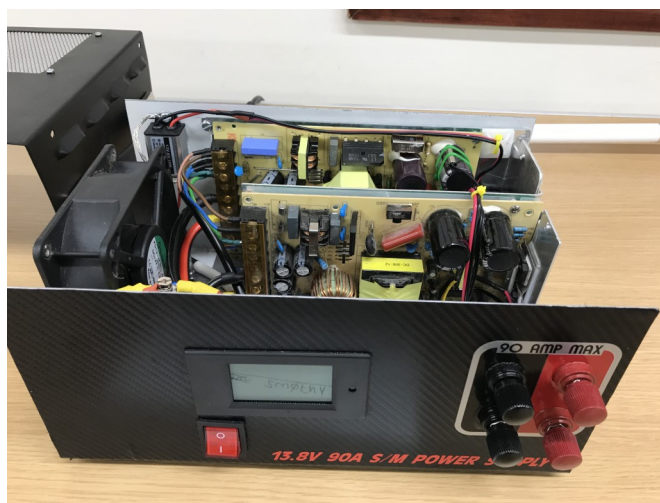
On the 11th November Dragon ARC once again hosted it's Annual Construction Competition. Whilst there were not as many entries as last year, the standard of entries was high, including a 40metre band software defined receiver (SDR) built by John GW3GUX, a dual band flowerpot VHF / UHF antenna courtesy of John MW6MON, a 90amp switch mode power supply by Karl 2W0FNA, a 'Shack-Box' Aduino Nano based display from Simon MW0NWM (not yet working) and a CW key with memories by Danny GW7BZR. Danny also displayed his latest project, a long wire antenna!

Each member told the gathered throng about their project, most notable being Karl 'FNA' who tested his power supply by adding a copper coil and wire to the terminals of his power supply and boiled a bucket of water in around five minutes! After inspection of projects and voting by members, Karl 'FNA' was declared winner for 2019. Well done Karl!



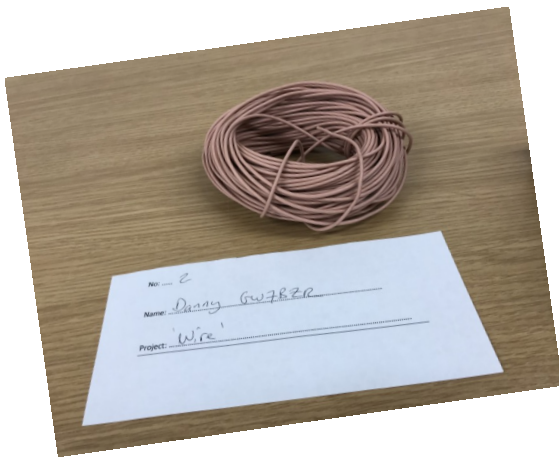
*Left: Karl 'FNA' showing us his 90amp power supply.*

*Right: Karl's winning entry!*



*Left: John 'MON' discussing his VHF / UHF 'flowerpot' antenna.*

## Annual Construction Competition 2019



*Above Left: Danny' s Long Wire Antenna!*



*Above Right: Danny 'BZR' discussing how long it took him to build his long wire aerial!*



*Left: Karl 2W0FNA receiving the Construction Competition trophy from club Chairman Danny GW7BZR.*

In conclusion this was a very enjoyable event, but we would like to see more members enter in 2020. Don' t be shy beginners and more experienced constructors are very welcome and encouraged. So why not get thinking about your project now and give yourself plenty of time to get those soldering irons hot!



## JOTA (Jamboree on the Air) 2019

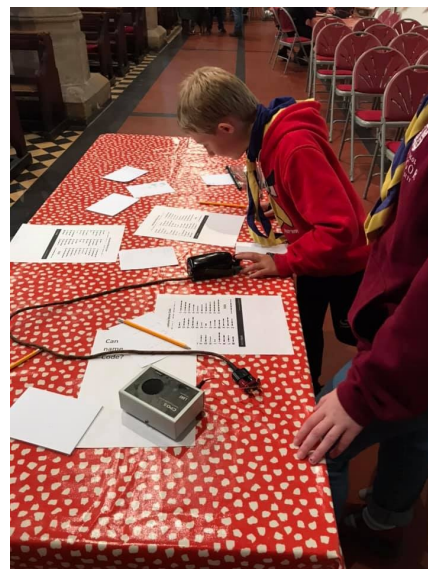


With just over a weeks notice, we were asked to run a JOTA station for 7th City of Bangor Cub Scouts, the only problem was we did not have a venue! After a very helpful suggestion from my lovely wife Beth, the Dean of Bangor Cathedral agreed to us using this magnificent building for the Saturday afternoon.

In pouring rain Danny 'BZR, Kevin 'CFA, Dylan 'EPI, Paul, Jim 'IAU, Karl 'FNA and Simon 'NWM set up the DX Commander for 40 and 80 metres, plus a two metre co-linear. We were soaked!

Along with the Cub Leader Matthew MW6RUN, we were visited by 20 Cub Scouts, plus younger siblings, parents, grandparents, aunts, uncles and a Collie dog! All the young people exchanged greetings messages with fellow Scouts in the UK and Ireland on HF and also made local contacts on VHF. They also enjoyed sending their names in Morse code, made tin can and string telephones and enjoyed hunting for knitted mice around the cathedral. Everyone including Dragon members had a great afternoon and we have been asked to run a larger event in 2020!

The gang packed up in the rain and we were soaked once again, but we have been given an open invitation to run events at the cathedral in the future, Churches on the Air in September 2020 anyone? A huge thank you to all the members who helped out at the event!



## DXPedition to Pentraeth Beach

By Danny GW7BZR

Once in a while the club does try to do something different. It was decided that we would have an evening on the beach at Pentraeth instead of a normal club night. Having checked the tide tables and found it was out a few of us descended on the beach at Pentraeth. We have used this beach previously when doing the ssb field day events. I had purchased a new generator and we were going to use that and we set up the radio and a dipole. Paper logging this time, sand and computers don't really mix.

One of the problems we found out straight away was the electrical interference from the generator. This gave S9 of noise on the receiver which was no good. We switched to an older generator and it was fine. It had only one other problem and it cut out after a bout 10 mins and needed restarting. Perseverance paid off and about 20 contacts were made. One of the members Karl 2W0FNA managed a first to South Africa on his home made vertical. By this time it was starting to get dark and cold so we packed up. It was an enjoyable event but we learnt a few lessons. Do it earlier when it is warmer and make sure the generators work properly which we have now done.



*Left: Karl FNA, Kevin CFA and Danny BZR*



*Right: One of the beach radio shacks.*



*Far Right: Danny BZR directs operations from the radio hot seat!*

**SSB Field Day 2019****By Danny GW7BZR**

Some years ago this radio club used to enter contests quite regularly and we used to achieve a creditable performance. These were entered as a serious entry and were not every bodies cup of tea so were only entered by a team of hardcore operators. Now I am not a hardcore operator by any figment of the imagination but I decided it was time that we tried this contest again.

The club has no caravan or even a tent so it was to be a low key event from my Jeep. I had all the radio gear, antenna and generator that I needed. Self sufficiency is something that is needed on this event. After much discussion I decided to set up camp at Traeth Dulas. I was helped to set up by a few of the members only to find the keyboard for the computer did not work so John

'MON and Jim 'IAU made a mad dash to Llangefni to get one. A few contacts were made by Karl' FNA and Jim while I set up the tea facilities later to be joined by Kevin' CFA and Dylan' EPI.

While we were operating we had many visitors who were intrigued by what we were doing and asked many questions which we were pleased to answer of course. Public relations at its best!! As darkness started to approach I moved into the Jeep and started to use the Icom 706 that is installed there. I carried on steadily till about 2.30 in the morning and as it was a bit decided to have a kip. I woke up about 6.00 and made a cuppa and topped the generator up. I was surprised how quiet it was except for the wildlife and the place had a zero noise level. I continued until the allotted closing time and then closed down and packed up. I was knackered but pleased with 225 contacts.

Once home I downloaded the log and unloaded the Jeep. It was definitely an early night that night. After a long wait the results were published and we were second in the class. The irony of this is that if I had registered the callsign as an entry earlier we would have easily achieved first place and a nice certificate. A hard lesson to learn!! Many thanks to all that helped especially to the lady who brought me a bacon sarnie at 8.00 in the morning!!.



## A New Club Banner and Car Stickers!



Thanks to our very own Karl 2W0FNA, Dragon ARC now have a brand new and very smart club banner! I hope you all agree that it looks great. In fact it looks so good that Karl has produced car window stickers measuring 15 x 5cm approx. These are available from our esteemed Chairman Danny GW7BZR for £1, worth every penny and no Dragon ARC members car is complete without one. In fact why not buy a 2nd one for the love of your life to put in their car.

Thank you Karl...

Keep your eyes open for new polo shirts, short sleeved smart shirts and sweaters with embroidered club logo. Coming soon in 2020.





## Rectifiers past & present

### Les MW0SEC



The requirement of a rectifier was (and is) largely divided between small-signal demodulators and power rectification. The purpose of this account is to list a few examples which have developed over the years, including some strange examples.

Dealing with signal detectors first, it is interesting to note that little has changed apart from improved manufacturing technique. The first type of diode detector was the 'catswhisker & crystal' arrangement popular in early radio receivers. This usually consisted of a spring pressing upon a crystalline material, such as galena. It was down to the operator to find a spot on the crystal which gave a decent 'front to back' ratio and thus a reasonable performance as a rectifier. Oddly enough, this was the method used to produce the first mixer for the receiver



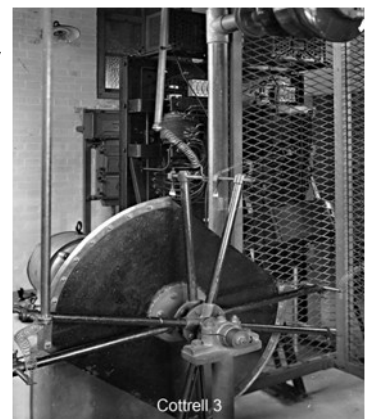
superhet used for 10 cms. Radar. H.W.B. Skinner developed his own diodes using a spring and silicon crystal while working at TRE Worth Matravers during WW2. He had little choice, since the only alternative at the time, was a thermionic diode – none of which currently available could handle the very high frequencies. This technique was later commercially applied – also using germanium

and giving rise to such well known diodes as the OA90. For lower frequencies (e.g. broadcast) it was common practice at the time to use a thermionic diode and these were often combined within the envelope of an amplifying valve. Bringing us up to date, we now have well known examples like the 1N4148 and the later Schottky diodes, although the 'whisker' is now superseded by a P/N junction.

**Power rectification** presents a more diverse picture and it is here that we see a large variation in approach:

### The mechanical rectifier.

If you can switch your AC input with precise timing such that the polarity of the input always matches the desired output, rectification is achieved. This was done using a synchronous motor locked to the input frequency, driving a rotary switch. A low-current variation of this method employed a synchronised vibrating reed, which switched contacts at the correct time. The latter were also employed as DC-DC converters to provide high tension supply for early car radios.



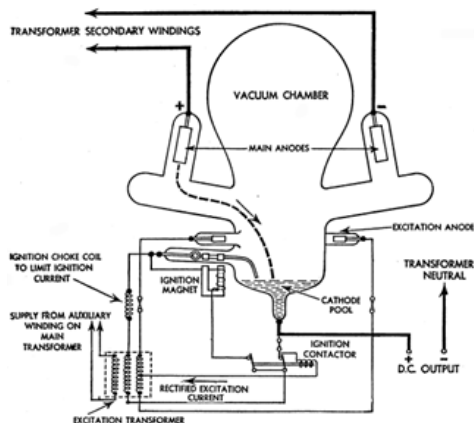
## Rectifiers past & present ctd ...



'Metal' rectifiers.

A number of rectifiers were produced using such materials as copper oxide and selenium. The selenium devices were popular for medium-current applications such as domestic televisions and low-current chargers. They were assembled with a system of fins to disperse heat as there was a considerable loss across the devices which had to be dissipated as heat. When these devices failed (A common occurrence) sulphurous fumes were released, giving rise to an unpleasant smell of bad eggs!

### Mercury rectifiers.



Where a considerable current and reasonable efficiency was required, mercury vapour provided a solution. The devices ranged in size from an octal valve envelope (for the likes of transmitter HT), up to enormous glass bulbs with a large pool of mercury in the base. These were employed for example in trolley-bus power supplies and for cinema use, to provide DC for the



projection arc system. These things were a beauty to behold when in operation, giving rise to a lovely bright violet glow. Sadly, with mercury now being treated with the same hysteria as asbestos, few examples remain.

### Chemical rectifiers.

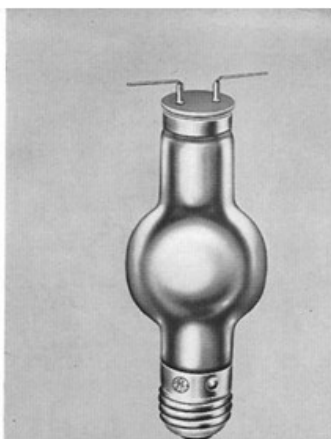
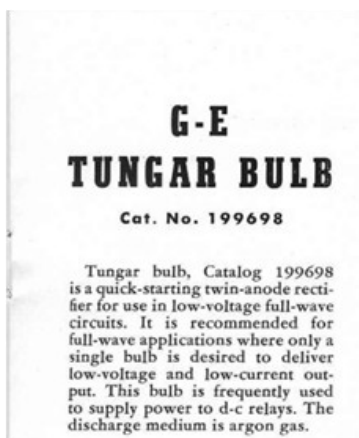
One type of chemical rectifier was called the 'Nodon valve'. This consisted of a glass or stoneware container with a plate of lead and a rod of aluminium immersed in a solution of ammonium phosphate. The rectification was caused by electrolytic action. One can imagine a

## Rectifiers past & present ctd ...

radio operator saying "QRX old man – just have to top up the phosphate" !

### Tungar rectifiers.

The thermionic diode has already been mentioned and will be familiar to anyone who worked with radio equipment from the 40' s to the 80' s. Thermionic diodes were employed not only in signal circuits but were popular for providing high tension supplies.



One unusual deviation from the norm was the tungar rectifier. It was thermionic in action, but rather than using a vacuum, the envelope was usually filled with argon. The filament (heater) was of thick, coated construction in order to pass a heavy current. When current was drawn through the device, the brightness of the filament increased – often to a very bright

light. These devices were common in heavy-duty chargers and were surprisingly rugged.



## Annual General Meeting 2019

On Monday 18th November, Dragon ARC held their Annual General Meeting. The meeting was the best attended in years, with 29 members being present.

The Chairman for 2019, Danny GW7BZR thanked everyone for attending and gave his annual report highlighting the many positives after a tough start to the year. Danny detailed the various special events we had taken part in including Marconi Day in April, Lighthouses weekend, JOTA with Bangor Cub Scouts and much more. Danny also commented on the number of paid up members being well over 40 and that we should exceed the previous years membership numbers.... Well done all!

Following the Chairman's report, Cath Thorley our recently appointed Treasurer presented the club accounts which are quite healthy.

There was then an election of a new club committee for 2020. The following were elected:

Chairman:	Danny Shurmer	GW7BZR
Vice Chairman:	John Parry	GW3VVC
Secretary:	Simon Taylor	MW0NWM
Treasurer:	Cath Thorley	

Ordinary Committee Members elected:

Kevin Thorley	MW1CFA
Stewart Rolfe	GW0ETF
Karl Byast	2W0FNA
Cliff Nicholls	2W0CBZ

Following a number of Unofficial, but vital posts were filled:

Door / Subs	Beth Roberts	
Refreshments	Cliff Nicholls	2W0CBZ
QSL Manager	Tony Wright	GW0LIS
Newsletter Editor	Simon Taylor	MW0NWM
Equipment Officer	Dylan Williams	MW1EPI

I am sure you will all join me in wishing all those people listed above the very best wishes and thanks for taking on their new roles and helping to keep Dragon ARC thriving.





## Dragon ARC Facebook Group ...

A few snippets from our Facebook Group. If you have not joined us yet, where are you? Just search Dragon Amateur Radio Club in Facebook search and 'click' join, you would be most welcome!



	Date	Time	Call	Band	Freq	Mode	Grid	Country	Operator Name
1	2019-11-16	08:26	ZS1OPB	20m	14.196	SSB	JF96GJ25	South Africa	Robert Lock
2	2019-11-16	08:10	JH1GEX	20m	14.226	SSB	PM95ik	Japan	KOMATSU YUTAKA
3	2019-11-07	15:01	YQØRN	20m	14.199	SSB		Romania	Casa-Muzeu RADIONOSTALGIA-BRUSTURI

16th November, Karl 2W0FNA told us..... **'First JH this morning happy with that!'** This lead to a lively discussion on the state of the bands...

6th November .... Stewart GW0ETF commented .... **'Wot, no FTx?'** Do Dragon ARC need to pay more attention to digital modes?

3rd November .... Janet B commented ... **'Made him get me a chair out the loft however it should be me sat on the comfy one Ye ?'** ... The general consensus on Facebook was that Karl should relinquish his comfy chair. You' ll never get it back Karl, as soon as Janet is licensed you will be lucky to access to your transceiver!



5th November .... John MW6MON commented **'I may not have won the construction competition but I' m very happy with what I won'** . Who will be the next to win the Dragon Raffle?

## Training Update ...



**The Training Team Rogues Gallery ...** (please note the Invisible Man will have to do until we get a decent picture of Les MW0SEC!).

With a lack of tutors, Danny GW7BZR and I Simon MW0NWM volunteered. We are now capable of tutoring all three levels of the Amateur Radio Licence structure, Foundation, Intermediate and Full.

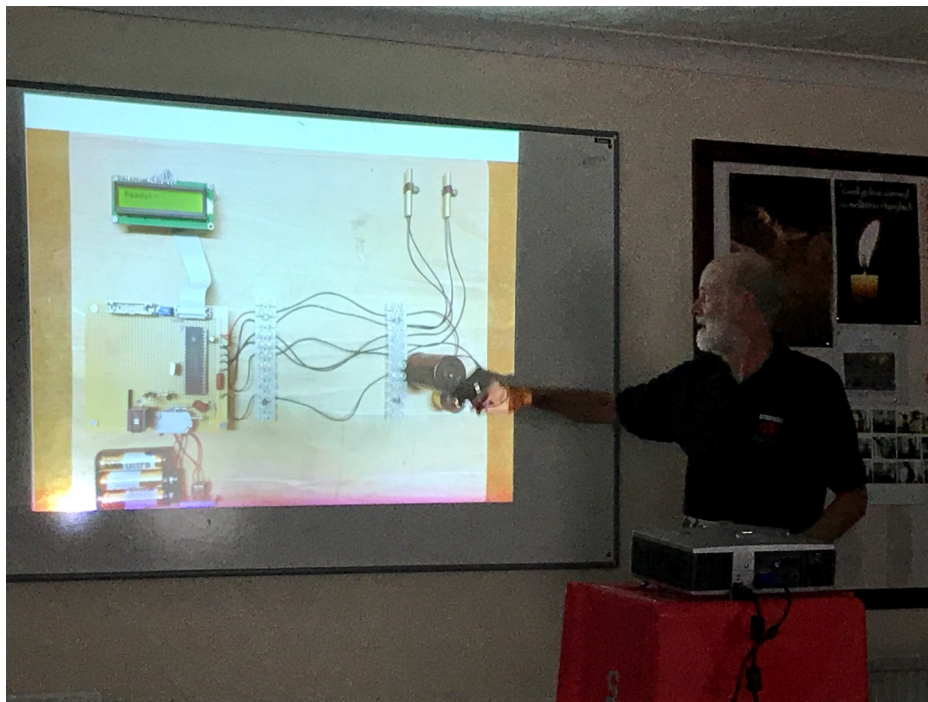
Starting in November Danny and Simon have been running a Foundation course and all seven candidates are doing very well. I am sure you all wish Cath, Janet, Paul, Jon, David, Martin and Steve the very best of luck in their mid December exam!

We are planning an Intermediate Course which will begin early February. Please do let Simon know if you wish to join in via email [darc.secretary@gmx.co.uk](mailto:darc.secretary@gmx.co.uk) or in person.

As for the Full licence, Danny and I are still getting used to tutoring the first two licence levels, however we are very lucky that our resident RF guru Les MW0SEC is happy to tutor the odd candidate to the Full licence standard. If you wish to study for the Full licence, email Simon at the email address listed above or speak to Les via 2 metres (145MHz) or approach him when he attends club.

Finally a request for further help. Tutoring people to gain an amateur radio licence is very rewarding, but we could do with one or two more tutors. If you are interested let us know, we shall support you all the way!



**Caption Competition Winner**

In the last issue of Llais Y Ddraig you were given the opportunity to write a witty or amusing caption to accompany the above picture of Les MW0SEC. Below is a selection of suggestions from our members:

Merv GW1SGG suggested "Few crossed wires here - hope it does not end up with a BANG"

Jeremy MW6XWP said ... Words you don't want to hear in a UXB lecture, "I can never remember which of these two wires disarms the bomb"!

David Morris though ... "Being colour blind these wires must look like 50 shades of grey to you." "yes" he said, "and it's not going to end well".

Dylan EPI ... "was a blast!"

Danny GW7BZR came up with ... "This is what I would have used if I were Guy Fawkes and there would be no problems today!!"

However after much thought, the winner is Karl 2W0FNA who came up with the following caption ... "This unit detects Italians using more than 2kw and sends 500v dc to their ptt switch" .

Well done Karl, your (small / very small) prize will be with you soon!

## A 'No Grunt' Method of Raising a Telescopic Mast

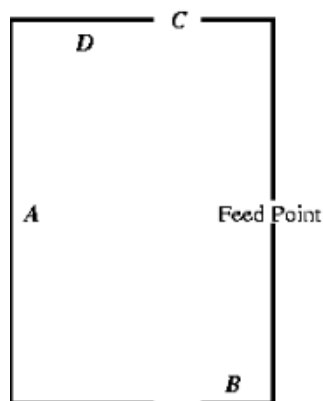
Stewart Rolfe GW0ETF

*(This will be of interest to those who have celebrated too many birthdays.....like me)*

Earlier this year I decided it was time to replace my 20m Inverted Vee dipole for something with a bit of gain to the west and significant attenuation to the east. The reasons were threefold:-

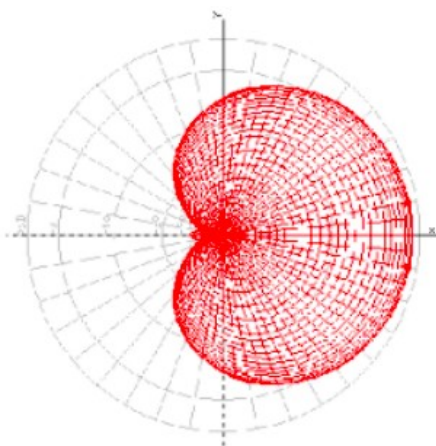
- 1) North America is the source of high scoring contacts in many of the big contests, and...
- 2) You often get clobbered by huge signals from Eastern Europe when trying to work these stations to the west.
- 3) In these days of no sunspots 20m is a crucial dx band.

The dipole I had was held aloft on a heavy duty 10m Spiderbeam aluminium telescopic mast sited up on some raised ground in the field next door (thanks James the sheep farmer.;-) and worked pretty well. There are big oak trees here and oaks aren't really ham friendly as they don't grow very high and spread branches all over the place to get in the way. After some inspection I decided I could just about fit a Moxon there although I did invest in a professional tree pruner with a 6m reach just to make sure – amazing bit of kit! So I ordered a 20m Moxon from Justin G0KSC at Innovantennas with the intention of sticking it on top of the existing mast and crossed my fingers it would be physically feasible.



*Moxon plan on the left. The long dimension relates to  $\frac{1}{2}$  wavelength at the design frequency.*

*Driven element is on the right (B) with the reflector (A,D) to the left.*



*The horizontal (azimuth) radiation pattern is the right hand diagram*



## A 'No Grunt' Method of Raising a Telescopic Mast ctd ...

These Spiderbeam telescopic masts are 'push up and clamp' and are very strong. No problem with a wire dipole on top which can also be left there in all weathers. A Moxon for 20m is by no means a monster but is quite large, heavier than a wire dipole and I wouldn't like to leave it up in really high winds. It was quite a struggle getting it aloft the first time but it definitely seemed to work well and was clearly better than the dipole. But there was no way I could see myself repeating this on a regular basis while escaping a hernia and the need to go and lie down for an hour each time to recover. It's particularly difficult when you get to the lower sections where you have not only the weight of the antenna to deal with but also that of the rest of the mast above you too. There was also the issue of safety; when all your effort is concentrated on simply pushing up each section you can't keep an eye on snagging guy ropes or tree branches and most importantly those tell tale marks toward the bottom of each individual pole which warn you it's nearing the point at which it will pop out and result in the whole upper portion crashing to the ground. Don't bother asking why I know that....I just do! I was even thinking I would have to ditch the Spiderbeam mast for something like a small Tennamast which I could wind up; the main problem besides the cost was space and having to put a large concrete base in ground that didn't belong to us and was about 6 inches of soil above solid rock.



*Photo 1 – see text at end*

But then I had one of those rare internet encounters that make you think that Google isn't that bad after all. Quite by chance I stumbled across the [website of W5FCX](#) in which he describes how he handles his Spiderbeam wire yagi supported on top of a 14.5m push up Al mast. In it Rick details a really neat and easy method for raising the mast and I realised this could be the solution to my concerns. Rick describes how he uses a linear actuator in which a reversible polarity DC motor extends and retracts a rod within a tubular housing and I decided I could easily adapt this idea to my situation. A picture is worth a good few dozen words so check out the photo and you'll see how it works (Photo 2). Linear actuators are available off eBay etc but for the modest increase in price I bought this 500mm one from a professional robotics company in the UK for around £110. For £8 I did avail eBay for a 10A 12v power supply, and a momentary 2 pole 2 way switch for reversing polarity completes the electrics. Using a 10mm bolt, the base is swivelled on one of the lugs of a standard 4-way guy bracket clamped to the lowest mast section at a height that meant I could just reach the top of the extended rod without ladders; this bottom section is secured at it's foot in one of those post sockets embedded in some postcrete. The actuator is kept loosely

## A 'No Grunt' Method of Raising a Telescopic Mast ctd ...

upright with some rubber coated plant ties and a length of 4mm Mastrant guy rope is fixed to a long bolt passed through the eye on the top of the extending rod.



*Photo 2 – see text at end*

In use, this rope is wrapped around the particular mast section 4 or 5 times and tied off on the bolt with a clove hitch. The rod is then extended until the rope begins to grip the mast under tension, then the relevant clamp is loosened (look twice, loosen once..!) and the rod extended to push up the section. When the actuator reaches it's limit or the section is at maximum extension release the switch and tighten the clamp. Press the reverse switch and the rod will retract bringing the rope loops with it after perhaps a nudge with the finger tips, and then repeat as necessary. Every couple or so cycles it's necessary to untie the rope and re-fix on the next section below the next clamp but doesn't take long. When raising the lower mast sections the body of the actuator will jam against the rotatable guy rings unless a spacer is used – hence the short length of 2 by 1 timber in the picture. So, thanks to W5FCX the previous grunt and curse routine has become a relaxed button pushing exercise which allows me to watch exactly what's happening with everything under control and the physical exertion is limited to carrying my small suitcase generator up to the top of the field.

I don't have a rotator as this was intended as a fixed 'North American' antenna but I have since added a second 4 way guy lug which when secured immediately above the top edge of the bottom (fixed) section allows me to loosen the clamp and turn the whole mast by hand as the guy fixings are rotatable; useful for chasing specific dxpeditions or EU based contests.

*Photo 1 – The Moxon in position and beaming down the handy slope towards the west (left in the photo). The upturned bucket protects the remote antenna switch....it's around 65m from the shack and a single feeder of LDF4-50 hardline coax feeds the switch. The fibre glass pole right foreground supports a  $\frac{1}{4}$  wave vertical for 20m with 2 elevated radials so I always have an omnidirectional alternative.*

*Photo 2 – Hopefully self explanatory. The motor of the actuator and supporting guy lug is secured to the bottom mast section which is fixed at ground level. It would be nice to have an actuator with a longer reach but it's a balance – it would be quicker but would probably mean having to take a step ladder to reach the top to undo the rope at full extension.*

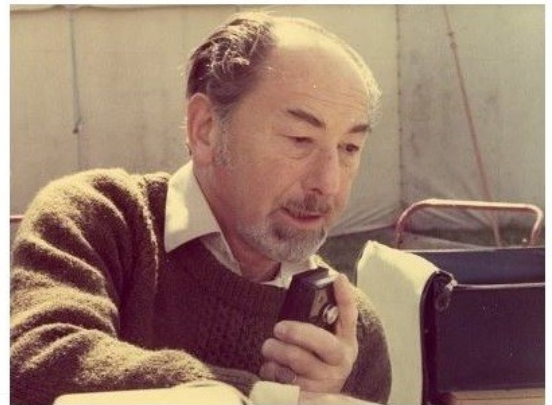
## Christmas Picture Quiz ...

Have a go at our Christmas Picture and Question Quiz. Send your answers to the editor at [darc.secretary@gmx.co.uk](mailto:darc.secretary@gmx.co.uk) no later than 31st January 2020. There will be a prize for the person who gets most correct, or if more than one person gets 100% correct, I shall draw the winner from a hat. GOOD LUCK!



1) <<< Who is this?

2) >>



Who is this and what famous piece of equipment did he invent?

3) Amateur radio stations whose call sign starts with the prefix **VP9** are based in which country?

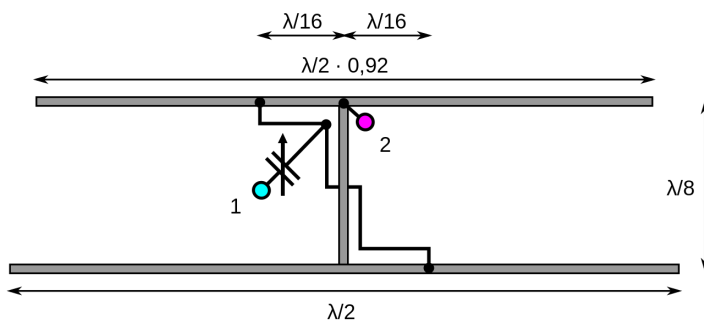


4) << Can you name this character?

5) Name the building and it' s famous TV transmitter >>>>>>>>>>>>>>>

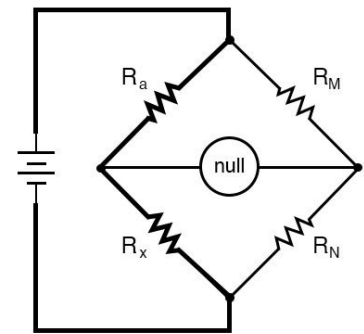


## Christmas Picture Quiz ... ctd...



6) &lt;&lt; Name the antenna

Name this simple circuit &gt;&gt;&gt;



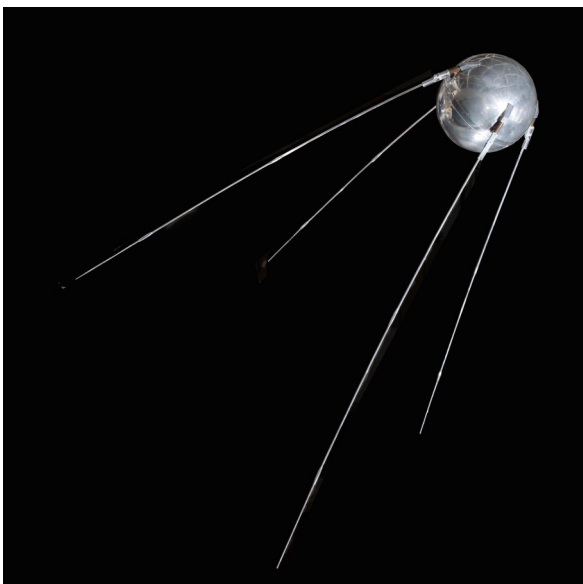
7) &gt;&gt;



8) &lt;&lt;&lt;&lt;&lt; Who is this and what is he famous for?

9)

Name this man and what was the nickname he was given by listeners in the UK?



10) &lt;&lt;&lt;&lt; Name this object and the year that it made headlines around the world.



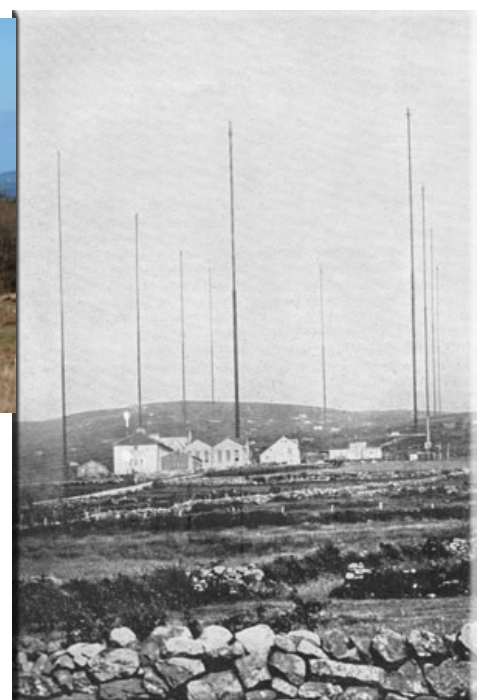
## VK Day at Waenfawr

By Danny GW7BZR

Every year the club tries to contact a station in Australia to commemorate the first telegram being sent from the UK to Australia. This was accomplished last year with the use of Echolink despite the amount of gear put up there. This year it would be a low key affair with a couple of antennae and a couple of rigs. A few of us braved the weather on Friday afternoon and with the promise of imminent rain it was erected and operational.

Of course something had to misbehave and once again it was the Dx Commander aerial. It kept collapsing back into the tubes because of the wind. This was to happen all weekend and most of the contacts were made on the FT990 and an 80m dipole.

We have not heard from the station in Australia since the last event so we did not know if they were on the air or not. We did not have a cw operator during the night so expectations were low. In total we made contact with 160 stations, had scores for the Rugby World Cup updated from an Irish station all day long. We did manage a contact with Australia but not from the one we wanted. Perhaps next year?. Everything was pulled down on Sunday afternoon and many thanks to those who turned up to operate and to help erect and pull down.



*Waunfawr transmitter site then and now.*



We are on the web!

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

**Committee for 2020**

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GW7BZR

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Karl Byast 2W0FNA

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**Refreshments** Cliff Nicholls 2W0CBZ

**QSL Manager** Tony Wright GW0LIS

**Equipment Officer** Dylan Williams MW1EPI

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

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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. 123 will be issued in Mawrth / March 2020. Please do send material for inclusion.**