



Llais Y Ddraig

The Dragon's Voice

Cylchlythyr Clwb Radio Amatur Y Ddraig
Newsletter of the Dragon Amateur Radio Club

Tachwedd / November 2017. Rhif/No. 116



The committee would like to wish all members and friends of Dragon Amateur Radio Club a Merry Christmas, a Happy New Year and enjoyment in our fabulous hobby in 2018.

Thank you...

Diolch yn fawr iawn to the following who have contributed to this issue:

Les MW0SEC and Dave Porter G4OYX.

Programme

December

4th 'A Radio Related Talk' by Dr Chris Barnes.

18th Christmas Social.
Chance for a drink and a natter at the Four Crosses, Menai Bridge.

January

1st CLUB CLOSED

15th Antennas with Danny GW7BZR.

February

5th Film Night.
An opportunity to watch one of a choice of presentations from the 2016 RSGB Convention.

19th The Flying Ambulance Service
A guest speaker and friend of John VVC will tell us all about this valuable service.

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From the Editor...

Dear Friends,

This newsletter finds us at the end of a very busy year! Perhaps that is why I had little copy for inclusion from the membership? Remember this is your newsletter and all contributions are gratefully received, whether they are full articles of a technical nature, contest reports, equipment reviews, band reports or anything else you think will be of interest.

I hope you find something of interest in this issue and of course the other file attached with this newsletter, when I emailed it out to you. I am only sorry that I failed to combine the PDF sent to me from Dave G4OYX for inclusion, but I am too tight to pay Adobe in order to merge PDF documents!

Finally I would like to wish you all Seasons Greetings and all the best for 2018.

73,

Simon, MW0NWM, Editor.

AGM Report

Simon Taylor

MW0NWM

On Monday the 20th of November, Dragon ARC held their Annual General Meeting. There were 17 members present and although this was slightly down on last years attendance of 20, it was still a good turnout. The members heard a report on the state of the club from Chairman, Simon MW0NWM; which was mainly positive and can be found in full elsewhere in this issue of Llais Y Ddraig. Simon also thanked the outgoing committee for their hard work and commitment to the club, in particular Dafydd MW5DJO and Kevin Jones MW0IBT who stood down from the committee. Simon was also happy to report that Kevin 'IBT had volunteered to remain as Equipment Officer, a most vital role.

Following the Chairman's Report, John Brimecombe GW3GUX delivered his usual concise Treasurer's Report. The club finances remain in reasonable shape, in spite of rising hall hire costs.

John Parry GW3VVC proposed that the club would benefit from a new position of Special Events Coordinator. This would help people planning events to ensure they have everything in place and that we do not miss events we have promised to take part in. After a brief discussion, the membership present voted unanimously to accept John 'VVC's proposal.

Following the reports, the committee for 2017 / 2018 was elected unanimously. The current committee is listed below:

Chairman:	Simon Taylor	MW0NWM
Vice-Chair:	John Parry	GW3VVC
Secretary:	John Pritchard	MW0JWP
Treasurer:	John Brimecombe	GW3GUX

Ordinary members:

Cliff Nicholls 2W0CBZ, Bryn Smiles MW6DZO, Emil Preda MW0IMZ and Steve Goodwin MW6KGY.

There are also non committee positions, some of which have been filled by committee members. The positions are:

Door Keeper:	Steve Nelson MW6SPN, with help from Bryn Smiles MW6DZO.
Equipment Officer:	Kevin Jones MW0IBT
Refreshments:	Cliff Nicholls 2W0CBZ
Newsletter Editor:	Simon Taylor MW0NWM

Further information about the roles of Public Relations Officer and Special Events Coordinator will be included in the next issue.

Following the election of committee and filling the non committee roles, there was no other business to be discussed and the meeting closed before 21:00, when the members present enjoyed their usual chat over a cuppa and a biscuit.

The Chairman's AGM Report 20/12/17

Simon MW0NWM

Dear Members,

I have spent quite some time deciding where I should start with this report. It has been a very busy and challenging year!

Let us start with club evenings. We have enjoyed talks on a variety of subjects including, Antenna analysers (Stewart GW0ETF), the uses of RF in the medical world (Kevin MW0IBT), V2 rocket guidance systems (Les MW0SEC), operating on 10 metres (Alun 2W0CYM), marine communications (John GW3VVC), time travelling rf history (Simon MW0NWM), WSPR Propagation tool (John MW0JWP), AM mode (Simon MW0NWM) and a mind blowing talk by Dr Chris Barnes.

We also enjoyed Ten Minute Topics, a radio quiz (John GW3GUX) and a well attended Annual Construction Competition, which was well supported with several members entering and was won by Emil (MW0IMZ) with his really useful Mains Remote Control. On club evenings we have also had the hf radio available for beginners and have had a very useful introduction to soldering courtesy of John 'GUX. Whilst talking about club evenings, I am pleased to be able to report that attendance has remained at an average of 16 people per meeting, the same as 2016.

Outside of club evenings, the club ran a well supported coach to the Norbrek Rally in Blackpool, thanks to Dafydd MW5DJO for organising this once again.

We have also run four special event stations throughout 2017. This started in April with a very well supported activation at Waunfawr for International Marconi Day. We had two active stations on HF and despite poor conditions made plenty of contacts. It was most gratifying to see one or two newly licensed amateurs making their first contacts on HF. Plus the BBQ organised by John 'JWP and Kev 'IBT proved to be a big hit. However how many of us did it take to put up the frame tent?

June saw the Holyhead area members put on a station at Holyhead Maritime Museum GB0HMM for International Museums Weekend. Once again contacts were hard to come by, but whilst not on the radio members enjoyed sitting out in the glorious sunshine. The day was also notable for Danny GW7BZR for his close shave with a parrot! Thank you to Kevin MW1CFA for organising the day.

In July Paul (GW1PCD) ran GB0SGC from the North Wales Show, aiming to promote amateur radio to a new audience. The station ran well with good support from the club membership, but only drew limited interest from the public. Paul and I have discussed areas where we could improve future recruitment stations. Perhaps we need some kind of interactive displays and digital modes to draw in a crowd. My thanks to Paul, for organising a very enjoyable day.

The Chairman's AGM Report ctd:

Finally in August, we enjoyed a weekend of operating from the Coastguard Lookout, overlooking Penmon Lighthouse for International Lighthouses and Lightships Weekend. Whilst Kevin 'CFA and I managed to once again burn out the switch on my AMU whilst lifting a 5/8 kite vertical antenna, others slogged away on the HF bands through poor propagation. I am sure I am not the only club member looking forward to improving propagation in a year or two?

Membership of the club remains healthy, with 42 paid up members as of Friday 17th November. We have gained some new faces and others have left us due to not being able to attend regularly. I feel I should take this moment to thank John MW0JWP for his work as Secretary and in training. His work has helped to recruit new members for DARC. This year John has trained several people at all three levels of the amateur radio licence. John has also been instrumental in Dragon ARC joining the RAIBC, helping to support people with limited or no sight to pass their exams.

Equipment is also another area where the club has been very busy this year. Thanks to the work of our Equipment Officer Kevin MW0IBT, our equipment is clean, securely stored and accurately logged in an inventory, therefore making it available for all club members to use. Kevin and a few other members have also made a start on the club trailer mast, clearing vegetation and assessing it's condition. The club also has a new generator, which is a lot lighter and far more transportable than its predecessor.

Finally regarding equipment, it would be remiss of me not to mention what was for several months the topic of conversation at every club night and committee meeting, the caravan! Having had the caravan checked over by a qualified mechanic, the decision was taken to dispose of it due to the fact that it was the beyond economical repair required in order to make it safe to use. However this leaves the committee for 2018 with the challenge of finding a suitable replacement!

I also hope you have seen the new club website, which has been live since the middle of the year and can be found via a simple web search. This is our 'shop window' for potential members and also a place for the current membership to find out what's happening in the club. With the support of Kevin 'IBT and John 'JWP, Bryn 'DZO has been very busy creating a site I am sure we can all be proud of. We also have a Newsletter produced quarterly, full of articles from members; however more contributions are always welcome and needed!



The Chairman's AGM Report concluded:

Various club members have been involved with contests this year. Stewart (GW0ETF), Danny (GW7BZR), John (MW0JWP) and Kevin (MW0IBT) have taken part in the regular 80m Club Contests. Kevin (MW1CFA) and I have taken part in the Practical Wireless 70MHz Contest and recently dabbled in the 160m Club Calls on Single Sideband (SSB) using the club contest call sign of GW6W. Kevin and I were supported in the 160m Club Calls by Stewart ('ETF) who entered from his home location (QTH) on CW and SSB.

I would like to send a huge congratulations Stewart ('ETF), Danny ('BZR), who with two friends of the club, including Steve (GW0GEI) and Martin (MW0BRO) entered the annual Islands On The Air (IOTA) Contest from Holyhead breakwater. They entered the Island, Multi Operator Single Transmitter, Low Power category. I am proud to say they gained 1st Place as GW6W Dragon ARC, well done you should all be very proud of your hard work, skill and effort! I do hope more people will consider taking part in contesting next year at HF, VHF or higher. Not all contests last all weekend, some for only a handful of hours and they are a great way of improving your station, working some new squares and improving your operating skills.

I would like to thank the whole committee for their hard work and support. I have already mentioned the work of John 'JWP and Kevin 'IBT, but I also need to pay special thanks to my Vice-Chairman John GW3VVC for his sage advice and friendship, John GW3GUX for his steady hand on the club accounts, to Bryn MW6DZO for helping to create and now maintain the club website, Cliff 2W0CBZ for his input and tea making and Dafydd MW5DJO for his input on committee and organising the Norbrek coach.

So what of the future? The club is currently strong and ever more active. There are already plans for several special event stations for 2018, in particular the centenary of the first official transmission from the UK to Australia in September 1918 and the centenary of the sinking of the RMS Leinster in October 1918. I would also suggest that not only do we need to replace the club caravan, but I would suggest that we also need to consider updating the club HF transceiver. Yes I agree with you all that funding of such items is a big consideration and perhaps external funding will need to be found.

I also believe that we need to improve our community engagement. Dragon ARC is strong just now, but what of the future? Where are the members of tomorrow going to come from? I challenge us all to think hard about how we can engage with young people under the age of 25, how do we recruit those adults whose children are now older and therefore they have more free time and disposable income, how do we attract people who have just retired into our wonderful hobby and club? This is the greatest challenge to all clubs, planning for the future and not just for today, I am sure that the members of Dragon Amateur Radio Club will rise to this challenge.

Last of all, a huge thank you to all of you, the membership, for your enthusiasm and support throughout my time as Chairman, it has been a real privilege. **Thank you.**

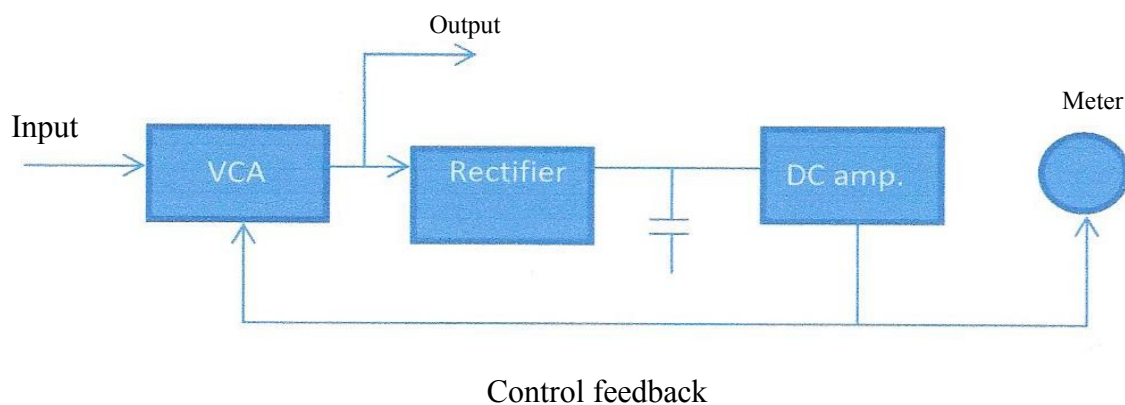
Audio Considerations

Les MW0SEC

(2) The Compressor

This follows the previous note in which I described a microphone pre-amplifier and mixer. The objective of this module is to maintain a steady average voice signal to the TX, allowing for movement to and from the mic and variations in voice level. What is described here is an *audio* compressor. It is intended purely to provide a level, average, signal without introducing distortion. It bears no resemblance to methods of RF clipping, or the ‘processors’ so beloved of modern rig designers – where poor adjustment can result in the operator sounding like a dalek!

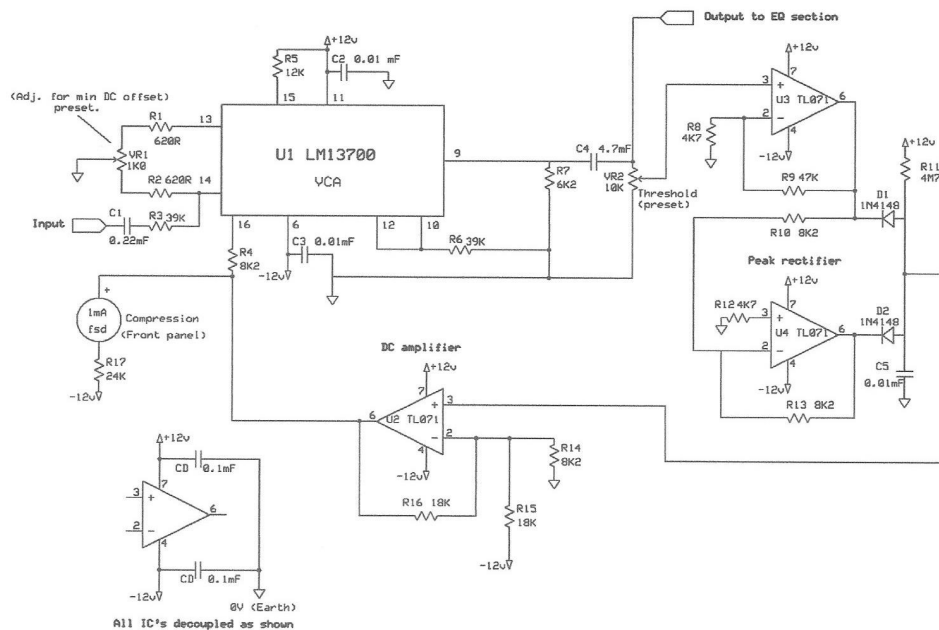
A compressor/limiter works in a similar manner to the ubiquitous automatic gain control which is in common use for receivers. A control voltage is derived from the signal level and rectified to produce a DC control signal which is fed back in proportion, to modify the gain of a preceding stage. In this case, we use peak detection on both the positive and negative excursions of the signal – this is important, given the asymmetry of the voice waveform. This is applied to a selected time constant with fast attack/moderate release and the resulting control voltage is used to set a voltage-controlled amplifier (VCA). In this way, variations of the input level are automatically modified to provide a consistent output. See the block diagram below:



(Note that metering is not essential for general operation, although monitoring of the control voltage IS essential for initial setting up.)

There are a number of ways to implement the VCA, a common one being the use of a FET to act as a voltage dependent variable resistor. In this case, I chose to use a ready-made IC, the LM13700. The other IC's are of the TL081/071 type as used in the earlier pre-amp. The LM13700 is an operational trans-conductance amplifier (OTA). A FET would be simpler, but has the disadvantage of having to be selected for the best performance. The complete circuit is shown overleaf:

Audio Considerations Concluded:



Setting up:

- (1) The preset VR1 (Offset) is adjusted for closest to 0V on pin 9 of U1.
- (2) The preset VR2 (Threshold) sets the point at which the compressor starts to operate. One method would be to set the mic fader to around $\frac{3}{4}$ of maximum setting and with normal voice input, set VR1 such that the reading on the compression meter is indicating around 50% on voice peaks.

In normal operation it will be found that the amount of indicated compression will then vary with the setting of the mic fader. This should be adjusted for transmission, so that the compression meter is indicating around 50-70% of scale. If too much compression is used (by turning up the mic further), the outgoing signal will sound forced with breathing and room noise being brought up to modulation level. The advantage of the compressor is that once set and the final output being adjusted to set the signal requirement of the TX, operation should be fully automatic – taking control of voice variations and reasonable variations of mic distance.

The compressor operates very quickly on the occurrence of a voice peak. The chosen components for the release time constant presently provide for quite a rapid recovery of gain, in order to follow quick speech. This can be changed if required by altering one component of the combination R11/C5. The release time constant is simply $T=C \cdot R$ (in seconds).

Further reading:

The LM13700 data sheet at: www.ti.com/lit/ds/symlink/lm13700.pdf

In the next session, I will go on to discuss a possible equaliser design.

Les (MW0SEC).

Slow Scan TV from Space

December 5th and 6th

(Courtesy of Southgate Amateur Radio News, 29/11/17)

<http://www.southgatearc.org/news/2017/november/slow-scan-tv-from-space-dec-5-6.htm#.WiF719JI9dg>

The 145.800 MHz FM Slow Scan Television (SSTV) transmissions from the International Space Station Dec 5-6 should be receivable by radio amateurs around the world.

The MAI-75 SSTV system in the Russian Service Module will be put through some extended testing from December 5 starting around 15:00 UTC and running until 09:00 UTC on December 6. Test images will be used during this period. This will provide near global coverage if all works well on 145.800 MHz FM.

In the past images have been sent using the SSTV mode PD180, with a 3-minute off time between each image. All you need to receive SSTV pictures direct from the space station is to connect the audio output of a scanner or amateur radio transceiver via a simple interface to the soundcard on a Windows PC or an Apple iOS device, and tune in to 145.800 MHz FM. You can even receive pictures by holding an iPhone next to the radio loudspeaker.

The ISS puts out a strong signal on 145.800 MHz FM and a 2m handheld with a 1/4 wave antenna should be enough to receive it. Many FM rigs can be switched between wide and narrow deviation FM filters. For best results you should select the filter for wider 5 kHz deviation FM. Handhelds all seem to have a single wide filter fitted as standard.

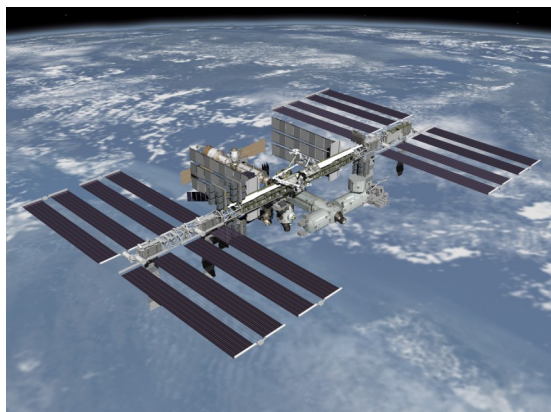
ARISS SSTV Blog

<http://ariss-sstv.blogspot.co.uk/>

ISS Slow Scan TV information with links to Apps and ISS tracking

<https://amsat-uk.org/beginners/iss-sstv/>

(The editor has written about how to receive SSTV images using a handheld VHF transceiver in the May 2016 issue of Llais Y Ddraig / The Dragons Voice. I shall also be able to give you details on Monday 4th at club if you wish to find out more).



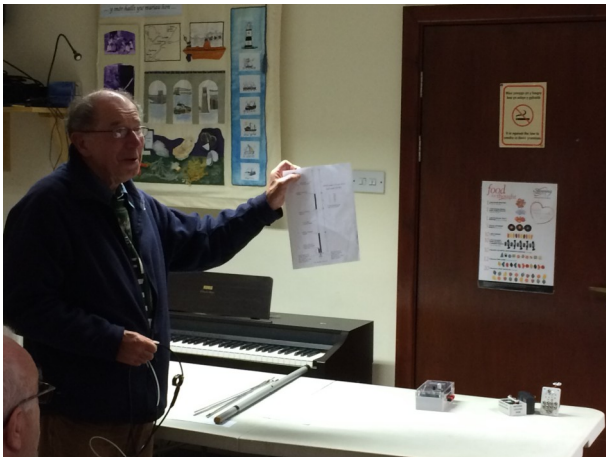
2017 Construction Competition

Simon MW0NWM

September saw the Dragon ARC Annual Construction Competition. There was a good turnout of members and entrants! The attending masses listened to the various constructors' explanation of their projects and then had the opportunity to inspect them up close, before voting for their winner.

The projects entered were:

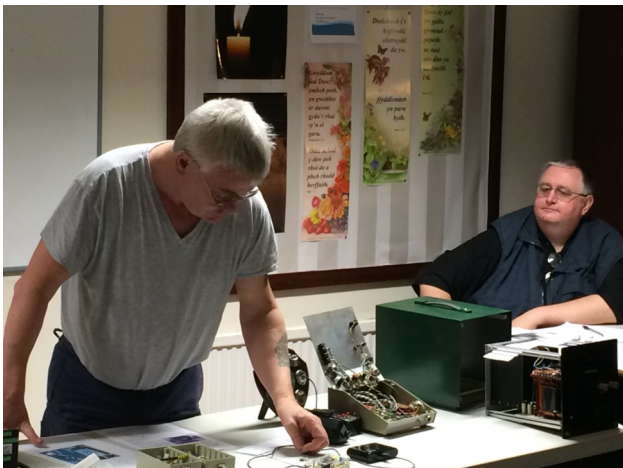
- | | |
|--------------------------------------|--------------|
| 1) Power Supply. | Les MW0SEC |
| 2) Polly the 'Voice Parrot'. | Danny GW7BZR |
| 3) Crystal Tester. | John MW0JWP |
| 4) Various antenna bits. | Simon MW0NWM |
| 5) 300 Watt Isolation Transformer | John MW0JWP |
| 6) Mains Remote Control. | Emil MW0IMZ |
| 7) Electronic Load. | Emil MW0IMZ |
| 8) 145/432MHz Coax Colinear Antenna. | John GW3GUX |
| 9) Portable 2 Metre Beam Antenna. | John GW3GUX |



Left: John GW3GUX talking of his 2 and 70cm coaxial collinear antenna.



Right: Danny GW7BZR explains all about his 'Voice Parrot'

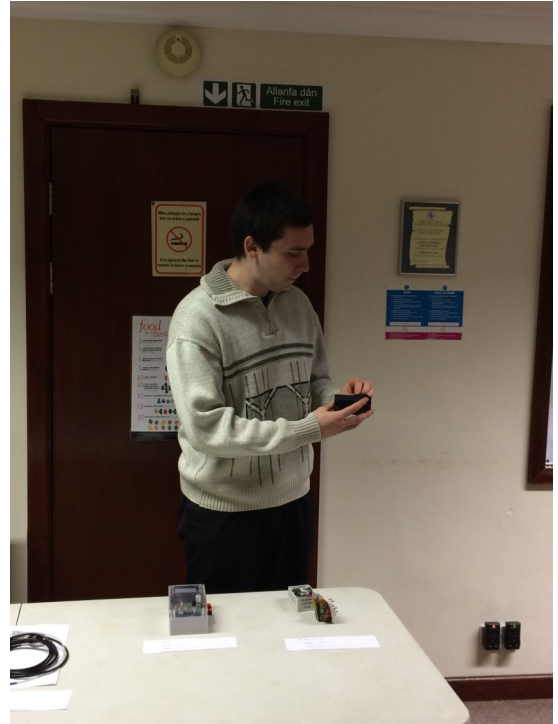


Left: John MW0JWP explaining about his crystal checker, with Brun MW6DZO looking on.

2017 Construction Competition Concluded:



Left: Some of the assembled membership listening intently



Right: Emil MW0IMZ explaining his self designed mains remote control system. Designed to enable Emil to turn electrical items in his house on and off from any location.

After an interesting hour or so, votes were cast and Emil MW0IMZ was proclaimed winner for his mains remote control. Well Done Emil!! I wonder when he will begin production so that I can buy one?

Right: Emil being presented the coveted Annual Construction Trophy by Vice-Chairman John GW3VVC.

Hopefully it will be another great competition in 2018, so get your creative caps on and get those irons hot!4



Instant HT on and off the M54

The above named article from the pen of Dave Porter G4OYX, is the follow up to the item about the 5MHz AM transmitter which was described in the August 2017 issue of Llais Y Ddraig, titled '60 Metres from the M54'. Unfortunately I have been unable to export the text and images into this newsletter, so I have decided to send it to all members as an attachment. I would like to thank Dave for allowing to circulate his follow up article. If anyone of you ever wishes to construct an AM transmitter or obtain advice in such matters, I am sure that Dave will be only too happy to assist.

'The attached article, Instant HT on and off the M54, was first published in "Signal" Issue 35, May 2015, the quarterly publication of The Vintage and Military Amateur Radio Society. It is reproduced here with kind permission from VMARS which exists to help and support Radio Amateurs and Short-wave Listeners who wish to restore and operate vintage military or commercial radio equipment on the amateur bands. See "About VMARS" on their web site for more information'.

VMARS web address is:
<http://www.vmars.org.uk/>

A Seasonal 'Elf and Safety' Message!



Please lower your antennas for Christmas Eve, so that Father Christmas and his reindeer can go about their important business unhindered!

Club Dates for 2018

The club is planning to run a few special event stations in 2018. Hopefully many of you will be able to take part in them! So here are a few dates for your diaries:

Saturday 21st April 2018 - International Marconi Day

Once again we plan to take part in this large international event from the old Marconi transmitting station at Waunfawr. This is usually one of the most enjoyable weekends of the year.

Saturday 18th - Sunday 19th August - International Lighthouses and Lightships

A regular visit to the Coastguard Watch station overlooking Penmon Lighthouse.

Saturday 22nd September - GB2VK

GB2VK - To celebrate the centenary of the first official wireless transmission between the UK and Australia. Being a centenary celebration, we hope to have a great turnout of members.

Thursday 11th - Sunday 14th October - GB100MCV?

MCV was the call sign of RMS Leinster, which was sunk by a German U Boat off the coast of Ireland on the 11th October 1918. We have been asked by the radio club of the National Maritime Museum of Ireland to put on a station in order to make contact with them on the 11th. They will be using the call sign EI100MCV for the occasion and come the new year Dragon ARC will apply for GB100MCV.

If we are granted a call sign this unique, it would be silly of us not to exploit it for a few days! We shall be looking for help setting up and running this station and should be great fun!





Gwybodaeth am y Clwb / Club Information

- Cynhelir cyfarfodydd y clwb yn Neuadd Ebeneser Lon Foel y Graig, Llanfairpwll ar Nos Lun y cyntaf a'r trydydd yn y mis am 7.30 ar gyfer 8.00 o'r gloch. Croeso I ymwelwyr ac aelodau newydd.
- Club meetings held at Ebeneser Hall, Lon Foel y Graig, Llanfairpwll on the evening of the first and third Monday in each month at 19:00 for 20:00. Visitors and new members always welcome.
- Pob gohebiaeth at yr ysgrifennydd. All communications to the Secretary, John Pritchard MW0JWP
QTHR. Tel: 07515 031025. email: mw0jwp@yahoo.com

Cylchlythyr Golygydd / Newsletter Editor

Simon Taylor MW0NWM. QTHR: Email: m3set@yahoo.co.uk
Tel: 07904 874652

Pwyllgor / Committee

Cadeirydd / Chairman: Simon Taylor MW0NWM
Is-Cadeirydd / Vice-Chairman: John Parry GW3VVC
Ysgrifennydd / Secretary: John Pritchard MW0JWP
Trysorydd / Treasurer: John L Brimecombe GW3GUX
Aelodau / Members: Cliff Nicholls 2W0CBZ, Bryn Smiles MW6DZO, Emil Preda MW0IMZ and Steve Goodwin MW6KGY.

We are on the web...

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

Issue number 117, will be issued in Chwefror / February 2018. Any material for inclusion to be sent to the editor.