



Llais Y Ddraig

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

Rhagfyr / December 2016. Rhif/No. 112



Rhaglen Clwb / Club Programme

December

5th North Wales Tech
(A talk by Carwyn Edwards)

19th Christmas Social

January 2017

2nd Film Night

16th

AGM (to be confirmed)

Thank you ...

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

Les MW0SEC and John MW0JWP.

It would be great to have more contributions for February 2017 issue please.

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(A Simple Topband AM / CW QRP (low power) Transmitter.
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From the Editor....

Dear friends,

Welcome to the final edition of The Dragon's Voice for 2016. First of all, please accept my apologies for the rather thin volume this time around. This was due to very little material being given to me and I have had less time than usual to write further articles as I have been studying hard towards the Advanced exam. Once again I am very grateful to those who have contributed and their names are listed at the bottom of this page.

As we reach the end of another year, it is worth considering what 2016 has been like for Dragon ARC. First of all, we have enjoyed a variety of very interesting talks culminating in a presentation about North Wales Tec on the 5th of December. We have enjoyed a construction evening, building 144mhz DF units, which we hope to use in 2017. Construction was also the subject of another evening, with our first annual Construction Competition, which was well received by all who attended.

Once again, DARC took part in the annual International Marconi Day celebrations in April, running a special event station at the old Short Wave transmitting site at Waunfawr. However, it was the usual crowd who helped set up and took part. What do we need to do in order to encourage other members to attend and indeed help with setting up and dismantling the station? This was our only special event station of the year, do we want to run more of them in future? Is anyone willing to commit to running one, or assisting?

2016 saw a few of us taking part in a couple of VHF contests, which whilst we did not do too well, we had fun and learnt about our station weaknesses. Hopefully in 2017 we shall do a little better and to that end a couple of pieces of equipment have been purchased privately to help improve our 70Mhz performance. Continuing the theme of contesting, Stewart GW0ETF and Danny GW7BZR organised a club entry in the annual Islands on the Air (IOTA) contest from a portable site in Holyhead, however it was a pity to see so few people join them!

In conclusion, Dragon ARC is active in various aspects of the hobby, numbers attending club nights remains steady and indeed club membership is fairly stable; even though we are waiting for a few stragglers to pay their 2017 subs! My question is, how can we make the club grow and be even more successful? What do members want to see their club do? Please let me or other committee members know so we can make this club what you want it to be.

I would like to finish by wishing you all a merry Christmas and happy new year.

AGM Report

Simon 2W0CHV

Due to unforeseen circumstances, the AGM had to be cancelled on the 21st November. High winds and heavy rain made driving 'interesting', plus our Chairman Chris MW0LLK had to cancel at the last hour due to flooding in his workshop! Our Vice-Chairman Alun 2W0CYM was also unable to attend and without anyone to chair the meeting, it had to be postponed. I would like to thank the ten or so hardy souls (fools), who like myself had been daft enough to head out in such awful weather.



Fortunately, I am reliably informed by Chris that there was not too much damage in his workshop and that repairs have now been made in readiness for the next winter deluge! **Monday 16th of January** has been pencilled in for the **AGM** and this will be confirmed as soon as possible.

In the next issue.....

Vision of the Future, The Birth of Television from 'Ally Pally'

Plus:

Looking forward to VHF Contesting in 2017.

Full AGM Report.

2016 Construction Competition Report.

And more! Please do contribute to your newsletter....

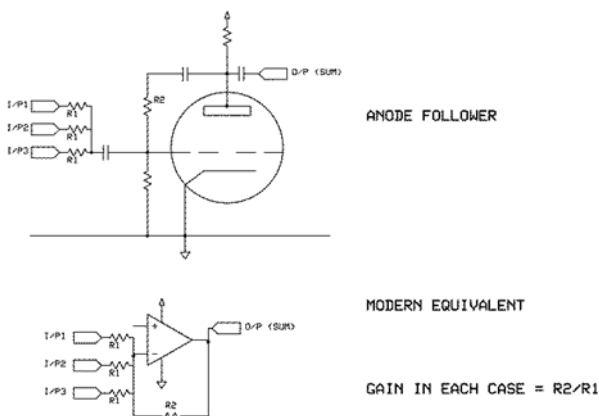


Electronics in the Sixties

Les MW0SEC

I had just completed an apprenticeship in radio & television and was now looking to expand my horizons. Britain in those halcyon days was a world leader in technology and all manner of interesting jobs were available. The columns of 'Wireless World' were full of vacancies which would have suited me, but one that stood out was a requirement for instrument technicians at the UK Atomic Energy Establishment (Winfrith), which was conveniently situated just a few miles from home. Having just acquired my first motor cycle (A Triumph Tiger Cub), travelling would not present a problem.

I duly applied and was requested to attend a selection board. This consisted of some fairly stiff questioning – the only question which had me floored being “What is the purpose of an anode follower?” I later discovered that this was a technique whereby voltage feedback is applied from anode to grid in order to create a low-Z node at the input as a summing junction. Little did I then realise that I was to employ this method many times in later years in audio mixing desks, but by then analogue integrated circuits were employed instead of valves.



I was set to work in the instrument services division. This handled anything to do with commercial equipment such as recorders, oscilloscopes, counters, signal generators and radios. All of the nucleonic instrumentation was normally handled by a separate division (C&I) using in-house designs, largely emanating from Harwell. We also had a mechanical division well equipped with the usual collection of lathes, milling machines, etc. Our work was verified by a well-equipped standards laboratory on the upper floors, which would quickly send back any kit we released which was a shade out of calibration!

I found myself working on a variety of instrumentation and communications equipment. There were three main radio networks, divided into engineering, physics and chemistry. The mobile units were of the Pye Cambridge (vehicle) type, whilst the base stations were located remotely on a hill near Lulworth and consisted of 60 watt Pye sets. The system employed high-level amplitude modulation on low-band VHF. It could be a bit spooky in the hut on a dark night when one of the transmitters would suddenly come on with a click and the modulation transformer would buzz with a metallic voice!



Electronics in the Sixties ctd:

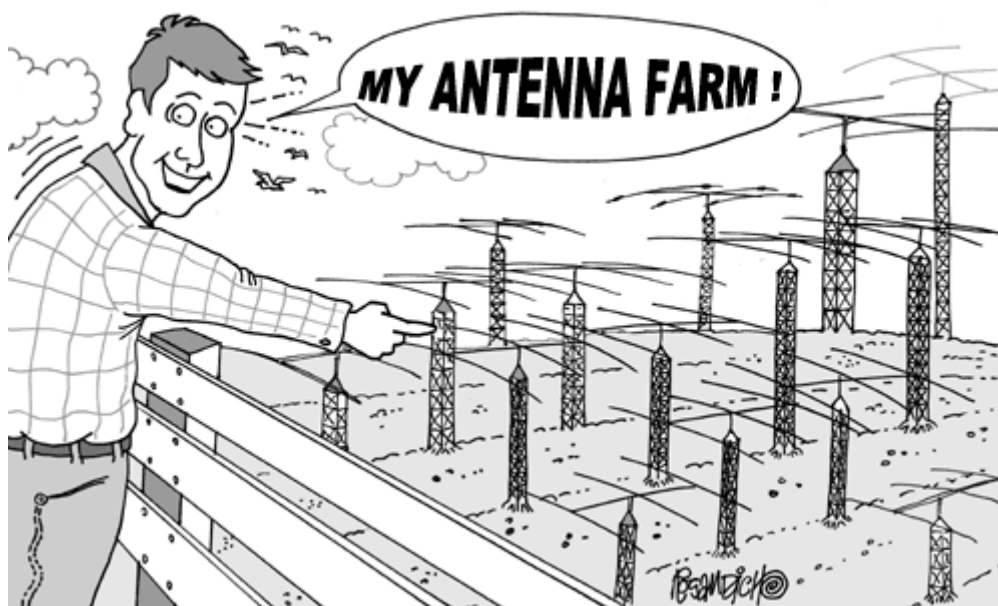
Coupled up to this system was an emergency call out system using an early pager technique. The pagers were made by Flight refuelling of Wimborne, but we were responsible for providing the tone generators to initiate the calling signal. This was a three-tone system, the tones being generated by phase-shift RC transistor oscillators and selected by timed impulses to mechanical uniselectors as used in telephone exchanges of the time. This seems a little crude now, but bear in mind that there were no integrated circuits and many computers of the day still used valves. Microprocessors were just science fiction! I had a demonstration of this call out in action one evening when a fire broke out in a glove box containing uranium oxide and all three services were called in.



Although all of the Pye radio equipment was supplied on contract by the manufacturers, we were responsible for any immediate work which became necessary – in addition we handled the police radio system which used a Storno base system and the (then) revolutionary ‘LanCon’ mobile personal radios. I recall with some amusement a somewhat ‘back-handed’ compliment I received regarding the latter. One of our general workers came in to tell me that the police at the North gate required urgent work on the radio. He said that the police spokesman had added: “*Send thick black-bearded fucker – he’s the best!*”

Christmas is Coming!!

What would you like for Christmas? A new antenna farm perhaps?



Sibrwd y Ddraig

The Dragon's Whisper A Simple 160m AM/CW QRP (low power) Transmitter

Simon Taylor 2W0CHV

After a few years languishing at the intermediate licence level, I have finally decided to study for the Advanced licence with the Bath Distance Learning Course. I would recommend this course of study and I am sure that the Training Team at Dragon ARC would be able to give you more details about this and is useful if you cannot commit to local training on a regular day of the week. Not only have I renewed my interest in study, but I have started to tinker with very simple home construction.

First of all, I have built a dummy load and simple 'Slim Jim' antenna for 70Mhz. I then started to look around for a simple transmitter which was capable of low power AM or CW for across town communications. I have found what I believe to be a suitable circuit designed by Eric Elsey G3YUQ and published in the Winter 1975 issue of SPRAT (the journal of the GQRP Club). This circuit **Fig.1** is for a very simple single transistor circuit capable of around 250mW AM and 750mW CW using a 12 volt supply.

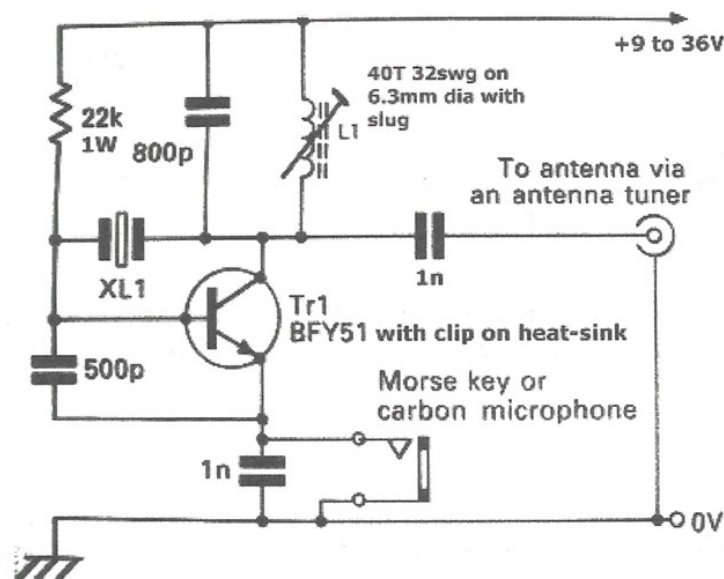


Fig.1

Components

This circuit can be built any way you like, but I aim to use simple circuit strip board. Both the strip board and various capacitors and resistor are readily available from all the usual electronics outlets, ask at club and I am sure someone shall advise you.

The L-C uses a 800pF capacitor in parallel with an old iron dust cored tuned inductor 9 quarter inch diameter with 40 turns of 24swg enamelled wire. Such coil formers and tuned slugs are practically unobtainable these days, so I suggest using a toroid, big enough to take plenty of turns. I am trying a T200-2 toroid, which are readily available for around £5, and you will have to experiment with the amount of turns required.

Sibrwd y Ddraig, The Dragon's Whisper ctd:

Crystals for topband, also known as 160m are quite hard to find, however the QRP calling frequency of 1836khz and also 1843.2khz crystals are readily available via the GQRP Club website (<http://www.gqrp.com/index.htm>)

Perhaps the trickiest component to find is perhaps a high impedance carbon microphone. The best source would be from an old (40+ years) telephone handset. The benefit of a relatively high impedance (600 ohm) carbon microphone, is that it is basically carbon granules between two conductors and it can take a fair amount of voltage! I imagine the impedance will change dramatically as you speak into it and this will be interesting to note when testing the transmitter.

Low Pass Filter

I think that this circuit will produce plenty of harmonics, albeit at low power levels. However to avoid upsetting other users, I think it wise to tag a low pass filter onto the antenna output of the circuit. I plan to use the simple circuit shown below **Fig.2**. It is simply to pi-networks using 1500pF capacitors in the legs and T68-2 toroids with 26 turns of 24swg enamelled wire.

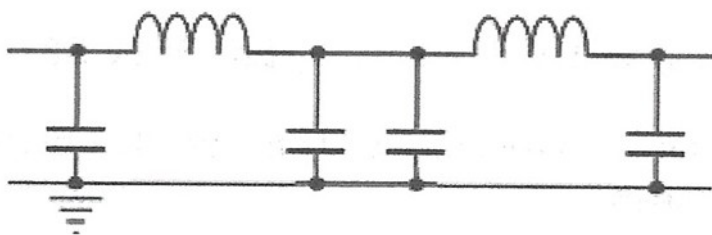


Fig.2

Antenna

I can almost hear readers of this article screaming at me that they have no room for a topband antenna, yes you have! Many amateur operate on this band from very small gardens. There are various options, but as this is beyond the scope of this article; I suggest picking the brains of the many experienced amateurs in Dragon ARC. They are a resource, use them!

Conclusion

Will this transmitter work? I believe that with a little tinkering it most certainly will. I am convinced for CW it will work very well, but on AM I suspect modulation may be a little low and therefore may need modification.

I believe that this should be a simple project for most amateurs to make, no matter what constructional experience you have. I am suggesting that this could be a simple project for members of DARC and therefore early next year I shall collect names of anyone interested so we can order the components. I hope that we can build them on a club night, perhaps before the main meeting.

Topband used to be where most amateurs started their life and was used as a local natter band, very much like two metres (145Mhz) is today. So let us take a step back in time and start a Top Band revival!

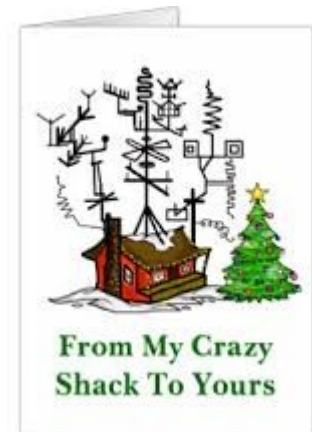
Training Update

John MW0JWP

Congratulations to Malcolm Hanks and Adam Williams, who passed their Foundation Licence exam on Monday 21st November. Both are looking forward to getting on the air and continuing to learn. This is evident as both have signed up to do their Intermediate study and exam, starting in April 2017. Five people have already put their names down for this course, so if you or someone you know would like to join them, please speak to me at club.



From everyone on the committee at Dragon ARC, we would like to wish all members and their families a very merry Christmas and a happy, healthy and prosperous 2017.





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 7.30 for 8.00. Visitors and new members always welcome.
- Pob gohebiaeth at yr ysgrifennydd. All communications to the Secretary, Stewart Rolfe GW0ETF QTHR. Tel 07833620733. email: gw0etf@btinternet.com

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Is-Cadeirydd / Vice-Chairman: Alun Guest-Rowlands 2W0CYM

Ysgrifennydd / Secretary: Stewart Rolfe GW0ETF

Trysorydd / Treasurer: John L Brimmecombe GW3GUX

Aelodau / Members: Cliff Nicholls 2W0CBZ, John Parry GW3VVC, John Pritchard MW0JWP and Simon Taylor 2W0CHV.

We are on the web...

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

Issue number 113, will be issued in Chwefror / February 2017. Any material for inclusion to be sent to the editor.