Llais Y Ddraig

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

Medi / September 2016. Rhif/No. 111

Rhaglen Clwb / Club Programme

September 2016

19th National Grid and the Future
(A presentation by John Shorney of the National Grid. We all need electricity!)

October

3rd Junk Sale
(A regular favourite and chance to offload some unwanted kit and grab a bargain)

17th Titanic—Signals of Disaster
(Another fascinating talk by regular presenter David Roberts GW8NZN)

November

7th Construction Competition
(Bring your recent offerings and show them off at the club)

21st Annual General Meeting
(Your chance to exercise your democratic rights)

December

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

19th Christmas Social

Thank you ...

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

Stewart GW0ETF, John MW0JWP, Danny GW7BZR and John GW3GUX.

In this Issue....

From the Editor....

Welcome to the September 2016 issue of Llais Y Ddraig, I hope you have had time to enjoy some portable radio activity over the summer months. Personally my radio activity has been somewhat limited, although I have thoroughly enjoyed entering two VHF contests with Bob 2W0RZL and Kevin MW1CFA, more details about these contests will appear in the next issue. However I have heard that there have been many strong openings on 6, 4 and 2 metres for people to enjoy. Were any of you club members successful on VHF this summer?

Whilst VHF propagation has been good, HF conditions have been largely appalling, a mixture of the usual summer doldrums and also the steady decline in sunspots due to us entering the declining phase of sun cycle 25, more discussion of this can be found in this newsletter.

This issue has a strong contesting theme, including two articles about IOTA, from the viewpoints of Stewart, GW0ETF and Danny, GW7BZR. I make no apology for this, input from members was scarce for this issue and I was hardly going to decline publication from anyone willing to write an article. So please can all of you think about contributing something to the next issue, which is due for the beginning of December.

We also look at the forthcoming Construction Competition and urge as many of you as possible to take part, even if you are a complete novice like me. If you need help and advice, there are several very experienced constructors in the club who I am sure will be only too happy to advise you.

Finally, we have several interesting events on club nights before Christmas and I very much look forward to seeing you there!

‘73
Simon Taylor
2W0CHV

DARC Annual Subscription

John GW3GUX

Dear Members,

It is that time once again. Annual Membership Subs for 2016/2017 are now due (end of September). Once again these have been held at £10, which I hope you agree is value for money. The can be sent to me at:

John Brimecombe, Llwyn Onn, Glanrafon, Llangoed, Anglesey, LL58 8PH.

All cheques should be made payable to 'Dragon ARC' and not to me personally.

Alternatively you can leave your payment with our ‘door man’ Simon 2W0CHV on the following club nights prior to the AGM.

October 3rd, 18th and November 7th.

Once again thank you for your support and helping to make DARC such a good club.

John GW3GUX will do anything it takes to collect the annual SUB’s!!!!

Islands On The Air Contest

Stewart GW0ETF

After missing last year's contest due to lack of interest Danny GW7BZR and myself decided to push the club into taking part in the IOTA contest again this year. We decided to set it up as a 'training event' in the hope that we could get members there to try some multi-op, multi-mode contesting and I personally wasn't concerned about turning in a particularly competitive score. We received a reasonable level of interest expressed in meetings leading up to the event so it was looking promising for a decent turnout on the last weekend of July.

We would use the newly repaired caravan (thanks largely to chairman Chris) and the location would again be the breakwater at Holyhead where we could use the Welsh Islands IOTA reference of EU-124. Permission was again granted by Stena for access and arrangements made for collecting a key for the recently installed gate at the head of the breakwater. John GW3VVC sensibly reminded me that in the past we'd organised operating schedules for members who had said they would take part in order to avoid everyone turning up at the same time (usually Saturday afternoon..;-) and then having just one person there to cover many hours alone. It also avoids the problem of a noisy rabble congregated in the 'van which makes it difficult for the operators to concentrate on the job in hand. Rather than spend time phoning round people I decided go modern and set up a 'Doodle' web booking system for members to book 2 hour operating slots; I thought this was a good idea but clearly nobody else did as there was not a single booking entered! John 'vvc thought he had a wedding to go to but apparently mis-read his calendar and at the last minute said he could come on Saturday afternoon for a stint on the key. Not driving now, John has to rely on his good lady Pauline to taxi him so he did well to make it and I for one appreciated their efforts.

On the Friday morning I drove over to Gaerwen to meet up with Danny who had previously collected the caravan from Chris's qth – Chris had meanwhile set off to Italy on a Scout trip. Danny's jeep was stuffed with 2 generators, fuel cans, his hf station, vertical antenna, coils of rg213 etc, etc. Not even room for a kitchen sink – and impressively he shifted all this on his own. I followed Danny to Holyhead where we were met by Tony Wright with the gate key. Bob Higgins also dropped by and later Kevin Thorley who stayed to give us a hand with antennas. Clearly the levels of commitment expected weren't going to materialise for various reasons so we didn't go overboard with antennas and stuck with the big doublet, club vertical and a vertical dipole for 20m that I brought along. The weather was good, and was throughout, and the antennas went up without a hitch. In fact one positive was that we had no problems with kit at all and everything was set up by early Friday evening; even the networking and internet worked solidly throughout on the free allowance on my mobile phone. In the evening we had a visit from some heavies from Stena who insisted we had to pull it all down and move off their private land and I had great pleasure in flashing our letter from head office which suddenly made them all chatty and friendly. Danny went home later and I settled down for the night in my Bongo which was parked alongside the caravan.

Danny reappeared in the morning and we ran some final checks and kicked off at 1pm local. Conditions didn't seem that bad although we made very few contacts on 10m, probably more because we only had the doublet and a vertical that didn't work. In fact the vertical only matched on 40m and extremely narrowly on 80m where it behaves more like a magnetic loop (in other words it's more or less useless;-). Even though we spent time on Friday carefully measuring and adjusting the lengths of the matching rods there was no sign of resonance on any of the higher bands. I've decided this vertical is pretty naff and the best things about it are the radials. The doublet performed pretty well and the 20m vertical was a godsend on the 'money band' but we were still short of antennas considering we were trying to keep 2 stations on the air.

IOTA Contest 2016 ctd:

I was also reminded that this caravan isn't good for 2 station contesting because both stations are right next to each other; when Danny was calling stations on the mult radio I couldn't hear a thing on the run radio even with my wrap around headphones so I had to have lots of repeats! The old van was better as the positions were at opposite ends though there were other problems of course.

Shortly after the start John 'vvc turned up and put in a good 3 or 4 hours on the key while Pauline was probably loading up his credit card in the higher end shops of Holyhead. Myself and Danny carried on from there but fair play to John 'jwp who turned up on his own after dark and spent a bit of time in the hot seat. Danny went home for some sleep at around 1am and I did consider grabbing some myself but carried on through the night with the mantra of BIC (Butt In Chair) ringing in my ears – no BIC no points! Danny reappeared in the morning and continued on the mult radio and kettle, and we finished at 1pm after a manic flurry of activity on 15m on the doublet with around 1150 contacts and just short of 2 million points claimed, not that bad all things considered. Bob had reappeared and gave us a very welcome hand pulling the antennas down; I have to say we're all getting a bit short of turns on our coils these days and we were feeling pretty shattered by the time all the kit was down and stashed. One thing that always gets me is the coiling of hundreds of feet of rg213 feeder after 24 hours contesting, and I've decided that for hf 100w contests rg58 is much, much easier and will make precious little difference to your signal with resonant antennas especially if you keep the 10m antenna close to the shack.

In truth I was a little disappointed with the level of interest and we will have to think carefully about putting this on in future. But I have to say I really enjoyed myself probably because I ended up doing so much operating! Thanks to Tony 'LIS for returning the key to Stena on Monday morning, and apologies if I forgot to mention anyone who helped to make all this happen – after 24 hours of BIC the memory can get quite hazy....

Relaxing with a brew after the contest and the 20m vertical guyed in the rocks with the help of my old climbing gear

(Thanks to Kevin MW1CFA for the photo on the right)

DARC AGM 2016

The Dragon Amateur Radio Club, Annual General Meeting will take place on Monday 16th November 2015 at 8pm. This is YOUR opportunity to vote on who, or how YOUR club is run, so please show your support and attend.

If you have any items you wish to include on the Agenda for discussion, then please let the club secretary Stewart GW0ETF known by close of play on Monday 7th November.

Stewart can be contacted via mobile on 07833620733 or email: gw0etf@btinternet.com

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TX Factor

For those who do not know, TX Factor is a series of HD TV shows dedicated entirely to amateur radio. A professionally produced programme presented by radio amateurs for radio amateurs. The presenters, who are all licensed amateurs explore the history of amateur radio, rigs, antennas, operating modes, propagation, sport radio, training, club news, RSGB news, world news - in fact, anything and everything!

There are now twelve episodes available online, with the latest episode was released on the 27th July 2016. This episode includes:

Not one, but two rig reviews. The Sun Expert Electronics Transceiver MB1 and the elusive Icom IC-7300 are comprehensively analyzed by ML&S' Gary Spiers M0TIG and Chris Ridley G8GKC from Icom UK. Plus, Bob McCreadie G0FGX teaches Mike Marsh G1IAR a thing or two about amateur satellite operating.

Icom UKs latest, the IC-7300 HF, 50 and 70mhz transceiver as reviewed on TX Factor.

So if you have some time to spare, I would thoroughly recommend watching some of the TX Factor episodes, there is plenty to enjoy!

TX Factor can be found at:

http://www.txfilms.co.uk/txfactor/

Annual Construction Competition

Simon 2W0CHV

Many of you may well be aware that this autumn we are running a Construction Competition, which will include a show and tell on Monday 7th November.

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 7th November, each entrant will show members their project. After this all members can inspect 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.

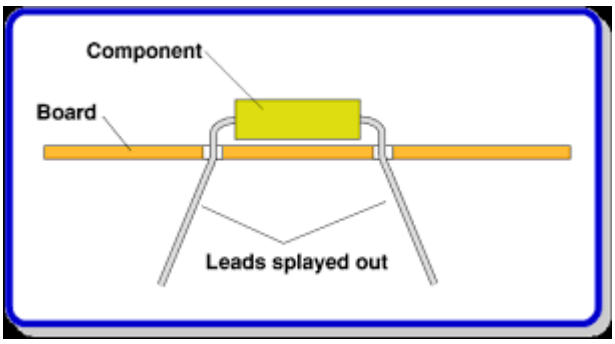
Each member will have three votes. We will then count the first choice votes, and if their is no winner we then add the second choice votes and so on. There is a TROPHY for the winner!

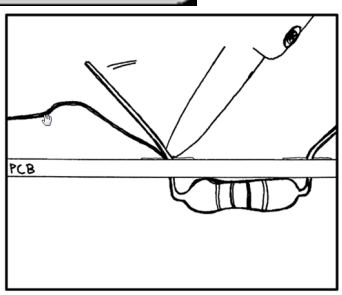
Please do not be shy to enter the competition, personally I am just starting out and will be entering a couple of simple projects including a dummy load designed by Ken K4EAA. See:

http://k4eaa.com/dummy.html

I have added a list of construction kit vendors on page 15, or if you need inspiration, or look online for circuits.

So grab those soldering irons and get building. GOOD LUCK





Training

John MW0JWP

Although radio has been my hobby for over forty years I have only been licensed for five. I approached the Dragon ARC with a view to getting my ham ticket and within 6 weeks of enquiring I had passed the foundation, reflecting on the help and advice that I got I made the decision that if and when I got through the Advanced level I would try to help others coming in to the hobby attain their licence.

In September 2015 I was part of a team that ran a Foundation weekend course, although my input was minimal I too also learned a lot, so when all 3 candidates passed I had caught the bug and was hungry to help others, and so it begun…….

Since then I have constantly had a student on the go, at the time of writing I have two foundation, one intermediate well as being involved with one advanced level students all of which are taking their exams in September. I have two foundation students starting at the beginning of October and then plan to have a break, starting again in February 2017 when I intend to run courses rather than taking one-to-one students at home.

I believe the future of our fantastic hobby lies in the training of new candidates and would willingly assist others who think they too could take on some students.

If you know anyone that is interested in starting out in Ham Radio please forward details to the club secretary. Thanks to all members for their decorum when exams are held prior to club meetings.

Best 73 to all

John MW0JWP

Update.... This year, John MW0JWP has helped the following club members gain their amateur radio licences:

Emil Preda YO9IMZ, MW6FVZ, 2W0DWV and now MW0IMZ. John trained Emil for all three UK licences!

Kevin Jones MW6SKV and now 2W0KBO.

John has also assisted the following non members to gain their licences:

Geraint Price MW6GWP

John Jones MW6FVB

John also reports that two students are sitting their exams prior to the club meeting on the 19th September, they are:

John Jones aiming for his Intemdiate (2W) and Gareth Jones, sitting the Foundation (MW6).

Good Luck to both!

As well as John ‘JWP, Les MW0SEC is also involved with training this year, unfortunately I have no details to report. However a big THANK YOU to both for their efforts on behalf of Amateur Radio and Dragon Amateur Radio Club!

IOTA 2016

The thoughts of Danny GW7BZR

Every year or nearly every year the Dragon Amateur Radio Club enters a contest called the ISLANDS ON THE AIR. This year after much deliberation it was decided to put on a semi casual event so everybody who wanted to try could do so. Permits were obtained from Stena with no problem and inquires made of the availability of operators in the club, on the website and on a survey with the expected results, not a lot. It was decided to go ahead in the hope of more interest being generated in the days before the event

On the Friday before the event we arrived by the gate to the breakwater to find that the key supplied did not fit the vandalised lock but access was soon granted thanks to a man with a JCB. We were joined by two club members 'LIS and 'RTZ for a short while and then by another member'CFA for a longer time. The station was erected in a few hours with no real problems and all the equipment was tested and working. Most of the equipment except for some of the antenna belonged to club members so they were modern and worked. Stewart 'ETF did the watch keeper for the night in his Bongo with its cooking and sleeping facilities, the "modern" caravan that the club possesses doesn't have them any more.

In the morning one of the generators was found to be leaking so another was put in line. At the start time 'ETF and 'VVC were in the chairs and except from a problem with my psu which was replaced with another all went well. We originally thought it was a generator problem but it was a psu not giving enough volts and causing the rig to shut down. ETF's silent inverter generator was connected up as well and two small generators were used all the time.

VVC spent quite a few hours on the key and then we were joined by 'JWP for a few hours on ssb. I spent a few hours on ssb and 'ETF stayed the night. In the morning 'ETF was on the main station and I was on the mult station and we worked steadily on our own until closing down time. We had achieved well over a thousand contacts about 230 mults and nearly 2 million points. Not bad for a casual set up.

We had dinner and Bob 'RTZ arrived to help pull it all down. Because we were tired and getting old it did take quite a while to pack everything up. The site was inspected before leaving and everything left as it was. The caravan was towed back to Gaerwen and parked up and I went and had some food and a nap. My 4x4 was unloaded 2 days later and my shack put back together a week later.

Organising an event like this takes time and members do use and allow their expensive equipment to be used by club members. What does give people the feeling that you are wasting your time is when none of the contacts we made were to club members and the often used excuse of we couldn't find you is not valid because we had internet capability and were on the cluster!! The amount of people that turned up was small (5) and as a club event was a waste of time. Certainly next year I will be having a serious think about doing this event or if I do it it will be for my benefit and not the clubs.
Thank you to all that came and helped, it was appreciated.

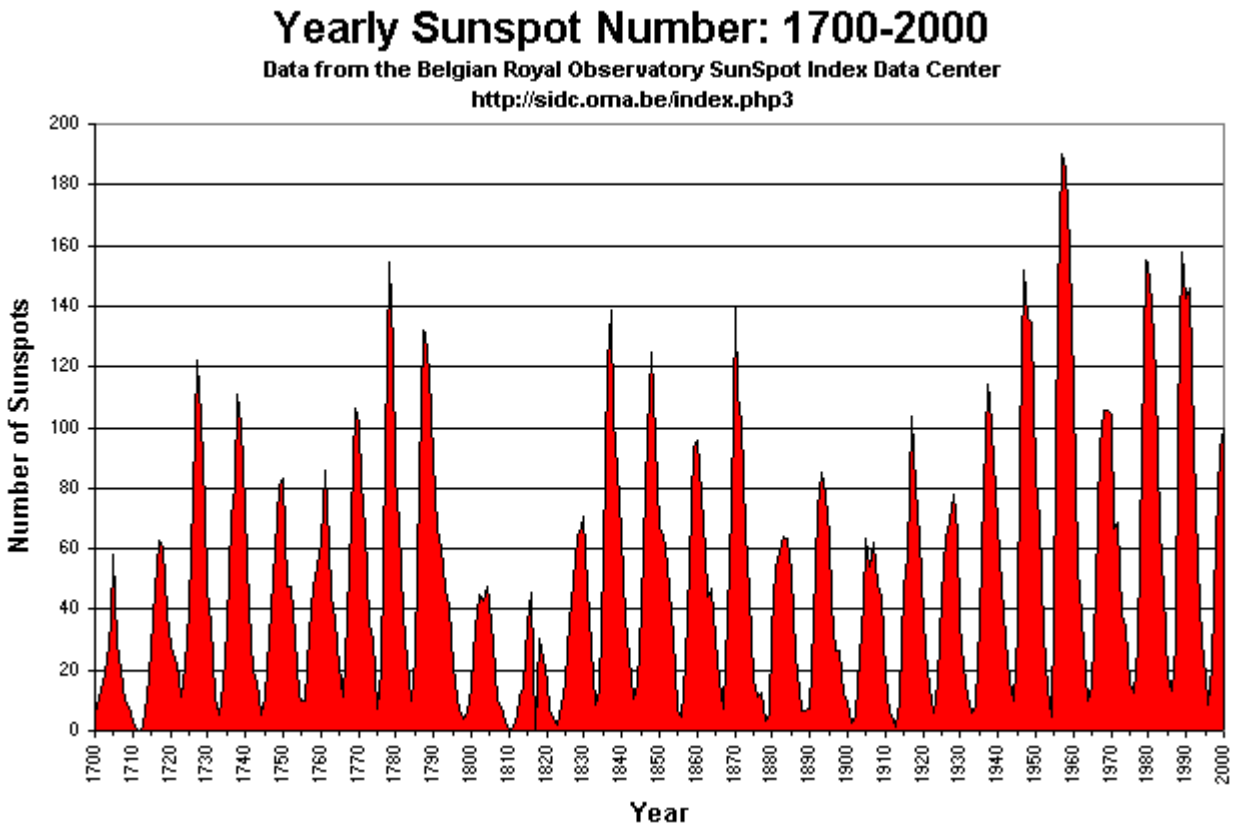
How to Obtain DX During the Declining Sunspot Cycle

Simon 2W0CHV (with the help of G3JKX ;-))

Our nearest star, the Sun emits electromagnetic radiation of all kinds, ranging in frequency from below HF all the way to the X-ray region. Much of the energy is emitted as heat. Some solar radiation ends up here on Earth, providing the energy needed to sustain all activity here-including HF radio propagation. Even though it is not a large star, the Sun radiates a level of power into space that is almost unimaginable, estimated to be $4'10^{23}$ kW-that is, the number four followed by 23 zeroes. At its surface, the Sun creates about 60 *megawatts* per square meter. Now that is an impressive transmitter!

The Sun follows a roughly eleven year activity cycle between sunspot peaks. The first cycle to be completely and scientifically observed began in 1755; we know it as Cycle 1. We are now witnessing the decline of Cycle 25. Sunspots are recorded in numbers from 0 to 200 and can vary from day to day during the Sun's 27 day rotational period as well as the eleven year cycle.

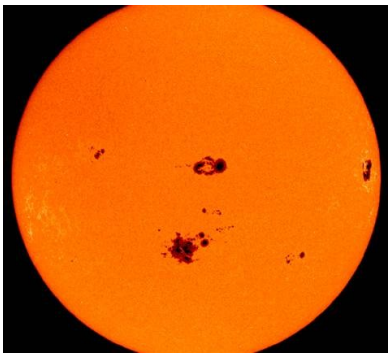
In order to make sense of the observations and indeed predictions of sunspot activity, instead of daily sunspot numbers, it is easier to think about them as an average month by month. This recorded and predicted data is given as Smoothed Sunspot Numbers (SSN). Amateurs over the last century or so have noticed that when sunspot numbers are high, propagation improves greatly on the higher HF bands 20 metres (14mhz) and above.

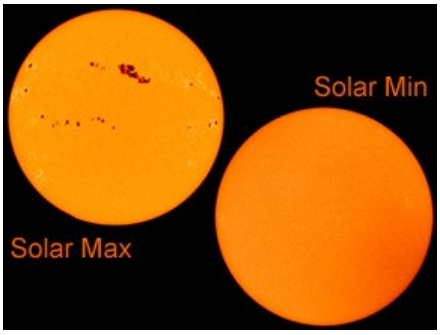


In fact it has been noted that when sunspot numbers are particularly high the ten metre (28mhz) band has been know to remain open almost 24 hours a day!

Sunspots are now disappearing rapidly, on the down-slope of the 11year cycle. Therefore the bands above 40m are going to be very poor for several years. There are some good things about this though. The noise levels on Top Band and 80 metres are going to be so much lower. This means DX will be possible on the lower bands, IF you have a good aerial for those bands. What does good mean?

How to Obtain DX During the Declining Sunspot Cycle ctd:





Well for me it may well mean more outdoor adventures with kites and various antenna configurations, hoping to sniff out that rarer DX. But even I have to admit that there will be times specially during the winter months that the idea of spending hours outside playing with radio and kites will not be very appealing, even dangerous! So what to do? My answer would be to erect an antenna at home that has low angle take off, in order to snare that DX.

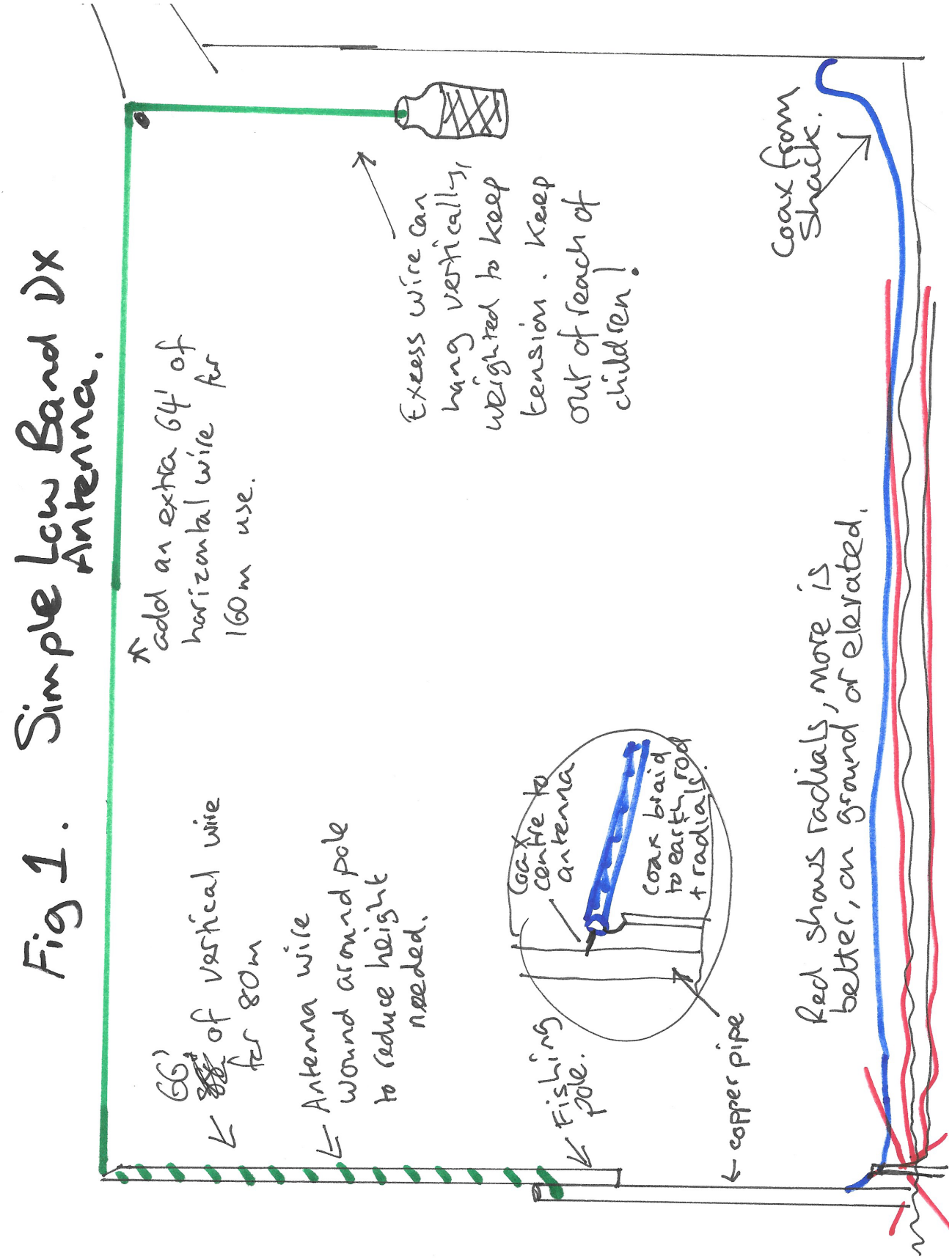
I believe having a ¼ wave vertical with a decent set of counterpoises is ideal. From my original radio QTH in Redditch I used such an antenna on 80m using just ten watts and regularly managed QSO's all around Europe and every so often across the pond to our American cousins. The quarter wave vertical I built then was a loaded whip, what does that mean? Basically a way of not having 66 feet of vertical up in the sky. So how to reduce the length and still keep the aerial efficient? As you know, max radiation from most aerials is from where the coaxial cable joins on to it. So by having the coax cable feed several feet of vertical copper tubing, with a fibreglass fishing pole on top, with the wire twisted round it and joined on, you then have a much shorter aerial.

As a rule I do not like 'long wire aerials', usually preferring to use resonant balanced antennas where possible as there is then little loss to be found in the coax. However 'long wire aerials' on 160m work very well. But a quarter wave is about 130 feet long and we need a VERY good ground earth and/or counterpoises to make a virtual earth. Many people lay chicken netting on their lawn and let the grass grow through which completely hides it, others lay ground radials and whilst the Station Manager is away, use a spade to cut shallow slits into the lawn to bury them. Along the top the fences works too. But I haven't got a 130 foot garden, you say. What can you do? You can allow several feet of the wire to hang vertically from the end, weighted with a bottle of water keeping the wire taught. There is hardly any radiation from the free end anyway, so you're not losing much. Make sure this loose end is out of reach of children. The RF on the end of an aerial is quite shocking and BURNS!!! You could use your 80m vertical ***Fig:1*** (which you have mounted as far away from the house as possible) with 66ft of horizontal wire from the top back towards your shack.

Don't worry about the length of coaxial cable you will need to reach the bottom of the garden, because the losses at these low frequencies are very small, so you can use cheapo RG58 cable, or any other 50 Ohm coax you have lying around. However, and this is very important! Make sure the polythene insulator is completely covered with screening and you have made any joins completely waterproof. Never let water gets into the coax. You have been warned! Easiest is liquid rubber from a bottle!

So, why not take advantage of the coming low sunspot activity, have a go on 160 and 80m, especially with the digital modes and work the world, you may well be surprised just how far you can reach.

How to Obtain DX During the Declining Sunspot Cycle ctd:



VHF Contest Gang

A few pictures of the VHF gang in action this year, maybe a few more of you will join us next year? A full report of our 2016 activities will hopefully appear in the next issue....

Exam Pictures

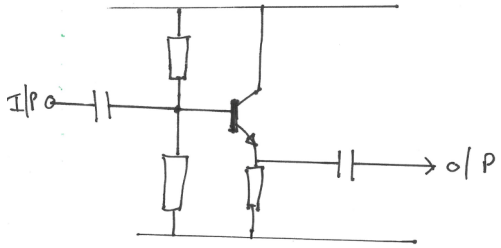
Emil 2W0DWV in his successful exam. Congratulations Emil, now MW0IMZ

These two likely lads were the exam invigilators! Namely John MW0JWP And Danny GW7BZR.

QUIZ

As usual there is a prize, and for once it is not chocolate! All answers to me via email by Monday 17th October please, via email at m3set@yahoo.co.uk or hand to me on a club night. Good luck!

1. The circuit amplifier circuit to the right shows:
   a. a common base amplifier.
   b. a common emitter amplifier.
   c. a common collector amplifier.
   d. none of the above.

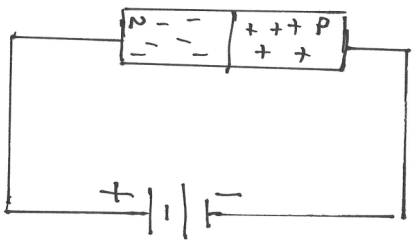


2. You would need to take particular precautions against static when handling:
   a. diodes
   b. bipolar transistors
   c. field effect transistors
   d. valves.

3. An efficient RF power amplifier with a DC input of 100 Watts will have an RF output power of around:
   a. 10 Watts
   b. 30 Watts
   c. 60 Watts
   d. 100 Watts

4. Which one of the following statements about varactor diodes is correct?
   a. Increased reverse bias narrows the depletion layer and reduces the capacitance.
   b. Increased reverse bias widens the depletion layer and increases the capacitance.
   c. Decreased reverse bias widens the depletion layer and reduces the capacitance.
   d. Increased reverse bias widens the depletion layer and reduces the capacitance.

5. The diagram shows:
   a. a reverse biased junction, current will flow
   b. a reverse biased junction, current will not flow
   c. a forward biased junction, current will flow
   d. a Zener diode.



Amateur Radio Construction Kit Vendors

1. SOTA Beams. They stock various kits, several of which are quite simple and would be ideal for the QRP enthusiast.

   http://www.sotabeams.co.uk/

2. Walford Electronics. Run by Tim Walford G3PCJ. They stock reasonably priced kits for all three levels of licence, from simple regenerative receivers to full SSB transceivers.

   http://www.walfords.net/

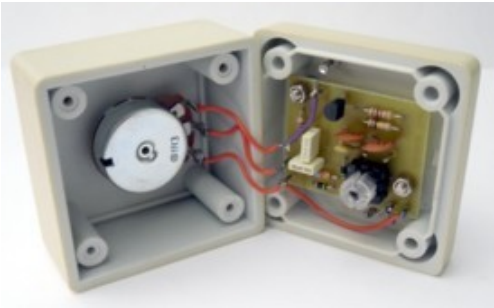
3. Kanga UK. A superb range of kits, from surface mount dummy loads, Watt meters, SDR receivers and simple altoid tin CW transceivers using discrete components.

   http://www.kanga-products.co.uk/kanga-uk-kits

FOXX-3 CW Transceiver Kit from Kanga

4. Spectrum Communications. More kits, mostly using discrete components from test equipment, transverters, simple receivers, transceivers and much more!

   http://www.spectrumcomms.co.uk/



Simple Spectrum Comms VFO Kit. Ideal for Those needing an Intemediate Licence project!

5. *GQRP Club.* Simple regenerative receivers, CW transmitter kits.

   http://www.gqrp.com/

I would encourage anyone wishing to take part in the construction competition to take a look. There are many more kits available in the UK and from around the world, so take a look!

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

Cylchlythyr Golygydd / Newsletter Editor

Simon Taylor 2W0CHV. QTHR: Email: m3set@yahoo.co.uk
Tel: 07904 874652

Pwyllgor / Committee

Cadeirydd / Chairman: Chris Tanner MW0LLK.
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 112, will be issued in Rhagfyr / December 2016. Any material for inclusion to be sent to the editor.