



Llais Y Ddraig

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

Chwefror / February 2016. Rhif/No. 113

Rhaglen Clwb / Club Programme

February

6th Club discussion / business night.

20th Using the antenna analyser.

(A talk from Stewart GW0ETF)

March

6th Summer Activities / Special Event Station Planning

20th The German V2 Rocket & It's Guidance Systems.

(A talk by Les MW0SEC)

Thank you ...

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

Chris Tanner MW0LLK, Stewart Rolfe GW0ETF, John Brimecombe GW3GUX,
Dafydd Owen MW5DJO, John Parry GW3VVC and Cliff Nicholls 2W0CBZ.

The committee would like to wish all members and friends of Dragon Amateur Radio Club a belated Happy New Year and enjoyment in our fabulous hobby in 2017.

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From the Editor....

Dear friends,

Welcome to the first issue of Llais Y Ddraig / The Dragon's Voice for 2017. This edition comes to you just after the postponed AGM, when two of our club officers resigned. I am sure you will all join me in wishing Stewart GW0ETF (19 years as secretary + more years on the committee) and Chris MW0LLK (5 years on committee, including two as chairman) a huge vote of thanks for all their efforts. I hope you will also join me in wishing our new committee for 2017 the best of luck and that we all help them when we can.

I would first like to place an apology for the delay in publishing my promised article on the BBC and the birth of TV from Alexandra Palace. Various time constraints, not least getting married to my lovely XYL Beth on New Years Eve have meant that I have had little time to finish this. I shall do my utmost to complete this for the May issue.

This issue is packed with reports and information for you all, but broadly follows two themes, construction and the state of our club and hobby following the AGM. Both Stewart 'ETF and Chris 'LLK have very valid points to make and I urge you to read their contributions. They suggest that there are challenges facing the hobby and our club. We need to look at why membership numbers are declining and what we can do to combat this, please be assured that the new committee will continue to look at this issue; but hopefully all members will engage in discussion about this issue over the coming months.

However on a positive note it was great to see that home construction of kits or from scratch is alive and well in Dragon ARC. Moreover we have members experimenting at the cutting edge of digital narrow bandwidth TV with Chris 'LLK and Peter 'BZY leading the way in this exciting field. Stewart 'ETF is working hard training new CW operators, proving that CW is regaining in popularity and we have several contesters in our midst such as Danny 'BZR on HF plus Kevin 'CFA, Bob 'RZL and I are tinkering about on VHF. I am sure there are many other club members active in various aspects of our hobby, tell us about it!

In conclusion the future of our club and indeed the wider hobby will only be successful if we continue to innovate, use the bands and most importantly of all promote our hobby and RECRUIT, RECRUIT & RECRUIT! Let us all embrace our future, work hard and enjoy ourselves along the way, it could prove to be a most enjoyable and enlightening journey!

'73

Simon Taylor

MW0NWM (note new callsign, my Christmas present to myself!).

AGM Report

Simon Taylor

MW0NWM

On Monday 16th January 2017, Dragon ARC held their re-scheduled AGM, the original date on the 21st November was cancelled due to some rather inclement weather, which prevented several members from attending. However on the 16th, there were twenty members in attendance, nearly a third of the membership; which is not a bad turn out for an AGM at all.

The assembled members heard a thought provoking report from outgoing Chairman Chris MW0LLK, on the state of the club and amateur radio in general. This can be found elsewhere in this newsletter and is well worth a read! Chris also thanked Stewart Rolfe, GW0ETF for all his 19 years of service as Secretary, not forgetting several years on the committee prior to this as an ordinary member and Treasurer. I am sure that everyone in the club would like to echo Chris's sentiments, a huge thank you to Stewart for all his hard work and continued commitment to Dragon ARC. There was also a vote of thanks from the assembled members to Chris MW0LLK for his excellent term of office as Chairman.

Following the Chairman's Report, our Treasurer John Brimecombe GW3GUX gave the meeting an update of the club's finances. GW3GUX reported that the club finances are in healthy order, yet with a 50% increase in hall hire fees it will be necessary to keep a careful eye on how this impacts the accounts.

Following the reports, the committee for 2016 / 2017 was elected unopposed. 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, Kevin Jones MW0IBT and Dafydd Owen MW5DJO.

There are also non committee positions, some of which may need to be filled. If you are interested in helping out, please do let us know. The positions are:

Door Keeper:	VACANT
Equipment Officer:	Danny GW7BZR
Refreshments:	Cliff 2W0CBZ
Newsletter Editor:	Simon MW0NWM

As new Chairman, I would like to thank everyone who volunteered to remain on the committee for another year and thanks to Dafydd Owen, Kevin Jones and Bryn Owen for volunteering to join. Everyone leads busy lives, so I really do appreciate your support to DARC. I would also like to echo the sentiments expressed at the AGM, a huge thank you to Stewart GW0ETF and Chris MW0LLK for all your hard work as members of the committee and your continued support for the club going forward.

If any members have suggestions for club activities, please do let the committee know.

The Chairman's AGM Report

Chris MW0LLK

The following is the report of outgoing Chairman Chris Tanner, MW0LLK.

2015 - 2016 has been a mixed year, some decline but also some new interest and activities. We learned about 4m and 6m operating, we had two interesting presentations (the Sun and Titanic) from David Roberts which were both well received. We learned of explosives, the Atalanta receiver and SOTA. We built fox hunting antennas though the weather stopped the hunt, we learned much about how our power gets to us from John Shorney of National Grid. We also became involved with Cyfeillion Marconi who are planning to wind down their group in short order, but we have persuaded them to take a final look at achieving their ambition to install a permanent memorial plaque at Waunfawr Marconi Station.

The club continues to train new candidates to the RSGB Foundation course, some of whom progress to the Intermediate and Advanced. Thanks must go to all the trainers particularly John JWP and Les SEC who have quietly been getting on with it over the last year or two. Please do offer to help if you can spare even just a few hours a year. We have de-emphasised contest reports at meetings although the keen contesters continue to take part, and of late we have been taking part in more vhf and uhf contests. The dreaded caravan has been repaired and was used at Waunfawr for Marconi Day and at Holyhead for IOTA. This is an expensive resource for the club to maintain so we need to look at using it more frequently in future, if only for evenings or to run training sessions occasionally.

Meeting attendance has dwindled slightly this year - though junk sales and external presenters usually receive a good turnout. I feel some of this decline parallels the general downturn in interest in radio reported countrywide by the RSGB and others. I am however, hopeful that we can start to turn this around by following the initiatives made this year to link up with other activity groups via North Wales Tech and others. I hear plans are afoot to start a rocketry club in the near future for example. Good levels of interest have been shown in the practical aspects of radio particular evidenced by the recent Construction Competition. I hope this continues to develop. Following Carwyn Edward's presentation in November I know a few of our members signed up to use the FabLab facilities at Pontio. I certainly plan to continue being active in this area as I see huge potential for the future with amateur radio and maker technologies complementing each other.

Following the replacement of the repeater at GB3AN with a mixed mode unit there was a flurry of activity from club members and others using it, however this seems to have quietened a lot! I note with some sadness the demise of GB3DW/GW in Criccieth— due in this case to the site lease having expired which is out of ARG's control. We must endeavour to make more use of the repeaters or they will eventually get turned off due to lack of interest.

An area of some growth, although having limited representation at the club, is Amateur TV - the last couple of years has seen steady growth in interest in this aspect of the hobby with the new allocations in 2m and 4m bands for digital experimentation, leading to the development of reduced bandwidth DATV systems. The latest project undertaken under the BATC umbrella is a complete, four band, DATV transmitter built around a Raspberry Pi (search for PortsDown). This is something to watch for the future as similar hardware has already been demonstrated to work as a 'normal' SDR capable of many modes aside from DATV.

The Chairman's AGM Report ctd:



Another thing to watch for in future is the development of Broadband-HamNet which is gradually making inroads across the UK and Europe. This could effectively become the Ham Internet operating independently of ISPs and their expensive infrastructure.

As I stand down this year I realise that I have now completed five years as a club officer starting in 2011 as Vice Chair and then succeeding Danny BZR as Chair in 2014. I have to say I have enjoyed taking part and I hope to continue doing so in the future, however it is probably time to take a break and let someone else into the driving seat! When I first came on board I was relatively new to the club and the hobby, having only qualified (Foundation) in June 2011. I was full of enthusiasm and enjoyed doing my bit at club events along with a core of like minded people. Sad to say the general level of enthusiasm has dwindled in recent years and as a result some events have been dropped from the club calendar. Perhaps with fresh interest from outside and / or new members this will turn around again, however I do think it is time for all of us to take a long hard look at why we are club members, what we want to get out of the club and what we need to put in if we are to get what we want.

Finally I would like to thank everyone for your support during my incumbency. In particular I would like to thank Danny BZR, Stewart ETF and John GUX for your sterling efforts and support over the years and also John VVC for your occasional mentoring and suggestions. My thanks also to Alun CYM and the rest of this year's committee members: Cliff CBZ, John JWP, John VVC and Simon NWM. I plan to continue being an active member of the club and look forward to supporting the new Officers and Committee as they grow into their new roles (whoever they may be). I wish you all well for the future and look forward to many more exciting times ahead.

It's been fun - Thank You!

Chris Tanner MW0LLK.



Secretarial Memorabilia

Stewart GW0ETF

At the re-scheduled AGM on January 16th I finally stepped down as club secretary after what seemed an age of taking minutes, arranging committee meetings and emailing the RSGB news with club programme information etc, etc. John Pritchard MWØJWP is taking over and I wish him well, I know he'll do a great job. A couple of days after the AGM I gathered together many years of minute books and other club paraphernalia to take over to John's place but before I did so I had a browse through them to see if I could work out just how long I'd been in the secretary's chair.

I had minute books from ordinary meetings, committee meetings and AGMs/EGMs going right back to the Dragon Breakers CB club in the early 1980s before it morphed into the Dragon Amateur Radio Club of today. They make fascinating reading and should be cared for as a history of the longest existing amateur radio club in this part of Wales; as many will know other clubs have come and gone in that time but 'The Dragon' has always survived. I couldn't work out from these tomes when I first became a member but I guess it was around 1986. The committee meeting minutes do show however that I became treasurer in 1989 while Tony Rees GWØFMQ was secretary. Then in 1998 we swapped roles and I became secretary, a post I held until last Monday – 19 years, so I'm not surprised I (and the members?) needed a change! From the first early records I only recognised 2 other callsigns that are still actively attending the club today, Billy Williams GWØIQZ and John Parry GW3VVC although Gwilym GW2DLK also featured occasionally but unfortunately doesn't attend now due to health issues, and we wish him well. I also know some of today's members were involved with the original CB club such as Danny GW7BZR and John 'JWP' himself but as I say it was the actual callsigns I was noticing and never being a Cber all those weird 'handles' are gobbledygook to me. And naturally most callsigns mentioned will be committee members so possibly there are others from the recent past who never got a mention in the minutes especially if they were well behaved and never rocked the boat ;-). My apologies if I missed or forgot anyone.

Not unexpectedly I've noticed some changes over my 30 years with the club. There has been a steady stream of licence changes from Class A (12wpm morse required) and the morse free Class B limited to vhf and above, the Novice licence through to the 3 tier system of today. Then there was the period of morse bashing which resulted in the lifting of the morse requirement for access to the hf spectrum, something I had some sympathy with. Thankfully now that all the hysteria has gone cw is being appreciated for the efficient and rewarding mode that it is and I'm busily engaged in teaching it through the Cwops Academy with a steady stream of motivated students from all over the world. In recent times we seem to have had a number of new members who are very keen at the start but who then drift away and disappear – I don't remember this years ago. I suspect, though not certain, that the Foundation licence might have something to do with this. This first tier licence is easy and requires little commitment to amateur radio; my suspicion is that after the first flush of excitement the novelty wears off and lacking motivation to progress they drift away. Having said that we've plenty of Foundation licensees that have stuck with it and moved onto great things in the club. I'm confident the club will continue to do an excellent job of helping new entrants to the hobby gain their Foundation licence and also to encourage progression to Intermediate and Full in due course.

Secretarial Memorabilia Ctd:

There was also the Ynys Môn EU124 fiasco in 2001 when the IOTA committee bowed to pressure from some 'incomers' who claimed the straits didn't quite fulfil the 100m rule and which gave locals an unfair advantage in IOTA activities. High tech measuring equipment was brought up from Cambridge University and found it was indeed short - by a few centimetres - so Anglesey wasn't an island after all! It was something of an own goal as it hit radio activity on the island badly, and to add insult to injury their strange rules then proclaimed Holy Island to be an island in it's own right and therefore EU124 while the rest of Anglesey was the UK mainland EU005. What a farce!

Finally I came across this photo from the Chronicle which dates back to time we began operating from the Marconi building at Waunfawr before it became the Beacon climbing centre. At this time it was quite dilapidated with holes in the upstairs room where we operated from (Health and Safety?) which meant you had to watch where you put your feet. Talking of 'Elf and Safety' I remember myself and Billy 'IQZ' fixing the antenna mounting up on the gable wall by the roof apex and me walking up the edge of the dodgy roof with minimal protection – I was still climbing in those days but clearly I was a bit mad as well. I blame Billy but I well remember 'VVC' and others laughing at me from the ground below. In the photo I'm on my Kent single lever paddle key with my straight key by it as back up and using the club's TS520. Hywel GW4CNM ('Cwm, Nant, y Mynydd) is next to me, a retired surgeon and a proper gentleman. Those were the days, and I had hair too..



I've just realised I still have the sweat shirt ;-)

Stewart GW0ETF

A Message from our Treasurer...

John Brimecombe GW3GUX

Once again a gentle reminder to those who have not yet renewed their membership to the club - subs were due on 1st of October last year. According to our constitution, anyone who has not renewed by the end of December (last year), will be deemed to have resigned from the club.

I know that it is easy to accidentally overlook such things as paying subs and so we are not taking the constitution too seriously at the moment - a sort of amnesty - however the club relies on its members subscriptions to keep operating. This means that if you have not renewed your membership, this could be your last newsletter, also you will not be able to use the club Facebook pages as it is a closed group - members only.

If you are not sure if you have paid your subs for this year, just 'phone me - 01248-490762, or send an email - taidjlb@mypostoffice.co.uk to make sure.

If you have decided to resign from the club, I would appreciate it if you would let me know so that I can update the members list.

John Brimecombe GW3GUX
Hon. Treasurer.

Blackpool / Norbreck Rally 2017

Sunday April 9th 2017

We are now taking names of interested members for the Blackpool, Norbreck Rally 9th April 2017. Please give your name and a £10 deposit to Dafydd MW5DJO or ask on any club evening. Pick up points and times will be posted on the club website and on the club Facebook Pages ASAP.

This is a cracking day out so don't delay and let the minibus take the strain of travel whilst you enjoy friendly discussion and banter with the Dragon ARC gang!



Come on gang, let's go and bag a bargain, so long as we can find our way to Blackpool!

Active Antennas

John 'vvc

At a recent construction night at the Club I bought along an active antenna I recently built. I've built a number of these over a period of time and I'm always surprised at how well they work. A lot of interest was shown and as Simon our Newsletter editor had been asking for material for the next issue I thought this might be an opportunity to kill two birds...

Most antennas are passive - i.e. they do not have any sort of amplification and therefore do not require any power. Active antennas however have a built-in amplifier and therefore do require a source of power, usually 12V dc. An active antenna is usually smaller than a passive antenna and therefore the signal pick up tends to be smaller, hence the need for a small low noise amplifier. Active antennas are not the answer to all antenna problems but can often provide surprising performance for their size and as they are so easily built can often be used when the station's main antenna is down for maintenance. Here it is important to note that an active antenna can **ONLY** be used for receive, transmitting through it will destroy the amplifier.

There are many active antenna designs, one of the most popular which was christened the Mini Whip was designed by PA0RDT, Google should find lots of references including a long article originally written by PA0RDT. It is recommended that this be read as it gives a good insight into how the antenna works. Many people have built and modified these but the basic theory of operation is the same. PA0RDT built his antenna on a piece of printed circuit board (pcb), using half the board to mount the components and the other half as the actual antenna. Many of these antennas are now available on ebay and most sellers copy this layout, using similar components. The antenna requires 12 volts dc and in PA0RDT's design this is sent up the co-ax from a little power injector or bias-T as it is sometimes called, in the shack, the power injector being supplied with 12 volts from the shack 12 psu. As we are dealing with low signal levels ideally the power supply needs to be a conventional one and not a more modern switched mode type as these can be electrically noisier and introduce hash into the amplifier which will then find its way into the receiver.



Fig.1

Active Antennas Ctd:

The picture (**Fig.1**) shows my active antenna. This is a commercially made board I bought on ebay for about £12 from a seller in Turkey. There are lots of people selling both kits and completed items. Half the pcb has been etched to accept the components whilst the other half is left un-etched and forms the antenna which is roughly 2 inches by 1.5 inches. A short piece of stout wire about 6 inches long can be soldered to the extreme left of the board (the black dot in the picture), if greater signal pickup is required. If this is made too long the amplifier will overload and cause signals to appear on the receiver in some strange places, typically broadcast stations appearing in the NDB band, between 250 kc/s and 500 kc/s. Experiment with different lengths of wire.

A Russian seller - *anton_ra0sms* - has an assortment of PA0RDT active antennas from around £12 carriage free – you can even make him an offer!

If you decide to ‘home brew’ all the components are cheap and easily sourced. If you take this path consider purchasing a couple of spare transistors just in case... The amplifier can be built ‘dead bug’ style, with the components stuck onto a piece of Bluetack and soldered together. If you build the amplifier in a metal box you might be able to use the box itself as the antenna...

The power injector (**Fig.2**) can also be purchased on ebay or again home-brewed. It has a small capacitor inside to stop the 12 volts getting to the receiver. Ideally it needs to be fused, I use a Bourns self-healing fuse, again bought off ebay. My antenna pcb conveniently fitted in a Marley soil pipe. The power injector was built in a small die-cast box from Maplin. This is one project where you can experiment as much as you like.

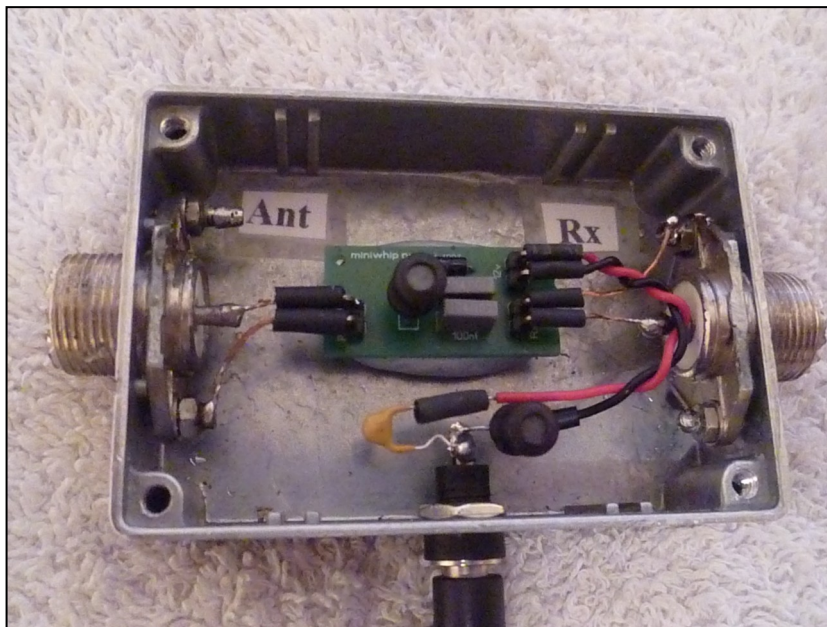


Fig.2 The Power Injector or Bias-t

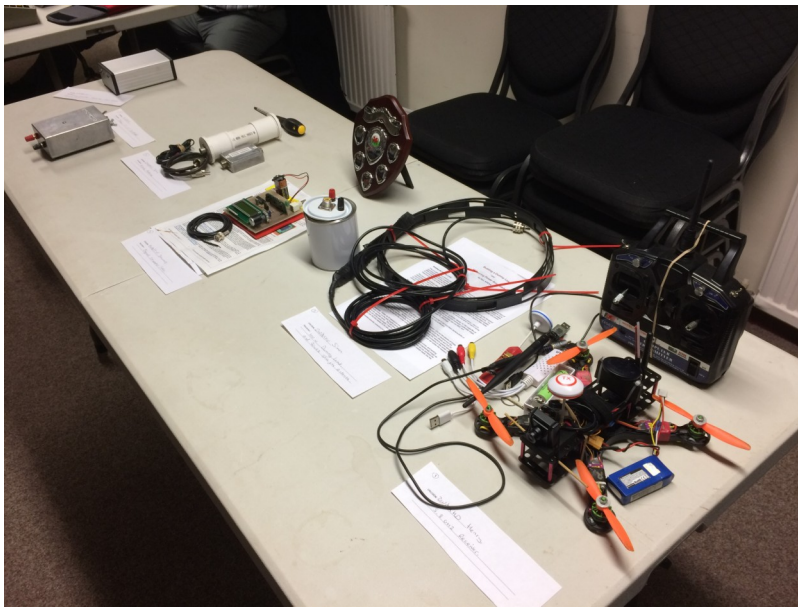
The antenna is connected to the left side co-ax socket and a short patch lead from the right hand socket goes to the receiver. The connection to the shack 12 volt power supply is at the bottom. The little yellow thingy that looks like a ceramic capacitor is the self-healing fuse.

Good luck with your active antenna and happy experimenting!

Construction Competition

Simon MW0NWM

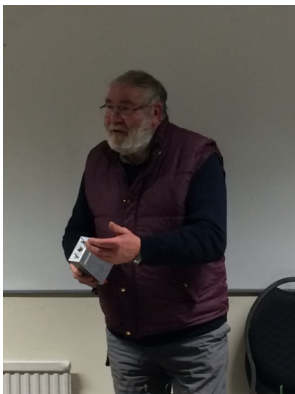
On the 7th November 2016, Dragon ARC held a Construction Competition, which we hope will become an annual event. There was a good turnout of members and I am pleased to report that there were several entries from various members at all skill levels from basic (that would be me!), to far more advanced. Each member had to briefly explain about their entry and field any answers from the floor before the assembled members voted for their winner. There were no categories, simply vote on the item you thought would be most useful or impressed you.



Just a few of the entries in the 2016 Construction Competition.

The following members entered the competition:

- | | |
|--------------------|---|
| 1) 2W0XHD Henry. | 5.8Ghz receiver in a homebrew drone, with GPS. |
| 2) 2W0CHV Simon. | 100 watt dummy load and 4m ladderline J Pole antenna. |
| 3) GW0ETF Stewart. | Signal Generator / VFO. |
| 4) GW3VVC John. | Active Antenna. |
| 5) GW7BZR Danny. | Switchable 4:1 / 1:1 balun. |
| 6) GW3GUX John. | 40m CW low power Transceiver. |
| 7) GW7BZY Peter. | 23cm FM TV Transmitter, with 18 watt PA. |
| 8) MW0YZM Emil | |
| MW0JWP John | USB Isolator. |
| 1) MW0LLK Chris. | Data receiver. |



Construction Competition ctd:



The assembled membership looking on with interest as members described their individual construction projects.

Following a close round of voting, John GW3VVC was declared the 2016 winner, with his very useful Active Antenna. Congratulations John, I suspect that several club members will be warming their soldering irons to construct one of these useful devices very soon!



John 'VVC receiving his winners trophy and certificate from then Chairman Chris MW0LLK.

John 'VVCs Active Antenna.



Chris MW0LLK also awarded the following 'Chairman's Commendation Certificates:

Danny GW7BZR for smart construction of his really useful 4:1 and 1:1 switchable balun
Simon 2W0CHV for his first steps in construction and creating the construction competition.
Emil MW0YZM and John MW0JWP for design innovation in their USB isolator.

Finally, a huge thank you to all who took part in this event, it is great to see home construction alive and well in the Dragon club. Maybe we shall have even more entrants next year?

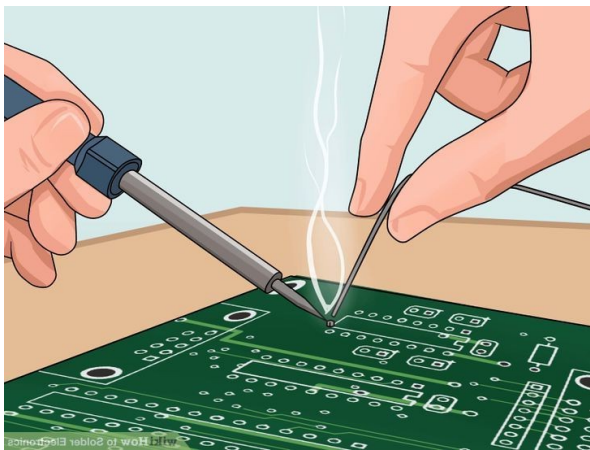
There is No Smoke Without Solder...

Cliff 2W0CBZ and Simon MW0NWM

In the January 2017 Radcom, letters page 97; David Noakes G6IYD says the following about solder.

'I would be interested to hear of others experiences of using lead-free solder. As 'old' tin-lead solder is no longer used for electronic/electrical equipment under EU law, it is not supposed to be available from UK sellers. I have used both, and prefer to use tin-lead rosin (or resin?) core solder, largely due to the lower melting point, and less chance of damage to sensitive components. It is my understanding that there is no problem with using tin-lead for homebrew construction, but if you are making up something for others, or for sale, you are breaking the law. There is some controversy over using lead-free cored solder which may give off more harmful flux airborne products due to the higher temperatures required to reach melting point.

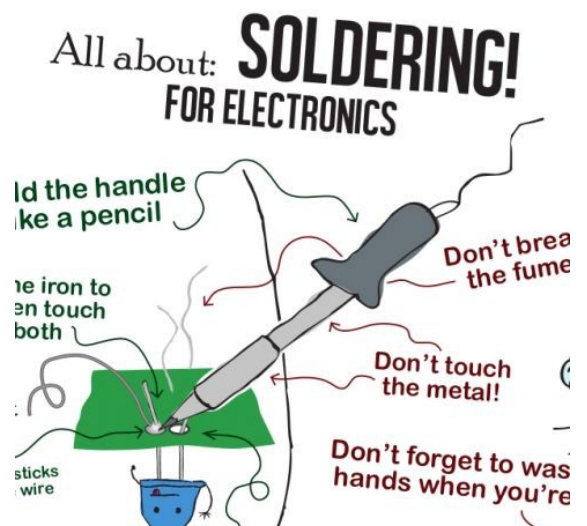
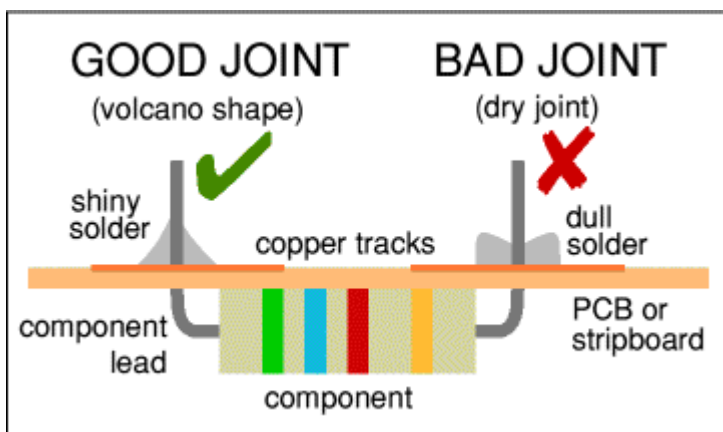
A useful article on the subject may be found at radio-electronics.com 'Using Lead Free Solder'.



So what are your thoughts on using tin-lead solder? Is it legal?

Cliff and Simon both use tin-lead solder for their projects, but what about you the membership?

We would love to hear your thoughts about this subject so we can report back in the next issue. Please send all correspondence to the editor at the address on the back page.





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, 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, Kevin Jones MW0IBT,
Dafydd Owen MW5DJO.

We are on the web...

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

Issue number 114, will be issued in Mai / May 2017. Any material for inclusion to be sent to the editor.