

STARLITE

THE JOURNAL FOR THE STOURBRIDGE AND DISTRICT A.R.S.



**G601
G6SRS**



ISSUE: JUNE 2021



G4CVK

**STOURBRIDGE & DISTRICT AMATEUR RADIO SOCIETY
INCORPORATING
OLDSWINFORD HOSPITAL SCHOOL RADIO CLUB**

MEETINGS NORMALLY HELD AT

**OLDSWINFORD HOSPITAL SCHOOL
HEATH LANE
STOURBRIDGE
[8:00 TO 10:00 PM]**

VISITORS ALWAYS WELCOME

**DURING COVID, THE SOCIETY HOLDS ITS MEETINGS
EVERY MONDAY ON 2M FM AND ZOOM VIDEO**

RSGB AFFILIATED SOCIETY

STARLITE

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Blakedown
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DY10 3ND

StARS Website URLs:-

www.g6oi.org.uk
<http://g6oi.ross-lewis.co.uk>

StARS Facebook Page:-

<https://www.facebook.com/groups/stourbridge.ars/>

Forthcoming Meetings

June 7 th	Club Net 145.325MHz FM & Zoom Video. 8pm
June 14 th	Club Net 145.325MHz FM & Zoom Video. 8pm
June 21 st	Zoom Presentation By A Guest Speaker. 8pm
June 28 th	Club Net 145.325MHz FM & Zoom Video. 8pm
July 5 th	Club Net 145.325MHz FM & Zoom Video. 8pm
July 12 th	Club Net 145.325MHz FM & Zoom Video. 8pm
July 19 th	Zoom Presentation By A Guest Speaker. 8pm
July 26 th	Club Net 145.325MHz FM & Zoom Video. 8pm
August 2 nd	Club Net 145.325MHz FM & Zoom Video. 8pm
August 9 th	Club Net 145.325MHz FM & Zoom Video. 8pm
August 16 th	Zoom Presentation By A Guest Speaker. 8pm
August 23 rd	Club Net 145.325MHz FM & Zoom Video. 8pm
August 30 th	Club Net 145.325MHz FM & Zoom Video. 8pm
September 6 th	Club Net 145.325MHz FM & Zoom Video. 8pm

Editor's Comment

Thanks to Wayne M5LLT, May 17th gave us an Aerial presentation on Zoom by Callum McCormick M0MCX aka DX Commander. The subject was recorded and the final edited video has just been released on Callum's You Tube channel. Here is the link:

Cheap Wire Shortwave HF Antennas for Small Gardens and Back Yards

<https://www.youtube.com/watch?v=FUB42vJ75Hw>

To continue the aerial theme, there is another short item from Tony M6AHW about his 20m vertical in this issue.

I understand that a suggestion has been made to organise a Club meeting, most likely somewhere outdoors, in the coming months. I presume the location would be the usual place on No Man's Green Lane, aka The Sheepwalks? More details later – probably just after publication of this issue of Starlite!

Solar flare frenzy and CME

On Saturday 22nd May, the sun produced a sequence of solar flares unlike anything we've seen in years.

Earth-orbiting satellites detected a dozen explosions in the magnetic canopy of sunspot AR2824.

One of them emitted a radio burst so strong, it drowned out static from lightning storms on Earth and was recorded at midnight by listening stations in the Arctic.

NOAA forecast models suggest that a CME might hit Earth's magnetic field on May 26th.

Full story @ [Spaceweather.com](https://spaceweather.com).

Changes to the RSGB 50MHz awards

The RSGB Awards Manager has reviewed the current 50MHz awards offered by the Society and concluded that the existing 50MHz 2-Way Countries and 50MHz DX Countries awards are significantly duplicating each other.

The plan is to amalgamate these two awards into one single 50MHz Countries award, whilst keeping all the incremental levels of award in both of the existing 50MHz awards.

If you've been working towards either of the current 50MHz awards you will have until the end of the year to complete them. A new award for operation 50MHz will be launching soon.

Foundations of Amateur Radio

Running out of things to do ...

So, there's nothing on TV, the bands are dead, nobody is answering your CQ, you're bored and it's all too hard. You've run out of things to try, there's only so many different ways to use the radio and it's all too much.

I mean, you've only got CW, AM, SSB, FM, there's Upper and Lower Side-band, then there's RTTY, the all too popular FT8, then there's WSPR, but then you run out of things. I mean, right?

What about PSK31, SSTV, then there's AMTOR, Hellschreiber, Clover, Olivia, Thor, MFSK, Contestia, the long time favourites of Echolink and IRLP, not to forget Fusion, DMR, D-STAR, AllStar, BrandMeister or APRS.

So far I've mentioned about 20 modes, picked at random, some from the list of modes that the software Fldigi supports. Some of these don't even show up on the Signal Wiki which has a list of about 70 amateur modes.

With all the bands you have available, there's plenty of different things to play with. All. The. Time.

There's contests for many of them, so once you've got it working, you can see how well you go.

Over the past year I've been experimenting with a friend with various modes, some more successful than others. I'm mentioning this because it's not difficult to get started. Seriously, it's not.

The most important part of this whole experiment is getting your computer to talk to your radio. If you have FT8 already working you have all the hardware in place. To make the software work, you can't go past installing Fldigi. As a tool it works a lot like what you're familiar with. You'll see a band-scope, a list of frequencies and a list of decodes. It's one of many programs that can decode and generate a multitude of amateur digital modes.

If this is all completely new to you, don't be alarmed.

There are essentially two types of connections between your computer and your radio. The first one is audio, the second is control. For this to work well, both these need to be two-way, so you can both decode the audio that the radio receives and generate audio that the radio can transmit. The same is true for the control connection. You need to be able to set the transmit frequency and the mode and you need to be able to read the current state of the radio, if only to toggle the transmitter on-and-off. If you already have CAT control working, that's one half done.

I've spoken with plenty of amateurs who are reluctant to do any of this. If this is you, don't be afraid. It's like the first time you keyed up your radio. Remember the excitement? You can relive that experience, no matter how long you've been an amateur.

Depending on the age of your radio, you might find that there is only one physical connection between your computer and the radio, either using USB or even Ethernet. You'll find that your computer will still need to deal with the two types of information separately.

Notice that I've not talked about what kind of operating system you need to be running. I use and prefer Linux, but you can do this on any operating system, even using a mobile

phone if that takes your fancy.

Getting on air and making noise using your microphone is one option, but doing this using computer control will open you to scores of new adventures.

I will add some words of caution here.

In general, especially using digital modes, less is more. If you drive the audio too high you'll splatter all over the place and nobody will hear you, well, actually, everyone will, but nobody will be able to talk to you because they won't be able to decode it. If the ALC on your radio is active, you're too loud. WSJT-X, the tool for modes like FT8 and WSPR, has a really easy way of ensuring that your levels are right, so if you've not done anything yet, start there.

Another issue is signal isolation. What I mean by that is you blowing up your computer because the RF travelled unexpectedly back up the serial or audio cable and caused all manner of grief. You can get all fancy with optical isolation and at some point you should, but until then, dial the power down to QRP levels, 5 Watts, and you'll be fine.

A third issue that was likely covered during your licensing is the duty cycle. It's the amount of time that your radio is transmitting continuously as compared to receiving only. For some modes, like WSPR for example, you'll be transmitting for a full 2 minutes at 100%, so you'll be working your radio hard. Even harder might unexpectedly be using FT8, which transmits in 15 second bursts every 15 seconds, so there may not be enough time for your radio to cool down. Investing in a fan is a good plan, but being aware of the issue will go a long way to keeping the magic smoke inside your radio.

I'm sure that you have plenty of questions after all that.

You can ask your friends, or drop me an email, cq@vk6flab.com and I'll be happy to point you in the right direction.

Next time there's nothing good on TV, get on air and make some digital noise!

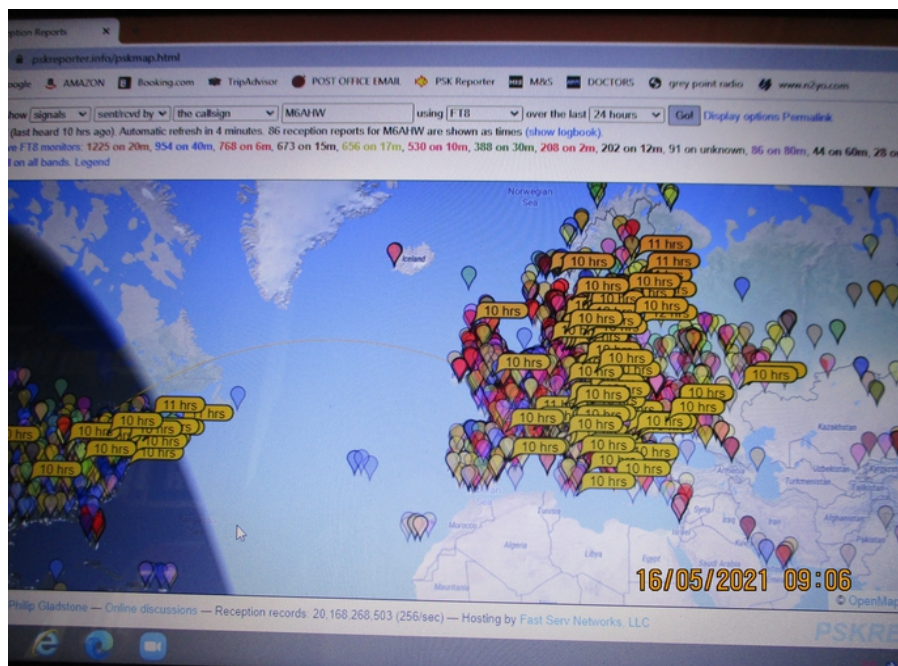
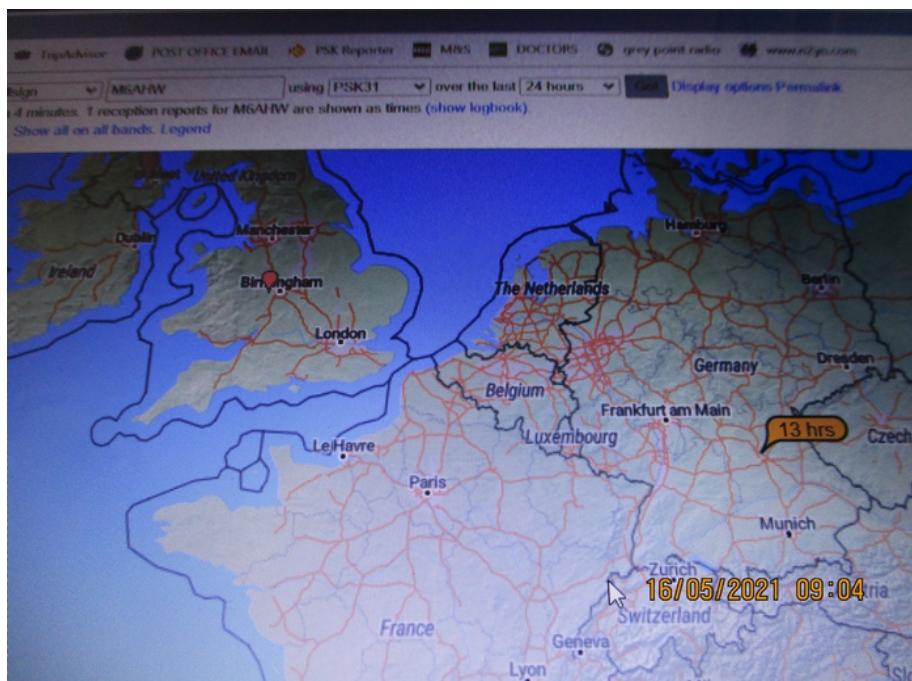
I'm Onno VK6FLAB

This article is the transcript of the weekly 'Foundations of Amateur Radio' podcast, produced by Onno Benschop, VK6FLAB who was licensed as radio amateur in Perth, Western Australia in 2010. For other episodes, visit <http://vk6flab.com/>. Feel free to get in touch directly via email: cq@vk6flab.com

If you'd like to join a weekly radio net for new and returning amateurs, check out the details at <http://ftroop.vk6flab.com/>, the net runs every week on Saturday, from 00:00 to 01:00 UTC on Echolink, IRLP, AllStar Link, Brandmeister and 2m FM via various repeaters, all are welcome.

THE 20m VERTICAL OF TONY M6AHW

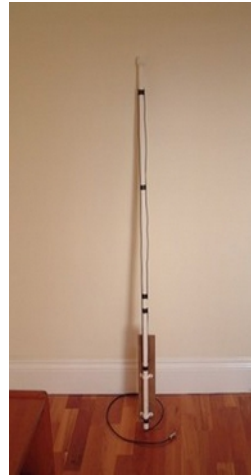
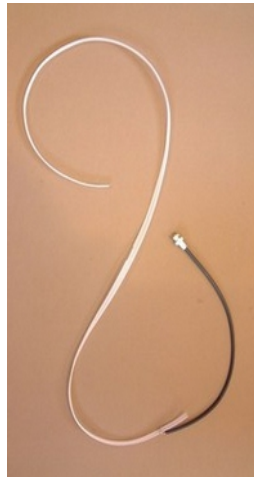
I HAVE GOT THE 20mtr PORTABLE VERTICAL WELL SORTED, IT WORKS REALLY WELL ACROSS THE BAND, EVEN GROUND MOUNTED, WITH THREE WIRE RADIALS. I HAD SOME VERY GOOD RESULTS ON FT8 AND PSK31/63; 86 CONTACTS ON FT8 AT THE FIRST ATTEMPT AFTER THE FINAL TWEAK, JUST NEED SOME DECENT WX NOW SO I CAN TRY IT OUT ON THE HILLS. HOPE THESE SCREEN SHOTS FROM PSK REPORTER WILL BE OF INTEREST. TONY (M6AHW)



A Slim Jim Antenna based on 300 ohm ribbon cable

As a newly licenced amateur, those Chinese made handheld radios are a tempting way to get onto 2m FM cheaply and quickly. The radios themselves are, in my opinion, quite good but like most handhelds, they are let down by their small "rubber duck" type antennas.

A Slim Jim is relatively cheap and easy to make. It will provide a significant improvement over a "rubber duck". At the club meeting on November 28th 2011, two versions of the Slim Jim were demonstrated. One was built of 300 ohm twin wire feeder. The other from hookup wire on a PVC former.



There are many designs for Slim Jim antennas on the Internet. Almost all specify a length of 58" (147cm). We have not been able to get Slim Jim antennas of this length to operate on 2m. The length of the antenna will depend on the frequency of operation and the velocity factor of the cable. (Electricity travels at 300,000,000 metres per second in free space but travels through a cable at a slower speed).

Here is our experience:

For the 300 ohm version, you will need:

- a length of 300 ohm ribbon cable (e.g. Maplin XR31J)
- a length of RG58 coax (e.g. Maplin XS51F)
- a suitable plug for your radio (for RG58 coax)
- solder, tools etc.

RG58 or a similar small diameter coax is recommended as the thick coax is difficult to solder to the 300 ohm ribbon cable but don't make it too long. A maximum of 3 metres is recommended. If you need to go further than that, use a short length of RG58 at the antenna end and then convert it to thick coax, which has much lower losses.

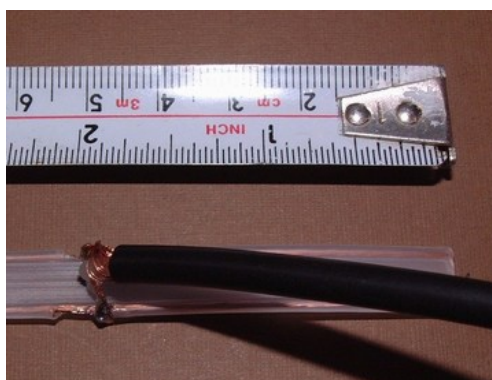
Strip the wires at one end of the 300 ohm ribbon cable and solder the wires together.



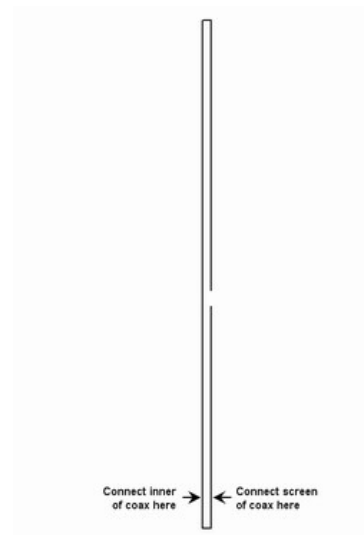
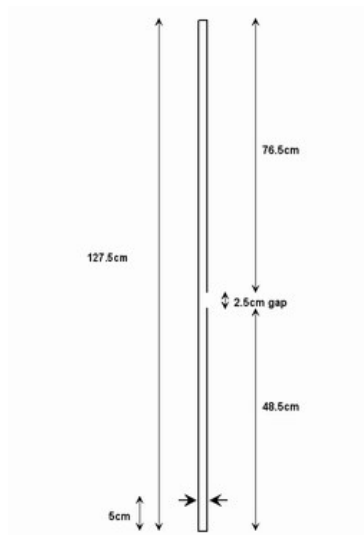
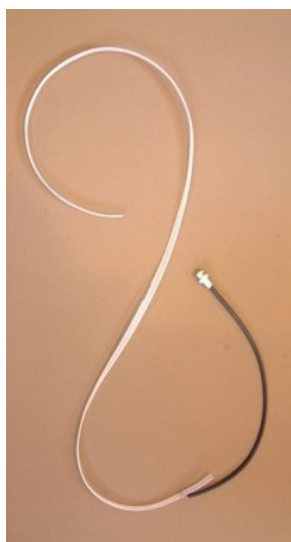
Measure 127.5cm down the cable. Strip the wires back to this point and solder the wires together. You should now have a piece of 300 ohm cable, 127.5cm long with the two wires shorted together at both ends. Measure down the cable 48.5cm from one end and cut through ONE of the wires. Measure another 2.5cm from this point (51cm from the same end) and cut through THE SAME WIRE. Remove the 2.5cm strip between these wires. You should now have a length of 300 ohm cable, 127.5cm long with both ends shorted and a 2.5cm strip missing from one of the wires only.



Strip the insulation from both wires at a point 5cm from the soldered end of the 48.5cm wire and at the same point connect the screen of the coax to the 48.5cm wire. Connect the inner of the coax to the 127.5cm wire.



Put the plug or adaptor onto the other end of the coax.



Our completed Slim Jim gave an SWR of about 1.5:1 at 145.4MHz. Please remember to hang the antenna at least 50cm away from metal objects. The best way to hang the antenna is probably to cut a hole in the insulation between the two wires and to use a piece of string to hang the antenna from a hook. **The top link of the antenna (away from the coax connection) and the ends of the cable by the gap could exhibit high voltages** when the antenna is used to transmit, even with relatively low powers. Maximum input should be limited to 10 watts (unless you undertake further tests).

This antenna, as shown, is designed for indoor use or for outdoor use in dry conditions. Some designs specify the use of slotted black coloured 300 ohm cable for outside use but we have had reports, from club members, that the capacitance of this cable also changes during wet conditions and this adversely affects the performance. Conclusion: do not use 300 ohm cable for outdoor use unless you keep the cable dry. For example, you could mount the cable in a plastic tube.

This information is offered in good faith but we cannot guarantee that an antenna built to this design will work exactly as ours did.

Discussion Point

Hello, Im Geoff Emery, VK4ZPP, and I've been thinking.

One of the features of being a representative body is that there are many tasks that go on that we members away from the centre of activity don't usually get to look at close up.

Within our clubs, there may be web sites and social media accounts to administer along with the usual functional and statutory tasks that pertain to any club. Reporting to the membership as well as regulatory bodies such as the sporting code administration and the registrar of incorporated associations are necessary to keep a local branch going. With radio clubs associated with the Wireless Institute of Australia it is just a matter of keeping up the details on the WIA web and recording the membership details to obtain the discount priced club insurance, pretty much. Obviously, depending on your clubs size and activities, there might be much more behind the scenes organisation.

The WIA represents the whole Australian amateur cohort in the administrative structure that starts with the United Nations through the International Telecommunications Union to the International Amateur Radio Union and thence to the Region 3. Locally, it is with the Australian Communications and Media Authority as the Government regulator of the local rules and regulations and the various international treaties that the WIA fulfils a national role. What this means is that there is a core of knowledgeable people who are depended upon to advise the WIA Board and represent the WIA at meetings and conferences.

Not only are there the face to face and the teleconferences but there are reams of documents to glean and papers to prepare and agree the content within. People bring a level of expertise to these tasks and many have years of experience in their professional roles and it is ultimately you and I who share the benefits of this background work.

To the busy people who have been committed to gathering opinion and formulating the formal responses, I must say a very heart felt Thank You. Your work has not gone unnoticed and the late nights and conferences are appreciated by your fellow amateurs.

I'm Geoff Emery VK4ZPP and that's what I think, how about you?

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