13th July 2016

Up The Stick

Volume Up, Issue QRM ! ...since 1923

VK2MB Manly-Warringah Radio Society
www.mwrs.org.au

Presidents Report—Geoff van der Wagen VK2AVR

One year or two, Mr President? When my most loyal supporters think I've already served my maximum 2 years it either means I've been dragging the chain, or we've accomplished so much in the last year that it seems like two. Well, it does feel like two.. for me at least! Acquiring a presidency, a wife, and a new job has made for an interesting year, and I feel we have made great progress as a club as well.

We finished up last year with a Hitchhiker's farewell from outgoing President Carlo VK2MXC. Working for a startup curtailed his participation in club life but he remains interested in the hobby. Also conspicuously absent was Secretary Des VK2TGJ, in hospital giving a couple of surgeons a hard time. Des's substitute, Yves VK2AUJ, was also in hospital after a bicycle accident! Dom VK2JNA, the substitute's substitute, did such a terrible job as Secretary we had to relieve him of his duties (I suspect a superstitious effort to avoid the role).

Dom is, however, a huge source of positive energy for the club and an amazing mentor. Tim VK2BT also has many years of expertise managing club affairs and I have greatly valued their collective guidance over the last year.

My main push as President has been to improve the relevance of the club in the wider community, and I think we have pulled together and made amazing progress.

Last year, ARNSW presented us with a Development Grant to build a public WebSDR node. This is a worthy project for us to undertake as a club with benefits to the wider AR community. I have enjoyed coordinating it and I greatly appreciate those who have contributed (I promise I'll finish it soon!).

We have been particularly active with the Scouting movement this year, in addition to JOTA we have a **new initiative** providing an introduction to radio to Cubs. This program runs as required up to 10 times a year and has considerable community benefits. It is a very worthy use of our time and I thank the volunteers who make these nights possible.

Our Lecture program is interesting and varied, and they are uploaded to YouTube to grab a wider audience. We had a fantastic range of speakers over the last year and Richard VK2NRA has done a wonderful job organising presenters.

Yves VK2AUJ has been instrumental in driving our "show and tell" Tech nights. One day Phil VK2BDF will run out of projects and someone else will have a chance to win! Yves also recently organised a shack clean-out, it has never looked better!

We also celebrated 6 years in our current location with a new lease arrangement giving peace of mind. Our working bees maintain the hall and we are very happy to call it our home.

Long term, our biggest risk factor (both as a club and a hobby) is membership. We need to attract more members, and younger members, for this hobby to enjoy long term success. A big part of this is becoming more diverse in what we do, and embracing new technology to remain relevant. I see Software Defined Radio (SDR) as a massive growth area and as a hobby we are perfectly positioned to facilitate those who are interested in it.

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Also over the past year.....

- Wyong sales
- Flagpole contest
- ILLW Barrenjoey Lighthouse
- 2 Working bees
- Ewaste/old gear night
- Test Gear Night
- JOTA
- **Cub Nights** (New Initiative going gangbusters!)

Digital Report,
Matt McGuire VK2RQ

The WiFi link used for the DSTAR internet gateway and the APRS connectivity has been working very well. You may have noticed that the dashboard for the DSTAR repeater is now split into two parts. Why is this? Well, it reflects to some extent the fragmented state of the DSTAR network today.

Originally, DSTAR was designed so that if you want to talk to someone, you put their callsign into your radio, and the network will find out which repeater they last used and retransmit your voice onto that repeater. The other person would then put your callsign into their radio, so that when they spoke, it would be retransmitted back on your repeater. ICOM implemented their gateway software that runs on a PC at the repeater to make this magic happen.

There is a central database called US Trust which keeps track of where people were last heard on the network and makes this information available to all the connected repeater gateways, and which keeps track of who is registered to use the network. This software is proprietary to ICOM, and they haven't updated it in a very long time.

Some guys in the US figured it would be cool if repeaters could be "linked together" like echolink or IRLP, so you didn't need to worry about putting people's callsigns in your radio, and they implemented a linking system called DPlus. As well as allowing repeaters to be linked, it also allows the use of little devices such as DVDongle and DVAP to plug into your PC and allow people to use DSTAR via the PC's internet connection, even if they are not in range of a repeater. This DPlus software runs on top of the ICOM gateway software, and it is also proprietary, controlled by Robin AA4RC. All this represents the left hand panel on our repeater dashboard.

There have been a couple of breakaway groups who didn't like the tight control from the DPlus group, and so they set up their own linking systems, DExtra and DCS. One of the breakaway hams wrote some software called Freestar to handle these new linking systems. I installed this on our VK2RWN DSTAR repeater gateway to give people more linking options, and it can be seen in the right hand panel on our DSTAR dashboard.

There was also a group who were not happy how slowly the central US Trust database system sends updates about people's location across the DSTAR network. If you move to another repeater, it can take the other repeaters in the network quite some time to realise that you have moved. So, they implemented a faster way of updating gateways when someone moves to a new repeater, called IRCDDB. I have also installed this software on our VK2RWN repeater, which also gives users a chance to play with new things like StarNet.

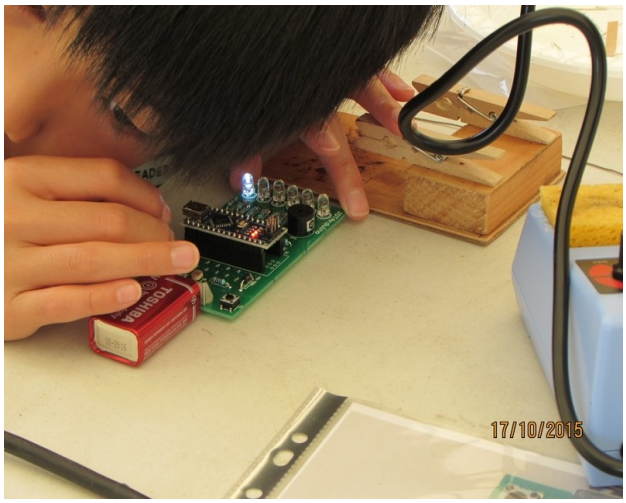
So, you can see the DSTAR system is made up of software from lots of different places, much of it proprietary and not well maintained anymore. One thing that has really changed the face of the DSTAR networks is an open source DSTAR gateway implementation called IRCDDBGateway. It replaces the need for all these different types of software, and can even be made to run on a small computer like a Raspberry Pi. Why haven't we gone over to this new software on our gateway? It does have some limitations. It breaks away from the old US Trust registration system, so that it will only work with other gateways that are using the IRCDDB system. Also, because the DPlus guys want to maintain full control, it is not allowed to link with DPlus as a fully fleged gateway, but instead needs to impersonate a DVDongle/DVAP. Finally, because IRCDDBGateway does not work with US Trust anymore, it does not allow people to register with US Trust so that they communicate with repeaters running the ICOM/DPlus software. This means people will need to register themselves on another gateway that does still talk to US Trust. Because of these limitations, I've been holding off moving our gateway over to IRCDDBGateway, so that users have the most flexibility. There may come a time however when the old software just becomes too hard to maintain, too many compatibility problems creep in, and we may look at breaking away from the old US Trust system and join the growing ranks of people using the open source IRCDDBGatweway.

-73 Matt VK2RQ

JOTA 2015 - Electronic Project Base

Club member Malcolm Faed designed an Arduino Nano based solder together kit for the JOTA electronics base. The board is software compatible with the Powerhouse Museum Thinker1 educational board. The hardware is quite different to the Powerhouse Thinker1

Details of the board are located http://jota.uniq.com.au/electronics/arduino/thinker.html This allowed us to use the Powerhouse open source training material.

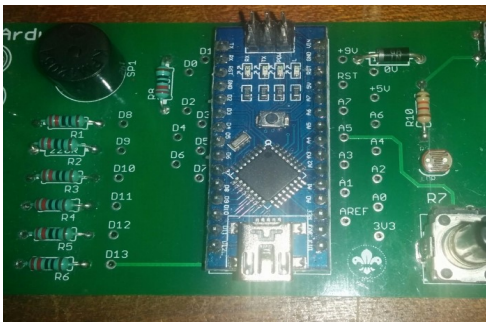


The hardware has 6 LEDs and a speaker output, and for input provided a push button, LDR and potentiometer. The Jota software provided several experiments including playing the Star Wars Imperial March, a persistence of vision toy, optical theremin among others. 300 kits were purchased, about 200 were soldered together on JOTA weekend by the youth. Should there be interest, the remaining kits are for sale.

On the Saturday evening we ran a programming class for those interested. About 40 youth participated and we were turning more away at the door. Some youth made their own programs from scratch or adapting existing programs. Some examples were an electronic dice utilising the 6 LEDs, playing the Mario theme on the included speaker, or copying code from the internet.

For 2016 another Arduino based flashing light kit based on the Digispark ATtiny85 has been developed. This is based on the Digispark and micronuclius boot loader.

Digispark dev board



JOTA Electronics night 2015

Publicity Report—Richard Murnane VK2SKY

The month-to-month work of the Publicity Officer continues much as it ever did, providing news items for the WIA and ARNSW broadcasts. Mostly just information about upcoming lectures, but also a bad pirate impression for the National News, promoting the annual Flagpole Contest. Not content with preaching to the converted, I also continue to try to get the club mentioned in the local press from time to time. This is harder to accomplish, but occasionally the Manly Daily takes the bait. Which reminds me, it's time to start another Lighthouse campaign...

Every so often though it's good to try something different. In March, I did an inexpensive online course on Udemy.com about how to make money on YouTube. It contained numerous tips for improving your YouTube channel profile and videos, so with the blessing of our club president, I applied a few of the lessons learned to the VK2MB-TV channel.

Here are a few specific changes I made:

- Customised video "thumbnails" to make it easier to see what the videos are about. By default, YouTube uses a frame from the video, which for our lectures is invariably the projector screen and an unidentifiable person in the relatively dark background. So all our video thumbnails looked the same and told you nothing about the video content. Fortunately, there are plenty of non-copyrighted images on the net that can be put to good use.

- Video thumbnails of club videos are now all "branded" consistently (with IKEA-like banners!) so that they stand out from the other offerings in the "suggested videos" list on the right-hand side of the page.

- Improved the search terms for all videos, to make them easier to find, and so that when you watch one VK2MB video, the "suggested videos" list tends to have other club videos.

- Included clickable links in each video to lead more viewers to other club videos.

- Created some new playlists to guide users to particular types of videos on our channel. It's not all lectures.

So, has it made a difference? YouTube provides enough analytic data to satisfy the stats freaks, and induce migraines in anyone else, but here are a few figures to show where we are compared to a year ago. Views were up a bit, from 250 in June 2015 to about 300 last month. But how viewers came to watch our videos tells an interesting story:

	June 2015	June 2016
Direct (user typed URL in directly):	36%	18%
External (links from other sites):	26%	15%
YouTube searches:	13%	26%
Suggested videos:	3.9%	27%

Hits from search terms and that "suggested videos" list increased dramatically, which means we are relying less on people already knowing the YouTube address of the video or following someone else's link to it. All things considered, I think I got my 10 bucks worth from that Udemy course!

The number of views could be increased a lot more, and perhaps in the future the club could then monetise the videos to provide some extra funds. The creator of the Udemy course I mentioned (Alun Hill) claims to earn $2 000 per month, and he doesn't even create his own content! He just mixes public domain content created by other YouTube users. Even if we could make $20 per month, that would be equivalent to getting several new club members, but of course we need more content. YouTube Analytics suggest that many viewers prefer short videos: less than 5 minutes. Geoff and I have discussed getting members to create "short and sweet" videos on very focused topics: handy tips, showing off gear, having fun at a VK2MB activity, etc. A lot less work than preparing a lecture. Something to consider for the new financial year! ***-Richard VK2SKY***

Lectures 2015-16 —Richard Ames VK2NRA

JUL - Mark Plowman VK2MP, *Why fixed wing aircraft actually fly*
AUG - Rod Miller VK2ZZM, *Montevideo Maru & Rabaul Prisoners*
SEP - Mike Du Plessis VK2UCT, *Electronic Blasting*
OCT - Jo Harris, *Marconi Wireless & Wahroonga*
NOV - Steve Kennedy VK6SJ, *RadTel HF Radio Network*
JAN - Geoff Osborne VK2TGO, *VLF signal Rx*
FEB - Tim Jensen VK2BT, *Spectrum Analysers*
MAR - Tim Mills VK2ZTM, *Amateur Radio history in NSW*
APR - Greg Roberts VK2TPL, *Mad Max Fury Road,*
Jack Swart VK2TRF, *radio & video support.*
MAY - Erika Davies, *Nuclear Magnetic Resonance spectrometers*
JUN - Yves Bernier VK2AUJ, *How not to ride your bike* ————>

"We sold some surplus MWRS Radio gear at Wyong for a tidy sum"

Repeater Report—Geoff Van der Wagen VK2AVR

Our repeaters have been remarkably stable over the last year, and the WiFi link we put in has been doing a wonderful job providing comms for DSTAR and APRS. There have only been two hiccups to talk about.

The first was our primary VHF repeater going intermittent, and then offline. After swapping in the standby repeater to restore comms, the problem was diagnosed to a fuse that had simply passed too many electrons. Not all at once mind you – the fuse was visibly intact but rather curiously it measured around 60 ohms. In fact, the repeater would start up with this fuse in place but after a couple of minutes running idle it would go offline. The self-heating in the fuse was causing its resistance to increase until it choked off the current flow. I guess there is a finite limit on how many drive-time temperature cycles a bit of wire can take!

The second hiccup was a 2 month gap in APRS packets. Nobody noticed that our I-Gate had gone completely deaf – not a single packet! This was also a simple problem, the radio we use had been bumped off-frequency and was listening to static.

Aside from that, we still have the occasional 'raspberry' from our VHF analog when DSTAR is used at the same time. We will have to schedule another tower day to investigate further, the cause is almost certainly intermod caused by "something" at the top of the tower. We need to put a finger on what that "something" is and fix it!!

– Geoff Van der Wagen VK2AVR

Arthur *Gerald* Sabin
VK2AGS—SK

Manly-Warringah Radio Society SK

We greatly lament the passing of:

Arthur *Gerald* Sabin VK2AGS
-SK Nov 2015, Life Member
Member since **~1934**

UpTheStick

Edited: Dom Bragge VK2JNA

VK2MB-TV

See VK2MB-TV on YouTube: www.youtube.com/user/VK2MB

Education Report—Mark Plowman VK2MP

There has been less demand for Education services compared to previous years. This is due to a number of other clubs now offering Foundation classes and exams including the NSW WIA that advertise their regular Foundation weekend on the Sunday broadcast. However, we the education team are ready and willing to provide our one day Foundation Licence training format and assessment for all levels of Amateur Radio licence when required.

Training and Assessment numbers

14	Foundation
1	Standard
1	Advanced

A big thank you to all the people that have assisted with the club training and assessing days. Your time and effort is always greatly appreciated. See MWRS education-and-training

Do you know anyone that has shown interest in our hobby that may be interested in learning about Amateur Radio and perhaps want to achieve their Amateur Radio Licence? *Word of mouth* is an effective way to promote our club's education and assessment services. If you are interested or know someone that is interested please let the Education team know. We always try to accommodate education and licence assessment requests as quickly as we can. Also, the club holds supplies of the very popular WIA Foundation manual for sale. $20 for financial club members ($25 for non-members) available at the club.

Manly-Warringah Radio Society

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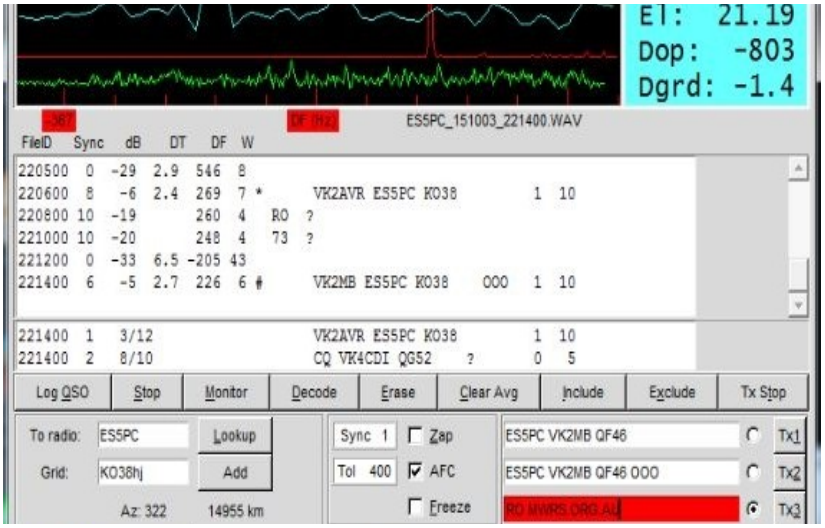

Manly-Warringah Radio Society EME contact

VK2MB—ES5PC on 23cm, 5m dish, VK2JDS QTH

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