



Next Meeting, Friday 6th June

Doors Open 7.30pm

Ern Rose Memorial Pavilion, Seaver Grove, Reservoir



John VK3FEZZ chatting on 2 meters while attending the WANSARC Amateur Radio display stand at Bundoora Park, for the Darebin Council Children & Family Day at the Children's Farm. The whole day was televised live to VK3RTV1. The IC-9100 is at left, with the new IC-5100A screen seen to the right on the table, first time used out of the box, very easy to operate. Radios covering HF, VHF & UHF were operating and questions by the public answered by us, about our hobby and club.

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MOORABBIN HAMFEST

A dozen WANSARC members were seen at the Hamfest. No one had a camera, so no pictures. Purchases were made, but with the current economy woes, sales were to what people really needed, with caution being the order of the day.

The next Hamfest is the GGREC on Saturday 19th July. More details at <http://www.ggrec.org.au/sales.php>

EMDRC NOW ON ATV

The Eastern and Mountain Districts Radio Club will be the first Club in Melbourne to have a permanent DATV Transmitter. The transmitter design is based around the German SR Systems DATV exciter and was built by Damian VK3KQ.

The transmitter, transmit and receive monitors and Set Top Box is all housed in a 19 inch rack. (Which turns out to be not quite 19 inches, but that is another story). The project was partially funded by a grant from the WIA and the installation work has been carried out by Damian, VK3KQ, Ralph VK3LL, Jack VK3WWW and Bob VK3AIC amongst others.

The Club has permanent rooms in the basement of a two story building, the top room being a shared facility with the local scouts. Video, audio and control cables have been run up to the top room to facilitate operations from either floor. ~EMDRC

DATV PARTY SCHEDULED IN AUGUST

The annual DATV QSO party is scheduled for Friday 29th and Saturday 30th August. (Eastern Australian Standard Time) As with previous years Friday night will be a VK hook up and Saturday international. More details later. ~Peter VK3BFG

Life really boils down to 2 questions...

1. Should I get a dog?



OR...

2. Should I have children?



GippsTech: An amateur radio technical conference and forum for the sharing of information and ideas. The focus is primarily on topics related to weak signal operations on the VHF, UHF and microwave amateur bands.

Regardless of your level of experience, from the newcomer, through Foundation operators and all the way through to the most technically astute amateur, the Club consistently receives feedback about the quality of the presentations and the level of presentations - plenty of detail, yet accessible to all. Everyone comes away with new understandings of our hobby and new friends. Attendees have come from around Australia and overseas. Most to enjoy the entire weekend, some come just for one day. More at <http://www.vk3bez.org/gippstech.html>

2014 JMFD RESULTS

In the class of 'Six Hour Portable Operation, Multiple Operator' in the 2014 John Moyle Memorial Field Day Contest, WANSARC was awarded eighth place. Given that we did not start until nearly half way through the second block by the time we were setup and on air, a reasonable result.

Of course more operators would allow operation on more bands. Consider coming along for JMFD 2015.

ICOM IC-5100A

This radio is now on sale in VK.

Along with the 7100 and 9100 series, its pager proof on 2 meters. An informative You Tube presentation is at <http://www.icomamerica.com/en/products/amateur/dstar/id5100a/default.aspx>



A full dual band 2 meter and 70cm transceiver with FM and DV (Dstar) modes, up to 50 watts. It has a touch screen just like the IC-7100 and operates virtually the same way. Operation is easy and intuitive, not a real need to consult the user manual.

The front remote mounting panel is large and easy to read. Comes with programming software, making setting up easy. But files from either 7100 or 9100 have a different field structure and are not compatible, so lots of typing involved, but faster than using the front panel. Lots of scanning options, lots of memories and scan banks. GPS is built into the radio front panel.

Receiver covers 118-174MHz, 375-550MHz with AM as well (RX only with AM) Supplied microphone is the full function type. One downside is mounting brackets are optional extras. Good audio both receive and transmit. For Dstar users extra quick capture features make using Dstar very quick and simple. Dual stations can be monitored either as 2mx/2mx, 2mx/70cm, or 70cm/70cm, with full cross banding available on either modes of FM or DV. The operating head is connected via CAT5 cable. The radio is perfect for use by Remote Rig. Nearby DV repeaters can be found using the radios internal GPS. Once you use this radio you will love it. ~Mick VK3CH

GET HIGH AND HACK YOUR WAY TO WORK

The FBI is struggling to recruit bright young computer programmers because of their fondness for cannabis, according to the bureau's director.

Under current rules the FBI cannot hire anyone who has smoked marijuana in the last three years – a policy that rules out many of the best recent graduates.

"I have to hire a great work force to compete with those cyber criminals and some of those kids want to smoke weed on the way to the interview," FBI director James Comey said.

Mr Comey said the bureau was "grappling with the question" of easing the marijuana rules to let in more tech-savvy youth, The Wall Street Journal reported.

Speaking at a conference of the White Collar Crime Institute, Mr Comey was asked by an audience member about a friend who decided not to apply for an FBI job because he had smoked pot recently. "He should go ahead and apply," Mr Comey said.

However, Mr Comey later clarified that he was attempting to use humour on the subject, and has no intention of changing the bureau's current marijuana policy.

The drug remains illegal under US federal law and possession of any amount can lead to a year in prison, even for a first-time offender. However, 21 US states have legalised medical marijuana, including two – Colorado and Washington – that have also legalised recreational marijuana.

This year Colorado became home to the world's most liberal set of marijuana rules. Residents can purchase up to an ounce (28 grams) at a time for recreational use from licensed pot shops.

US authorities, including the FBI, have said they will allow Colorado's experiment to go ahead even though its rules go against federal law.

The contradiction has led to complicated legal contortions. For example, under federal law it is illegal for banks to accept money from the sale of cannabis, forcing Colorado's legal shops to use cash only. In February, the US justice department issued new guidelines reassuring banks that they would not be prosecuted for doing business with marijuana stores.

~Internet

EARLY SNAPSHOT 2014 WIA MEMBERSHIP SURVEY

The members response to the Survey was most heartening, with a total of 834 completing it by the closing date – some 18.4% of the membership, a significant sample. In all, 654 completed it online, while 180 returned the paper-based option published in Amateur Radio magazine. The following is a global overview of highlights from the survey results. I have not yet had time to analyse it all on the basis of, for example, license type, age, location or duration of amateur license holding. I have also not included a detailed examination of the free text responses provided to Question 29 (on what changes would you make if you were WIA President), which will take time to properly analyse.

Responses to two questions have proved most interesting for the Board – Questions 20 and 21, on rating the importance of WIA functions, and the value of the cost of membership, respectively.

Among all survey respondents, the most highly valued of the WIA's 25 functions, activities and services – with an important-to-most important rating of 90% or more – are, in order:

1. **Protecting our Spectrum**
2. **ACMA Liaison / Lobbying**
3. **Publicising the Hobby**
4. **AR Magazine**
5. **WIA Website**
6. **International Representation**
7. **Promoting the WIA**

In rating the cost of annual membership – considering all the functions, activities and services the WIA offers – 67.5% of respondents rated it as reasonable-to-excellent value, more than a quarter believed in being a member regardless, while only 6.48% considered it poor value.

AR Editor, Peter Freeman VK3PF, will be pleased to know that around 90% of responders read the magazine on a monthly basis, at home.

Full WIA members accounted for 76% of survey respondents, 19.8% were concession members, with the balance made up of student, family and overseas memberships. Approximately 30% of respondents had been WIA members for less than five years; the next largest group had been members for over 30 years in total (which would include membership of former Divisions).

A surprising result was the response to Question 19, about how much money respondents spent in 2013 – on books, magazines, parts, equipment, subscriptions and attending events. More than 30% spent \$1000-\$4999; the next largest group, 28.9% of respondents, spent \$100-\$499. While those with a modest spend of \$500-\$999 amounted to 18.82% of respondents, 12.23% spent less than \$100, while 6.35% spent more than \$5000. So much for amateurs having deep pockets and short arms!

It should be no surprise that, as amateurs, we have embraced the computer world. The bulk of respondents own one or more computers; only 11 respondents – 1.32% – did not own any sort of computing device. Over 80% own a desktop PC and a similar number a laptop/notebook. Ownership of a tablet was just over 30%, an iPad just under 29%. Of operating systems, almost 94% run Windows, followed by Android (38%), IOS (26%), Linux or variant (24%), followed by Apple at 20%.

The Internet is ubiquitous, with 90% of respondents using it every day, the bulk of whom have ADSL speeds or better. Almost all respondents use the Internet at home, with 40-50% also using it at work and on the move.

The most commonly-used amateur radio related websites are the WIA Website, with 90% of respondents accessing it regularly over each month, followed by VK Ham (70%), VK Classifieds (69%), VK Logger (42%) and VK Logger Forums (32%).

The vast majority of respondents (over 80%) hold Advanced licenses, followed by Standard (12%), and Foundation (6%).

The most common entry points into the hobby were the old Limited licence (34%) and old Novice licence (21%), followed by the Foundation license (21%). These results probably reflect the

WANSARC NEWS

THE MAGAZINE FOR MEMBERS

Got a story to tell?

Working on a project that is of interest to others?

Got gear to sell, buy and swap?

Looking for that hard to get part or information?

Seen something interesting that others should know about?

WANSARC Editor always looking for stories from members.

Send your news to Mick, VK3CH, at

magazine@wansarc.org.au

Don't think you're a good writer???

Just email photos and text to Mick,

and he will write it up for you.

WINTER VHF/UHF FIELD DAY

21st ~ 22nd June

<http://www.wia.org.au/members/contests/vhfuhf/>

entry-level license options that were available at the time, and show the importance of the previous Novice, and now the Foundation, licenses as feeders into our hobby. Over 50% of respondents upgraded their license within two years, and almost 70% within the first five years.

More than a third of respondents (37%) are aged between 61-70, with the next peak (25%) between 51-60. About 6% are under 40, while 3.5% are over 80 – there is hope for us yet!

Only four respondents preferred not to indicate their age bracket.

While 57% of respondents live in the suburban and inner city areas, 28% live in rural areas (including semi-rural) with 12% in fringe/outer urban areas.

Over 70% of respondents prefer to pay their WIA membership subscription annually, with 24% taking the 5-year option, and 7% using the recently introduced quarterly automatic payment option. Surprisingly, 30% of respondents are not members of a radio club, and 25% who said they were a member of a club were not aware if their club was WIA affiliated.

Pleasingly, over 80% of respondents who contacted the WIA National Office or a Director/Office Holder were satisfied with the level of service provided. Disappointingly only 10% of respondents had attended a WIA AGM and Conference Weekend in the last three years, with the most common reason for absence being a preference for a location nearer to them.

Further analysis will be undertaken over the next few weeks.

The information gleaned will be particularly useful to the Board in setting the long-term WIA strategy, and prioritizing initiatives.

Thank you all for your participation.

~Christopher Platt, VK5CP, Vice President

FOUNDATION LICENCE - ARV WEEKEND COURSES

Next course will be held 14 and 15 June

Courses are held at the Amateur Radio Victoria office 40G Victory Blvd, Ashburton.

The study and operational practice guide book for the Foundation Licence is available as a mail order for \$26 from Amateur Radio Victoria on-line shop.

To enrol contact Barry Robinson VK3PV foundation@amateurradio.com.au or 0428 516 001

Future dates: August 23 & 24, October 11 & 12

WIRELESS MICROPHONE SHIFT SPARKS UPROAR

The policy to outlaw existing wireless audio devices from vacant former TV spectrum under the so-called digital dividend has resulted in a 3,067 signature Senate petition and an on-going campaign.

Wireless audio devices are used by fitness, performing arts, conventions, broadcast and news gathering, marriage celebrants, community arts, schools, places of worship and more.

It could cost \$250 million to replace the 150,000 wireless audio devices - currently the cost is borne by the users.

The TV companies were given money to leave the spectrum by last December that is set to reap the government millions of dollars. Spectrum from 694-820MHz is to be auctioned for other telecommunications use.

The petition and on-going lobbying by the Australian Wireless Audio Group seeks to address what it calls an unfair government policy. The industry funded representative group speaks for key manufacturers, wholesalers, retailers and users of wireless audiovisual products.

It advocates that the government should recognise there are costs involved including in decommissioning existing equipment and its replacement.

Most wireless audio transmitters, which include microphones, in-ear monitoring, public announcement systems and musical pickups, currently are in the 694-820 MHz.

From 1 January 2015, they must not operate in that frequency range.

~ARV Website

FIRST DATV REPEATER IN SOUTH AUSTRALIA

VK5RDC was commissioned on Saturday the 17th of May 2014, it is the first Digital Amateur Television Repeater in South Australia input is 1290.000Mhz DVB-S and the output is on 446.500Mhz DVB-T at 100Watts.

VK5RDC is situated on the Buff at 2000' above sea level, and some 15Km east of Port Pirie on Spencer Gulf, it shares the transmitter hut of Trax FM our local community radio station, it is intended to cover Port Pirie and Whyalla to the west, Port Augusta to the north Kadina in the south and towns in-between.

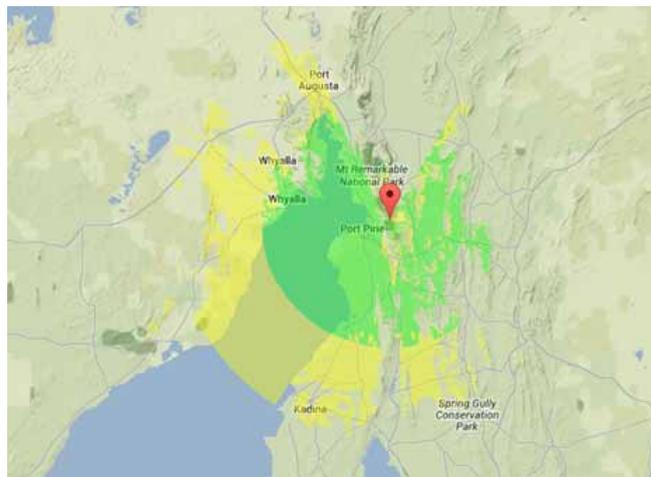


Antenna Mast ↑

← ATV Repeater

On the top of the repeater there is an orange box that is the DTMF 240V interface below that is the Analogue 23cm receiver, then the Digital 23cm receiver, the 2meter DTMF receiver and video switcher, DTMF controller, below that is the 70cm ATV modulator two intermediate RF amplifiers and SWR/Power meter, then the 600w linear RF power amplifier, the black box is the power supply, below that is the TRAX FM transmitter equipment.

The antennas are temporary at the moment, once they have proved themselves they will be installed on the tower you can see laying on the ground in the background, on top of the pole is the 23cm receive antenna and below are the two CA16 type 70cm transmit antennas.



Radiation pattern from the site ↑

Many improvements are planned, but the first step is complete, it is licensed and on the air.

~Dave VK5DMC

FOUNDATION LICENCE - NERG WEEKEND COURSES

NERG are holding classes on June, 14/15th.

Contact Greg Williams 9432 0563 to book in.

Mick's Amateur Radio Work Saga

RF QRM HASSLES

Sometimes things aren't as simple as they should be.

Mick, VK3CH, setup Remote Rig at work for the IC-7100.

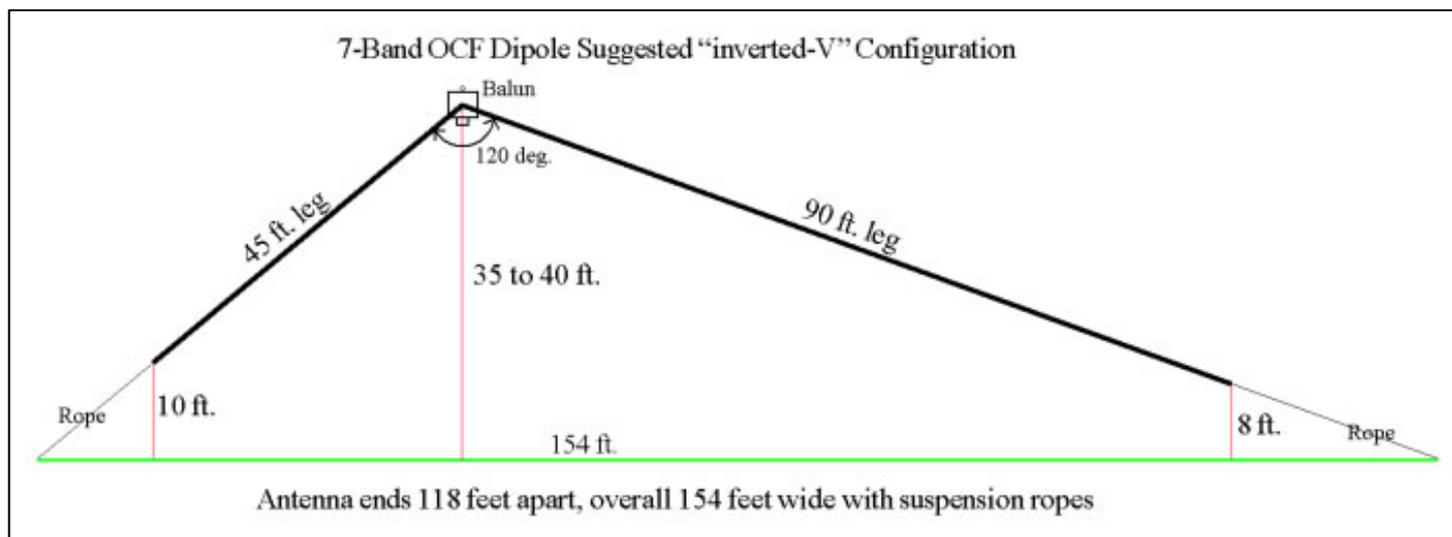
All was working fine, but RF was finding its way into the Remote Rig and making it to fail, only on HF, on certain bands.

Placing ferrite cores on either the data lines or DC leads to the Remote Rig box did not help.

Moving the Remote Rig box next to the radio, to avoid long cable runs did not help either.

Extending the 'earth' side of the dipole did not stop the RF getting into things, but it did help the signals received a little.

A suggested OFC dipole system by Don VK3HDX is here. ↓



But raising it 10 meters or so as an inverted "V" is not really practical at work, so just a long wire remains.

But the extended wire to 12.3 meters comes closer to the above lengths. Well it used to...

BAD NEWS...

But then an email arrived from the Body Corporate saying they had held a meeting, where the antenna wire was reviewed and it was decided that it was not allowed on O.H. & S. grounds and had to be removed.

This was after initially being given approval, pending a meeting, a few weeks prior.

I thought that being 11 meters above the ground, 3 meters above the roof tops and 3.5 meters above the car park lights, that was OK.

As the wire passes through "common property", plus what one persons idea of what is considered safe and proper practice will differ, from myself, I decided that it was not worth disputing over, so reluctantly it was taken down.

So now it was a case of all antennae had to remain within the confines of the warehouse roof space area.

Too bad, a wire was simple, easy and cheap and performed very well, with a low enough angle of radiation for local and DX work.

It was also not really noticeable, far less than what was now needed to replace it with, in a more confined space.

A full loop wire system was decided against as all the support poles would look way too unsightly and noticeable.

As there was no problem with the VHF/UHF vertical, that remained in its spot on the roof.

Since HF required a rethink, it was time to make sure all radiation pattern options were available, both vertical and horizontal.

TOP LOADED VERTICAL OPTION

A Top Loaded Vertical tuned for 160 meters was made, using the Drew Diamond design, which has been also used at home.

A portable one was used at the park, but not that often, so the top coil was removed and replaced onto a single 6.5 meter aluminium mast and a top mast added. The roof is an area of 20 meters by 11.6 meters, which would be a good ground plane area, but the electrical connections between the flashing and beams is not really proper, so ground wire radials were installed.

A mounting plate with sixteen screws for the sixteen ground wires was made up, with an insulated base for the mast. ↓

An antenna analyser was used to tune the top coil using capacity "hat" wires to set the best angle and length to tune at 1843 kHz.

There is both AM and LSB activity to be found on 1820kHz, 1825kHz, the usual, most used, 1843kHz and 1850kHz.

But instead of directly feeding to coax, the vertical was coupled via an AH-4 ATU.

This way the Top Loaded Vertical can function on 160 meters with the ATU switched out, or be used on other bands, albeit with less efficiency, to whatever the ATU can match it to. Of course being vertical, it will be a lot more noisy on HF.

When not used for 160 meters, the AH-4 ATU can tune the vertical mast for all HF bands with a good VSWR match.



INVERTED 'V' OPTION

A length of wire was run the full length of the roof, supported by bamboo poles either end and at the centre.

It is fed via 450Ω ladder line to AH-4. With lots of guy ropes, it can be tied away from the metalwork to stop any RF interaction.

The whole length of wire was put on pulleys so it could be lowered for adjustments and maintenance without having to take down any masts. The outer bamboo poles hold the dipole ends, via a pulley, 3.45 meters above the roof, with the centre 6.45 meters above, also being able to be lowered via a pulley. Each wire length is 10 meters, with some trimming able to be done if needed, but the AH-4 ATU copes with all bands except 80 and 160 meters. A very low VSWR match of 1.3: 1 or better is obtained on all the other higher bands up to 6 meters. The bamboo poles may look strange, but they are strong, very light and of course are RF transparent.

If you decide to use bamboo, its probably been treated with Bromide to allow it to be imported into Australia, to kill any bugs that may be on or inside it. If you handle imported bamboo, wash your hands afterwards. After a few months installed on your roof, the rain will have washed most of the chemical off the bamboo. Its light and easy to use and lasts for ages, some hams say over 20 years.



160 top loaded antenna, with ground radials over the rooftop, with the inverted 'V' to the left and looking up at the feed to the 'V'. As well as the three guys to adjust the capacity hat radials, another dedicated three guys were put so no need to lower the mast when making tuning adjustments, plus support in high winds. Three guys are set lower down the mast to stop it oscillating in the winds.

AH-4 had an internal relay fitted, allows switching of inverted 'V' and 160 meter mast, refer to AH-4 article, elsewhere in this issue.

THE RESULTS

Due to not having a long time to play with the long wire, the only true yardstick of comparison, so far, is the morning "Albury Net" (or the *Wodonga 10am Net*, as I am told it is now named) from that and the new inverted 'V', signals on 40 meters, appear close to what the wire gave, but just slightly less it seems, but all stations, on a good day, all come in on S9, with a few very S9+, not bad from the top of Victoria and southern New South Wales and South Australia.

With the length of the dipole, it appears to favour 40 meters, the band most used by myself, nearly open 24 hours to somewhere...

Compared to the wire, background noise seems up about 1 S point more, that's up from S0, but still quiet compared to home.

While doing all the new antenna work, to ensure the RF QRM issues were sorted, all the radios were put into the office and new runs of coax from the antennas were done over the roof.

A suggestion by Don VK3HDX was to swap the ladder line for coax and use a 1:1 balun at the dipole and feed the coax to the ATU.

Another coaxial relay was also added to the AH4 ATU to also isolate both the active antenna feed and the ground connection to prevent any RF interaction between antennae and any unwanted RF going into the shack.

Several connectors failed as the coax was ran through the wall, all these fixed up, but caused much headache.

By next month after some more activity, the results of all the work will be known.

Its been a bit of a saga...

~Mick VK3CH

Modifications to AH-4 Auto Tuner

For tuning on HF, the ICOM AH-4 auto tuner is very good. But it only has the one output.

With two antennas to pick from, on HF, using a coaxial relay rated into GHz regions seems overkill and needs fancy coaxial work.

So it was decided to investigate using an internal relay installed within the AH-4 to do the switching.

As the highest frequency used is 54MHz (6 meters) as long as leads are direct and short, all should be fine.

The relay needs to have the two wires that go from the switching contacts to their own pins removed.

The two contacts that operate in tandem are then shorted with a bit of copper; I used the top bits of the copper contacts I cut off.

When soldering the bridge, solder is deliberately tracked across the two contacts so the RF has a shorter path to travel.

AH-4 with cover removed, before starting modifications ↓



Relay with jumper wires removed ↓



Relay contact pairs bridged with solder via a copper strip ↓



Side view of the added solder bridge ↓



← Completed AH-4 with relay inside, relay held in place with a dab of glue



Close up of the new relay switching of the HF ↑

The “new” HF outlet can be seen just to the right of the main outlet.

12 volt DC to the relay is from the two screws on the top left.

Of course a better idea would have been to use six core cables and have four wires for the AH-4 control and the spare two for DC for the relay.

Not wanting to rip up my already installed ■ ■ ■ ■ control cable, I did it this way.

With no power to the relay, the AH-4 is default, as through its normal output.

When power is sent to the relay the tuner switches to the small bolt.

This will be used on the 160 meter top loaded vertical.

The actual mast itself can be tuned to other bands as it about 6.5 meters length.

Being a vertical it will attract more background noise, but still an option to use.

Most of the time it will be on the main output into the inverted “V” at work.

Waterproof glue was smeared internally around the new bolts that were added to ensure the unit retained its waterproof properties before going back to the roof.

Because I have several AH-4 tuners and they are quite old, I did this mod.

Doing this mod on a new one will of course void any warranty.

~Mick VK3CH

Modifications to Microphone

Out of the box, lots of radios are given “soft” audio reports.

With the newer radios, often a good look at the user manual reveals not so easy to find audio settings in level and tone and bass. Once these adjustments are made, it’s still often, depending on your operating environment and your voice, not quite still right. What I have found with many ICOM microphones is some surgery is required. Surgery that will no doubt void your warranty!!!

As supplied the internals to recent ICOM hand held microphones have a small hole in the front near the microphone insert, which is covered with felt, as a “wind sock”. Removing the felt and enlarging the hole increases the audio when no other settings are left. Other than adjusting biasing, this needs access to the circuits and SMD soldering work. Something I’m happy to do to the microphone, but would not want to do to the radio internal circuit boards, under warranty.

As supplied, the HM-207 cover removed ↓



The microphones insert, with black felt covering ↓



Black felt removed, just using a fingernail ↓



The small hole near the right LED light for voice input ↓



The enlarged audio hole, with the drill used ↓



The assembled microphone, ready to use ↓



All my microphones used mobile have all been modified this way, each time with far better audio reports and still not much background noise complaints. Of course your results may vary. Most of them, even with different models, look similar inside.

If you decide to do this with a new microphone, remember, its goodbye warranty, do anything at your own risk.

~Mick VK3CH

WANSARC at the Darebin Family & Children's Day ~ Bundoora Children's Farm

Looking through the local newspaper, Mick VK3CH noticed an article about the upcoming Darebin Family & Children's Day at Bundoora Children's Farm. An email to the council offering our club to put a display up was quickly accepted. So on a very nice day, with unseasonably good weather for this time of year, a radio display consisting of HF, VHF & UHF and ATV was put together, using the equipment of Mick VK3CH. Sort of like a family day at the park, without the BBQ gear... The site was good, as reception to distant repeaters and VK3RTV was easy to reach, on quite low power. In fact on only 1.6 amps, perfect transmission to VK3RTV1 was done for nearly five hours without one dropout of signal. Repeaters heard as far as Latrobe Valley, Shepparton, Ballarat, Geelong, Mornington, Mount Baw Baw, Gisborne and Narre Warren.

Its usually about \$20+ to take a family to the Children's Farm, but today it was all free, lots of community events and displays on. As well as clowns, magic shows, bongos, balloons, lollies and a very medieval carnival atmosphere, little tent marquees everywhere.

The view right behind our table all day ↓



Lots of other displays to look at...



Plenty for young kids to get involved in, all free, aimed at 2 years to young teenagers. Community groups, face painting, hayrides... Lots of history here too, with original old buildings with features and furniture dating back to last century, in immaculate condition. We were located in a clear area, making erecting antennae easy. Being right behind the blacksmiths shop had lots of noise as they worked the steel and iron by hand, but with some microphone adjustments we were heard, all without any drama.



So peaceful, no wonder the club has adopted Bundoora Park for the majority of our local outings, when operating portable ↑

A tour of some of the history from a grand older era ↓



About a dozen folk knew exactly what our station was, with some saying they used to be hams, but had let it take a back seat due to work and raising a family. Handouts about AR and our club were given out, so maybe we may get some new visitors at future club meetings. Not being a contest, it was a case of enjoy the day, we took turns walking around looking at all the other displays on show.

John using the new IC-5100A transceiver, as the camera sends his every move, to VK3RTV1 'live' ↓



Setting up was done in two hours at a leisurely pace, with ATV on at 10.50am, just in time for opening to the public at 11am.

At 3.30pm it was time to pack up, which is always faster to do.

The battery had maybe only an hour left in it, so it worked out well. A smaller TV was used to save the power drain on the battery.

We had a few stations call in to say they were watching us on ATV. At days end battery voltage was at 12.05 volts, very borderline.

A new IC-5100A radio was put through its paces and is so easy to use, no need to refer to the instruction manual at all.

The IC-5100A, like the other series, as the 7100 and 9100, are completely pager proof.



The radio station setup amongst the buildings on the farm



Wildlife that's quite used to people, just casually stood right in front of me, as I photographed it... ↑

An enjoyable day, hopefully we will get invited back when the council host this public event again.

~Mick VK3CH

SMART Car, SMART AR

Hi, I'm Brenton, VK3CM and a new resident of VK3 since 2013 and a proud member of the WANSARC group.
(Editors Note, Brenton can be heard most mornings, on the Wodonga 10am Net, on 7055kHz)

Let me introduce to you, Rob, VK2FAAA, a relatively new ham to our great hobby and someone that has made me feel very welcome when we moved to this new exciting area up here in North Eastern Victoria. As you all know, we are very close to the border and the Albury Wodonga area has many VK2's and VK3'S who are virtually minutes from each other, and of course, some of us are a little further out, and Rob VK2FAAA has been a regular visitor to our little piece of heaven out here in Tangambalanga.

What first intrigued me about Rob, especially myself being an individual that has spent a large part of my life working professionally in an around electronics and being a full call for approximately 35 years was this F calls attention to detail. F calls cop a lot of flack on air for a number of very invalid reasons at times (and some valid ones too) and its great to show you an individual who is running his station by the license conditions and doing such a great job. I believe the F call licence has been the launching pad for so many hams who have now upgraded to higher levels and its been a very good way to get our bands active with new blood.

But firstly some detail on the car and its a Mercedes Smart car. When you see the Smart Car, the first thing that you notice is its size. The Mercedes Smart car is only 8 feet, 2.5 inches long, less than 5 feet wide and about 5 feet tall. (In comparison, the original Hummer H1 is over 7 feet wide.) That means that instead of parallel parking in line with other cars, a Smart Car can back right up to the curb. Two or three Smart Cars can park that way in a single curb side parking space.

A 70 mph crash test conducted by British TV show "Top Gear" revealed that the Mercedes Smart cars body remained mostly intact when compared to that of a conventional subcompact car. A sudden deceleration from 70 mph will cause injury of the occupants in just about any vehicle.

Both the 50- and 61-hp engines are three cylinder engines, with cooled turbochargers. According to Smart, the 61-hp engine can go from zero to 60 mph in about 15 seconds, while top speed is electronically limited to 84 mph for the driver's safety. (Cars as small and light as the Mercedes Smart Car become very unstable at high speeds.) In city driving, the Mercedes Smart Car gets a reported 46.3 mpg, while highway driving is an even more impressive 68.9 mpg. The 50-hp engine accelerates more slowly, but the electronic speed limit is the same, and the mpg ratings are the same as well.

So lets get back to the reason we are discussing this car, so far we have an F call, who obviously enjoys very good fuel economy and has wanted to incorporate some very interesting options including Ham radio to make this one of the worlds most efficient mobile ham shacks in the world.

Inside this vehicle, we have the following radios covering from 80m right through to 70cm.

Rob chose the Icom 208H as his way to keep in touch with a load of applications on VHF and UHF with the incredible receive range that these radios offer. Actually he used two Icom IC208H units to ensure he had so many options on screen whilst driving. He can monitor a number of services that are spread all over the bands and keep updated on so many levels with his pre-programmed radios. All equipment is fitted in locations that keeps robs eyes on the road first and foremost, a factor that is so important after the recent death of a VK3 on a country road.

Recently Rob approached me and said, how do I get an efficient HF system in such a small car and also keep the current footprint of radios from overpowering the cars very neat design. My automatic suggestion, probably mainly due to previously being Yaesu dealers in another lifetime, the FT857D and the ATAS120A would be a discrete system that would be easily attached to the vehicle and allow to easily remove the HF antenna when required.

Rob decided that this was a great idea, but how to mount the antenna to be both easily detachable and have an efficient grounding system proved to be not so easy. Enter Frank(Potz) and Potz as we call him noted that the car had two tow points at the rear of the car and came up with an idea where he would manufacture a custom bracket, then make custom threads and spacers on his lathe to suit the mounting tow points. Over 8 hours of work in manufacturing the most beautiful custom brackets that have been finished off so well that you cannot even see the welds where the brackets were welded after painting. The bracket is so versatile that the rear window glass that opens is still accessible and keeps the ability to pop his various bits and pieces in the back.

I recently had to travel from Tangambalanga here in North Eastern Victoria down to Geelong to pick up a motor home that I had bought for our family. Rob, VK2FAAA offered to drive me down there to pick up the big beast and I of course offered to pay any petrol costs as I was so appreciative that he could make the trip with me. So not only did we get to play radio all the way to Geelong, I got to get a real feel for how stable one of these smart cars were on the road and how spacious they were as Rob and I are both not small boys. We picked up the Motor home and when we stopped to fill up the new toy with diesel, I of course offered to fill robs car up. He said, no we are ok, the first fill up way back when we started is going well. So as I watch my motor home consume diesel as you would expect they would, I kept radioing Rob to ask how are you going for petrol and we need to fill you back up again.

We made it all the way back to Glenrowan near Wangaratta when he finally said, ok, we might put a few litres in. The entire trip to Geelong and back with this smart car, a grand total of under \$100. My motor home used \$175 just to do one leg of the trip. It was a great day with Rob as we travelled, enjoyed meals together and chatted on ham radio as we drove along. And Yes, the motor home came complete with an IC706MK2G and antennas.

I am in the process of installing an IC7000 and a 500w amplifier and a HYQ antenna and a NBS portable tower over the next few weeks. We will be running a Cushcraft D4 40m-10m rotatable dipole on the NBS portable tower. And while I procrastinate about all the work we need to get done here in North Eastern Victoria, Rob has amazed me with his work that has been done in such a short amount of time, this man works fast and with great quality. Some credit must also go to Rob, VK5FRGM who Rob VK2FAAA worked with on the phone with many ideas exchanged to get this final solution that works so well.



Photos showing installation are very basic and do not show the incredible amount of intricate work Rob has gone to in ensuring that the wiring is concealed, there are minimal holes drilled and the job is truly one of the most professional installations I have ever seen.

So what a concept, a car that runs on the smell of an oily rag, all bands fitted and working incredibly efficiently and all done by a relatively new ham radio operator with his F call. Rob is working on his upgrade and in time will be able to produce full power from these radios, I have tested all units in the vehicle under VK3CM with full power and the battery system is suited with capacity to spare. I told Rob, you may have to think a 2nd battery if you add a 500w amplifier in the mobile one day, and he just laughed, he's so happy with his results at 10 watts, I suspect this smart car is pretty close to finished. Rob has already made international contacts from the mobile and is regularly heard with an amazing signal travelling about on the various HF nets. And a comment of note, he really does run 10 watts, I have to remember the menus of these radios to turn the power up when I am operating them and he is adamant about turning them back down to 10 watts, this also may be considered unique hihi. If you hear him mobile, say hello to VK2FAAA and I am sure he would love to get a report on his signal from the car that we say is run by a series of rubber bands. Great work Rob, cant wait to see your next project. Cheers, Brenton, VK3CM, Tangambalanga

(Tangambalanga is 20 km south-east of Wodonga, in the Kiewa Valley, and 5 km from the Hume Weir)

Rob's next addition, if Brenton VK3CM has his way...



WANSARC NET

Tuesday Night, 8pm Check In

VK3AWS

146.450MHz FM Simplex

WANSARC VK3AWS

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VK3FMPB

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WANSARC CLUB PROFILE

History

The Western and Northern Suburbs Amateur Radio Club (**WANSARC**) was first formed in 1969 and since then has served the needs and interests of amateur radio operators, short wave listeners and those interested in hobby radio and electronics. The club is not gender specific, having both female and male members. Members come from all walks of life with a mix of experience, young and mature, novice and technical. The most important aspect of the club is the willingness of all members to share their knowledge for the benefit of others. Members mainly reside in the west and north of Melbourne; however membership is encouraged from all interested. **WANSARC** is an affiliated club of **The Wireless Institute of Australia**.

Meetings

Meetings held at the **Ern Rose Memorial Pavilion, SEAVER GROVE, RESERVOIR** (Melway Map 18 D5) on the **1st Friday of each month** (excluding January) commencing at **7.30pm local time**. Talk in on **146.450MHz FM**—call club station **VK3AWS**.

Benefits

Free technology and related presentations, sponsored construction activities, discounted (and sometimes free) equipment, network of likeminded radio and electronics enthusiasts, excellent club facilities and environment plus an informative monthly newsletter for members to post articles, news, classifieds for all radio, test equipment, etc, featuring Amateur Radio news from WANSARC, ARV, WIA, ACMA, Melbourne Clubs, VK and Worldwide.

Club Nets

146.450MHz FM each Tuesday evening commencing **8.00pm local time**. Net Control Station - **VK3AWS**

Website: www.wansarc.org.au

Postal: **WANSARC PO Box 336 RESERVOIR 3073**

A proud tradition of supporting hobby radio and electronics enthusiasts since 1969

All editors' comments and other opinions in submitted articles may not always represent the opinions of the committee or the members of **WANSARC**, but are published in the spirit in which they were submitted; in any case anything stated is to promote interest and active discussion on club activities and the promotion of Amateur Radio in general. Contributions to **WANSARC** are always welcome from any part of the world. Email attachments of Word™, Plain Text, Excel™, PDF™ and JPG are all acceptable. You can either post material to the Post Office Box address at the top of this page, or email your submission to the editor direct at magazine@wansarc.org.au. Email attachments not to exceed 5 Mb in file size. Attachments of (or thought to be) executable code or virulently affected emails will not be opened.

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While we strive to be accurate, no responsibility taken for errors, omissions, or other perceived deficiencies, in respect of information contained in technical or other articles.

Any dates, times and locations given for upcoming events should always be checked with a reliable source closer to the event – coming up on the **WANSARC Tuesday evening NET** on **146.450 MHz** starting at **8:00 pm Local** is recommended to discuss and confirm information and any dates.

The club website has current information on planned events and scheduled meeting dates. **WANSARC** News written with Word™ 2007, published with Adobe Acrobat™ 10.

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