

# WANSARC NEWS

Incorporated in Victoria, 1985 Registration Number: A0007611S

The monthly magazine of the

Western & Northern Suburbs Amateur Radio Club Melbourne, Australia



 [www.wansarc.org.au](http://www.wansarc.org.au)

146.450 MHz FM

**VK3AWS**

28.470 MHz USB

Volume No: 42

Issue 12

December

2011



## Next Club Meeting, Friday 2nd Ern Rose Memorial Pavilion, Seaver Grove, Reservoir @ 7.30pm



## WANSARC CHRISTMAS DINNER 2011

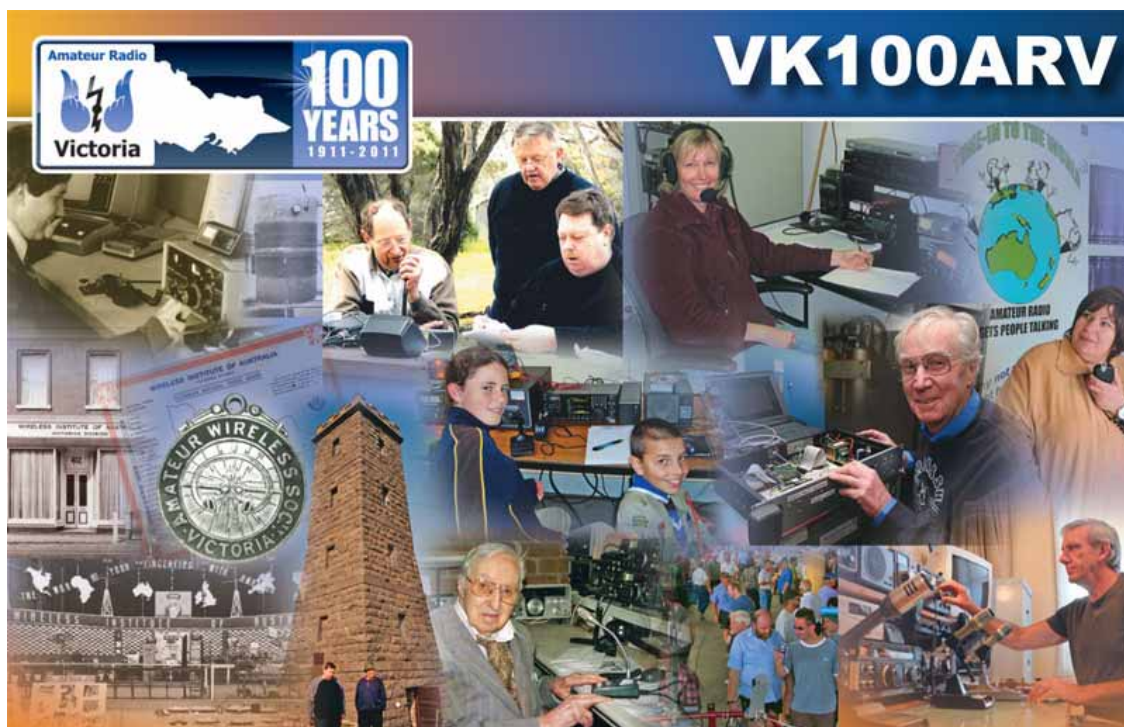
TO BE HELD AT THE DAREBIN RSL ON SATURDAY 10th

402 BELL STREET PRESTON

Start time 1800 hrs



**WANSARC FAMILY DAY**  
to be held on  
**Sunday January 22, 2012**



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## Around the Shack

### BBQ MEETING AT CLUB ROOMS - BYO SNAGS, STEAK, LAMB CHOPS, ONIONS, WHATEVER...



Next club meeting, 2nd December is at Ern Rose, the last meeting for this year. The Christmas Dinner is the weekend after that on 10th December. The last club meeting for the year will be a general natter night with a BBQ available at Ern Rose Clubrooms. BYO food and drinks.



### BLOW-UP RADIO MAST

A range of inflatable flag poles is being marketed by LTA Projects and a version may provide the solution to those who operate portable or don't need a permanent mast. It began with a focus on developing new and innovative cloth-based products for "high tech" applications, although in early years concentrated on government airship projects.

LTA Projects has released its 25 foot inflatable antenna radio mast built especially for that sector and citizen emergency response teams. The company claims it performs well in winds and very safe to use. Versions are regularly in use with emergency management and law enforcement agencies all over the US. For more information visit [www.ltaprojects.com](http://www.ltaprojects.com)



### WIA EMERGENCY COMMUNICATIONS OPERATOR TRAINING PROGRAM

To date well over 100 emergency communications operators across Australia have been training via the WIA Emergency Communications Operator training program.

This program, Certificate II in public safety (SES Operations), is now available "on line" and can be completed as a self-paced program. The WIA registration requirements apply. The process to undertake the course can be commenced by completing the WIA on line application form found on the WIA web site.

<https://www.wia.org.au/members/emcom/emcomregisteronline/>

The on line program will assist those wishing to complete the program but are unable to attend a formal training session or those who have missed a section of the training as well as those who want to complete the program and provide a service to their community.

### ACMA PROPOSES COST INCREASES: WIA COSTS NOT AFFECTED

A number of amateurs have drawn attention to the ACMA current review of certain of its costs and its proposal to increase some costs affecting amateurs.

In particular, in general terms, it is proposed to increase the costs of Advanced Standard and Foundation exams or assessments conducted by the ACMA by 68% or 69%

Under the Commonwealth Cost Recovery Guidelines the ACMA is bound to review these costs every 5 years and the last time this was done was in 2007.

These cost increases will affect only the cost charged by the ACMA and not the cost charged by the WIA for providing the same service.

Under its agreement with the WIA there are only two situations where the ACMA, rather than the WIA, will provide any of these exam or callsign services.

One is where the ACMA has reasonable grounds for believing that a qualified operator will probably be unable to pass an examination, part of a process leading to the cancellation of a licence.

The other situation is where the WIA ceases to provide the services. The WIA has no intention of giving up its functions in respect of the qualification of amateurs or the recommendation of call signs.

Under its arrangements with the ACMA the WIA is bound by the Commonwealth Cost Recovery Guidelines, except that its costs are reviewed every year. The costs taken into account incurred by the WIA in setting its charges include all the direct and indirect costs, such as salaries referable to providing the services, paper, postage, phone costs, insurance, security costs referable to providing the services, storage of records, even the costs of printing the actual certificates of proficiency that the WIA issues.

Why are the WIA costs so much less than the ACMA costs? For the simple reason that so much is done on a voluntary basis.

All the Assessors and Learning Facilitators, the WIA's RTO and the many others involved one way or another give their time.

Knowing how much it costs the WIA in fact to provide the services is very important in two ways.

One is that it is not in the interests of amateur radio for the costs of becoming an amateur to be more than the minimum.

The other is that if the WIA is charging less than the actual cost it incurs it means that its members are paying for the shortfall, which will ultimately lead to even further membership fee increases.

The cost of an amateur licence is made up of two components, the costs incurred by the ACMA in managing the system, and a tax component.

In accordance with the Cost Recovery Guidelines, the ACMA is bound to increase the management cost component by the cost increases it has incurred.

That is why it is proposed to increase the cost of amateur licences by \$5.

As is the case for the WIA charges, the cost increases proposed by the ACMA depend on fact: has the cost it incurs to provide a service increased and if so by how much?

The WIA believes that it is unlikely that the ACMA will be unable to demonstrate the cost increase it asserts.

The WIA also believes that once again the value of the contribution of so many to the examination system that it manages for the ACMA is amply demonstrated.

Michael Owen President WIA

## Around the Shack...

### LAST CLUB MEETING



After the discussions Mick, VK3CH, gave a demonstration of fast scan ATV using the recently constructed 10GHz dishes.

As most of all the details have been covered in pervious issues of WANSARC News, not much talking was needed.

No one got 'cooked'!

But some members went in front of the TX dish during the show...



Later that night they looked like this....



### LASER TEST TO IDENTIFY FAKE WHISKEY

A NEW portable method to detect counterfeit whiskey has been invented by researchers in Scotland, in a bid to save the industry millions of pounds every year.

Scientists at St Andrew's University said they can work out the brand, age and even which cask was used to create the scotch, using lasers the size of a human hair.

And luckily for the manufacturers, the test requires a sample no bigger than a teardrop to determine whether or not the whiskey is genuine.

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The whiskey is placed on a transparent plastic chip no bigger than a credit card, and using tiny optical fibers the sample is illuminated by light using one fiber, and collected by another.

By analyzing the collection of light scattered from the liquid, the researchers said they can diagnose the sample.

The laser is able to detect the amount of alcohol contained in the sample - with genuine whiskey containing at least 40 per cent.

The research, which has been patented, was carried out by physicists Praveen Ashok, Kishan Dholakia and Bavishna Praveen.

Ms Praveen, said "Counterfeiting is rife in the drinks industry, which is constantly searching for new, powerful and inexpensive methods for liquor analysis".

She said, "Using the power of light, we have adapted our technology to address a problem related to an industry which is a crucial part of Scottish culture and economy".

Mr Ashok said, "Whiskey turns out to be very interesting, we can not only gather information about the alcohol content, but also the colour and texture. These are dictated by the manufacturing process, which of course influences greatly the type of whiskey people enjoy."

Mr Dholakia said, "It is amazing to think that the technology we are developing for biomedical analysis can also be used to help us enjoy a wee dram."

The research was published by the journal Optics Express.

~Internet

### VK3ATX ON ATV

As part of the VK100ARV celebrations VK3RTV had the call on November 2nd, which gave Trevor a deadline to get serious with getting antennas in order. Further improvements are being worked on and Trevor's shack will undergo some transformation to have a proper ATV "studio" up and running.

Watch this space (*or is that watch your TV*).

### NEW EHF DISTANCE RECORDS

First ever records for the 134 GHz and 243 GHz bands; Michael VK3KH and Alan VK3XPD have set the first Australian distance records for these bands - 25 metres (21 October 2011).

Alan and Russell VK3ZQB then extended these records to 50 metres (23 October 2012).

First ever record on 324 GHz

Michael VK3KH and Alan VK3XPD have set the first Australian distance record for this band - 25 metres (21 October 2011).

(Frequencies above 250 GHz are not assigned to any service by ACMA, so technically there is no 324 GHz band. However amateurs may operate on these frequencies because they are not assigned to any other service).

~WIA News

### BBC TV LICENCE FEE MAY EXTEND TO iPLAYER

The UK television licence fee could be extended to cover catch-up services such as the BBC iPlayer as part of an overhaul of the levy being considered by the Department for Culture, Media and Sport. British viewers must pay for a £145.50 television licence if they watch or record programmes as they are broadcast, whether viewed via a television, computer, mobile phone or video games console. However, computer catch-up services such as the BBC iPlayer – via which 153m television and radio programmes were broadcast in September – do not require a licence.

The issue is likely to intensify over the next year, as a rash of new internet-enabled set-top boxes, including the BBC-backed YouView, are expected to launch.

~WIA News

**WANSARC FAMILY DAY,**  
to be held on  
**Sunday January 22, 2012**

As usual the venue will be Bundoora Park. Further details will be provided closer to the event however as per previous events financial members of the club and their immediate families will enjoy a free BBQ lunch, soft drinks, salads, bread and some sweets. So mark this date in your diary now as the first club event for 2012. It will be at Rotunda 6. A January issue of WANSARC News will be issued with full details of the Family Day. Talk in on 146.450 FM available as usual.

# VK1WIA Broadcast Sunday's 1030hrs

## Victorian frequencies

VK3RML 146.700, VK3RLV 146.800  
VK3RMM 147.250, VK3RMU 439.800



### FOLLOW THAT CAB

The Radio Frequency Service of Russia has undertaken to clamp down on illegal 10-metre band activity alleged to involve sections of the taxi industry. Ulrich Bihlmayer DJ9KR reports that taxi traffic is being regularly heard as harmful interference on the band. In a letter to the Deutscher Amateur Radio Club (DARC) Monitoring Service, it said that permanent measures are now in place to detect CB stations causing the interference to the Amateur Service and have them stop.

A big number of illegal taxis in Russian language in FM have been heard in the range 28000 - 29700 kHz. ~ARV News

### EXPERT CLAIMS SMALLEST SUNSPOT CYCLE

We are experiencing likely the smallest cycle in 100 years, according to NASA Solar Physicist David Hathaway.

The current prediction for Sunspot Cycle 24 gives a smoothed sunspot number maximum of about 77 in April of 2013.

David Hathaway has forecast that we are currently over two and a half years into Cycle 24. Increased activity in the past six months has raised the predicted maximum above the 64.2 for the Cycle 14 maximum in 1907.

This predicted size still has us headed towards being the smallest cycle in over a century, but Hathaway states it's far too early to predict the death of sunspots.

Flares capable of causing widespread damage are unlikely to occur. The latest cycle began late, although before its arrival was forecast to be a moderate cycle.

Predicting a sunspot cycle is fairly reliable once the cycle is well under way. While cycle 25 is not yet a write off, he feels it will be weaker than the current one. Some report that solar activity remains low. Sunspot 1324 which used to be a large cluster is rapidly shrinking in size. ~ARV News

### GPS JAMMING TRACED TO NORTH KOREA

North Korea is jamming Global Positioning System devices with strong signals sent during the joint military training exercises between South Korean and U.S. forces.

Large metropolitan areas of South Korea including the capital of Seoul have been affected by jamming.

The signals have made some mobile phones and certain military equipment that use GPS unreliable.

The jamming could be the lead-up to discharging full-fledged electromagnetic waves. Pyongyang has reportedly imported the GPS jamming system from Russia in early 2000 and has since developed two kinds of a modified version.

Rumours include North Korea developing an electromagnetic pulse bomb that would damage electronic devices such as mobile phones, computers, radio and radar. ~ARV News

### JAPAN COMPUTER SMASHES SPEED RECORD

A JAPANESE supercomputer has broken its own record as the world's fastest machine by performing 10 quadrillion calculations per second, its developers announced.

The "K Computer", which has more than 88,000 central processing units - the computer's "brain" - compared with the fewer than four in the average desktop, smashed its own record of just over eight quadrillion calculations during an experiment in October. A quadrillion is a thousand trillion.

Supercomputers operate roughly 10,000 times faster than ordinary personal computers.

Among other things, supercomputers are used by scientists investigating the effects of seismic waves and tsunamis to predict what effect they may have on buildings.

Ryoji Noyori, president of Riken, the company that jointly developed the machine alongside Fujitsu, said it was a landmark achievement in computing. "The K Computer is a key national technology that will help lay the foundation for Japan's further progress. I am delighted that it has achieved its major objective, demonstrating our strong technical power." ~Internet

### WHEN YOUR CAR DOBS YOU IN

Modern vehicles can provide crash evidence against their drivers.

Drivers of new cars might soon be facing tougher prosecution than people who pick older vehicles.

Police will soon be trained to use technology that could prove the difference between conviction and acquittal, though for now it will only apply to a limited number of cars built after 2000.

Many modern cars are equipped with an event data recorder (EDR) that stores crash information in a similar way to the "black box" flight recorder used in aircraft.

Sergeant Brett Samuel of Sydney's Metropolitan Crash Investigation Unit says police have dabbled in using EDRs and that their use in investigations will soon be common. "It's coming," he says. "We have done it but it hasn't held up in court yet. The technology has been streamlined so that we will be able to use that evidence in court."

But a transport engineer and the secretary of the Australasian and South Pacific Association of Collision Investigators, Colin Wingrove, says there are still "legal problems" with data retrieval: questions of privacy, intellectual property and evidence management that have not yet been addressed.

"It is a whole new area that the public has no idea of," he says. "I don't even think the government has thought about this properly."

"Over a number of years it's started to worry me; I have reservations about these things."

The topic is sure to provoke animated discussion when police from the Crash Investigation Unit join private investigators at a six-day course in crash data retrieval at Penrith later this month.

The course will include a forum and an address from a US-based expert in vehicle data recovery.

Senior Constable Derick Fenton of the unit is one of the police representatives who will attend the EDR course at Penrith Panthers Leagues Club.

He says the technology records more than the moment of impact.

"It's not that it records the details of an accident," he says.

"It records the parameters that the car was experiencing at the time [of the crash]."

He says a car's computer could bring to light several factors, such as whether a driver braked before a collision.

Courts could soon have better forensic access to crucial information including vehicle speed, throttle and brake input and other factors that will help authorities convict or acquit motorists.

Brett Samuel says examination of vehicle electronics is a natural progression from mechanical checks. "When we seize the vehicle it's an exhibit and we have custody," he says.

"We have a mechanical examination to see if there's any mechanical fault or defect in the car [because] if they went to court and said 'the brakes didn't work' and we can't disprove it, it's an out for people."

But event data recording is not a universal requirement and some cars are not compatible with the Bosch Crash Data Retrieval system police are learning to use. Most Chrysler and General Motors products built after 2005, including Holden's VE Commodore, work with the data recovery equipment.

Many Toyota, Lexus and Ford vehicles should also work with the system but thousands of popular cars made by Audi, Mercedes-Benz, Subaru, Volkswagen and other manufacturers do not.

The president of the HSV Owners' Club of NSW, Joe Garzaniti, says it is not fair that late-model Commodore drivers could have their crash data forensically examined while others will escape such scrutiny.

"It should be across the board," he says. "But at the end of the day it shifts the blame to the person it should."

Garzaniti says the police could more effectively invest the money elsewhere and that the EDR process is an invasion of privacy.

"They're going to go into your [car] computer and look at the history of what you've been doing and what you haven't been doing," he says.

Garzaniti believes prevention is a better alternative to state-of-the-art crash investigations.

"I'd rather see them spend their resources on driver education," he says, "but that's never going to happen."

The president of the NSW Council for Civil Liberties, Cameron Murphy, says it is important for rules to be established before data retrieval is widespread.

"Otherwise, we'll have a system worked out on the run lumbered through as police attempt to prosecute people and insurance companies attempt to deny liability," Murphy says.

"Most people are not aware that that's even possible, that their car is already doing it. "There should be a public debate first about the circumstances of its use. "Just because it's there doesn't mean that it should be available automatically to police without any rules or laws around it."

The Crash Investigation Unit will be the primary user of crash data recovery initially and its officers are unlikely to apply it in the case of a minor offence.

They work on a limited number of accidents, including incidents involving fatalities or where serious injuries occur, or where the driver survives and can be prosecuted for dangerous driving

~Internet

## IT'S MENTAL HEALTH DAY

That's the belief among one third of workers who admit to faking an illness to get the day off work because they feel they are not coping. Workers with competent bosses they respect are less likely to pull a sickie because of the guilt factor, the Galaxy poll of almost 1300 employees also found.

Almost one out of four workers who categorised their manager as a poor performer admitted to taking days off when they weren't sick purely because they hated their boss.

But the most common reason for faking illness was attributed to anxiety, with one in three workers citing too much responsibility or feeling burnt out. Close behind was family commitment, with 27 per cent admitting to absenteeism as a way of juggling personal responsibilities and emergencies.

Overall, the majority of workers - 63 per cent - admitted to taking a sickie at some point in their lives to get the day off.

Stephanie Christopher, the national director of the workplace consultancy firm SHL which commissioned the study, said the feeling by a worker they were entitled to a mental health day was closely linked to the relationship they had with their boss.

"Ineffective management affects productivity in lots of different ways, including staff loyalty and motivation," she said.

The finding that workers who feel they have too much responsibility are more likely to take sick days which are not genuine appears to contradict research to date, which has found that workers are more likely to call in sick if they feel powerless.

But Professor Sue Richardson, the principal research fellow with the National Institute of Labour Studies at Flinders University, has found that job status and autonomy play a crucial factor when it comes to workplace anxiety and burn out.

Consequently, there is a higher rate of work-related stress recorded among bus drivers than senior executives, she said, because although both have considerable responsibilities, bus drivers have no control over their timetable or traffic conditions. Frustration turns to anxiety, anxiety leads to burn out.

Just 12 per cent admitted they had pulled a sickie because they had something else they wanted to do. Presumably, most of them live by the sea. An auditor general's report earlier this year found that an employee's proximity to the beach had a direct correlation to the number of sick days they took in a year.

## ACMA WARNS UNLICENSED RADIO OPS

The Australian Communication and Media Authority (ACMA) has issued warning notices to six radio communications hobbyists, citing breaches of the Radiocommunications Act.

The hobbyists, comprising those using the Citizen Band (CB) and Amateur Radio frequencies are from Tasmania, Victoria, New South Wales and South Australia. The ACMA's Field Operations Sections found each were operating on High Frequency (HF) frequencies outside the radio bands they were authorised to use. In addition to warning notices, a number of non-compliant radio communications devices surrendered to the ACMA. ~WIA News

## SCHOOL RADIO STUDIO

A NEW, dedicated radio studio at Patterson Lakes Primary School means students are now interviewing some of Australia's biggest names, live to air.

Radio program co-ordinator Craig Jenner said a \$50,000 State Government grant to build the studio also helped deck it out with the latest technology. "We've also got the experienced students training others how to do it, which gives them a sense of responsibility and independence." The school's radio program has been hugely successful over the years, with students interviewing the likes of former prime minister John Howard, TV stars Bert Newton and Rove McManus, NBA basket baller Andrew Bogut and former St Kilda footballer Robert Harvey. The station can be picked up on 104.7 FM throughout the Patterson Lakes area.

A map of the station's coverage area can be found at [pattopradio.weebly.com](http://pattopradio.weebly.com)

~WIA News

## 500 kHz

During the meeting of the CEPT WRC-12 Conference Preparatory Group held in Bucharest between November 1st-4th 2011 a European Common Proposal (ECP) was agreed.

This ECP represents the block vote of 48 administrations and was passed without dissent. It proposes an allocation to the amateur service between 472-480 kHz on a secondary basis with a maximum power limit of 5W eirp.

This ECP will now be forwarded to the ITU as a contribution from CEPT to WRC-12.

The IARU has thanked the European Member Societies who helped to influence their national administrations in this matter. This is an important step in the IARU efforts to secure a worldwide secondary allocation to the amateur service in the region of 500 kHz at WRC-12. ~WIA News

## NEW DIGITAL NET

A new digital net to encourage use of these modes on 10m will be held every Saturday and Sunday at 18.00 UTC.

The net will gather on 28,125kHz USB, plus or minus QRM. RS ID and Call ID will be used to help people pick out the net and modes used. Olivia 500/8 mode will be used to call up the net but it may switch modes as needed.

Check out [www.obriensweb.com/sked](http://www.obriensweb.com/sked) for online coordination during each session. ~WIA News

## VK4 ATV

At this month's general meeting, the SEQATV group gave the Brisbane Digital Amateur Television Group permission to commence testing digital TV transmission on 446.5 MHz from their Ocean View repeater site. It is hoped that if the testing goes well, the two groups will combine their ATV repeaters in the near future. ~WIA News

## 'CHIRPY' 28 MHZ CW TRANSCEIVER ON YOUTUBE

Roger G3XBM has released a video of 'Chirpy' the CW transceiver for 28 MHz that uses just 14 components.

This ultra-simple transceiver puts out just over 100mW and can hear signals down to around 2uV in a quiet room. Crystal controlled, full QSK and great fun, although the signal does chirp! Hence the name. Best DX so far is 1414km.

The circuit diagram of Chirpy is at

[https://sites.google.com/site/g3xbmqrp/Home/xbm10\\_2](https://sites.google.com/site/g3xbmqrp/Home/xbm10_2)

Google Chirpy - a 14 part CW transceiver for 28MHz on YouTube. ~WIA News

## ARGUMENT GMT & UTC CONTINUES

Since the introduction on January 1, 1972 of UTC (Universal Time Coordinated) based on atomic clock time there has been those who want to stick with the name of GMT (Greenwich Mean Time) which originally was solar based.

GMT was made the international standard for timekeeping at a conference in Washington in the United States in 1884, until the adoption of the atomic clock time.

The International Telecommunication Union will meet in Geneva next January to vote on whether to formally adopt the new measure and how it will work. GMT is based on the passage of the sun over the zero meridian line at the Greenwich Observatory in south-east London. France had lobbied for "Paris Mean Time" at the same Washington conference but was not successful. In 1972 it was replaced in name by UTC but essentially remained the same as GMT which had adopted atomic time.

UTC is based on about 400 atomic clocks around the world but then corrected with "leap seconds" to align itself with the Earth's rotational speed, which fluctuates.

A two-day meeting of about 50 experts under the banner of Royal Society, is debating the issues including the implications of abolishing the leap seconds and moving fully to atomic time. ~ARV Website

## VK100ARV - ADDITIONAL VK3AWS CLUB NET SLOT



After the 5 day WANSARC stint with **VK100ARV**, Mick asked if it was possible to get a single hour time slot to run the Net with **VK100ARV**, which was done during our 5 day custody.

The guys at ARV said **YES** and WANSARC was given Tuesday night of November 15th, with many stations able to watch the Net on **VK3RTV1** and score some more points.

Your last chance to get points locally from **VK3AWS** (operating as **VK100ARV**) is Tuesday night on the 29th November.

**WANSARC Net** will be operating as **VK100ARV** instead of **VK3AWS** for the last time, with the Net sent live to **VK3RTV1**, the Amateur Television Repeater at Mt Dandenong.



## ARV centenary station

# VK100ARV finishes end of November

## WANSARC CLUB CAPS ARRIVED READY TO COLLECT

This meeting on Friday 2nd December, see Trevor **VK3ATX** to collect your club cap, that you have paid for we hope.



↑ Trevor in his shack, sporting the new WANSARC Cap  
Note the WANSARC and callsign emblem on the shirt.

**Any money owed to treasurer Rod VK3FAB for either caps or club Christmas Dinner at the RSL must be paid on that night.**

**Thanks to those who have already paid.**

**Don't forget you can pay on line as well.**

## BIG JUMP IN DIGITAL RADIO SALES

Despite one of the weakest retail markets for many years, sales of digital radios recorded their biggest quarterly jump since Christmas 2010. Official data relating to digital radio in Australia was released by Commercial Radio Australia (CRA) this week, showing close to 100,000 DAB+ digital radios were sold in Q3 2011 alone, according to the GfK Marketscope report, bringing the total number of DAB+ digital radios sold since August 2009 to 603,932.

~WIA News

## THOUSANDS OF CONTACTS LOGGED BY VK100ARV

Mid November over 6000 VK100ARV QSL cards need to go out. So by month's end that can only mean possibly just as many more.

~Mick VK3CH

## INTRUDER WATCH REPORTS TAXIS ON 28MHZ

Following the flood of low power FM transmissions across the 28MHz amateur band, the RSGB Intruder Watch has provided the Ofcom Monitoring Station at Baldock with a number of recordings. It has been confirmed that these transmissions are from taxi operators and this will form the basis of a complaint by Baldock to the Russian authorities. The timing of this complaint is fortunate as Uli Bihlmayer, DJ9KR, the Joint Coordinator of the IARU Monitoring System, has recently had a reply to a written complaint that he made directly to the Russian authorities. They have agreed to monitor the 28-29.7MHz band with the intention of stopping transmissions from CB and taxi operators. It remains to be seen how this works in practice but there is now a real possibility that this problem is going to be tackled at source.

(rsgb) ~WIA News

## EXTRA LONG ELECTRICAL ARCS

IRTS report researchers at the University of Canterbury, New Zealand, have developed a new, lower-voltage method of generating extra-long, lightning-like electrical arcs.

The arcs are created when an electrical impulse is applied to a thin copper wire that subsequently explodes!

By jump-starting the arcs using exploding wires, as opposed to the traditional method of directly breaking down air, the researchers reduced the amount of voltage needed to create an arc of a given length by more than 95 percent.

~WIA News

## CLIMATE CHANGE CLAIMS ANTENNA

Since being erected in April 2008, the 14 meter long capacity loaded VK3CH HF vertical has been battered about by the strong westerly winds.

After a few years it had quite a bend in it.

It got re-guyed to straighten it a bit, but some recent strong storms snapped the new guys yet again.

Then one day while walking the dog, it was noticed the mast was nearly resting above the roof and nearly the next doors roof as well.

So it was lowered down and removed.

Later on a long wire may go up, several ideas are in hand, but will require sweet talking the neighbours depending on where the wire runs to.

So you will not be hearing Mick on HF for a while...



## WEAR THE CODE

Samuel Morse would be pleased I'm sure to learn about Morse Code Aviation Tie. What is it?

Well a neck tie that has the code printed on it. Presumably pilots can check their tie if they're a bit rusty on the code and want to verify reception of a navigation aid.

These beacons transmit a two to five letter call signs at 5-words per minute.

The perfect Christmas present for the ham that has everything...

~WIA/ARV Website



## WATCH THAT FLY - IT'S REALLY A SPY

Our interaction with the world of insects is not usually a friendly one. A lot of human effort is expended trying to stop creepy crawlies getting in our way, and eliminating them when they do.

But what if insects could be recruited to our side? What if we could control them and use them to do our bidding?

It would make being bugged a rather more literal expression, and it is already happening in laboratories.

The result of this technology is usually called a cyborg insect, although if we are looking for fictional parallels, then zombie might be closer. Although these insects are augmented with artificial devices, it's not for their benefit, but ours, so we can control them.

Cyborg insects came about because miniaturisation in electronics has outpaced miniaturisation on the mechanical side of robotics. Robotocists can build flying robots a few centimetres in size, but they fly for only a few minutes before running out of juice.

Most of the weight of these robots comes from the machinery and batteries needed for the flying, while the controlling electronics make up just a fraction of the total weight and power consumption.

Cyborg insect researchers saw another option. Evolution has already honed real insects into efficient flying machines, so we should take advantage of that and find a way to control a real insect instead of trying to build our own from scratch.

Hiroataka Sato and Michel M Maharbiz, of the University of California at Berkeley, are leaders in this area and have demonstrated large beetles being remote-controlled to start and stop flying, turn and throttle the beating of their wings.

Rather than controlling muscles directly, the beetles are fed false perceptual information via their nervous systems to induce them to take the desired actions.

For example, the beetle *Mecynorrhina ugandensis* will cease flying in the dark and start again in the light.

By stimulating the beetle's optic system electrically, the same effect can be achieved regardless of the actual light level.

The electronics needed to communicate by radio and deliver the necessary stimulation are so tiny that they can be attached to insects without interfering with flight, and run for many minutes off a tiny battery.

It may also be possible to harvest the energy of the insect's movement to power the electronics.

Researchers see applications for the control of insects to study the bugs themselves and their social interactions, and they would be useful for things like search and rescue.

But it is no surprise that a lot of this research has military backing: a tiny insect under your control would make an ideal spy.

The technology is not perfect yet but cyborg insects may have the lead on their purely artificial equivalents.

They could soon leave the laboratory and be put to use. The technology may not let you be a fly on the wall, but it does offer the next best thing.

~Internet



North East Radio Group members John Weir, Greg Williams and Ewen Templeton have been putting Banyule students in touch with astronauts aboard the International Space Station. Picture: JANINE EASTGATE N15HB405

## Radio hook-up out of this world

ASTRONAUTS are getting long-distance calls from students in Banyule.

Members of the North East Radio Group are using their equipment to help children connect with astronauts aboard the International Space Station.

Member John Weir said the group visited several schools in the area to let the students speak with the astronauts.

"The kids love chatting to the astronauts and asking them questions about what they eat and how they sleep," Mr Weir said.

"There are so many people wanting to make contact with astronauts that NASA couldn't send us an approval for two years."

But space isn't the only place the amateur radio club is calling.

"We are making contact with people from across the globe," Mr Weir said.

"Volunteers from the group also assist emergency services by supplying radio equipment and operators during emergencies."

The group recently received \$3270 from the Federal Government to buy a signal generator, radio antennas, and an antenna rotator.

Mr Weir said the money would also help the club teach others the skills of amateur radio.

**WANSARC NET  
TUESDAY NIGHT 7.30PM START  
146.450 MHz FM  
LISTEN FOR NET CONTROL STATION  
VK3AWS**

# WANSARC Family Fun Day 2012

## WANSARC Family Fun Day

# Rotunda 6

# January Sunday 22nd

It's on again at the same venue as last year  
Gear will be setup from sunrise and  
Cooking of food well in progress by 11.00 am

All Soft drinks, Food and Nibbles & Salads are all club supplied (to financial club members) so just turn up!

## VK3AWS

active the whole day, call and / or be talked in, on

**146.450 MHz FM**

You can find Bundoora Park in the Melway ® Ref: **Map 19, F4 Bundoora Park, 1069 Plenty Road, Bundoora 3083 (15km from Central Melbourne)**

*As you enter the park from Plenty Road, turn right into River Red Gum Avenue and follow it until you come to the first right turn into Playground Drive. Continue down Playground Drive and it's the only and last rotunda, (No.6) just look for the wire antennas and other club members, if you have 146.450 MHz going we can even "call out" to you as we see you approaching, for the rest that remember – it's the same place as last year, which puts it at Melway ® Map square 19 F 4.*

Some of the attractions over the last few years and also this year include;

- Radio Transmitters setup on HF, VHF, UHF, Dstar
- Amateur Radio Television, the whole day's events sent live to VK3RTV
- Club provided Food & Soft Drinks, expertly cooked and presented by our Club Chef's
- Your kids can annoy other kids instead of you
- Catch up with old friends – Make new ones – Put a face to that "voice on the air"
- Enjoy a lazy relaxed day in the sunshine with some yummy eats...
- Catch up on the gossip – radio and otherwise...

*If you only come to one WANSARC meeting this year – this is it!!!*

*Bring along your chair, shade if you want extra, a hat, sunscreen and anything else you want on hand*

**Mark the first WANSARC event for 2012 in your diary now, no January meeting, Club BBQ instead!**

# Centre Victoria RadioFest No. 5

## Sunday 12 February - Kyneton Racecourse

### THE BIGGEST RADIO EVENT IN VICTORIA

The place to pick up a bargain at the Traders Hall supported by all the major traders or at the second-hand market place whether it be at the tables or carboot lots.

Socialise, see, learn and enjoy. This is a family friendly event where you can have a picnic and relax.



### Check out this great program

- ✓ Australia's first look at home-brewing a DVB-S ATV Transmitter. The poor man's entry into the enthralling world of digital television by Ross Pittard VK3CE
- ✓ The ZL6QU Super Station at Quartz Hill by its Chair of Committee 1997-2011 and avid contester, Brian Miller VK3MI/ ZL1AZE
- ✓ Tracking down that interference! An interesting insight delivered on this very important activity from Mark Tell of the ACMA

### DISPLAYS AND ACTIVITIES

- EmComm ready to serve in our name
- F-Troop photo call of Foundation licensees
- Bendigo District Astronomical Society
- Scout radio display
- Historical radio on show
- CQ Awards QSL checking with VK3PA
- Special interest group meetings

More details listen to the VK1WIA broadcast or check out the website

The program advertised reflects what is proposed at this time and may be subject to change.

### Second-hand market and car-boot sales

Bookings of tables and car-boot space close soon. These are low cost and include one entry ticket. An application form and conditions on the website (see below) or contact Tony Hambling VK3VTH 0423 635 152

**Catering:** Hot and cold food and drinks will be catered by the Kyneton CFA Auxiliary. Hot breakfast is available from 9am. Free tea and coffee available all day. Or bring your own lunch to enjoy in picnic style.

**Entry tickets \$10:** On sale from 9am with the gates opening at 10am. Free entry to children aged under 13. No pets or alcohol. The venue is mostly under cover suited for all weather.

**Door prizes:** Entry tickets will be drawn for the winners of available door prizes.

**Venue:** Kyneton Racecourse, Campaspe Place (off Beauchamp St), Kyneton, Only 50 minutes from Melbourne and an hour from Ballarat and Bendigo. Plenty of free parking.

**Info and talk-in:** Mt Macedon 2m repeater VK3RMM 147.250MHz from 7.30am to 10.30am on the day.

**Email:** [radiofest@amateurradio.com.au](mailto:radiofest@amateurradio.com.au)

**Website:** [radiofest.amateurradio.com.au](http://radiofest.amateurradio.com.au)

Don't miss this major event and great social occasion for everyone with an interest in radio communications. Ready to help you maximise your participation are volunteers from **Amateur Radio Victoria** and the **Central Goldfields Amateur Radio Club**.

# 146MHz 5/8 GROUND PLANE ANTENNA ~ Peter VK6YSF

Requiring a new 2 metre band antenna for local FM simplex and repeater communication and after evaluated a couple of the main contenders for the project I settled on the  $5\lambda/8$  wave ground plane to be designed for approximately 146.5MHz. The reason for selecting the  $5\lambda/8$  wave ground plane is that for a simple single element antenna it appeared to have increased capture aperture when compared to the standard  $\lambda/4$  wave length ground plane antenna and has a relatively low angles of radiation in comparison with other similar antennas. The decision to proceed with the  $5/8$  wave ground plane antenna was largely based information and analysis provided by the RSGB's VHF UHF Manual - fourth edition by G. R. Jessop, G6JP

## THEORY

The increased capture aperture or gain for single radiating element increases as the radiating element length is increased until the length of the radiator exceeds the magical  $5\lambda/8$  wave length at which point the increasing radiator length causes the radiation pattern to begin breaking up into a number lobes and nulls. The optimum length is in fact equal to or slightly less than  $0.6\lambda$ . The standard quarter-wave radiator loads up against a ground plan with a typical impedance of  $36\Omega$  which will match the standard  $50\Omega$  coax feed line with a SWR (standing wave ration) of about 1.5 to 1. Figure 1 show the impedance distribution along the radiating element of a typical  $\lambda/4$  ground plan antenna with the ideal low impedance at the feed point. When the radiating element is extended out to a half-wave length we are now looking at a high impedance node at the feed point as shown in figure 2 that is impossible to match with the  $50\Omega$  coax feed line without some sort of matching circuit. If however the radiator element is increased to a  $3/4$  wave length the feed line will see an impedance value at the feed point that is similar to that of the quarter-wave radiator as shown in figure 3, however while this overcomes the matching issue the  $3/4$  wave length introduces a poorer radiation pattern. The trick is to make the  $5\lambda/8$  radiator appear to the feed line as if it were a  $3/4$  wave length; establishing a good impedance match while at the same time achieving the ideal low angle of radiation that can be realised through the  $5/8$  wave radiator. By add a series loading coil at the base of the radiator to compensating for the lost  $\lambda/8$  section a match of close to  $50\Omega$  can be obtained as shown in figure 4. It is also much easy to design a matching circuit for a  $5\lambda/8$  radiator than the more extreme impedance presented by the  $1\lambda/2$  radiator.

## DESIGN

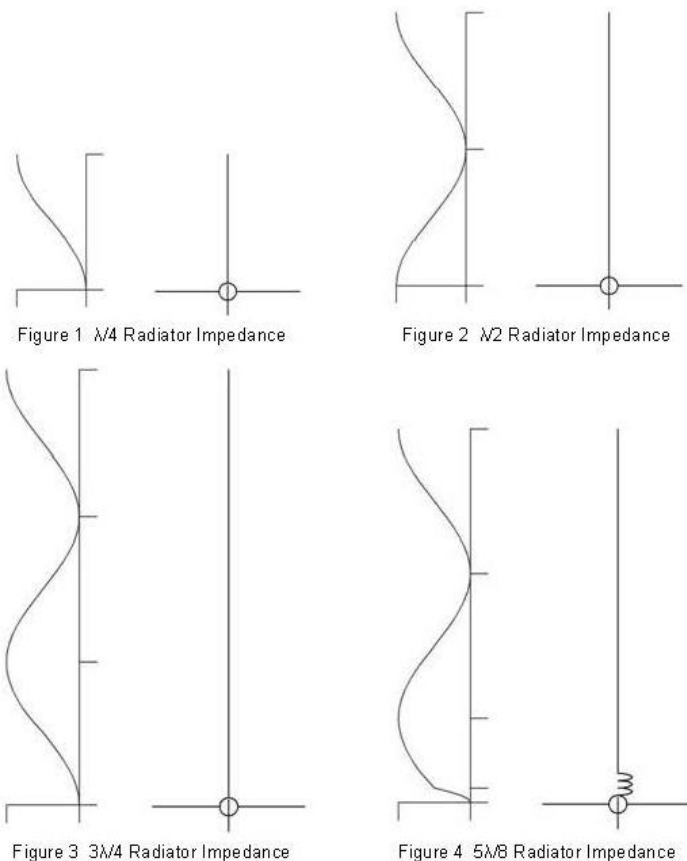
Having reviewed a number of designs I decided that the simplest approach was to cut a sample radiator to the physical  $5\lambda/8$  for 146.5MHz reducing the overall length by about 5% to allow for the material physical diameter and then forming a loading coil from a  $\lambda/8$  equivalent length of enamelled coated copper wire. The size of the loading coil is then adjusted until a sufficiently good match is achieved. The design consists of a re-hashed commercial whip antenna that was design for an unknown frequency, possibly low band VHF. The original antenna consisted of a stainless steel whip mounted on an insulated tube containing some sort of loading coil. After cutting thought the bottom end of the tube too asses the construction the existing loading coil was removed.

At this point it was decided to wind the new loading coil over the outside of the insulated tube and soldered the coil tails to the tube end caps, allowing for easy removal and experimental adjustment of the coil. The length of the loading coil wire was determined by the physical length of  $\lambda/8$  at 146.5MHz less 5% to allow for the effect of the wire diameter and less the length of any metal antenna hardware between the bottom end of the coil and the attachment with feed line. The additional tail from the top of the coil would ultimately be deducted of the final length of the  $5\lambda/8$  radiator as it would be part of the radiator.



Photo 1 Installed re-designed matching coil using recovered insulated tube.

There are two loading coil configuration for the  $5\lambda/8$  radiator. The first being popular with commercial mobile manufactures and which is also the approach that I have taken, which is to simply add the loading coil in series with base of the radiator. See fig 5. The second slightly more complicated method to set up is to ground the base of radiating element to the ground plan via the coil and tap the feed line into a the coil as in fig 6. The second method is in many way superior in that it allows the antenna to be turned to resonance eliminating any reactive component while achieving a perfect match to the  $50\Omega$  coax feed line. The first method is a bit of a compromise in that to achieve a good match to the feed line; however the antenna may be some what reactive. The second method has the benefit that when the antenna is mound high on a mast that the entire antenna is at DC ground and will give some lightning protection to attached equipment. While the second method requires a lot more trial and error, it represents the superior approach and is intended to be employed on future prototype antennas of this type.



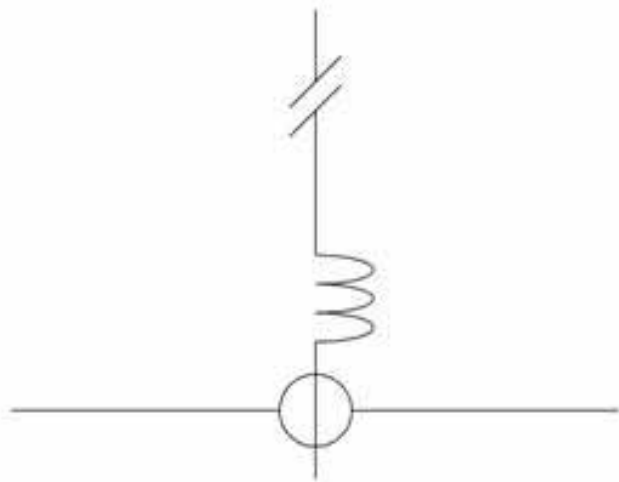


Figure 5 Series matching coil

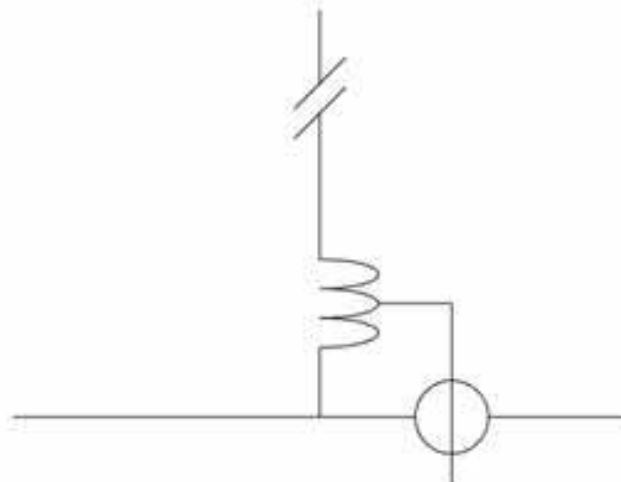


Figure 6 Grounded matching coil

Despite the antenna and mounting hardware being of a reworked mobile vertical antenna, the intention is that it be used as mast mounted antenna and therefore feed it with something better than RG58. A solution was to redesign a standards mobile antenna mount with a Female 'N' type coax cable connector that would be robust and more importantly weather proof.

Photo 3 Standard mobile antenna mount adapted to the ground plane assembly - Top view



Below is an explanation of how the standard mobile antenna mount was modified to for the feed attachment for the ground plane antenna. It is important to remember that mobile antenna mount of this type vary considerably in the design and any attempt to duplicate the this process should use this description as a guide only.

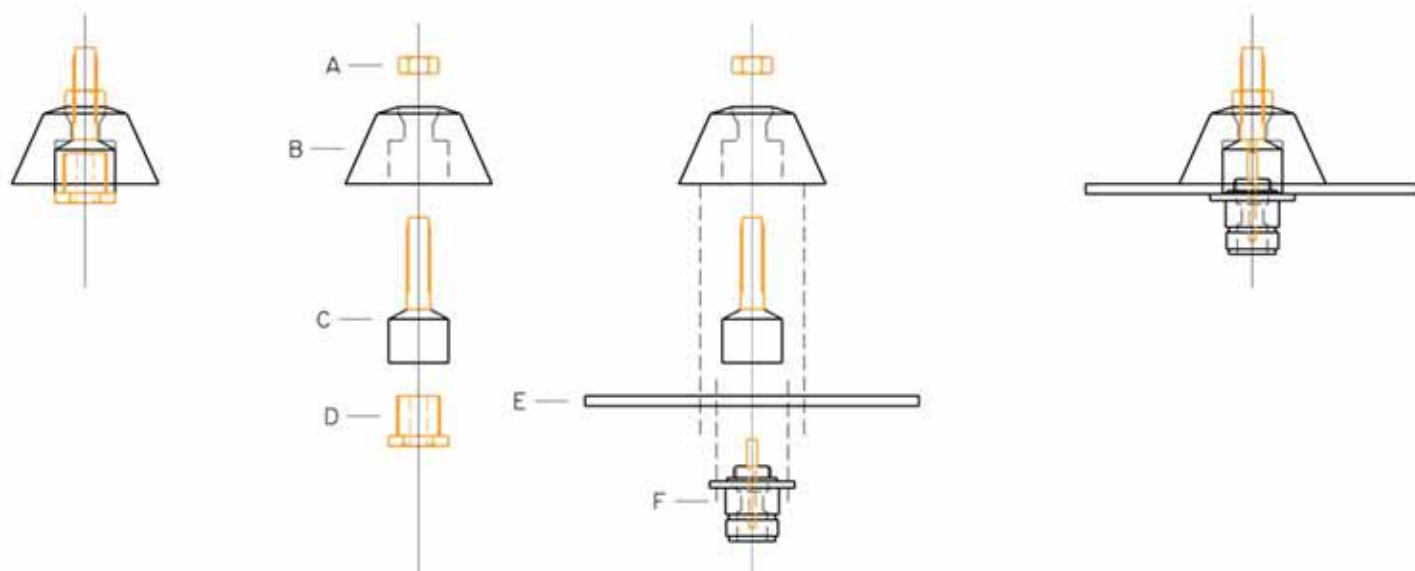


Figure 7 Explanation of how the standard mobile antenna mount was modified for the feed attachment for the ground plane antenna.

- A - Retaining nut.
- B - Weather proof cone.
- C - Aerial mounting stud and insert guide.
- D - Coax screen ground insert. (Remove, not required)
- E - Ground plane mounting base.
- F - Standard N connector (Female)

The standard mobile antenna mount is disassembled with the coax screen ground insert being discarded and the insert guide skirt of the aerial mounting stud assembly trimmed so that it remains flush with the bottom of the weather proof cone when assembled. The female N connector is pop-riveted to the ground plan base disc and the aerial mounting stud is connected with a very short and flexible lead to the female N connector centre pin. The weather proof cone is then seated over the aerial mounting stud and fixed in place with two self tapper screw to the ground plan base disc from beneath. A light bead of marine grade silicon is applied to the bottom of the weather proof cone before it is attached. The retaining nut is then installed with care not to over tighten. See below complete assembly.



Photo 4 Standard mobile antenna mount adapted to the ground plane assembly - Side view

## TESTING

With the antenna assembled on an easily accessible test mast well clear of the ground and surrounding metallic objects, the antenna was connected to an AIM 4170C antenna analyser to ascertain how the antenna loaded up.

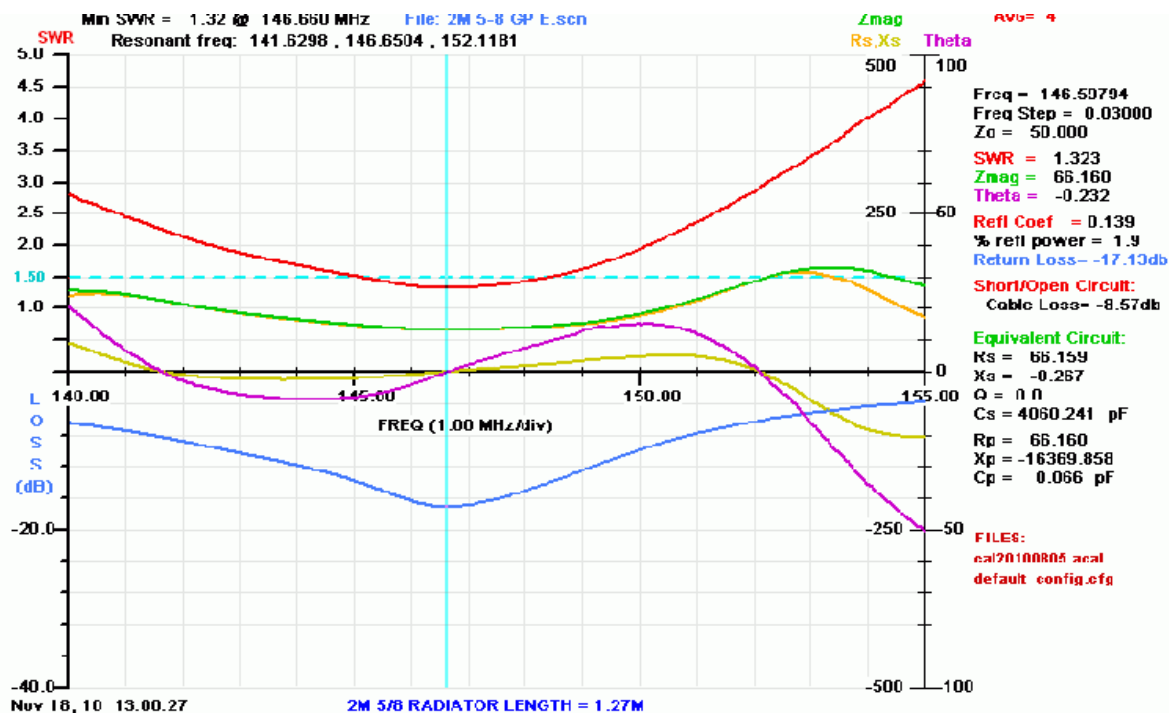
The goal here is to find the operating frequency of 146.5MHz compromise between being close to the resonant frequency and achieving best possible impedance match resulting in an SWR of about 1.5 - 1 or less.

The AIM 4170C produces a display of all relevant data and most importantly it can project it's analysis to the antenna end of the coax giving a truer picture of the antenna.

The initial plot indicated that the antenna was resonant around 135MHz, while the 5/8 radiator can be trimmed at the final tweaking stage the most important feature of this antenna is to maintain a radiator length of slightly less than the 5/8 wave length, therefore the first component of the antenna to be adjusted is the loading coil. One complete turn was removed at the first attempt resulting in the analyser indicating a good SWR and resonant frequency of around 152MHz. Third time lucky, after winding a new loading coil with a third of a turn more than the previous coil the result showed a resonant frequency of around 146MHz after a bit of fine adjustment by compressing the coil a little.

Finally with only the most modest trimming of the radiating element the required parameters were realised with a resonant frequency of 146.5MHz and a SWR of 1.32 at 146.66 MHz.

It is important that the heat shrink tubing that will be used to weather proof the loading coil assembly is slipped over the coil to reveal the effect that it will have when it is finally shrunk into place as the effect of the heat shrink tubing lowers the resulting ideal frequency by as much as 1MHz. Once shrunk the ideal frequency is lowers slightly further. Requiring a bit of guess work a very close result is not at all difficult and a bit of trimming of the main element will allow target specification to be achieved.



## CONCLUSIONS

I have been surprised at how little detail information actually exists on both the internet and resource book regarding the principles and performance of 5/8 wave ground plane and similar antennas. There is much discussion related to theoretical gains in comparison with similar antenna types, but little about the harsh reality of real world antenna performance.

With some on air comparisons and antenna modelling there appears to be no dramatic performance advantage between for example a simple  $\lambda/4$  ground plane and that of the 5/8 wave ground plane.

It appears that while the 5/8 wave ground plane exhibits some improvement in performance in comparison with the simpler  $\lambda/4$  ground plane the big performance improvements for 144MHz and high is as everyone knows antenna height and high quality low loss coax.

This project has challenged a number of personal antenna myths, created the necessity of a bit of experimental tinkering along with detailed measurements and test to produce a new station antenna that has met the original design goals.

## REFERENCES

ARRL. RSGB. VHF UHF Manual - fourth edition by G.R.Jessop, G6JP

For an example of a practical development of a 5/8 wave vertical antenna for the 4mtr band see:

[http://www.acanas.co.uk/g4zlj.co.uk/4metre\\_vertical.html](http://www.acanas.co.uk/g4zlj.co.uk/4metre_vertical.html) Article on Degrees of Antenna Occupied by a Loading Coil.

The purpose of this article is to provide a procedure for determining the number of degrees of antenna occupied by a loading coil. A later article will explain how that value applies to inductively loaded mobile antennas.

See: <http://www.w5dpx.com/> A comparison of 10 meter verticals using modelling see: <http://home.comcast.net/~nm5k/acompari.htm>

A very interesting discussion on news group: rec.radio.amateur.antenna. regarding the comparison between 5/8 vertical and J-Pole antennas including lengthy discussion on 5/8 vertical performance.

See complete discussion: Which is better: 5/8 wave vertical or J pole.

Cheers from the wild-west Peter VK6YSF vk6ysf@arrl.net

# WANSARC 5 Day VK100ARV Centenary Celebration

DAY 1, Saturday 5th November, Rotunda 6, Bundoora Park



With **VK100ARV** not being in our possession until 11am, this gave us time to set up the gear and antennas at a leisurely pace.

The weather perfect as well, the park a great venue for either local or DX. The early team to arrive at 7am and secure Rotunda 6 was Mick **VK3CH**, Trevor, **VK3ATX** and John **VK3FMPB**.

It was decided to setup two HF stations and two stations covering VHF/UHF.

Power was supplied by a generator donated by Dan **VK3DWH**, as Micks generator took early retirement!

As we had few operators Mick decided not to put the day's events up to ATV as he was needed to man a radio for the day.

This was the first time for years that Mick has actually operated HF in a serious way, time to find out what the IC-9100 can do on HF!

Trevor was in charge of the antennas and design and layout for minimal cross band interference on HF. Mick on AM 160mx ↓



Trevor erects long wire with a cast of a fishing rod then pull wire up ↑



Mick checking connections before ↑  
VK100ARV starts



Lou on HF ↑

The AH-4 tuner fed from the IC-9100 covering 160mx to 6 meters, feeding 150 meters of long wire into the gumtrees ↓



After the antennas were up, next job was cook some snags and chill out before getting **VK100ARV** at 11am.

We later had others turn up; Lou **VK3ZLD**, Dallas **VK3EB**, Greg **VK3CN**, Ian **VK3QL** and John **VK3FEZZ**.

Some operated HF in turn, other had VHF/UHF, and others just had a social outing with a lot of chatting, making copying stations a challenge at times! Dallas had some tests with a home brew tuner and kite antenna.

Greg had a home brew crystal locked 160mx AM transmitter, complete with home brew top loaded 160mx vertical plus a long wire. Dallas with the home brew tuner ↓

Greg erecting the top loaded 160mx vertical ↓



## WANSARC 5 Day VK100ARV Centenary Celebration

DAY 1, Saturday 5th November, Rotunda 6, Bundoora Park...

We had some hassles with interaction between the two HF radios which was solved by working bands in turn on a rotational basis.

Sometimes bands were quiet, other times a rush of activity.

Lou being an old hand at HF DX was able to advise where to listen and what to expect as the day progressed.

At day's end we had worked 54 stations, most on HF. But only started at 11am until 6pm and had to make a few antenna adjustments.

At the end of the day it was decided to leave the long wire in the trees to save time on Sunday getting back on the air at 7am.



The (visible) antennas at the park ↓



Trevor protecting the food! ↓



While waiting for contacts we had great weather, tasty food and some cold ales.

There was plenty of "eye candy" as well, if you know what we mean....!

(The radios of course)!!

A lot of stations gave very favourable comments on the audio and signal quality of the IC-9100, guess the longer the wire, the better the result.

Greg adjusting 160mx AM transmitter ↓



Picture from end of 150 meter wire antenna in tree looking back at rotunda (yellow) ↓



Hopefully with more time the morning openings will boost the tally of stations. By day's end we had a few tired operators. But with the HF antenna ready to go on Sunday, there should be less work to do. After we finished,

Lou VK3ZLD took over the VK100ARV from home in Fawkner.

Lou normally works into Europe on HF most days.

The last job was for poor Mick to collect and collate the logs and go home and attempt to read the handwriting!

Lou worked 37 stations on HF later that day.

Log breakdown for Saturday was;

HF 88 (80 / 40 / 20 / 15 / 10 meters)

VHF 3 (2 meters)

UHF 0 (70 cm)

23cm 0

## WANSARC 5 Day VK100ARV Centenary Celebration

DAY 2, Sunday 6th November, Rotunda 6, Bundoora Park

Mick and Trevor arrived at 7am to find the 150 meter long wire still intact. It took only 15 minutes to unpack and hook up the HF radio and start the generator, fastest ever time getting on air from the park.

We should have a permanent antenna farm set up at the park!

Tuning across we found Lou who was finishing up with his early morning stint with **VK100ARV**.



Lou worked 6 stations at daybreak on HF.

We had 52 HF contacts at the park on Sunday. John **VK3FEZZ** used a handheld on 70cm and logged 10 contacts on 439.000MHz. Rod **VK3FAB** was on 2 meters most of the day and logged 21 contacts.

Mick also handed out two extra points for ARV members for both calls he holds as well as the 10 points for **VK100ARV**.

At times the bands were very quiet with contacts hard to come by despite calling CQ with the **VK100ARV** call.

This time headphones were used by everyone, which covered most of the banter and cooking sounds going on, but not all...!

We had Mick **VK3CH**, Trevor **VK3ATX**, John **VK3FMPB**, John **VK3FEZZ**, Peter **VK3XCO**, Rod **VK3FAB**, Lou **VK3ZLD**,

Ray **VK3KEL** and visitor Joe **VK3XH** attend on Sunday at Rotunda 6. The weather was good with no rain at all.

Rod also dusted off his Kenwood TS-450S HF radio and even had the manual nearby to reacquaint himself with the radios features.

After packing up, Lou **VK3ZLD**, returned home at Fawkner, to work more HF DX later that night, another 11 contacts.



Some of the crew ↑ John FEZZ, Mick CH, John FMPB, Lou ZLD and radio operators Rod FAB and Trevor ATX.

# WANSARC 5 Day VK100ARV Centenary Celebration DAY 2, Sunday 6th November, Rotunda 6, Bundoora Park (continued...)

More photos of members at the park working VK100ARV.



# WANSARC 5 Day VK100ARV Centenary Celebration



## DAY 3, Monday 7th November, VK3CH Portable Doncaster East / VK3ZLD Fawkner

When WANSARC first applied for **VK100ARV**, Mick **VK3CH** thought of places that may be good to setup a portable station, including either Bundoora Park or a park near his place. Both locations meant dealing with the weather at night during the roster. Later Mick made mention of his plight to the minister of the local church at Doncaster saying *"...the church hall would make a great operating area, out of the weather with power, saving the need for a noisy generator, with lots of land to run a long wire antenna."*

Mick was offered permission and the keys on the spot to use the hall for the four day duration of his night shifts with **VK100ARV**. So from midnight until morning each day, Mick had custody of the whole land and buildings to play AR; free, no costs at all.

With a week to go until the first night, Mick returned with a cut long wire of 84 meters and erected it all along the length of the property up through the trees. Returning later the next day some brief tests indicated that HF operation would be OK. The ATU just sat outside the door of the hall on the ground fed by a drop wire from the end of the 84 meters of wire, suspended through the trees.

Setting up each day only involved just bringing in the power supply and radio and ATU, wiring it up and away you go... Creature comforts of chairs, large tables, shelter, light, power, stove, fridge, cutlery, etc made for a 'home away from home' QTH.

Mick's first night started at midnight, just about 8 hours after finishing and packing up from Bundoora Park the Sunday prior! Being a lone operator, Mick decided just to use the IC-9100 on HF, with the AH-4 ATU matching the wire from 160 mx to 6 meters.



The station setup at the church hall ↑

On arrival the antenna was still intact, 15 minutes later the first call went out.

Most activity was on 40 meters.

Being the middle of the night things started out slow as expected, but the stations worked were good copy and all commented on the good audio from the SM-50 desk microphone.

A slight echo in the hall was noticed by ear, but no one said they heard an echo, not even a station a few km away in Blackburn.

ATU with drop feed ↓



Long wire end feed to ATU by the moonlight ↓



Other end of long wire in front tree ↓



After working up at the park, it was hard to stay awake, plus conditions were quiet, but the stations heard were good copy.

Only four stations were worked! Three VK and 1 US. But later in the morning I felt really ill and decided to pack it in.

It was decided that starting at 4am was a better option for future morning DX.

The roster details on the club website were updated to show a 4am start.

In the afternoon Lou **VK3ZLD** worked HF DX into Europe from home, as he does just about every day.

Later that evening Trevor **VK3ATX**, called CQ on HF, but only got 1 contact in 2 hours – he was not a happy boy! Cant blame him.

# WANSARC 5 Day VK100ARV Centenary Celebration



**DAY 4, Tuesday 8th November, Mark VK3PI Mobile / Lou VK3ZLD / WANSARC Net VK3AWS / Trevor VK3ATX**

Mick felt really ill most of Tuesday and was too fatigued to go out and work DX in the early hours.

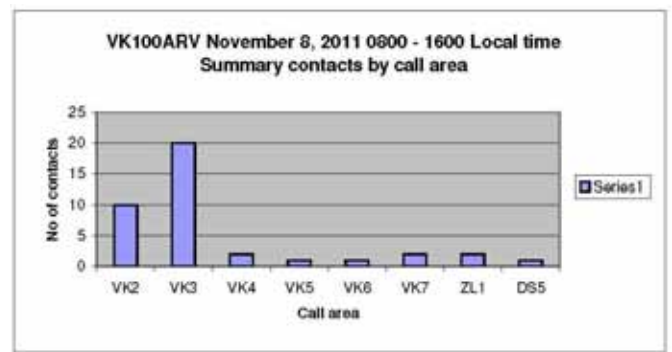
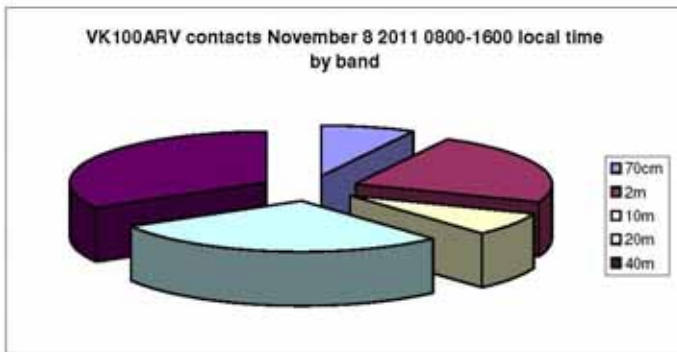
He could use another word starting with F to describe his pain as well... (hi)

But others in WANSARC had asked for blocks on time on Tuesday so the day had a variety of stations on.

Mark **VK3PI** took to going mobile with **VK100ARV** from 8am to 4pm, logging 39 contacts, most on HF.

Mark said conditions were tough, with a lot of static crashes on HF due to the impending stormy weather heading towards Victoria, but hearing the news it looked like it had already arrived in some areas.

Mark kept very comprehensive logs and his summary below...



*"The combination of torrential rain and thunderstorms in Melbourne precluded the anticipated portable operation during the day, however the best was made of the situation. With storms along the north eastern seaboard and the remnants of geomagnetic disturbances the HF bands were not brilliant at best and unusable at worst. Signals on 40m and 20m were weak with high ambient noise levels and intense static crashes. This was the first time in a dozen years that I had been forced to use headphones to pick out stations in the noise. However all things considered it was a great day and one in which I was proud to be able to contribute in a very small way to celebrate the centenary of Amateur Radio Victoria. It was pleasing to note a number of stations commented on the fact that I was using an end fed zepp antenna with open wire feed line, true to the original design - a "nice touch" using such an antenna whilst reflecting on the history of wireless radio. **Martin VK3FMJP** assisted me late in the morning with some operating and **Ian VK3QL** contributed during the afternoon session - my thanks to both gentlemen for their assistance." **Mark VK3PI***

After Mark finished, Lou **VK3ZLD** once again took to working Europe. Lou worked 27 stations.

Tuesday night is **WANSARC Net** night and Mick decided earlier in the day to see if he could get DVB-S ATV going.

His own DVB-S transmitter was not working for as yet undiagnosed reason, so he found the unit Ian, **VK3IV**, his father, used to use. By 4pm the ATV and on screen text was ready, emails sent out telling many as possible that **VK100ARV** would be on **VK3RTV1**.

Mick emailed Lou to say at 7.30 **VK100ARV** to be transferred to **VK3AWS**, club station of **WANSARC**. The **WANSARC Club Net** ran with 14 stations logged in, about a third of those watching Mick, Net Control, running the Net.



After the Net, Trevor, **VK3ATX** took over **VK100ARV**, chasing DX with a delta loop antenna put up only hours beforehand. After the sole contact the night prior he was not taking chances.



Trevor's Delta Loop ↑ the wires not very visible but are there



Trevor's HF beam ↑

## WANSARC 5 Day VK100ARV Centenary Celebration

DAY 5, Wednesday 9th November, Mick VK3CH Portable / Trevor VK3ATX / Lou VK3ZLD / Mark VK3PI



Feeling guilty for not working DX the night prior, Mick setup portable at Doncaster East, after having run the Net, 6 hours before.

The wire antenna was still in place, with the feed end tucked in behind a drain pipe near the window, no vandals around here...

I doubt there are many public places, like a park, that you could leave a long wire antenna up for week, without any problems.

At 3.20am the station was on air, 40 meters the only band with any activity heard – but none of it in English! Yes, we are on LSB!

A very strong AM radio station in foreign language was heard on 7.175 then lots of AM carriers past that, so looked like 7.070 to about 7.145 was where the CQ calls were to be cast. For the next two hours, CQ, CQ, but no joy.

Still not a station using English.

Going down to 80 meters was no good, no stations and static crashes, lucky I have digital meter, as an analogue one would have smashed itself to bits with noise!

Just in case the laptop I was using to log contacts was partly to blame for the noise on 40 meters it was shut down. It was not...

By 4.45 am many of the non English stations had gone with four still heard. Tunning up and down 40 meters, still no English heard.

As Thursday was the last day ending at 11am local, I decided on a 6am start now... seems I lack the skills to use HF seriously...!

I tried 15 and 10 meters just for a look in, I need not have bothered. As for 80 meters, man, I have heard quieter diesel loco's...

At least I have learned that 40 meters is a true crossroads band that is nearly open to somewhere nearly all the time; well in this season of the year anyway. 5am came around – where was the gray line??? Surely it was time for some early starts in VK to wake up.

I fast understood why the internet, qrz.com and DX clusters are apparently popular, but something I have never used.

It was 5.10am, took my first drink of cold coffee milk, the very thing that (*too much of*) may have made me sick two days before...!

By 5.20am most of the non English stations had faded out. Listening on 30 meters brought nothing either.

The very strong AM station on 7.175 was completely gone. So either they shut down, or band conditions were slowly changing.

5.45am and from 7.055 all the way to 7.200 had only four reasonable clear stations, none of them in English.

It was also sunrise outside with a beautiful orange purple colour appearing through the thin clouds. Walking the length of the wire antenna, now very visible, found nothing touching or shorting it, all was good. Checking 80 and 20 and 15 meters brought nothing.

One good thing about the SM-50 desk microphone is that it made calling CQ for hours on end easy on the voice as you just speak normally, just watching the ALC meter. Even after hours of calling my voice was OK, no need to shout as the room was so quiet.

Having a lock bar on the microphone to hold TX open saves stress on the hands as well, little things matter over several hours.

Maybe a mistake after all the effort, but in order to not become part of the Eastern Freeway morning traffic jam, I packed it all up.

It was time to go home and check the 'in' box for logs from other club members; my score of zero won't be too hard to beat.

Arriving home before 7am, a call was put out to Trevor and **VK100ARV** handed across to him.

Later Lou had his usual afternoon HF sked into Europe, note the new WANSARC Caps! ↓





↑ The antenna farm at Lou's QTH, VK3ZLD ↓



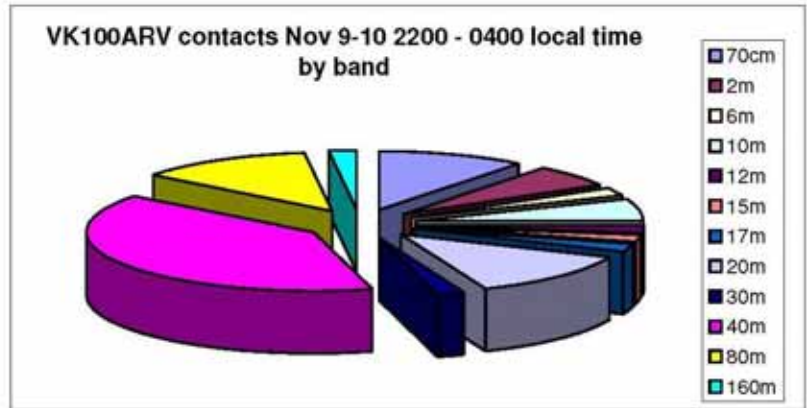


DAY 5, Wednesday 9th November, Mick VK3CH Portable / Trevor VK3ATX / Lou VK3ZLD / Mark VK3PI (continued...)

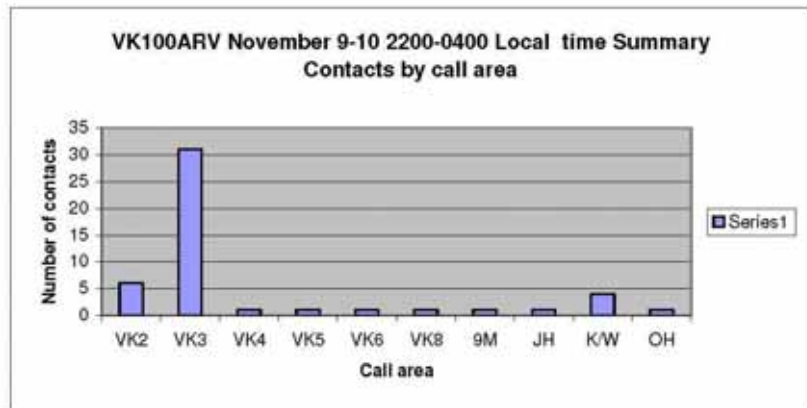
Mark VK3PI decided to have another go at 10pm until early hours to 3am. Once again, very comprehensive logs supplied by Mark. He worked 48 stations, even down to 160 meters. In true tradition of "modes gone by" some Amplitude Modulation (AM) contacts were made as well. Interesting to see even the newer WARC bands (12, 17 and 30 meters) also worked as well.

**SUMMARY OF CONTACTS**

Band	Contacts
70cm	5
2m	3
6m	1
10m	3
12m	1
15m	1
17m	1
20m	6
30m	1
40m	19
80m	6
160m	1
<b>TOTAL</b>	<b>48</b>



CALL AREA	Contacts
VK2	6
VK3	31
VK4	1
VK5	1
VK6	1
VK8	1
9M	1
JH	1
K/W	4
OH	1
<b>TOTAL</b>	<b>48</b>



Mark summed up his last day with VK100ARV...

"Melbourne experienced some of the most severe storms for some time, with torrential rain and gale force winds. By 2200 in the evening the rain was still pelting down in QF22MH and the wake of the storms could be heard on the lower HF bands as intense static crashes. You could fire a gun on 80 metres and not hit a station as the band was a sea of static. 40 metres improved considerably as the evening wore on and the storm fronts pushed their way further east, providing some excellent contacts. Mario, VK3NI portable 8 near Alice Springs did a great job with his G5RV 25 feet in the air. VK6NAT and JH1WNL were worked in succession, proving that the band was in good shape with ambient noise levels dropping to S3. A short stint on 20 metres yielded John, 9M6JC and then a marvellous contact with KC7O portable at a park in California. The band was quiet and after a short contact with Keith, VK3FT and a "spot" on the net, Bart K6UNR in Nevada called followed by Boris OH5ZZ. In the wee small hours back to 40 metres and contact with Bob, N7UA and Frank N7EKD, from Washington and Portland respectively. At 0400 it was time to hit the sack, having completed 5 hours of operation it was a case of "quality" contacts not quantity. With a modest 100 watts and an end fed zeppelin wire antenna at 25 feet, in some way I felt I was emulating some of the achievements of those amateurs that have come before us in the last 100 years. Even after 33 years of amateur radio operations it was a great feeling to be trawling the bands in the wee small hours of the morning, rain pelting on the shack roof, cosy with the soft glow of signal meters and hum of power supplies - not a match for the striking pose of mercury vapour rectifiers and 807's but nonetheless engaging. Thanks for the opportunity to participate in this centenary event."

Mark VK3PI

## WANSARC 5 Day VK100ARV Centenary Celebration

**DAY 6, (remains of last WANSARC UTC day)**

**Thursday 10th November, Mick VK3CH Portable, East Doncaster**



After last night's quiet band conditions it was decided to start at dawn. With wild storms during the night it was good to be at the comfort of the hall. WANSARC hands over **VK100ARV** at 11am local time. The plan was to work local VK hams as they woke for the day plus any DX.

Arriving at 6am, first contact was into VK2 at 6.13am, but the static was steady S7 most of the time. Tuning across 40 meters found a few very weak voices, but they were in English, so that helps...

When calling CQ, often stations could be heard coming back, but all you can make out is it's a male voice down in the noise. Lucky they are not mayday calls, as there would be no way to communicate with them, in times like this Morse Code rules.



John working 40 meters on the IC-9100 at East Doncaster, Lutheran Church Hall ↑

John **VK3FMPB** arrived at 7am to help put out some calls.

Later the band improved and we made 12 contacts into VK 1, 2, 3 and 5, many of these mobile stations, one with just a helical whip. It was the best result I had for days, of course John said it was due to his presence and his operating skills.

I was going to try and catch some of the AM Net, but the VSWR on 160 meters was way too high and the ATU refused to match it. While a stainless steel wire was used and many people say copper wire is better to use, next time Mick goes portable he will consider making an end fed zepp antenna like Mark, **VK3PI** has done.

At 11am, WANSARC ended the 5 days with **VK100ARV**, the longest straight session by any club during the **VK100ARV** month. WANSARC helped many VK stations to achieve the 100 Points and they will be applying for the Award. Certainly many in WANSARC itself that did not really think they had a chance to try for **VK100ARV** award are now well on their way with many points gathered during recent weeks and a real spur of enthusiasm during our clubs 5 days sked.

Last job was gathering the logs, putting them in order and checking readability of the hand written ones, many thanks to those that gave electronic logs. These were compiled and sent to Amateur Radio Victoria. Tony Hambling is going to be busy dealing with a month or more of logs for **VK100ARV**, they will need a dedicated team to post out all the QSL cards and certificates!

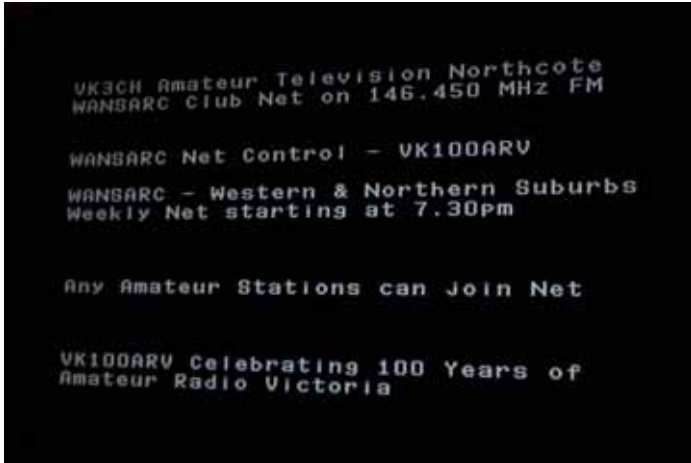
Thanks to Amateur Radio Victoria for WANSARC to participate in this centenary event. And congratulations on 100 years.

~WANSARC VK100ARV Crew

# VK100ARV Centenary Celebration ~ WANSARC Net

On Tuesday 15th November WANSARC was given a one hour block to run the weekly Net with **VK100ARV**.

On the 29th of November the WANSARC Net will again run as **VK100ARV**.



↑ WANSARC Net ID on VK3RTV1



↑ Don, KE6BXT California, via Skype on VK3RTV2

14 stations checked in, including a patched USA station, via Skype from Peter Cossins.

The Net Controller Mick VK3CH, operating the Net was live to **VK3RTV1** and Peter Cossins patched USA station, **KE6BXT** Don from California.

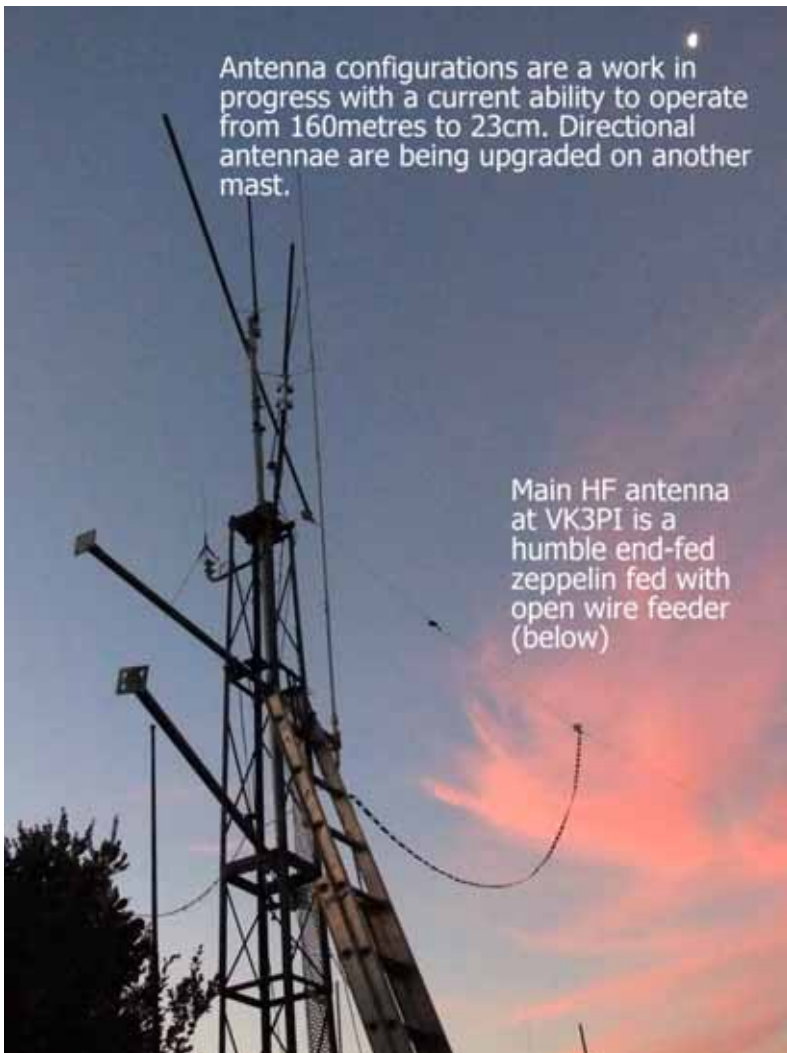
All pictures were perfect and steady copy. Both VK3RTV 1 & 2 were streaming live to BATC website as well.

The club Net was run with **VK100ARV** on November 8th and 15th.

It is also going to run under **VK100ARV** on November 29th, the second last day of **VK100ARV** callsign being on air.

If a link up is made outside of VK, then time will be allocated for local stations with ATV TX in there shack to come up on VK3RTV to be logged as a full duplex ATV contact, thus getting 20 points.

So be sure to join the WANSARC Net on the 29th for your last chance to locally obtain 10 points towards **VK100ARV**.



The ladder line to the end fed Zepp ↑

← Mark's antenna setup used when working VK100ARV from home QTH



## VK 100 ARV



## WANSARC VK3AWS

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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 7.30pm local time.

**Website:** [www.wansarc.org.au](http://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 [vk3ch@wia.org.au](mailto:vk3ch@wia.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. Other persons or radio clubs may edit or copy out such as they like from the magazine but a reference to **WANSARC** is appreciated, except copyrighted (©) material or as otherwise indicated. Other articles that are credited to outside sources should be asked for their permission if they are used. 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 **07:30 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.