

Incorporated in Victoria, 1985 Registration Number: A0007611S

The monthly magazine of the

Western & Northern Suburbs Amateur Radio Club Melbourne, Australia



www.wansarc.org.au



146.450 MHz FM

VK3AWS

28.470 MHz USB

Volume No: 45

Issue 10

October

2014

Next Meeting,
Friday 3rd October
Doors Open 7.30pm
Ern Rose Memorial Pavilion, Seaver Grove, Reservoir



Mark VK3PI on the microphone and Guy VK3GUY with the prize barrel at the MARTG Hamfest
The first Hamfest in the west for a long time - read more on page 8

WANSARC CHRISTMAS DINNER

Thursday Night, 7pm Start, 27th November

If you are yet to let Mick VK3CH know if you are attending, please send your booking notification please,
Or you can tell him at the meeting, or email to vk3ch@wia.org.au

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LAST MONTHS MEETING

The September meeting was the demonstration of the Active Magnetic Loop Receiving antenna. The receiver used was an SDR transceiver, but listening only. The loop was placed on the balcony. A full article on the loop is in the newsletter. The SDR nearly stole the show from the magnetic loop. The Bose speakers certainly filled the room with astounding sound, so good for their small size. Mick, VK3CH, has only been using both the loop and SDR for just a few days, so it was a real live experiment of sorts. In the afternoon just before the meeting Mick was listening to some amateur stations in Gippsland on 40 meters AM. With the 7100 on an inverted 'V' they were 4 by 7, some noise. On the SDR with the loop on the ground at work, the same stations were once again, 5 by 7, but with NO noise at all. Pixel Technologies Active Magnetic Loop Antennas are designed for reception of signals over the range of 100-kHz to 30-MHz. They include a very high dynamic-range low-noise preamplifier that can be mounted to a pole, mast, or any flat surface. The preamplifier is designed for minimum intermodulation distortion in the presence of very high-level signals that would normally overload most preamplifiers.



With ten members on the night, the formal general meeting was put forward to next month and the night launched right into the presentation. Mick needed a few power leads and between the club cupboard and a few members cars, he got what was required, thanks guys! Thanks to Christian VK3FYAB, for the photos.

JOTA 2014



Jamboree-on-the-Air will be on the air the weekend of 17, 18 and 19 October.

JOTA VK Calling frequencies,

80 m	3.650 MHz
40 m	7.090 MHz
20 m	14.190 MHz
15 m	21.190 MHz
10 m	28.590 MHz
6 m	52.160 MHz

DSTAR REPEATER UPDATE

Back in May WIA wrote to clubs known at the time to be custodians of the equipment with a view to hand over ownership. This came about because the DSTAR agreement between WIA and ICOM had expired and to maintain a DSTAR service in Australia, a new arrangement was required.

The original agreement was signed with ICOM in November 2007 to support the establishment of a DSTAR network for a period of not less than 6 years. This agreement included the donation of six repeater systems to the WIA supported technically by ICOM with full equipment warranty for the term. As part of this agreement the WIA was to establish equipment into each state through interested amateur radio clubs and by supporting the process together with licence and broadband costs. During the course of this agreement, some changes in interest occurred with some equipment being transferred between clubs and additional equipment being offered to clubs who had expressed interest to the WIA and ICOM direct.

The WIA Board has now agreed to hand over the WIA DSTAR equipment to respective clubs on the proviso they take up associated costs including licensing, power and broadband access. For their part, ICOM have kindly offered to extend existing warranty on the equipment for a further 5 years with back to base equipment repairs as part of this arrangement.

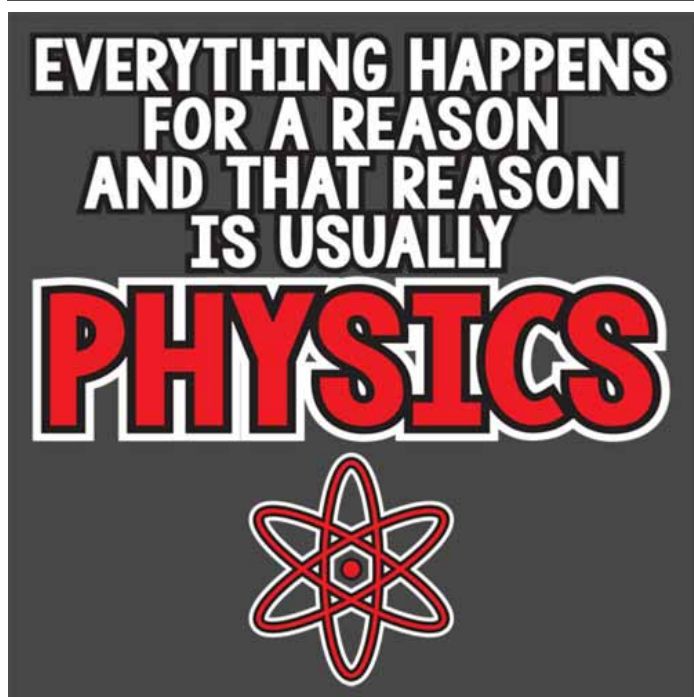
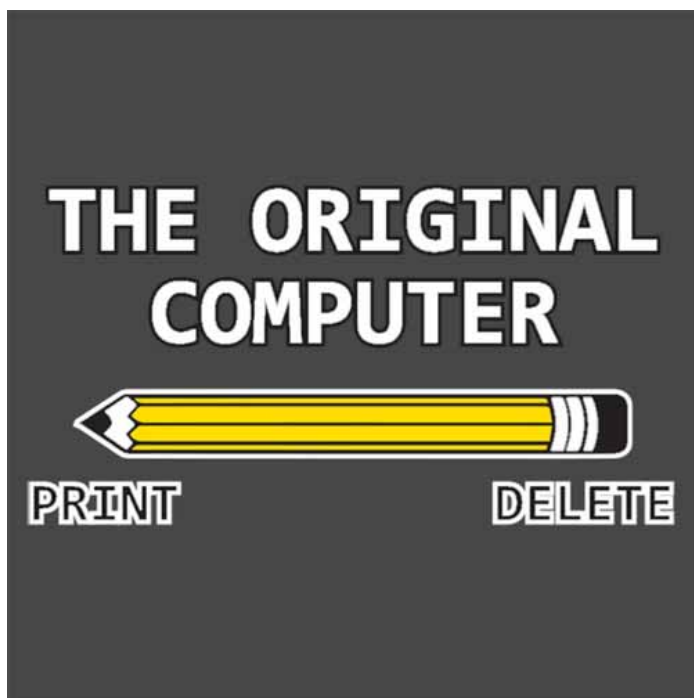
A letter has been forwarded to known custodians of original DSTAR equipment informing that the proposed handover date will be 30th September this year.

It is therefore important that clubs confirm they can meet this target or let us know if they are encountering difficulties.

It is certainly not the intention of the WIA to cut off any DSTAR installations.

DSTAR enthusiasts might be interested in developments currently underway in Victoria where a DSTAR user group is coming together. This group has a website <http://www.vk3.dstar.org.au> Not much there right now but keep an eye out as things are starting to evolve.

~David VK3RU on behalf of the WIA Board



COMMERCIAL SATELLITE WITH DATV

Qatar has launched or is about to launch a commercial geostationary satellite which includes an amateur package, one allocation for narrow BW standard phone stuff, but also one with an 8 Mhz BW for amateur DATV. Uplink on 13 cm and downlink on 3 cms. Northern Hemisphere of course. Not much chance for us bods in the southern hemisphere for a similar system, but you never know.

~Peter VK3BFG



CHANNEL 31 GETTING BOOTED OFF THE AIRWAVES



COMMUNITY television channels in Australia will be forced from the airwaves and onto the internet under new government plans to reclaim and resell the spectrum currently used to broadcast their services.

Community channels, including Melbourne's Channel 31 and TVS in Sydney, have until December 31 next year to switch their broadcasts to the internet.

The switch-off forms part of new government plans to reallocate the spectrum from the "sixth channel" — which is primarily used for the broadcast of community TV channel — so that it can be used by free-to-air television broadcasters or alternatively sold off to telcos such as Telstra and Optus who are keen to get more spectrum to improve their mobile phone services and deliver faster 4G download speeds.

~WIA

WIA PLANS A SUBMISSION ON NEW REGULATIONS

The due replacement next year of the expiring Licence Condition Determination or LCD for the Amateur Service is an excellent opportunity to re-think how to regulate its existence now and the future. Like all Australian legislation, the Amateur LCD is due to 'sunset' in October 2015 and needs replacement so the Amateur Service can continue.

The LCD includes how Australia's three licence grades operate, their frequency bands, modes and maximum permitted powers. The Wireless Institute of Australia (WIA) sees that many of the current LCD provisions are outstripped and need of removal or replacement. It has identified issues that can be better aligned with international standards, some future-proofing due to emerging technologies, and to further reduce unnecessary regulatory burden for all.

The WIA board of directors has identified issues so far for evaluation and invites all to have input on them and any related

LCD matter before it makes a final submission. The WIA is taking a holistic view to make sure all radio amateurs now, and where possible in the future, enjoy the hobby and bring some benefit to the community.

The new Amateur LCD must include references to the Electro Magnetic Emission (EME) requirements for all in the Amateur Service to support other awareness and compliance action. The WIA wants no limit on experimentation to allow flexibility in communications technologies and applications, and remain a self-regulating service with no reduction or downgrading from the current Apparatus Licence principles.

The WIA review covers all licence grades. For the highest or Advanced Licence it seeks a relaxation of permitted bandwidths on 1.8 MHz to 430 MHz to enable emerging and newly developed technologies. In line with awareness and compliance with the EME requirements, the WIA sees that Advanced Licence be given a power limit of up to 1000w, as a right without a permit. Several microwave allocations are also to be sought.

The WIA will seek to raise the Standard Licence conditions to better match similar intermediate licence grades in other countries. It is looking at increasing the Standard Licence access to a number of between 1.8 MHz and 28 MHz, and particularly access to the lower part of 6-metres at 50-52 MHz. The WIA seeks a relaxation of the permitted bandwidths relating to the Standard licence on all bands over 1 GHz, to allow the use of wideband digital and image transmission modes by that licence.

For the entry level Foundation Licence, the WIA will seek digital modes, commercially made transmitter kits, unattended operation, and an increase to 25 watts because of the tyranny of distance of Australia and the noisy urban environment. The WIA also notes the Foundation Licence permitted bands are quite restricted when viewed in the context of other entry level licences across the world.

The WIA also will seek access to the 5 MHz band subject to the World Radio Conference 2015, preferable some allocation enabling contact overseas, continued access to 50-52 MHz, and consideration of 70 MHz allocation overlapping allocations in other countries.

~WIA

SAINT MAXIMILIAN KOLBE

Kolbe used radio to spread his Catholic faith and to speak out against the atrocities of the Nazi regime.

He was killed at Auschwitz in 1941. He was made a Saint in 1982 and is the only canonised saint to have held an amateur radio license, with the call sign SP3RN. He is the patron Saint of various things including amateur radio.



Kolbe was thrilled by the media, especially radio. Familiar with the radio and started his own station on a mission in Japan.

He wanted to set up a radio station in the Convent in Niepokalanów, where he ordered the construction of the building and radio broadcasting equipment. During this time acting licensed radio amateurs and radio broadcasting license had only Polish Radio (since 1925.). He got verbal permission to broadcast test transmissions on shortwave, near the 40 meter amateur band. Father Maximilian Kolbe, SP3RN, is recognized by the Catholic Church as the patron saint of amateur radio.

~Internet

SHEPPARTON HAMFEST

About half a dozen WANSARC members were seen wandering around the Hamfest, in lovely sunshine. It was very well attended and the sellers seemed to have activity with lots of persons there.



Many of the usual faces were seen, both sellers and buyers, a few from NEVARC were also there. Highway is now 110km speed nearly all the way there with all the roadworks long completed.

~Mick VK3CH

SDR KITS MADE IN VK

Want to build your own SDR radio or Transceiver?

Check out <http://www.genesisradio.com.au/>

They say, *Building and operating your own equipment is still the ultimate goal of amateur radio, and Genesis is exactly that: Fun to build, fun to operate! There are so many things you can do with your Genesis: from regular 2-way Morse contacts, phone, digital modes like PSK to RTTY or WSPR - Truly, the list of activities for which you can use your G11 is practically endless! If you're into QRP, DXCC chasing or serious contesting, the G11 will deliver unparalleled performance you won't find in much more expensive analog radios.*

They have three different versions, basic, up to a full all mode 160m to 6m Transceiver. The G59 is an all-mode 160-6m SDR transceiver with 10mW of output power. The output is boosted to 10W with the GPA10 linear amplifier.



If you build the base model they say, *"The G11 is a "hybrid kit": for your convenience, all the difficult to solder SMT components (over 600 of them!) are factory pre-assembled. Your task is to assemble 50-60 large through-hole components and to wound a bunch of toroids. The entire assembly takes 8 hours."*

Prices are on the site, quite reasonable, if you want to make a serious entry into SDR, take a look.

SCANNERS PUT QLD POLICE AT RISK: UNION

QUEENSLAND'S police union says its members are at risk from eavesdropping criminals until the analog radio system is completely upgraded.

THE state government has pledged more than \$500 million over 10 years to change police radio to a more secure digital signal across Queensland.

Police in Brisbane have already made the switch and officers involved in G20 duties will use the digital signal during the leaders summit in November.

But a spokesman for Police Minister Jack Dempsey told AAP the wider introduction for southeast Queensland would not happen until 2015.

Until that time, the Queensland Police Union says officers using the analog signal could be intercepted by scanners, meaning criminals could potentially track police movements.

President Ian Leavers said the signal could also be intercepted by anyone with a smartphone.

"Therefore, it puts everyone at risk and the information is public information," he told reporters in Brisbane on Tuesday.

"(Information) needs to go, when it's very highly sensitive, directly to police."

Mr Leavers said he was also concerned about resourcing shortfalls, which included a lack of protective body armour and Tasers for officers after the terrorist group Islamic State released a propaganda video mentioning Australian authorities.

He said a more secure system would allow officers to share information about suspects within seconds.

"We just need the equipment to do the job. Police simply are being left out in the cold and they are expendable, that is the way police feel," Mr Leavers said.

Premier Campbell Newman was not able to say when the digital technology would be available on the Gold Coast and parts of Logan, south of Brisbane.

"This government inherited a situation where the police had a communications network that essentially the criminals could listen in to," he said.

Police Commissioner Ian Stewart said the state government had made a "huge investment" in the new system and its benefits were not restricted to security.

"The digital network allows us to through its ability to link up what they call 'talk groups'," he said.

"It means that we can have officers raiding a place or doing a job in Cairns, with someone in Coolangatta listening in to that job, if they're given access."

The analog signal would not be dropped completely, Mr Stewart said. "Analog has served us very, very well for many years. It's a great backup tool."

~Internet

ATV PARTY EXTRAS

With so much happening, some pictures missed out here are some more photos of the ATV weekend.

Picture shows to the left the microphone for the IC-5100 and video / audio to outside. To the right is a small table with TV monitoring VK3RTV with the IC-5100, installed on the wall, seen above the TV. On the table along with some chips and dips, is the IC-7100 and microphone plugged into the radio control head. Peter Cossins, VK3BFG is on the TV giving the ATV Party opening address for the Saturday morning session.



Saturday morning was televised from work, with another day of sunshine. It is quiet on weekends apart from the car club next door doing inspections, you never know what sort of cars will appear, but some are really classy.

The work ATV station sits on a shoe rack bought for \$29; it seems the best way to house it all with easy access to all the cables. As it has its own space it will remain in service, so a few more impromptu and planned, ATV activity to be seen in future.



The ATV Party may become a bi-yearly event, planning with the various ATV Net control stations in VK, USA & G is underway.

UPCOMING HAMFESTS

BALLARAT HAMVENTION SUN 19 OCTOBER

The Ballarat Amateur Radio Group will hold their annual Hamvention on Sunday 19th October.

Location, Ballarat Greyhound Racing Club in Rubicon St, Redan, Ballarat. Starts 10.00am and finish around 1pm

For info www.barg.org.au or email hamvention2014@barg.org.au

YARRA VALLEY ARG HAMFEST SUN 9 NOVEMBER

YARRA Valley Amateur Radio Group sale of second hand Radio & Electronics Equipment.

The annual Yarra Valley Amateur Radio Group Hamfest will be held on Sunday 9th of November 2014. 10am to 2pm approx.

Doors open for sellers at 8am, buyers at 10am.

Gary Cooper pavilion, Anzac Ave, Yarra Glen. Ample parking. Free tea & coffee, \$5 entry fee. Food and drinks available.

SOUTHERN PENINSULA ARC HAMFEST

SUN 30 NOVEMBER

Australia's best hamfest at Rosebud on the Mornington Peninsula, Displays, talks, Prizes, Demos, Exhibits, New/pre-loved gear sales, Talk in, Special Guests, Emergency services Communications, WICEN, ALARA, Clubs, help for new operators. Fully catered at excellent prices, plenty of free on-site parking and all housed at the best venue in Australia. More info, look up the club on the WIA site or contact Mark VK3PDG markybradio@gmail.com

RF PRO-1B Active Loop Antenna

Sometimes it's a wonder how such small things can work so well. I would have been too sceptical to believe, let alone order, such a thing for the technical claims made. But seeing one in action by Don VK3HDX and seeing the results for myself I had to have one. These loops use the magnetic part of the received signal, not the electrical part, so noise is virtually gone.

The specifications from the manual read;

This active magnetic loop antenna is designed for reception of signals over the range of 50 kHz to 30 MHz. It includes a very high dynamic range low noise pre amplifier that can be mounted to a pole or any flat surface. The pre amplifier is designed for minimum inter-modulation distortion in the presence of very high level signals that would normally overload most amplifiers.

The antenna should be oriented in the proper direction to maximize reception of the desired signals. For best performance, the amplifier should be installed near the antenna to avoid amplifying low level local interference that may enter the coaxial cable leading from the loop antenna to the pre-amplifier's input.

Based on the work of Dr Carl Baum for the US Air Force his "Moebius Strip Shielded Magnetic Loop Antenna" architecture outperforms much larger antennas.

Dr Baum was a Senior Scientist at the US Air Force Research Laboratory and is the recipient of several awards from the IEEE (Institute of Electrical and Electronic Engineers) for his work. Originally developed for a classified US Air Force project involving the measurement of EMP (Electro Magnetic Pulse) from nuclear weapons, this design has wide application to antennas for low- noise, interference-free radio reception over a wide frequency range. Pixel has coupled this antenna with a custom made low-noise amplifier developed for Pixel by Clifton Laboratories with very high inter-modulation distortion (IMD) specifications (OIP3 = +48 dBm, OIP2 > +100 dBm) that can operate without saturating in high AM and FM broadcast band signal environments.

Most active antennas are the whip type and respond mainly to the electrostatic-field portion of an electro-magnetic radio wave. The Magnetic Loop responds primarily to the magnetic-field and this ensures high rejection of nearby electric-fields. The intensity of the electric field is usually higher than the magnetic-field when an antenna is close to interference sources such as TVs, florescent lamps, power line wiring etc. By rejecting the electric-field there is a reduction in local interference compared to other types of active and passive antennas. Interference reduction is further enhanced by the deep nulls of the antenna's 'Figure-Eight' directivity pattern that can be used to null out or reduce interference coming from a specific localized direction.

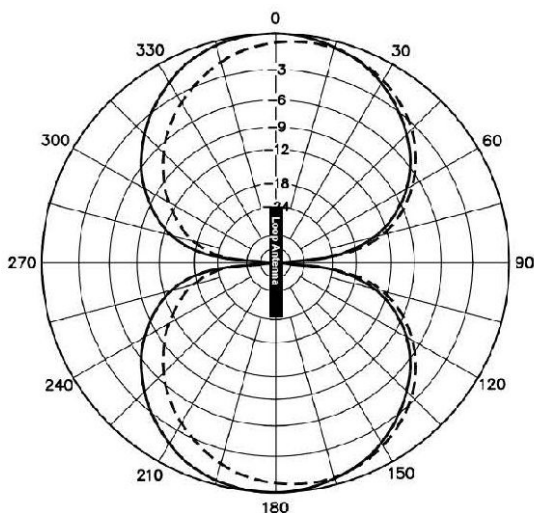
Some active antennas generate inter-modulation products which can appear as spurious signals interfering with reception. This interference or second and third order inter-modulation is caused by non linearity in the amplifier producing signals which are usually the sum and difference of strong AM or FM Broadcast stations and their harmonics. The RF PRO-1B Loop has been specifically designed to reduce inter-modulation products to a minimum. The third order intercept point is typically +48 dBm (OIP3) and the second order intercept point is greater than +100 dBm (OIP2 typically 110 dBm). The 1 dB compression point of this amplifier is + 27 dBm making the levels of the inter-modulation products generally far below the atmospheric and man-made noise.

This is a receive only antenna. You need to have it connected to your transceivers "Key Out" or whatever connection that senses RF transmit, so the loop is off, while you transmit on your usual transmit antenna. Internal transmit/receive switch disconnects antenna/preamp from your receiver when transmitting

The cable from your receiver to the preamp (mounted close to the loop itself) is just standard 75Ω RG-6 Quad-Shield Lead-In Cable. Just good TV coax will do the job, at runs they claim of up to 200 feet, that's 60.9 meters length.

~Mick VK3CH

The loop at Micks work, that has better reception than the Inverted "V" on the roof, even on 40 meters, that it's cut for! Roll on stand to stop strong wind tipping it over! ↓



Loop Antenna Pattern (looking down edge – on from above antenna)



JIDX Contest ~ Mark VK3UA

I first got my call in 1983 and since then, never really found an interest in trying contesting. Mostly I thought those contests just congested the bands when you wanted to use them. Hi.

Anyway in 2012 I thought I should be fair and actually operate in some contests to see what they were all about. I didn't do too well in the first few as I was learning how to operate, and what set up to use. After a few contest attempts I started to get the hang of it and decided to seriously try to get a result.

I tried a couple of contests that I went really well in, and buoyed by that; decided the next one to go in was the Japan International DX Contest (JIDX).

The object of the JIDX is: For amateurs around the world (DX) to contact JA stations in as many JA prefectures + JD1 islands as possible. For amateurs in Japan to contact DX stations in as many DXCC entities and CQ Zones as possible.

The JIDX has CW and Phone separated to 2 different weekends and the CW section was soon so I decided to give it a concentrated effort.

As my antenna system is best at 28 MHz (and I like Ten) I decided to enter the 28 low power ($\leq 100W$) single band/ single op section.

I spent the week before getting organised with updating my version of VKCL

(by Mike VK3AVV - great contest logger, thanks Mike), arranging my operating area, and setting my radio up.

The radio is a Yaesu FT-450AT and has a built in cw keyer and also a cw broadcast function. I programmed the broadcast for the CQ call which takes the load off when operating.

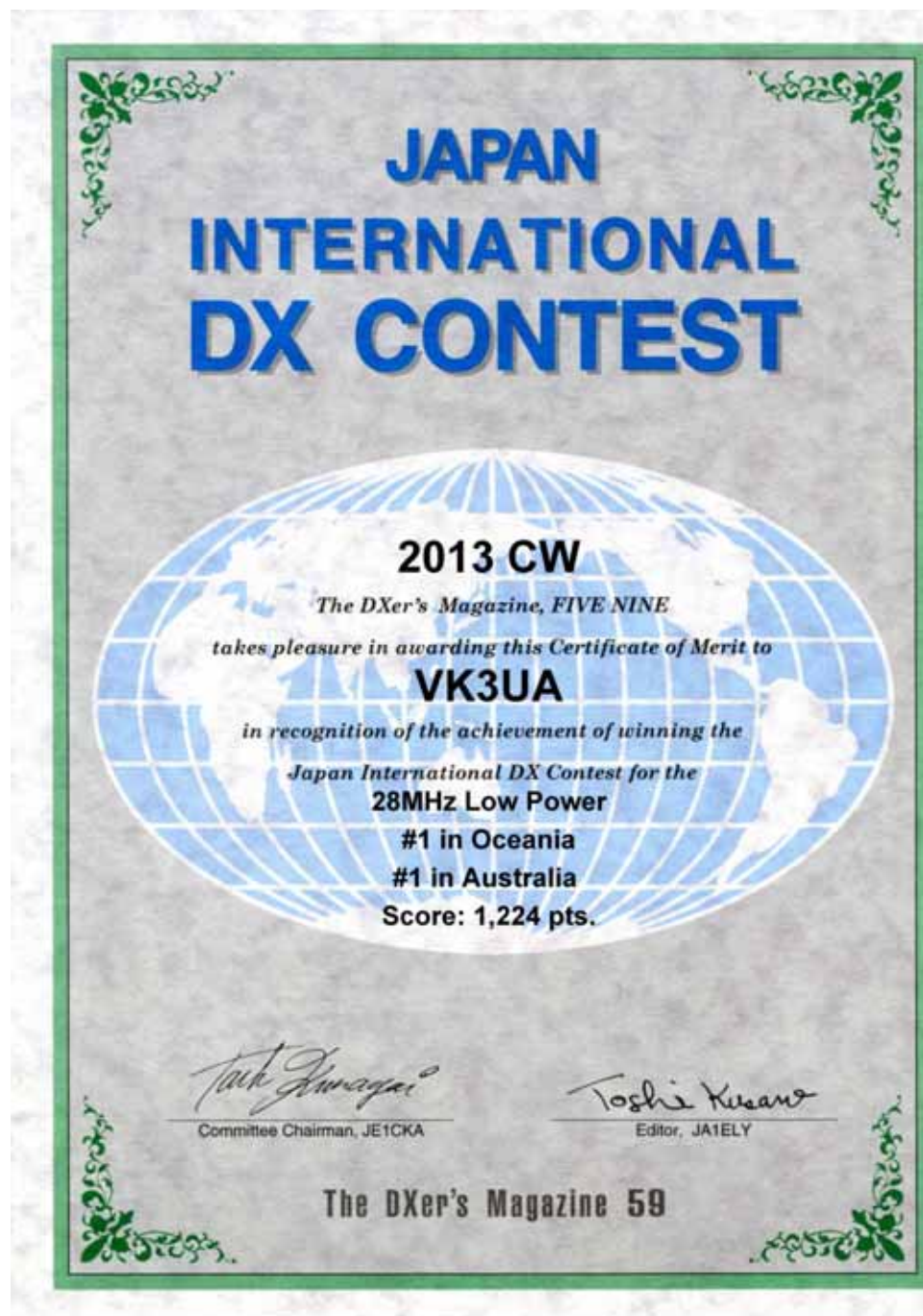
I had a cw paddle for use with the keyer, and a hand key for backup. I am not a very fast cw op and had the keyer set to 14wpm, although I can read the callsigns of the very fast ops by listening to it a few times.

I was ready to go at the start time, 0700 UTC, and keen to operate. Only problem was, band conditions from VK3 to JA were poor. Signals were very low with every contact having to be fought for with a lot of contacts as RST 319.

Conditions were the same for the entire contest. The good thing was the propagation did move around Japan and I managed to contact most call areas. At the end of the contest I was bit disappointed with my score but I figured the others who entered had to endure the same conditions so I sent my log in to the organisers.

One thing I found is that the Japanese are very thorough with the log checking, which translates to: you have to wait a long time for the results.

Anyway, eventually the interim results were published and to my surprise I was #1 Oceania and #1 Australia in my section. I recently received my certificate and it is now has pride of place on my shack wall.



~ Mark VK3UA



The Melbourne Amateur Radio Technology Group (MARTG), held their first Hamfest on Sunday 28th September. MARTG are one of the newest AR clubs to form in suburban Melbourne. MARTG are about the enjoyment and challenges of experimenting and building stuff, anything with a connection to amateur radio. The Hamfest was also one of the first to be held in the western side of Melbourne for many years. The weather was perfect; the grand old dance hall was host to many tables and lots of room to move in an uncluttered layout. At the invitation of MARTG, the Hamfest was televised live to the Melbourne ATV repeater VK3RTV1, by Mick VK3CH.

The ATV 'OB' Van ↓



ATV TX on just 3 watts, in the car ↓



For the keen, there were lots of bargains to be had. The stand out table would have to be Don VK3HDX, with lots of gear, in truly mint condition, being sold at bargain prices. Don declined all pre-Hamfest offers being offered weeks in advance. At 10am it was a swift walk to his table when the doors opened. One of the bargains was a mint condition IC-910H, including the 23cm option, how much you ask? Try \$600! It did not stay on the table for long, I assure you...! Other bargains were an Ameritron AL-811 600w PA at \$400, an IC-22820H for \$250 and a Yaesu FT-101ZD with FV101 as well, for the pair, \$400. If you missed out, there will be more next year; Don has a leased room, full of stuff to dispose of...



Don's table, all sold by 11.15am ↑

Some of the usual sellers were there with a mix of new and old stuff. As the venue has its own commercial kitchen, with cooking staff, the food on offer was not your usual burnt greasy Hamfest food. Sure, it was eggs, bacon, sausages and onions, but cooked properly and lots of it. At day's end, a pile of free snags were offered to the last stragglers leaving. For the kids a fire truck was on site and SES crew as well.

There was plenty of room to wander about, lots of table spaces for others to gather and chat over a coffee away from the bussing chatter in the main hall. Ample car parking close by also added to the convenience factor. All the traders had the doors at the rear of the building to setup and pack up without getting in the way of the buyers. Quite a few door ticket raffle prizes were handed out by the MC, Mark VK3PI, assisted by some young kids drawing from the barrel. Mark VK3UA won a radio in the very first ticket draw – well done Mark!



VK3JAK at his table ↑
Brian at his stand ↓



Food cooking ↑
The kitchen ↓



Door ticket girl's ↑
The commercial grade kitchen ↓



Traders setting up before the doors open to the crowd



The MARTG Hamfest Crew ↓



Dave VK3DTS checks out the goods ↓



Mick VK3CH flogging socks ↓



Buyers trawl through the offerings...



FT101E with added digital readout ↑





Mark VK3UA, with his door prize ↓



All commented that the MARTG Hamfest was a great day out, in perfect weather and can only improve. For a first effort everything went smoothly, it will be another yearly event in the Melbourne Hamfest calendar. This place even has a licensed bar!

MARTG meet every Thursday night from around 7pm or so, very informal, with projects being built by various people. The club shuns any formality, no meetings, no paperwork, no boredom, just soldering irons, test gear and fun. Every week is something different, from drones, Geiger counters, telemetry stuff, software defined radios, valve gear restoration, writing machine language code, modifications to radio gear, computer building, trading junk and spare bits, it goes on...

MARTG are already famous for their radio space balloon launches. More on their website at www.martg.net
Well done guys, will see you next year...

~Mick VK3CH

WANSARC NET

Tuesday Night
8pm Check In

VK3AWS

146.450MHz FM Simplex

WANSARC VK3AWS

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SECRETARY: John Karr

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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

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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.

You can get the WIA News sent to your inbox each week by simply clicking a link and entering your email address found at www.wia.org.au. The links for either text email or MP3 voice files are there as well as Podcasts and Twitter. This service is FREE.