

# VK3AWS



# WANSARC NEWS August 2007

Western and Northern Suburbs Amateur Radio Club  
(WANSARC)  
Incorporated in Victoria

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A WIA Affiliated club

**News and views from the Western and Northern Suburbs Amateur Radio Club VK3AWS—AUGUST 2007**

## SOLUTION TO INTEROPERABILITY AMONGST EMERGENCY SERVICES AGENCIES.....



For years now Emergency Services across the world have been grappling with solutions to radio interoperability.

Different radio systems, handsets, data terminals etc. have made solutions difficult. In Europe bordering countries have not standardised and border responders have differing radio network standards.

So here is the solution—carry as much radio equipment in the vehicle with as many frequencies as possible. Power requirements may be a little excessive, but hey, you do have the potential to be able to talk to anyone at any-time on any frequency. Now which box and microphone do I use???

### NEXT MEETING FRIDAY

**AUGUST 3 2007**

Our very own GRAEME VK3NE will present on the application of Antenna Analyzer equipment.

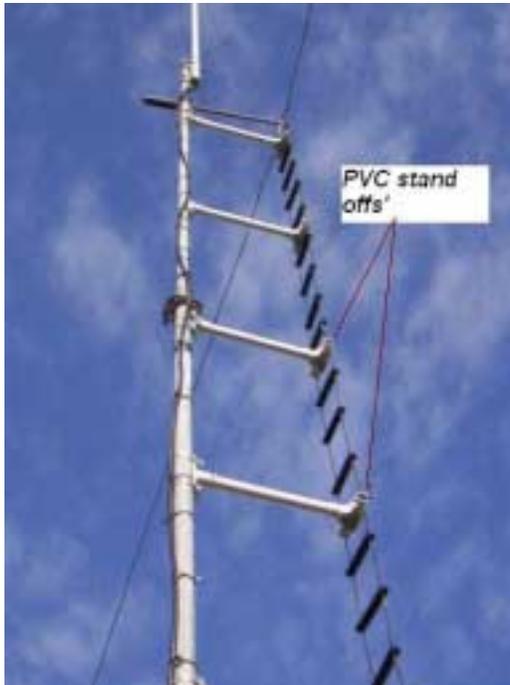
Chris VK3HGX recently donated an antenna analyser to the club, so this is a perfect opportunity for members to hear of applications for this very handy piece of test equipment.

See you at the meeting!

### Inside this issue:

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# REMOTE CONTROLLED ANTENNA TUNING by Chris VK3HGX



Experimentation with antennas is a wonderful aspect of Amateur Radio and with a limited size block the options for rigging a full size HF antenna were limited.

One option, however, was to make a centre fed antenna using open wire feedline.

The length of the antenna tip to tip is 110' ( 36.3m ) and the antenna is fed with home made 600ohm open wire line to a Palstar Balanced tuner.

### One major problem I had was RF in the shack.

RF was getting into my personal computer and telephone line too. (Much to the disgust of the XYL!). As I also found out RF and Heil microphones do not go hand in hand.

A web article by Owen Duffy VK3OD on a better G5RV gave me the idea of making my Palstar Balanced tuner **remote controlled**. Despite the fact that I use 4 x 1/4 wave counterpoise wires for 80, 540, 20 and 15 from the tuner, it was also hoped that this would eliminate or at least reduce the RF problems being experienced.

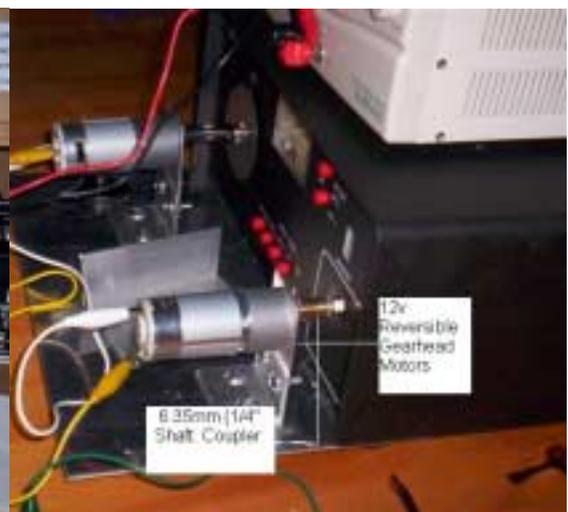
Here are the parts I used:

- 3x12v DC Reversible Gearhead Motors:
- 2x cheap 5" B&W Monitor with 2x Cameras.

You adjust the speed of the motors by the voltage output to the motors at (8volts)

The great thing about the Cameras is that they have little lights built in this helps light up in the ceiling.

Any questions, please see me.



## THE U-BOAT WILHELM BAUER U2540

by **Tony Saunders VK3BZT**

In 1944 when the German submarine war effort was nearly defeated, the U-boat command wanted to seize the initiative with a new submarine the Type XX1 to replace the Type 7c that had become vulnerable to new means of Allied detection and attack.

Recently, on our 7th home-and-car exchange with a couple in Bremen Germany, my wife



Carleen and I had the opportunity to inspect one of these 'U-Boot' moored at Bremerhaven northern Germany.

For 3 Euros admittance we had the boat, the last remaining of its type and now a floating museum, to ourselves. We entered the bow compartment where the torpedoes and Control Room are (now used as an exhibition area) and worked our way through all sections to the rear. We exited near the two W.C's., for 52 men and 6 officers.

The Type XX1 was the most advanced submarine in the world. It could travel submerged continuously for speeds up to 17 knots using the snorkel ventilation system for the diesel engines. It had larger capacity batteries, and a streamlined hull. A rapid reloading system enabled all torpedo tubes to be reloaded within 15 minutes of firing. All in all a sharp and deadly weapon. Although they were in operation before the end of the war not one shot was fired from them in anger.

50-4-2-4-9-500



The U 2540 has an interesting history. It was launched in Hamburg in 1945 by Builders Blohm & Voss, the same company that launched the Bismarck in 1941 from the same slip- Nr 9. Today Blohm & Voss own two huge dry-docks in Hamburg harbour. The submarine was scuttled by the crew a few days before the end of the war, refloated in 1957 and entered service in the German Navy as a training boat named 'WILHELM BAUER'. In 1984 it was taken out of service and commissioned for the last time as a U-Boat museum at the excellent German Maritime Museum in Bremerhaven on the North Sea.

I was surprised at the generous space available for bunks etc. The vessel is 77 metres long and weighs about 1800 tons. The two electric motors have more h.p. 5,000 than the two M.A.N. diesels 4,000 h.p. each. The large hand-wheel I have controls the port propeller and a similar green one the starboard. Twenty torpedoes and 4 AA guns make up its armament. At the nearby Maritime Museum you can enter a full scale audio-visual room and experience what it was like standing watch on the conning tower of a 'unterseeboot' in rough Atlantic weather.

*Come up on the club net each Tuesday evening, 7.30pm local time, 146.450MHz FM. Don't forget to also listen on 28.470MHz USB.*



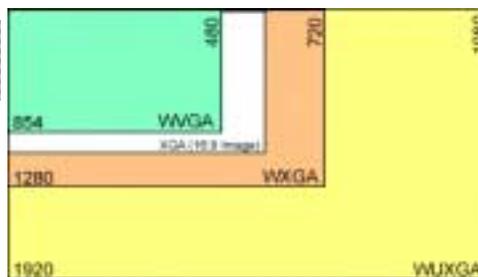
**HAPPY BIRTHDAY**

**To Peter VK3YSF on attaining his half century milestone of 50 YEARS YOUNG!!**

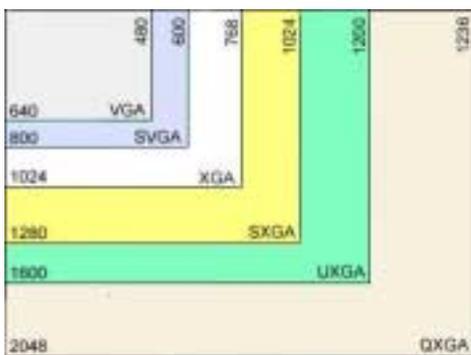
## UNDERSTANDING "MOVING PICTURES" Part 2 contributed by Graeme VK3NE

### Relative resolution pixel comparison.

This first graphic shows to scale, how resolutions compare for widescreen (16:9) Home Cinema projectors and a Video (4:3) projector in 16:9 aspect ratio mode:



This next graphic shows to scale, the difference between all the Video (4:3) projector resolutions:



### Input Signal Resolutions?

You may have noticed that our projector specifications state 1080i, 720p etc under Compatibility - HDTV but what are they? Separating the number from the letter "1080" refers to the vertical resolution 1080 pixels and the "i" refers to the signal being Interlaced ("p" is for progressive scan). Other signals are:

Signal	Resolution	Scan	Definition
1080p	1920 x 1080	Progressive	High
1080i	1920 x 1080	Interlaced	High
720p	1280 x 720	Progressive	High
720i	1280 x 720	Interlaced	High
576p	720 x 576	Progressive	Standard
576i	720 x 576	Interlaced	Standard
480p	640 x 480	Progressive	Standard
480i	640 x 480	Interlaced	Standard

### How does this apply to projectors?

Every projector has a 'native' resolution (sometimes called 'true resolution'). That's the maximum number of pixels it can actually project individually. So an SVGA projector can only display 480,000 pixels at a time.

There is a popular myth espoused by many projector salespeople that since an NTSC or DVD video signal is 480 lines, then an SVGA-resolution (600 lines) projector is plenty adequate to resolve all of the information in the video signal. "No point in buying an XGA machine," they say, "it's over-kill."

Those who promote this myth are sorely mistaken. But it is a prevalent belief, so it's an issue that needs to be addressed.

### The Difference between SVGA and XGA

As we said earlier most SVGA resolution LCD and DLP projectors have a physical matrix on their displays consisting of 800 pixels across and 600 down. That means there are 600 horizontal lines. XGA projectors have a physical display matrix of 1,024 pixels across and 768 down-768 horizontal lines. A quick calculation shows that XGA machines use 64% more pixels to display an image than do SVGA machines.

Anyone who gives it two seconds of thought will say,

"Hay, if the video signal has only 480 lines, then SVGA resolution has more than enough lines to display the video information. So stepping up to XGA is a waste of money—you can't squeeze any more info out of the signal."

**Wrong!** There are four issues that bear upon image quality that need to be taken into account: scaling, screen size/viewing distance, pixel visibility, and colour definition.

### 1. Scaling

If a projector displayed a 480-line video image in 480 lines, there would be no scaling. You would see a relatively pristine picture because you are viewing it without any unnatural scaling alterations attempting to stretch 480 lines of information into a 600-line or 768-line display.

By scaling a 480-line image up to 600 lines, the picture gets fuzzed somewhat since 480 lines of information cannot be stretched to fit across 600 lines as cleanly as it looks when displayed line-for-line. If the projector has a bad internal scalar, the picture will look terrible. But on most of the newest projectors the scalars are much better than they used to be. The net result is that the image on a good SVGA machine is reasonably clean but softer than it would be if displayed without scaling.

On an XGA machine, the 480 lines are scaled into 768. With the increased lines of resolution and 64% increase in pixel density, the scaling errors are smaller. There are more pixels available to approximate the original unscaled image. So the image is fuzzed less than it is on an SVGA machine. The result is that, side-by-side, an XGA resolution machine will generally deliver a sharper picture than will the SVGA.

Now please note, this comparison only holds for like technologies. For example an SVGA LCD unit will be less sharp than an XGA LCD. Or similarly, an SVGA DLP machine will be softer than its XGA DLP counterpart. Since LCD by its nature tends to be sharper than DLP for any given resolution, mixing technology types will confuse a comparison.

So. The bottom line is that XGA is capable of producing a sharper image than is SVGA, but not because it magically gets more out of the 480-line video signal. It doesn't. Rather, it is because the higher resolution XGA scaling softens the image less than does SVGA.

### 2. Screen Size and Viewing Distance

Your screen size and how far you sit from it is intimately related to image quality in this discussion. Assume you have an 8-foot wide screen and you set up two projectors side by side. Arrange them so they both have 4-foot wide images side by side on the screen and feed them both the same signal with S-video from a DVD player.

Now step back to view your demo from about 10 feet. Guess what? You won't see any difference in sharpness between them. The differences between them at that image size, and viewed from that distance, are too small for your eye to resolve. Now move these two projectors back so each of them fills the 8-foot screen. Then alternate the projected images by covering one lens then the other. From the same distance of ten feet you will see that the picture from the XGA unit is quite obviously sharper.

So. Part of the "image quality" question surrounding SVGA vs. XGA has to do with your screen size relative to your viewing distance. If you intend to watch movies at a distance of 1.5 times the screen width, you will definitely see a big improvement with XGA over SVGA. If you view at a distance of 2.0 times screen width, the XGA will still have an advantage in sharpness. If you view at a distance of 2.5 times the screen width you won't notice any difference at all worth paying for.

501-FTDX-401

To new member Trevor Close on the allocation of his callsign -

**VK3FTDX**

At this stage Trevor does not have a radio but odds in it would have to be a Yaesu when he does, given his call-sign. Perhaps an old FTDX401 or 501???

## The Cranbourne HAMFEST—a report by Johnno VK3FMPB and Rod VK3FRMT.

Saturday Morning the 21/7/07. Rod VK3FRMT and myself Johnno VK3FMPB, headed down to Cranbourne. Wilfred, VK3DWA our usual partner in crime is in Papua New Guinea for a while, so there was only the two of us this time.

The hall was fairly small for a large Hamfest. So I suppose you might class this as a smaller or perhaps a medium sized Hamfest. There just didn't seem to be much room around the tables to wander and also being due to the fact that there were quite a few hams in attendance.

There were lots of displays ranging from commercial shop displays, 2nd hand gear and private people who had 1 or 2 tables. The tables were placed against the walls and a couple of tables in the middle of the room. This is what led to the shortage of space. Perhaps the organisers didn't expect there to be quite the interest there was. I looked for the dipole making classes but to no avail. Pity that, I am sure there would be lots of new hams who would love to do some hands on stuff at these events. Maybe that is something we could do at the club?

I bought myself a couple of years of old Amateur radio magazines for a couple of dollars. I will troll through these and see if I can come up with any good simple projects to work on.

Rod bought a 12V battery, some coax, an Uninterruptible Power Supply and also picked up a real bargain in the form of a Yamaha keyboard for the princely sum of \$5. We were told a couple of the keys don't work, however I'm sure he will sort that out!

Before the raffle was drawn, Rod and I went over to the stand of G & C communications where he (Rod) picked up a couple of adaptors so he can connect the 2m walkie talkie he won at the Moorabbin hamfest, up to a J-Pole antenna. That's the one Bob (VK3EL) made for me and I have loaned to Rod. We like to share at WANSARC as you may see. My, my, we are a friendly lot aren't we?

We bumped into 2 club members - Trevor VK3FTDX and Dave at the hamfest so at least we had some other people to talk to. While I am on that subject, it is nice to see old faces that you might know from other events you will attend that are ham related. I bumped into a couple of WICEN blokes and a couple who knew me from the AGM or other Hamfests.

So you build up a collection of people you know and who you have a chat with at every event you go to. Then slowly and bit by bit you build up a group of people you are mates with and this group grows with each event you attend. Sort of like building a community around yourself. That is the main reason I got into ham radio really.

Cheers all.

*Johnno and Rod*

\* \* \* \* \*

### *Amateur Radio Licence fees rise*

ACMA has increased the cost of the amateur licence from \$58 to **\$61** with effect from **1 July 2007**.

The cost of amending an existing licence has not changed.

It is understood that where the old fee has already been sent to ACMA it will be accepted, and the next renewal date will be brought forward to a slightly earlier date to reflect the slight underpayment.

**ODD**

**SPOT**

### **EXCUSE ME DRIVER ?**

A panel reviewing astronaut health issues in the wake of the Lisa Nowak arrest has found that on at least two occasions astronauts were allowed to fly after flight surgeons and other astronauts warned they were so intoxicated that they posed a flight-safety risk.

The panel, also reported "heavy use of alcohol" by astronauts before launch, within the standard 12-hour "bottle to throttle" rule applied to NASA flight crew members.

A NASA spokesman declined to comment on the findings, which were obtained by Aviation Week & Space Technology.

So it may not be "Doppler" on your satellite signal!!!



## GET WELL SOON

Still a bit cold for **Max VK3ZCW** to venture down into the shack but club members thoughts are with you, Max. Won't be long before the voice is warbling on the club frequency of 146,450MHz.

And members before of a virus doing the rounds at present. **Mark VK3PI** dropped 4kg in 4 days—even Mark reckons this was a good thing but a hell of a way to lose weight!

Your magazine contributors this month include—  
**Chris VK3HGX,**  
**Graeme VK3NE,**  
**Johnno**  
**VK3FMPB, Rod**  
**VK3FRMT,**  
**Chris VK3FY,**  
**Mark VK3PI**

Thanks folks!

## WHAT ABOUT THIS ? Contributions from members

*Now that I have been issued with my callsign, VK3FTDX, I am looking to obtain a dual band VHF-UHF hand held. Has anyone used a Quansheng portable before? Any comments would be welcomed and if anyone knows where I could obtain one, all the better. Does anyone have any other information which may be useful in deciding on a model to buy? Contact me at vk3ftdx@yahoo.com.au*

From  
Trevor  
VK3FTDX

The Five Star DXer's Association (FSDXA) is mounting a DXpedition in September 2007 to St. Brandon. St. Brandon (also known as the Car-gados Carajos Shoals) is a group of about 16 small islands and islets on an extended reef in the Indian Ocean northeast of Mauritius.

From  
Chris  
VK3FY

The allocated callsign is **3B7C**. Up to twelve stations will be on air for around 18 days, including three weekends.

Emphasis will be on the Low Frequency bands, given the current state of the sun-spot cycle.

For more information on dates, frequencies and hours of operation, hop onto the following web addresses:

**3B7C:** [www.3b7c.com](http://www.3b7c.com)

**CDXC:** [www.cdxc.org.uk](http://www.cdxc.org.uk)



## Digital Panels replace analogue in light aircraft

The Airbus A320 was the forerunner of commercial aircraft to utilise digital instruments and at that time arguments raged as to the pro's and con's of digital versus mechanical instrumentation.

Now the focus is on light aircraft as more and more commercial and home built light aircraft sport the latest in digital instrumentation. Digital is cited as being more reliable, requiring less power, less prone to mechanical vibration and mis-alignment, are



lighter, can be more accurate, retain calibration tolerances and are easier to install.

Ah, progress!

From  
Mark  
VK3PI



**WANSARC is at**  
**[www.wansarc.org.au](http://www.wansarc.org.au)**  
**Or [www.wansarc.org](http://www.wansarc.org)**



**Graeme VK3NE (left) holds court for technical discussions as Peter VK3YSF (bearded) and Chris VK3HGX contribute to the white board mayhem! A great place for sharing ideas is WANSARC!**



**This month browse through the "ODDS AND SODS" box of bits and pieces. You too could take home a treasure for the cost of a gold coin donation—all proceeds to the club**

# WANSARC VK3AWS

**PRESIDENT:** Graeme McDiarmid VK3NE [vk3ne@wia.org.au](mailto:vk3ne@wia.org.au)

**SECRETARY:** Mark Stephenson VK3PI Telephone: 0400 443 218  
[vk3pi@optusnet.com.au](mailto:vk3pi@optusnet.com.au)

All correspondence to be addressed to the **SECRETARY: PO Box 336**

**RESERVOIR 3073**

## 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.

### Meetings

Building K, Northern Metropolitan Institute of Technology (NMIT), St. Georges Road, Preston (Western side between Bell Street and Cramer Street) Melway 18 E12 *PARKING at NMIT-Members please note that parking adjacent to the club room building K is illegal and NMIT staff WILL book any cars which are parked in that area. ALL members must park cars in the main car park to the WEST of building K. Just look for vehicles with lots of aerials!* Meetings held 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 like minded 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, WIA, ACMA, Melbourne Clubs, VK and Worldwide.

### Club Nets

146.450MHz FM each Tuesday evening commencing 7.30pm local time. Also monitor 28.470MHz on 10 metres USB.

**More Information:** **Website:** [www.wansarc.org.au](http://www.wansarc.org.au) **Email:** [wansarc@wia.org.au](mailto:wansarc@wia.org.au)

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

**NEXT MEETING FRIDAY AUGUST 3, 2007**

**Australia Post  
stamp here**

**GRAEME VK3NE on "Antenna Analyzers".**

If not delivered within 7 days please return to

WANSARC PO Box 336 Reservoir 3073