VK3AWS

WANSARC NEWS
December 2007

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Western and Northern Suburbs Amateur Radio Club (WANSARC)
Incorporated in Victoria
A7611S

A WIA Affiliated club

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

NEXT MEETING Friday DECEMBER 7, 2007.

The final meeting for 2007 will be our Christmas Dinner. This will be held at the NMIT restaurant, commencing at 7.30pm.

A sumptuous three course meal is on offer for $20.

More details in this issue of the magazine.

See you at the dinner!

Season's Greetings to you all and may Christmas 2007 be a safe, happy and healthy time.

May all your wishes and dreams come true in 2008.

Inside this issue:

HAARP contributed by Graeme VK3PGK

After 15 years of effort from multiple contractors and enduring multiple conspiracy theories alleging it is a "doomsday weapon," the world's most advanced high-energy radio physics experiment know as HAARP (High Frequency Active Auroral Research Program) was declared fully operational in a Wednesday afternoon ribbon-cutting ceremony outside the central Alaska hamlet of Gakona.

Built upon the site of a cancelled Air Force over-the-horizon radar site, the massive "instrument" as it is called, comprises 180 transmitter towers occupying several acres. The precisely placed and aligned towers dwarf the scrubby black spruce forest and look like a science fiction movie set piece. These high frequency transmitters work in close conjunction to precisely "heat" discrete areas of the Earth's upper atmosphere known as the ionosphere, which is located from about 30 to 500 miles in altitude. HAARP's focused radio transmissions temporarily increase the temperature and energy level of the ions and molecules in the upper atmosphere. This heating can produce spots of man-made aurora, though they pale in comparison to the power of the natural aurora and are visible only with sensitive night-vision cameras.

HAARP is jointly administered by the U.S. Defence Advanced Research Projects Agency (DARPA), the U.S. Air Force Research Laboratory (AFRL) and the U.S. Office of Naval Research (ONR) and is run by BAE Systems, the world's fourth-largest defence contractor.
Adjusting for inflation, approximately $300 million have been spent on the project since its beginning 15 years ago. Currently, annual operations run at about $7.5 million, which also funds the salaries of the dozen or so permanent employees. The mix of pure/academic ionospheric and auroral research to defence-related efforts is about 50/50. Each experiment, or campaign as they are called, is funded by whatever school, institution or defence agency conducting the campaign.

In the driver's seat of the HAARP (High Frequency Active Auroral Research Program) Control Room, ***Chief Physicist Mike McCarrick, (above)*** *from BAE Systems, explains how the massive high power ionospheric heater is controlled. The displays above him show how the high frequency radio beam is directed skyward from the array of 180 transmitting towers. The beam is rapidly steerable up to 30 degrees from the vertical.*

Though there are other radio-frequency research heaters located around the world, including the much smaller University of California HIPAS facility near Fairbanks, HAARP is by far the most powerful. HAARP was originally managed by ARCO, which was looking for an onsite way to use North Slope natural gas deposits to generate electricity to power the heater. That plan was shelved though HAARP is often confused with an enormous one-mile square heater designed by Dr. Bernard Eastland that would have used natural gas to power fire HF energy into near-earth space to create a global blanket of high energy electrons capable of frying any satellite or enemy ballistic missile flying though it as well as effecting changes to the weather (HAARP is not that machine nor does it emit a fraction of Eastland machines energy). HAARP uses five large diesel-powered generators to supply electricity to the transmitters. The heater has a broadcast power of 3,600 kilowatts, and within the narrow high frequency transmission band HAARP has an effective radiating power of over 7 gigawatts (billion watts). Housekeeping power is drawn from the local public grid.

While claims of HAARP being an offensive or defensive weapon have largely been discredited, the facility is being used for cutting-edge military-related research. The ionosphere plays a critical role in traditional long-range radio communications and HAARP experiments help in forging a deeper understanding of the near-Earth space weather environment that affects defence communications.

Photograph of the HAARP antenna array

Perhaps the two most important HAARP military efforts involve using the instrument to stimulate the ionosphere to produce extremely low frequency (ELF) transmissions. ELF, though unable to carry large amounts of data, is able to penetrate to great depths in the ocean and the earth. The U.S. Navy communicates with its nuclear-powered ballistic missile and attack submarines using ELF antennae buried in the ground and trailing from airplanes, and it wants to find and new and better ways to reliably produce ELF waves. The other ELF effort is called Earth Penetrating Tomography (EPT). Using HAARP-produced ELF waves, scientists have demonstrated that they can locate subterranean features and ore bodies -- this technology may prove to be able to locate underground enemy facilities and installations. Other possible HAARP applications might involve the detection of stealth weapon systems and to deny the communications and early-warning use of the ionosphere to future adversaries.

The future for HAARP looks busy as its research schedule is booked up at least through the next year. Though the ionosphere-heating instrument is complete and operational, researchers are working to obtain funding for additional diagnostic instruments, including a $50 million dollar incoherent scatter radar, which would help further understand the deeply complex and intricate nature of the ionosphere.

DON'T FORGET THE CLUB NET—Tuesday evenings 7.30pm on 146.450MHz ably conducted by your maestro,

BOB VK3EL.

CHRISTMAS **WISHES FROM OUR MEMBERS TO OUR MEMBERS……**

Ben Megans recently wrote to me and wishes fellow members the best for Christmas and the New Year.

Ben and Tonia travelled to QLD in June, returning in September. Ben unfortunately picked up a nasty bout of the flu and despite weeks of medication it is likely to be another 8 weeks before Ben is well again.

Thanks for the note Ben—all the very best to you and Tonia for Christmas and the New Year.

Class of September '07

By Rod Tacey VK3MRT (formerly VK3FRMT)

I had been thinking about upgrading from a Foundation to a Standard Licence for some time now. Then, back in August, I received an email from Amateur Radio Victoria, advising their next Bridging Course was coming up in September. I decided to enrol in the course and was accepted.

Classes commenced at 7pm on Wednesday 5th September, and the following 3 Wednesday evenings at Amateur Radio Victoria's office in Ashburton. A final class was held at North Box Hill on Saturday 29 September, then the exams on Sunday 30 September.

Kevin Luxford, VK3DAP, was our course instructor. He made us all feel welcome and his teaching style was relaxed yet effective. We went back to basics, covering subjects such as voltage and current – mains and DC, Ohm's Law, power, capacitance, resistance, inductance and so on. As the course continued, we covered tuned circuits, transmitters and receivers, transmission lines and antennas, propagation, interference, measurements and safety.

Left to right, Phil, David Munro VK3VPZ, Graham Koch VK3PGK, Ben Fries VK3MBF and Rod Tacey VK3MRT

At times it was heavy going – there was a lot of material to cover. However, Kevin was always happy to help with any problems and where necessary go over difficult concepts again where required. We were also provided with plenty of study material.

There was a great camaraderie amongst my fellow students – Graeme, Ben, David and Phil. For example, Graeme and I would bounce questions off each other after class on the way home.

On the Saturday Kevin wrapped up the course and answered any remaining questions. Sunday morning, prior to the exam, we got together beforehand to ask each other questions.

At the appointed time, we commenced our exams – Standard Theory, followed by Regulations. I was very confident about the Theory, however, I wasn't so confident about the Regulations (I found out later I did make some silly mistakes in the Regs). Once the exams were over, we waited outside the hall for them to be graded.

We all passed our exams with the exception of Phil – who narrowly failed. However, I'm very glad to report Phil passed his exam the following weekend. A couple of weeks later, I found out via the ACMA website my new callsign had been issued – VK3MRT. I'm very glad I now have my Standard Licence.

To conclude I though the course was very good – I recommend anyone thinking about upgrading to a Standard Licence consider this course. Providing you put in the effort, ie additional study between classes, you should pass!

One last note – I'd like to thank Graeme for giving me a lift to the city after class, and also to and from

WANSARC CLUB DINNER , DECEMBER 7, 2007 AT ST GEORGES, NMIT

One of the toughest decisions for your Committee this year has been the choice of menu for the WANSARC club dinner, however the democratic process has been concluded with the winning choices listed below.

The dinner will commence at 7.30pm at St. Georges, the NMIT restaurant. Details of the location are on our website but really, you can't miss it. As you are leaving club meetings to go to St. Georges Road, St. Georges is on the left hand side prior to driving past the security gates. The restaurant has ample parking. So make your way into NMIT as you would for a meeting night and then head out—the restaurant car park will be on the left.

Three Courses $20.00 for club members and their friends/partners
(entrée, main and dessert with coffee or tea inclusive)

ENTREE

- Smoked SALMON and lime cream with a herb salad layered between pastry crisps
- CAESAR salad - crisp bacon, croutons and cos lettuce with a creamy dressing

MAIN

- Roast golden TURKEY with cranberry sauce and a bacon and pistachio stuffing

served with hassleback potatoes, beans, broccoli and carrots

- Pan-fried marinated LAMB with fattoush, mint yoghurt dressing and flat bread

DESSERT

- Mini PAVLOVA topped with brandied cherries and toasted coconut
- Traditional Christmas PUDDING with rich liqueur custard

Now note that generally the restaurant serves alternate choices at a table, so one person will receive Smoked Salmon and the next salad. You may have an opportunity to swap what is delivered to you with someone else on your table, or by smiling sweetly at the waiter/waitress and asking for a change.

Raffle prizes will again be available and the Committee thanks Dan VK3DWH and his lovely wife for the donation of a traditional Christmas fruit cake.

If you have not already indicated your ability to attend please contact Mark VK3PI at vk3pi@optusnet.com.au.

And if you wish to bring a friend from another club or someone interested in amateur radio by all means do so—some vacancies still exist for the night.

The first WANSARC event for 2008 will be the "FAMILY DAY".

This is a great opportunity to bring family and friends together for an informal BBQ. Details will be forwarded to members in a mail out in January, however in the interim mark JANUARY 20, 2008 as the family day date.

QSL CARDS AND PHOTO'S WANTED……

In 2009 WANSARC will celebrate its 40th birthday and your Secretary Mark VK3PI is collating information to produce a history of WANSARC.

This history will focus on the people who have made WANSARC what it is. To assist in compiling this history 2 blank QSL cards would be appreciated (one spare in just in case).

So if you have a QSL card, please provide a couple to Mark VK3PI.

Similarly if you have any photo's from WANSARC of old, we would love to see them and scan these for the history.

Email Mark VK3PI at VK3PI@optusnet.com.au

Thanks to Alan VK3SM and Laurie VK3DPF for their contributions.

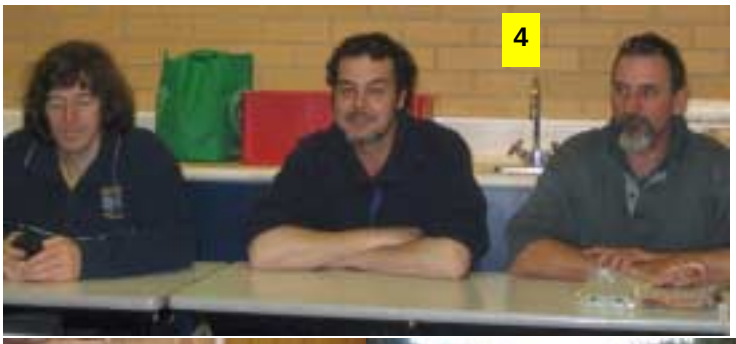
WANSARC IN 2007

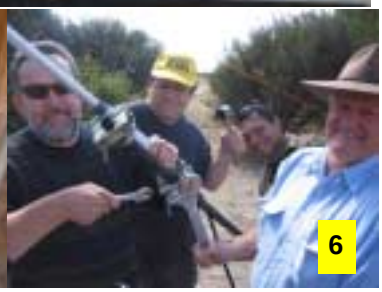
I guess if you had to describe WANSARC we are a group of amateur radio enthusiasts who enjoy a bit of technical work, some social networking, sharing knowledge on a range of topics and most of all having fun doing it.

With such diversity it is no wonder that our membership is growing and it is remarkable for a club of 45 or so members that we continually have more than 50% of our members attending meetings.

So what shall we remember of 2007:

- On a sad note the passing of Bert VK3BH and Jock VK3UB, both long time members and supporters of the club.
- WANSARC 1st in the John Moyle Field Day 6 hour section—a great effort!
- John VK3FMPB and his "posse" of Rod VK3MRT, Trevor VK3FTDX and Dave VK3FXDX "raiding" hamfests across the state.
- The popularity of the club net under the direction of Bob VK3EL.
- The camaraderie amongst club members.
- And finally Peter VK3YSF jumped borders and became a "sandgroper" - he is now VK6YSF.





So what will 2008 bring for WANSARC?

Rest assured with the same enthusiasm shown by members in 2007 the club will continue to prosper.

WANSARC will again compete in the 2008 John Moyle Field Day and Rod VK3MRT has offered to conduct some Syntrx workshops to further advance the conversion program of these UHF radio's.

For now, a MERRY CHRISTMAS and HAPPY new YEAR to our members, their families and our supporters.

Photographic roundup—1. L-R John VK3FPRC, Geoff VK3AVJ, Gordon VK3YOD and Russell VK3BMR discussing Syntrx mods. 2. John VK3FMPB hassles a hamfest trader. 3. Bill VK3KBL on ATV 4. Three wise monkeys—Tony VK3JED, Dave VK3FXDX and Trevor VK3FTDX. 5. Dan VK3DWH cooks up a storm at the 2007 John Moyle Field Day. 6. Peter VK3YSF (now VK6YSF), John VK3FMPB, Wilfred VK3DWA and Graham VK3NE preparing antennae for the field day.

FROM YOUR MAG EDITOR

It has been a pleasure to produce the club mag again this year, mainly because of the incredible increase in articles submitted by members of our club.

Hopefully the magazine has provided members with a broad range of interesting articles and it is hoped that the availability of "home grown" articles will continue in 2008.

Thanks also to those who have thrown their hat in the ring to produce the magazine in 2008.

73 de Mark VK3PI

WELL DONE!!

Chris VK3FY is a proud parent to his boys Nik and Norman. Both are now representing Keilor in the representative basketball competition on Friday nights.

And just to keep it in the club, Kate, 14 year old YL of Mark VK3PI is also playing rep basketball for Darebin.

An excellent effort and both parents are now travelling long distances on Friday evenings!

Your magazine contributors this month include—**Ben Megens, Chris VK3KQU, Mark VK3PI, Graeme VK3PGK,**

Thanks folks!

WHAT ABOUT THIS ? Contributions from members

From Chris VK3KQU

Hello all,

Just wanted to let you all know that everything in Canada is going well and that I look forward to coming back to a club meeting in February or March. The semester here is getting towards the business end of things and the classes are really starting to get busy. The university here in Ottawa has got their own IC fabrication lab and as part of one of the courses I am taking we have designed and layed out an entire nMOS computer chip.

Testing it is coming up in the next few weeks. Just one of the very nice pieces of equipment they have here.

All the best for Christmas to all the members and I look forward to joining you all again early in the new year when I return to Australia.

Thankyou very much and 73's to you all—**CHRIS VK3KQU in VE land**

DO YOU HAVE INFORMATION OR AN ARTICLE YOU WANT TO SHARE WITH MEMBERS?

Why not write it up for the magazine in word format, with pictures, and send to the club:

WANSARC PO Box 336 Reservoir 3073.

It's your magazine!!

Looking ahead to 2008 the club will be hosting a presentation from D Star experts. D –Star is certainly creating a wave of interest in the amateur fraternity. Also of interest to aviation enthusiasts is A-DSB, a data format used by aircraft to transmit callsign, altitude, bearing and speed information.

A-DSB decoders are available and next year you will have the opportunity to see A-DSB equipment in operation.

WANSARC is at www.wansarc.org.au 0r www.wansarc.org

WANSARC VK3AWS

PRESIDENT: Graeme McDiarmid VK3NE vk3ne@wia.org.au

SECRETARY: Mark Stephenson VK3PI Telephone: 0400 443 218 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 **Email:** **wansarc@wia.org.au**

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

Friday DECEMBER 7, 2007

WANSARC DINNER AT NMIT "St. Georges" 7.30pm

Australia Post stamp here

If not delivered within 7 days please return to

WANSARC PO Box 336 Reservoir 3073