SHEPPARTON & DISTRICT AMATEUR RADIO CLUB

Founded 1979 Incorporation No A6677 P.O. Box 692, Shepparton 3632

VK3RGV repeaters and transmitter operating frequencies

53.725MHz (1 Meg offset), Operational.

146.65MHz (600 kHz offset), Operational.

438.2MHz (D-Star) Off-air (to be re-installed) *.

438.650MHz (7 MHz offset and 91.5 Hz tone access only), (Operational)

439.775MHz (5 MHz offset), (Operational, IRLP to be fitted)

(*) These services will be back on air once refurbishment is complete.

Access to most analogue repeaters is by sub-audible 123 Hz tone or noise/carrier mute (less sensitive).

Club Network informal on air get togethers - Wednesday evenings. All welcome. Club call sign VK3SOL:-

2mx repeater 8.00pm 146.650 MHz, 3.63 MHz ± interference 8.30pm.

Meetings are held at 1 pm on the first Saturday of the month (except January when no meeting occurs) at the Mooroopna Scout/Guide Hall off Echuca Road, Mooroopna. Variations in these times, days and location are normally notified in the preceding newsletter.

Website – www.sadarc.org Face book - www.facebook.com/sadarc.org Info for the page contact Denny French on **denny3782@gmail.com**

Note: Want to get your licence? SADARC has examination assessors, contact the secretary for details.

The vintage radio club (including SADARC members) have a sked at 11.00am Sunday on the 2 mx repeater.

The following repeaters do not belong to our club but provide good signals for many members.

Mount Major VK3RDU repeaters and TX operating frequencies, 146.850 MHz and 439.875 MHz

UHF CB Repeater Mt Wombat Channels 3- 33, 476.475 MHz (Out of service) * 21/01/2019

DISCLAIMER. No guarantee is given as to the accuracy of information in this newsletter. **Warning:** - There is a danger of electrocution or injury when working on electrical/radio gear or working at heights doing antenna work. You do so at your own risk.

President: - Peter Rentsch	VK3FPSR	pages.cobram@bigpond.com
Secretary: - Andy Ashley	VK3AJA	vk3aja@wia.org.au
Vice-President: - Barrie Halliday	VK3KBY	
Treasurer: - Graeme Martin	VK3FCVT	vk3fcvt@vk3fcvt.com
Membership Sec: - Graeme Martin	VK3FCVT	"
Webmaster: - Ray Gardner ray@etheira.net	VK3YNV	Publicity Officer: - Vacant

Communications Managers (External Events):- Bruce (VK3PNF) 0427 715 663 & Darren (VK3HEN) Glasson

Tech. Committee: Geoff VK3ZNA, Ray VK3YNV & Rodney VK3UG

Newsletter: - Rodney VK3UG (Editor) rodlynn6@bigpond.com Peter & Andy (Printing/ Distribution)

Radio Australia and the Northern Australia Short Wave Services

Nigel Holmes VK3DZ was the frequency, antenna direction and time of day assigner for Radio Australia. His job meant that he was able to provide the best combinations of frequency, antenna, antenna direction and finally when these various combinations could be used for maximum effect into the target regions. I can remember the transmission program for one transmitter. Early in the morning it would be beaming to the eastly direction on 21 MHz. As the day progressed the antenna used was pointed in a northly direction and finally late in the day the antenna used pointed into the North West and the frequency was lowered. Eventually it ended up on 6 MHz and then in preparation for the next day it was pointed to the East again on 21 MHz (actually either 21.725 or 21.740 MHz not in the amateur band).

Nigel has put a post onto a site called **SWLing Post** which is well worth a read and it is accessible on https://swling.com/blog/2018/11/editorial-nigels-take-on-restoring-abc-shortwave-service/ On this site Nigel discusses his thoughts on a revival of the high frequency inland service for the people in the northern parts of Australia. It might be noted that the Labour Party has given an indication that it might resume such a service if it is elected as the Commonwealth Government at the next election. It would be good to have **Radio Australia** reinstated too. Nigel's idea would mean that Shepparton would be the site for the N**orthern Australian service** as well as **Radio Australia** should it be revitalised.

Our club's representations to Peter Schwarz and to the Deputy Prime Minister Hon Michael McCormack seem to have got lost. A few days ago I provided a copy of our original submission as requested by the Deputy Prime Minister's secretary.

Note that the 5055 kHz station run by 4KZ is now running at 1.2 kW. More info email Al at al@4kz.com.au

Hard at work installing a replacement UHF CB repeater antenna in November At the repeater site on Mt Wombat. VK3YNV, VK3ZNA, VK3BPH & VK3UG

Repeater News

- On the 29th November 2018, Ray VK3YNV, Josh, Geoff VK3ZNA, Kevin VK3BPH and Rodney VK3UG travelled to Mt Wombat to continue the refurbishment of the site. The 7 meg split (438.650 MHz) repeater was returned to service. The 5 meg split (439.775 MHz) repeater had its defective binary antenna replaced with the old refurbished 2m/70cm standby antenna. The signal strengths of both services are approximately the same and performance is good. Other planning work for the site is continuing. A replacement antenna was installed for the UHF CB repeater. The UHF CB antenna is aligned such that it is in line with the 5 Meg split antenna so that the vision from the fire control hut is not further obscured. The CB repeater is still off air at this stage.
- The UHF CB FM828 repeater has a problem of internal de-sensing which has proven to be difficult to pin point so it is expected that another FM828 will be modified to do the job. Work is also being done on the cavities investigating methods to obtain greater notches in their characteristic whilst retaining minimal insertion loss.
- Occasionally, particularly in summer, we get amateurs from some distance away accessing our repeaters. In mid December I had a chat with a VK8 in Darwin via our 6mx repeater. The contact wasn't good with rapid fade, but my conclusion was that our repeater was hearing him better than he was hearing the repeater. This repeater is a very good repeater thanks to Phil VK3ELV's work the dual side-mount dipoles and the Digital Signal Processing on the audio.
- It amazes me that stations will put out a general call on a repeater and if they are not answered with a few seconds and I do mean within a few seconds they close down or go to another channel. They will not wait a reasonable time; say a minute or so, to see if someone is able to get to a microphone to answer them. To me this is very bad manners, I'm certainly not going to sit at my rigs with my hand on the microphone to answer a call – I have other things to do in the shack which means I will answer within a short period of time. How many others have experienced this?

Editor's Ramblings

- On the 1st December our club and the Vintage Radio club had their combined end of year luncheon at the Royal Mail Hotel in Mooroopna. In all there were 38 folk present from the two clubs with 12 ladies attending. President Peter thanked members of SADARC for the successful year we have had and wished all members a Happy Christmas and New Year. Several awards were presented to members who did not hold a committee position within the club in appreciation of their efforts to make the club the club it is. Members arrived around midday and the last to leave departed around 3PM after very fruitful discussions on all sorts of matters both radio and otherwise.
- It has been suggested by Ray VK3YNV and supported by Rodney VK3UG that we should look at the possibility of revamping "fox hunting" as a fun activity. Many years ago this was a very popular club activity in many amateur radio clubs. I remember the late Bill Rice and his elaborate direction finding system mounted in a normal sedan. A hole had been cut in the roof of the sedan (a bit drastic but some did those things) and a directional antenna was mounted on a rotating assembly controlled from within the vehicle such that with the exotic equipment of the time Bill was able to observe the direction of the hidden "fox" transmitter on a CRO screen. Bill's activities occurred in the 1970's and more elaborate automatic systems have been developed since.
- Allied to "fox hunting" we could plot the radiation pattern and coverage of our repeaters, and even Drones could be considered to plot the vertical radiation pattern of the repeater systems and also

our home systems. Food for thought, after all we are groups of experimenters and even the smallest work on an antenna system is an experiment to get better performance.

- Have any members come up with any ideas on what the unusual valve like items shown in the November Newsletter might be. I'd like you ideas – just email me with your thoughts.
- Since our last official meeting and the time lapses until the next meeting I have provided some notes to Andy to pass on time critical news for members by email.
- The summer period is the time for devotees of the 6 metre band to have a ball. Over this time since December a number of our members have had extremely good contacts into other states both on 53.725 MHz (repeater) and at the bottom end in the 50 to 50.2 MHz area where SSB is the current way to go. A number of signals were so strong that a whip antenna and just a couple of watts of RF achieved very good results. Digital modes are achieving even better results. Give 6 mx a go – a band of surprises.

MURRAY QUAD 2018-11-24/25

SADARC were invited again to assist Tim Roadley with the Murray Quad, this time it was organised under a different format and to be run over two days, the 24th and the 25th of November.

On the Saturday the canoe section was held from Thompsons Beach Cobram along the Murray to the Tocumwal Town Beach. The foot race section was on the Sunday starting at the Yarrawonga Rowing Club and running along the foreshore of lake Mulwala to the bridge and back to the Rowing Club at the start and finish lines.

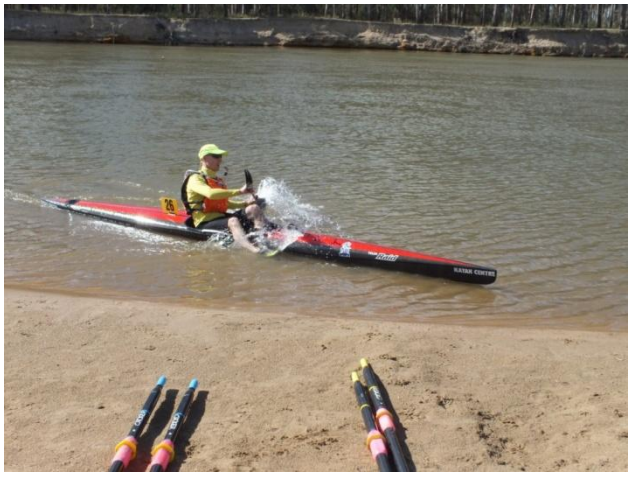
There were 23 canoes on the Saturday and over 100 runners took part in the Sunday foot race.

Darren VK3HEN and Bruce VK3PNG arrived at Tocumwal about 4pm on the Friday and Andy VK3AJA arrived soon after where we set up our caravans at Tocumwal Town Beach. Saturday Graeme VK3PGK, Peter VK3FSPR and Mark VK3KMF arrived at the Town Beach Tocumwal to get their radio positions for this canoe event. After receiving directions to their various check points Andy, Graeme, Mark and Peter travelled to their appointed positions ready for the start at 3pm. Graeme was at the starting line at Cobram, Darren and Bruce at the finishing line at Tocumwal Town Beach and Andy, Mark and Peter were at various positions on the Murray between Cobram and Tocumwal. This event started at 3pm and finished at around 6.30pm.

Reception to all radio points from the start to the finish was excellent and we were able to track were every canoe was via our radio network at any time from the start to the finish of the race. We used the 147.200 Yarrawonga repeater for this event. After the last canoe arrived at the finish line we packed up and travelled to the Rowing Club at Yarrawonga to get ready for the Sunday foot race. Bruce and Darren, Andy, Graeme and Mark stayed at the Rowing Club on the Saturday night ready for the Sunday event.

Sunday an early start at 7.45am. Darren and Bruce set up base at the start and finish at the rowing club, Peter was at the turn around point at the Mulwala Bridge, Mark, Graeme and Andy at various drink stations along the way. It was a complicated route and a few of the runners had trouble keeping to the route that was mapped, apart from the few who had problem finding their way it was a successful event. Part of the proceeds from this Sunday event Tim is going to donate to Heart for Kids.

Once again our radio communications part of this Sunday event was very good; we had excellent reception from all check points both days. For this Sunday event we used simplex 146.500.
An enjoyable and successful weekend by all the SADARC members who took part.
Bruce VK3PNG and Darren VK3HEN.



A Murray Quad competitor

Darren VK3HEN handling safety communications

At the end of year get together 1st of Dec.

The technical gurus lunching and discussing tech matters.

Presidents Report January 2019.

Karen and I hope you all had a good Christmas and a Happy New Year. We had a quiet Christmas Day, just Karen and I on our own but then the hordes arrived Boxing Day and we then started our real Christmas. It was great to have all Karen's family at our house for Christmas. It was especially good to see our newest Granddaughter who is 15 months old and lives in Singapore. We have not seen her since she was 6 weeks old. A most enjoyable few days with family.

I hope Santa was good to you and brought what you wished for. No Radio equipment this year at the end of my bed but a 3D Printer was found on the back seat of my car. Obviously he could not get down the chimney with it so that was the next safest place. I have been learning how to use this device and having a bit of fun with it.

As you all would be aware we were to meet at our new test venue in November but this meeting was cancelled due to the passing of John VK3PXJ. Consequently we will now meet at this new venue for our February meeting. So, the meeting will start at 1.00pm followed by Ray Gardner speaking on how to use an Oscilloscope in Amateur Radio. Coffee and Tea facilities are available on site so we can partake of some refreshments as well.

At the conclusion of Ray's presentation I would like to reconvene for 5 Minutes to discuss the venue and the pros and cons of this location. I am still very keen to get our own building of some description that we can call our home. A decent room for the shack, a convivial area for coffee etc and a flexible meeting area for the meetings, project work and training. I don't want much I know but one can only dream.

You may recall last year I attempted unsuccessfully to choose a date with suitable weather for our get together with BAREC at Goulburn Weir. In fact if my memory serves me correctly I resigned from that responsibility. We need to discuss this as it is normally held in April but last year was in March to "hopefully' have better weather

That's it for this month and I look forward to seeing you all on the 2nd February.

Peter – VK3FPSR
President – SADARC

Calendar

2nd February – Regular Meeting to be held at Vision Australia venue in Channel Road, Shepparton with Guest Speaker – Ray Gardner. Topic – How to use an Oscilloscope

2nd March – Regular Meeting

6th April – Regular Meeting

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The International Space Station

It whizzes around above our heads several hundreds of kilometres away. It is easily seen and is quite bright being brighter than any other point of light other than the moon. To know where to look check various web sites for information of when and where to look in the early evening or just before dawn. Why am I telling you this? A friend of mine Tony VK5ZAI has worked with both the Russian MIR space station and the International Space Station providing communications from astronauts/cosmonauts and school children at various schools throughout the world. Yes, I did say throughout the world. On the 23rd of this month (a day or so time) he will be conducting a hook up/sked with Ashbury College, Ottawa, Canada. I have down loaded some of Tony's information for your interest as follows.

Australian Satellite Earth Station for ARISS

J.A. (Tony) Hutchison VK5ZAI

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21 January, 2019

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I thought it may be of interest to you that I have been working with NASA and most of the space Agencies around the world for over 25 years now, although receiving little acknowledgement from Australia over the years I have been presented with awards from Roscosmos, in Russia, the European Space Agency, and received an engineering Award from NASA. in 2006 during this time.

Growing up in the Tatiara district I became interested in Electronic Engineering at an early age and became involved with space communications and satellites in 1965.

In 1988 we moved up to the Riverland and I became involved with manned space flight with the crew on the Mir Space Station. Always interested in involving students in STEM I asked Alex Serebrov the cosmonaut on Mir if he would be prepared to answer questions from the Loxton High Schools science students and he agreed. This took place on 27th August 1993. From this grew an interest around the world in the educational work I was doing with students.

In around 1998 with the International Space station being developed I joined with a group of NASA engineers from the Johnson Space Center in Houston and was a founder an educational group sponsored by the NASA education Office called ARISS, (Amateur Radio on International Space Station).

Our intentions were to make our small group available to students around the world to apply through us for a formal radio linkup to the ISS and ask questions to the astronauts on board what experiments etc they were doing. I am a foundation member and was appointed one of nine approved satellite stations around the world to link to the ISS.

Over the years we have made it possible for tens of thousands of students around the world to speak to astronauts as they circle the Earth and to ask educational questions about life in space. This has included many Australian Schools over the years. Recently on Sept.12th 2018 the Walford Anglican Girls School in Adelaide had their turn. In January 2019 8,000 + scouts will be taking part in the Australian Jamboree and camping at “The Bend” for two weeks. I was asked by the scouting commission six months ago if I could arrange to have an astronaut speak to them and answer scouts questions. I have arranged this to take place on Sat. morning 12th Jan. at 10:30 am S.A. Summer time; Astronaut Mike Fossum will answer their questions. Mike is a Scout Leader in the US.

Over the 25 years I have been setting up these school educational links on a voluntary basis I estimate it's cost me around $50,000 personally – not cheap. Unfortunately despite asking our past Federal and State Governments for a small grant to continue this work I have been told what a wonderful program we are running but no money is available.

NASA realize that today's students are tomorrows Engineers and Scientists however the past governments don't seem to be able to see that far ahead. Hopefully now that Australia is building a Space Agency this will change.

Over the 25 years I have done 110 scheduled linkups between the ISS and schools or astronaut families into around 15 different countries that I've kept records of however there would be double that number of times I've had personal QSO's with the crews on board.

A rundown of Tony's station. For Satellite work the antennas are a 10 turn helix for 2m. and a 20 x 20 crossed Yagi for 70cm. both have preamps at the base. Between these is a 1.2m dish for 2.4 GHz digital HamTV from the ISS. I'm using a patch antenna at the focal point feeding into DEM preamp then into a Kuhne down converter to a MiniTiouner by F6DZP. Picture is processed on a quad core computer then fed to the British Amateur TV site for all to see. Unfortunately the HamTV TX on the ISS isn't working at present and has just been returned to Earth for repairs. The satellite antennas are computer controlled by SattraK free standing computer.

The EL, AZ rotator assembly is all "home brewed" and is driven by 2 windscreen wiper motors through gearboxes. I built this up when living in the Riverland in 1990 and its survived 2 moves since and has been in service ever since. Apart from general service and maintenance I have had to replace both motors once. Originally I used pots for the position feedback to the computer; however the accuracy was not good enough for the 2.4 GHz dish so I have now installed magnetic encoders.

For the audio to and from Mir and ISS and also the other satellites I originally used an FT-736 with a few mods for 9600 baud work, then around 12 years ago I upgraded to an FT-847. These radios are interfaced with a home brewed phone patch and drive two "home brewed" amplifiers. Apart from the antenna system the whole satellite station is doubled up in case of failure and a 240 volt alternator can be on-line within a couple of minutes should we have a power failure.

For DX I use long Yagis for 6m 2m and 70cm at around 50ft. high. DX is a bit of a joke as I don't get on much now unfortunately.

I do work the HF bands a little, I have an FT-1000MP and also an IC-7300 the antennas I use are inverted V's again around 50ft high.

Apart from my ham gear I am an official Coast Guard monitoring station and licensed for HF SSB through to VHF. I also run an AIS station for tracking shipping around the world.

Unfortunately age is starting (maybe it has!!) to catch up with me, my main passion has always been construction however, although I have a good mechanical and electrical workshop I don't use it as much as I used too. I was licensed in 1960 when you had to build your own ham gear to get on the air. I can still remember the thrill I got when I heard voices coming from the 10 valve RX I built just before I got my license, then the rush to build up a 2m. AM transmitter then I got the ticket.

TOP – Tony's Steerable VHF, and UHF antenna systems BOTTOM – Tony's general purpose amateur station and ARISS control station