



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

**Repeaters VK3RGV Freq: 53.725MHz (1 meg offset) -146.65MHz(IRLP Node #6992) (600 kHz offset) - 439.775MHz (5 MHz offset) - 438.2MHz (D-Star) [D-Star not operational at this time]
Access to the analog repeaters is by sub-audible 123 Hz tone or noise mute (less sensitive).**

**Club Network informal on air get togethers. All welcome. Club callsign VK3SOL:-
Wednesday - 7.00 pm 3.62 MHz ± interference, 8.00pm 2mx repeater**

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. You do so at your own risk.

President:- Peter Rentsch (Temp) VK3FPSR Vice President:- Vacant
Secretary:- John Waters VK3PXJ Treasurer:- Greg Keegan (Temp) VK3POP
Membership Sec. :- Pat O'Shannessy VK3OV Newsletter:- Peter VK3FPSR & Rodney VK3UG
Technical Committee:- Phil VK3ELV, Ray VK3RW, Geoff VK3ZNA & Rodney VK3UG

October 2014 Newsletter.

Presidents Report October 2014.

Our October meeting was well attended as was the AGM. Good and lively discussion was held on numerous topics during the meeting which was great to see. Greg presented us with a report in regards to the financials for the Hamfest and again we made some money for the Club to use on projects. Our profit was down a little on last due to a change in the processes for the catering but door takings were up. This reduction in profit was expected but I am still very happy with the outcome for the day. Well done to all those members who contributed to the Hamfest in any way.

The AGM went well until we arrived at the time for the election of office bearers. After three years as President I felt it was time for me to have a break as I other things that I need to do and as my work has changed I do not have the time to allocate to the running of the Club. Nobody was prepared to take on the role of President so as an interim measure I will fill in until the February meeting but I WILL NOT and CAN NOT continue after that. If nobody steps forward to take on the role then the Club will have to go into recess.

Earlier in the year I suggested that we broaden out the scope of the Club to include Electronics and Computers as both these disciplines are now a large part of Amateur Radio and there is a cross pollination between the three areas. Arduino and Raspberry Pi are used very frequently in Amateur Radio. The ARRL has just published a 300 page book on using Arduino in Amateur Radio and the Canadian developers of IRLP have now put together an IRLP Node using a Raspberry Pi instead of a regular computer. These technologies are changing the face of Amateur Radio and we need to allow that to occur within our own ranks. If we restrict ourselves to Amateur Radio only then we will not have sufficient members to take on the roles required to keep the Club going. One of the reasons that I suggested earlier in the year that we go down this path was so as we could increase our membership so we don't run into the problem that occurred at our AGM.

The Bendigo Amateur Radio Club now incorporates electronics, the recent Hamfest at Keilor had displays of electronics and the Hamfest last weekend in Ballarat also had an electronics area demonstrating LED lighting, 3D printing and even the use of transponders on a working slot car track. The Ballarat group, from comments made to me intend to broaden out further into the electronics area next year and make the whole event more open to the public. By doing this they broaden out the interest group that may attend, they collect more door takings, the traders sell more products and hopefully everybody is happy. They still retain ownership of the event as they manage the whole show but some excitement is created by what's on show.

Our Christmas meeting will be Lunch on Sunday 7th December at the Mooroopna Golf Club from 12.00 noon on. Cost of the smorgasbord lunch is \$17.00 per head. John VK3PXJ has booked the venue and we will be joined on the day by members of the Vintage Radio Club of North East Victoria. A great day was had last year in Benalla and I am looking forward to the joint luncheon again this year.

Our next Club meeting will be a more social gathering with a BBQ luncheon followed by a good chin wag. The Club rooms will be open from 11.00am onwards with BBQ being fired up at about 12.00 noon. Both Trevor VK3ATX our current Vice President (he has changed his mind and is prepared to continue the role of Vice President next year) and myself will be apologies on the day.

That's it for this report and I look forward to seeing as many of you as possible at the Christmas gathering at the Mooroopna Golf Club on the 7th December.

Peter – VK3FPSR
President – SADARC

Minutes of SADARC October 2014

Open 1.00

Present,

vk3hen,vk3fpsr,vk3dsf,vk3ov,vk3fbng,vk3faln,vk3hbw,vk3cop,vk3on,vk3pxj,vk3kby,vk3bph,vk3u
g,vk3kug,vk3eb,vk3atx,(vk3dmo Doug visitor)vk3pop.

Apologies,

Bill Crocker, vk3vce, vk3fjhm, vk3geb.

Previous minutes accepted as correct

1st vk3atx, 2nd Vk3faln.

General business,

JOTA will be along the same lines as last year. Start up will be around 2pm and Finnish around 10 pm. At this stage Allan, Darren, Kevin and Ron will be helping on the day.

The Xmas lunch will be held in Shepparton this year with the Vintage radio club At this stage it will be on the 1st Sunday in Dec. John will be making enquiries with the RSL for prices and availability. At this stage the tri band beam has not been installed but will be happening soon .Some repairs are required to the high lift truck first.

Finance Report,

As per sheet handed out.

1st vk3pop, 2ndvk3cop

Technical Report,

The 6 mtr antenna is still to be installed and the DStar is still to be decided on what to do with it. New batteries have been looked at after a lightning strike caused a power supply fault that damaged the batteries.

2 motions were raised at the last meeting 1st was on the installation of the 2nd 6 mtr antenna giving authority to the technical committee to decide to best way to do this.

All members were in favour of this.

2nd motion was to let the technical committee decide on the best value for money on replacement batteries for the repeater on Mt wombat.

1stTrevour, 2ndRon.

All members were in favour

A motion was raised on the day that we should sell the DStar repeater as it had been unusable for a long period of time. This was amended to reinstall the DStar repeater as a digital repeater without internet connections. 1st Darren, 2nd Allan.

All were in favour.

Peter has sent thank you letters to the businesses who donated items for the hamfest raffle.

Comments From Rodney

The normal meeting of the 4th October was held with considerable discussion on replacement batteries for the repeater site and the mounting of the 6 mx antenna on the lattice mast. A working bee was held on 11th October to finalise the mounting of the 6 mx antennas and to tidy up the site. The 3 element HF beam is to be reinstalled ASAP at the club rooms.

It was decided that the costs of running the D-star with internet connection was too great considering the amount of use the repeater gets. Some considered that we should sell the repeater, however, it was decided that the repeater be reinstalled purely as a digital repeater as soon as practical.

It was noticed that the 50' tubular guyed mast on the club room roof had been vandalized with around a third of the guys disconnected so that the turnbuckles could be stolen. Kevin VK3BPH and Trevor VK3ATX re-attached the guys. The vandalism was reported to the police. It might be time to consider whether the 50' mast is needed at the club rooms as all services that use the mast would work well with a much smaller supporting mast.

The AGM was held after the normal meeting. Peter VK3FPSR was re-elected as president only until the February meeting as he has heavy work commitments. The vice-presidency is vacant, John VK3PXJ was elected as secretary and the treasurer is Greg VK3POP until February. As these two positions are temporary, members need to think of who can take on the job by February. **Are you willing?** Additionally we need a vice president. The club cannot work effectively and may need to go into recess if some positions are not filled, we don't want that. Pat VK3OV remains as the membership secretary. The technical committee was re-elected, Peter VK3FPSR and Rodney VK3UG will compile the newsletter but will need input from members if the newsletter is to be anything other than a very basic newsletter. The website and station manager work has been carried on by Steven VK3DG, but due to his heavy workload away from home he is unable to continue to do the newsletter or be station manager. He hopes to be able to do some work on the web page.

It will be noted that the HF get together is set down for 7 pm. With daylight saving with us, some have expressed concern that this is not a suitable time for most who would call in for a chat. This is something to think about. Perhaps 8.30pm is a better time. It has also been decided that there will be no net controller just an informal get together of members and anyone else who would like to join the net.

The working bee on the 11th October at our Mt Wombat repeater site was attended by Ian VK3CHV, Trevor VK3ATX, Kevin VK3BPH and Rodney VK3UG. The Bracken fern was sprayed with weed killer, the hut shelves and floor were cleaned, and the Motorola power supply was brought back on site, but not commissioned.

The main purpose of the working bee was to look at the best methods (physically and radiation wise) of attaching the two 6 mx antennas to the lattice mast. Ian put forward an alternative idea which would mean that two 6 mx antennas would be mounted on an extended braced mast on the hut. This would overcome the problems that have dogged us with mounting two antennas on the lattice mast, plus the uncertainty of what problems the Amateur Radio Victoria (ARV) modifications to the guys would create.

However, the down side to members is that to make this work we would need to purchase another 6 mx antenna the same as the new one the club purchased last year. This would mean that the existing 6 mx antenna would remain on the lattice tower and become the standby antenna and the current standby antenna could be brought down and installed at the clubrooms so that we have permanent capability on 6mx, 2mx and 70cm from the club rooms in addition to HF capability.

The long term benefit is that there would be less need to climb the lattice mast, which means that antennas will be easier to service.

TECHNICAL COMMITTEE REPORT October 2014 (22/10/2014)

Things have been relatively quiet in matters relating to the repeaters over the last few months, however, our seasonal activity program at our repeater site has started.

- A working bee was held at Mt Wombat on the 11th October in glorious weather. The weather was so good one of the local Echidnas made an appearance and received member's attention. Attending were Ian VK3CHV, Trevor VK3ATX, Kevin VK3BPH, Rodney VK3UG and a non amateur friend. The inside of the hut was swept and is now a little cleaner. The Bracken fern was sprayed with weed killer and the site in general was checked and found to be in good order. The Motorola power supply was returned to the site but not put into service.
- The main reason for the visit was to make a final decision on the mounting of the new six metre antenna on the lattice mast. All the technical committee, as well as Ian who is the mast installation expert, have thought long and hard on how to best mount the antenna to achieve on site safety and the best performance from the dual antenna system. From previous reports you will realise this has been a difficult task. Whilst on site and able to look at things very critically, Ian made the suggestion that why not mount the two antennas on a suitably stayed pole around 6 metres long on the north-west corner of the hut roof. The pole would take the place of the pole currently supporting the standby 6 metre, 2 metre and 70cm antennas, with those antennas being transferred to the south-west corner of the hut roof.
- Tech committee members have discussed this proposal at length and we believe this is the best method of mounting the two 6 metre antennas as a gain array. It will also make the antennas easily accessible for maintenance if required. The proposal would be to obtain a second new antenna and mount it with the antenna we already have, and use the existing lattice mast mounted antenna as the standby. The current standby antenna could then be brought back to Mooropna and installed at the club rooms giving the station permanent 6 metre capability.
- The tech committee endeavours to effectively mount the two antennas on the main mast have to a large extent been scuttled by the uncertainty of what ARV intend to do about the guys. Hence, we believe that the proposal suggested by Ian is practical, will work well and be easily maintained so we ask the club to approve the purchase of an identical antenna to the one we obtained last year which will cost \$467.50 plus freight. A mounting pole and two stays will complete the installation.
- The backup batteries have not been ordered at this stage as we are still obtaining quotes and information on the expected life etc. of any we may obtain.
- All repeaters are working well.
- No word is to hand on when the D-Star will be reinstalled.
- The 3 element beam from the club rooms is still to be re-installed.

- At the last meeting in Mooroopna it was observed that there were some wires hanging loose above the roof. On inspection it was found that some ner-do- well had undone around a third of the guy wires on the 50' (16m) mast and stolen the turnbuckles. Kevin and Trevor reattached the guy wires less the turnbuckles. A few days later we were advised that there were loose cables from the antennas. Inspection revealed that a cable had come off the roof. All the cables were secured. A test was then done on the antennas installed at the club rooms and only one coaxial cable out of three going to HF antennas proved to have a viable antenna connected. The 2 metre /70 cm antenna tested okay. One HF wire antenna was removed as it had been put up temporarily last year and had deteriorated to the stage of being useless. A temporary 6 metre whip antenna and a temporary 20 metre dipole were installed for the Jamboree on the Air and these worked well. Kevin, Greg , Dallas and Rodney dealt with these problems.
- It was observed that the coaxial cables had been laid across the metal roof with the consequence of sunlight (ultraviolet) damage. The coaxial cables get a double whammy with direct and reflected sunlight causing cable deterioration. The cables should be protected (e.g. run under the eaves) even if UV protected. It was also observed that the cables coming down the mast were not put on the south side of the mast to minimise the amount of UV they are exposed to. As a result of the vandalism and changed use of the antennas over the years should it be considered that the 50' (16m) mast be reduced in height to around 20' (6.1 m) and have all the VHF and UHF omni-directional antennas mounted on it? A general overhaul of the antenna systems at the club rooms is desirable. Note this hasn't been the responsibility of the tech committee.

A number of other items previously approved which showed up in earlier newsletters have not been forgotten and will be actioned as time permits.

Rodney VK3UG on behalf of Phil VK3ELV, Ray VK3RW and Geoff VK3ZNA

POWER SUPPLIES (Part 2)

Most power supplies used by amateurs are low voltage types putting out a nominal 12 to 13.8 volts DC at several amps. The supply diagram is of a very simple regulated supply that isn't particularly practical as it is not adjustable in output voltage, nor does it have much in the way of dynamic filtering or overload protection. However, it does show how a power supply does operate. The voltage out of the transformer is 16 volts RMS. When rectified the output voltage on no load will be $1.4 \times 16 \text{ volts} = 22.4 \text{ volts}$ less 1.2 volts drop across the two diodes conducting at any one time which will bring the voltage on C1 to a maximum of 21.2 volts if the mains remains exactly on 230 volts – which it often doesn't.

What happens when the current drawn is increased to somewhere near the transformer's maximum rating. Small transformers will have a significant drop in the peak output voltage that can be supplied at high loads, plus the diodes will have more than 0.6 volts drop across each of them and the filter capacitor C1 will lose quite a bit of its charge when the transformer and diodes are not supplying a charge to it on parts of the sine-wave input cycle. Hence to have a voltage above the minimum voltage necessary for the transistor regulator to work the no load voltage will be considerably higher than the minimum voltage applied under load to the regulator. To see what the minimum voltage is it is desirable to use an oscilloscope to observe this as most multimeters will register an average of the peak voltage and the minimum voltage on C1, which is not the figure you need to know.

Now looking at the circuit again, resistor R1 is used to limit the current to ZD1 a 14 volt.10watt zener diode, which sets the voltage at the 2N3055 base, which then sets the output at around 13.4 volts DC at no load. Zeners do have a tolerance and the diode may have a zener voltage between around 13.5 to 14.5 volts. As the output current rises the voltage across the output filter C2 drops but not at a rate anywhere near that across C1. This means that the supply is regulated to a certain extent and there is some ripple reduction due to the action of TR1, R1 and ZD1. R2 is used to put a small load on the output of TR1. Note there is also a voltage drop across TR1 depending on the load and the amount of base current it can draw.

More about power supplies later on.

SIMPLE 12-13.5 VOLT REGULATED POWER SUPPLY

