SHEPPARTON & DISTRICT AMATEUR RADIO CLUB

Founded 1979 Incorporation No A6677 P.O. Box 692, Shepparton 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 - 3.62 MHz ± interference 7.00pm (try also 8.30pm), 2mx repeater 8.00pm

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

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:- Greg Keegan	VK3POP	Vice-President:- Barrie Halliday	VK3KBY
Secretary:- John Waters	VK3PXJ	Treasurer:- Ron Burns	VK3COP
Membership Sec :- Pat O'Shannessy	VK3OV	Publicity Officer:- Peter Rentsch	VK3FPSR
Station Manager:- Ian Ward	VK3CHV	Webmaster:- Dallas James	VK3EB

Technical Committee:- Phil VK3ELV, Ray VK3RW, Geoff VK3ZNA & Rodney VK3UG
Newsletter:- Peter VK3FPSR & Rodney VK3UG

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NEWSLETTER – FEBRUARY 2015

Next meeting:- 1pm 7/3/2015 Mooroopna Scout/Guide Hall, Echuca Road

As you read below you will see that our President and Vice-President have a number of ideas to make our club function even better than it has – but it will require your input as expressed below in both ideas and assistance as needed.

A number of articles will appear in the newsletter from time to time with photos or diagrams as is appropriate. Your input is needed. RodneyVK3UG - Newsletter editor.

STOP PRESS:
The Technical Committee has just had a call from Amateur Radio Victoria. The planned changes to the guy wires on Mt Wombat are now not going to occur. There are other positive things likely to occur that will be beneficial to the Club. More information as it comes to hand and hopefully at the next meeting.

The Presidents report for February 2015.

At our February meeting the issue of electing a committee was finally resolved.
John VK3PXJ was elected as Secretary, Ron VK3COP was elected as Treasurer and I, Greg VK3POP was elected as President.
I would like to take this opportunity to thank Peter on behalf of all members for the outstanding job he has done as President.
During Peter's time as President the club has experienced great stability and the club is now possibly in the best financial situation ever.
I admit I have some big shoes to fill, but I will give it my best shot. Let's see what 2015 brings.
We must all realise that for the club to move forward the members must contribute in some way.
I would like to see all members think about what they want the club to do for them as well as what they can contribute to the club.
If you have any suggestions please send me an email with your ideas or bring them up at the next meeting.
Barry VK3KBY made some suggestions, a show and tell, a demonstration, problem solving session or antenna project.
I would also like to discuss the following;

- Having the meeting for general business held bi-monthly with the other month for socialising. If there is any general business that needs to be discussed then it can be but the main focus will be on socialising.
- Organising more outings. E.G. at Nagambie with the Bendigo club.
- The 4WD swap meet is on 22/03/2015 at the trotting track. This would be a great opportunity to show case Amateur radio.
- The D-Star Users Group is holding a D-Star education day on the 21st March at the Woodend RSL club. Starting at 9.30am to 4.30pm.

Give these items some thought and come to the next meeting and tell us what you think.
I have attached an article from the QST magazine for anyone thinking of building a loop antenna.
We all know that variable Vac Capacitors are expensive; this would be a cheaper alternative.
I have an article on the antenna itself so if anyone is interested in building this as an antenna project let me know. **(A great article and I expect to publish it in next month's newsletter - editor)**
Until the meeting 73 for now

Greg VK3POP

Some Thoughts from the Vice Pres

Being a foundation member and having a long association with this Amateur Radio Club it was disappointing that so many were reticent to accept any responsibility for the administration of the club.
That said, it is not just the office bearers who have the ideas and that are responsible for the direction the club takes, so please talk to the committee members and play an active part, after all what you get out relates closely to what is put in.
The Club was formed for the advancement of our hobby not just to sit and listen to meeting procedure so I believe our monthly gathering should be small on business and more on a technical direction.
Perhaps like the Antique group there could be a show and tell, a demonstration, a swap table, a problem solving session or an antenna project. These are a few ideas for consideration what are yours?

Barrie vk3kby

Minutes of meeting 7/2/2015

- Meeting opened at 1.05pm
- Members and visitors attending – Pat VK3OV, Max VK3DSF, Mile VK3FMAA, Ron VK3COP, Barry VK3KBY, Dallas VK3EB, Kevin VK3BPH, Allan VK3FLAN, Ian VK3CHV, Rodney VK3UG, Allan VK3AO, Andy, Ashley, Huntley VK3ZE, Peter VK3FPSR, Greg VK3POP, Jacek VK3TJS and John VK3PXJ.
- Apologies – Bruce VK3FBNG, Dareen VK3HEN, John VK3FJHM, Ian VK3JNC, Brian VK3HBW, Les VK3TEX, Bob VK3GEB.
- Huntley and Andy were welcomed to the meeting.
- Inwards mail – ACMA VK3SOL licence renewal, 2 emails re next Hamfest.
- Outwards mail – Sympathy card to Geoff Angus VK3ZNA on the passing of his mother.
- Financial report read by Greg VK3POP and accepted.
- Rodney VK3UG gave the technical report on the repeater installations on Mt Wombat, and provided information on work that is to be done to upgrade the 6 mx repeater installation. It was moved by Rodney VK3UG and seconded by Barrie VK3KBY and carried by the meeting to purchase another 6 mx antenna to phase with the existing antenna purchased 18 months ago.
- The meeting closed at 2.05 pm.
- The adjourned AGM was reopened and the committee positions as shown at the head of this newsletter were elected.

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The first meeting of the year was held on 7/2/2015 at the Mooroopna Scout/Guide Hall commencing at 1 pm. The General Meeting and the extended Annual General Meeting took place during the afternoon. There was quite a bit to sort out as a number of positions on the committee had not been filled on a permanent basis at the October Annual General meeting. The incumbents for all positions are now shown above.

A comment was made that the Mt Wombat two metre repeater has quite low audio output. Tests have been done and the audio level appears similar to other repeaters accessible in the area.

Alan Ransley VK3AO reported that there is an IRLP node #6655 operating on 433.175 MHz in the Cobram area at the moment.

Our public liability insurance costs us so much per WIA member, whilst any non-WIA members the insurance cost is several dollars more. To be fair to dual SADARC and WIA members, it is proposed that non-WIA members of the club pay the difference between the two fees. This will be discussed next meeting.

A proposal was put to the club that perhaps we could relocate the Hamfest to the Merrigum hall. The proposer of this idea is to put it in writing to the club what the offer is, so that it can be assessed.

Kevin VK3BPH is working on the design of the new 6 mx antenna mast for Mt Wombat.

Rodney VK3UG spoke on the proposal for an additional 6 mx antenna to match and be co-phased with the antenna the club bought 18 months ago. This would be mounted on the pole Kevin is working on. As has been written about and spoken about over the last few months there are many advantages to be had on mounting the antennas on an extended mast on the hut. These are no guy wires to upset the radiation pattern, easier access (particularly for us older folk), allows us to experiment with separate antennas for the transmitter and the receiver, a 3dB increase in signal level overall which will fill in a number of the spots where interference may be evident, and slightly increase the range of the repeater. We expect that good communications in both Wangaratta and Bendigo will replace scratchy performance in these areas. It was voted on and approval given for the purchase of the additional antenna.

WANTED:-

Ian VK3CHV as Station Manager would like a four drawer filing cabinet so various papers and other bits and pieces can be safely stored at the club station. Anyone got one going cheap. Contact John Waters – Secretary

WANTED:-

It has been suggested that members provide a short profile of their life for publication in the Newsletter. It is always interesting to know what members have done or currently do in other areas of their lives. For example there are two members I am aware of who hold either a private or commercial pilot's licence. There are at least four members who have worked at Radio Australia. We have many members with skills and occupations or hobbies that would be of interest to other members.

Another example is Ron VK3COP. Ron is nearly 90 and late last year he gave up acting as a pilot for oversize loads on our highways and byways. That was a job of considerable importance so good on you Ron. Its things like this that would help each of us to get to know our fellow members – they are an interesting lot.

WANTED:-

Your ideas on what we all need to do to make our meetings more interesting and helpful for all who attend. Bring your ideas to the next meeting on 7th March or email them to me Rodney rodlynn6@bigpond.com or John glengordon@bigpond.com

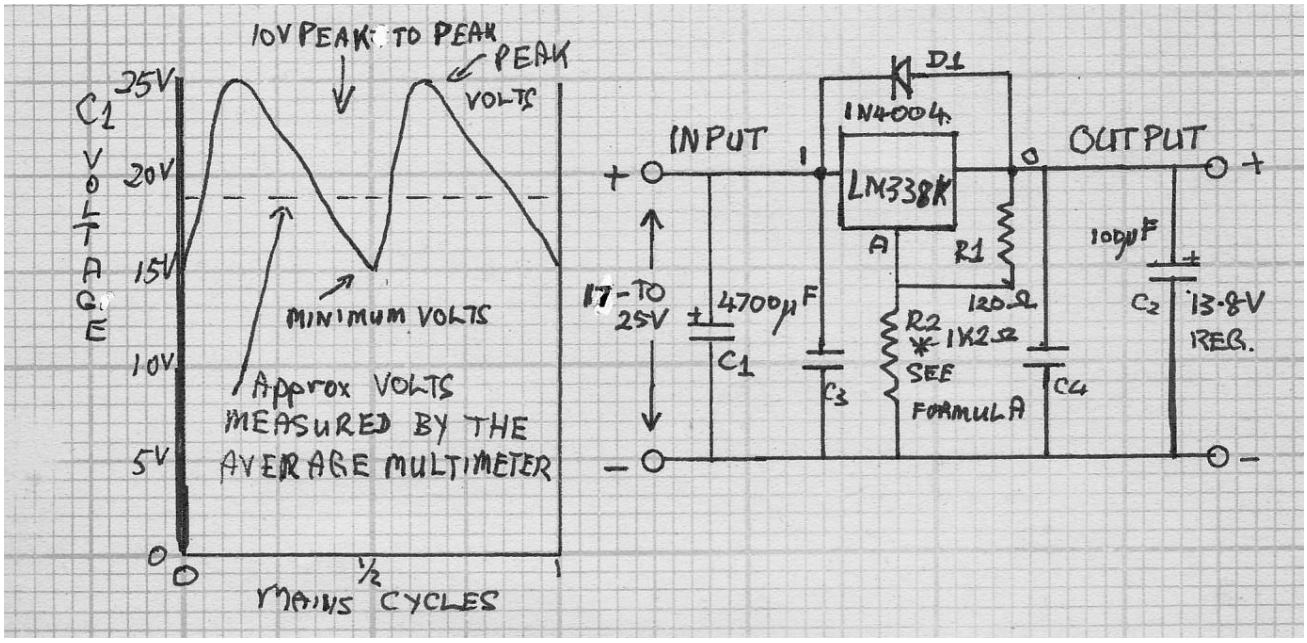
Also as I've inherited the job of putting the newsletter together I would ask members to send things to me for inclusion in the newsletter. Pretty Please!

POWER SUPPLIES - PART IV

Having shown members a number of simpler power supplies it is now time to show one that has very few physically parts but has a lot going on inside a three legged regulator integrated circuit. I'll concentrate on the variable output LM317 which will handle around 1 amp output and the LM338K which will handle around 5 amps. Adequate heat-sinks are needed for safe operation of these ICs. Whilst these items will not power a high power transceiver running off a 12 volt supply, they can be the building blocks for supplies that can handle upwards of 20 amps or so.

The unregulated DC with ripple is applied to the input filter capacitor C1 which should be at least 1000 µF per amp of output current. For the regulator to operate properly it is necessary to allow at least 3 volts difference between voltage input to the regulator and the output. The supply to the regulator consists of a DC voltage with an AC component sitting on top of it. On full load, if the DC voltage is 15 volts and the ripple voltage is 10 volts peak to peak the average DC voltage at the filter will be around 20 volts. You may assume that with 20 volts minus 3 volts drop across the regulator that a fully regulated output of up to 17 volts will be available. This is not so, as the true minimum voltage at the input to the regulator is 15 volts and the maximum fully regulated output is 12 volts. If you try and get 13.8 volts out of the supply you will not get 13.8 volts and you'll get a lot of hum. By increasing the size of the input filter C1 the ripple level will be reduced but the peak current drawn through the rectifier diodes will be increased. An oscilloscope connected across the filter capacitor C1 will show what the minimum voltage on C1 is over the whole mains input cycle. Some of the more complex DMMs can also tell you this.The diagram below shows what I have said in this paragraph.

Both the input and the output of these regulators need to have 0.1 µF or similar capacitors wired between input and chassis and output and chassis. You can also use tantalum capacitors if they are used at the input or output of the regulator. The electrolytic capacitors can be wired further away. These regulators have their output voltage set by a voltage divider that goes from the output to the common or adjustment pin and which then goes on to the negative terminal of the supply or chassis as appropriate. The formula for working the values necessary is as follows and applies to the circuit diagram below:- V out = 1.25V (1 + R2/R1) . For an output of 13.8 volts with this circuit the formula comes out as V out (13.8 V) = 1.25V (1 + 1205Ω/120Ω). A value for R2 of 1200 ohms is near enough. To achieve a variable regulated output voltage R2 can be a potentiometer.



The value of the output filter capacitor C2 is not particularly critical but I would suggest around 100 µF per amp of output current.

Overload protection is inbuilt into these regulators and as they heat up they will progressively close down. However, as with any design it is not a good idea to push the envelope by running the regulator at its limit. When designing a power supply it is desirable to check what the peak voltage is across C1 and subtract the regulated output voltage across C2 then multiply this result by the maximum current drawn. This is an optimistic figure of heat to be dissipated but it means the regulator is likely to be running well within its ratings providing the heat sink is adequate and the regulator is attached properly to it for maximum heat transfer. Keep in mind most of these regulators have an upper limit of around 30 to 40 volts measured between the input and the output terminals. I have one with a limit of 12 volts for very low output voltage. A fuse in series with the secondary winding of the power transformer is recommended in case of some severe short circuit or overload. To protect the regulator in the case of loss of mains when a large value capacitor is included as C2, the diode D1 will protect it.

This is quite a practical power supply regulator. Rodney VK3UG

Mobile Amateur Radio with a difference

Does the club have any cycling hams ?,as i am making a list of hams who enjoy riding with or without radio's with them. I often ride with a 2m/70cm h/held with 2 band mobile whip and have the occasional QSO while mobile .

There is a 20 m pedal radio freq 14.200 0700gmt. But there is also a sked on 3.668 mhz Monday 7pm -8pm about anything to do with amateur radio and cycles of any type.. I have a 40m mag loop (1.5m dia)that i can transport to a suitable hill with a solar panel etc(or even pedal powered generator) .I have worked a few stations at the John Moyle Field days with the mag loop ant.
The other station i qso with is Vk2CKC Kevin who is currently working on a cycle mobile station with extra's. This is good project with a few good benefits like keeping fit and healthy.....
For more info give Kevin or myself a shout Monday 7pm,we'd love to hear from you.
Cheers
Lloyd VK2KNS (Does Lloyd mean VK2CKC or VK3CKC?) Lloyd's email address is white3@iprimus.com.au

A SISTER CLUB'S UPCOMING HAMFEST

EMDRC would like to invite SADARC members to attend our annual hamfest Sunday 29th March. In Heathmont Melbourne. More information at http://www.emdrc.com.au/hamfest-2015/

Are you able to share the below image and website url with your members and pass on the information of the event. (we are happy to reciprocate with your hamfest later in the year, as we have in the past to our member base) thanks

Andrew Scott VK3BQ, EMDRC Vice President, 0411101021
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