



REPEATERS VK3RGV 2m
& VK3RGV 70cm
CLUB CALL SIGN VK3SOL

SHEPPARTON & DISTRICT AMATEUR RADIO CLUB Inc

Incorporation No. A6677
P.O Box 692 Shepparton 3632 www.sadarc.org

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PRESIDENTS REPORT



After our meeting, I conducted a presentation on Portable Antennas and Portable Radio Operation; this was received by all present with much enthusiasm.

You will note in the Minutes a change of meeting dates for the March and the April meetings; this came about due to the fact that the Hall had been booked for the Scouts prior to my negotiations last year in securing our new club rooms.

A special thanks to our Technical Committee, and to all members that helped in the installation of our new antenna on Mt Wombat, present Ray 3RW, Neil 3KAL and Angela, Greg 3ZKV, Brian 3HBW, SWL Max, Cameron 3FMCG, I believe it was a 12+hour operation, well done. If you do not have a club name badge and would like one please contact Jacek VK3TJS, we are in the process of putting in a bulk order, the cost to members \$Nil.

All of those members that offered to assist in the DX LED Modulation world record attempt please note that a projects committee meeting to be held on Saturday 4th March 2006 at my home in Tocumwal, for a barbeque lunch/meeting, partners are welcome, start time 12.00 midday, my contact phone number 0409251951. A request from the WIA Re-Broadcast committee that the high end of 40mtrs should be considered, we need to spread our activity across 40m-the band is still under considerable pressure from commercial interests. It is not inconceivable that land mobile and broadcasting interests could bring pressure to bear to change the long term allocation arrangements for 40m. We are not out of the proverbial woods yet. Hence we have decided to run a 40m WIA Broadcast on Sunday mornings at 10.00am local time, frequency 7.153ssb, starting on the first Sunday in March, please note this does not replace our 2m

Sunday evening broadcast, we are going to run the 40m Broadcast as a VK3 effort to populate our band. The March meeting, Rodney VK3UG and myself, will do a presentation on mobile operations/ installations and noise reduction mobile. Also you will have read in the minutes about the roster system for 80m and also the change of time for our club broadcast on 80m.

Bruce VK3QC has started on submissions for Grants and letters of request, for our fund raising activity to equip our radio station at the new club rooms, this is indeed a very time consuming activity, we thank Bruce for making his time available to assist the club, Bruce was co-opted onto the Executive at the last club meeting, welcome aboard Bruce and thankyou, keep up the good work.

*73s Roger Conway VK2RO
Club President*

*Photos: LED Modulator
Inset: Modulator side view*



Hi to everyone,

We got off to a great start in 2006, a good attendance at our first meeting in our new club rooms, much discussion and a lot of Club business was on the agenda. (Refer to the minutes attached to the newsletter)

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2006



Barry Halliday VK3KBY was presented with a Life Membership at the February meeting.



Proud moment for Rob VK3KBV while he received his Wombat Award at the February meeting.

PLEASE NOTE CHANGES:

Next Meeting on the 11th of March 2006 -

Scout and Guide Complex Echuca Rd, Mooroopna (our new home)

March meeting - 11th of March (note the change)

April meeting - 8th of April (note the change)

Weekly radio net: Wednesday 7:30pm on HF 3620 Mhz +- and 2m FM 146.650 Mhz

VicLink and VK1WIA news transmission 7:30pm each Sunday on 146.650 Mhz

Newslink - an American Ham news broadcast on Mondays at 7.30pm



Photo: Margaret & Neil (SWL's) and visitors, Terry VK3FTHS and Danny VK3FDTH (new foundation licence holders) were among some of the SADARC members who attended the first meeting at the new club rooms in Mooroopna on the 4th of February 2006.

Convenient shopping in one place.

Battery World Shepparton and Chips N Bits electronics (your local authorized Jaycar dealer) have combined. For those that can remember, we are located in the old Tandy shop at 154 High Street Shepparton. Not only do we have the gadgets, but we can also power them. *Battery World, Power for anything anytime!*

At Chips N Bits we are basically an electronic enthusiast shop while Battery world supplies batteries and associated products

for anything that needs power. We thought that the combination would be a good marriage and it looks like it is. We have had plenty of positive feed back from our customers.

For the time being, the old Battery World shed is going to be our workshop for fitting solar panels and power systems to vehicles while the High street store will be our "Shop front."

As a special to readers, I have about 10 battery packs for the Motorola listening sets that many

of the local fire brigades use, for only \$25 each and one only 5kva electric start diesel generator for \$1790. First come first serve. For a full Jaycar product range, log onto www.jaycar.com.au.

You can contact us on:-
Battery World :- 58313176
Chip N Bits electronics:- 58222729 Fax: 58222042
Email:-sales@chipsnbits.com.au
Come on in and check out the new store and talk to Len or Dave.

Chips N Bits are giving 10% off selected products to SADARC Club members.



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CLASSIFIEDS

FOR SALE

- * 1 X IBM Thinkpad Laptop win 3.1 with charger, new battery, \$80
 - * 1 X Digital HiNote Laptop win95 with charger, new battery, modem, \$80
 - * 1 X Alinco 2 Meter FM/SSB 60 watt linear amplifier, \$150
 - * 3 X AWA 25M Low Band, 6 Meter converted, \$30 ea.
 - * 1 X AR1200 Mobile Packet TNC with thermal printer, performs the same as tiny2, \$100
 - * 1 X Yeasu 227RB 2 Meter rig, 10 watts out, Suit Foundation Lic, \$200
 - * 2 X Philips UHF FM747's, \$25ea.
 - * 2 X Synthesizer kit for 828 conversion \$140
 - * 1 X Signet 27 Mhz am/ssb on 10 meters, thumbwheels fitted, \$200
 - * 1 X Uniden 800Mhz Chordless Phone set, base unit,two phones with charger, \$80
 - * Panasonic NV G1 VHS Camera c/w all acc \$50
- Contact: Dave on 0409469661
or email: jdu29660@bigpond.net.au
for more information

FOR SALE



Sterber 4.55mts fibreglass half cabin, 55hp Mariner 2 stroke motor, and also 6hp Evinrude 2 stroke auxiliary motor, includes trailer and all safety equipment, fish finder, marine radio and storm covers, boat and trailer current registration, EC, \$5800

Linear Amplifier Yaesu FL2100Z new tubes fitted includes WARC Bands good condition \$750.00
MFJ-986 Differential-T Tuner 3kw Roller inductor good condition \$450.00
MFJ-989C Versa Tuner V 3KW Roller inductor with inbuilt dummy load good condition \$500.00
ICOM IC-575A 28/50mhz All Mode 10watt Transceiver with inbuilt power supply \$450.00
ICOM IC-R71A HF Communications Receiver good condition \$475.00
Alinco DX70 HF/6MTS 100watts All mode Transceiver with Alinco desk microphone and remote/mobile kit, good condition \$795.00
Samlex Model SEC1223 13.8V 23Amp switch-mode power supply, very compact \$150.00
Andrews DX1600V 2KW+ HF All Band Linear Amplifier with Brand New Svetlana 4CX1600B Tube still in the box, cost \$1200.00 from the USA, the display has a slight problem with the LED , will repair prior to sale, this is the top of the range Australian Built Linear, \$3200.00
HY Gain TH7DXX Thunderbird 7 Element Triband Beam, in good condition with manual, needs all plastics replaced, comes with Brand new plastic kit from HY Gain USA \$325.00
Brand New Reace SWR HF Meter Model FSI-5 \$30.00

For more information contact Roger VK2RO.

Our thoughts go out to the Hender family with the news that Dannels' wife Michelle is returning home this week after a major operation in Melbourne recently. Members and their families would like to wish Michelle all the best for a speedy recovery and hope you are out and about very soon.


DID YOU KNOW?

That the Cobram Urban Fire Brigade has been serving the Cobram & District community since 1907. They are pleased to announce that in 2007 they will be 100 years old. Preparations are now being made to contact past members and affiliates of the Brigade and are also looking for any memorabilia from the Cobram CFA. If you were once a member, or know of someone who was involved with the Brigade then please let the Brigade know by calling them on either: **0358722538** Postal: P.O. Box 369, Cobram 3644, email cobramcfa@bigpond.com Or visit the website <http://clix.to/cobramcfa>



OUTBACK RADIO

From Flynn to Satellites
By Rodney Champness (VK3UG)



Outback Radio is a 186 page A4 size book complete with a total of 92 diagrams, pictures and circuits. Up until now there has been no book published which has traced the history of the development of communications (particularly radio communications) in outback Australia. The book shows the social, educational, medical and business uses to which radio communications have been put to in the outback. The story describes how the equipment came to be developed by Traeger and others to meet the impossible technical requirements of the 1920s. Radio was in its infancy at that time. The progressive improvements in radio equipment design and capabilities are explored through the book and end up with the use of satellite phone communications. The author has been involved in radio communications all his adult life and writes professionally the column Vintage Radio for Silicon Chip. The book is available from the author at:- 6 Mundoona Court, Mooropna, 3629 for \$39.95 per copy, plus \$8 for post in Australia for up to two copies. Three or more copies post free in Australia.

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Minutes of previous meeting

MEETING was opened by President Roger VK2RO at 1412 hrs.

PRESENT Bill 3DWG, Brian 3HBW, Danny 3FDTH, Margaret SWL, Neil 824, Visitors Kylie and Jason, Barrie 3KBY, Ed 3BG, Max 3DSF, Jacek 3TJS, Rob 3KBV, Pat 3OV, Rod 3UG, Les 3TEX, Ray 3ZOR, Nandor SWL, Roger 2RO, Terry 3FTHS, Allan 3AYD, Neil 3XNW, Daryl 3KLN, Ross 3UCR.

APOLOGIES Ray 3RW, Greg 3ZKV, Neil 3KAL, Jan 3ALF, John 3PXJ, Norma 883 and Max Matthey. Moved Rod 3UG Sec Ed 3BG Carried. MINUTES of the previous meeting were read and confirmed. Moved Rod 3UG Sec Ed 3BG Carried. The Treasurer sent a letter of thanks and donation of \$200 to the Shepparton Search and Rescue on the 12/12/05 Treasurer Alan 3AYD read the Treasurers report: Moved Allan 3AYD Sec Roger 2RO Carried.

GENERAL BUSINESS An informal Executive Committee gathering discussed directions for 2006.

Moved that the AGM should be rescheduled for October to eliminate the clash with Comms day organization that has been experienced in previous years. Moved Rod 3UG Sec Ed 3BG Carried.

Moved that Bruce 3QC be co-opted onto the Executive Committee to research and apply for State, Federal and community grants to facilitate the completion and equipping of our new radio room. Moved Brian 3HBW Sec Jacek 3TJS Carried.

LED club project report: 3KLN, 3BG and 2RO attended last nights EMDRC meeting for Chris Long's lecture on LED modulation. 3KVC and Cameron 3FMCG were also

in attendance. SADARC is working towards a world record transmission. An important issue is the aiming accuracy necessary for long range comms and fortunately these should not be difficult to achieve. The most important factor will be atmospheric conditions. This means the record attempt will be a matter of overcoming any technical hitches then waiting for "ideal" conditions and putting plans into effect at short notice. These conditions should occur in the coming autumn.

Repeater reports: Neither Ray 3RW or Neil 3KAL were able to attend today, however antenna upgrades, equipment upgrades and maintenance are continuing.

SADARC membership currently stands at 57.

In light of current health concerns Allan 3AYD has undertaken to train a new treasurer should another member be willing to accept this post.

80 metre questionnaire: 20 replies, all positive.

Given the limited footprint of our repeaters the 80 metre net is the best way of advertising our clubs existence and level of enthusiasm to the amateur and swl community at large.

Appreciating the efforts made and time commitment involved in running this net it has been decided that a roster of 80 metre equipped members should take it in turns as net controller. The roster will be prepared for the March meeting. In the event that a rostered controller is unable to run the net it will be their responsibility to notify the club or organize a stand-in.

It is planned that the 80 metre net should start half an hour earlier, 7 pm, propagation

permitting, to give more time for callins and reduce the clash with the 2 metre net commencing at 8 pm.

Ed 3BG Foundation license report:

Enquiries have been received. Currently gauging the level of interest in a course and the format most suitable. Instructors will guide license applicants through the WIA course material.

Determined that a nominal fee of \$100 should be charged. This will cover annual SADARC membership, course and assessment materials, lunch and morning and afternoontea. This fee shall be flexibly administered in light of the individual situations of applicants.

Les 3TEX, Rod 3UG, Pat 3OV, Roger 2RO and Rob 3KBV have put agreed to assist in the role of instructors.

Ed 3BG is currently our only assessment facilitator, but has received the offer of backup from Jim Linton and another facilitator involved in scouting.

Rod 3UG made the point that publicity through local newspapers will be more effective in articles than advertisements and that our forthcoming LED world record transmission attempt would provide an ideal opportunity. Terry 3FTHS volunteered to publicize our Foundation license plans over Wangaratta radio.

Organizing our radio operating room in Mooropna is a major priority for the immediate future.

Daryl 3KLN reported on progress in the LED project: Schematics are done. Boards to be made and components to be purchased. Also reported on the recordings of the previous world record and the great quality of the full duplex audio received. Currently amplitude modulation is being used but there will be opportunities for further experimentation with other modulation methods later. The record attempt will use noncoherent light with an average frequency of 472 Terahertz.

SADARC newsletter will be distributed in the 3rd week of the month. Member profiles, classifieds, articles, need to be submitted to the editor within the next fortnight. Submitted material to be in Microsoft Word or Microsoft Publisher formats only (Plain text format only

please).

Gold coin donation from members attending meetings to cover refreshments and incidental club expenses.

Jacek 3TJS will organize name badges for new members. He encourages club members to keep an eye on the regularly updated club web page.

Les 3TEX asked members to think about what club activities they wish to take part in. Club projects, antenna building and refurbishment, kit construction and testing are now all possibilities in these new premises.

Comms Day 2006: Sunday 10th September at the new club premises. Mark your calendars.

Barrie 3KBY was presented with a Life Membership in recognition of his long involvement and enthusiastic participation in the club.

Rod 3UG raised the matter of ongoing BPL trials. Club concerns were expressed to MP Charmaine Stone by club representatives last year. It was decided the secretary should write to Charmaine Stone concerning BPL developments, seeking any information she might be able to provide.

Amateur radio standards of on air conduct and language need to be upheld. The President will be corresponding concerning a current issue.

Club members are encouraged to become members of the WIA. The benefits of membership include an excellent monthly publication, technical resources, competitively priced club insurance and most importantly a national voice to represent our hobby. There are a number of membership options available.

The secretary will organize redirection of club mail to his home address. This means the club will maintain its long-term address while speeding up correspondence.

Checkins for the club broadcasts are important indicators of member enthusiasm, so please make the effort and acknowledge the contribution of the net controllers.

Meeting was closed at 15:54 hrs

graphic design services

GF

Available Services

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Lisa Laffan
0358711551
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Eggstremely versatile antenna

Article by John Martin VK3KWA

A Versatile VHF Antenna

Are you looking for simple, cheap omnidirectional antenna? Here is the "Eggbeater" - an easy to build antenna which offers good performance for terrestrial and satellite operation.

The most popular antennas on the VHF bands are verticals. They are unobtrusive, and easy to mount on vehicles. But they have a number of disadvantages for home station use.

In theory, a vertical antenna has a doughnut shaped radiation pattern, with maximum radiation towards the horizon. In practice, many verticals radiate at angles well above the horizon, so they do not work well over longer distances.

Most obstructions in VHF signal paths are vertically polarised, and reflections can cause polarisation shift. This causes problems with flutter, fading and "dead spots". Verticals also pick up more noise and interference than horizontal antennas. Most noise sources are vertically polarised, and so are interference sources such as pagers on the 2 metre band. In a home station, verticals can be a nuisance for multiband stations because each one requires a separate vertical support.

Horizontal polarisation
Horizontally polarised antennas have a number of advantages which make them the logical choice for home stations. A number of them can be stacked one above the other on a single mast. They are less affected by vertically polarised obstacles and reflections, and they give more consistent signals over longer paths. They also have the advantage that for 2 metre operators, switching from vertical to horizontal can reduce or totally

eliminate pager interference.

But what about the fact that most 2 metre stations are vertically polarised? Surely anyone using a horizontal antenna would be at a disadvantage if they wanted to work mobiles or repeaters. Not really. All of my antennas are horizontal, and I find that I can hear vertically polarised stations - especially the more distant ones - just as well as anyone else. The reason is probably polarisation shift. Signals which started out vertical can arrive with random polarisation, and this means that cross-polarisation losses are never as high as theory would suggest.

In a test some months ago, a home station worked a vertically polarised mobile, and found that he copied the mobile far better with his horizontal antenna than with a vertical. This is quite common, and it would be far more common if more home stations went horizontal!

Polarisation rotation is less of a problem with horizontally polarised signals. They tend to pass through obstacles without being skewed by them, so a horizontally polarised signal is far more likely to stay horizontal. This means that if two stations use horizontal antennas, they will do better than they would if both were vertical. For this reason, you will do far better working SSB stations if you use horizontal polarisation. If you have a multimode radio, you can switch to SSB and work stations that aren't audible on FM - even with a vertical. But you will get better results if you use horizontal polarisation.

So now I've persuaded you (I hope) to give horizontal polarization a try, the question is: what sort of antenna?

Omnidirectional pattern

Everyone is familiar with horizontally polarised beams. But if your space is limited, or you don't want to buy a rotator, there are several types of omnidirectional antennas you can make. The best known ones - in ascending order of performance - are the halo, the turnstile (crossed dipoles), and the cloverleaf.

All of these antennas are easy to make. The halo and cloverleaf can be adjusted to provide a 50 ohm match, but with crossed dipoles there is usually no adjustment and the SWR will be about 1.5 to 1, which is quite tolerable. The eggbeater is similar in principle to crossed dipoles: two elements mounted at right angles and fed 90 degrees out of phase through a quarter wave

section of feedline. But in the eggbeater, the two elements are one wavelength loops rather than dipoles. The loop elements give the eggbeater a larger capture area than a halo or crossed dipoles, so the performance is better. The impedance of circular loop is around 100 to 115 ohms, so two loops in parallel provide a very close match to 50 ohm feedlines with no need for matching adjustments.

Satellite uses

The 90 degree phase shift provides another advantage. At angles above the horizon, the polarisation becomes elliptical, and when seen from directly above, it is circular. The polarisation sense - clockwise or anticlockwise - depends on the phasing of the two loops. This combination of linear polarisation at low angles, and circular polarisation overhead, makes the eggbeater an ideal antenna for satellite work.

Construction

The loops can be made from aluminium wire, tubing or flat strap, which will give the smoothest looking circles. I used strap for a 2 metre eggbeater, but chose 1/8 inch welding rod for the 70 cm version.

The correct loop length varies with the diameter of the material. The eggbeater is quite broadbanded, so small errors in loop lengths are not disastrous. A good starting point for wire or tubing elements is the formula $L = 12540 / F$, where L is in inches and F is the centre frequency in MHz. To find the length in metres, the formula is $317 / F$. This gives a circumference of 2.18 metres for a centre frequency of 145 MHz, and around 730 mm for the 70 cm band. I found that when using flat strap for the loops, the optimum length for the 2 metre band was closer to 2.08 metres.

Once the loops are formed, their tops are bolted at right angles to an L bracket which is in turn attached to the vertical support. The mounting diagram shows one way of attaching the tops of the loops to the mast. The bottom ends are mounted in the same way, except that the L bracket is replaced with a plastic box.

At the feedpoint end, the ends of the loops are fed into the plastic box, and the entry holes or slots are sealed with neutral cure sealant. To keep the loops in position, it is a good idea to bolt them to a piece of fibreglass sheet that has been cut to fit inside the plastic box. The box also houses the quarter wave phasing line and a coax socket for the feeder.

The phasing line between the loops must have the same impedance as either of the loops - close to 100 ohms. There are two possibilities here. One is to use 93 ohm coax cable such as RG62. This cable has a velocity factor of 0.84, so for 2 metres the phasing line should be about 430 mm long.

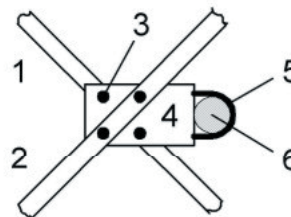
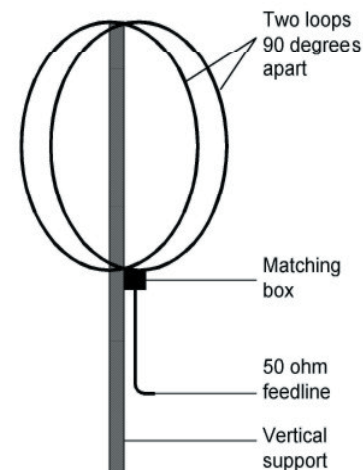
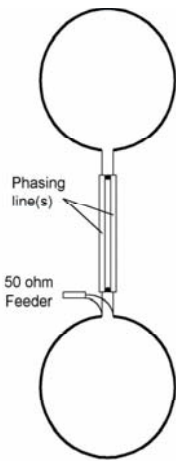
The other option is to use two lengths of 50 ohm cable as a balanced, shielded 100 ohm line. This is the method shown in the connection diagram. For 50 ohm cables

with velocity factors of 0.66, the length of the phasing section should be 340 mm. Solder the two braids together at either end, but do not connect them to the feedpoint. Then connect the inner conductors to the loops. The coax lines can be rolled into a compact circle to fit inside the plastic box. Finally, mount a coax socket on the box, and the antenna is ready to go.

The feedpoint is balanced, so purists may wish to feed the antenna through a 1:1 balun. I just connected the feedline directly and found that the radiation pattern did not seem to be skewed.

Conclusion

So, there it is. An almost-all-purpose antenna which will let you sample SSB activity and satellites while still allowing effective FM operation with much less pager interference. And it costs up to \$300 less than those imported verticals. Give it a try!



- 1,2 : Loops
- 3 : One of 4 bolts
- 4 : L bracket
- 5 : U bolt
- 6 : Vertical support



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If you are not already a member become a member of SADARC by filling out the form and sending it along with your \$20 to the address below.

 **Shepparton And District Amateur Radio Club Inc.**
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WIA member (yes/no).....

Enclosed is my remittance for \$.....

Thank You For Your Valued Patronage.

SADARC Inc

A 70cm Beacon is now testing on 432.534 USB at Koonoomoo.
Any comments or reports to Ed VK3BG

Wombat Awards

After a long hibernation, the Wombat Award has been re-designed and reinstated by the S.A.D.A.R.C. and is now available.

All S.A.D.A.R.C. members are requested to promote this award whenever they can when on air, both within VK & overseas.

In order to qualify for this attractive award, one has to obtain 15 points. By contacting any S.A.D.A.R.C. Club member, one may claim points in the following manner:

Contacts with club members on VK3RGV Repeaters: 1 point
HF/VHF/UHF Simplex : 2 points
VK3SOL (Club Station): 3 points
Club members & the Club station can be worked a second or more times but with not less than 7 days between contacts.

The S.A.D.A.R.C. Club Net is on Wednesday evenings, 3.620 Khz LSB at 7:30pm (local time) and 8:00pm on VK3RGV, 146.650 Mhz FM.

A log sheet of stations worked and

points claimed must accompany applications along with remittance.

The cost for a certificate within Aust is \$5.00 AU inc. post, and for overseas stations the cost is \$5.00 US inc. post. Endorsements for modes, etc. are available. Post applications to either: Wombat Award, Awards Manager P.O. Box 362 Cobram VIC 3644 (Preferred) or Wombat Award S.A.D.A.R.C. P.O. Box 692 Shepparton VIC 3632

SADARC MEMBERS

Call Name

- SWL John Ellis
- SWL Neil Tingay
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- VK3VG Trevor Pitman
- VK3WH Warren Heywood
- VK3XDJ David Harms
- VK3XNW Neil Watt
- VK3XQA Wayne Collyer
- VK3YF Peter O'Keefe
- VK3YNV Ray Gardiner
- VK3ZKV Greg Halley



Battery World is offering **10%** off all batteries to **SADARC Club members.**

We have moved!!

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Email: shepparton@batteryworld.com.au

Pop in and see manager Len Bauer for this great deal!

*Members please provide your SADARC members badge to receive these discounts