Zululand Amateur Radio Club News

The newsletter for the discerning Ham

August 2015

ZARC Committee

Chairman: Mike Kramer ZS5MB

Vice Chairman: Warren Snyders ZS5WOZ

Treasurer: Willie Axford ZS5WI

Secretary: Dawn Snyders ZS5ME

Ham Net: Mike Kramer ZS5MB

Editor: Jo Snyders ZS5PO

Member: Gerald Scrooby ZS5GS

Webmaster: Chantel Pelser

Club Repeaters

Ntumeni 145.675 MHz

Empangeni 145.700

Club Packet Digipeater/Mail-drop & APRS Digipeater

Ntumeni 144.625 (ZS5ZLB Mail, ZS5ZLB-2 Digipeat, ZS5ZLB-7 KA-Node) PBBS: ZS5AND

Club Nets

ZS5PO & ZS6AE Have A Sched On Thursdays Between 17:30 and 18:45
On 7.175 Or 3.645 Depending on propagation
ALL are more than welcome to join us for a "rag chew"

SARL News

08h30 - Sundays - 145.650, 7.066 MHz

NEXT ZARC MEETING

DATE: 27th Sept OR 18th Oct 2015 (Sunday) Still to be decided

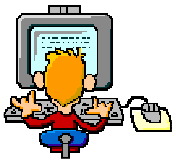
TIME: Meeting will take place ± 13:30, after the customary Braai at 12:00

QTH: Still to be decided

E-Mail: dawnjo@telkomsa.net (Secretary)

Club Web site: http://zs5zlb.zs5and.co.za/

Editor, Q.R.L.



Greetings & Salutations fellow members, I trust that this news letter finds you all in good health. The date of the next club meeting is still to be decided, and will take place on either 27th Sept OR 18th Oct 2015. The venue will be decided once the date is finalised. Whatever date and venue is decided on, the meeting will still take place at ± **13:30**. Please make a note in your day books and diaries. The time for the customary braai will also still be at **12:00**, giving everybody a chance to get there after Sunday morning commitments.

Have you bought insurance to continue enjoying your hobby yet? SARL membership IS that insurance!!!
Is your hobby worth R1.26 per day to you? YES?! Then join the SARL, it's the RIGHT thing to do!!!

The radical opinions, and rantings of the Editor, are not necessarily the opinions of, or supported by, the ZARC Committee, or it's members.

Wots Potting In The ZARC

Birthday Greetings Go To:

Aug: Anne ZS5FAB, on the 2nd. Melissa, daughter of ZS5WOZ, on the 17th. Bridget, daughter of ZS5PO & ZS5ME, on the 20th.
Sept: Ian, partner of Chris ZS6RI on the 17th. Chris ZS6RI on the 17th.
Oct: Willie ZS5WI, on the 2nd. Mike ZS5MB, on the 6th. Kiana, daughter of ZS5J, on the 31st.
Dec: Belinda, SW of ZS5WOZ, on the 17th.

Many happy returns to all of you, and may you be spared for many more happy, healthy, years.
(If your birthday wishes do not appear here, it is because you have not informed me of your birth date).

Get Well Soon

Our Treasurer, Willie ZS5WI, Is expecting to go into hospital again soon, we wish you a speedy recovery.

Club Happenings

Obituary

It is with great sorrow, that I have to announce the passing of Andrew ZS5AND, on Tuesday 04th August 2015, after several months in hospital. RIP Andrew, the Lord looked down and saw your suffering, and has now taken you home and relieved all your suffering.
Andrew was our club Chairman for the last two years running.
He was very fond of building electronic projects from kits, and spent a large part of his free time at his soldering station.
He was employed at the University of KZN, where he held the position of LAN Manager in the IT department. He also designed, and was web master, of our Club Web Site for a number of years, until, due to health reasons, he relinquished the web-master duties, which are now managed by a young lady by the name of Chantel. Andrew, you may be gone, but will never be forgotten!!

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At the ZARC AGM that took place on **Sunday July 19th,** , **it was decided to leave the club membership fee at R75.00 for SARL members, and R90 for non-SARL members.**

The Club 2014 – 2015 year came to an end at the end of July 2015, and club membership fees are now again due, for the 2015 – 2016 year. For those that have already paid their renewal fees, we thank you. For those that have not renewed yet, please do so as soon as possible. You have THREE months grace
Account name: **Z.A.R.C.** A/c number: **602 194 201 50** A/C Type: **Savings** Bank: **FNB** Branch: **Eshowe** Code: **22 02 30** Please **quote your call sign and first name** in the reference section.
Please E-mail proof of payment to **zs5wi@telkomsa.net.**

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18th ANNUAL INTERNATIONAL LIGHTHOUSE / LIGHTSHIP WEEKEND

00:01 UTC 15th AUGUST 2015 TO 24:00 UTC 16th AUGUST 2015

This was normally a ZARC Club annual field event, which the club had taken part in EVERY year since 2003. Well, we have come to the end of an era, as this year, for the first time in TWELVE years, the ZARC did NOT take part in this event. This was due to the fact that I am now too old to put up the antenna mast, and string up the dipole antenna, and then take it all down again …….. all by my self. Oh well!!! We will just have to wait and see what happens NEXT year.!!??

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Early Warning

The second leg of the 2015 South African Radio League National Field Day, takes place over the weekend of **12 and 13 September 2015**.

No, NOT November – National Field Days are now February and September!

OK, as it seems that nobody is going to be available this September. I will be house sitting/ "baby" sitting, for ZS5WOZ that week end, so I will THINK about setting up a station in his front yard, IF I can coerce ZS5ME to give me a hand with the mast & antennas, and maybe even stay long enough to work a few stations with me.

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Club Birthday & Web Site

Next year on **Friday 15th February 2016**, **OUR** club turns **21 years old**. We are thinking of adding a Photo Album page on our web site, depicting a selection of photographs taken during various club functions eg. meetings, field stations, and other interesting occasions that have taken place during those 21 years.

If any one has any photos that were taken by them at any of the club functions, and you think they would look good on the site, please send them along with names and call signs of the people in the photographs, and also the occasion and the date taken.

At the AGM, a discussion took place regarding setting up a special event field station on Sunday 17th Feb 2016, at the Fort Museum in Eshowe, and combine this with the club's "Christmas Lunch". More about this later.

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YL Sprint

The **YL Sprint** took place on Sunday 9th August, between 11:00 & 12:00 CAT. Dawn ZS5ME took part in this event. The first half an hour, she called on one frequency only, and the second, she used the "hunt & pounce" method, to work all the stations that were still staying on their one frequency. In all, Dawn made 26 contacts, netting her 86 points and a 6th position in the compo. Several club members were sent SMS messages, asking them to come up and work her. Dawn says "Thank-You" to Gerald ZS5GS, who was the only one who came up and worked her. Congrats Dawn, 6th out of a total of 13 logs sent in, was not a shabby result at all. ☺

Packet

On the packet Mail-Drop scene. The TNC is beaconing out. The coax on this set-up still has to be renewed, and the antenna moved to the east side of the tower

APRS

Your path to any stations in RSA, (or anywhere in the world via the I-Gate on 144.625) will be **ZS5ZLB-2, RELAY4-4.** The I-Gate should be available between the hours of about **09:00** and **22:00**, WHEN I AM AT HOME. People in the Richards Bay/Empangeni area can get into the PMB I-Gate on 144.800.

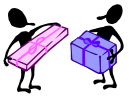
For those of you Zululanders who have Internet, go and look on the **www.aprs.fi** web site, and type your call sign into the slot at the top of the column on the right, and press search, and see if your station appears on the map.

Repeaters

145.675: This repeater was replaced after the Xmas meeting & lunch, and the old Storno is working well.

145.700: This repeater is now a DEAD puppy, and needs LOTS of TLC. **STILL waiting for ESKOM to open up for us to get into this site.**

"SWAP SHOP"

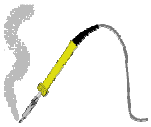


If you have any items you want to get rid of, or if you are looking for something, Please let the Editor know and he will advertise it in the swap column for you.

1 X **Neutec SM-1645** 16 channel 2Mtr VHF radio for sale.
Service, user and reprogramming instruction manuals available.
Reason for selling: Surplus to requirements
Please contact Gerald, ZS5GS on: **071-143 5433**

NB This picture of the radio was found on the internet, and is NOT a picture taken of the actual radio that is for sale

Please contact me if you are looking for a **Hy-Gain TH-MK4** beam antenna, The price being asked is **R4500,** and this one is in very good condition. Brand new they go for around **R9500**.



Home Brewers Hoekie

Exploring Rechargeable Batteries

by Peter Parker VK3YE
(first appeared in Amateur Radio, December 1999)

Rechargeable batteries: They're used everywhere, and there's many different brands and types. Almost every amateur has their own opinions on the merits of different types and the best ways to look after them. Here we examine the main types available and their suitability for various equipment amateurs use.

PART 2 OF 2

Nickel metal hydride (NiMH)
Like NiCads, nickel-metal hydride cells provide 1.2 volts per cell. Battery makers claim that NiMH cells do not suffer from the 'memory effect' and can be recharged up to 1000 times.
NiMH cells are not as suitable as NiCads for extreme current loads, but do offer a greater capacity in the same cell size. A typical AA NiCad may have a 750 mAh, but a NiMH may provide 1100 mAh - 45 percent more. This makes NiMH cells a good choice for applications where long life is desired but current demands are not high - eg portable receiving equipment.
NiCad chargers can be used to charge NiMH batteries, but the charging time needs to be lengthened to take NiMH's typically larger capacity into account. The main enemy of rechargeable cells is heat. If cells get hot during charging, reduce the charging current to no more than that recommended.

Rechargeable alkaline manganese
Unlike the preceding two battery types, rechargeable alkaline manganese (RAM) cells give a full 1.5 volts each. They are therefore suitable for applications where the substitution of 1.2 volt NiCads for 1.5 volt dry cells results in degraded equipment performance. RAM cells are cheaper to buy than NiCads. They can be recharged between 50 and 750 times. They also have a greater capacity than do NiCads - 1500 mAh is typical for size AA cells. RAM cells are good for use with outdoor and solar equipment as they will work efficiently at temperatures up to and exceeding 60 degrees Celsius.
RAM cells have a much higher internal resistance than NiCads (0.2 ohms vs 0.02 ohms). This means that they cannot supply high peak values of current. For this reason they are unsuitable for use with standard amateur HTs. However, their high capacity and long shelf life (5 years) makes them suitable for low powered or emergency-use applications, such as clocks and emergency torches.
Chargers intended for NiCad and NiMH cells will not charge rechargeable alkalines. This is because rechargeable alkaline cells require a constant voltage source of between 1.62 and 1.68 volts to charge. RAM cells should be connected in parallel rather than in series when charging several cells at a time. Unlike other rechargeable batteries, RAM cells are pre-charged and do not require charging before first use.

Lithium ion
Lithium ion cells are the most recent of the battery types discussed here to come onto the market. They offer higher cell voltage (3.6 volts) and greater capacity for a given volume. This makes them especially suitable for handheld equipment where long operating times are important, such as mobile phones.
As an example of what Lithium ion battery packs can do, a typical lithium ion battery pack is 55x45x20mm but provides 7.2 volts with a 1100 mAh capacity. Lithium ion batteries are still quite expensive, but are coming into amateur use through their inclusion in handheld transceivers such as Yaesu's VX-1R and VX-5R models.

Sealed lead acid
Sealed lead acid batteries (or 'gel cells') are less popular than NiCads in handheld equipment, but find widespread use as back up batteries in security systems and for amateur portable operation. Per-cell voltage is 2.3 volts when charged, and 1.8 volts when discharged. This equates to 13.8 and 10.8 volts respectively for a battery of six cells. For best use of the full battery charge, equipment intended to operate with '12 volt' sealed lead acid batteries should operate well (if not at full power) at voltages of 10.8 volts or less. Gel cells are cheap, rugged and reliable and should last several years at least. If you want a battery to run a QRP HF station or a VHF/UHF handheld for several hours, they are the ideal choice. They are also widely used with small solar systems.
Sealed lead acid batteries can either be used on a cyclic charge regime (battery connected to charger for a specific time) or continuous float use, where the battery is across the charger any time it's not in use. Cyclic chargers should charge at 2.4 or 2.5 volts per cell and be current limited to prevent overcharge. In contrast continuous float charging (or trickle charging) requires a charging voltage of only 2.3 volts per cell (13.8 volts for a '12 volt' battery). With both types of use the charger voltage is held constant. Connect batteries in parallel if charging two or more from the one charger.
Chargers for sealed lead acid batteries are available commercially or can be made at home. Special gel cell charger ICs exist to provide the necessary voltage and current regulation. Alternatively chargers can be made from the more common regulator chips such as the 723 or LM317. These chargers can be used to directly trickle charge the smaller '12 volt' gel batteries. No damage is done if the charger remains on, even when the battery is fully charged. This is because as the battery voltage approaches 13.8, the charging current will fall to negligible levels.
Sealed lead acid batteries should not be charged at voltages higher than those indicated as safe above. This is because high charging voltages (eg 2.6 volts per cell) will endanger the battery due to the production of excess gas. At a 13.8 volt charging voltage the production of gas is low, and the battery should give years of service. Charging current should not exceed 20 per cent of the rated amp hour capacity of cells. If using a high current 13.8 volt power supply as a charger, some form of current limiting is desirable to stay within the battery's limits.

Conclusion
This article has examined the characteristics of all major types of rechargeable batteries used by amateurs. We learned that NiCads and sealed lead acid cells were best for high current applications, while other varieties, such as rechargeable alkaline and nickel metal hydride work well for low current applications. The charging of batteries varies too - Rechargeable alkaline and sealed lead acid required a constant voltage, but nickel cadmium and nickel metal hydride cells needed a constant current to charge properly. In all cases over-charging, through excessive voltages, currents or charging periods can cause heating, gas build-up and possible cell damage. However, if you treat your batteries well, you should have many years of successful operation from them, whichever type you choose.

Acknowledgments
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The late Bill Trenwith VK3ATW for suggestions on the manuscript and imparting of knowledge gained through many years as a mechanics teacher, model engineer and radio amateur.
Peter Wegner from Coorey & Co, distributors of BIG rechargeable alkaline cells.
Danielle Cvetkovic from Invensys Energy Systems Pty Ltd for material on Hawker sealed lead acid batteries.
Adeal Pty Ltd for information on Varta's range of NiCad and NiMH cells.
References
1. Hawker P G3VA, Technical Topics Scrapbook 1990-1994, RSGB, pages 1, 16, 142
2. ARRL Handbook 1988, ARRL, pages 6-25, 27-32
3. Gruber N WA1SVF, QST November 1994, ARRL, page 70.

End

STOP PRESS

If you want to, you can go and have a look at the club web site at **http://zs5zlb.zs5and.co.za/** and clicking on the link on the far right of the navigation bar, marked **"Gallery"**, and **REMEMBERING that this page is still heavily under construction**, you can go and have a "sneak-peek" at the photographs that have been "dumped" in there for starters. SO, don't come and complain, or ask, "why don't you do this", or, "why don't you do that"!! As you will NOT even get an answer!!! This page is a LONG way from being anywhere even NEAR finished, SO, please don't upset our webmaster!!!
Editor

If you would like to contribute to your Club newsletter, or to contact me for any reason, please use the address / Phone numbers below.

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