

Zululand Amateur Radio Club News

The newsletter for the discerning Ham

March 2014

ZARC Committee

Chairman: Andrew Jansen ZS5AND

Vice Chairman: John Kramer ZS5J

Treasurer: Willie Axford ZS5WI

Secretary: Dawn Snyders ZS5ME

Ham Net: Jo Snyders ZS5PO

Editor: Jo Snyders ZS5PO

Webmaster: Andrew Jansen ZS5AND

Member: Warren Snyders ZS5WOZ

Member: Anne Griffiths ZS5FAB

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

CANCELLED DUE TO LACK OF INTEREST

SARL News

08h30 - Sundays - 145.650, 7.066 MHz

NEXT ZARC MEETING

DATE: 4th May 2014 (**Sunday**)

TIME: Meeting will take place at 13:h00,

QTH: Still to be decided

E-Mail (Secretary) dawnjo@telkomsa.net

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 next club meeting date is **4th May 2014**. The venue is still to be decided. The meeting will take place at **13:00**. Please make a note in your day books and diaries. The time of the meeting will be **13:00**, 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 R1.09 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:



April: Warren, ZS5WOZ, on 13th, Brian, ZS6AE, on 26th.

May: Tinkie, SW of ZS5WI, on 18th, J-J, Son of ZS5WOZ, on 23rd.

Many happy returns to all of you, and may you be spared for many more years.

(If your birthday wishes do not appear here, it is because you have not informed me of your birth date).

Get Well Soon



I have not heard of anyone who has been doctor bothering lately.

Club Happenings

Having heard nothing from other club members regarding interest in taking part in the February SARL field week end competition during the week end of 8th and 9th February, Warren ZS5WOZ and myself, decided to represent the club during this compo. We were rather surprised to gain a 7th position in the Club Category. We then saw that Willie, ZS5WI had also sent in his log sheet, and this had netted him a 5th position in the General Station category. Well done Willie. Where were the rest of our club members?? Come on guys!!

We would also like to welcome Mike ZS5MB, who joined the ZARC on January 12th, Mike lives in Mtunzini, and is also a member of HARC. May his membership of ZARC be a long & happy one.

Brian, ZS6AE & I have a sched at around **18:30** every **Thursday** evening on **7.175**, anyone who feels like it, is welcome to join us for a general "rag-chew". I normally bail out in time for the 19:00 news. 📺

Willie has replaced the Windom that got eaten up by lightening. Well Willie, we wish you better luck with this one than you had with the first one. 😊

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 put your call sign in the slot at the top of the column on the right, and press enter, and see if your station comes up 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.

Home Brewers Hoekie



Wire Antenna Life

How long should a wire antenna last?

MADE TO LAST

The answer to the question depends on many factors. Some are under your control, some are not. To quote some ancient ham radio wisdom, "if it didn't fall down last winter, it isn't big enough!" Let's look at two scenarios:

This first station has two un-guyed, free standing 80 foot towers about 150 feet apart. Directly between the two towers is a 100' wooden pole. A wire dipole is strung between the two towers. Its centre insulator is attached to the wooden pole that supports the weight of the heavy coaxial feed line. The towers are high quality units and do not sway even in high winds. The wire used in the antenna is #10 stranded copper-clad steel. Three insulators are at each end of the antenna. They are connected in series with stainless steel wire using the proper stainless steel wire clamps. The support line is stainless steel wire rope that runs through commercial quality stainless steel pulleys attached directly to the towers. The antenna support lines run through the pulleys and down the tower where they are terminated with heavy weights and dampening devices. The dampening devices act like 'shock absorbers' to keep the weights from moving or dropping too quickly during sudden wind gusts. The weights and dampening devices are supported by ground anchors secured by the tower's concrete base. There is constant tension on the antenna wire even in high winds. Extensive weatherproofing techniques are applied to the entire antenna and feed line system including the balun/centre-insulator that costs around \$350.

A very long, maintenance free life can be expected from this antenna. It was put up for government use.

MADE TO GET BY

#14 house wire is stretched between two trees. A length of utility nylon rope is thrown over easily available tree limbs. The antenna is directly supported by the nylon lines. The insulators used are cut from a sheet of plexi-glass, as was the centre insulator. The coax was stripped back about one foot and the braid and centre conductor are soldered directly to the antenna wire. Inexpensive vinyl tape seals the coax. There is about a 10foot sag in the middle of the antenna due to the weight of the coax. The tree will sway and stretch the soft household type wire. Antenna resonance will move lower and lower in the band. Antenna sag will increase. In a few days, someone will untie the ropes from around the tree trunks and pull the antenna back up to its original height. The nylon lines scrape across the tree limb and begin to abrade. Along comes a storm and the trees sway violently in the wind. The antenna, attached to the trees resists the motion. The force is terrific and the antenna wire stretches. The nylon rope is sawing back and forth over the tree limbs. Water is entering the coax since only electrical tape was used for weatherproofing. Finally, abrasion takes its course, cuts the nylon line, and down comes the antenna

Is this an unusual example of a ham radio antenna installation? Probably not.

Will this antenna still be up next year this time? Probably not

An Alternative

A RADIO WORKS CAROLINA WINDOM is supported between two trees. 5/16" double-braided Dacron line runs over the tree limb and terminates in a quality sailboat pulley with a roller designed for 3/16" line. 3/16" Double-braided Dacron line, tied using proper knots, runs through the pulleys, down the side of the tree and is securely tied to a heavy garage door spring. The other end of the spring is hooked into a screw eye screwed into the tree well out of reach of curious neighbours or kids. The springs keep tension on the antenna as the trees sway.

A 'rope fuse link' is installed to prevent overloading the springs during a heavy storm. This 'rope fuse link' works like an electrical fuse. When the wind loads reach a high enough level, the 'rope fuse' opens to protect the antenna support system. The antenna falls harmlessly several feet that allows for more tree movement before the springs are over stretched. To make a 'rope fuse link,' tie two loops, several feet apart, along the length of the antenna support rope. To avoid tangles in the tree, this is done at a point between the antenna and the tree. You may want to use wire rope 'thimbles' to reduce wear on the rope and 'fuse link.' Select thimbles that have smooth surfaces. Between the loops in the antenna support rope, tie a 'fuse line.' The line used for the 'fuse link' has a 'test' strength of only 25% to 35% of the main antenna support rope. The idea is that the 'fuse line' will stretch and break long before the antenna support line.

The coax used in our alternative example is light weight RG-8X PLUS and strain relief is applied according to instructions in the antenna's manual. All recommended weatherproofing procedures, including CoaxSeal® and weatherproof vinyl tape are applied. A system improvement would be to support the antenna at its middle. This would provide strain relief due to the weight of the coax. The CAROLINA WINDOM was an off-the-shelf unit, constructed using quality, #14 hard-drawn copper wire. All connections are soldered. Heat shrink tubing covers the soldered joints to provide weather proofing and reduce the corrosive effects of the atmosphere. End insulators are deeply ribbed and are self cleaning in the rain. The matching transformer at the feed point uses stainless-steel eye-bolts. The eye-bolts are not internally connected which reduces any receiver noise caused by the contact of two dissimilar metals (stainless steel and copper wire)

This installation should provide several years of reliable service.

By the way, if you want an antenna constructed for very heavy duty conditions, we can custom build any of our antenna systems for you. You can select the wire size and type of your choice (our #13 stranded, insulated, copper-clad wire is a popular choice). We can use the thousand pound rated B&W insulators, and we can even install strain relief insulators for the baluns. The extra life may be worth the extra cost, especially if you live where bad weather is a critical factor.

So, how long does a wire antenna stay in the air?

There is no easy answer. Put up an antenna like our first example and you can expect many years of trouble free operation. A typical ham radio antenna installation, using trees for supports will probably last a few years or until a big storm comes along. Adding preventive measures like rope fuse links' in your support line, may save the antenna.

Antenna supported from towers may perform less well than tree supported antennas but give extra years of service. The interaction between the towers and the wire antenna depends on many factors. The guy wires in particular may affect the antenna supported between the towers. Use cheap parts, low quality wire and insulators, and poor weatherproofing techniques and expect your antenna to last several months, perhaps a year or two at the most.

Wire antennas are not forever. Installation and quality are major factors in the useful life. Don't forget maintenance. You can avoid an untimely failure.

Yearly Wire antenna maintenance.

Support ropes

You need to check out the entire length of all support ropes. This is especially true for ropes that contact tree limbs or any place that can cause abrasion.

Compare the support rope with a piece of the same rope that has not been in the sun and weather. Note how fast the material is deteriorating. Does it feel stiffer? Does it's colour look dull? Are strands breaking?

End Insulators

Wash all the dirt, spider's webs, and other accumulated junk off the insulators. Check to see if they are cracked.

Wire

If the antenna is made of copper-clad steel wire, is there any sign of rust? Is the copper in good shape? Does it have any cracks in it? Pay careful attention at the end insulators and the matching transformer or balun. This is where most of the damage to the wire will take place.

Soldered Connections

If you are not using a RADIO WORKS antenna, check all soldered or compression connections. Do soldered connections look crystallized? If so, re-solder with quality solder. You may want to weatherproof the soldered connection. Apply a layer of CoaxSeal® over the newly soldered connection.

Balun or Matching Transformers.

Check the weatherproofing. Is it still intact? Is there water in the balun's or matching transformer's case? Water doesn't generally harm a balun or matching transformer, but it might be a good idea to let the water out. Drilling a small hole in the TOP of the case will permit pouring or shaking out the water. Reseal the balun according to instruction manual directions. Plug the newly drilled hole with a ball of CoaxSeal® pressed firmly into the hole. Hot melt glue works, too.

Coax deterioration

If you really want to do a first-class inspection, disconnect the coax from the antenna and measure the coax for power loss. Here is the procedure. Put a dummy load at the antenna end of the coax. Measure the transmitter output power, using an accurate wattmeter, placed at the transmitter end of the coax. Move the wattmeter to the dummy load end of the coax and install it there. Reconnect the coax to the transmitter and without changing any of the transmitter's settings measure the power delivered to the dummy load. Record the two numbers and determine the loss of power through the coax. If the measured value is not within a few percent of the cable's specifications, replace the coax - period.

The Once Over

Give any other part of the antenna system a good examination.

Reinstall the antenna

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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