HAMS Haywire News
October 2010
www.marc.org.za
PO Box 1076, Hilton, 3245

MIDLANDS AMATEUR RADIO CLUB

AFFILIATED TO THE SARL & IN ASSOCIATION WITH THE NATAL CARBINEERS

CLUB COMMITTEE 2010-2011

CHAIRMAN, HHN, WEBMASTER & EMAIL
Mike Lauterbach ZS5ML
082 372 0997

VICE CHAIRMAN & TECHNICAL
Shaun Rudling ZR5S
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SECRETARY & TREASURER
Ian Pearson ZS5AZ
082 419 6450

EVENTS, PRO & TRAINING
Shaun Fisher ZR5SF
076 600 4460

DISASTER MANAGEMENT
Des Mullen ZU5DM
082 496 9573

Club House Manager
Gavin Claasen ZR5GAV
076 305 9644

The Chairman's Report

The first month since the AGM has passed and we have been quite busy so far, at least behind the scenes. The committee has had a few meetings to date, in addition to the email correspondence. We have sorted the new signatories for the bank, and have taken possession of the club's secretarial paperwork.

Unfortunately Hill ZS5HN became a silent key at 21h45 on 03 October 2010, leaving behind his xyl Iona. Times will be hard for her, so please think of her in your prayers. Her being blind does will not help with the situation. Hill Mason is sorely missed by many, both by present and past members who knew him. His memorial was well attended, and listening to the eulogy, well delivered by Bert ZS5MQ, I'm sorry that I did not get to know him as a ham in younger days. He must have been quite a character. His dedication to everything he undertook will be an inspiration to many. Rest in peace!

The committee has identified items needing attention, and these include finishing the club house, maintenance at World's View and Groenekloof, repairs of the club radios, refurbishment of the antenna at the Girl Guides Hall at World's View and sorting the computer at Groenekloof. The radios have already been repaired, and were used at Jota. Thanks to Ian ZS5AZ for organising this so quickly!

Shaun ZR5SF is busy with the club house and has been helped by a few individuals, like Gavin ZR5GAV and Ian ZS5AZ. Shaun ZR5S has obtained a new computer for Groenekloof as the old one could not handle the work load anymore, and broke down again. It runs many programs which include Echolink, EQSO, APRS (vhf and hf), plane and ship plotter, D-Star and a few more. The new computer is a new generation i3 and it's processor is a lot more efficient than the old one, running a lot cooler and consuming less electricity, which is important during power failures.

The club will purchase the old computer, which belongs to ZR5S, and Shaun will repair it again for use in the Club House. The computer there does not need to be a high spec computer, and this one will be fine for local Echolink and also for an internet connection. We will have a sponsored internet connection at the club, and this will also help members without computers and internet to go online there to eg manage their eQSO cards on the SARL web site, read our HHN on line, and even send and receive email - we can set up individual email addresses for club members, like zs5xyz@marc.org.za.

The clubhouse will get a new work table along one wall, complete with shelving above it. This should leave enough space to hold small meetings there, or to hold project building events there.

We have 8 students studying for the RAE exams, which will be written on 21 October. We wish all students the best of luck - hopefully we will hear you on air soon.

Our next outing is the hf field day/weekend at Midmar Dam on 20/21 November. The members from HARC will also be attending, like in the last two years. All amateurs and non-amateurs are welcome to come along. Many will be sleeping over. There are chalets available for those who do not want to camp. Please phone KZN Wildlife on 033 8451000 to book your spot. We will be camping in block C, which has both electric and non-electric sites. Go onto our website for more details.

Our year end function will be held at the Cumberland Nature Reserve. It is 15km from Pietermaritzburg, off the Table mountain road. To get there, take the M30 to Wartburg. At the Copesville junction (just over 1 km past LCM Engineering) turn right. Travel along this tar road for 2km and turn left onto the D408 (gravel road). Travel along this good gravel road for 6.5 km until you get to the Cumberland Nature Reserve. Please proceed slowly through the citrus orchards shortly before the reserve.

Some will be camping over. Costs for camping will be R50pp. Food arrangements have not been finalised yet, and more details will follow. What is important is to finalise a date for this Christmas function. The dates available are the 4th and the 11th of December. Schools break up on Friday the 10th. Please contact Shaun ZR5SF for your choice in date and for any other information regarding this weekend. You can also go on line and vote for your preference on our website.

As you will have heard by now, ICASA has issued draft Radio Spectrum Regulations in Government Gazette 33590 for comment. You can download it on our website at:
http://www.marc.org.za/downloads/gazzette_33590_whitepaper.pdf
There are some significant changes to regulations pertaining to amateur radio in the proposed document.

Some of the major changes are:
The ZR licence will disappear and with that the requirements for the present upgrade criteria.
Persons having passed the Class A examination will be allocated a ZS callsign.
There will be an age restriction on the class B license. The Class B licence will be available to persons under the age of 20. ZU licence holders are expected to write the class A examination before they reach 25 after which the Class B license (ZU) will be cancelled.

ICASA will be holding public hearing on 1 and 2 December 2010. Soon after that the final regulations will be promulgated.

Personally I'm in two minds whether I'm for or against getting rid of the ZR licence, and leaning towards agreeing to get rid of it. But I do not agree with putting an age limit on the ZU licences. Most holding a ZU licence will progress to the Class A licence, as we have experienced so far. The class B licence has been a tremendous success to date, and has been part of the reason why our hobby has gained popularity again. The restrictions imposed on the ZU licences should be enough of a motivation to move on to the class A licence. At the same time I don't see why we should prevent amateurs from staying a ZU indefinitely with their restrictions.

Your comments are important. Please send them to our secretary ZS5AZ, who can collate them and forward them SARL and/or ICASA. Alternatively, you can send them to armi@sarl.org.za before 22 October.

Last, but by no means least, Ian sent out membership update forms via email. Please complete the form on your computer and press the send button. We will be posting the form off by snail mail to those who do not have email and internet access. The form is also available on our web page. If you do not have an internet connection, you can go to a friend who has and complete the form on his computer.

This information is very important. We are struggling to extract simple data from our old records, like how long you have been a ham, when you joined MARC (or the club when we were still a branch of SARL), your spouse's name, dates of birth etc. So, please help us in getting our data base up to date.

Wishing you many sunspots and great dx conditions,

Mike ZS5ML

Diary of Events

20/21 November SARL HF filed day at Midmar Dam
04/11 December Year End function at Cumberland Nature Reserve

The M.A.R.C. Infrastructure

Voice Repeaters (FM) *Visit www.marc.org.za/pages/freq.htm for updates of this list*

VHF	Tx	Rx	Equipment
Hilton	145.6625MHz CTSS 88.5	145.0625 MHz	SCR200 20W, Diamond X-200 rx and tx
Estcourt	145.700 MHz	145.100 MHz	Emcom SA256 25W, Diamond X-200 rx
Franklin	145.725 MHz	145.125 MHz	GE MVP 10W
Worlds View	145.750 MHz CTSS 88.5	145.150 MHz	Emcom SA256 25W, Diamond X-200 rx and tx
Greytown	145.775 MHz	145.175 MHz	Home Brew @ 20w, Diamond X-200 rx and tx
Underberg	145.7875MHz CTSS 88.5	145.1875MHz	Q8000 30W
Windy Hill	145.700MHz	145.100MHz	Hamnet repeater.
UHF			
Mt Gilboa	439.225 MHz	431.625 MHz	Vertex Standard VXR-9000, Diamond X-200 rx and tx
Zwartberg	438.775 MHz CTSS 110.9	431 .175 MHz	GE MVP 15W

APRS
The national APRS frequency is 144.800 MHZ (Tx & Rx). The I-Gate is at Hilton (ZR5S). Fixed stations should beacon at approximately 30min intervals with a path of WIDE5-5. Mobile stations should beacon at approximately 1min intervals with a path of "WIDE1-1, WIDE5-5". We have aprs digi's throughout KZN. A PBBS (mailbox) is on ZS0PMB-1 for emergency use. A KA-NODE is on ZS0PMB-7

Packet Radio
No packet radio frequency. However, limited packet radio facilities are available on 144.800MHz

ECHO-LINK "voip"
Our node number is 244279 Call Sign ZS5PMB. This Echo-link facility is available on the Midlands linked Repeater network.

E-QSO "voip"
We are in the "101ENGLISH" virtual room, on the "repeater.dns2go.com" server. This is linked to RF at Hilton on 433.000 MHz simplex.

BEACONS
Greytown 50.321 MHz (Tx) ZS5SIX FSK

WEB SITES
MARC'S very own website www.marc.org.za
SARL's website www.sarl.org.za
HAMNET website www.hamnetkzn.org.za

Regular Events

The KwaZulu Natal Net (Early Birds):
Starts at 06h00 on 7.055 MHz. in winter and 3.650Mhz in summer and continues until 07h40. Colin ZS5CF hosts the net from 06h00 & Gary Potgieter (ZS5NK)-takes over later on.

MARC Sunday Morning Net:
Times: 07h45. Club bulletin is presented at 08h0.
Frequencies: VHF: 145.750MHz, 145.6625MHz, 145.775MHz, 145.725MHz, 145.7875MHz, 145.700MHz
UHF: 439.225MHz

Hamnet Bulletins: Sundays at 07h00 on 145.625MHz and 3.760MHz
Wednesdays at 19h30 on 145.625MHz and 3.760MHz

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How I became a HAM *by Krish ZS5KRN*

My Dad who is now late, bought his first CB in 1980 and when he brought it home the first day, We took a drive to a hill above our house in Thornville and for the first time we saw what a radio transceiver was, the first contact my Dad made was a guy in Durban Harbour. For us this was something amazing because this was the closest thing to a telephone which was quite scarce in our area at that time. That day will never be forgotten and so will the contacts we met over the years. For me, the codes and "LINGO" that was used was a bit odd, words like Anklebiters (children), Punchback (brother), Pushback (sister) etc tickled me and as I grew accustomed to these words I became more fascinated with this new marvel that my Dad brought home.

One day my Dad needed money to repair his car and he was short of R50.00, he sold the CB and it was a very sad day for him as well as for me. My uncle bought it and for over ten years never used it, and one day I asked if he still had it and he took it out and gave it to me and I promised to pay his money back to him. And from then on I started using the CB on my own.

It was not long ago, about four years or so I met an old CB friend that moved over into Ham and he asked me to join up as well. At first I had a difficult time trying to get information on how Ham works and eventually made up my mind to become a Ham. I did it because I heard that one can talk to people all over the world and there was so much more to Ham than CB. There was more power and better radios and besides all that there was this thing about Amateur radio that really caught my attention and that was experimenting with electronics. I was always interested in electronics but never had enough time to spend studying it.

I now work for a firm that manufactures powerlines and overhead insulators for all types off high voltage transmission lines. The products we use to manufacture the insulators can very well be used in amateur radio especially for building antennas. The insulator consists of silicone rubber moulded onto a fibreglass rod. Depending on the application and voltage, the size and thickness of the rod varies. My most rewarding experience regarding my hobby so far was buying a CW ZR to ZS upgrade kit and building myself and getting it to work, I did however manage to mix one resistor and put it into the wrong place causing the transceiver not to have any audio but thanks to a fellow ham and Mentor, I got it changed it it works perfectly. Now to learn "Mors" Code hi hi. Or is it Gemors? I will however try my hand at it though.

That's my story and I want to tell all the new and upcoming Hams that you must not give up now for it is at this point in time that the tide will turn. My tide has turned and within two years or less I have done my ZU as well as ZR and I am awaiting ZS. Take this opportunity to do your best.

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Multimeter as Lightning Detector submitted by Shaun ZR5SF
Publication extract from elector electronics 7/8/2006

Most digital multimeters have a sensitivity of 200mV and an input impedance of 10M?. With this information you can calculate that at full scale there will be a current of 20nA. In reality you have a very sensitive ammeter in your hand.

Now that we know this, it becomes a mission to do something with that knowledge. In other words, here is a solution that requires a problem….

For example, try the following:
Connect the "Com" of the voltmeter to ground (safety earth from a power point, central heating, plumbing etc.). Connect an old bicycle wheel spoke or a length of thin copper wire to the"V" socket so that you get a kind of antenna. When you place this impressive looking apparatus on a windowsill during a thunder storm and set the meter to the 200mV range, you will, with a bit of luck, see nice deflections during lightning strikes. A nice thing is that you will see a build-up of static charge long before the flash, and immediately after the lightning flash the charge is gone. Be aware of your own safety and those of others: don't walk outside with the thing or surreptitiously lead the antenna to the outside. This is really dangerous. In these modern times people still die from lightning strikes!

According to theory it is possible to improve the lightning detector somewhat. A sharp point or edge collects more that a rounded one. You probably have a razor blade somewhere. Attach this razor blade at the top of the antenna. And again, be careful: keep old people, children and pets away.

The reception can be improved a lot more by ionizing the air in the region of the antenna with the aid of radioactivity. Most of the mantles used in gas and petroleum lamps contain a small amount of radioactive material and also smoke detectors that work with an ionizing chamber are (lightly) radioactive. It is better to leave the smoke detectors alone, because they often contain very poisonous substances, but a piece of lamp mantle could be secured to the razor blade with some two-component epoxy glue.

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To Swop:

1. 20m tilt-up free standing tower with base. The top is galvanised. Bearing in top for a rotator. Very strong. R15k onco
2. FT201 Transmitter with separate VOX. R4.5k onco
3. 3 band yagi (10/15/20m ?) Plus HiGain Quad - needs some attention. R500 onco

   Phone Robin Inggs ZR5RMI on 072 880 1368

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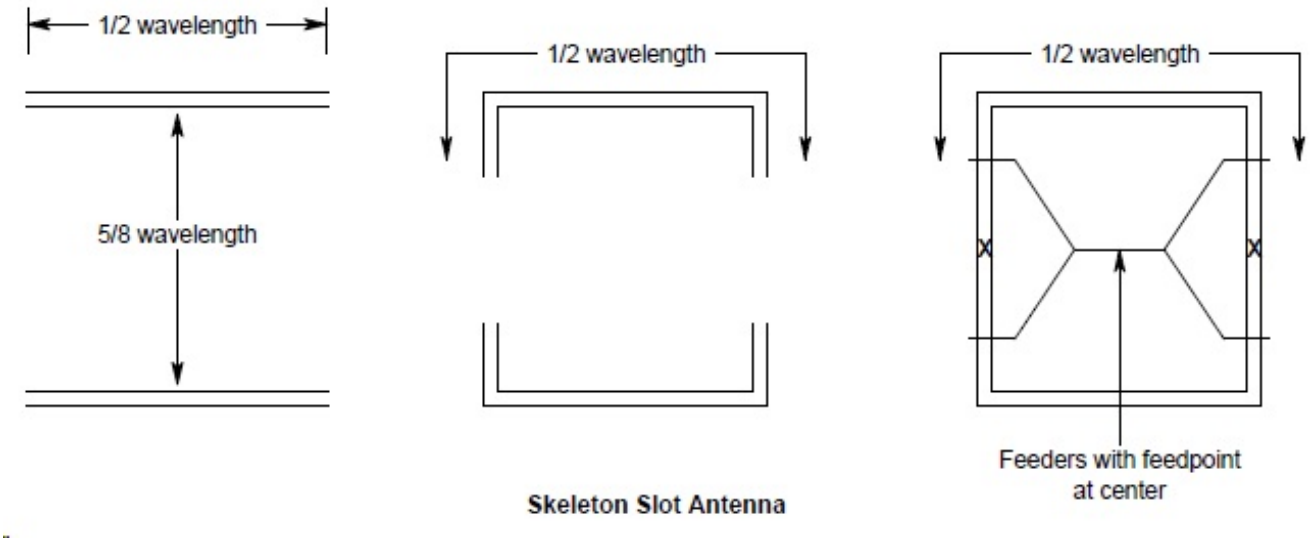
The Skeleton Slot Antenna Revisited

by Bobby Brainwave, N3VGS+

Having received correspondence about the skeleton slot antenna featured in the article "combination and hybrid antennas" in a recent issue of the QRN, I felt the necessity of revisiting this particular array and taking a closer look at its properties. It was brought to my attention by Howard, WA3EOQ, that this antenna is not a combination of yagi and quad designs. It is an array of stacked yagis but the driven element is not one wavelength in circumference or fed at a current point as a quad element would be. Although the driven element resembles a slot radiator in appearance and feed point, there are no other similarities between the two. First let's look at the properties of a slot radiator.

The slot radiator is as its name suggests, a slot cut in an infinite conducting plane. The slot is a multiple of half wavelengths at the desired operating frequency and current fed with balanced transmission line at the center. It appears electrically to be two shorted quarter wave transmission lines with no radiation possible. Currents circulating through the conducting plane about the slot cause a radiation pattern that is perpendicular to the slot. In other words, a vertical slot radiator is horizontally polarized and vice versa. There is no radiation at the slot ends. Studies were done to reduce the conducting plane from infinite proportions to a wire slot to determine when properties of a slot radiator disappeared. It was found that when the conducting plane was reduced to less than one half wavelength from the slot, radiation quickly deteriorated. Therefore the skeleton slot driven element is not a slot radiator at all except in appearance.

Dimensions for the skeleton slot driven element have been developed by experiment. Best performance is obtained with slot sides of 5/8 wavelength and top and bottom of 5/24 wavelength. If the skeleton slot is not a true slot radiator then how does it work? Consider two half wave dipoles separated by 5/8 wavelength. Since the current portion of a dipole does the radiating, bend the voltage ends toward the opposite dipole. This gives an advantage that will be mentioned later. This end bending has a slight efficiency loss that is more than offset by stacking efficiency. Next, the bent ends of both dipoles are joined together by high impedance feed lines and fed at their centers for equal currents to the dipoles. This high impedance feed point is connected to transmission line with a tapered matching section or delta match.



Skeleton Slot Antenna

The electrical differences between the skeleton slot and slot radiator are as follows: Radiation from the skeleton slot is from the slot ends and not the middle; the skeleton slot requires two sets of parasitic elements instead of one for the true slot; skeleton slot feedpoint is high impedance and requires matching while the true slot feed is low impedance. Both antennas exhibit wide bandwidth and a single feedpoint.

The other advantage that the skeleton slot driven element brings to a stacked yagi array is due to the bending of the radiating dipole elements. In a yagi antenna the impedance of a split dipole driven element varies greatly with spacing and quantity of the parasitic elements, often being reduced to below 20 ohms and difficult to match to coaxial cable. This is due to capacitive coupling between the voltage ends of the driven and parasitic elements. With the skeleton slot driven element these voltage ends are bent down and away from the plane of the other elements. Therefore, the feed impedance does not vary as much with element spacing or number of directors yielding a much wider bandwidth at a slight loss of gain.

This type of array gives almost equivalent gain to two stacked yagis but exhibits wider bandwidth and a single feed point. These are necessary qualities for operators who need an antenna to cover an entire ham band or are using wide bandwidth modes such as FM or amateur television. Another great advantage is when vertically polarized, the support mast if metallic does not interfere with the antenna pattern since each yagi portion is side mounted. Physical size limits this array to 6 meters and higher in frequency. Its popularity goes back over thirty years and is not difficult to construct as a home-brew project.

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Jota Weekend 16/17 October by Craig, 1st Howick Scouts

Seek you.... seek you.... Zulu Sierra five papa mike bravo... seek you.... seek you.... Jota Jamboree!

Hi Guys

Just a quick report back on the weekend. JOTA weekend was a great success. We had 15 scouts attend and 11 sleeping over on Saturday. We were able to chat to scouts from Namibia, Botswana, Mozambique and South Africa. Nearly everyone was able to chat over the radio (one or two were a bit shy), some managed to rack up more than 10 contact! Fun was had by all!

Unfortunately JOTA really snuck up on us this year and we weren't able to invite other troops. Next year I would really like to host a district camp. We had such fun and I would love to widen that circle! There is a possibility that the Shaun from the amateur radio club will be able to organise a permanent antenna at the hall for us, which should give us a much clearer signal and a wider range next year, so we'll need to follow up on that possibility.

A special word of thanks to Shaun, Rachel, Stan, Marjoke and Joost from the club for giving up their time to share their knowledge and passion with us. The scouts learnt a great deal in a very short space of time and enjoyed every minute I can assure you. Thanks also to Dr Johnson for coming down to share his experiences with Morse code breaking in the army, it was fascinating.

I look forward to more JOTA fun next year!

Yours in Scouting,
Craig

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If you have any useful articles for this newsletter, please email them to zs5ml@marc.org.za for publication. Any articles of interest to Amateur Radio, both technical and non technical, will be well received.

If you would like your own email address ending with @marc.org.za, please contact me zs5ml@marc.org.za

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Ham Bulletin Readers
24 October - ZS5ML
31 October- ZS5ML
07 November - ZS5AZ
14 November - ZR5SF
21 November - TBA

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Tailpiece (submitted by Errol ZS5EGW)

What Makes 100%? What does it mean to give MORE than 100%? Ever wonder about those people who say they are giving more than 100%? We have all been to those meetings where someone wants you to give over 100%. How about achieving 103%? What makes up 100% in life?

Here's a little mathematical formula that might help you answer these questions:

If **A B C D E F G H I J K L M N O P Q R S T U V W X Y Z**
is represented as **1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26**.

Then **H-A-R-D-W-O-R-K**
8+1+18+4+23+15+18+11 = **98%**

And **K-N-O-W-L-E-D-G-E**
11+14+15+23+12+5+4+7+5 = **96%**

But **A-T-T-I-T-U-D-E**
1+20+20+9+20+21+4+5 = **100%**

And **B-U-L-L-S-H-I-T**
2+21+12+12+19+8+9+20 = **103%**

AND, look how far ass kissing will take you.
A-S-S-K-I-S-S-I-N-G
1+19+19+11+9+19+19+9+14+7 = **118%**

So, one can conclude with mathematical certainty, that While Hard work and Knowledge will get you close, and Attitude will get you there, it's the Bullshit and Ass kissing that will put you over the top.

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