



HAMS Keywite

December 2009

NEWS

www.marc.org.za

PO Box 1076, Hilton, 3245

M I D L A N D S A M A T E U R R A D I O C L U B



AFFILIATED TO
THE SARL & IN
ASSOCIATION
WITH THE NATAL
CARBINEERS

CLUB COMMITTEE: 2009-2010

CHAIRMAN / TREASURER

Mike Boast (ZS5BGV)
Telephone: (033) 342-1241

VICE-CHAIRMAN, HHN & WEBMASTER

Mike Lauterbach (ZS5ML)
Telephone: (082) 372 0997

SECRETARY

Peter duPlessis (ZS5PJ)
Telephone: (033) 239 4426

REPEATERS & DIGITAL

Shaun Rudling (ZR5S)
Telephone: (033) 342-1609

TECHNICAL

Craig Dagleish (ZS5CID)
Telephone: 082 802 0916

PUBLIC RELATIONS

Rob Billing (ZU5 ROB)
Telephone: 083 656 2676

COMMITTEE MEMBER

Brian Lourens (ZR5BCB)
Telephone: 072 157 7708

The Chairman's Ramblings

As we say good bye to 2009 and the end of the first decade of the second millennium, how time has flown. It seems not so long ago that we were all worried about the YK2 or millennium bug, many people wouldn't even fly on the 31 December 1999. Was that all a hoax? The company I worked for at the time spent millions on sorting out its soft ware to handle the date change.

Things have changed and I suspect that we don't notice the changes as they come along gradually, and when we look back and see the differences we are stunned at the changes. The cell phone is a good example it wasn't so long ago that they were "bricks" (same size and weight) as compared to the current models and they only made phone calls.

So where will we be in the next decade, could it be, in the grip of many black outs by Eskom or will we be well into the green power generation, with solar power panels on the roof, wind turbines or some similar energy generating devices in our homes. I believe that the battery will be very different and this will make ham radio more portable. There is much research going on in this field and this is a major draw back for solar power, how to store and recover the energy efficiently. Current batteries are not very efficient, costly and have a relatively short life. We can but wait and see how technologies develop and impact our lives.

At a recent Hamnet meeting in Durban we were told about the emergency plans for the FIFA world cup and that Hamnet would be part of the emergency communication system. There will be a communication centre here in Maritzburg and we will be looking for volunteers to help man this station on Durban match days. Any licensed Ham will be able come forward and training will be given on procedures, and on the equipment. Give it some consideration. We will have details in the new year.

My I thank the members support over the year and a specially thanks to the committee for all the work they have put in, it is much appreciated. We look forward to 2010 and trust that it will be a great year for amateur radio.

May I wish you all a peaceful Christmas season and a very prosperous 2010 .

Mike ZS5BGV



Diary of Events

16 January MARC Meeting, 11h00
15-17 January PEARs VHF/UHF Contest

The M.A.R.C. Infrastructure			
Voice Repeaters (FM)			
<i>Visit www.marc.org.za/pages/freq.htm for updates of this list</i>			
VHF	Tx	Rx	Equipment
Howick	145.6625MHz CTSS 88.5	145.0625 MHz	SCR200 20W, Diamond X-200 on rx and tx
Estcourt - off air	145.700 MHz	145.100 MHz	Emcom SA256 25W, Diamond X-200 on tx
Franklin - off air	145.725 MHz	145.125 MHz	GE MVP 10W - off air
Worlds View	145.750 MHz CTSS 88.5	145.150 MHz	Emcom SA256 25W, Diamond X-200 on rx and tx
Greytown	145.775 MHz	145.175 MHz	Home Brew @ 20w, Diamond X-200 on rx and tx
Underberg	145.7875MHz CTSS 88.5	145.1875MHz	Q8000 30W
Windy Hill	Will be taken over by Hamnet - off air		
UHF			
Mt Gilboa	439.225 MHz	431.625 MHz	General Electric MII, Diamond X-200 on rx and tx
Zwartberg	438.775 MHz CTSS 110.9	430.175 MHz	GE MVP 15W - off air
APRS			
The national APRS frequency is 144.800 MHz (Tx & Rx). The I-Gate is at ZR5S (Blackridge). 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 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			
Hilton	144.625 MHz (Tx & Rx)	AEA PK-88, Slim-Jim	
The PBBS (mailbox) is on ZS0HIL-1. The digi is on ZS0HIL-2. Use Winpack to connect to the PBBS and leave a message for someone.			
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 Blackridge on 433.400 MHz simplex.			
BEACONS			
Hilton	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:

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 08h00 and the national bulletin at 08h30.

Frequencies: HF: 3.620MHz
 VHF: 145.750, 145.6625, 145.775MHz
 UHF: 439.225MHz

Hamnet Bulletins: Sundays at 07h00 on 145.625MHz and 3.670MHz
 Wednesdays at 19h30 on 145.625MHz and 3.670MHz

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Origin Of HI HI

"hi hi" is the Morse equivalent of a laugh as in Morse it sounds like someone chuckling ("hehhehhehheh hehheh"). That is di di di dit di dit --- or dot dot dot dot dot dot. You really have to listen to it sent in Morse to appreciate its laugh like sound. It is most commonly used in CW (Morse Code), but has carried over to voice as well. Many CW expressions have carried over to voice -- such as 73 (Best Regards) and 88 (love and Kisses), etc. The origin probably dates back before radio to the telegraph days. And since Hams used Morse long before voice became practical-- the sound of the Morse characters HI HI was used to resemble a laugh sound. In some sense it is equivalent of a smiley. It's onomatopoeic -- that is the naming of a thing or action by a vocal imitation of the sound associated with it (as buzz, hiss) The definitive answer might be found in the "Dodge's The Telegraph Instructor Manual" circa 1850 to 1900. However, I have never been able to find a copy of this document. Wish I could as it would help to see the transitions from telegraph to radio usage. So that is my best guess -- based on what old time telegraphers have told me.

Ed Note: Another use of HI HI is sending a greeting to a fellow Ham when vehicles pass -- four short horn beeps followed by two short horn beeps. Since many Hams have Ham License plates -- a fellow Ham is easily spotted as well as the seeing the mobile antennas.

Why 50 ohm coax ?

Standard coaxial line impedance for r.f. power transmission in the U.S. is almost exclusively 50 ohms. Why this value was chosen is given in a paper presented by _Bird Electronic Corp._ Standard coaxial line impedance for r.f. power transmission in the U.S. is almost exclusively 50 ohms. Why this value was chosen is given in a paper presented by Bird Electronic Corp.

Different impedance values are optimum for different parameters. Maximum power-carrying capability occurs at a diameter ratio of 1.65 corresponding to 30-ohms impedance. Optimum diameter ratio for voltage breakdown is 2.7 corresponding to 60-ohms impedance (incidentally, the standard impedance in many European countries).

Power carrying capacity on breakdown ignores current density which is high at low impedances such as 30 ohms. Attenuation due to conductor losses alone is almost 50% higher at that impedance than at the minimum attenuation impedance of 77 ohms (diameter ratio 3.6). This ratio, however, is limited to only one half maximum power of a 30-ohm line.

In the early days, microwave power was hard to come by and lines could not be taxed to capacity. Therefore low attenuation was the overriding factor leading to the selection of 77 (or 75) ohms as a standard. This resulted in hardware of certain fixed dimensions. When low-loss dielectric materials made the flexible line practical, the line dimensions remained unchanged to permit mating with existing equipment.

The dielectric constant of polyethylene is 2.3. Impedance of a 77-ohm air line is reduced to 51 ohms when filled with polyethylene. Fifty-one ohms is still in use today though the standard for precision is 50 ohms.

The attenuation is minimum at 77 ohms; the breakdown voltage is maximum at 60 ohms and the power-carrying capacity is maximum at 30 ohms.

Another thing which might have lead to 50 ohm coax is that if you take a reasonable sized center conductor and put a insulator around that and then put a shield around that and choose all the dimensions so that they are convenient and mechanically look good, then the impedance will come out at about 50 ohms. In order to raise the impedance, the center conductor's diameter needs to be tiny with respect to the overall cable's size. And in order to lower the impedance, the thickness of the insulation between the inner conductor and the shield must be made very thin. Since almost any coax that *looks* good for mechanical reasons just happens to come out at close to 50 ohms anyway, there was a natural tendency for standardization at exactly 50 ohms.

ORIGIN OF LID (another version)

My granddad was a railroad telegrapher. He said that the term lid came from operators who would put the lid of a Prince Albert tobacco tin on the sounder so they could copy the code easier. It was a practice that was frowned on by operators who did not have to do this and it became the slang used for bad operators. They would also say that such an operator had a "tin ear".
73 Mark WA0DC

ORIGINS OF THE TERM, BOATANCHOR

FOUR VERSIONS:

Version I -- During World War II, Military Radio Techs used the term BoatAnchor as they struggled with the huge, heavy, electronic equipments of the day -- full of transformers, tubes etc. Also the US Navy frequently marked electronic gear with an anchor. After the war -- tons of the equipment appeared on the surplus market and was dubbed BoatAnchors due to the reasons above - one or both.

Version II -- After WWII a national magazine editor answered a query "As what to do with an outdated heavy, large, surplus electronic instrument?" and answered "Tie a line to it and use it as a BoatAnchor"

Version III -- The expression "boatanchor" may have originated earlier than 1956, as Doug Hensley pointed out. I found no earlier references in amateur radio than these CQ's, but there may be some. However, there was no reason to call amateur gear of that era "boatanchors" since almost all of it fit that description. It wasn't till later when smaller, lighter gear became popular that there was reason to categorize some gear as boatanchors. And it is also interesting to me that a word originally used to denote something of little value, useful only to anchor a small boat, has taken on a more affectionate meaning. We love our "boatanchors". Roger K6XQ

Version IV-- And then there is this one from a News Group. "The true determination is generally made by your spouse. If you can walk in the front door with it, without your spouse asking "and what are you planning to do with that?", it is not a boat anchor. Boat anchors are brought in during the night or on long weekends. That is CLASSIC! :-)

ORIGIN OF MAYDAY (another version)

Why do ships and aircraft in trouble use "mayday" as their call for help? This comes from the French word m'aidez - meaning "help me" - and is pronounced "mayday." (Note: not exactly.... it's pronounced "med-ay", but close enough)

International Radio Call Signs

Radio callsigns for the world are set by the ITU – the UN Agency which coordinates all radio activity. The ITU allocates a block or blocks of prefixes to each country, and all callsigns must begin with the specified prefix. This applies to all radio amateurs, aircraft, ships, broadcast, commercial stations etc.

1913 - Radio Call Letter Policies issued by the Department Of Commerce listed the USA with call letters of KDA to KZZ - United States, N - All to the United States, W - All to the United States. This document shows other countries as well. However, for Amateurs, "The call letters for amateur stations in the United States will be awarded by radio inspectors, each for his own district, respectively according to the following system: (a) The call will consist of three items; number of radio district; followed by two letters of the alphabet. Thus, the call of all amateur stations in New England (which comprises the first district) will be the figure "one" in Continental Morse, followed by two letters; in California (in the sixth district) the figure "six" followed by two letters; in South Carolina the figure "four" followed by two letters; in Missouri the figure "nine" followed by two letters, etc. The letters X, Y, Z, must not be used as the first of the two letters". Examples, 1AW, 6OI, 2MN.

Here is a possible explanation as to how the USA got W and K, no documentation on this but sounds plausible. The USA had unofficially used N for North America (e.g., NBZ, Boston), also A for America. The letter "N" in morse is dah dit, adding a dah to N gives dah dit dah which is "K". Letter "A" in morse is dit dah, adding a dah to A gives dit dah dah which is "W".

Somewhere in this era, an informal system of prefixes evolved and Amateurs used A for Australia, B for Belgium, C for Canada, etc. This single-letter system worked until Amateur Radio spread around the world and there were too many countries for the system to accommodate. Thus, in 1927, a new system took effect using two-letters with the first letter indicating the continent (E for Europe, A for Asia, N for North America, F for Africa, etc.) and the second letter indicating the country. Stations in the 48 United States used an NU call. These were called "Intermediate Prefixes".

With the advent of the Radio Act of 1912, the first Amateur Radio License is issued. The call letters assigned to the United States were NAA -NZZ, WAA - WZZ, and KDA to KZZ (KAA-KCZ was assigned to Germany and was not given to the United States until 1929). The somewhat puzzling Amateur calls like 1AW, 6OI, 2MN, etc. is explained by the fact that Amateur stations did not qualify for international call signs. At that time, the USA was divided into nine Radio Districts so Amateurs were granted calls consisting of their district number followed by letters, the first letter was from A through W, for example, 1AW, 1TS. Recognition was given to certain land stations, X as the first letter for Experimental licenses (e.g. 1XE), Y for School licenses (e.g. 9YY), and Z for Special Amateur licenses (e.g. 8ZZ). 1x3 calls (like 1AAA) was issued to Amateurs beginning in 1914. For a list of early X, Y, Z callsign issues -- see U.S. Special Land Stations: 1913-1921.4 It was not until October 1, 1928, that the W and K prefixes were assigned to Amateurs.

Some Examples:

Angola	D2
Antarctica-Scott-KC4	ZL0, ZL5
Australia	AX, VH–VN and VZ.
Botswana	A2
Cape Verde	D4
Canada	CF-CK, CY-CZ, VA-VG, VO (Newfoundland), VX-VY, and XJ-XO.
China	BAA-BZZ, XSA-XSZ, 3HA-3UZ, VR (Hong Kong), XX (Macao).
Comoros	D6
Germany	DA-DR
Korea	DS–DT, D7–D9, HL and 6K–6N.

Japan	JA–JS, 7J–7N, and 8J–8N.
Lesotho	7P
Madagascar	5R
Malawi	7Q
Marion Island	ZS8
Mauritius	3B8
Mexico	XA–XI, 4A–4C, and 6D–6J.
Mozambique	C9
Namibia	V5
Netherlands	PA–PI.
New Zealand	ZL, ZL1 - ZL4, ZM
Penguin Island	ZS0, ZS/1, ZS1/P, ZS9/1
Reunion Island	FR/R
Russia	R and UA–UI.
Seychelles	S7
South Africa	ZS, ZR, ZU
St Helena	ZD7
Swaziland	3DA
The United Kingdom	G, M, VS, ZB–ZJ, ZN–ZO, ZQ, and 2.
The United States	K, W, N, and AA–AL.
Zambia	9J
Zimbabwe	Z2A - Z2Z, ZE

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Editor's Waffle

Thanks to Shaun for submitting some interesting snippets for this month's edition! Any articles or suggestions are greatly appreciated. Without any feedback I have absolutely no idea if the HHN is well received or not.

As most of you are aware by now, we have installed a "new" programmable Kenwood repeater at Hilton, so that the old repeater can be retuned, to get the deviation right. It was too wide, causing some radios to open their squelch when listening to the Bluff 145.650 repeater. The deviation on the new repeater also seems to be too wide, and will have to be corrected.

Some have questioned the frequency we have chosen, and this raises the question re old and new rigs, tone guarding etc again. The 700 repeater can no longer be used at Hilton because of the close proximity of the new HamNet repeater at Windy Hill. Moving the HamNet repeater away from Windy Hill is not an option, as it has proven to be invaluable with the many events supported by HamNet. It also covers many dead spots not covered by the other repeaters. As a result, the Hilton 700 repeater is being moved to Estcourt, to extend the range of the HamNet repeaters.

The question now was which frequency to use at Hilton. The National Band Planning Committee was consulted, and the first frequency we tried was 145.675, hoping that it was far away enough from the Eshowe repeater. Unfortunately it was not, and then another frequency was needed. The obvious "free" frequency to use was the 145.725, which would not cause any interference. This frequency is not being used locally as a repeater at the moment, but unfortunately is legally licenced in Durban, and is not available. As a result an "in-between" frequency needed to be used, and the one least likely to cause problems is the 145.6625MHz. The deviation on this frequency needs to be narrow, and will cause possible problems with old rigs with wide deviation trying to access this repeater by clipping their transmissions.

We are trying to accommodate those with old rigs, but this is not always possible. First prize will be to find a happy medium, where the old rigs will still work well, and where the deviation is narrow enough not to open the squelch on the radios tuned to 650. A possibility also exists that this repeater will need tone guarding at times, judging by the intermittent interference experienced on the site. This means that some of the old rigs will struggle on this frequency. The committee has already discussed workshops for installing tone boards on older rigs, and these will probably be subsidised for club members.

On a positive note, the 750 repeater has generally performed well, and the tone guard on it did not have to be deployed often, in fact quite rarely.

I wish you all a merry Christmas and prosperous New Year, filled with joy and dx.

73 until next year.
Mike, ZS5ML



VOIP notes

by Shaun ZR5S

The MARC has two (2) voip technologies interfaced with its radio network.

These two facilities have been running for a few years now and local hams have had some memorable moments talking to overseas ham stations.

Echo-Link is our first VOIP (Voice Over Internet Protocol) facility. It is linked to the Worlds-View 145.750 repeater. When this 750 is linked through to the rest of our repeaters, one can use this facility on any of our uhf or vhf repeaters, including the HARC Alverstone 600 rptr.

E-QSO is our second VOIP facility. It is also located in Hilton and works on a simplex frequency of 433.000 MHz (no tone).

There is one big difference between the Echo-Link and E-qso as described below.

The Echo-link principle is similar to a telephone. It defaults as disconnected and one needs to dial a dtmf number to connect to a specific node anywhere in the world. After your session, you need to disconnect "hang-up" from that node.

The E-qso is different in that the overseas nodes are connected permanently. So one does not need to dial a number to connect or to disconnect. If someone anywhere in the world should talk on the e-qso, we would hear them on 433Mhz. Or if you should talk on 433 MHz, all the e-qso nodes around the world would hear you. One could also say that we are all in a virtual room in that if any one of us should talk, the other people in the room would hear that person.

So there you have it. This has been a very basic introduction to our voip nodes and we hope you will use them. You should in the very least, monitor and listen on these frequencies.

Because of nuisance operators, we have had to implement a password in order to make an echo-link call. Please contact Shaun, ZR5S on 0826761488 or any committee member for this code. Please do not mention this code on air or spread it around loosely. A nuisance echo-link operator is a ham or pirate that transmits dtmf numbers on the repeater network without announcing their call-sign first. This irritable practice is also often followed by repeated connects and disconnects to nodes around the world without actually calling for cq. The other echo-link stations can ban us from connecting to them if this happens.

How about trying to connect to some local echo-link nodes first to build up your confidence before you make international contacts. Here are some local node numbers to try;

402052	Bloemfontein
373742	Pretoria
4043	Cape Town
8041	Kempton Park

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Reminder re ICASA licences

ICASA will be generating the renewal notices in the first week of December, and plans sending them out middle of December. The unchanged licence fee of R27 has to be paid before 31 January 2010. Rumour has it that it will be increased to R125pa in the near future.

If you do not receive a renewal notice, please check with Peter, ZS5PHL, ICASA - Dbn branch. Chances are good that they do not have your correct postal details. Hopefully it will not be due to non payment of your license for this last year, because then quite a bit more work will be required to get it reinstated. Please visit http://www.sarl.org.za/forum/topic.asp?TOPIC_ID=4680 for more detailed information.

When you make a payment, please use your licence number, and not your call sign as reference. The payments are handled by the accounting staff who do not have call sign lists. There was a statement that you would have to sit exams again if you lost your licence due to non-payment. This is incorrect, but there is a good chance that your call sign might not be available when you reapply for your licence again. If you don't receive a renewal notice in time, make the R27 payment, with your licence number, to avoid possible future grief.

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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

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Ham Bulletin Readers

03 January - ZS5ML
10 January - ZS5BGV
17 January - ZS5CID
24 January - ZS5PJ
31 January - ZS5ML

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Tailpiece:

All women should live so long as to be this kind of old lady!
Toward the end of Sunday service, the Minister asked, ' How many of you have forgiven your enemies? '

80% held up their hands..

The Minister then repeated his question. All responded this time, except one small elderly lady.

'Mrs. Neely?'; ' Are you not willing to forgive your enemies? '

I don't have any. 'She replied, smiling sweetly..

'Mrs. Neely, that is very unusual. How old are you? '

'Ninety-eight, 'she replied. The congregation stood up and clapped their hands.

'Oh, Mrs. Neely, would you please come down in front & tell us all how a person can live ninety-eight years & not have an enemy in the world? '

The little sweetheart of a lady tottered down the aisle, faced the congregation, and said, ' I outlived the bitches.'