



HAMS

Keywite

July 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

The Chairman's Ruminations

CLUB COMMITTEE: 2009-2010

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I would like to begin by thanking the retiring members of the committee, Robin, ZS5MRS who reluctantly took over the chairmanship after the tragic loss of Wessel ZS5BLY, thanks Robin. Errol ZS5EGW and Mickey ZS5QB both of whom have made a considerable contribution to the committee and the club, thank you both for your efforts. It was good to have such a good turn out at the AGM with 14 members present and 4 proxies from members unable to be present. That is more than 50% of the membership, higher than we have seen for a few years.

I look forward to working with the new committee, who are Mike ZS5ML, Shaun ZR5S, Rob ZU5ROB, Peter ZS5PJ and welcome Brian ZS5BCB and Craig ZS5CID on to the Committee. We will be agreeing portfolios shortly. We have a number of issues to tackle in the year ahead all of which are vital for the club's future.

The first being the revision of the constitution, which has presented the committee with difficulties over the last few years. There are sections that are vague and others that are silent on important issues. We will shortly be bringing a new constitution for approval at a Special General Meeting. All being well that should be in the next few months. This will assist the working of the club and satisfy member needs.

Another priority will be to encourage new members to join the club, especially younger men and women. Ham Radio is, for most young people, an unknown hobby. The newer digital modes available require the use of IT and computer systems. These are in vogue with the younger set, and could prove an entry point and attract the interest of the younger generation. The clubs in Gauteng do seem to be making some headway with their projects. The ZU license does offer an easier entry to the hobby and will hopefully lead to an increased interest and advancement to the higher level licences. Every member of the club can play a role, by making known the attractions and excitements of our hobby. We do have a number of candidates who wish to write the ZU exam in the near future and this is a good start, but still more efforts are needed to keep the club relevant and interesting.

The other area of activity is completing the repeater network and linking the sites together. This will give coverage from Key Ridge in the East to the Berg in the west and south to Kokstad, a significant slice of the KZN midlands, one of the most comprehensive networks in the country. We can all be very proud of the system that will be a major asset to the club members.

Finally I would encourage all those who can attend our monthly meeting, to come and join us. We will be having meetings at some of our repeater sites and other places of interest. Come join us and enjoy our get togethers.

Mike ZS5BGV

Diary of Events

28 July	Digital Competition and Intechnet
01 August	Stand at the Hobbies Fair at the Model Engineering Club
02 August	SARL HF SSB Competition
3/7 August	National Science Week and ZS6SCI active
03 August	First teleconference meeting of the SARL Public Information Officer network at 20:00
8 August	BACAR Flight
9 August	SARL Mobile 40m sprint
15/16 August	Lighthouse and Lightship activity
22 August	Western Cape RTA
30 August	SARL HF CW 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	145.675MHz	145.075 MHz	SCR200 20W, Diamond X-200 on rx and tx
Estcourt	145.700 MHz	145.100 MHz	Emcom SA256 25W, Diamond X-200 on tx
Franklin	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 - off air
Windy Hill	Will be taken over by Hamnet		
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, 145.675, 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

Editor's Waffle

It has been another eventful month. Amongst other things, the repaired and modified Estcourt repeater was installed at the SAP in Hilton. Once again Shaun, ZRS5S, was the brave man climbing up the round, tapered, self supporting tower. We were glad that there was no wind when we arrived, but that changed when he reached the 30m mark at the top receive antenna. The sudden strong winds made up for the calm morning and made things extremely difficult - Shaun swayed with the mast by at least 2m off vertical! I could not have done it!

The cable for the receive antenna was removed as it had an open circuit, which was traced to an unsealed cable joint in the underground water-filled pipe. We replaced it with LMR400 cable. The lower transmit antenna is fed with 3/4" helix cable, and it was left untouched as it is still in good condition. The old home-made slim jim antennas were replaced with new Diamond X200 antennas. These new antennas should see us through quite a few years again before maintenance is needed.

A few lengths of old unused RG213 were recovered from the site. Many are still in good nick and will be used on other sites, like Groenekloof.

The 145.750MHz repeater modification is nearing completion. Thanks Craig, ZS5CID, for all your work with sorting our repeater radios! Once it has been replaced, the Estcourt 675 repeater will be sent to Craig so that new crystals can be fitted for 145.6625MHz, as well as a tone guard. This is necessary since at least one of us can trigger both the Eshowe and the Hilton repeaters simultaneously. Changing the frequency will sort this.

The Greytown 775 repeater is working very well. Hamnet has secured a repeater for Windy Hill. It is being programmed at the moment, and will be operational sometime soon. It will also be tone guarded but will not be linked to any network as it's primary use will be for HAMNET.

All our repeaters will have dtmf boards installed, which will enable them to be switched on and off remotely. This is necessary for various reasons, including when one should lock up for some reason. Switching it off will ensure that the rest of the network is unaffected and operational. Once completed, we will have a repeater network second to none in SA! Not a bad accomplishment for a group of amateurs called "wet behind the ears"...

Shaun has also been busy with his PlanePlotter radio. This radio receives 3 sets of data every second. This data, including positional data, is then stored on his computer. It forms a real time three dimensional plot of the aircraft on the computer screen. It does not stop there. Shaun has provided a link which interfaces this data with the internet. You can download this link from our home page on www.marc.org.za. When you click on this link, it opens Google Earth and plots any aircraft within range on the Google Map, in three dimension! In Google Earth you can tilt and rotate the screen to view the flight path of the plane in 3D, following the flight path as it descends in altitude, adjusting its course for a successful landing. Take offs are just as exciting .

And there is more! While watching the aircraft you can listen to the radio dialogue on 119.100MHz and 118.700MHz (for Durban International) If you cannot listen on radio direct, you can listen to them via the internet on <http://www.liveatc.net> and selecting Durban (code = DUR). There is also a link on the web for displaying all APRS objects, such as vehicles fitted with APRS units and ships.

What else have we been up to and what's planned ?

- You will already have seen the notice for the ZU courses. There will be follow-up ZR courses on offer, possibly in conjunction with HARC.
- We will try and patch our repeater network for some evening nets, in conjunction with HARC. Subjects will include projects, like antenna analysis, design and building
- Another country outing is on the cards before Christmas. Suggestions would be welcome. This should be another great event, and will hopefully be supported by the other KZN clubs as well.
- Bert has set up his "Wireless Shack" at the Baynesfield museum. By all accounts he has done a great job. Well done, ZS5QB, for promoting our hobby here! This is a great initiative!

- There will be work parties to bring our repeater sites back to their former glory, namely at World's View and Groenekloof. They have been neglected in the last couple of years and need repairs and painting. These could even turn out to be fun family days.

It really saddens me that a lot of club members go off air, or into listening mode only, when they step into retirement. This hobby is ideally suited for retirement, as theoretically, there is more time now to chat on air, keeping the repeaters warm, and staying in contact with your mates. The repeaters are there to be used, full time. If I get tired of hearing how well your morning is going, what you did to your antennas or how much better the weather is on your side, I can always turn my radio down this side. The rest of us would really like to hear you on air and listen to your stories, even if we cannot get back to you because of work commitments. There is a lot we can all learn from you. So how about it? Why don't you start enjoying your hobby again by trying to burn out our repeaters? Many of us will enjoy listening to you.

The beauty about our hobby is that you probably don't even need to change your radio. Just get it out of the box and dust it off. There are not many hobbies where 60 year old equipment can still interact and communicate with new equipment. Guess what - your old valve radio, manufactured before the second world war, can still communicate with radios manufactured today, which have all the latest bells and whistles. Twenty year old computers cannot communicate with current computers, unless you employ very clever computer programmers to do this with specialist programs. But our radios can, without any modifications, if no fancy tone guarding and new digital modes are used. Makes you think, doesn't it? So let's hear you on air! There should be one or two repeaters within range.

What is BACAR? An article from EngineerIT, by Hans van de Groenendaal ZS6AKV

In the 1970s and 1980s radio amateurs in the greater Johannesburg area were looking to spice up their amateur radio activity with some outdoor adventure that would involve the family. A group from Southern Africa Amateur Radio Satellite Association (SA AMSAT) came upon the idea of launching a radio payload on a balloon to go into near space. Near space is the area above where aircraft fly but below where low earth satellites orbit, the area between 20 km and 65 km above sea level. The project was aptly named BACAR, the acronym for balloon carrying amateur radio.

A number of various payloads were devised and packaged in a 2-litre plastic coke bottle. Those days the plastic bottle had a polystyrene covering to keep its content cold and in BACAR's case, from freezing once in the upper atmosphere.

Working with air traffic control and the Irene (near Pretoria) weather station a suitable launch time was established. The weather people at Irene routinely send up a weather balloon in the early hours of the morning which sends back information about the upper air winds. Armed with that information the path which BACAR would follow was worked out and a call to air traffic control would determine the launch window, normally between 07:00 and 07:30. In those days there were no early departures from OR Tambo Airport (then Jan Smuts airport).

The first payload was a simple beacon transmitter but soon more sophisticated payloads included transponders and parrot repeaters. One of the missions included a TV camera transmitting pictures from near space on an unused SABC television frequency.

While it was fun building and testing the equipment, the real fun was on the launch day. It involved a large number of people and their families gathering at the launch site, which often was at Rand Airport, Midrand.

At the launch site teams would get ready to fill the balloons with hydrogen (highly inflammable!), tie the payload and parachute to the balloons ready to let go at the time specified by air traffic control. Often more than one balloon was used depending on the weight of the payload. Powering the equipment was a problem, as usually Duracell batteries were used and although they delivered consistent power, their weight was a problem.

At the local radio club (then Gauteng) in Houghton, a mapping team would have maps of the expected coverage area and would receive information such as beam headings from radio amateurs as far as the Free State and Northern Natal.

As the balloons were released a radio station would cover the event live so that other amateurs tracking the signals from their homes would know where to start looking. This was for many where the real fun began. Although a radio signal could be sent to ignite an explosive device to release the payload from the balloons, the balloons would often burst prematurely. Armed with direction finding equipment and radios to listen to the mapping team's commentary of where BACAR was heading, the race was on.

There are many great stories about recovery of the BACAR equipment - such as the one where a farm labourer found this strange-looking coke bottle with wires and aerials sticking out of it. He carefully picked it up and set off to the farmhouse to report his find. To the amazement of the tracking teams, BACAR was moving again after it had apparently landed. It was later recovered from a smiling farm labourer as he collected his R10 reward as advertised on the coke bottle. After every find the teams headed to a pre-arranged spot for a braai, beers and tall stories.

As balloons became difficult to get and the gas supplier became safety-conscious - stopping our supply of free hydrogen and instead offering expensive helium - BACAR was no more. Interestingly, the BACAR story found its way into international amateur radio journals, where amateurs in the US picked up on it. Today several projects are run at universities and other educational institutions. The fun is not over.

BACAR is back!

BACAR is making a return this year. A group of radio amateurs plan a launch in June. Much has changed in the intervening years. Microelectronics, sophisticated tracking systems using GPS information and a vastly improved supply of weather balloons from Japan will make a BACAR project possible that radio amateurs in the seventies could only dream of. Not only are the devices less power-hungry, far more sophisticated battery technology is available at considerably lower mass. One thing that has not worked to the advantage of a 2008 BACAR launch is the increased air traffic and more stringent CAA regulations. This is an opportunity for companies to have their components fly into near space, or just to have their logo go up and away in support of scientific experimentation. Industry support is important to get BACAR 2008 off the ground. The BACAR team is also inviting science teachers and their learners to join in an event that takes science out of the classroom for a great learning experience. Follow the BACAR project by visiting www.amsatsa.org.za

The next flight is on 8 August. Here is an excerpt from their website:

The long awaited BACAR flight will take place on 8 August 2009. BACAR is planned to be launched between 08:00 and 08:15 and with a multi-payload which should be of interest to radio amateurs and shortwave listeners around the country.

The payload includes an APRS system operating on 144,800 MHz which will be switched on 2 minutes before launch and allow APRS stations to follow the flight of BACAR. The callsign of the APRS beacon is ZS6SAT. A VHF beacon on 144,825 MHz will be operating every 2 minutes for the first 30 minutes of the flight on voice, MCW and CW, for the following 119 minutes every 5 minutes and then revert to every 2 minutes.

A 40 metre beacon will be operating on 7022 kHz with telemetry information every one minute. The information includes the inside and out temperature and the pressure in millibar.

Commentary will be carried on 7082 kHz, on 2 metres in Gauteng and on echolink and webcasting. More information will be in SARL news on 2 August.

Get a certificate:

Radio Amateur submitting a telemetry line of the 40 metre transmission together with details of their location will be awarded a BACAR certificate of participation. Telemetry details must be sent to bacar@sarl.org.za on the day of the launch.

MORE TELEMETRY INFORMATION

The 40 metre beacon is on 7 022 kHz.

The message sent on 40 metres in CW only every 1 minute and is as follows:

DE ZS6SRL BACAR PRESS MBAR xxxx TEMP INT xx [plus]/[min] C TEMP EXT [plus]/[min] C rst
-----50mW -----30mW-----20mW-----10mW EOM

The 2 metre beacon operates on 144.825 MHz. The message is sent in three modes:

During the first 30 minutes every 2 minutes, for the next 119 minutes every 5 minutes and there after every 2 minutes. One transmission consists of:

Voice x1

MCW x1

CW x1

The message is as follows:

Voice: "This is ZS6SRL BACAR ARDF BEACON BALLOON CARRYING AMATEUR RADIO"

MCW: "DE ZS6SRL BACAR ARDF BEACON BALLOON CARRYING AMATEUR RADIO EOM"

CW: " DE ZS6SRL BACAR ARDF BEACON BALLOON CARRYING AMATEUR RADIO EOM"

BACAR LAUNCH SITE:

Elandsrand Airfield Aviators Paradise. Private Airfield SACAA approved. This is a very clean and well run airfield just (2.3km) outside of the Air Traffic Management (TMA) and SFR area. The surrounding area is flat and ideal for a balloon launch. There are large areas between and next to modern hangers that have the grass cut short and ready for our launch.

Radio access to the NARC is not good but possible with high power and a yagi.

The launch site is ideally situated to launch and get a balloon track that will give the maximum exposure to the NARC and surrounding area without entering the TMA.

If a North wind blows for most of the altitude below 15000 feet we will have to call off the flight. This is unlikely from previous experience but can happen.

Details of the Elandsrand

Coordinates Dec: E 27.783307 S25.694272

Mission control

Mission control will be situated at the national Amateur radio centre where BACAR will be tracked using APRS.

If you are not planning to tacking in the field, visit the NARC and follow the activities.

CHAIRMAN'S REPORT - MARC AGM 2009

Robin Seal, ZS5MRS

A year ago, I was elected to the Club Committee. The Chairman, also elected at the same AGM, asked me to take up the position of Vice-Chairman. You will all remember who that Chairman was: none other than Wessel du Preez, ZS5BLY. Wessel was a great guy. He was also a great Chairman. He was also a good friend of mine.

Sadly, on the 2nd October, only three months after the AGM, OM Wessel died. His passing came as a great shock to me and, indeed, to the entire Club. Greta, his wife of many years, asked me to speak at his funeral, which was held in his adopted home town, Himeville. This I did: a well-attended and moving occasion.

On the 15th November, at a Special General Meeting, I was elected Chairman. A week later, I called together

the Committee, and we held our first meeting at my house in Hilton. As if by magic I found that I had inherited a quite remarkable group of hams – a group whom I unequivocally salute for their individual commitment, friendship, and hard work. Please give a resounding round of applause to show your own appreciation of this devotion and generosity of time, and often, of money.

I have not been a great Chairman. If I want an explanation, please believe that there is a connection between the passage of time, astuteness, and energy. A few years ago I would not have thought this connection to have been so dominating in one's life. If I have achieved anything during the past eight months it is because I seem to have been able effectively to harness the drive and enthusiasm of my team.

My report would be incomplete if I failed to mention a few of the highlights of my term of office. It is of the greatest import to draw your attention to the fact that MARC has one of the most advanced and extensive communication complexes in South Africa. Whilst it would, perhaps, be churlish to single out any single member of our Committee, a picture which stands proud in my collection is of Shaun, ZR5S, hanging on to an antenna tower, 30 metres above ground, swaying not so gently in a strong Midlands breeze. Have a look on our website: www.marc.org.za/home.htm which tells it all – which Shaun describes with typical “sang froid” as being tiresome! But jokes aside, our guys have given their all, and some, to place us on the map.

One must not forget the standard of excellence which Mike (ZS5ML) has achieved with HHN. I know the effort involved, for I tried my hand as editor for many moons in the past. And, single-handed, he has produced our own website – which, of course, emphasizes the importance of the Internet in all our lives today.

Before I end this report, I must mention the on-going effort which is geared to the perennial problem of membership. One of the tasks which I set the Committee a few weeks ago was to come up with a strategy for improving our membership numbers, including the nature of our Club meetings, and the necessity of a Clubhouse. A comprehensive questionnaire was sent out to all members – we are still awaiting some returns. The results of this survey and a plan for the future will be tackled by the incoming Committee.

One last thing. It is accepted that we are not perfect. That our achievements could be bettered. We are far from infallible. Criticism, creative criticism, is always welcome and acceptable. Destructive criticism is not. Such criticism, especially when voiced over the air, is utterly reprehensible, and has no place in our society.

As I leave you, I pray that your endeavours will always bear fruit. As I have said elsewhere, VIVA MARC ; VIVA HAM RADIO; VIVA! VIVA! Thank you for listening.

Where does the Lighthouse and Lightship Weekend activity stem from?

(Article sourced from <http://illw.net>)

The ILLW was started in Scotland by Mike Dalrymple (GM4SUC) and other members of Ayr Amateur Radio Group. Today the group is committed to the longterm ownership, development, administration and non-commercial operation of the event on behalf of the world-wide radio amateur community. Through its efforts in these areas AARG hopes to ensure that the ILLW and Mike's dream (of a premier international goodwill event) shall continue for many years in a truly amateur environment.

The event came into being from the Scottish Northern Lighthouses award weekend . See also the Ayr Group web site for further history and here for the original ILLW web site and 1999 list by Bob Dixon, GM3ZDH. Over the past 12 years it has grown to over 400 lighthouses in some 50 countries around the world participating in the event. For the history of the event please see this page.

The event is always held on the 3rd full weekend in August starting at 0001 UTC on Saturday and finishing at 2359 UTC on Sunday. It also now coincides on the Sunday with the International Lighthouse Day which is an event organised by the International Association of Lighthouse Keepers whereby as many world lighthouses will be open to the public for the day.

PURPOSE

The basic objective of the event is to promote public awareness of lighthouses and lightships and their need for preservation and restoration, to promote amateur radio and to foster International goodwill.

GUIDELINES

The event is NOT a contest. There are no prizes, certificates or other enticements to participate and therefore, participation is free. Each station's operators decide how they will operate their station regards modes and bands. Participants are not committed to being on the air during the entire period - only as much as they can. There are no restrictions on aerials or power. We wish operators to enjoy themselves and have fun whilst making contact with as many amateur radio stations as possible. We request that stations take time to work other lighthouses or lightships as well as the slow operator, or the newly-licensed or QRP stations.

As most available space in many lighthouses is usually filled to capacity, our activity does not have to take place inside the tower itself. Field day type set-up at the light or other building next to the light is OK. Our guidelines require that the station must be AT or ADJACENT to the light. Adjacent means next to or as close as possible in the field next door. Rules about 'line of sight' or 'within 1000m' do NOT apply to this event. Permission to operate from a lighthouse/lightship must be obtained from the relevant authorities. Operation from faux or false lighthouses, lights on poles etc. is discouraged as they are not within the spirit of the event.

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

Membership Fee Summary for 2009/2010

Full and Country Membership: R190-00
Joint Membership: R300-00
Student: R 95-00

All who opt to receive their HHN by email qualify for a discount of R50-00

The committee is also aware that some might not be in the position to pay these increases, and that they should be catered for. If you are in this position, or know of someone who would need assistance, please approach a committee member. Payment schedules will also be catered for. Please note that our financial year is from 1 July to 30 June in the following year, and that the new membership fees became due on 1 July.

MARC's banking details are:

Account Name:	Midlands Amateur Radio Club	Account Number:	62057756507
Bank	First National Bank	Account Type:	Current Account
Branch:	Bank Street		
Branch code:	220825		Use your Call Sign or Invoice Number as reference

Ham Bulletin Readers

02 August - ZU5ROB

09 August - ZS5PJ

16 August - ZR5BCB

23 August - ZS5BGV

30 August - ZS5ML

Tailpiece:

*The guys have stopped going out with ABSA girls: Today, Tomorrow, Together
They are now going out with Standard Bank girls: Simpler, Better, Faster*