



HAMS Waywite News

October 2007

www.marc.org.za

MIDLANDS AMATEUR RADIO CLUB
P.O.Box 1076, HILTON, 3245



AFFILIATED TO
THE SARL & IN
ASSOCIATION
WITH THE NATAL
CARBINEERS

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The Chairman's Fax

Well, last month spring had sprung but lo and behold the heavens have now sprung a massive leak with every thing, including concrete, turning green!

It has been a busy month with quite a lot happening on the two metre side what with the decision to purchase two fancy Diamond aerials to be tried out at our 750 site prior to be used at the Greytown upgrade which is almost ready. The Echolink is working very well and during the forthcoming JOTA at Worlds View it should be interesting to see what happens, hope to see everyone who can make to the meting which will be a bring 'n braai affair.

An interesting QSO took place recently with an ex-member of the club viz. Clyde Hyman, then ZS5XR and now ZS1CS in Cape Town. It was so nice hearing from OM Clyde again and I am sure that some of the older members will still remember XTRA ROMANTIC. He did send his 73 to all in PMB. This contact took place on Echolink, watch out for him.

Hopefully we will have some response to the basic electronics course which we intend to hold at the clubhouse over the next ten weeks, so far no takers!

The committee would like to welcome Rob Billings from the old town of Richmond (Natal) to our club and hope that his association with us will be a happy and fruitful one.

The next meeting in November will be a boot sale at the club house, please try and tidy up your shacks and storerooms of unwanted items and bring them along so that they may be dispersed evenly amongst us all at nominal cost!!

Why don't you join in on the Thursday MARC net at 19:00 on 3,620 MHz

NEXT MEETING ON THE 15/09/2007

CU THERE

PS! Don't forget to send your apologies if you can't make it!

73 DE ZS5MQ

The club meets on the third Saturday of every month, except December at 13:00 at the Natal Carbineers Conference Center, Geere Street, PMB. Sunday Morning Bulletins (MARC and SARL) as well as the Club Net from 07:45 on 3620 kHz and the 145.750 MHz repeater.

Sunday Club Net Controller: Mickey Esterhuysen, ZS5QB
National News Bulletin: Robin Seal, ZS5MRS

CLUB BANKING DETAILS

Bank: First National Bank

Branch: Bank Street

Branch code: 220-825

Account holder: Midlands Amateur Radio Club

Account Number: 625057756507

Type of account: Current

Reference to use is your call sign

From the Editor

Nobody will argue that technology plays a major role in our modern society. Technology focuses on technological processes from conceptual design to practical problem solving and the application of scientific principles. It is in this sphere that our country is sorely lacking, and it was with great pleasure that I read a circular from the DoE that technology subjects will now be introduced as part of the Senior Certificate Programme. They plan courses in Electrical, Civil and Mechanical Technology. One drawback will probably be that most smaller schools will not be able to comply with the minimum requirements as regards infrastructure and equipment as listed in the circular. To this I can add the problem of finding and appointing suitably qualified teachers that can cope with the subjects at this level. At least, it is a good idea!

One reason why most governments give up much of their valuable radio spectrum to the Amateur Service is that they form a core of self-taught technologists that can be of immense value in times of disaster. For engineering faculties at universities and technical universities, they produce a supply of the material required to turn out the much needed end products. But do we still live up to that which is expected of us? What about trying some very interesting experiments of your own or take part in the 40 m beacon experiment of the SARL? Great fun is to be had while learning a lot of useful new things!

Wessel, ZS5BLY

News and Views

① Our next meeting will be held on Saturday, 20th October at the Girl Guide Center, World's View. This meeting coincides with JOTA so if you have any OLD or fancy equipment that you would like to show to the scouts, bring it along. A bring-and-braai will be started before the meeting (and probably continue!) so bring your roll and wors along as well.

① The November meeting to be held on the 17th November will take the form of a flea market/boot sale. Our neighbouring clubs have been invited, so there should be some new goodies available to take up the space of your recently cleared storage area.

① The new X-200 antennas have been installed at the 750 repeater. Reports will be welcomed by Shaun, ZR5S.

① The proposed electronics course to be held at the Club has been postponed by one week and is scheduled to start on the 20th October. Though it will be advertised in the press, it will be appreciated if you could spread the word to youngsters (and the not so young!) in your contact areas.

① If you have perhaps missed it, the club banking details appear on the top of this page. You can now pay your subs by transfer instead of having to post a cheque.

DURBAN AMATEUR RADIO CLUB
17 BROWNLEE PLACE
Bluff 4052

The Chairman and Committee
Midlands Amateur Radio Club

Hi All,

This Club feels that the Hams in Natal have over the last many years drifted apart. The old lovely Picnics at Midmar Dam have fallen away probably due to traveling and entry costs. On air activities are at an all time low. Propagation conditions are the worst ever etc. There are no doubt many Committee Members of all ZS5 Clubs whom I do not know due to the efflux of time and new Hams on Committees and you I should imagine feel the same. We would like to put a face to a Call Sign so to speak.

We feel that the Committees of Natal Clubs should get together, enjoy some hospitality and renew old friendships and make new ones and get to talk about Ham Radio generally.

To this end we cordially invite your entire Committee to a "Get Together" at the DARC, Roland Chapman Drive, Montclair, Durban, on Saturday 13 October 2007 at 10:30 am to partake in some Tea, Coffee and Snacks. There will be a Cash Bar for RF and Cold Drinks.

Please endeavour to attend and help us make it a pleasant occasion.

Laurie ZS5DL
Secretary

RSVP TO ZS5DL AT 031 709 1598 OR TO: laurie @tiscali.co.za so as to assist with catering.

DURBAN AMATEUR RADIO CLUB
17 Brownlee Place
Bluff 4052

The Chairman,
Highway ARC
Midlands ARC
Zululand ARC

Dear OM,

Due to a complete lack of response from all Clubs we have decided to cancel the Div 5 Inter Club meeting scheduled for 13 October 2007.

We regret this step as we feel that the comradeship that used to exist between all Amateur Radio Clubs has disappeared completely. So be it.

Laurie
ZS5DL
Secretary

{ I am publishing these two letters so that members may consider their involvement with and commitment to our hobby. Let us discuss it at the braai-meeting. Ed.}



Standard Resonators		
Power Rating 400 Watts		
Part Number	Description	Approximate Bandwidth
		2:1 SWR or better
RM-10	10 Meter	150-250 kHz
RM-12	12 Meter	90-120 kHz
RM-15	15 Meter	100-150 kHz
RM-17	17 Meter	120-150 kHz
RM-20	20 Meter	80-100 kHz
RM-30	30 Meter	50-60 kHz
RM-40	40 Meter	40-50 kHz
RM-75	75 Meter	25-30 kHz
RM-80	80 Meter	25-30 kHz



Ameritron's SDA-100 is without a doubt the best built, best looking, best performing HF Mobile Screwdriver Antenna in the world! When properly installed on your vehicle this antenna will provide continuous coverage from 10 Meters through 80 Meters with a 6 foot whip. Remove the whip to get 6 Meters through 40 Meters coverage.



Stop tuning, start talking.

The SG-230 Smartuner was the first product in the HF market to offer fast, flexible tuning without any user interface. This unit works with ANY radio and ANY antenna without any special interface, making it the most versatile tuning product available. The SG-230 can be used in base station, mobile, marine and aviation and has been the "Gold Standard" of automatic antenna tuning for nearly twenty years. The SG-230 is built in a rugged ABS plastic enclosure which is sealed to protect it, and allows ultimate versatility in installation.

X200
 144/430MHz(2m /70cmz)
 Gain:6.0dB(144MHz),8.0dB(430MHz)
 Max. power rating:200W
 Impedance:50ohms
 VSWR:Less than 1.5:1
 Length:2.5m
 Radial length:approx.52cm
 Weight:1.2kg
 Rated wind velocity: 50m/sec.
 Mast diameter accepted:30mm to 62mm
 Type:2 x 5/8wave(144MHz),4 x 5/8wave(430MHz),FRP outershell



Radio Accessories & Data Modems

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A small experiment with satellites

I am sure that everybody has heard of and experienced the Doppler effect at some or other time. The evergreen example is the sound of an approaching vehicle that rises in pitch, and then decreases as it travels away from the observer. This change in frequency (or pitch) is known as the Doppler shift. It is not restricted to sound waves and is observed in electromagnetic waves as well. Astronomers use it to determine whether far off stars are approaching or receding from us by measuring the Doppler shift in their light reaching us. It is known as blue or red shift depending on whether the frequency of the light is shifted up or down from the observed frequency.

The same thing happens when we try to tune in to a satellite as it is either approaching us or leaving us. If we regard our point of observation as stationary and tune our radio to a satellite that is transmitting on a frequency of f_s , then we hear it on a frequency f_r which is shifted from the transmitted frequency by a small amount Δf which, for the mathematically inclined, is given by the following equation:

$$\Delta f = \frac{-V_s}{c} \times f_s$$

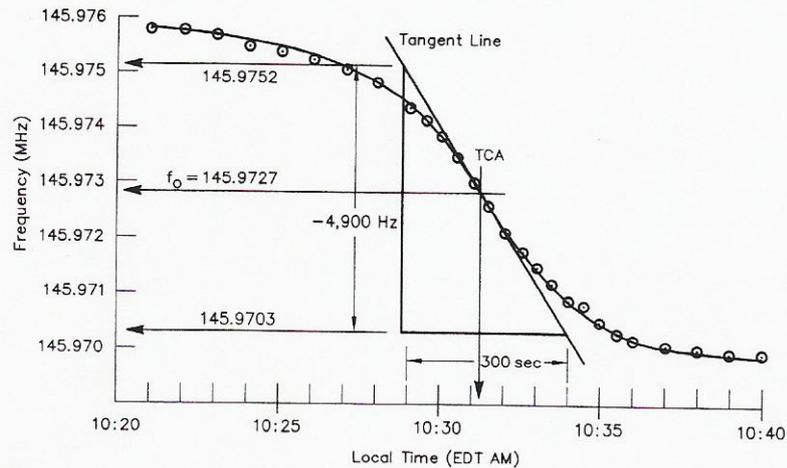
where:

- Δf = the shift in frequency
- V_s = the relative velocity between the satellite and the observer
- f_s = the transmitted frequency
- c = the speed of light (3.00×10^8 m/s)

Note that Δf is negative when a spacecraft is approaching. The apparent frequency will therefore be higher than the source frequency.

Now let us drop the maths and do the experiment! Decide on a spacecraft and set your receiver to CW or SSB mode (even if the satellite is transmitting on FM) while waiting for it to appear. On first signal, note the time and record the frequency of the zero beat signal. Do so for every minute until the signal

is lost. Now plot a graph with time on the horizontal axis and frequency on the vertical axis. You should end up with a graph which looks like the diagram below.



For circular orbits, the steepest part of the graph occurs at the point of closest approach, and the observed frequency at this point is equal to the actual transmitted frequency. We can also calculate the slope of the curve at this point and use it to compute the minimum slant range (the closest point to the observer). To do this, align a transparent ruler over the central part of the graph until you get the steepest match and draw that line. Using any two convenient times, complete the right triangle as shown. The slope is then given by the ratio of the vertical side to the horizontal side of the triangle. In our example the slope, m , is:

$$(-4900 \text{ Hz}) / (300 \text{ sec}) = -16,3 \text{ Hz/s}$$

By making use of the Doppler curve we can determine the six parameters needed to characterize an elliptical orbit, or the four parameters needed to characterize a circular orbit. Turning this around, if the orbital parameters are known, the data can be used to determine the latitude and longitude of the ground station. This is the principle used in navigation satellites.

Next time, some more about satellite orbits, meantime, enjoy the experiment!

For EchoLink users

OM Shaun, ZR5S, has kindly supplied what he calls " a small sample of the 1000's of EchoLink node numbers" which is as follows:

New York Net	290251
England Conference	7889
JOTA - English	138203
Alaska- Anchorage	105939
Hermanus Repeater ZA	294988
Pretoria Repeater ZA	185459
Disney World USA	86525
Mt Disappointment USA	8722
Calgary Canada	94113
Rotorua N Zealand	206941
Hobart Tasmania	331193

Remember, to connect, dial a 0 (zero) immediately before the node number and to disconnect, dial 73

Hopefully this information will help our members to travel to far off places via EchoLink while the HF bands are still enjoying their once every eleven year rest.

Bulletin Readers

14th October	Bert	ZS5MQ
21st October	Wessel	ZS5BLY
28th October	Mickey	ZS5QB
4th November	Mike	ZS5BVG
11th November	Robin	ZS5MRS
18th November	Bert	ZS5MQ
25th November	Wessel	ZS5BLY

On the Giggle-Hertz bands

A four-year old was overheard praying: " And forgive us our trash baskets as we forgive those who put trash in our baskets".

They said it

Truth always expresses itself with the greatest simplicity.	Pierre Schmidt
Kind words can be short and easy to speak, but their echoes are endless.	Mother Teresa
A paradox is truth standing on its head to attract attention.	Nicholas Falletta

NEXT MEETING

The next club meeting will take place on Saturday, 18th October at the Girl Guide Center, World's View. A bring-and-braai will be started before the meeting so bring whatever you need for this activity.

Please note the starting time of 13:00

SWOPSHOP

FOR SALE: Yaesu FT-901DM transceiver plus YO-901 multiscope and FTV-901R transverter unit with 6m, 2m and 70cm modules fitted. All manuals and interconnecting cables included as well as a service manual for the FT-901DM. Asking price is R3 200,00. I would not like to split the units. Contact ZS5BLY at (033) 702-1968 or e-mail as per front page.

WANTED: Basic computer to put our remote (on the local air strip!) weather station on APRS. Must have two serial ports and be able to run Win 95. A sound card would be welcomed. Low price essential. Contact Craig, ZS5CID on (033) 702-1117 during office hours.

