



HAMS Waywite News

April 2008

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

A lot has happened during the past month which has kept your committee fairly busy, most of us lead normal lives as well and there are various commitments which have to be made from time to time. This coming month will be a busy one for our two most supportive members viz. Rod and Rose Radford who are about to embark on a massive move to ZL. They will be leaving on the 15th May 2008 and the committee has decided that we should host them to a farewell lunch at what would have been our April meeting on the 19 April 2008. This will take place at our meeting venue at 13:00 hrs. Please take this opportunity to send them off to their new home with gusto.

We will miss them as they have been a big part of the club's existence. You and your spouse are therefore invited to this gathering of friends and fellow hams on the above date. See you there!

Work is progressing with the Gilboa project and it is due to be completed fairly soon, watch out for more details. Philip, ZR5PDL, recently was heard working through the 750 repeater from the Swartberg site, quite a long haul.

Please try and support the Thursday net at 19:00 hrs on 3,620 MHz.

NEXT MEETING ON 19/04/2008

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

From the Editor

It is with sadness that we have to say "good bye" to Rod and Rose Radford who are off to settle in the land of the Low White Cloud. We will miss the many tongue in the cheek "assaults" on the club meetings made by Rod, but will always remember his passion for things radio. Always the quiet one, Rose kept an eagle eye on the club treasurer and ensured that our books were in order at the end of our financial year. *Hamba kahle*, dear friends.

Winter is traditionally the electronic construction season for hams. There is no lawn to be mowed and it is too cold to hold a braai. This must surely direct you to your workbench and soldering iron (Eskom being willing!) to start your project for the Walter Reid competition coming up very soon. I am sure that a LPG powered soldering iron will get a very high score! Go and do it now!

Wessel, ZS5BLY.

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

News and Views

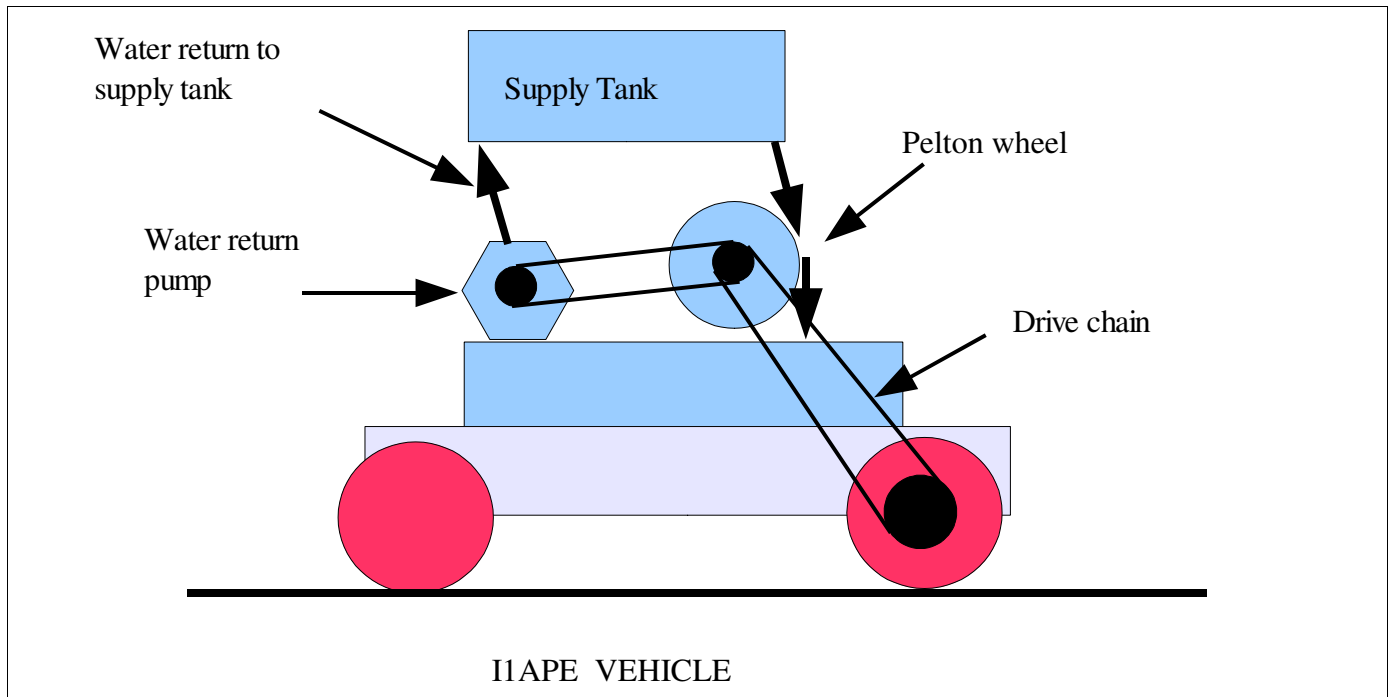
- ① The Underberg repeater has been put back on its perch and switched on! Thanks are due to ZS5CID, ZR5PDL and ZS5BLY for the effort. The repeater is now fitted with folded dipoles up very HIGH in the sky with the result that OM Mickey, ZS5QB now only needs 15 W to work it. Maybe we should now cancel the Hillbilly Award! (See photo of the tower on page 3)
 - ① The Swartberg repeater has been on for some time and seems to be functioning OK. Thanks to OM Philip, ZR5PDL for the hard work. Those of you who can reach it, can now talk down to Kokstad - if we can get a radio amateur to go and settle there!
 - ① In an article published in the February issue of QST, Gerald Martes, KD6JDJ, describes a very interesting antenna for the reception of circularly polarised signals from weather- and amateur-satellites. Due to circumstances beyond my control this article has to stand over for the next issue. (Once again!)
- ☺ = ? (Nobody has sent any good news except for the news of the two repeaters!)

High Fuel Prices

The constant increase of fuel prices affects all of us. But, have no fear while hams are near! A retired Italian engineer and radio amateur Aprilius Fulensia, IIAPE, has come to our rescue. He has designed a vehicle that uses NO FUEL! A schematic drawing of the design is shown in the diagram below to which the following remarks apply:

- 1) The vehicle should be constructed using light but strong material such as Carbon Fibre or Kevlar.
- 2) For the water system the use of Titanium is highly recommended as this will prevent rusting.
- 3) Use only Deuterium, H₂O₂ (that is heavy water) for the liquid as this greatly increases the output torque. (very important in hilly country or when hauling trailers or caravans)
- 4) The supply tank should be well sealed as any Deuterium spillage may cause potholes to be formed in the road and the authorities may hold you responsible for the cost of repairing them.

5) Low friction, double toothed gears should be used in the drive train and Teflon coated chains are mandatory.

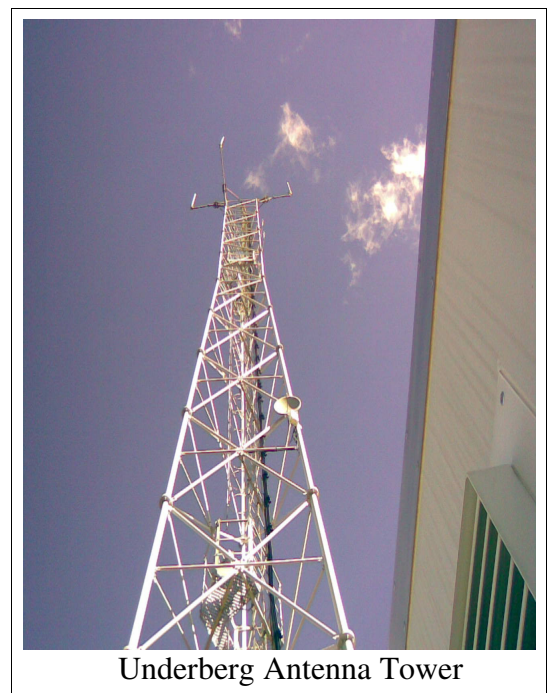


For those with a limited knowledge of engineering drawings, a short description follows: Water from the supply tank flows over a Pelton wheel and drives the front wheels via a clutch and gearbox. At the same time the surplus used water is pumped back to the supply tank by a pump, also driven by the same Pelton wheel. The only maintenance required is to maintain the level of water in the supply tank and keep the drive train free of dirt.

Trouble Afoot

I ask if any of you know,
 When men's socks vanish, where do they go?
 Perhaps, as folk suggest,
 Martians take some, leave the rest.
 For reasons out beyond the stars
 They only need one sock on Mars.
 Or here's a thought, perhaps debatable,
 One sock is made biodegradable.
 But the best idea, the greatest notion,
 Comes from New York. One Poloshijian
 Suggests that maybe in his drawers
 Are socks that might be yours.
 He thinks there might be some device,
 And possibly it would be nice,
 If match-ups could somehow be made
 Through systematic one-sock trade.
 The time has come for such a change
 And hence the New York Sock Exchange.

Charles Osgood.



Underberg Antenna Tower

(Photo ZS5CID)

Lead Acid Batteries (Part 2)

Basic charging methods:

1) **Constant voltage:** This type is most often found in the cheap car battery chargers as well as car charging systems. As the battery charge increases, the charging current will decrease

2) **Constant current:** These vary the applied voltage in order to maintain a constant current flow, switching off when the voltage reaches the level of a full charge.

3) **Pulsed charge:** These feed the charge current to the battery in pulses. The charging rate (based on the average current) can be precisely controlled by varying the width of the pulses, typically about one second. During the process, short rest periods of 20 to 30 milliseconds between pulses allow the chemical reactions in the battery to stabilise by equalising the reaction through the bulk of the electrode. This allows the reaction to keep pace with the input energy. It is also claimed that this method can reduce unwanted chemical reactions such as gas formation, crystal growth and passivation.

4) **Burp charging:** Also called *Reflex* or *Negative Pulse* charging. It applies a very short discharge pulse, typically two to three times the charging current for 5 milliseconds, during the charging rest period to depolarise the cell. These pulses dislodge any gas bubbles (hence the name burp) which have built up on the electrodes speeding up the stabilisation process and hence the overall charging process. Controversial claims have been made for the improvement in both the charge rate and the battery lifetime.

5) **IUI charging:** This is a recently developed profile used for fast charging standard flooded lead acid batteries from particular manufacturers. It is not suitable for all lead acid batteries. Initially the battery is charged at a constant current (I) rate until the cell voltage reaches a preset value. This is followed by a constant voltage (U) phase and the current drawn by the battery will gradually drop until it reaches a second preset level. Thereafter it returns to a constant current (I) phase until it switches off at the final voltage level.

6) **Trickle charge:** This method has been designed to compensate for the self-discharge of the battery. The charge rate varies according to the frequency of discharge and may be at a constant voltage or constant current.

7) **Float charge:** The battery and the load are permanently connected in parallel across the DC charging source and held at a constant voltage below the battery's upper voltage limit. This method is used for emergency power back up systems.

Termination of Charge.

Overcharging of batteries have an adverse effect on battery life. It results in gas formation, heating and the destruction of the electrodes. For a lead acid battery, the end of charge may be determined by measuring the terminal voltage (usually 13,8 V) with the charger disconnected. The so-called "intelligent" chargers are mostly of the pulsed type and check the voltage during the rest period between the charging pulses in order to determine the state of the battery. Some of them also measure the battery temperature and adjust the rate of charge accordingly. There are specialised batteries which have electronic systems built into them to do most of the control functions and even measure the specific gravity of the acid! Microchip (the PIC people) have developed a special micro-controller to take care of batteries - you can even monitor your battery activity on your PC!

Batteries have become rather expensive so it will pay to get the right type for your application and to take good care of it. Car batteries have not been designed to operate as standby power sources as few of them can deliver their full capacity in ampere-hours. For such applications the deep cycle units are to be preferred. The circuit of a pulse-type charger has been published in this newsletter before. A large deep cycle battery and pulse charger system has been in use at this QTH for four years and is still very much alive.

For more information on this and other power topics, go to www.mpoweruk.com.

I have had one e-mail regarding the op-amp articles. It reads: "That is all very interesting, but what do you do with them?" The answer will have to wait for next month as I have again ran out of space and also have some other interesting material that has been submitted. (Ed.)

ADVERT



SOLAR Power for your Shack

Be prepared for extended power outages. Convert your shack to use 12 volt Solar Energy. I have acquired affordable 10 watt Solar Panels. Each panel is capable of sending ± 720mA at 13.8Vdc into your lead-acid battery. You can add more panels in parallel to increase your charge rate.

Solar Panels, 10w @ **R298.00** each,
 120W switch-mode inverters @ **R290.00** each,
 12v energy saving lamps @ **R49.00** each,

Contact: - Shaun Rudling (ZR5S) on 082-676 1488 or
shaun@pmbnet.co.za



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 Smarttuner 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

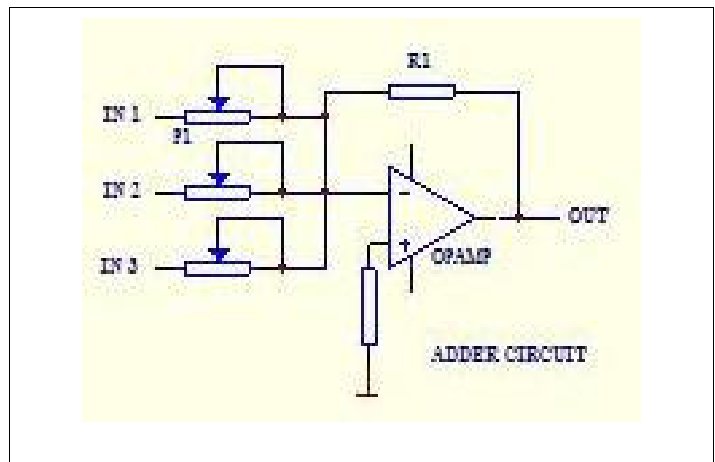


Radio Accessories & Data Modems

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 2052

It seems that I have found space for one op-amp application! The circuit shows how to use an op-amp as an adder. It will combine or add the three input signals of which the gain can be separately set by varying the value of the potentiometers in their respective lines. This can be used to make your own audio mixer and select the input to your Tx.



Bulletin Readers

13th April	Wessel	ZS5BLY
20th April	Mickey	ZS5QB
27th April	Mike	ZS5BGV
4th May	Robin	ZS5MRS
11th May	Bert	ZS5MQ
18th May	Wessel	ZS5BLY
25th May	Mickey	ZS5QB

On the Giggle-Hertz bands

(Staff that man the Technical Support desks at computer companies are a very special breed. I will try and present some of their stories here)

Customer: "My computer crashed!"

Tech Support: " It crashed?"

Customer: " Yeah, it won't let me play my game."

Tech Support: " All right, hit Control-Alt-Delete to reboot."

Customer: "No, it didn't crash - it crashed."

Tech Support: "Huh?"

Customer: " I crashed my game. That's what I said before. I crashed my spaceship and now it doesn't work."

Tech Support: " Click on 'File,' then 'New Game'"

Customer: (pause) "Wow! Wher'd you learn how to do that?"

They said it

Kind words can be short and easy to speak, but their echoes are endless.

Mother Teresa

It isn't the common man at all who is important: it's the uncommon man.

Lady Nancy Astor

Yesterday is a cancelled cheque; tomorrow is a promissory note; today is the only cash you have- so spend it wisely.

Kay Lyons

NEXT MEETING

The next meeting of the Club will take place on Saturday, 19th April, 2008 at the usual venue. The meeting will take the form of a farewell lunch for Rod and Rose and is scheduled to start at 13:00. Come and enjoy a good old rag chew with them and other members and visitors!