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Monthly newsletter of the Pretoria Amateur Radio Club
Maandelikse nuusbrieff van die Pretoria Amateur Radio Klub.



PARC, PO Box 73696 Lynnwood Ridge 0040, RSA



<http://www.parc.org.za> mail: zs6pta@zs6pta.org.za

Bulletins :145,725MHz 08:45 Sundays / Sondae

Relays : 1840, 3700, 7066, 10135, 14235, 51400, 438825, 1297000kHz

Activated frequencies are announced prior to bulletins

Swapshop: Live on-air after bulletin 2m and 40m

Bulletin repeats | herhalings : Mondays 19:45 on 145,725 MHz

PARC AGM - the final stages -

- einde se kant - PARK AJV



In this issue

- AGM report 9 Aug AJV verslag
- Member's pages Lede-bladsye
- Member activities Lede-bedrywighe
- Mobile antenna matching Tegnies
- Technical 24GHz records
- True RF power
- Page eight Bladsy agt

In hierdie uitgawe

AGM Meeting 10 Sept 2008

Time: 19:30 for 20:00
PARC Clubhouse
South Campus
University of Pretoria
SE cnr University and
Lynnwood roads

PARC Management team / Bestuurspan Aug. 2008- Aug. 2009:

Committee members

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SARL liason, fleamarket					
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Social	Molly Peer	ZR6MOL	molly@peer.co.za	012-333-0612	

At the AGM..

Your editor attended the AGM and is pleased to report that agenda items were dealt with the traditional efficiency. Alméro ZS6LDP (chairman for 3 years) could not be present and Johan ZS6JHB presided as acting chairman while Richard ZS6UK acted as secretary. A minute of silence was requested in respect for four members and two spouses that had passed on during the past year.

Our guest speaker was Louw Erasmus ZS6LME who is in the legal profession and an SARL councillor. He conveyed best wishes from the SARL President Rassie ZS1YT and reminded us of our very long history with the SARL since 1935 and that after WWII in 1945 the Pretoria (6) amateurs regrouped even prior to the SARL and again became League members on 1 July 1945.

"What is success?" was his question when referring to the table with awards. A successful person is one that makes him- or herself available to serve and/or enrich others with inputs that have a positive effect. They are the ones that will reap these awards - or any others in life - and become respected people who have given much and taken little.

His main agenda was to explain his involvement and the intricacies of revising the Radio Regulations of which parts were not in keeping with current technologies and communication practice. G14 and B3 were given as examples. A further note was given on the meaning of the HAREC Certificate. Possessing a HAREC certificate (ZR and ZS) is recognition of having passed an IARU standardized examination entitling an RSA visitor to European countries that have signed a CEPT agreement to operate for 3 months with the same privileges as in the country of origin. However, a bypass is also possible by direct agreements between the RSA and another country - which is the case for many of our popular visiting destinations.

After Louw's interesting talk the Chairmans' Report was read by Johan ZS6JHB and well received. Richard ZS6UK followed with the Financial Report which showed a small positive increase over last year. It was then time for the handing out of Trophies and Certificates. Tjerk ZS6P and Louw ZS6LME did the honours and members in attendance could receive them personally. The four ladies present were treated by a gift of Tjerk's home-grown Proteas. Subsequently the 6 Committee nominations (see above) were approved. Johan ZS6JHB accepted the post of Chairman. The meeting closed around 15:30.

By die AJV...

U redakteur het die AJV bygewoon en is bly om te rapporteer dat agenda items glad verloop het volgens tradisie. Alméro ZS6LDP (3 jaar voorsitter) kon nie bywoon nie en Johan ZS6JHB het waargeneem as voorsitter met Richard ZS6UK as sekretaris. 'n Minuut stilte is gevra as respek vir vier oorlede lede en twee gades van lede wat gedurende die jaar heengegaan het.

Ons gasspreker was Louw ZS6LME uit die regsprofessie en ook 'n raadslid van die SARL. Hy het die beste wense oorgedra vanaf die SARL President Rassie ZS1YT en ons herinner aan ons baie lang geskiedenis met die SARL sedert 1935, en ook na die tweede wereldoorlog in 1945 toe die Pretoria amateurs hergroep het selfs voor die SARL en weer Liga lede geword het vanaf 1 Julie 1945.

"Wat is sukses?" was sy vraag met verwysing na die tafel met trofeeë. 'n Suksesvolle persoon is iemand wat hom- of haarself beskikbaar maak om ander te dien of verryk met insette wat 'n positiewe effek het. Hulle is diegene wat wat hierdie toekennings oes - of ander in die lewe - en gerespekteerde mense word wat baie gegee en min geneem het. Sy hoofagenda was om te verduidelik wat 'n HAREC Sertifikaat beteken. Besit van 'n HAREC Sertifikaat (ZR of ZS) is erkenning dat 'n IARU gestandaardiseerde eksamen geslaag is wat die houder daarvan geregtig om as RSA besoeker in Europese lande wat 'n CEPT ooreenkoms geteken het, vir 3 maande te mag amateur toerusting bedryf met dieselfde voorregte as in die land van herkoms. Daar is egter ook direkte ooreenkomste met baie van ons gewilde bestemmings wat die reëls omseil.

Na Louw se inessante praatjie is die Voorsitter-verslag gelees deur Johan Zs6JHB en goed ontvang. Richard ZS6UK volg toe met die Finansiële Verslag wat 'n klein verbetering oor laasjaar getoon het. Dit was toe tyd om Trofeeë en Sertifikate te oorhandig. Tjerk ZS6P en Louw ZS6LME het die taak verrig en die wat aanwesig was, het persoonlike ontvangs geneem. Die vier dames aanwesig het tuis-gekweekte proteas as geskenk van Tjerk ZS6P ontvang. Daarna is die 6 Komitee nominasies goedgekeur (sien hierbo). Johan ZS6JHB het die Voorsitterpos aanvaar. Die vergadering het gesluit rondom 15:30.

AGM pics



Johan ZS6JHB (R) and Richard ZS6UK leading the proceedings



Louw ZS6LME explaining some legal tangles



Trophies polished for the occasion



8 members were awarded trophies (see below)



11 members were awarded certificates



Nominated members

Trophies

1. ZS6BLY Trofee : **Roy Newton ZS6XN**
2. Sonny-Don Practical Assistance Trophy : **Craig Symington ZS6RH**
3. Pretoria Ham Spirit Award : **Nico van Tonder ZS6AQ**
4. Hansie Meyer Deelname Trofee : **Ivan Jancuska ZS6CCW**
5. ZSL Trophy : **Vlasta Jancuska**
6. SARL Piet Roos Trofee : **Hans Kappetijn ZS6KR**
7. Roy Alexander Rally Trophy: **Johan de Bruyn ZS6JHB**
8. Jack Bennet VHF/UHF Trophy : **Pine Pienaar ZS6OB**

Certificates

Merit

1. **Craig Symington ZS6RH** : Repeater development and maintenance.
2. **Pierre Holtshausen ZS6PJH** : SARL Wedstryd Deelname.
3. **Pieter Human ZR6AHT** : SARL Wedstryd Deelname
4. **Lynette Human ZR6LHT**: SARL Wedstryd Deelname
5. **Hans Gurtel ZR6HVG** : SARL Wedstryd Deelname

Rally assistance

1. **Roy Newton ZS6XN** : Rally assistance
2. **Andre van Tonder ZS6BRC** : Tydren deelname
3. **Graham Reid ZR6GJR** : Rally assistance
4. **Pierre Holtshausen ZS6PJH** : Tydren deelname
5. **Johan de Beer ZR6YV** : Tydren deelname
6. **Chris Nagel ZS6BGH** : Tydren deelname

Birthdays

Verjaarsdae

Sept



- 02 Charell ZR6GN
- 02 Lizette ZS6LZT, dogter van Pieter ZS6PVW en Magda ZS6MVW
- 09 Brendan, son of Marilyn ad Deryck ZS6KQ
- 11 Johan ZS6JPL
- 15 Pamela, sw of Harry ZS6HRD
- 21 Johan ZS6JHB
- 24 Estie ZS6CC
- 25 Susan, lv van Freddie ZS6JC
- 26 Graham ZR6GJR
- 26 Pieter ZR6KSA

Sept

Anniversaries Herdenkings

- 02 Lilly and Harry ZS6AMP (52)
- 04 Matha Louisa en Attie ZS6REY (39)
- 07 Gerda and Roger ZS6RJ (6)
- 09 Adele en Hans ZR6HVG
- 28 Retha and Roy ZS6XN (23)

27 Lodewyk, seun van Elmarie ZR6AXF en Johan ZS6JPL

Joys and Sorrows | Lief en Leed

- **Ivan ZS6AUT** is reportedly now in a care centre
- **Mike ZS6AFG** is reportedly still unwell

Diary | Dagboek (UTC times)

- Sept** 06-07 All Asian SSB DX Contest 00:00-24:00
- 06-07 IARU Region1 SSB Field Day 13:00-12:59
- 06-07 RSGB Field Day SSB 13:00-13:00
- 10 PARC Club (evening) meeting**
- 13 RTA at NARC**
- 13-14 WAE DX SSB Contest 00:00-23:59
- 17 MOON Contest 18:00-20:00
- 27-28 CQWW RTTY DX Contest 00:00-24:00
- Oct** 08 Set up a school station for Space Week
- 11 PARC Club (afternoon) meeting**

Nuwe lid

Welkom aan Louise Trudie Taljaard ZU6LTT

PARC SUBS / LEDEGELD 30-06-2008

Please remit your subs
to our treasurer or
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Betaal asb. u ledegeld
aan ons tesourier
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Bank : FNB Ordinary members/ gewone lede R70
Branch : 25 20 45 Spouses, pensioners R50
Account : 546 000 426 73
Your call sign must appear as statement text!

Fax proof of payment to our Treasurer 086-518-6414

FUTURE MEETING DATES

Even months: Saturdays 14:00 **Odd months: Wednesdays 20:00**

Oct	11 2008	Sept	10 2008
Dec	13 2008	Nov	12 2008

Snippets | Brokkies

- **Upgrades:** Congratulations to two club members who recently received their ZS license: **Estie ZS6CC** (ex ZR6STB) and **Brendan ZSBW** (ex ZR6BM). (Estie inherits the call of OM Hofie (SK), and Brendan the call of Basjan (now NS0W))
- **Heritage Day on 24 September** will see various stations talking to each other from historical sites all over the country. PARC has possible access to Skanskop just east of the Voortrekker Monument. Envisaged is a 2-5pm 'social' QSO event with portable stations. Everyone is invited for a pleasant afternoon.
- **Pine ZS6OB** reported that the EMEFA antenna trailer and tower have been completed. This was possible with a donation from Dick ZS6BUN. To follow are antennas and rotator etc.
- Did you know that EME and other digital mode operators congregate on www.pingjockey.net/cgi/bin/pingtalk where you can see their successes and tribulations and pick up useful tips. Furthermore if you want to be up-to-date on all matters VHF/UHF, send an email to ZSVHF@mailman.gth.net to subscribe to a local newsletter.
- **Monthly Committee meetings are now scheduled 1 hr before an afternoon club meeting for economy and safety reasons.**
- **Hal ZS6WB** has been to the US for 3 weeks
- **Johan ZS6JHB** lost the rear half of his Benz in a traffic accident. He was not hurt.

GRATIS E-POSADRESSE EN DOMAINS!

Lede: Aktiewe lede wie tans nie oor e-pos beskik nie, of miskien 'n duur e-posadres het, kan aansoek doen vir 'n gratis e-posadres - roepsein@parc.org.za; beskikbaar stel aan lede wie graag hul eie webwerf wil skep.

PARC bied die volgende dienste aan:

Domeine: PARC kan gratis domeine

FREE E-MAIL ADDRESSES AND DOMAINS!

Members: Active members without e-mail or with an expensive e-mail address, are offered a free e-mail address - callsign@parc.org.za;
supply free domains to members wishing to create their own websites.

PARC is offering the following services:

Domains: PARC can also

Navrae / Enquiries : Nico - 082-326-9345.



Mobile Antenna Matching Coil Adjustment Procedure

(condensed from K0BG website)

There is a specific procedure which must be followed if proper adjustment of a shunt matching coil is to be achieved. In addition, the coil must be correctly configured. For eg; long, skinny coils do not work as well as ones where the length and diameter are approximately the same.

Further, for best results the coil should be installed as clear of surrounding sheet metal as possible. When matching coils are mounted close to mounting brackets, and vehicle sheet metal, their performance and linearity will suffer.

The coil at left has 9 turns, 1" inside diameter, and wound with #14 Thermalese® (enameled) wire. The one on the right is 7 turns. In actual use, the turns are spaced a little further apart to adjust the inductance. The coil needs to be about 1 uH, but in

the real world, the value may be between .5 uH and 1.5 uH (7-10 turns) depending on the actual input impedance at resonance.



Matching is achieved by borrowing a small amount of capacitive reactance from the antenna (when tuned slightly above the operating frequency), and the inductance of the coil. Together, they form a highpass, LC network which transforms the antenna's low impedance (typically 25 ohms or so) to that of the 50 ohm feed line.

Coil adjustment If you own an antenna analyzer, you can adjust the turns spacing to provide a good compromised match (<1.5:1) across the operating range of the antenna. Once you've installed the coil, here's the tuning method to use:

Move the antenna to the 80 meter band. The actual frequency isn't important. Adjust the frequency on the analyzer until the $X=\emptyset$, or as close to it as you can (the SWR reading is not important at this point). Read the R value. If it is less than 40 ohms, stretch out the coil slightly, and readjust the analyzer's frequency so $X=\emptyset$ once again. If the reading is lower than the first try, squeeze the coil together, and try again. Repeat the process until the R reading is about 40 ohms when $X=\emptyset$. This relates to an SWR of 1.25:1. Remember, the only time the SWR readout will be accurate (and significant), is when $X=\emptyset$, and R is close to 50 ohms.

Move the antenna to the 40 meter band, and adjust the analyzer's frequency until $X=\emptyset$, and read the R value. In most cases, it will be about the same spot as it was on 80 meters. If it is not, it may be necessary to compromise between the two bands.

You will have to go back and forth several times between 80 and 40 to get the coil properly adjusted. Properly set, the SWR should be the same on 80 and 40, or as close to it as you can.

Once you've completed the 80 and 40 meter adjustments, move the antenna to the 20 meter band. Adjust the frequency on the analyzer until $X=\emptyset$, and read the R value. It will usually be closer to 50 ohms than either 80 or 40 meters. You can check the rest of the bands if you desire. Typically, they will read very close to the 20 meter R value.

If a compromise can't be reached between 80 and 40, or the 20 meter R reading is far removed for 50 ohms when $X=\emptyset$, then chances are there is an inadequate ground plane under the antenna, or there is too much stray capacitance between the antenna and the body of the vehicle, or both!

If you do the coil adjustment correctly, you will be rewarded with a low SWR at any resonant point the antenna can be tuned to.

Long Term HF Propagation Prediction for August 2008

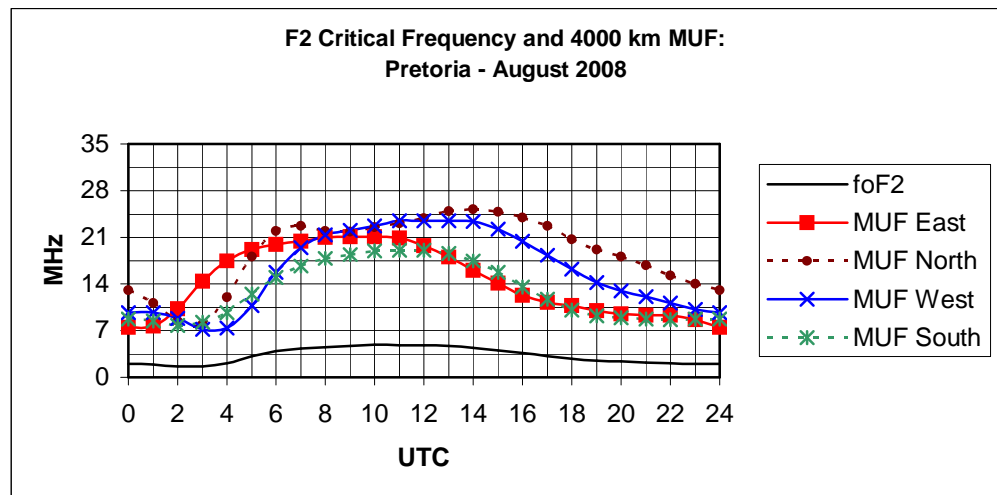
courtesy ZS6BTY

DX Operating

The graph shows the 4000 km maximum useable frequency (MUF) to the East, North, West and South from Pretoria for the first hop using the F2 layer.

Local Operating

The F2 critical frequency (foF2) is the maximum frequency that will reflect when you transmit straight up. E-layer reflection is not shown.



1991 : South African 24GHz Distance Records

- from the archive of ZS6BTY

These pictures were taken while setting the South African 24GHz distance records by Gerard, ZS6KX and Vincent ZS6BTY in 1991.

a) 20 km Record - Donkerhoek to Constantia Park 24th March 1991

b) 44km Record - Magalies Cable Way to Roodekrantz 14th April 1991



24 GHz Equipment at Roodekrantz (ZS6BTY)



The current record is held by ZS6AXT and ZS6JON - 56km

PLASMA SCREEN RFI

ZS6KR

The following was gleaned from a posting on Dutch radio amateur newsgroup:

After purchasing a nice flat plasma-screen TV, it was noticed that it caused heavy interference from MW to 7 MHz. Reading the handbook it was stated that the apparatus was 'technical information equipment' and conformed to the following standards:

89/336CEE of 3 May 1989 with annexures (directives 92/31/CEE of April 1992 and 93/68/CEE of 22 July 1993)

73/23/CEE of 19 February 1973 with annexure (directive 93/68/CEE of 22 July 1993)

EN55022, EN55024, EN61000-3-2/-3 (Electromagnetic emission)

EN60950 (Safety requirements)

The CE mark on this product guarantees conformance to these standards.

Then the clincher:

"This is a class A apparatus. Installation in a domestic environment can cause radio interference and in such case the user is required to take the following actions:

- Connect the apparatus to another mains outlet
- Point the antenna of the affected radio receiver in another direction
- Increase the distance between the affected radio and this product

The manufacturer cannot be held responsible for any other application than described in this manual. In such case any liability regarding the product and its guarantee will be void.

Furthermore, the purchaser also found ferrite included in the package! (which had no effect) and the screen itself is suspect.

Editor's note: LCD/TFT screens reportedly do not have this problem. Plasma screens should have a metal maze at least.

A recent discussion on one of the SARL Technical Forums mentioned that the bottom line for measuring RF power to an antenna was by measuring RMS current directly with a thermocouple meter, as was always the practice in earlier days. How very true - as RMS current is defined as that current that will cause the same heating effect (true power) as would a DC current of the same magnitude.

Your editor then remembered that he had built such an (ex WWII, ex PTA fleamarket) meter into a a box stashed at the back of a cupboard shelf and retrieved it for a little experiment:

1. DC current check:



2. 50W RF Power:

The third photo shows the same meter with 7MHz RF current passing through for an RF power of 50W into a wattmeter and 50 ohm dummy load. By Ohm's law the current should be 1A.

This demonstration proves the following:

1: The thermocouple meter reads DC and RF the same. (I have no meter spec, but it shows constant below 10MHz, whereafter the reading increases slowly for the same 50W out)

2: My wattmeter is correctly calibrated!



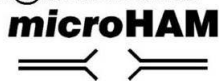
Amateur Electronic Supplies

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Smile..

A girl was visiting her blonde friend, who had acquired two dogs, and asked her what their names were. The blonde responded by saying that one was named Rolex and one was named Timex. Her friend said, 'Whoever heard of someone naming dogs like that?'

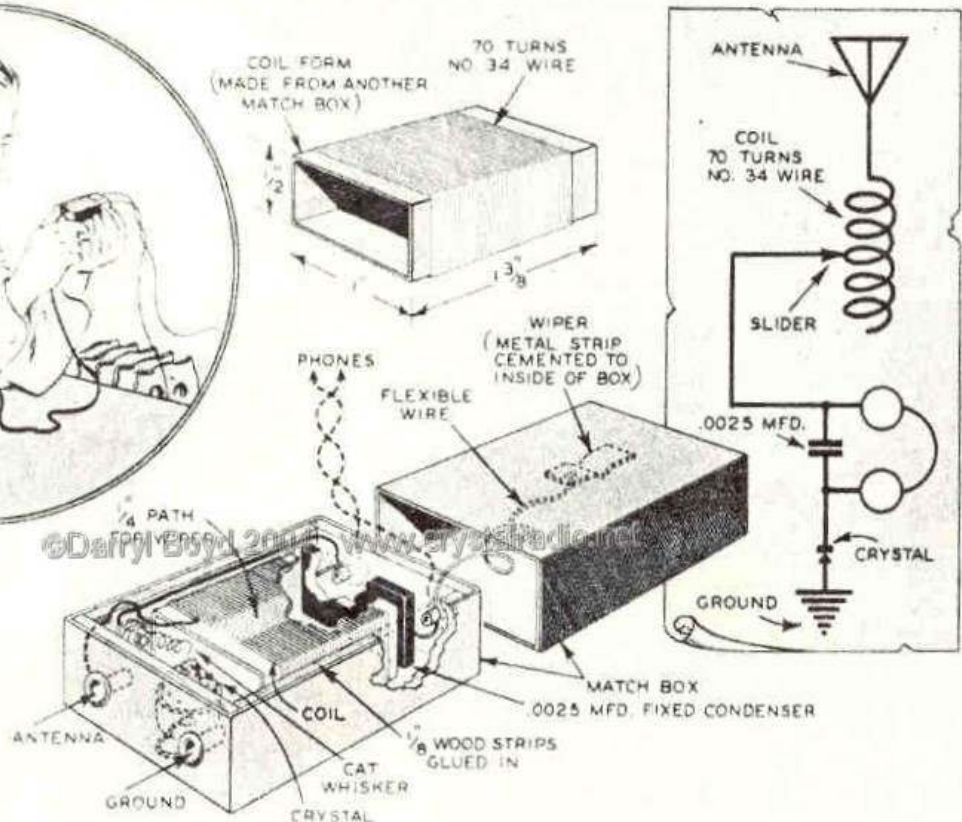
'HELLLOOOOOO.....,' answered the blonde. 'They're watch dogs!'



A MATCHBOX RADIO THAT ACTUALLY WORKS



This tiny radio receiver which has a 100-mile range is constructed in an ordinary safety match box. Tuning is accomplished by sliding the lid in and out. The pictorial diagrams are simple enough so that even those without radio experience can make the set. To insure good reception use earphones of 3,000 ohms resistance.



A RADIO receiver so small that it can be placed in an ordinary safety match box yet actually receive broadcasts up to one hundred miles can be built by anyone no matter how limited his radio knowledge. Select a match box of the type made of thin wood bound with blue paper in which to install the set. A cardboard box is not satisfactory for the purpose.

Reinforce the inside of the box with strips of wood $\frac{1}{8}$ " thick. Glue these in place then after the glue has dried drill holes in each end of the box for the antenna, ground and phone terminals. For terminals use brass shoe eyelets. These may be obtained from a shoe repair shop for the asking.

The coil consists of 70-turns of No. 32 enameled wire wound on a form $\frac{1}{2}$ "x1"x $1\frac{3}{8}$ ". The wood from another matchbox serves

as the coil form. The completed coil is cemented in place inside the box with acetone cement to hold it rigid. The crystal detector is located on one side of the coil and connected to the "ground" terminal and one of the phone leads. A bolt holds the "cat-whisker" wire in place so that it may be easily adjusted.

A fixed condenser of .0025 mfd. capacity is installed in the opposite end of the box and connected across the phone terminals. A flexible wire is soldered to one of the phone leads so that contact can be made to the coil slide. This is a strip of brass bent in the form of a wiper and cemented inside the lid of the match box. A $\frac{1}{4}$ " path for the wiper is made on the coil with fine emery cloth so that a positive contact is insured. A good antenna and ground are essential.