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WATTS

03-2010

Year 80 + 3m

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: 145,725 MHz 08:45 Sundays/Sondae
Relays: 1.840, 3.700, 7.066, 10.135, 14.235, 51.400, 438.825, 1297 MHz
Activated frequencies are announced prior to bulletins

Swapshop: 2m and 7.066 MHz Live on-air after bulletins
Bulletin repeats Mondays | herhalings : Maandae 2m 19:45



SARL HF Field Day 13-14 Feb. – PARC contest team at Veekraal



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In hierdie uitgawe

Next Meeting

Date: 10 Mar. 2010
Time: 19:30 for 20:00
PARC Clubhouse,
South Campus,
University of Pretoria.
SE cnr University and
Lynnwood roads.

PARC Management team / Bestuurspan Aug. 2009 - Aug. 2010

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Minutes of the monthly club meeting of the Pretoria Amateur Radio Club held at the South Campus of the University of Pretoria on 6 Feb. 2010.

Welcome: The vice chairman welcomed all present.

Present: See register, 10 members, 1 visitor

Apologies: 8 as per register.

Joys & Sorrows: Alf ZS6ABA is back home after his operation, very frustrated at the lack of mobility. Molly ZR6MOL is back in hospital. Whitey ZS6JJJ lost a sister in law. Signer ZS6SIG will be departing on 5 May for Afghanistan. Pine ZS6OB sent an SMS advising that on their EME Dxpediton to Namibia they were placed third in the world out of 60 participants.

Minutes: The minutes of the previous meeting were in Watts, approved by Whitey ZS6JJJ and seconded by Sarel ZS6EK..

Matters Arising: None.

Finances: The balance in the current account is now R5061.05. An unauthorised debit order of R793.98 by Virgin Mobile had been made, and the treasurer has been following this up to get it reversed. Pierre ZS6PJH will give a budget with a request for assistance at the HF field day.

Membership: There are 112 paid up members of the total of 140.

Activities

Rallies: The Belfast rally is on 20 February. Five members are booked for the event.

Flea Market: The next PARC flea market is on 27 March 2010 from 08:00 till about 11:00 at POMC.

Technical: The work party at Radcliffe will be on 20 February. There was a problem with an open receiver which has been cleared. Whitey reported on the spider beam, the second has been built, two bands are OK, but the other three require tuning. The antenna was on the ground on two occasions during the month.

Contests: The SARL HF field day takes place on 13-14 February, next week, and those interested in assisting should talk to Pierre ZS6PJH. The heritage day event will take place in the second half of the year. An attempt will be made to obtain access to the site at Wonderboompoort.

Next meeting: The next meeting will be on Wednesday 10 March 2010 at about 20:00.

Editorial - Redaksioneel

A FRIENDLY PLACE

A club should be a friendly place

Where common interests meet.

Where kindly hearts are eager

Another one to greet.

Where each one brings the best he can

And wants to do his share,

For without co-operation

A club can be quite bare.

It has been truly said

We get just what we give,

And a member's loyal service

Helps the club to live.

Tnx CQ Verwoerdbrug November 1987

Birthdays

March Verjaarsdae



- 01 Francois, seun van Karin en Sarel ZS6EK
- 01 Elsa, dogter van Elmarie ZR6AXF en Johan ZS6JPL
- 01 Albert, seun van Elmarie ZR6AXF en johan ZS6JPL
- 02 Jozua, seun van Erna en whitey ZS6JJJ
- 09 Helga, lv van Hans-Peter ZS6AJS
- 10 Gary ZR6GK
- 12 Rita, sw of Vitor ZS6VG
- 17 Gerda, sw of Roger ZS6RJ
- 21 Frances ZS6AUT

Maart

Anniversaries Herdenkings

- 14 Marilese en Pierre ZS6PJH (14)

- 21 Martie, lv van 'JB' ZR6YV
- 22 Julian ZS6AOU
- 25 Doreen ZR6DDB
- 27 Sarel ZS6EK
- 28 Le Clue, seun van Elma en Gawie ZS6GJJ
- 28 Liezl, dogter van Elma en Gawie ZS6GJJ

Joys and Sorrows | Lief en Leed

Craig ZS6RH is moving house

Sig ZS6SIG is moving to Afghanistan toward the end of the year

Diary | Dagboek (UTC times)

- Mar. 05 Closing date for the Tinus Lange Technical Excellence Awards**
- 06-07 ARRL International DX Contest SSB 00:00-24:00
- 07 UBA Spring Contest CW 07:00-11:00
- 07 DARC 10m Digital contest 11:00-17:00
- 07 SARL Hamnet Simulated Emergency Contest 12:00-14:00**
- 13-14 Commonwealth (BERU) Contest 10:00-10:00
- 14 UBA Spring Contest 6m 07:00-11:00
- 20-21 SARL VHF/UHF Contest 10:00-10:00**
- 20-21 Russian DX Contest 12:00-12:00
- 27 Closing date for the SA AMSAT Space Symposium
- 27-28 CQWW WPX Contest SSB 00:00-23:59
- 27-28 UBA Spring contest 2m 07:00-11:00
- 31 SARL 80m Club Contest with PSK and RTTY**

Notice – Kennisgewing

Lede word genooi om so gou as moontlik die sekretaris in kennis te stel van u voorkeur oor watter dae en tye vir u geskik sal wees vir klubvergaderings.

Members are invited to notify the secretary as soon as possible about your preference as to which days and times club meetings should be held.

Snippets | Brokkies

The Namibia EME DXpedition was voted 3rd position (short of 2 votes for joint second) out of 60 expeditions.

Maldives 8Q7QQ EME activity: 24-31 March will see HB9CRQ and HB9QQ operating from grid square MJ64JE on various bands.

Foxhunts: Richard ZS6UK recently put out an appeal for all foxhunters to come to the fore as well as newbies who will be very welcome to learn the skills. *See the rules on our webpage.*

Repeater: We have acquired a floor-standing 19-inch rack cabinet to properly house our equipment at Radcliffe. Still waiting for aircon.

Roy ZS6MI reported that not all shooting stars are due to rocks being burnt up in the upper atmosphere. Human waste from the space station is jettisoned to earth in a container which - together with its contents - also burn up just like meteorites!

On a more serious note, all local satellite operation is available on a daily basis when you subscribe to ZS-SAT. You can also get lots of news and odds and ends from the SARL Web page as well as SAAMSAT Web page. Additionally have look at the **Live OSCAR Satellite Status Page** www.southgatearc.org/news/january2010/live_oscar_status_page.htm which was created to help users work out which satellites are active and in which mode they are in.

SARL HF Field Day: ZS6PTA was active again from Veekraal 25km north of Brits with 8 operators.



Contester's breakfast



No-headache balun for Windom antenna



**ZS6BTY 40-10m tuner for his Double Zepp
700 ohm feed**



**Vince's operating table with
his Elecraft radio.**



**Hierdie fotos is per e-pos
ontvang van Pieter ZS6PA
en Vince ZS6BTY.**

**Details currently available
are that approximately
130 contacts were made.**

Building the broadband version of a 6 Band (6–20m) Hex Beam

Part 2 by Roger Jones, ZS6RJ

The spreaders

Your spreaders need to be long enough that they will form a diameter of around 6.5m at the top of the centre post, when pulled into the "inside-out" umbrella shape. This will allow the longest element set (20m band) at the top to be strung and held taut. They should be connected to the centre hub at equidistant intervals. The curvature you are going to get on your elements varies greatly with the type of material used. Tapered fishing rods, for example, tend to have quite a bit of their length horizontal coming out from the hub, before curving steeply upwards at the ends. This is not ideal, as it causes problems keeping the element sets parallel to each other as you move down the post to the higher bands (bearing in mind the spacing you need between the elements at the post to avoid interaction). What you're aiming for is a constant as possible curvature. This is more easily achievable by the use of hollow nested fibreglass poles, and using three sections each consecutively smaller than the previous one per spreader.



Thus your spreaders will radiate from the hub as shown. You can see the route I've gone here clearly – U-bolts with a diameter close to that of my spreaders. The bolt through the middle of the spreader between the U-bolt helps reduce movement in the event of heavy wind – not entirely necessary, strictly speaking. The spreaders are pulled up into their shape by attaching tensioning nylon ropes to the end of the spreaders and running them to the top of the post in the centre. Do this before starting to string your element sets on the spreaders. My picture shows 4 ropes in place – you'll have 6 (one from each spreader) when you're finished. Tip – hook or tie opposite tension ropes to the centre pillar at the same time, or you'll bend and possibly snap your centre post, depending on the materials you're using.

Feeding the Beam

One 50 ohm feed line for 6 bands! Looking at the centre post in the earlier picture (part 1 in the previous edition of Watts), you connect all the left terminal nuts together and all the right terminal nuts together and feed one side to the centre of

the coax connector and the other to the outer of the connector. It does not matter whether the left or the right set is connected to the centre or outer of the connector. You may use either RG213 50 ohm coax (very difficult to work with) or heavy (at least 4mm) cable (similar to that supplied with HF rigs to connect them to power supplies) to make the connections to the terminals and female coax connector at the bottom of the centre-post.



What is of **paramount importance** is the following: start down at the bottom (closest to the hub) and connect wire to your 6M terminals. Move up and connect these to the 10m terminals and so on until you get to the **top** of the centre post, with the 20m terminals being the last to be connected. Then make a tight U-turn with your feed cable and run it all the way back **down** the post before connecting it to the coax connector at the bottom. Allow around 15 to 20cm of coax to protrude above the 20m terminals before reversing with the U-turn. Why? Mainly to assist with decoupling the antenna from the feed line, as well as maintaining close to a 50 ohm match for the coaxial feed line.

Here's a pic of an old hexbeam I made with the coax on the outside to demonstrate the feed technique:

RF Choke



By far the best and easiest way of achieving this is by means of placing 6 or 7 ferrite beads over the feed line just below the hub of the antenna as shown. Use a



couple of cable ties pulled tight below the beads around the coax to keep them in place, and wrap them with insulating tape to stop movement and wear on the coax. You may also use a 6-turn coax choke with a diameter of around 20cm – again, just under the centre hub.

Built to these specifications, the antenna is broadband by nature and at my QTH at 50 ft is provides an SWR of 1.3 or less on all 6 bands from the start of the CW portion right up to the top of the phone section. Although you can get good results from around 25 ft up – the usual rule of thumb applies – the higher the better, though it depends on which take off angle is best for prevailing band conditions. But this is an antenna you can build and support on a relatively "flimsy" pole at low heights – and still work a lot of DX.



Part 3 will deal with suitable materials. 73 de Roger.

Interessante feite omtrent Aard-Maan-Aard (EME) kommunikasie

Geografiese inligting:

1. Die maan reflekteer ongeveer 7% van die sein terug gedurende 'n aard-maan-aard kontak.
2. Die fase van die maan het feitlik geen effek op A-M-A seine
3. Die maan is tipies $\pm 406,000$ km verste vanaf die aarde en $\pm 358,000$ km op sy naaste.
4. Presies dieselfde kant van die maan is altyd na aarde gerig
5. Die maan se diameter is 3476 KM in deursnee
6. As ons na die 180° sigveld van die horison kyk verteenwoordig die grootte van die maan tipies 'n $+1/2$ graad van die spektrum
7. Dit neem tipies 2.7 sekondes vir 'n radio sein vanaf die aarde na die maan en terug
8. Die feit dat die maan groter vertoon met maan opkoms en ondergang is 'n illusie



ZS6OB

Toerusting benodig:

Minimum sal wees 100 watt en 'n rigstraler van 15 dBd wins - behoort die 20 groot EME stasies te kan kontak. Die gemiddelde grootte stelsel in gebruik is gewoonlik 350 watt en 4 rigstralers met 'n gesamentlike wins van 18 dBd met antennes van 3 tot 5 golf lengtes lank. Ek het reeds meer as 1200 A-M-A QSO's met 'n soortgelyke stelsel gedurende die afgelope 2 jaar behaal. Groot stelsels [the big guns] kan wissel van 8,12,16,32,48 tot 64 rigstralers met uitsaai krag wat kan wissel van 1000 watt tot 5 kW.

Polarisasie is gewoonlik horisontaal. Vertikaal speel ook 'n belangrike rol omdat seine oppad van polarisasie kan verander. Kruisstelsel rigstralers vergemaklik kommunikasie met veranderende omstandighede.

In ZS is baie van ons kommunikasie tussen vertikaal en horisontaal aldus sal antenna stelsels wat ook die tussen-in polarisasie kan hanteer groter sukses behaal.

AARD-MAAN-AARD - Terminologie

'Spatial' polarisasie verlies:

Dit is die sein verlies in dB as gevolg van die verskil in polarisasie tussen 2 stasies, dit word veroorsaak wanneer stasies aan teenoorgestelde posisies van die aarde is en word veroorsaak deur die kurwe van die aarde.

Faraday rotasie:

Dit is die rotasie van die sein wat veroorsaak word deur die aarde se magnetiese veld en veroorsaak die meeste sein kwynings, dit is meer prominent op die laer A-M-A frekwensies

'Libration fading':

Die maan se oppervlakte is vol kraters en ongelyke terrein, dus word die gereflekteerde sein gefragmenteer. Die maan "wobbel" in sy baan om die aarde sodoende word gereflekteerde seine verder gefragmenteer

Dit kan beteken dat verskillende komponente van 'n gereflekteerde sein op verskillende tye by die antenna aankom wat die kwyning van die sein verder kan verhoog, benadeel of selfs onbruikbaar maak.

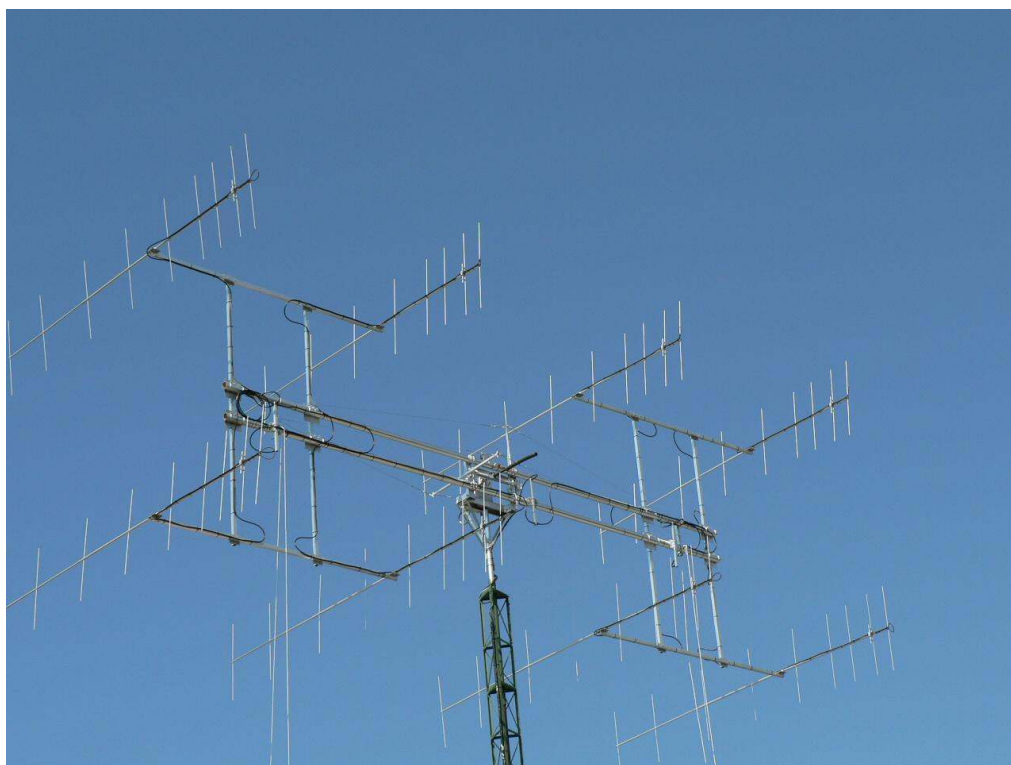
Doppler effek:

Dit is die verskuiwing van die oorspronklike sein se frekwensie as gevolg van die voortplantings faktor 'velocity' van die sein - Die Doppler verskuiwing is groter vir kort afstande en kleiner vir verder afstande waarvoor die sein voortplant.

Dan wonder ons soms hoe dit moontlik is dat seine vanaf die maan ooit bruikbaar is en gehoor of gedekodeer kan word?

Dit laat mens besef A-M-A kommunikasie is eintlik 'n wonderwerk!

73 de ZS6OB



The e-TV Sunrise Essay that won 50 laptops for the New Hope School

New Hope School is the Best School in South Africa.

New Hope School is the best non-racial school in South Africa. The reason for this statement is because their main purpose is to make disabled, learning disabled, and learners who had a problem of some sort in the past, and who are still in the school, smile.

This is a special school that caters for the above-mentioned types of learners and provides them with hope of a better future personally and in the open market.

The school has the following facilities that help us as learners to get the necessary stimulation and support needed. This school has incomparable teachers who teach in such a manner that each learner can understand and get good pass marks.

New Hope School has speech therapists, physiotherapists, and occupational therapists who stimulate the pupils' young minds so that they can cope better in their school-work and so that the disabled learners' bodies can function better. They also have psychologists and a social worker to help all the learners of New Hope School with problems they are facing and provide the necessary guidance and motivation to carry on with life and to become a happier individual.



Young Andre the author

Andre ZS6GCA

One of the old learners of New Hope School was my father, André George Coetzee. He was diagnosed with brain damage at birth and it was said that he would be a vegetable, unable to do a thing for himself forever, but my family raised him and sent him to New Hope School. The school has helped stimulate him to such an extent that he is now the best Telkom Technician in his office.

New Hope School will be celebrating its 40th birthday in 2011 and this school will continue to help as many learners in my family and other families as possible, for many years to come.

Long Term HF Propagation Prediction for March 2010

courtesy ZS6BTY

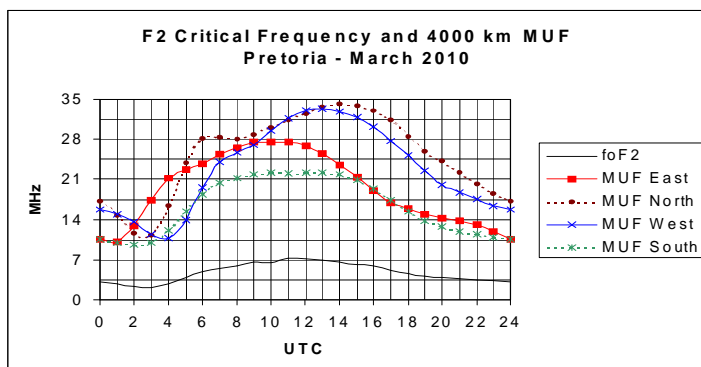
(see also our website propagation tab)

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.



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CUSHCRAFT CORPORATION

3 Things that Microsoft could never explain....!!!

MAGIC #1

An Indian found that nobody can create a FOLDER anywhere on the Computer which can be named as "CON". This is something funny and inexplicable? At Microsoft the whole Team, couldn't answer why this happened!

TRY IT NOW, IT WILL NOT CREATE A "CON" FOLDER

MAGIC #2

For those of you using Windows, do the following:

- 1.) Open an empty notepad file
- 2.) Type "**Bush hid the facts**" (without the quotes)
- 3.) Save it as whatever you want.
- 4.) Close it, and re-open it.

Noticed the weird bug? No one can explain!

MAGIC #3

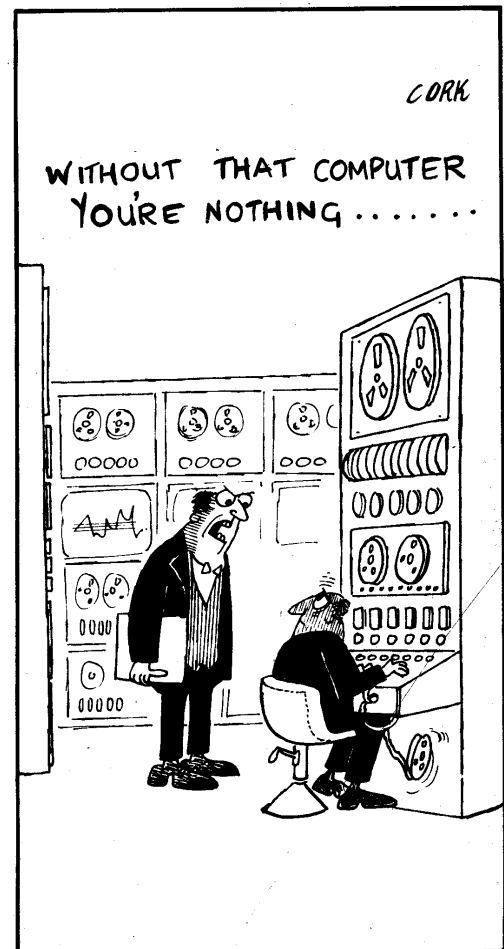
Again this is something funny and can't be explained? At Microsoft the whole Team, including Bill Gates, couldn't answer why this happened!

It was discovered by a Brazilian. Try it out yourself?

Open Microsoft Word and type

=rand (200, 99)

And then press ENTER and see the magic?



I was born intelligent - education ruined me.

If it's true that we are here to help others, then what exactly are the others here for?

Since light travels faster than sound, people appear bright until you hear them speak.

How come "abbreviated" is such a long word?

Behind every successful man, there is a woman. Behind every unsuccessful man, there are 2.

Every man should marry. After all, happiness is not the only thing in life.

The wise never marry; and when they marry they become otherwise.

Success is a relative term. It brings so many relatives.