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# WATTS

07-2011

Year 81 + 7m

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

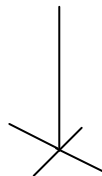
✉ PARC, PO Box 73696 Lynnwood Ridge 0040, RSA

web <http://www.parc.org.za> mail: [zs6pta@zs6pta.org.za](mailto: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



PARC Winter Fleamarket

28 May 2011

one of the many busy tables



## In this issue

- Minutes 11 June 2011
- Member's pages
- Member news and activities Lede-nuus en Aktiwiteite
- 
- Technical | Power at bandwidth limits | Tegnies
- | ZS6BGH shack
- | Battery discharge monitor
- Page eight | Bladsy agt

## In hierdie uitgawe

## Next Meeting

Date: Sat 13 July 2011  
Time: 19:30 for 20:00

Building #4  
University of Pretoria.  
S/E corner University  
and Lynnwood roads

# PARC Management team / Bestuurspan Aug. 2010 - Aug. 2011

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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 11 June 2011.

**Welcome:** The chairman welcomed all present.

**Present:** See register, 10 members.

**Apologies:** Many members are on the Total Bapsfontein rally, see register, 6 apologies.

**Joys & Sorrows:** Molly ZR6MOL is back from hospital, Charel ZR6GN is recovering from a light stroke. Nico ZS6AQ is getting ready to move to east Pretoria. Don ZS6AQS had a bad case of flu.

**Minutes:** The minutes of the April meeting were published. Approved by Fritz ZS6ASF and seconded by Hans ZS6KR.

**Matters arising:** The trophies were discussed. With no nominations received, the committee will attempt to do nominations. The desert island trophy will be run in December. Fritz ZS6ASF is nominated for the Sonny Don Trophy. Elma is nominated for a merit award for auditing our books. Craig ZS6RH is nominated for the Ham Spirit award.

**Rally:** The Total Bapsfontein rally is currently in progress, and many of our many members away on the rally.

**Finances:** The bank balance is R4897.47, there is about R176000 in investments. The cash in hand is large as a large donation from Mark ZS6USA was handed over in cash.

**AGM:** The AGM is on Saturday August 13 at 14H00. A social was suggested for the AGM, at SAM clubhouse. Motions must be in 4 weeks before the AGM by the 19:00 committee meeting on July 13. Those attending should advise the committee by the 13 July meeting so that catering for the social can be done. Bulletin announcements will be made. Award nominations are invited before the June meeting on 8 June. Subscriptions are due from 30 June. After the AGM, a new secretary is required. Proxy forms will be emailed shortly. Only paid up members may propose motions or nominate members for committee or vote at the meeting.

**RAE:** Thanks to Fritz ZS6ASF for the effort of the RAE. A schedule of the second half course was presented by him. Members are asked to advertise the course.

**Flea Market:** The date of the next flea market is 3 September, and will be held at PMC at 08:00.

**Technical:** Thanks to Craig ZS6RH for the work he is doing on the repeaters. Charles Thompson ZS5CH is helping Craig a lot.

**Web site:** Graham ZR6GJR is appointed to admin the web site. The current web site is paid till October 22. Parts of the web site updates has been presenting some problems. There should be a banner asking about membership en route to the Watts page, the newest issues should only be uploaded after a period of time. There was a discussion on various features of the site. The instructions for the swap shop access are very unclear. Electronic applications are not forwarded to the database manager.

**Contesting:** We have a vacancy for a contest organizer.

**Next meeting:** The next meeting will be on Wednesday 13 July 2011 at about 20:00.

## Birthdays

## July Verjaarsdae



05 Lynette, daughter of Bill ZS6KO  
06 Helen ZR6HN, daughter of Retha and roy ZS6XN  
11 Peter ZR6FD (81)  
13 Pieter ZS6PA  
17 Lynn, lv van Andre ZS6BRC  
17 Pine ZS6OB  
19 Sarina, lv van Willie ZR6WGR  
20 Roy ZS6XN  
21 Elmarie, lv van Johan ZS6JPL

Julie

## Anniversaries Herdenkings

06 Julie and Paul ZS6BMF ( 48 )  
15 Ellen en Joe ZS6AIC ( )  
23 Pamela and Harry ZS6HRD ( 57 )

22 Rozanne, dogter van Sylvia en Tjerk ZS6P  
25 Justin ZS6-262, son of Rika and Errol ZR6VDR  
27 Julie, sw of Paul ZS6BMF  
30 John ZS6JAO

## Joys and Sorrows | Lief en Leed

**Martinho ZS6BQP** recently became grandpa  
**Charl ZR6GN** is progressing well after his stroke  
**Nico ZS6AQ** is relocating to the east of Pretoria

## New Members

a hearty welcome to:

**Charles Thompson ZS5CH (ZR5CBT)**  
**Jim Norton ZS6US (KG2QB)**

## Diary | Dagboek

(UTC times)

### July

02-03 Venezuelan Ind. Day Contest 00:00-23:59  
03 DARC 10m Digital contest 11:00-17:00  
09 IARU HF World Championships 12:00-12:00  
16-17 CQWW VHF Contest 18:00-21:00  
30-31 RSGB IOTA Contest 12:00-12:00

### Aug

07 SARL HF Phone Contest 13:00-16:30  
13 **PARC AGM**

### Be an early bird!

### PARC SUBS / LEDEGELD 30-06-2011

**Please remit your subs in  
time to our treasurer or  
by transfer to:**

**Betaal asb. u ledegeld  
betyds aan ons tesourier  
of per oorplasing aan:**

**Bank : FNB Ordinary members/ gewone lede R150**  
**Branch : 25 20 45 Spouses, pensioners R50**  
**Account : 546 000 426 73**

**Your call sign must appear as statement text! !**

## Snippets | Brokkies

- Members are also here reminded to pay subs prior to the AGM and preferably by 30 June **else you have no voting rights.**
- **Please take note of the RSVP required for the AGM on the following page.**
- We had 6 RAE entrants from our classes given by **Fritz ZS6ASF**. Outcome has been 4 out of 6 that we could ascertain.
- The PARC is appealing to members to support our club in volunteering to partake in **Rally Communications**. You can gain a wealth of experience in the real world of radio in the field.
- **RAE lectures** again start on 18 July. Contact Fritz ZS6ASF 083-304-0028 012-811-3875 to receive a schedule. The exam registration deadline is 25 Sept.
- The PARC still has a **vacancy for a Contest Organizer**. Volunteers can opt for either V/UHF only, HF only or both.

## New DXCC country next month

The government of South Sudan will declare their independence from Sudan on 9 July 2011. They have applied for member status of the UN. The UN General assembly and Security Council will vote on this matter within weeks of independence. The Intrepid DX Group and the DX Friends/Tafiriti Gang ([www.dxfriends.com/SouthernSudan2011](http://www.dxfriends.com/SouthernSudan2011)) plan to be in the new capital of Juba and to be ready to start their DX-pedition upon admission by the UN. They will have 18 operators operating 24/7 on 7 active stations.

# AGM | 13 Aug 2011 | AJV

**Members must please indicate if they will attend the AGM for the purpose of budgeting and catering.**

**Lede moet asb laat weet of hulle sal bywoon vir begroting- en spysenieringdoeleindes.**

Please notify Richard 012-333-0612 or [ZS6PTA@QSL.net](mailto:ZS6PTA@QSL.net) or Fax 086-518-6414 before the end of July

## CALL FOR MOTIONS | AANVRAAG VIR MOSIES

**81<sup>st</sup> AGM Motions can be submitted by the next Club meeting 11 June or 13 July latest.**  
**81<sup>e</sup> AJV Mosies kan by die volgende klubvergadering 11 Junie voorgelê word of laastens op 13 Julie**

**!! Only paid-up members may nominate and vote at the AGM.**  
**!! Slegs opbetaalde lede mag by die AJV nomineer en stem.**

**TechTip** 12 (republished from WATTS 2002)

ZS6KR

## POWER AND SWR AT BANDWIDTH LIMITS

We have all learnt that in a resonant circuit  $BW=f/Q$ . This is however only true at the -3dB (half power) point where circuit reactance=inherent resistance.

Deducing the magnitude of response at any other point on the response curve is to make use of the geometric symmetry close to resonance and mathematics then yields a simple relationship:

$$(M)agnitude\ at\ any\ point = [1+(Q/Q')^2]^{0,5}$$

Where  $Q' = f/BW$  other than at the half power point.

This result is independent of frequency and very useful provided  $Q' > 10$  else we wander too far off the resonant point.

Rearranging the formula yields:

$$BW\% = (1-M^2)^{0,5} / MQ$$

As power is proportional to the square of M (ie voltage) then we deduce for a  $Q=20$  as follows:

Mag	Power	Bandwidth	approx SWR
100%	100%	0,00%	1
95%	90%	1,64%	2
90%	81%	2,42%	
86%	74%	2,96%	3
80%	64%	3,74%	4
70,7%	50%	5,00%	

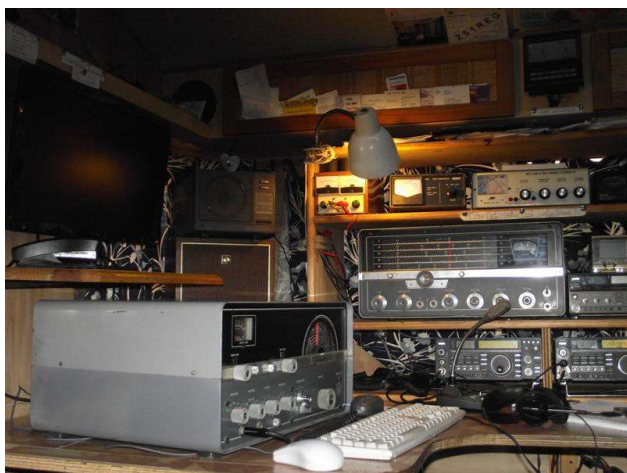
These figures must be seen as the **amplitude and power available at the edges of the bandwidths indicated**. Since there is a mismatch off resonance, the expected SWR is also shown.

Note that we have again proved that for a  $Q=20$  the bandwidth is  $f/20$ ; thus 5% at 50% power. Any Q value can be plugged into the formula and the power response easily deduced.

## Chris Nagel ZS6BGH / ZS3B shack exposed!



Amazing what can be packed into a small space! Apart from the more modern equipment in the centre and power supplies on the floor there is an Ameritron AL811 amplifier, D104 mic and an old Heathkit monitor scope on top a pristine RME "electrovoice" dual conversion wideband communications receiver.



The left picture shows one of his RX/TX combinations using a Hallicrafters HT37 transmitter with a Hallicrafters SX111 RX residing on the shelf.

On the right Chris is observing a Gelo VFO that hooks up to a recently acquired FT-100B transceiver just below the turntable.

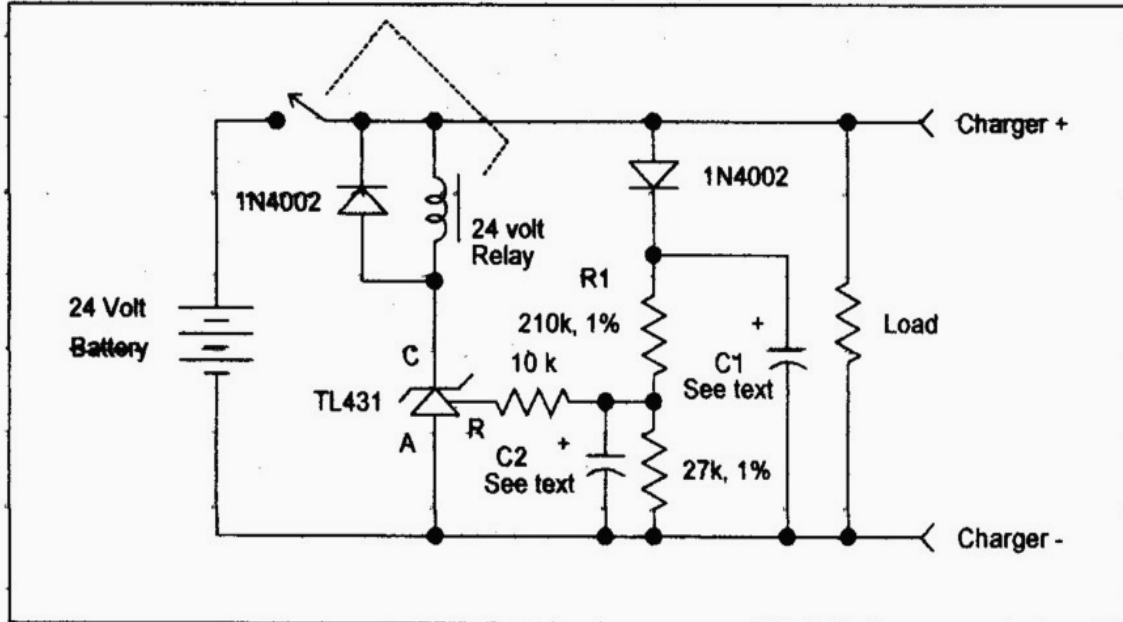
Besides a dozen various accessories he also has a multi-channel microphone audio router/ recorder hooked up to 5 rigs that deal bands and modes fed by various antennas outside including a satellite set-up.

He is also a keen traveler in his 3-wheel "Takkie" that has featured in some of our previous newsletters which is also fitted with radio equipment. Additionally he has a well cared for motorbike and a late 1960's Volksie.

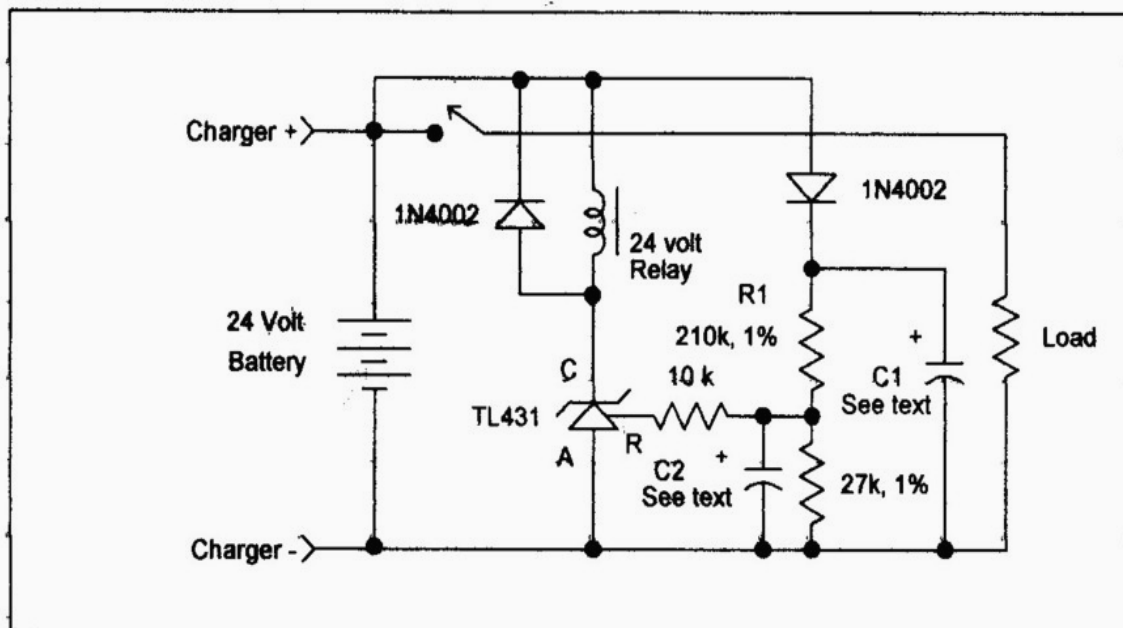
He has also recently again become active with rally assistance.

# Battery Discharge Monitor

Here is a battery monitor circuit which disconnects the load when the battery is discharged, preventing a deep discharge which could cause permanent battery damage. The battery is automatically reconnected when a battery charger or other DC source is connected across the load. Select a relay which requires less than 100ma coil current and with contacts capable of handling the load and charging currents.



C1 should be about one hundred micro-farads and C2 may be near 1 micro-farad. C2 simply delays the closing of the relay long enough for C1 to charge and C1 keeps the relay closed long enough for the battery voltage to climb above the cut-off point (about 22 volts for the circuit as shown). The 210k resistor may be reduced to 92k for 12 volt batteries. These R1 values may be reduced if a lower drop-out voltage is desired. The circuit may cycle on and off several times if the battery is deeply discharged with a delay proportional to the value of C1. The load sees the full voltage of the charger before the relay connects the battery in this circuit and in some applications the version below may be more desirable.



In this circuit, the battery will buffer the load from the charger a bit but the load will not receive power until the battery voltage has risen above the set-point.

# The bands are dead.... Wake us when something happens...

Shack of Danny ZS6AW

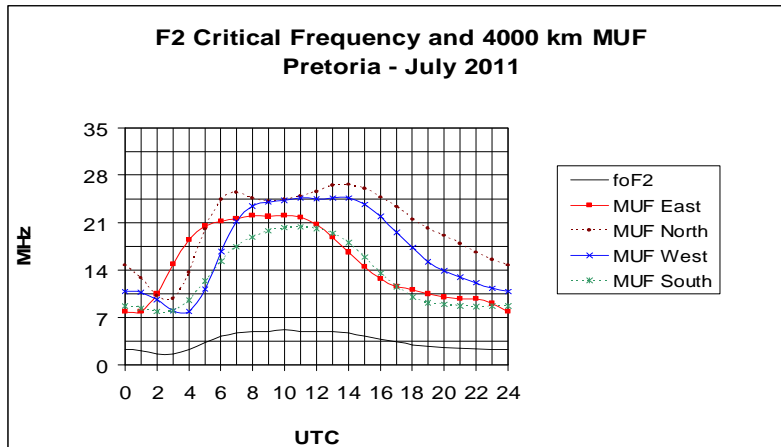


Shack of Hans ZS6KR



## QsoNet; an HF simulator on the Internet.

QsoNet involves the use of a software transceiver named CQ-100. It covers 5 simulated bands: 80, 40, 20, 15 and 10m. The system is capable of voice and CW operation. CW is sent via one's computer keyboard. There is also a band scope built-in the CQ-100 transceiver, with user-settable sweep ranges. It appears to be the next best thing to actually being on HF.



## Long Term HF Propagation Prediction for June 2011 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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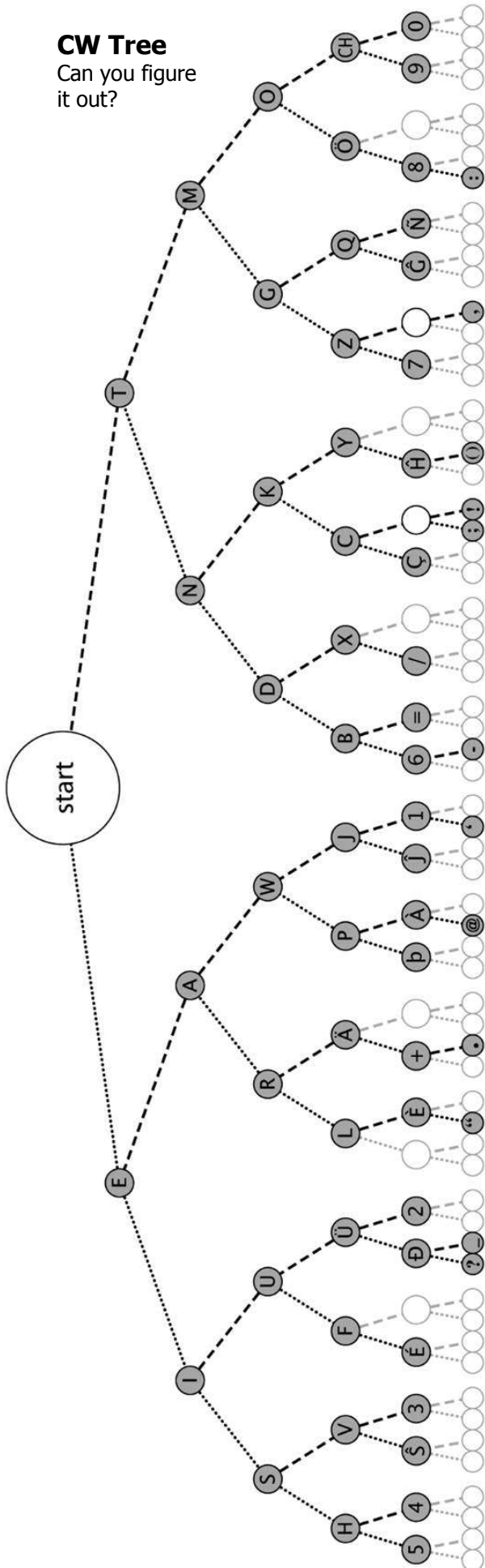
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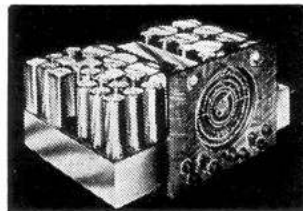
1940



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