



WATTS

03-2011

Year 81 + 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

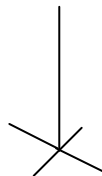
Bulletins: 145,725 MHz 08:45 Sundays/Sonday
Relays: 1.840, 3.700, 7.066, 10.135, 14.235, 51.400, 438.825, 1297 MHz
Activated frequencies are announced prior to bulletins

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

ZR6FD logo

Drukwerk
printing
ZS6JPL

Papier / Paper
ZS6JPL



SARL NATIONAL CONVENTION ON VAAL <http://www.qsl.net/zs4srk/agmhome.htm>

SARL National Convention
15-16 April 2011
Gauteng

AGM Venue: Vaal University of Technology
Friday evening: river cruise on the Vaal river
Bloemendal MW radio transmitter visits
SUPER flea market (Biggest EVER in the Vaal)
SARL Gala evening at Riviera Hotel
Bring and Brag equipment exhibitions
Industry Sponsors and Suppliers
Prizes to be won in raffles and lucky draws!

Biggest Ham meeting in Gauteng !

Hosted by:
ZS4SRK
Sasolburg Radio Club

Visit www.sarl.org.za
www.qsl.net/zs4srk

The Sasolburg and Vaal Triangle Radio Clubs present: The SARL National Convention 2011. This year it takes place on 15 and 16 April. Come and enjoy the beauty of the Vaal. There is an exciting line-up, starting on the Friday evening with a wonderful Vaal River cruise down Millionaires' Bend. Enjoy a fantastic dinner and the company of good radio friends until late that evening!

On Saturday morning the SARL AGM takes place at the Vaal University of Technology. A huge flea market will be held for radio enthusiasts, while a nature drive at Emerald Casino Resort will keep non-amateur partners suitably entertained. The two clubs are aiming to make the Convention the biggest get-together of radio amateurs in years. Saturday afternoon has been earmarked for a visit to the Bloemendal medium wave radio broadcast station near Meyerton. Come and experience what a 500 kW RF transmitter is capable of doing, and see how the systems for such a shortwave broadcast station operate and service the world from South Africa.

The Convention's highlight is on the Saturday evening at the Riviera Hotel. This year, the SARL Gala evening is going to be a formal black tie affair. Our guest speaker is Prof. Alwyn Louw from VUT, a fantastic speaker! Gerald Klatzko, ZS6BTD, will be giving a riveting presentation on his satellite contact experiences. The annual prizegiving will be hosted by Tjerk Lammers, ZS6P. Thereafter the Broken Stream band fires up the dance music and the party begins.

Registration for the Boat cruise and the Gala evening is essential as there are limited seats available. Bookings should be done through the club secretary by visiting www.qsl.net/zs4srk to complete the forms.

In this issue

- Minutes 12-02-2011 Notules
- Member's pages Lede-bladsye
- Member news / Activities Lede-nuus en Aktiwiteite
- Technical | Slowing down a DC fan | Tegnies
- | ZS6RJ junk box 2m antenna |
- | HF Zepp too good to be true |
- Page eight Bladsye agt

Next Meeting

Date: Wed 09 Ma 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

Committee members

Chairman, SARL liaison	Pierre Holtzhausen	ZS6PJH	chairman@zs6pta.org.za	012-655-0726	082-575-5799
Vice-Chairman, Fleamarket	Alméro Dupisani	ZS6LDP	fleamarket@zs6pta.org.za	012-567-3722	083-938-8955
Secretary, Treasurer	Richard Peer	ZS6UK	treasurer@zs6pta.org.za	012-333-0612	082-651-6556
Repeaters, Technical	Craig Symington	ZS6RH	technical@zs6pta.org.za		072-724-9695
Rally co-ordinator	Johan de Bruyn	ZS6JHB	rally@zs6pta.org.za	012-803-7385	082-492-3689
Web co-ordinator, Secretary	Graham Reid	ZR6GJR	webmaste@zs6pta.org.za		083-701-0511
Social co-ordinator	Doréen de Bruyn	ZR6DDB		012-803-7385	082-857-9691
	Willie Greyling	ZR6WGR	social@zs6pta.org.za		082-940-2490

Co-opted / Geko-opteer:

Auditor	Elma Basson				
WATTS newsletter/Kits	Hans Kappetijn	ZS6KR	editor@zs6pta.org.za	012-333-2612	072-204-3991
Asset control	Andre van Tonder	ZS6BRC	andre.vtonder@absamail.co.za	361-3292	082-467-0287
Klubfasiliteite, Vlooiemark	Willie Greyling	ZR6WGR	facility@zs6pta.org.za		082-940-2490
Rallies	Johann de Beer	ZR6YV		011-918-1060	082-857-1561
Contest co-ordinator	Pieter Human	ZS6PA	contest@zs6pta.org.za	012-800-2888	082-565-6081
Training co-ordinator	Fritz Sutherland	ZS6ASF	training@zs6pta.org.za	012-811-3875	083-304-0028
Historian, Awards	Tjerk Lammers	ZS6P	zs6p@iafrica.com	012-809-0006	
Public relations	Alméro Dupisani	ZS6LDP	fleamarket@zs6pta.org.za	12-567-3722	083-938-8955

Minutes of the monthly club meeting of the Pretoria Amateur Radio Club held at the South Campus of the University of Pretoria on 12 Feb. 2011.

The February meeting was given a miss due to little attendance and absence of several members at the Field Day Contest as well as a Rally event.

Moreover the University Rag was about to start a 3pm and streets would be blocked preventing exit from the premises.

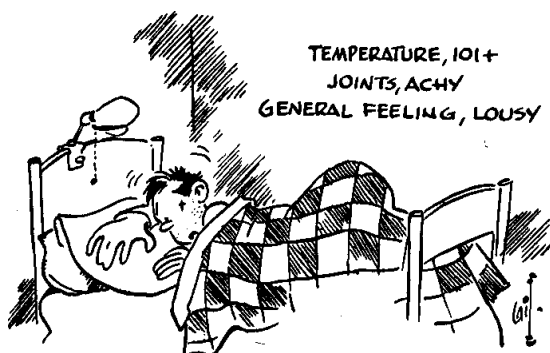
The next meeting will be as stated on page 1.

Editorial

Is monthly meeting attendance withering?

Saturday 12 February had 7 or 8 members turning up. Admittedly some were on rally duty and some at our field station and could not attend. Some were possibly mowing the lawn and some in a terrible state as shown?

Please diarize meeting dates and come along.



"SPRAINED THUMB, THEN LARYNGITIS -- THE BEST PAIR OF EXCUSES A CLUB MEMBER EVER HAD."



Birthdays

Verjaarsdae

Maart



- 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, sw of Hans-Peter ZS6AJS
- 10 Gary ZR6GK
- 12 Rita, sw of Victor ZS6VG
- 17 Gerda, sw of Roger ZS6RJ
- 21 Frances ZR6AUT
- 21 Martie, lv van "JB" ZR6YV

March

Anniversaries

Herdenkings

- 16 Marelise en Pierre ZS6PJH (15)
- 22 Ivan OK1LL
- 22 Julian ZS6AOU
- 25 Doreen ZR6DDB, lv van Johan ZS6JHB
- 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

Jean ZS6ARA had affirmative shopping visitors at his home while away with his mother only 20 minutes.

Diary | Dagboek (UTC times)

- | | | |
|-----|-------|--|
| Ma | 06 | DARC 10m digital contest 11:00-17:00 |
| | 06 | SARL Hamnet 40m simulated emergency contest 12:00-14:00 |
| | 09 | PARC Club Meeting – see p1 |
| | 12 | Belfast Rally |
| | 18-20 | SARL VHF/UHF analog and digital Contest |
| Apr | 15-16 | SARL National Convention, Vaal University |

Region I preferred Emergency Frequencies
7110 kHz
and
7120 kHz Maritime Mobile

Snippets | Brokkies

Evan ZS6ELI is a budding contester: He received 2 certificates for the CQ WW WPX Contest 2010 1st place, Africa Division using a tribander on 15m, and 1st place South Africa, low power, single operator 15m. Well done!

SARL Field Day 2010: Despite our logs that were lost and found, corrections were eventually made to the official results and PARC was placed 3rd overall. Again well done and a big thank you to all participants.

SARL Field Day 2011: The first leg took place at Veekraal on 12-13 Feb. with ZS6PJH, ZS6JJJ, ZS6EK and ZS6USA doing digital. Several visitors also gave a hand. Several hours were lost due to bad weather and rain. 96 SSB and 10 digital QSO's were made.

Fox Hunt Saturday 19 Feb: Richard ZS6UK was the fox and ZS6BTY, ZS6PJH and ZS6RAS were all unsuccessful hunters. Some sharpening of technique may be necessary. Better luck next time.

Johan ZS6JHB was the recipient of two prestigious awards from the SA Motor Association: Best Chief Radio Marshal and Best Marshal for 2010. Congratulations as we all know you and your other half ZR6DDB put all your efforts into rally events every year.

ZS6OTL Club has put up a repeater on Marietskop on 145,7125MHz. This will cover Middleburg – Kruger Park and we could have comms from Pretoria to those areas. Try it.

Just in case you thought QRM is about as bad as it can be: "There will be an estimated 7 trillion wirelessly connected devices and objects by 2017. That is about 1000 per person." [From an Arizona State University report, quoted in the Johannesburg "Star" of 2010-11-29.] (Ed: one or two zeroes too many?)

CTCSS PC boards

Several hams in the Pretoria vicinity still have no 88,5Hz tone available in their 2m radios and thus no access to most tone-access repeaters such as ZS6PTA.

We have been notified by the Kempton Park Amateur Radio Technical Society that they have a PIC controlled PCB with dip-switch frequency control available as a kit (R70) or as ready built and tested (R100).

Contact Viv Dold ZS6VD 083-327-9181 or office 011-978-6720.

Want to run a 12v DC fan very slow?

zs6kr

If you need an air flow *without the noise* then adding a resistor will slow it to a point where it may run, but has not enough push to start turning. The solution is simple. First establish a series resistor in the + line which gives you the speed you want – starting rotation with your finger when beyond self-starting and make sure it can maintain it in the orientation that it will be fitted.

Then add a 470-1000uF capacitor across the resistor with –ve towards the fan.

Presto, the fan will now self start and run at the desired speed!

Why? The capacitor is fully discharged by the resistor before power is applied. At switch-on it will be a direct short to the fan motor supplying maximum current after which it charges exponentially to a voltage determined by the resistor voltage drop.

It is assumed you use a good low friction fan and not a heavily worn ex- PC fan!

Test mechanical rotation to be light and smooth without power by lightly freewheeling the blades.



ZS6RJ Garage Special

I built this homebrew vertical dipole last weekend for “free” from scraps lying around the garage. Elements made from a metre of 10mm aluminium tube. Stub or boom made from a piece of 35cm 50mm pvc plumbing pipe. Sealed the ends by using a 50mm hole saw and cutting 2 circles from plywood. Fed the RG213 (overkill for the coax but I have a lot of it lying around) through the hole the pilot drill bit made in the middle. Sealed the plywood (which fits snugly anyway) with white silicone sealer both sides of the boom.

Elements go into the PVC pipe through 2 holes drilled either side and are kept firm by virtue of the fact they’re joined by a piece of 8mm wooden dowel inside the PVC boom with a 1cm gap between the elements. This happened to fit nice and snugly into the inner diameter of the 10mm aluminium elements. RG213 is connected to the elements either side inside the PVC pipe with two small hose clamps. 2 more holes drilled allow the 213 coax to exit the PVC pipe, wind around it 5 times (tough job with thick coax), enter the boom again to keep the RF choke snug, and led out the back. Beauty of this is if you yank the coax by mistake, it’s virtually unbreakable.

SWR 1.2 to 1 from 144 to 149 with 45 to 55 ohm reading on an MFJ analyser, and elements cut for 1:1 at the repeater inputs – wanted to maximize its efficiency for connecting to handhelds specifically. Certainly not a spectacular antenna – but the projects main goal was to build it without going to the shops, from what was available in and around the house. It also only took 2 hours to cobble together. It’s completely waterproof and the big surprise is it outperforms the J-pole above it by 4 S-points, so I’ll be making a couple of these more “professionally” soon and painting them a low-profile grey or black. Will work well for field trips too – haul it up into a tree and strap it to a branch – no grounding required. I’m also going to experiment with a 70cm/2m version.

Now, if only I could make an efficient top band antenna this size!

73,

Roger

J. W. Spencer W4HDX
300 Lido Cove
Niceville FL 32578

Editor's note: Wire antennas accompanied early amateur radio and are still not to be ignored or shunned. Way back in 1929 the Windom (single wire off-center feed) and later newer designs with parallel feed line are discussed and analyzed here: http://www.w8ji.com/windom_off_center_fed.htm. A later development was the Carolina Windom: <http://www.hamuniverse.com/k4jw/newwindom.html>. A parallel wire feed can also be made to alter the radiation pattern (WATTS 09 -2010). **Of particular interest is parallel feed arrangement with twin coaxes. Such a feed can be routed any physical way unlike parallel line and has electrical advantages.** A Carolina Windom with such a feed can be seen here: <http://www.hamuniverse.com/kf9focfdipole.html>

The 1984 article below discusses a similar feed applied to a doublet (Zepp) illustrating applicability to any antenna requiring a matching section.

This Antenna Is Too Good To Be True

*It's cheap. It works well on all bands.
And it radiates a super signal.*



Completed antenna mounted in tree.

Would you like to have an antenna that is capable of working all the HF bands, or any combination of the HF bands including the new WARC bands, with excellent results, at a fraction of the cost of any of the commercially-available multi-band antennas now on the market? Would you also like to have an antenna with an extremely low noise factor? I'm about to describe an antenna that is just what you've been looking for.

This antenna is a combination of the old reliable Zepp with the addition of a balanced, shielded feeder system which has been described in various articles in past years.

This antenna has been in

use at this QTH as well as other locations for over two years and has yielded many fine DX contacts and many good reports stateside.

To determine the comparable merit of this antenna, I erected separate dipoles cut for the center of each band and fed with a single coaxial cable. Then I connected all antennas so they could be switched rapidly to determine the comparable signal strength of each as compared to the Zepp antenna.

In addition to the favorable signal strength comparisons, I also found that the noise level on the Zepp antenna was as much as 5 S-units lower than the noise on the cut-to-frequency dipole with single coax feed. I noticed this particularly on

Desired Bands of Operation	Length of Each Side of Antenna From Center to Each End
160-10 meters	108 feet
80-10 meters	54 feet
40-10 meters	27 feet
30-10 meters	18.7 feet
20-10 meters	13.5 feet
17-10 meters	10.4 feet
15-10 meters	9 feet
12-10 meters	7.8 feet

Table 1.

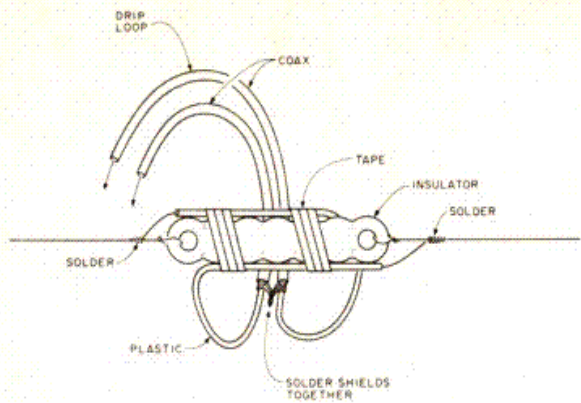


Fig. 1. Method of supporting coax cables.

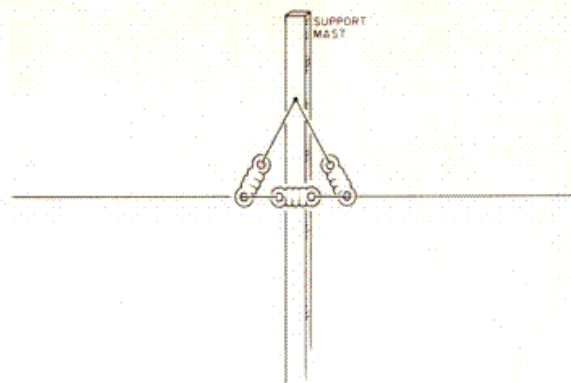


Fig. 2. Method of supporting antenna at center.

the model of this antenna which was erected inside the attic of the house in close proximity to the ac wiring of the building, where the noise level dropped from an S-7 on the regular dipole to an S-2 on the Zepp antenna.

To erect this antenna, you simply figure the length of each side of the flat-top from the center to one end by using the figures shown in Table 1.

This antenna can be cut for operation on any combination of the HF ham bands, including the WARC bands which have not yet been released. For example, if your space is limited, you could put an antenna in the attic of the house, as I did at one location where I had an attic length of only about 30 feet, by figuring the antenna for operation on the bands from 30 through 10 meters, resulting in a length each side of center of 18.67 feet. Then I ran the wire in a Z configuration through the attic to compress it into the available space.

I have used various configurations on this antenna, such as the halo and the inverted vee, and all give good results. If you can get the wire running in a fairly straight line, though, your radiation pattern will be more predictable.

The flat-top portion is designed so that it is non-resonant on all bands of operation, thereby avoiding any extremely high or extremely

low impedance points at the feedpoint. It is designed to be resonant between the one-quarter, half, three-quarter, and full-wave points on each band, thereby presenting an impedance to the antenna tuner which is well within range of the tuner on each band and will not cause any loading problems. An antenna tuner is required which has a built-in balun or you must use a 4-to-1 balun at the bottom end of the line if you don't have one built in the tuner itself.

The feedline is made of two runs of RG-8/U cable for powers up to 2 kW PEP, or for low-power operation under 100 Watts output, RG-58/U cable may be used. The lower loss of the larger cable is to be desired, however, even if low power is used.

At the top end of the

feedline, you connect the shields of the two coax cables together but *do not* connect them to anything else. Then at the bottom end of the line, the shields are tied together and connected to the ground connection in the shack and to the frame of the tuner.

The inner conductors of the coax cables are tied to each leg of the antenna wire at the top of the line, and at the bottom end of the line they are connected to each of the balanced-output terminals of the antenna tuner.

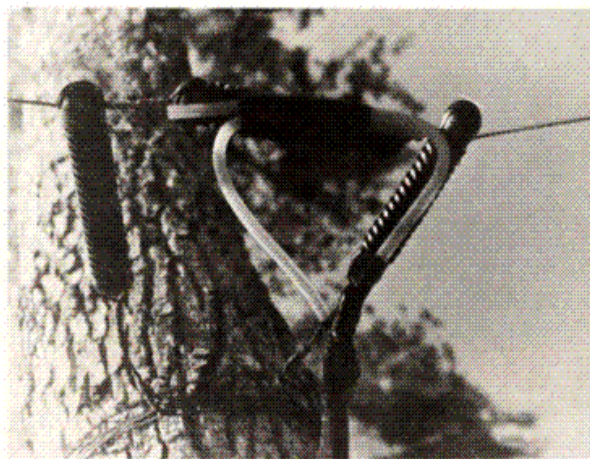
The feedline can be run anywhere—underground, through metal or vinyl conduit, or in the open. The advantage of this arrangement, however, is that unlike the old open-wire feedline previously used on Zepp antennas, it does not have to be kept clear of surrounding objects and is not

affected by anything it lies against.

There is only one precaution that must be observed, and that is to cut both runs of the cable exactly the same length. They do not have to be run together, however, as the shield on the cables provides exact electrical separation of the inner conductors even if the two cables are widely separated.

As to the length of the feedline, I found that best results were observed with line lengths of a little more than one-quarter wavelength at the lowest frequency of operation (or anything longer than that). Try to avoid making the feedline resonant at any particular frequency you are operating on, particularly the quarter-wave points, or you may have a bit of trouble tuning on this band. Optimum length seemed to be about 55 feet for 80-through-10-meter operation.

As for the mechanical construction, it is a good idea to use a long insulator, the same type used on the ends of the antenna, at the center of the antenna. Then slip the end of another insulator of the same type over the wire on either side of the center insulator, coming off at right angles to the wire and tying the support wire to these two side insulators so that equal pull is achieved on either side of the center insulator. Then



Center support and coaxial connections.

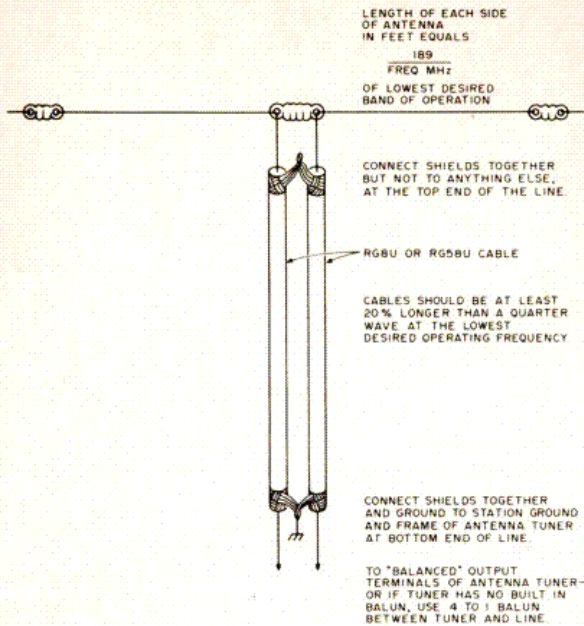


Fig. 3. Allband trapless antenna for HF.

at the point where you need to support the two coax cables, just strip off about 2 feet of the braid, leaving the plastic inner insulation, and bend this part along the center insulator on each side and tape securely to the insulator. This will make a very solid support

for the coax cables and will prevent wind damage.

It is also a good idea to bring the coax up the support mast a little higher than the antenna wire and bend it over in a loop and down about a foot or so to prevent the water from leaking into and running down the inside of the shield on the cables.

To separate the braid from the inner conductor on the coax, strip the outside plastic covering off about two feet from the end of the shield and push it down, compressing it so that it becomes larger in diameter. Then take an awl or the tip of a small screwdriver and carefully spread the strands of the braid apart, opening up a hole in one side of the braid. At this point, bend the coax in a U shape and pull the plastic insulated center conductor out through the hole in the side

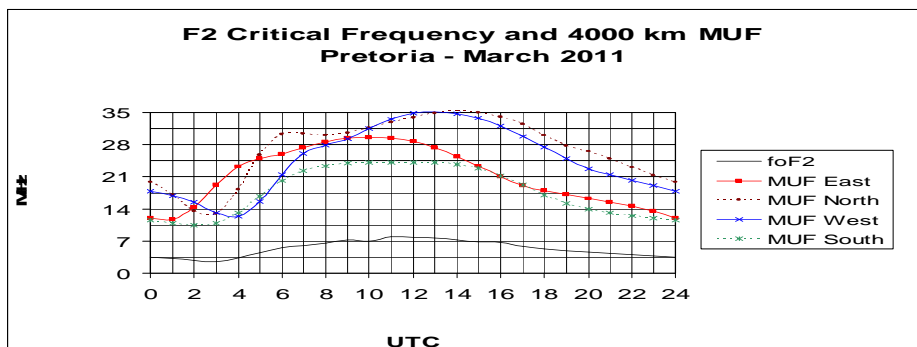
of the braid, U-end first. This will eliminate the need for making a solder connection directly next to the plastic where it might create a weak spot.

I have used this antenna in various situations cut for all different combinations of bands and have had excellent results with all of them. I have also made up a portable version of this antenna using stranded insulated wire such as zip-cord and RG-58/U cables which I use in conjunction with a small antenna tuner for operation on 20 through 10 meters. This one is only 13.5 feet long either side of center with two runs of coax 20 feet long. It is ideal for stringing up in a motel room or apartment by supporting it with nylon fishing line. Just keep the antenna out a foot or so from the wall and support it by anything you can find to tie it to. Try it. You'll like it! ■

Long Term HF Propagation Prediction for March 2011

(see also our website propagation tab)

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.

QRV Services offers the following expertise:

- General equipment repairs and calibration
- Small-scale design and manufacturing
- Technical writing
- 3rd Party scrutiny of projects and documents
- Expert TV repairs and second-hand TV sales
- MFJ 259/69 Analyzer repairs and calibration

and products:

- Morse Mate
- Legal limit 40m dipole traps
- Radio power supply OV protection kits
- Nissei SWR/Power meters HF and VHF/UHF
- Connectors RF and DC
- Plug-in triple sequential industrial timer

Contact Hans at 012-333-2612 or 072-204-3991



Amateur Electronic Supplies

Your Affordable Amateur Radio Dealer

Johan Lehmann ZS6JPL

083 3008677 / 012 8413648

aesham@telkomsa.net



CABLE & INTERCONNECT SOLUTIONS FOR TELECOMS, BROADCAST AND MIL/AERO MARKETS



See what Grandpa was up to in 1932. Get the whole magazine at:
http://www.wikiradio.org.uk/wiki/image/3/35/Practical_Wireless_Issue_01.pdf

FREE INSIDE! BLUE PRINT OF THE LONG-RANGE EXPRESS THREE

Practical Wireless

3^d

Published by

**GEORGE
NEWNES
LTD.**

Vol. 1 — No. 1
SEPTEMBER 24th, 1932

**THE VERY LATEST FOR
THE HOME CONSTRUCTOR**



**THE
LONG-RANGE
EXPRESS
THREE**

FOR EVERY SET — *there's a*

PILOT AUTHOR KIT