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# WATTS

12-2010

Year 80 + 12m

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



PARC, PO Box 73696 Lynnwood Ridge 0040, RSA



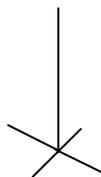
<http://www.parc.org.za> mail: [zs6pta@zs6pta.org.za](mailto:zs6pta@zs6pta.org.za)

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

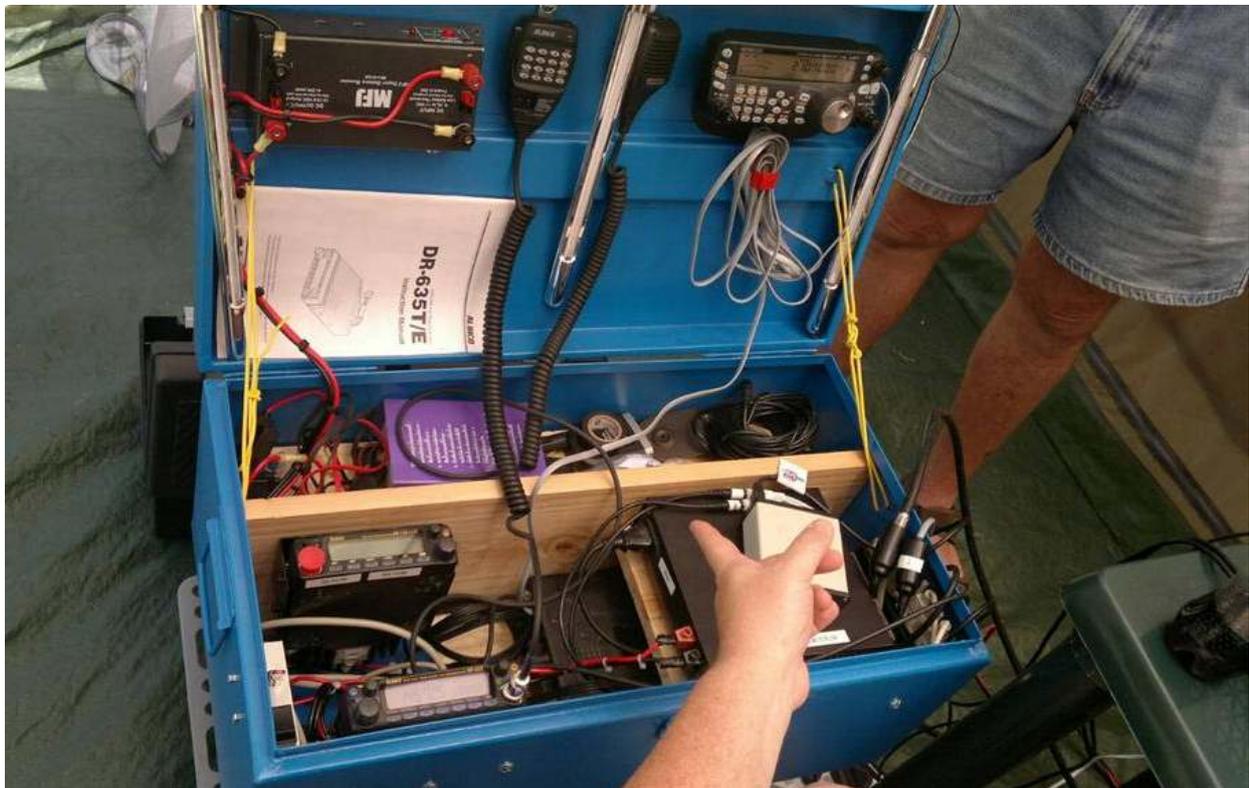
Bulletin repeats Mondays | herhalings : Maandae 2m 19:45



## SARL HF Field Day 20-21 Nov.

Mark ZS6USA' station in a trunk.

He came to work digital DX.



### In this issue

- Minutes 10 Nov Notules
- Member's pages Lede-bladsye
- Member news / Activities Lede-nuus en Aktiwiteite
- 
- Technical Short 80m dipole
- 2m TVI killer
- Schonland: African son of Science
- Page eight Bladsy agt

### In hierdie uitgawe

### Next Meeting

Date: Wed 12 Jan 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

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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 10 Nov. 2010.

**Welcome:** The chairman welcomed all present, including Jim Norton KG2Qb formerly ZS6JIM.

**Present:** See register, 13 members.

**Apologies:** ZS6RH, ZS6AQS.

**Joys & Sorrows:** None reported.

**Minutes:** The minutes of the previous meeting were read, approved by Willie ZR6WGR and seconded by Pieter ZS6PA. It was noted that the heading was incorrect.

**Web site:** Graham ZS6GJR had confirmed that the web site is again operational. It was noted that Tjerk is registered as the owner. The committee had decided that this must change. Information for the web site must be sent to Graham ZR6GJR. The club meeting date and venue must be on the web site.

**Projects:** Willie ZR6WGR has a 10 component car alarm project in progress.

**Finances:** We have a bank balance of R7669.78 with R1450 in cash..

**Membership:** There are 95 paid up members of the total of 135 for 2010/11.

**Flea Market:** The date of the next flea market is 27 November, and will be held at PMC at 08:00.

**Social:** The end of year event will take place at PMC after the flea market of 27 November starting at about 11:30. Please advise Willie of intention to attend for the arrangement of braai packs.

**Rallies:** The 2010 season is completed and the end of year function will be combined with the club end of year function at PMC after the flea market on 27 November.

**Awards:** A list will be sent to Willie ZR6WGR, who will arrange them for the social event after the flea market..

**Technical:** The repeater is operating without the voting system from Keevykop with two dipoles.

**Contests:** The SARL HF field day will take place on 27/28 November and PARC will take part at Veekraal north of Brits. There was much discussion on contests and it was agreed that we must cultivate activity on VHF/UHF in the ZS6 and ZS4 areas.

**VHF Dxpediton:** Pine ZS6OB gave a short preview on the dxpediton planned for April or May 2011 to Lesotho. They will be using the same set up as was used in Namibia recently with many improvements to the technical aspects.

**Presentation:** Pierre ZS6PJH showed a video on cryptography.

**Next meeting:** The next meeting will be on Saturday 11 December 2010 at about 14:00.

From the Editor and Management

Vanaf die Redaksie en Bestuur

## A Blessed Christmas

## 'n Geseënde Kersees



It is difficult at the time of writing to realize that the Festive Season is soon upon us. The January issue of Watts will probably appear after Christmas. **The Management Team of PARC will now take the opportunity to wish you and your loved ones a Blessed Christmas and Happy New Year.** May there be new inspiration for the future through the Message and real meaning of Christmas for all. We also wish our Jewish members a happy **Chanukah**.

Dit is moeilik om nou ten tye van hierdie skrywe te besef te dat die Feesgety alreeds baie naby is. Die Januarie uitgawe van WATTS sal waarskynlik eers na Kersfees verskyn. **Die Bestuurspan van PAK wil nou van hierdie geleentheid gebruik maak om u en u geliefdes 'n geseënde Kersfees en Gelukkige Nuwe Jaar toe te wens.** Mag daar nuwe inspirasie vir die toekoms deur die Boodskap en ware betekenis van Kersfees vir u almal wees.

## Birthdays

## Verjaarsdae

Dec.



Des.

## Anniversaries Herdenkings

02 Antoinette ZS6D, sw of Danny ZS6AW  
04 Wynand, seun van Wynand ZS6ARF  
05 Hanlie, dogter van Susan and Freddie ZS6JC  
06 Sylvia, lv van Tjerk ZS6P  
08 Hans ZS6KR  
15 Don ZS6AQS  
15 Almero ZS6LDP  
22 Steven, son of Bill ZS6KO  
23 Niel ZR6AUK, son of Marieta and Roy ZS6MI

29 Molly ZR6MOL and Richard ZS6UK (34)

28 Allan ZS6AVC, son of Frances ZR6AUT  
30 Corrie, lv van Bridge ZS6BJM  
31 Henk ZS6CS

## Joys and Sorrows | Lief en Leed

**Edwin ZR6ESP**, son of Richard ZS6UK and Molly ZR6MOL was married to Nina on 5 November. Many congratulations to the couple.

## Diary | Dagboek (UTC times)

**Nov** 27-28 CQWW DX Contest CW 00:00-24:00  
**Dec** 03-05 ARRL 160m Contest 22:00-16:00  
11-12 ARRL 10m Contest 00:00-24:00  
18 OK RTTY Contest 00:00-24:00  
18-19 Croatian CW Contest 14:00-14:00  
**Jan** 08-09 Hunting Lions on the Air 00:00-24:00  
09 DARC 10m Contest 09:00-10:59  
15-16 Hungarian DX Contest 12:00-12:00  
28-30 CQ 160m Contest CW 22:00-21:59  
29-30 REF Contest CW 06:00-18:00  
UBA Contest SSB 13:00-13:00

### Notice

**PARC Fleamarket 27 November at PMC**  
with year-end social and rally braai afterwards

**PARC next meeting 12 January 2011**  
**NB: no meeting in December**

## Snippets | Brokkies

- **Suzette ZS6SZT**, dogter van Pieter ZS6PVW en Magda ZS6MVW het uitmuntend gepresteer op skool en ontvang sertifikate vir: Positiewe Merietes, Junior Stadsraad Verteenwoordiger, Medialeier, English First Additional language, Computer Applications Technology, Afrikaans Huistaal, Geskiedenis, Lewenswetenskap, Verbruikerstudie, Akademie Algeheel vir graad 11. Balkie toekenning vir Akademies graad 11. Trofeë gekry: Beste Prestasie in graad 11, Beste Prestasie vir graad 10, 11 en 12, Dux Toekenning vir graad 11.
- **ZS6PTA/4 VHF/UHF Contest field station made a resounding 2<sup>nd</sup> leg multi-op first place with 113 210 points. Pine ZS6OB took part as a single operator home station and came first in that category.**
- **SARL HF Contests: 2<sup>nd</sup> place taken by Hans ZS6KR (2<sup>nd</sup> leg CW) and 3<sup>rd</sup> place on aggregate 2010 Phone and CW.**
- **SARL Contest Club results CW: ZS6PTA 3<sup>rd</sup> place, Phone and CW combined: ZS6PTA 2<sup>nd</sup> place.**
- **ZS6PTA** was the only Heritage station in the 24 Sept. Sprint to send in a log with 378 top score besides 5 general station logs.
- **SARL Bursaries for 2010.** SAARDT is making bursaries available for students under 25 years of age who plan to write the May 2011 RAE. Each bursary pays for the exam fee, a 1 year student membership of the SARL and a contribution to the tuition fees. The bursary is valued at R1000 and has been made available by the family of Tony Reumerman ZS6AOG, now incapacitated, from the proceeds of the sale of equipment. Application forms are available on [www.amateurradio.org.za](http://www.amateurradio.org.za).
- **Bronze medal for Team Africa participants.** During March 2010 the 73<sup>rd</sup> Commonwealth Contest attracted a lot of participants and besides seven teams comprising Rest of the World, England, Canada, Australia, Asia, New Zealand and Africa. Africa was represented by ZS1EL, ZS4JAN, ZS6KR, 3B9WR, 5X1NH, 5H3EE, 9J2BO, V51YJ, and 9G5XA. Individual scores also featured in the official results.
- **SAR News warns ZR operators to stay within HF allocated frequency bands:** 14,070-14,099MHz, 14,225-14,350MHz, 21,070-21,200MHz, 21,300-21,450MHz, 28,070-28,150MHz, 28,300, 28,500MHz. Cancellation of licence and/or fine may result.

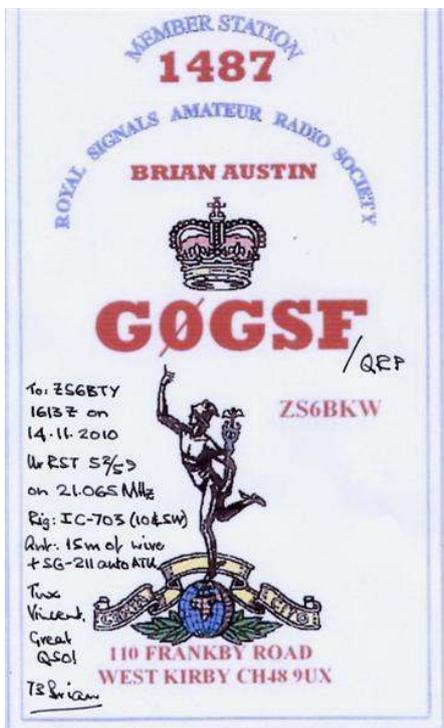


**Doppies ZS6BAQ en Estie ZS6CC klim Kilimajaro! – Vakansie hoogtepunt**



**Vince ZS6BTY makes a memorable contact**

with Brian Austin of modified G5RV fame

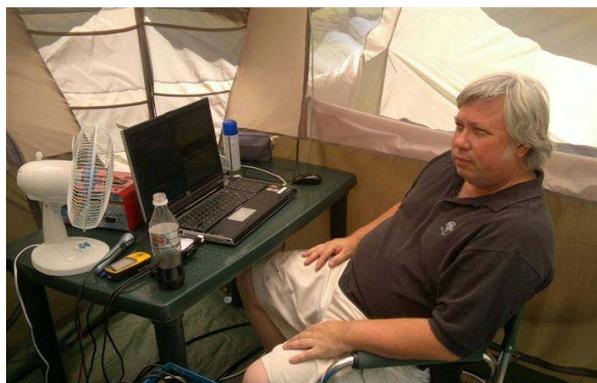


"It was two way QRP (5W CW) playing cat-and-mouse with the lightning storm going on here at the time. We were trying Gray-Line Propagation. Whether it was Gray-Line Propagation I don't know, but it was sunset at both ends".

**HF Field Day 20-21 Nov (at Veekraal near Brits)**

Operators in the HF Field Day were Pierre ZS6PJH, Pieter ZS6PA, Kallie ZS6KCS, Tienie ZS6MHH, Vincent ZS6BTY, Mark ZS6USA (below)

No other Field Day photos have come to hand at the moment but more will probably be shown at club meetings or on our website

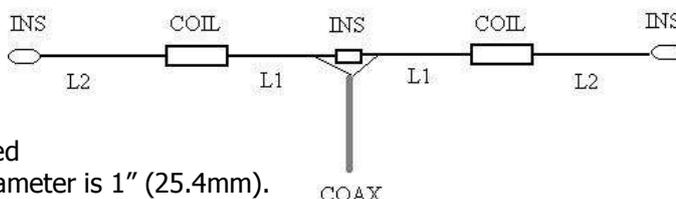


**Short 80m dipole**

(by 4S7NR)

L1 and L2 = 3,66m

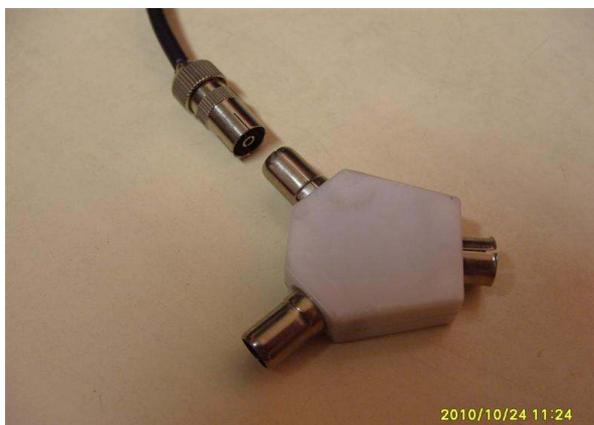
The two loading coils are described as 67.83µH and can consist of 104 turns of insulated wire, wound over a length of 89mm. The coil diameter is 1" (25.4mm).



**TVI on 2m? Try this method based on a  $\lambda/4$  O.C. stub in parallel with your antenna feed**



Open up a TV 2-way "splitter" (you can use any of two types as shown below) and remove the 75Ω resistors in series with each outlet. Wire all three solder points direct as shown. Make up a stub with any cable as described below.



**1-male 2-female type with TV flylead stub and male plug**

**1-female 2-male type with RG58 stub and female plug.**

A "stub" is a resonant line section preferably of shortest length like  $\lambda/4$  and we need that at 145MHz. Taking into account the velocity factor of the RG58 this calculates to around 33cm from the tip of the connector to the end of the cable. Theory tells us that a  $\lambda/4$  stub must open-circuit to act as a short-circuit. So we place a short-circuit across the TV feed at 145MHz to suppress this unwanted frequency (obviously within some bandwidth) but also at 435MHz (bonus) and 725MHz but RG58 losses here will make it ineffective as a resonant circuit. A piece of TV cable was also tried but the length here had to be somewhat longer.

The author used a MFJ analyzer to test the stub. Some ingenuity is needed at the MFJ socket to make contact with the TV plug. If you start with a 35cm piece of cable you can cut off very small pieces at the time until you read R=0 and X=0 or an absolute minimum at 145MHz. Dress the cable end so that no strands can short-circuit it. One brand of RG-58 resulted in 33cm and another in 31,5cm.

Results? my XYL Satisfied at last – no more patterning with 5-50W VHF - especially on TV2.

**ZS6KR**

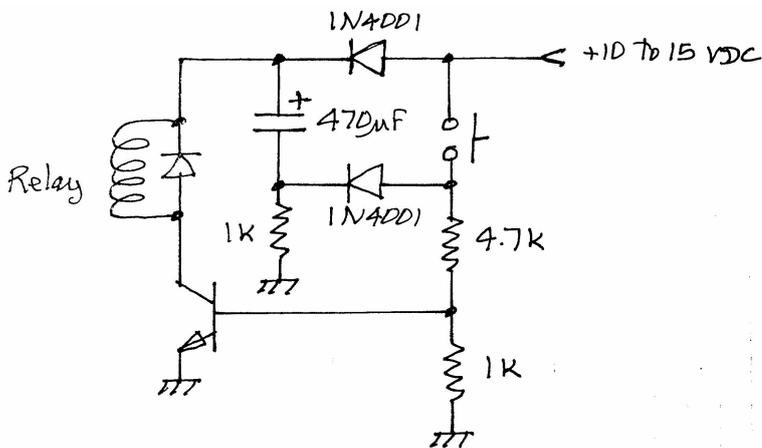
**How to Operate 24V relays on 12V**

[http://www.ko4bb.com/ham\\_radio/Projects/](http://www.ko4bb.com/ham_radio/Projects/)

This circuit takes advantage of the fact that relays need a much lower voltage to stay on than they need to actually turn on.

Most of the smaller ones have a 200 ohm coil, and they turn on around 14-16V and turn off around 7-9V, which makes them unusable directly from a 12V battery.

While the switch is off, the capacitor charges to approximately the battery voltage through the top diode and the 1k resistor, then when the switch is closed, the capacitor is placed in series with the battery voltage (through the transistor and the other diode.) The capacitor then discharges, but not before the relay has closed. The relay stays on with the nominal 12V.



# Schonland: African son of science

from [www.southafrica.info](http://www.southafrica.info) and wikipedia.

First published in [Eastern Cape Madiba Action](#), winter 2007 edition.

## He developed radar in Africa in 1939, launched the continent's premier science council and was a world expert on lightning.

Basil Schonland served as advisor to Field Marshal Montgomery in World War II, led atomic energy research in the UK and was knighted by the Queen.

This Eastern Cape son of science finally received recognition as "Scientist of the Century" in South Africa in 1999, was granted a posthumous award and sparked a biography.



**'Mighty Atom'** St Andrew's College in the Frontier Country town of Grahamstown at the turn of the century could not have foreseen the child prodigy on their hands when 10-year-old Basil Schonland entered the foyer in 1907. He matriculated four years later at the tender age of 14 - with the highest mark in the country. Notably bright but small of stature, his prophetic nickname at school was "Mighty Atom".

He matriculated four years later at the tender age

With a BA (Physics) from Rhodes University College under his belt and an OBE for service in France in WWI, Schonland enrolled as a research student at Cambridge University in the UK. Pioneering nuclear physics research was under way, and Schonland made a name for himself with research on the scattering of Beta particles.

But the call of Africa propelled him to Cape Town in 1922 to take up the post of lecturer and soon professor of physics at the University of Cape Town.

As Brian Austin puts it in his biography *Schonland: Scientist and Soldier*, facilities for research in South Africa at that time were very primitive compared to what Schonland was used to in the UK. Isolated from the international research community, he turned to something completely different.

**Chasing storms** He pursued the study of lightning, and the exciting period between 1937 and 1939 (at the University of the Witwatersrand and as director of the Bernard Price Institute) saw him chasing storms, photographing lightning and measuring the electrical fields under thunderclouds.

His work was internationally regarded as the biggest advance in the field since Benjamin Franklin's work in the late 18th century.

When war clouds gathered in Europe in the late 1930s, the need to develop radar was urgent. Commonwealth countries were secretly invited to send scientists to the UK for a briefing on the new concept of radar. No one went from South Africa. However, Schonland met distinguished New Zealand scientist Sir Ernest Marsden on a ship in Cape Town after the UK briefing. Copies of vague documents and notes made during the UK discussions were all Schonland had to work on.

## South Africa's own radar system

Incredibly, he and his team developed their own radar system, which was fully functional in South Africa just three months after the outbreak of World War II. "All they really received from the UK ... was that it could be done and 'how'," wrote Military History Journal author Dr FJ Hewitt.

In 1941, while on a special visit to England, Schonland was asked to stay. He became a member of the famous "Blackett Circus" - a group of scientists who scientifically addressed problems and worked with generals in the field. It was the start of operations research as we know it today.

With the invasion of Normandy, France, in 1944, Schonland was appointed personal scientific advisor to Field Marshal Montgomery.

There was a happy post-war sequel. Schonland's early African radar team remained in touch, and when Sputnik 1 was launched in 1957, they improvised tracking equipment and established its orbit in just two days. The expected lifetime of Sputnik was published in *Nature* - giving the world the first accurate prediction of Sputnik's expected lifespan, which proved correct to within 15%.

## Pan-African science

In December 1944, Schonland was recalled to South Africa by General Jan Smuts to establish and become first president of the South African Council for Scientific and Industrial Research (CSIR). The CSIR's first pan-African programme of scientific collaboration was a historic event, held in Johannesburg in 1949 and attended by 100 delegates from 25 countries south of the Sahara.

Representatives from Europe, the US and Australia were also there in a "panoply of nations never before seen under one roof in South Africa", wrote Brian Austin in his essay "African Science and One Man's Vision".

They formed the Scientific Council for Africa South of the Sahara (CSA), which convened over 10 years until apartheid and the growth of independence movements got in the way. The "winds of change" had begun blowing across the country by 1960, and colonial links were starting to sever.

## Anti-apartheid protest

In 1962, Schonland resigned his then post of Rhodes University's first Chancellor in protest at South Africa's apartheid legislation, which segregated previously "open" universities. South Africa was no longer able to lead, apartheid was anathema to the world, and in 1965, riven with political differences, the CSA was disbanded.

By then, Schonland had already returned to England as the director of an atomic energy research unit at Harwell. He was knighted by the Queen in 1960 for his services to British science, and was a Faraday Medallist for 1962.

Schonland was voted South Africa's Scientist of the Century in 1999, and was posthumously awarded the Order of Mapungubwe (in the gold class) in 2002.

# Volunteers track rally cars - (Not only in RSA) – found on E-ham.net

CLAIRE CONNELL - The Marlborough Express Last updated 13:01 18/11/2010

About 20 keen volunteers from the Marlborough Amateur Radio Club are playing a vital role in running one of New Zealand's major car rallies.

The club is in charge of all communication during the Silver Fern Car Rally, from Christchurch to Queenstown, which runs this week.

Club member and manager of the rally controls Andrea Bourhill said it was an honour for the club to be asked to do the task for a third time.

Volunteers are in charge of communicating with crew members out in the field (via radios) at various stages of the race to ensure all 55 cars are tracked for safety reasons.

Communication is vital if a breakdown occurs, or if there is a car crash, Ms Bourhill said.

The club was asked to help out because historically the event finished in Blenheim, before it was moved further down the South Island several years ago.

Volunteers have to write down every radio call, have a clear voice and an eye for detail, remain calm in an emergency, and multi-task. "It's an interesting event from the aspect of safety. There are a lot of specialist skills that are needed," Ms Bourhill said.

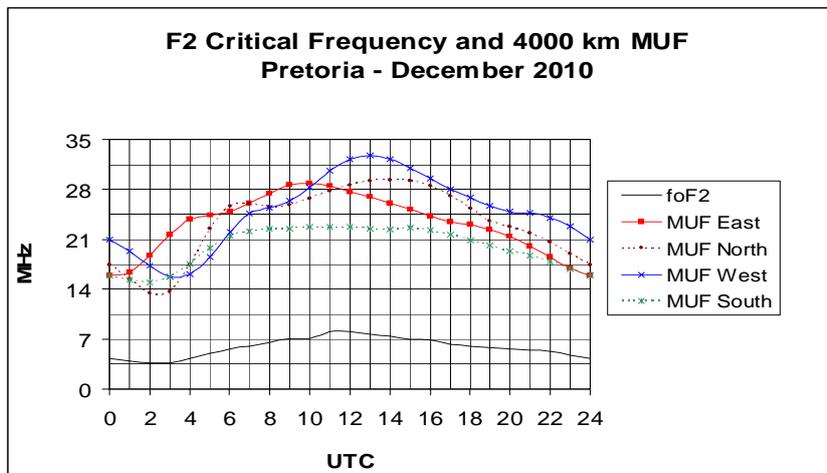
When The Marlborough Express visited no accidents or mishaps had taken place, but the group said there were usually one or two minor accidents along the way.

The volunteers spend long days at the Copthorne Hotel in Nelson St, some setting up about 5am.

Drivers from Britain, Australia, South Africa and New Zealand are involved in the race.

Club member Ken Hynds has been involved for "years" and said he was interested in the technical aspects of the communications systems, which meant establishing links in low, out-of-reach valleys where drivers often were.

"It's not as easy as some people think," Mr Hynds said. Those interested can check out the rally's website, on [silverfernally.co.nz](http://silverfernally.co.nz)



## Long Term HF Propagation Prediction for December 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.

### QRV Services offers the following expertise:

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- Expert TV repairs and second-hand TV sales
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aesham@telkomsa.net



Time - Aug 27  
\$3

*When you gotta go...  
you gotta go!*

CALLING ROVER would be a cinch if you could equip him with a "walkie-talkie" set . . . and you might even teach him to reply, once he caught the spirit of the thing!

But, whatever its application after the war, the portable short-wave receiving-sending set will be electrically operated. And electrical circuits call for dependable connectors. Cannon Connectors will undoubtedly play an important role in all after-the-war electrically operated communication equipment because they are proving their merit today wherever dependability is of paramount importance.

This Cannon Connector becomes an integral part of a carburetor primer cap for aircraft engines. Cannon Plugs are used in thousands of different places on all types of American aircraft as well as on ships, guns, tanks and radios wherever good electrical connections must be assured.

**CANNON ELECTRIC**  
Cannon Electric Development Co., Los Angeles 31, Calif.  
Canadian Factory and Engineering Office: Cannon Electric Co., Ltd., Toronto

REPRESENTATIVES IN PRINCIPAL CITIES—CONSULT YOUR LOCAL TELEPHONE BOOK

## Hull man convicted of radio offences

A Hull resident was sentenced at Hull Crown Court on 22 November for causing deliberate interference to amateur radio users in the Hull region of Humberside between June and November 2009.

The defendant was also convicted of unlawfully using radio equipment without a licence from Ofcom, which was installed in his van and driven around the region to interfere with legitimate users of the local amateur frequencies.

He was sentenced to:

- Four months imprisonment suspended for 18 months
- A curfew between 7pm and 7 am for 3 months via a means of electronic tagging
- Forfeiture of his van and radio transmitters, to Ofcom.

Commenting on the sentence, Paul Mercer, Head of enforcement at Ofcom, said: "There are around 900 amateur radio users in and around the Hull area, who have been deliberately disrupted for more than four years. Ofcom is very pleased with this result, which will hopefully give these users some welcome relief, as well as sending a very strong signal to those that abuse the airwaves. This followed a dedicated investigation by Ofcom involving six enforcement officers working day and night to bring the culprit to court."

Mr Sheldon, the Court Recorder commended Ofcom for the quality of the evidence that had been collated and the quality of file presented in court. RSGB General Manager Peter Kirby, G0TWW, said "RSGB volunteers co-operated closely with Ofcom in gathering evidence for this case. This conviction shows that deliberate interference will not be tolerated and can have serious consequences for the perpetrator."

## A beautiful, touching story from a generous musician.

As a bagpiper, I play many gigs. Recently, I was asked by a funeral director to play at a graveside service for a homeless man. He had no family or friends, so the service was to be at a pauper's cemetery in the back country.

As I was not familiar with the backwoods, I got lost and being a typical man, I didn't stop for directions. I finally arrived an hour late and saw the funeral guy had evidently gone and the hearse was nowhere in sight. There were only the diggers and crew left and they were eating lunch.

I felt badly and apologized to the men for being late. I went to the side of the grave and looked down. The vault lid was already in place. I didn't know what else to do, so I started to play. The workers put down their lunches and began to gather around. I played out my heart and soul for this man with no family and friends. I played like I've never played before for this homeless man. And as I played 'Amazing Grace,' the workers began to weep. They wept, I wept, and we all wept together. When I finished, I packed up my bagpipes and started for my car. Though my head hung low, my heart was full.

As I opened the door to my car, I heard one of the workers say, "I never seen nothin' like that before and I've been putting in septic tanks for twenty years." Apparently, I'm still lost...