



ZR6FD logo

Drukwerk
printing
ZS6BAQ

Papier / Paper
Richard ZS6UK
Bill ZS6KO
Deryck ZS6KQ

WATTS

12 - 2007

Year 77+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.zs6pta.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

SARL
VHF / UHF Field Day
21-23 Sept 2007

SARL HF Field Day
17-18 Nov 2007



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- Tegniese items
- Bladsy agt

Next Meeting
08 Dec 2007

Time: 13:30 for 14:00
PMC Clubhouse

Keuning straat Wes
Silverton

PARC Management team / Bestuurspan Oct. 2007- Sept 2008:

Committee members

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	Doreen de Bruyn	ZR6DDB		012-803-7385	082-857-9691

From the Editor

A Blessed Christmas



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**.

Vanaf die Redaksie

'n Geseënde Kersefees



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 PARK wil nou van hierdie geleentheid gebruik maak om u en u geliefdes 'n geseënde Kersefees 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 en Freddie ZS6JC
- 06 Sylvia, lv van Tjerk ZS6P
- 07 Hansie ZS6AIK
- 07 Tim ZS6TIM
- 08 Hans ZS6KR
- 08 Magda ZS6MVW, lv van Pieter ZS6PVW
- 10 Arland ZR6KVV, son of Heila and Melvyn ZS5MF
- 14 Madelein, dogter van Tim ZS6TIM
- 15 Almero ZS6LDP
- 21 Retha, sw of Roy ZS6XN
- 22 Steven, son of Mary and Bill ZS6KO

- 11 Petro en Gert ZS6ZB ()
- 12 Mary and Bill ZS6KO (56)
- 17 Leanne and Allan ZS6AVC (13)
- 29 Molly ZR6MOL and Richard ZS6UK (31)

- 23 Niel ZR6AUK son of Marieta and Roy ZS6MI
- 25 Annemarie, sw of Bernie ZS6ANU
- 28 Allan ZS6AVC, son of Frances ZS6AUT
- 30 Rika, sw of Errol ZR6VD
- 30 Corrie, lv van Bridge ZS6BJM
- 31 Henk ZS6CS

Condolences: Bernie **ZS6ANU** passed away at 5 AM on 22 November after a long illness. He was an active PARC member for over 55 years and always available for rally assistance. Our condolences to his family and friends.

Sick Parade | Krukkelys

Jean ZS6ARA is nou al meer as 6 weke platgetrek met geelsug.
Corrie, lv van Bridge ZS6BJM was vir 'n ruk in die hospitaal.
Hermann ZS6SN is weer ernstig siek in die hospitaal.

FUTURE MEETING DATES

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

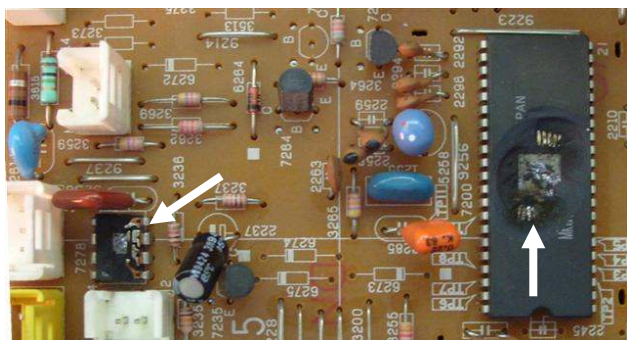
Dec	08	2007	Nov	14	2007
Feb	09	2008	Jan	09	2008
Apr	12	2008	Ma	12	2008
Jun	14	2008	May	14	2008
Aug	09	2008	Jul	09	2008
Oct	11	2008	Sept	10	2008
Dec	13	2008	Nov	12	2008

Diary | Dagboek (UTC times)

- Nov** 30-2Dec ARRL 160m Contest 2200-1600
- Dec** 08-09 ARRL 10m Contest 0000-2400
- 01 Centurion ARC test-your-equipment Day and Potjie.
- 08** PARC meeting / braai at PMC grounds
- 14 NARC closes.

Snippets | Brokkies

- **Suzette van Wyk** het haar RAE met vlieënde vaandel geslaag en die roepsein **ZR6SVW** gekry. Daar is nou vier amateurs in die van Wyk familie.
- **Roy ZS6XN** received a prize for the best comms officer at the recent Toyota Dealer 400 Rally. This rally was very arduous under conditions of rain, hail and lightning.
- **John Ogden** passed his RAE and now has the call sign **ZR6JAO**
- **Upcoming projects / kits:** Roy ZS6XN will have available kits for a 3LED battery condition indicator and also a 10LED version with intelligent charging. Under consideration is a 'rally trap antenna' using RG174.
- **Henk ZS6CS** is retiring from the building trade as of this December to become a permanent loafer. We hope to hear him more often now!
- **Ed ZS6UT** recently obtained this monster linear amplifier. It is of French origin and sports the name/type Nardeux T166. Ed is now on the lookout for its user manual! →

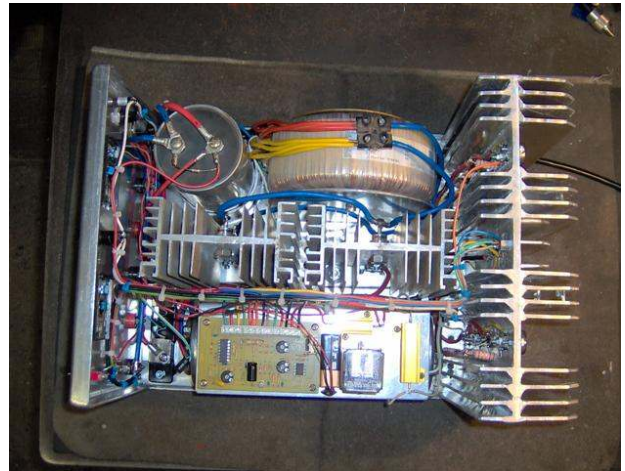
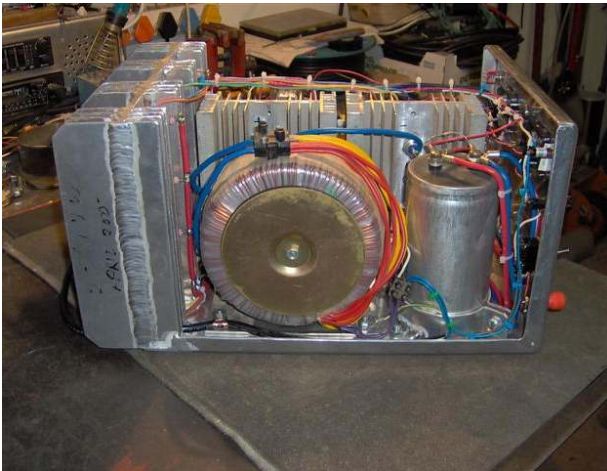


Summer is here. Photo left shows 2 of 3 severe IC blow-outs in a TV set via a lightning strike on the outside antenna.

Needless to say the antenna changed shape and the TV was a write-off. **Your radio could be next!**

Lede se Projekte

1. Pieter ZS6PVW se 'Marchwood' kragbron



2. Lourens ZS6KRT se veldstasie projek



Lourens beplan 'n volledige veldstasie vir homself vanweë dat HF bedryf by sy QRA amper onmoontlik is.

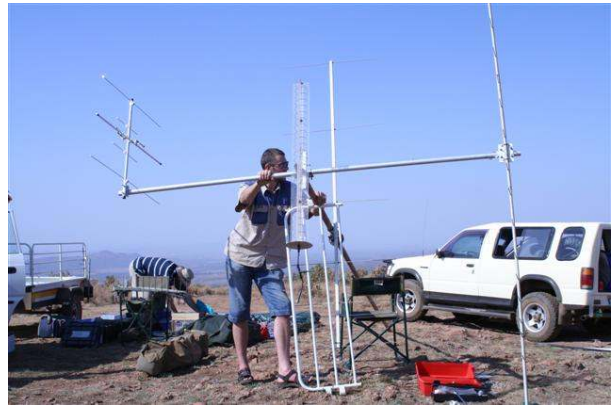
Hier word 'n multiband draad antenna betrag.

Hans ZS6KR en Doppies ZS6BAQ het kom help om verstellings voor te stel.

VHF/UHF Sept 2007 Field Day



Pierre ZS6PJH unpacking



Will this ever work? Willie ZR6WGR



Skyline decorations are up



Pierre ZS6PJH and Craig ZS6RH operating ZS6PTA

HF Field Day Nov 2007



ZR6AHT, ZS6PJH and ZS6CCW



Ops tent using battery supply in the trailer charged by solar cells. Two radios and two antennas were used.

ZS6RH checking 10 and 15m.



ZS6KR in PARC regalia on 40m

ZS6PJH checking the 40,80,160m trap dipole support



I worked on a design for an "uninterruptible power supply" using high current diodes to route the voltages. The problem is, if you place a diode between a battery and the transceiver, the voltage drop across the diode is often too much to keep the PLL circuits in the transceiver operating from a slightly discharged battery.

My solution is a simple high current relay to transfer the transceiver from the ac power supply to the battery when the ac power fails. When normal ac power returns, the relay is energized, connecting the transceiver to the ac supply. See Figure 2. The circuit also connects a trickle charge circuit to recharge the battery. With the 4.7 Ω current limiter, you cannot overcharge the battery. The diode prevents the battery from discharging through the ac power supply when the supply is switched off.

K1 is a DPDT relay with 15 A contacts. By paralleling the contacts, it has a 30 A capacity. I mounted the relay and its matching socket, along with the charging components in a project box.

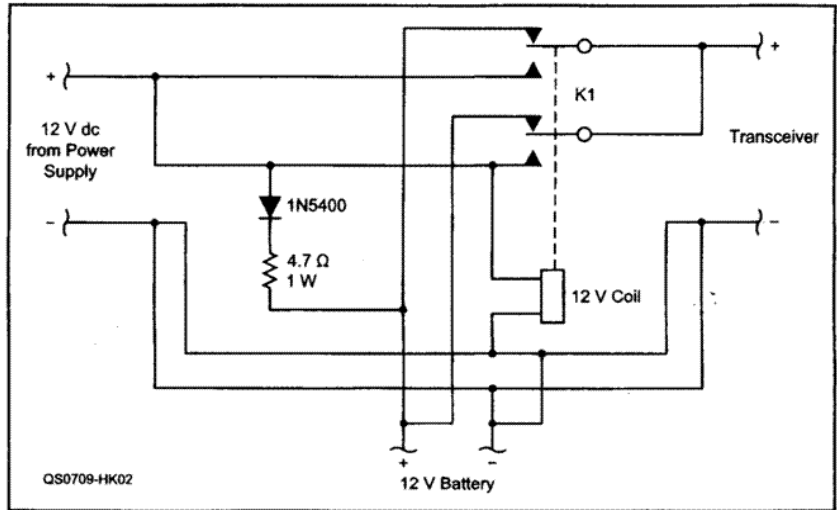


Figure 2 — This schematic diagram shows how a 12 V relay can be used to automatically switch between an ac power supply and a battery to power a radio. The diode and resistor form a trickle charger to keep the battery topped off and ready for the next power outage.

Oorsprong van Ohm se Wet

Radio ZS Sept 1975. (lees kolom 1,3,2,4 volgorde)
 deur Hennie Ferreira, ZR6CF

VANDAG is Ohm se wet aan ons almal bekend maar hoeveel van ons ken die gekiedenis van die ontberings wat hierdie Duitse natuurkundige en wiskundige moes deurmaak. Wat vandag as eenvoudig en vanselfsprekend aanvaar word, het baie deursettingsvermoë en vernuf aan die kant van George Simon Ohm gekos om hom in staat te stel om in 1825 sy bevindings te publiseer.

Wetenskaplikes van daardie tyd was reeds bewus van die sogenaamde "galvaniese vloeistof" (elektriese stroom) wat 'n geheimsinnige rol in hul studies en eksperimente gespeel het. Alessandro Volta het in die begin van die jaar 1800 hierdie geheim begin opklaar met die bekendstelling van sy "hidro-elektriese" battery, die voorloper van die hedendaagse battery, wat wetenskaplikes toe 'n bestendige bron van stroom kon gee. Dit het natuurlik aanleiding gegee tot 'n verdere kopseer vir die wetenskaplikes want vir die volgende twintig jaar was daar geen bekende manier om die vloei van stroom te meet nie. Dis toe dat Oersted in 1820 die deurbraak maak met sy bevindings dat stroom wat deur 'n stuk draad vloei 'n magnetiese veld voortbring. Schweigger en Poggendorff sien egter dat Oersted se bevinding 'n stappie verder geneem kan word en 'n jaar later verskyn die galvanoskoop.

Hier het dit egter nie geëindig nie. George Ohm, destyds hoërskoolonder-

wyser in Cologne, sien die moontlikheid raak om Volta se hidro-elektriese battery met die galvanoskoop te verbind om sodoende die vloei van 'n elektriese stroom te bestudeer. Deur gebruik te maak van toerusting wat hy self gebou het, het hy toe begin met proefnemings om die presiese verhouding tussen die toegepaste potensiaal, die lengte van die geleier en die defleksie op die skaal van die galvanometer, te meet.

In 1826 was Ohm gereed om die wêreld te bewys dat hy weet waarvan hy praat. Die nuwe vergelyking wat hy toe bekend stel is:

$$x = \frac{a}{b + c}$$

waar x die stroomvloei deur die geleier; a die opgewekte stroom; c die weerstand van die geleier wat getoets word en b die totale interne weerstand van die kragbron en die galvanoskoop. Die wetenskaplike gemeenskap was egter nog nie gereed om Ohm se stelling te aanvaar nie. Ten eerste die vergelyking het te eenvoudig voorgekom, glads te eenvoudig om die onverklaarbare wonder wat die slimmokke van Europa en Amerika vir dertig jaar lank getreiter het sommer so goedsmoeds af te maak met so 'n eenvoudige vergelyking. En dan het hulle ook nog nie vergeet van die fout wat Ohm gemaak het om 'n soort van verskoning

te maak. In 1825 publiseer hy toe sy bevindings. Tegnies gesproke was die vergelyking wat Ohm voorgelê het nie korrek nie. Die vergelyking was $v = m \log(1 + \frac{x}{c})$ waar v die vermindering in die naald se defleksie; x die lengte van die geleier; r die weerstand van die geleier en m die hoeveelheid toegepaste potensiaal verteenwoordig het. Maar net voordat hierdie bevindings van hom gepubliseer sou word doen hy verdere eksperimente met 'n ander tipe kragbron. Die resultate stem toe nie ooreen met dit wat hy in sy vorige publikasie aangehaal het nie. Ohm besluit toe om onmiddellik die druk van sy publikasie te stop maar daar kon nie aan sy versoek voldoen word nie, aangesien dit reeds op die pers was. Al wat hom toe te doen staan, is om 'n kort briefie te laat publiseer waarin hy belowe om verdere proefnemings te doen om 'n makliker formule te bekom. Dit het hom natuurlik die gramskap van die wetenskaplikes op die hals gehaal, want hoe kan 'n mens publiseer alvorens jy nie oor genoegsame data beskik nie.

Ohm se foutiewe bevindings was te wyte aan die beperkte kennis oor die basiese teorie van die batterye wat hy gebruik

aan te bied met die bekendstelling van sy eerste formule die vorige jaar. As gevolg hiervan het baie toonaangewende wetenskaplikes hom as 'n kwak beskou wat Ohm natuurlik baie verbitter en teleurgesteld gemaak het. Dit het hom laat besluit om sy ou beroep as onderwyser weer te beoefen.

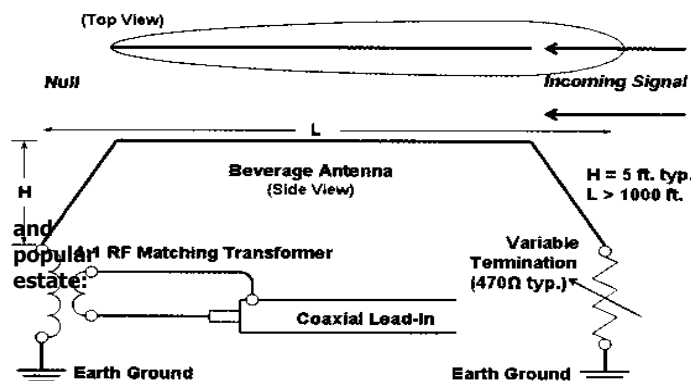
Ses jaar moes hierna verloop alvorens 'n paar invloedryke wetenskaplikes belangstelling begin toon het in Ohm se proefnemings. Hierdie hernude belangstelling het veral inslag gekry met 'n publikasie (in 1831) deur 'n sekere Pomlett waarin hy onwetend Ohm se werke herhaal en dieselfde resultate gekry het. Op hierdie stadium het ander wetenskaplikes saam met Pomlett gedink dat hy die uitvinder van die Wet op elektriese geleiers was. Daar was egter nog die wetenskaplikes wat die ooreenkomst tussen die werke van Pomlett en die van Ohm opgemerk het.

In 1841, sestien jaar nadat Ohm sy Wet oor elektriese geleiers bekend gestel het, het die Britse Koninklike Vereniging hom met die Coply goue medalje vereer vir sy mees merkwaardige ontdekking op die gebied van volgehoue elektriese stroom.

Skaars dertien jaar na hierdie toekenning, in 1854, sterf George Ohm. Sy merkwaardige prestasie het egter nie ongesiens verby gegaan nie, want in 1864, het die Britse Vereniging vir die Bevordering van die Wetenskap die ohm as die eenheid vir die meet van elektriese weerstand aangeneem.

(*34 ste Laan, Villieria, Pretoria 0002; Radio Tak Impala)

RADIO ZS SEPTEMBER 1976

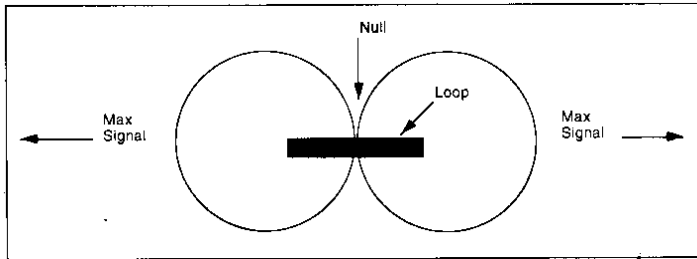
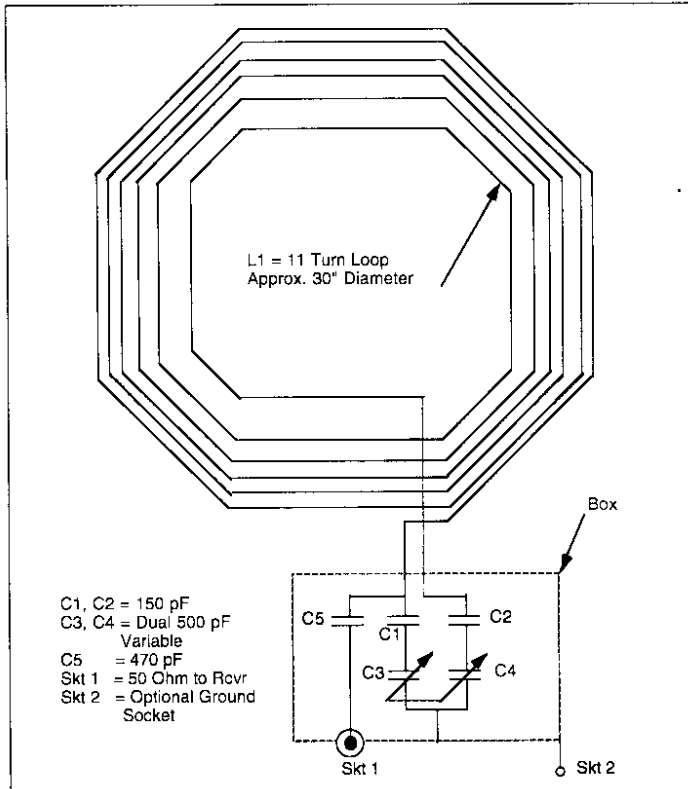


Q: Why has your rig a separate receive socket?

A: There are receive antennas with good gain very low noise. The Beverage Antenna is a one for low band DX if you have the real

It has a very low angle directional pattern as shown.

Top Band Loop



Take note (from SARR bulletin) 2 new digital modes

Modes JT2 and JT4 are being supported by an experimental version of the popular WJST software. Both are designed for QSO's under extremely weak signal conditions while using the same message structure and encoding as that used in JT65.

JT2 has a BW of just 8,75Hz enabling dozens of contacts to take place in the 2,4kHz stock filter BW found in most transceivers. The system uses 2-tone FSK modulation for synch and differential BPSK for the encoded user info. In this way both a synch bit and data bit can be transmitted with each channel symbol. Symbols are sent at a rate of 4,375 baud, and tone separation for the 2-tone FSK modulation is 4,375Hz. JT2 performance JT2 may eventually be as good as JT65, or slightly better at 144MHz and below. If made to work up to its potential, JT2 can be a great boon to random digital E-M-E operation on 2m, especially for those without panoramic wideband receivers and software like MAP5. JT2 can also be attractive VLF, MF and HF bands.

JT4 is similar to JT2 except that it uses 4-tone FSK, also including a synch bit and data bit in each symbol. Again the keying rate is 4,375 baud, and a number of different tone spacing is offered.

Read more on the WJST web pages.

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The world's tiniest radio is a step closer to reality.

US scientists have unveiled a detector thousands of times smaller than the diameter of a human hair that can translate radio waves into sound.

According to a University of California team, the study marks the first time that a nano-sized detector has been demonstrated in a working radio system. Made of carbon nanotubes a few atoms across, it is almost 1,000 times smaller than current radio technology. More at <http://news.bbc.co.uk/1/hi/sci/tech/7050477.stm>

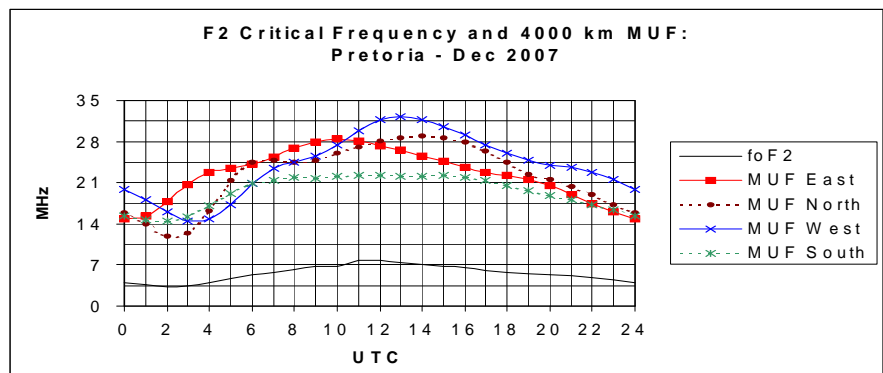
Long Term HF Propagation Prediction for Dec. 2007 (courtesy Vince ZS6BTY)

DX Operating

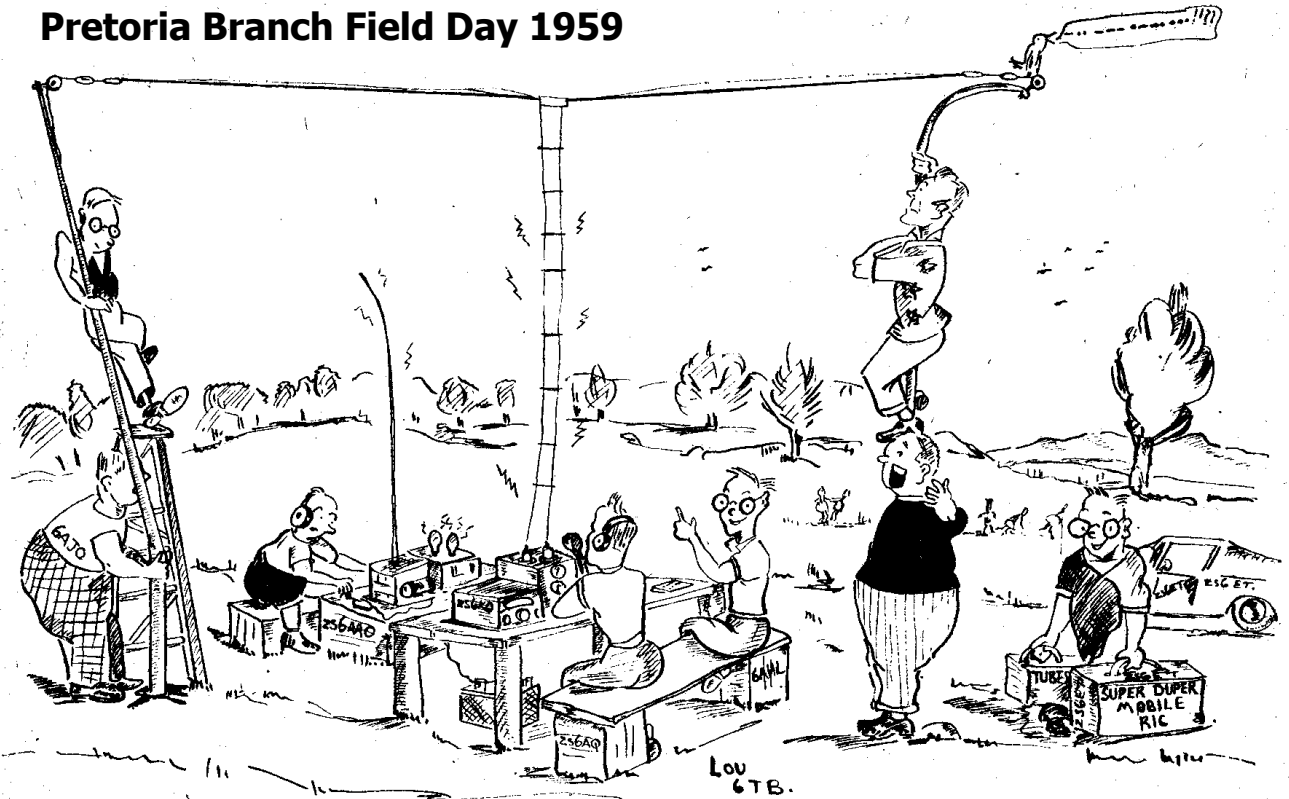
The graph shows the 4000 km maximum useable frequency (MUF) to the East, North and South from Pretoria for the first hop using the F2 layer.

Local Operating

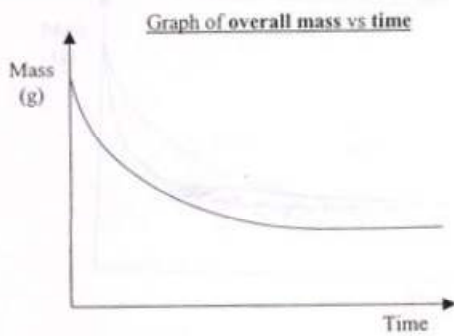
The F2 critical frequency (foF2) is the maximum frequency that will reflect when you transmit straight up. E-layer reflection is not shown.



Pretoria Branch Field Day 1959



FIELD DAY WITH THE PRETORIA BRANCH !!



Exam time

1. Explain the shape of the graph.

Its curvy, with a higher bit at the end and a rather aesthetically pleasing slope downwards towards a pretty flat straight bit. The actual graph itself consists of 2 straight lines meeting at the lower left hand corner of the graph and moving away at a 90° angle. Each line has an arrow head on the end.

A HAM'S PRAYER

Lord, thou knowest I am growing old. Keep me from becoming talkative and possessed with the idea that I must express myself on every subject.

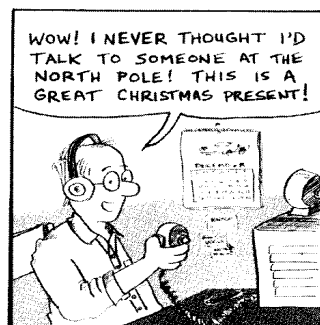
Release me from the craving to straighten out everyone's affairs.

Keep my mind free from the recital of endless detail.

Give me wings to go to the point. Teach me the glorious lesson that occasionally I may be wrong. Seal my lips when I am inclined to tell of my aches and pains. Make me thoughtful, but not nosy; helpful, but not bossy.

With my vast store of wisdom and experience, it does seem a pity not to use it all; but thou knowest, Lord, that I want a few friends in the end. Amen.

— F. H. Flanter.—SZ1FD.



Happy new Year!