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WATTS

07 - 2004

Year 74

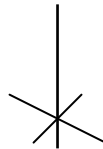
Monthly newsletter of the Pretoria Amateur Radio Club
Maandelikse nuusbrieff van die Pretoria Amateur Radio Klub.



PARC, PO Box 73696 Lynnwood Ridge 0040, RSA



<http://www.qsl.net/zs6pta>



Bulletins : 145,725MHz 08:45 Sundays / Sondag

Relays : 1840, 3700, 7066, 10135, 14,200 MHz

depending on season

Swapshop: After bulletin 2m and 40m (also on-line)

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in hierdie uitgawe

Redaksioneel
Klubvergadering notules
Ledenuus
Dagboek
Algemeen / Tegnies
EM Reg's en CE merk
Bladsy agt

Next meeting

Date: 08-07-2004
Time: 19:30 for 20:00
PARC Clubhouse,
South Campus,
University of Pretoria.
SE cnr University and
Lynnwood roads.



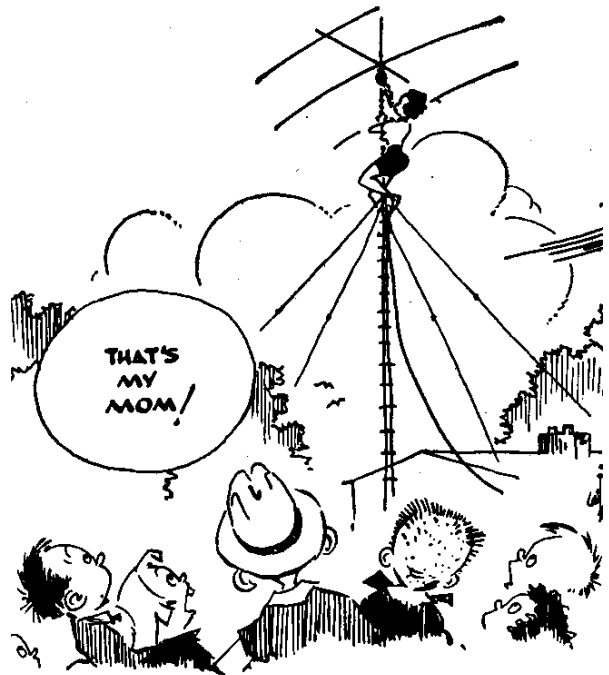
Editorial

There is a distinct absence of ladies' voices on VHF/UHF in Pretoria and wonder why they don't come on the air more regularly. All clubs have several licensed YL Amateurs who can probably not talk tech subjects as most OM's do, but can certainly inject a welcome change to the regular fare on these bands. It would be beneficial to break the illusion of some operators that the bands are men-only and similar to a land-line connection where language is free choice. Make no mistake: licensed and non-licensed YL's are more observant than you think as shack radios are audible to most - including the kids and servants - forming some very unfavourable opinions.



**(Ladies: you don't have to doll at any time
- men will think you are tops anyway..)**

Paging through several old Radio ZS's, I saw that every issue had some dedication to YL's with a YL-of-the-month photo to boot. Admittedly Amateur-YL's have to be a men-hardened breed; but for many marriage does that automatically... I wonder if the SARL has statistics on the ladies' complement of our total amateur population.



Redaksioneel

Daar is 'n kenmerkende afwesigheid van damesstemme in Pretoria op die VHF/UHF bande en ek wonder hoekom hulle nie meer gereëld op die lug kom nie. Alle Klubs het verskeie gelisensieerde JD (Jonge Dame) Amateurs wat waarskynlik nie tegnies kan gesels nie soos die OK's maak nie, maar kan sekerlik 'n bietjie verandering in die gereëld spyskaart maak op hierdie bande. Dit sal bevordelik wees om die denkbeeld van sekere operateurs te breek dat die bande vir mans alleen is en soortgelyk aan 'n landlyn waar taalgebruik vry is.

Moenie 'n fout maak nie: gelisensieerde en nie-gelisensieerde dames is meer opletend as wat julle dink omdat radios in die hok meesal hoorbaar is - insluitende aan kinders en bediendes - wat ongunstige opinies teweeg kan bring. Toe ek deur 'n klomp ou Radio ZS'e blaai, sien ek dat elke uitgawe iets aan JD's gewy het, met 'n JD-van-die-maand foto daarby. Toegegee dat Amateur JD's 'n mans-geharde soort moet wees; maar vir baie doen die huwelik dit outomaties... Ek wonder of die SARL statistiek het van dames-getalle binne ons totale amateur bevolking.

Minutes of the monthly club meeting of the Pretoria Amateur Radio Club held at the South Campus of the University of Pretoria on 10 June 2004

Welcome: Hans ZS6KR declared the meeting open and welcomed all who attended.

Attendance: The meeting was attended by 18 members.

Apologies : ZR6JHB, ZR6RY, ZR6BJS, ZR6HAP, ZR6ESP, ZS6HRD, and ZR6OLM, ZS6XN by email.

Personal Matters/Lief en leed: None reported but we know that the condition of Stan ZS6AAO is unchanged.

Minutes of previous meeting: The minutes of the previous meeting as published in Watts were approved. Proposed by Willie Bill ZS6KO and seconded by Charl ZR6GN.

Matters arising from previous minutes: None.

Club Activities:

DF Hunt: Richard ZR6CK – Next DF hunt to be announced on future bulletins. Due to the cold weather it was decided to postpone activities till next spring.

Fleamarket: Our MEGA FLEAMARKET will be 26 June 2004 at 0930 at our premises. Vendors to come earlier.

Rallies: The Sasol Rally on 18-19 June will involve 10 field stations and 12 mobile stations. 17 of these are members of our club.

Social: An outing to the Boston restaurant somewhere in late July was suggested to serve the purpose of getting members together and also to serve as a preamble to our 70th year of existence and AGM. Details will be worked out by Willie ZR6WGR and announced as necessary.

Finances: Richard ZR6CK reported on our current account – Subs payments are starting to come in.

Ham Dairy: A few international contests were noted.
Sasol Rally 18-19 June.
SARL Kid's Day was noted to be in the middle of the school exams period and thus not a good time.
The VHF Workshop offered by Hal ZS6WB this Saturday has attracted about 20 persons. With the PEARS Contest coming up 02-04 July this will be good experience.

General/Algemeen: A request for a special callsign like ZS70PTA to commemorate the birth of the Pretoria Branch of the SARL in 1934 was suggested. Or possibly involving every member by requesting ZS70 / ZR70 followed by our own suffixes. This will be looked into by the chairman.

Presentation: Pieter ZR6PSR gave a most informative show on Marion Island. A very cold but beautiful place formed by volcanic action and now the home of several bird- and amphibious animal species zealously guarded by conservation policy. Some 15 humans engaged in various scientific projects currently reside in the base camp. Everything on the island has to be ferried from the ship by helicopter. Pieter and Ludwig ZS6WLC had the mission to install a GPS fixed installation to monitor earth dynamics. In 2005 they will return to install a radar-type tide gauge suspended above the sea.
Amateur Radio operating conditions in the ship and on the island were also shown. Due to the constantly changing weather there was enough time to flea indoors and do some operating. The Collins equipment was impressive but the current experience has shown that their sheer weight and bulk are not a practical proposition for the next trip. HF band conditions mostly favoured 20m and 15m, with only a few successful contacts on 10m. A triband vertical on the tin roof of their sleeping quarters and inverted vee's for the low bands on soggy marsh ground were used. Pieter handed a copy of the CD presentation to the Chairman for the club to keep.

Next meeting: The next meeting is scheduled for 8 July 2004.

Closing: The meeting closed at 2115. Thanks to Molly ZR6MOL for the hot drinks, soup and a bite to eat.

ZS6KR _____

Can you figure this one? **Everything should be made as simple as possible; but not simpler** (Albert Einstein)

This year is the 125th anniversary of the practical light bulb.

Birthdays Verjaarsdae

Julie



02 Peter ZS6RX
05 Lynette, daughter of Bill ZS6KO
06 Helen, daughter of Roy ZS6XN
11 Peter ZR6FD
13 Pieter ZR6AHT
13 Chris ZS6FCS
17 Lynn, sw of Andre ZS6BRC
17 Pine ZS6OB
19 Sarina, lv van Willie ZR6WGR
20 Roy ZS6XN
21 Elmarie ZR6AXF, lv van Johan ZR6ANF
22 Rozanne, dogter van Tjerk ZS6P
24 Brittany, dogter van Louie ZR6LVW

July Anniversaries Herdenkings

04 Beatriz and Manny ZS6AKX
06 Julie and Paul ZS6BMF
13 Ellen and Joe ZS6AIC
23 Pamela and Harry ZS6HRD
23 Lorraine and Stan ZS6SDZ
28 Pat ZR6AVC and Frank ZS6GE

25 Justin ZS6-262, son of Errol ZR6VDR
26 Frank ZS6GE
27 Julie, sw of Paul ZS6BMF

Nuwe Lede Aansoeke is ontvang by die vlooiemark van Wynand ZS6ARF en Hendrik ZR6RPC

Sick Parade

Stan ZS6AAO's condition appears to be static.



Krukkelys

PARC Diary | Dagboek

Jun 30 Schools close – coastal provinces
30 **PARC subscriptions due**
Jul 01 SARL Subscriptions due
02-04 PEARS digital VHF/UHF contest
10-11 IARU HF World Championship
10 **Regional Rally East Rand**
17-18 CQWW VHF Contest (www.cq-amateur-radio.com)
19 Schools open (inland provinces)
24-25 IOTA contest (www.rsgb.org.uk)
25 SARL President's Net
Aug 01 **SARL HF Phone contest**
07-08 Worked All Europe CW DX Contest (www.darc.de)
12 **PARC AGM**

Forgot? Please pay your membership fees
Vergeet? Betaal asb u ledegeld. R50

Nuwe lede vanaf 1 April is opbetaal vir 2005
New members from 1 April are paid up for 2005

Our current membership status is 147
Let's keep it the same after June 30 !

FNB Account | Rek : 546 000 426 73
FNB Branch | Tak : Lynnwood 25 20 45

or direct to any committee member.
of direk aan enige komiteelid.

IMPORTANT ANNOUNCEMENT

An archive study has shown that our Club was formed in 1929/30. - We are thus going towards our 74th AGM and into our 75th jubilee year in January. The Year 69 shown on page 1 on current issues of WATTS indicated the period since first League membership. Future WATTS issues will correctly indicate our Club period of existence.

CALL FOR MOTIONS | AANVRAAG VIR MOSIES

74th AGM Motions can be submitted by the next Club meeting 8 July or 29 July latest.
74^e AJV Mosies kan by die volgende Klubvergadering 8 Julie voorgelê word of laastens op 29 Julie.

!! Only paid-up members may nominate and vote at the AGM. Forms will be in our Aug. issue.
!! Slegs opbetaalde lede mag by die AJV nomineer en stem. Vorms sal in ons Aug. uitgawe wees.

Snippets | Brokkies

PARC caps are still available at R25

- Ed ZS6UT's daughter Melanie won a Maldives holiday worth thousands in a ladies' magazine competition.
- Sander ZR6SW is close to finishing our website update
- Bill ZS6KO appears to be doing some shack cleanup as he donated his valve collection to the club.
- Pieter ZR6AHT won the raffle (to a raffle) for a chance to visit the World Rally Championships in Australia.

Ledeprofiel:

Ons vriend en klublid "Boet" Dormehl ZS6SN was onlangs in Europa om deel te wees aan die 60^e (en laaste) herdenking van van "D" dag oftewel *Operation Overlord* toe geallieerde magte op 6 Junie 1944 Frankryk suksesvol binnegeval het vanuit Engeland.

Hermann is gebore in New Redruth in 1927 in die dae nog voor dit 'n stad met die naam Alberton geword het.

Sal julle glo dat hy waarskynlik Suid-Afrika se jongste soldaat was op die ouderdom van 13 jaar en 10 maande. Hy het toe gelief dat hy 17 was. Sy pa laat soek hom toe hy van die huis af verdwyn het, maar toe die polisie hom weer terug bring, het hy sag geword en tog toestemming gegee dat Hermann by die *Special Service Battalion* (SSB) kan aansluit. Sy pa was Kapt. Dormehl van die *Cape Mounted Rifles* in die eerste wêreldoorlog.

In 1943 was Hermann in die voorste linies by die inval in Italië vanuit Noord Afrika met die 6th *South African Armoured Division* en het die verbete geveg by Monte Cassino meegemaak. In 1944 het hy ook gesien hoe die berg Vesuvius sy top afblaas en die vreeslike neerslag van vulkaniese as daarna.

Op beide oorlogstonele was hy onder bevel van Kol. Joe Asher en is deurentyd geprys as 'n *excellent signaller* wat sy apparaat en batterye altyd goed in stand gehou het. Jammergenoeg was dit nie by almal die geval nie en slegte kommunikasie het onnodig baie geallieerde lewens gekos. Hy wil nie veel praat oor sy aktiwiteite daarna nie maar hy het verskeie dekorasies (selfs onlangs) ontvang vir ander dienste gelewer tot die einde van die oorlog. Na die oorlog was hy 18 jaar oud en moes weer 'n skoolgaande seun word.

Hy kwalifiseer later as motor- en diesel werktuigkundige maar kort daarna word hy sakeman saam met sy broer Jack en, asof dit nie genoeg was nie, het hy ook aan plaaslike politiek deelgeneem in die jare '70.

Hierdie jaar is hy 50 jaar getroud met Bettie en hully bly nou al 40 jaar in Waverley, Pretoria.

Sy amateur loopbaan het in 1947 begin en is steeds lief vir die ongekompliseerde radios wat hy as jong man gebruik het. Kort-kort smee hy vandag nog by ZS6PTA *Swap-Shop* vir daardie Atlas 215X wat hy in Italië rondgedra het op sy nostalgiese staptouer in 1988. Vergange roepseine deur die jare was ZS5SK, ZS4SK en ZS3SK.

Dankie September November - vir jou bydrae aan die wereld- en SA gemeenskap – asook die amateur gemeenskap.

Hermann ZS6SN



SN in Frankryk. Die radio antenna kreun met die vlae.

Thanks Paul,

ZS6BMF cleaned out his shack and merrily dumped two truckloads at the local dump and another two at the QRA of Hans ZS6KR.

Last-mentioned was timeously asked permission but did not expect that the front stoep would look like a mini-fleamarket.

A jolly time was spent sorting all the stuff some of which was at least thirty years old and was a good reminder not to hoard items into obsolescence. A lot duly went into the dustbin which luckily could still be lifted by the Council truck bin tipper.

Jokes aside, thanks Paul, the remainder brought in considerable funds covering your requirements as well as a nice contribution to the Club...



Digital workshop

some of the 13 attendees shown here

from L to R are:
ZR6TDK Tobile
ZR6SW Sander
ZS6WAB Willem
ZS6XN Roy
looking at a
demo by Hal
ZS6WB.



EMC Regulations, Acceptance Testing and the CE Mark significance

(Integrated information from Practical Electronics Jan 1995, Quantum May 1999, SABS website and author's experience) ZS6KR

HISTORY: As far back as 1933 international organizations held a meeting in Paris to discuss radio interference, which led to the *Comite International Special de Perturbations Radioelectriques* (CISPR). Since its inception the CISPR has produced a number of reports and standards, mainly on emissions of radio interference. Many of these were adopted by CENELEC, the organization responsible for electrical standards in Europe. The IEC (International Electrotechnical Commission) concentrated on developing immunity test specifications. Many countries accepted their Directives.

Harmonisation: In recent years the situation has become far more complex with the advent of mobile phones, computers, microprocessor controlled household appliances and various wireless technologies. Europe has recently made an EMC barrier against the barrage of imports and wishes to harmonize European Union manufacturers to common standards by means of a new EMC Directive for the purpose of creating a single internal market.

EMC DIRECTIVES : The core purpose is simply the following:

1. The electromagnetic disturbance it generates does not exceed a level allowing radio and telecommunications equipment and other apparatus to operate as intended.
2. The apparatus has an adequate level of intrinsic immunity to electromagnetic disturbance enabling it to operate as intended.

The scope and implications were very wide-ranging and manufacturers were given till 1-1-1996 to comply. Non-compliance would either illicit fines, a jail sentence or a ban on sales or import of an electrical product. Accredited third-party test laboratories have to test every electrical apparatus and issue a report which would then be scrutinized by a *Competent Body* and compared with the current compliance standards which exist as EN-XXXX documents.

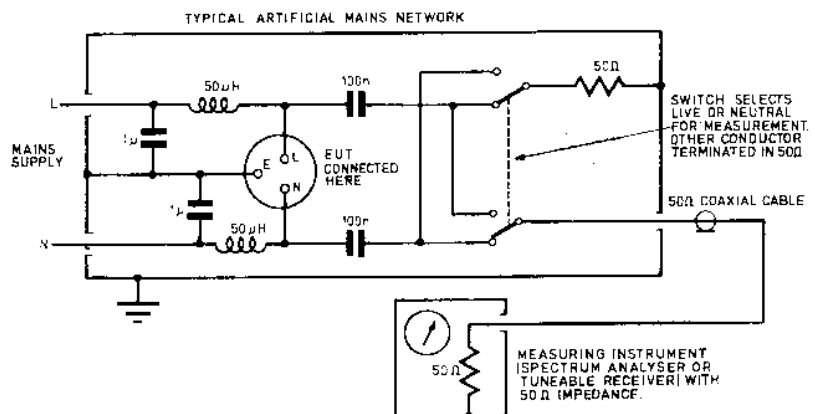
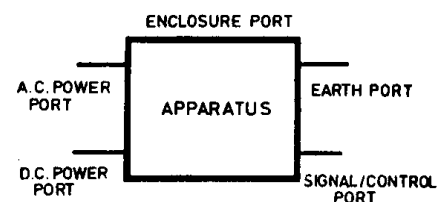
In certain cases a manufacturer may also submit its own technical files and test results. The manufacturing facility and procedures must also comply with the *ISO Quality System*, requiring regular accredited local or overseas audits and certification. Once compliance is demonstrated, the manufacturer must show a Declaration of Conformity, usually in every equipment handbook or manual, citing the evidence for compliance. For an item to be fully marketable the item must also conform to various other Directives such as safety, labeling, risk analysis for various failure modes etc. The European Community "CE" mark or compliance symbol may then be displayed on the equipment, allowing it to be marketed unhindered in any state in the European Community. The CE mark is thus a *general compliance symbol* and not specific to EMC and can even be seen on toys, which then comply with the Toy Safety Directive. Medical equipment, even those saleable at Pharmacies, are subject to regular audit by a *Notified Body* and the CE mark displayed on apparatus must additionally indicate the *Notified Body registration number* just next to the mark. If not present, it is illegally marketed. In Europe, any accident or bodily harm caused by CE marked equipment can be reported to an *Adverse Incident Centre* which will initiate an investigation with the manufacturer anywhere in the world.

South Africa (ICASA) accepts CE marked products, though the SABS has called for proof of compliance in the form of original test reports to be submitted for scrutiny prior to local sale. Currently certain product categories such as medical equipment manufactured here, has to undergo testing overseas to achieve FCC approval or the CE mark so as to be marketable here and elsewhere. As far as harmony with the US is concerned, the author is not familiar with the extent of overlap on all these issues, but we know about FCC compliance requirements especially for Amateur equipment. FCC approval currently requires separate USA testing and world-wide harmony is probably still a dream.

EMC TESTING: Five categories of "ports" are defined as capable of transmitting electromagnetic disturbances to and from the apparatus. The purpose here is only to give a general idea what is technically involved. Compliance testing by a third-party test house can also be an enormous financial burden on the product R&D budget.

Enclosure port radiation must not exceed 30dB (10µV/m) at 10m over 30-230MHz and 37dB over 230-1GHz tested on an accurately defined Open Field Test Site (OFTS) which has a large part of its ground area covered with conductive mesh so as to give consistent ground reflections irrespective of Equipment Under Test (EUT) and the RX antenna orientations.

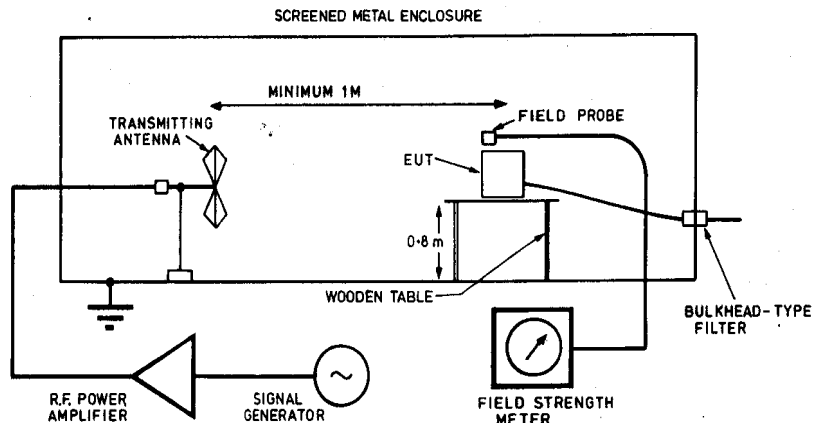
AC power port conducted outward interference including the mains lead is tested over the range 150kHz-30 MHz. An artificial mains network provides a standard impedance to the EUT and attenuates signals from the mains that could interfere with measurements. It may also be necessary to conduct these measurements in a screened enclosure. Harmonic components of the mains current in the range 0-2kHz are also monitored by a spectrum analyzer across a low value series resistor. Limits are also set on discontinuous interference such as clicks etc.



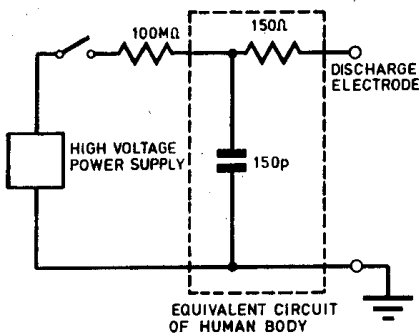
IMMUNITY: The generic immunity standard is more extensive and includes specifications for immunity to incident RF fields over a wide frequency range, electrostatic discharges, magnetic fields, high voltage transients etc. Each specification has a Class performance criterion: Class A means full performance during the test. Class B means it should operate as intended but not necessarily during the test. Class C means there may be a temporary loss of function that is recoverable either automatically or by means of controls.

A simple test setup is as shown. The field strength at the EUT is specified by the Standard as 3V/m over the range 27MHz-1GHz as monitored by field probes on or near the EUT. The tests have to be carried out in an anechoic chamber to prevent reflections and leakages influencing measurements and monitoring equipment.

Electrostatic discharge tests are designed to simulate the effect of the equipment being touched by a charged person at potentials that can be as high as 10kV.



The test method uses a discharge generator which incorporates the electrical equivalent of the human body. The capacitor is charged to 8kV and the discharge electrode brought near to the EUT until a discharge occurs. This is repeated at other points on the accessible surface and to nearby conducting surfaces.



Further notes.

As mentioned before, the cost of testing and approval can be considerable to a manufacturer as several iterations may be needed. Methods and values mentioned are subject to change with time and experience. The ISO Quality System ensures that updates of Directives are followed and audited.

This article has merely touched on the vast subject of Quality Systems and Compliance to Directives for a particular product. The South African

consumer should benefit by these systems in that the CE mark is intended to instill a confidence factor. Similarly our SABS mission is in the involvement with regulatory affairs and consumer protection. Commercial specifications are handled by our TC73 Body which draws expertise from local industry and will determine the future route for South African commercial specifications.

Military EMC specifications are more elaborate and stringent. In 1967 the US Defense released a specification that would jointly serve the air force, army and navy. This was the very prominent MIL-STD-461 and later 462 currently 285 which paved the way for the foundation of military EMC procurements all round the globe. Three companies in South Africa have international accreditation. Two have international accreditation for both commercial and military testing excluding medical equipment. One of these is Gerotek in Pretoria.

Vehicle Rig minder

Switching on your rig before starting your vehicle is not recommended as the battery voltage can take deep sags accompanied with large spikes which can zap your radio. Forgetting to switch off your rig can drain the battery overnight to such an extent that you can kick yourself the next day.

Both these problems are successfully addressed with the circuit shown and your rig on-off switch can be left permanently on. At the turn of the key the circuit waits for about 10 seconds before the (remote) relay pulls in and energizes the radio. When turning off the key the relay automatically disconnects the radio a few seconds later.

Use a 20A automotive relay with an 80Ω coil and integral fuse.

