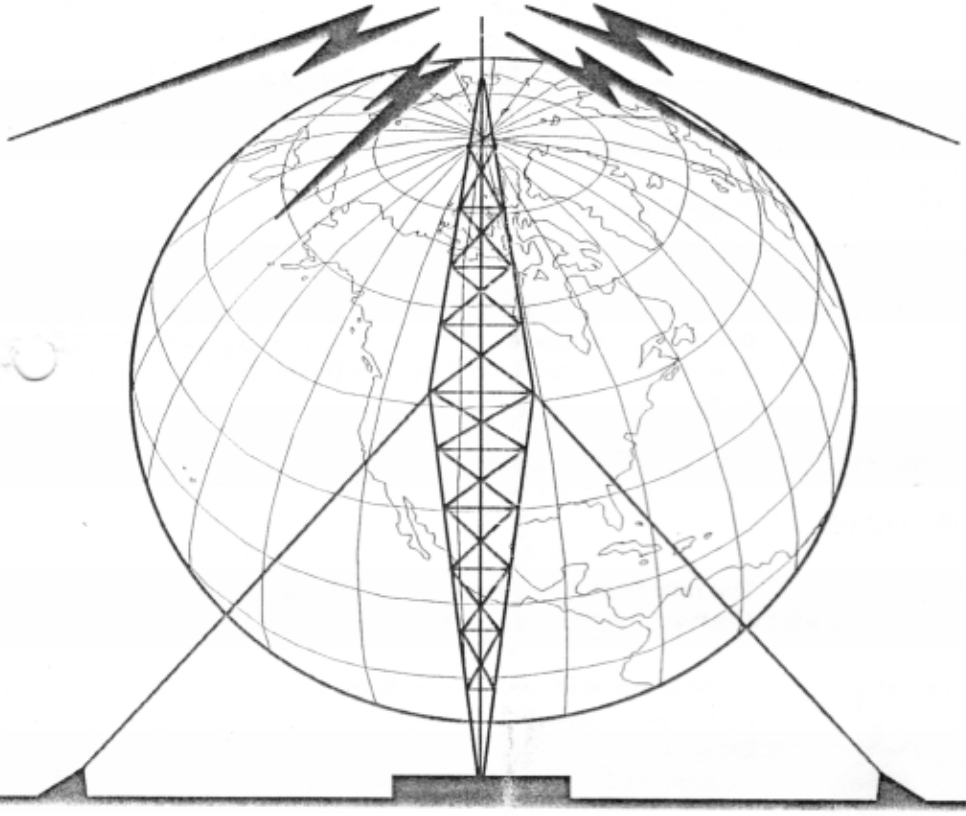
JUNIE 1995 JUNE

watts

SA RADIO LEAGUE
PRETORIA BRANCH
P.O. BOX 1259
PRETORIA 0001

ZS6PTA



MINUTES OF THE 9TH BRANCH MEETING OF THE 66TH YEAR HELD AT THE CLUBHOUSE PREMISES, UNIVERSITY OF PRETORIA SOUTH CAMPUS ON 11 MAY 1995

Present Members and visitors as per attendance register.

Apologies ZS6KO, ZS6BUG

Welcome The Chairman Tjerk Z56P welcomed everyone present.

Minutes The minutes of the previous meeting were accepted and signed. Proposed by Richard ZR6CK and seconded by Jon ZR6AXR.

Correspondence The branch received the minutes of the last HQ meeting.

New members The Branch welcomes the following two members: Peter Baker ZS6AEU and Uwe Horst.

Awards A new award is now available. To qualify for this award, one contact with members of ZS6PTA must be made on each of the following bands: 80m, 40m, 20m, 15m and 10m.

DF Hunt The DF hunt will take place on Saturday 13 May 1995 at 14:30. The DF hunt starts at the Botanical Gardens.

RAE Classes Viv ZS6BZS reported that the RAE classes are going well and that the examination will be on the18th of May 1995 at 19:0 The invigilators are Don ZS6CRT, Don ZS6AQS and Tjerk ZS6P.

Flea market Hal ZS6WB informed the meeting of a flea market that will be held at the Fountain Square shopping centre on 13 May 1995 at 09:00.

Rallies The rally briefing meeting takes place on Monday 22 May 1994 at 19:00 for 19:30, at the clubhouse.

Repeater A carrier wave is causing problems on the repeater. Tinus ZS6TL is working on the problem and asked members to locate it.

Next meeting The date for the next Branch meeting is 8 June 1995.

Guest Speaker Dr Scheffler from the Department of Physics at the University of Pretoria presented a very interesting talk and slide show on alternative energy sources.

Closing The Meeting closed at about 22:00.

DF HUNT

The DF hunt in May saw Kevin ZR6KPN taking an active part as a first-time fox. He hid the transmitter just behind the BP garage on the corner of Atterbury Road and General Louis Botha Avenue, while he himself hid in a partially constructed domestic garage in a building site about 100m away. This ruse successfully delayed the hunters. HF and VHF signals were very good at the start, but the 2m signals varied in strength as the hunters moved around the vicinity of the fox. First to find the transmitter and then the fox was Chris ZS6AVC, followed by Robert ZS6ARC who hunted only on 2m. John ZS6CDI came in shortly afterwards. Frank ZS6GE did not find the fox in time. Like Chris and Robert, he spent some time looking around the local shopping shopping centre. Thanks Kevin for a good hunt. Wehope you will join us on future hunts - John ZS6CDI.

SCORES:

	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	May.	Tot.
John ZS6CDI	42	120	110	146*	31	62	30	65	606
Chris ZS6AVC	95	71*	97	-	30	78	75	75	521
Frank ZS6GE	131*	98	-	-	-	97	128*	30	484
Richard ZR6CK	30	-	107	33	147*	77	-	-	394
Edwin ZR6ESP	30	-	107	33	147*	77	-	-	394
Robert ZS6ARC	-	-	109	30	31	102*	-	70	342
Bill ZS6KO	-	-	75*	42	42	-	-	-	159
Kevin ZR6KPN	-	-	-	-	-	-	-	68*	68

AWARDS.

As they say on PKT, thanks for reading this! Would you like to own a piece of real estate on a beautiful island on the shore of a bay, yet so far have only dreamt of the possibility, if so read on McDuff.

A Piece of the Rock Award.

Earn this award and you own one square inch of real estate in picturesque Garnish, Newfoundland situated on the shore of Fortune Bay. (The land will be held in trust by the Garnish DX Club). Contact **any** of the following stations since 1st August 1990:
VE3OZT/1, VO6TX, VO5TX, VO1TX, VO9TX, VO1TX, XLITX, VJ1TX, CY1TX, CZ1TX, VO1GDX, or X09TP. SWL
OK. FEE is $10.00 or 15 IRC's to: The Garnish DX Club, PO Box 36, Garnish, Newfoundland, CANADA AOE ITO. Good luck and please invite me to visit you in your square inch multi floor complex, HI.

The committee of the Pretoria Branch of the SARL is pleased to announce that the following award is now available on application. It is hoped that it will encourage members to operate on the HF bands and help to make the branch and its members known to other operators in SA and throughout the world. Members are requested to inform their contacts about the award during their QSOs and encourage them to apply for the award.

The PRETORIA 5 Band Award.

The above award can be applied for in accordance with the following conditions.

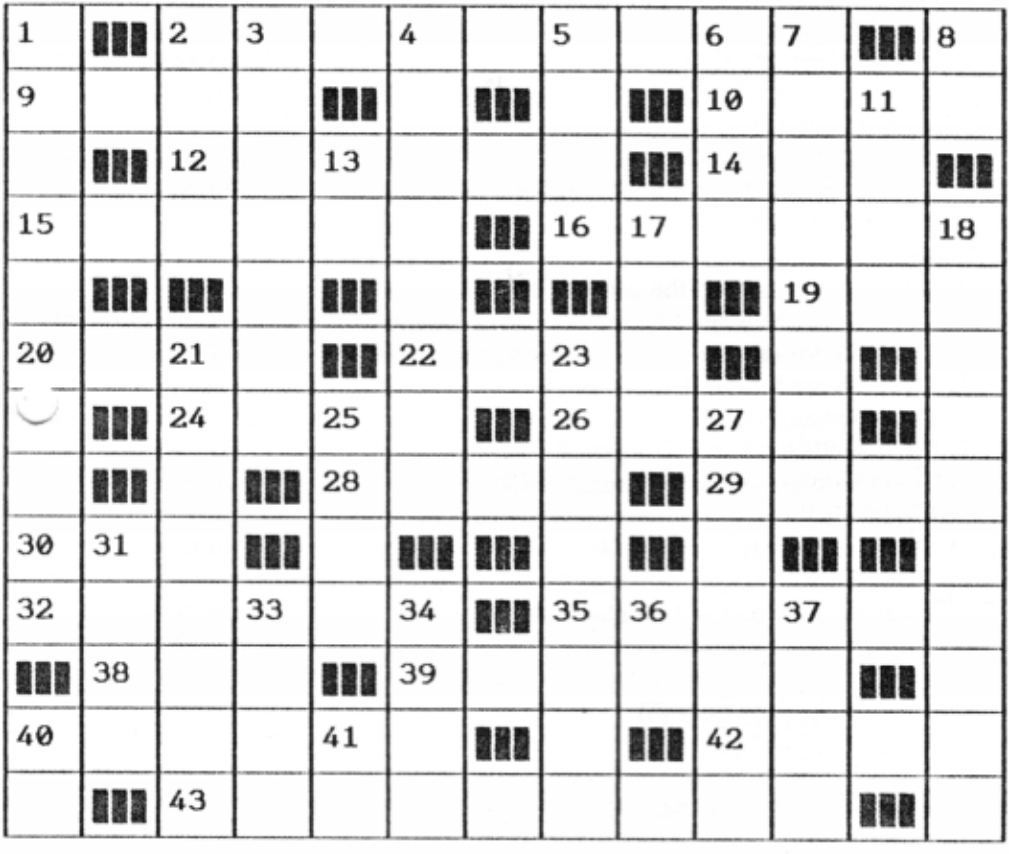
1) Any licensed amateur radio operator can apply.
2) An extract of the stations log verified by two fellow Hams must accompany the application showing, (GCR)
a) Five different members of the Pretoria Branch have been worked, regardless of location. (verify membership during QSO).
b) One on each of the following 5 amateur HF bands:
80m, 40m, 20m, 15m and 10m.
c) The usual log record i.e. time, RST, etc.
3) Any mode may be used.
4) Contacts only after the 1st January 1995 are valid.
5) No QSL cards are required.

Send applications to: Awards Custodian, Don Blackburn ZS6CRT, Pretoria Branch, SARL, PO Box 1259, Pretoria 0001, South Africa.
Fee: DX, US$2.00, ZS, R2.00. Applicants attending a Pretoria branch meeting will be presented with the award free of charge. (Please inform ZS6CRT of this intention in advance)

Please don't forget to send in your log for the 10m Challenge Contest, which was held on the 13/14th May, no matter if you made very few contacts it will help SCI to assess the event.
Send log to: Dwight N.West ZS6NT, PO Box 14933, LYNN EAST, 0039.

BEST 73s & GOOD DX-PAPERCHASING,
de Don ZS6CRT (PTA AWARDS) :+)

CROSS WORD PUZZLE - Clues on next page.....



Clues to crossword 95/1 (c) ZS6PJ 1995

Across

2. Men with stigma have strange attraction (9)
9. Some hope Newton's is not closed (4)
10. Dwelling in the top LH corner of the PC screen (4)
12. Rise in waveform sounds like onslaught(6)
14. Fuss in the shadow (3)
15. One dimensional amplifier? (6)
16. Submit to in the end Ureka! (6)
19. Pin in the angle grinder (3)
20. For baking crystals? (4)
22. Sounds like I'll be surrounded by sea (4)
24. Young girl in the highlands (4)
26. Tide over to check written work (4)
28. Capital in Scandinavia (4)
29. Etna erupting is smart (4)
30. Big tree in Elmoor (3)
32. Gave off bad smell (6)
35. Keeps the shoulders warm (1,5)
38. Single bone without bee's head (3)
39. Use this to clean up in a drab room (1,5)
40. Deer's high point? (6)
42. Grin spoilt the call (4)
43. Pen, pencil and paper seller muddled set ration (9)

Down

1. More frolic disturbed the winding aid (4,6)
2. Intend to be between highest and lowest (4)
3. This radiator can be used in winter and summer (7)
4. Close shave for a girl in the vicinity (4,4)
5. Remove wild Kate (4)
6. Dash scattered fish in Durban (4)
7. Upset ludo team change amplitude (8)
8. Middle East (2)
11. Rome for greater amount (4)
13. Thanks (2)
17. Sounds like we want to make dough (4)
18. Study of the pyramids etc. (10)
21. Steel men mixed the parts (8)
23. Artist broke lane door (8)
25. Exclusive fish? (4)
27. Mixed horse in close to land (7)
31. Noel upset another man (4)

33. Sea trout (4)
34. Dash for the board (4)
36. Just __ (2)
37. Ruler in Afghanistan (4)
40. Modulation that can only be used in the morning? (2)
41. Each Spanish prefix (2)

BIRTHDAY AND ANNIVERSARY LIST OF CURRENT SARL PRETORIA MEMBERS

JUNE	Occasion	Name	Callsign	Details/SW
01	Brithday	Ferdi	ZS6-250	
01	Anniversary	Charles	ZR6XZ	Lorna
06	Birthday	David	ZR6KU	
06	Birthday	Callie	ZR6ADL	
06	Anniversary	Bert	ZS1AJA	Jeanne
06	Anniversary	Colin	ZR6AOY	Joan
07	Birthday	Chantel		dtr Johann ZR6YV
08	Birthday	Alan	ZR6JFF	
08	Birthday	Tina & Tonia		dtrs Nico ZS6BVR
11	Birthday	Nadia		dtr Frank ZS6GE
13	Birthday	Derek	ZR6AJL	
13	Birthday	Gideon	ZS6-244	
14	Birthday	Hilary		dtr Richard ZR6CK
15	Birthday	Claire		sw Robert ZS6ARC
15	Birthday	Robert		son Pat ZS6BZJ
17	Birthday	Adri		sw Derick ZR6FX
19	Birthday	Eddy	ZR6EJW	
19	Anniversary	Don	ZS6CRT	Sue (ZS6SUE)
19	Birthday	Colin		son Stan ZS6AAO
20	Birthday	Andre	ZR6ALQ	
20	Birthday	Malcolm		son Roy ZS6XN
21	Birthday	Grag	ZS6GY	
22	Birthday	Richard	ZR6CK	
22	Birthday	Ryan	ZS6RYN	
22	Birthday	Erika		dtr Norm ZS6MA
24	Anniversary	Roy	ZS6MI	Marita
25	Birthday	Sandra		dtr Gideon ZS6BZT
27	Birthday	Mario	ZR6MAR	
27	Birthday	Jac	ZS6QA	
27	Birthday	Selma		sw Joe ZS6TB
27	Anniversary	Chris	ZS6AVC	Frances
29	Anniversary	Andrew	ZS6BLN	Michelle

SOME LIGHTNING (or worse) FACTS

Hans ZS6KR

Lightning is a fast rising EM pulse .2 to .5 sec long which can generate large currents in terrestial collectors such as cables, girders, fences, railroad tracks, antennas etc.

The total occurrence is called a flash but is composed of 3-4 high current pulses called strokes. Each stroke is about 1mS with delays between strokes of 40-80 mS.

The first stroke is initiated by a preliminary breakdown in the cloud, which channels a -ve charge towards ground in a series of luminous steps called the step-leader.

As its tip aproaches ground the electromagnetic field beneath it becomes larger and causes one or more upward moving discharges to be initiated from the ground. When the leader contacts one of these discharges the leader tip is connected to ground potential.

The return stroke now propagates up the already ionized luminous plasma path discharging the leader channel. This produces a peak current of typically 30 - 200KA with a risetime of 2µS. This heats the leader channel to some 33000 °C and produces a high pressure channel that expands to generate a shockwave that is heard as thunder.

If a residual charge is available at the top of the channel, a charge called a dart leader may propagate down the first stroke channel. This will initiate the 1st, 2nd etc return strokes, if any.

The earth surface area affected is typically a few sq.km.

The intense magnetic field of a stroke will also induce high potentials in all surrounding metallic objects if their impedance to ground is poor. Furthermore a poorly conductive ground causes ground points to be at different potentials.

Several hundred KV and several KA will be present at the same time in various locations in the stroke area - observe good protection practice to safeguard you and your equipment.

If there is sufficient forewarning, pull the power plugs out the wall and chuck the antenna cable on the floor or out the window. Go floating ie: handheld if you must communicate during an electrical storm.

Now the (or worse) part. An event much feared in the past - and who knows in the future - was the possibility of an elevated nuclear detonation.

Even if you survive this (you better be underground), all metallic objects on top will be subject to an EM pulse of similar energy but of much shorter risetime and irradiating a much larger area almost equally. Much higher voltages are thus induced.

This is referred to as the Nuclear Electromagnetic Pulse (N)EMP and typical values here are risetimes of 5-10nS and field strengths of 50KV/m hor and 20 KV/m vert. The instantaneous power density is about 6MW/sq m.

Terrestial radio and electronic equipment can collect immense amounts of energy as the main energy density lies in the 10-10MHz region tapering off to just beyond 100MHz. Many unintentional collectors are also good EMP antennas and, though not directly connected, can jump an arc to such equipment.

Furthermore propagation conditions especially for HF will be totally upset for many hours.

How to electrically survive:

Your equipment may survive all these misfortunes if devices such as varistors, gas discharge tubes, coaxial line protectors, power line protectors and tranzorbs are used and sensible physical placement of the station is implemented.

Some aspects of a lightning strike such as the possibility of structural damage are impossible to prevent except by luring it away to another location.

Amateurs should take some interest in protection devices - read the literature and collect device data, compare prices and specs, and implement what is considered of primary importance.

73

reference:

Bodson D. Electromagnetic Pulse and the Amateur
QST (4 parts) Aug-Nov 1986

RF IMMUNE POWER SUPPLY (PART 6)

Quoted from "Elector Electronics" magazine - December 1994

The ICs should be mounted on the heat-sink with the aid of mica ceramic washers and associated insulating bushes. Also be sure to use a liberal ammount of heat-conducting paste. It is important to first secure the regulators to the heat-sink, and then solder them to the pins inserted into the board, not the other way around

The bridge rectifier has a tough job at the maximim load, and needs to mounted on the heat siink as well. Here, too, a good thermal contact must be ensured to prevent the device from overheating and breaking down. Do not skimp on heatcnoducting paste, it is cheaper than almost any replacement semiconductor.

The tranceformer's secondary is connected to the a.c. terminals of the bridge rectifier via short peices of heavy-duty wire. Next run run wires from the a.c. terminals on the bridge to the corresponding connections on the terminal blocks K5 and K6 on the board. Next, connect the + and - terminals of the bridge to the respective screw terminals in K5 and K6.

At the mains side of the transformer, it is best to use a mains switch with a built in filter. This affords good protection against interferance on the mains. Llikewise, the filter also prevents mains pollution by noise generated in and arround the power supply. Finally, for best possible screening the supply must be built into a earthed, metal enclosure.

Practical notes

A prototype was tested for RF immunity by monitoring its output voltage in the very close pressance of a transmiting 2-meter band handheld with a RF power output of 1.5 W. Nothing happend. Next the power level was steped up to about 10 W form a 2-meter FM mobile tranciever. During this test the antenna, the magnetic 5/8-wavelength car-roof type was at a distance of less then 1 meter fom the power supply. Although the voltmeter and the ammeter connected to the power supply went haywire the power supply proper remained totaly immune to the strong RF field.

If you happen to use a power amplifier which is known to radiate, that problem must be solved first because the radiation then is bound to be on the supply wires also.

To be continued.....

SARL Pretoria Branch Committee 1994 / 1995

			HOME	WORK
Chairman	Tjerk Lammers	ZS6P	87-1079	379-4251
Vice Chairman	Viv Prince	ZS6BZS	45-5417	
Repeater	Tinus Lange	ZS6TL	64-1487	
Rallies	Tinus Lange	ZS6TL	64-1487	
	Thys Smit	ZR6AHY	87-2003	(011) 881-1966
Secretary	A. du Pisani	ZR6RY	57-3722	420-3721
Treasurer	John Airey	ZS6CDI	83-5570	
)F Hunts	John Airey	ZS6CDI	83-5570	
	R. Boulanger	ZS6ARC	664-4288	
RAE Classes	Viv Prince	ZS6BZS	45-5417	
Flea Market	Richard Peer	ZR6CK	333-0612	836-2387
	Hansie Meyer	ZS6AIK	333-8541	327-2891
Projects	Paul Straub	ZS6BOO	87-2076	803-5000
Clubhouse	I. Billingham	ZR6ICE	43-7007	450-2572
	R. Boulanger	ZS6ARC	664-4288	
Shack	Don Milner	ZS6AQS	47-1377	
Social	Hansie Meyer	ZS6AIK	333-8541	327-2891
	Richard Peer	ZR6CK	333-0612	836-2387
Auditor	Callie Pistoruis	ZR6ADL		420-2946
Awards	Don Blackburn	ZS6CRT	98-2271	98-2620
Hamnet				
Watts Publisher	Richard Peer	ZR6CK	333-0612	836-2387
Watts Editor	Edwin Peer	ZR6ESP	333-0612	
		FAX (Richard ZR6CK)		836-2378

Bulletins transmitted after HQ bulletins on Sundays at approx. 8:45.
'Q bulletins are transmitted at 08:15 to approx. 08:45 and relayed on 145,725 mHz.

Frequencies:	2m:	145,725
	20m:	14,180
	40m:	7066
	80m:	3700
(Winter)	160m:	1,840

Please stay tuned to these frequencies for the duration of the branch bulletin.

AMATEUR RADIO: The hobby for Radio Experimentors and those who like to fiddle with Electronics, Computers or Communications.

Agenda.

Monthly Meeting

The branch meeting will be held at the South Campus of the University of Pretoria.

Time: 19.30 for 20.00
Date: 08-06-95

1. Official Business & General
2. Science Show (Lasers, Tesla coils, etc.)
3. Ragchew
4. End of Meeting
5. Refreshments and tea/coffee will be available

DATES TO REMEMBER

Ladies Net

All licensed ladies are invided to join in on the ladies net at 20:00 on the 725 repeater on Thursday nights.

Microprocessor cources

The next course will be held on Wednesday 31 May.

General technical discussion evenings

The technical discussions will be replacing the microprocessor cources on the first Wednesday of each month starting on 7 June while the microprocessor courses will continue on the other Wednesdays of the month. You are all invited to join the technical discussion. The topic to be discussed this month will be computers. What to buy? What to watch out for. How to assemble etc.