



WATTS

01 - 2005
Year 75+1m

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



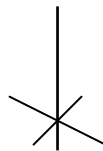
PARC, PO Box 73696 Lynnwood Ridge 0040, RSA



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

ZR6FD bilingual | tweetalige logo!

drukwerk papier / paper
printing ZS6P
ZS6BAQ



Bulletins : 145,725MHz 08:45 Sundays / Sondae
Relays : 1840, 3700, 7066, 10135, 14,200 MHz
depending on season

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

Diamond Jubilee

ZS

75

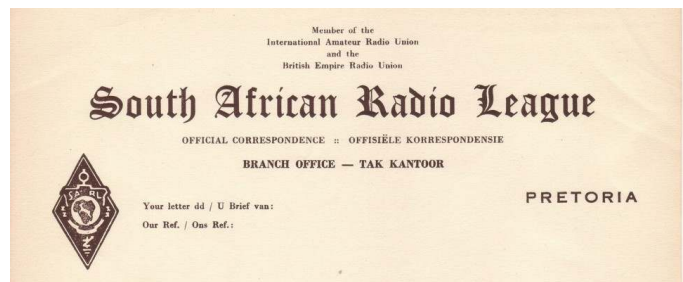
PTA

1930-2005

1929/30 Pretoria Radio Club formed
1935 Pretoria Section of Div. 6 of the SARRL



1944 PRC revival after WWII
1945 PRC rejoins League after League revival
1946 Independent Branch of the League



1996 Pretoria Branch becomes a Club affiliated to the League. Own Club logo.

In this issue

- Editorial
- Minutes of meeting 12/04
- Club history
- Member news and diary
- Photo reports and snippets
- Technical
- Page ten

in hierdie uitgawe

Redaksioneel
Notule van vergadering
Klubgeskiedenis
Ledenuus en dagboek
Fotoverslae en brokkies
Tegnies
Bladsy tien

Next Meeting

Date: 13-01-2005
Time: 19:30 for 20:00
PARC Clubhouse,
South Campus,
University of Pretoria.
SE cnr University and
Lynnwood roads.

Management team / Bestuurspan Aug 2004- Aug 2005:

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Sekretaris Tydrenne, Jakkalsjag	Johan de Bruyn	ZR6JHB	johandbr@absa.co.za	012-803-7385 082-429-3689
Treasurer Clubhouse, Database	Richard Peer	ZR6CK	peerrk@safrica.com	012-333-0612 082-651-6556
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Co-opted / Geko-opteer:

Auditeur	Egbert Begeman	ZS6AZG	begeme@unisa.ac.za	012-347-1905
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Editorial

On behalf the Management Team we wish all our Members a happy and prosperous New Year.

This issue is the first in our 75th Anniversary and we give our Historian Tjerk ZS6P the limelight with part 1 of our history on page 4. His introduction appears below.

Redaksioneel

Van die Bestuurspan wens ons u almal 'n gelukkige en voorspoedige Nuwe Jaar.

Hierdie uitgawe is die eerste in ons 75e bestaansjaar en ons gee ons Historikus Tjerk ZS6P die kalklig met deel 1 van ons geskiedenis op bladsy 4. Sy inleiding verskyn hieronder.

Bumper 10-page issue !



Stampvol 10 bladsy uitgawe !

What is in a Name?

I have dug up some interesting articles from RADIO_ZS and Watts with the help of Paul ZS6BMF, Mike ZS6AFG and Pine ZS6GST, setting out the chequered past of our club's many names:

from the Pretoria Radio Club to the Pretoria Section of Division 6; the Pretoria Division; the Pretoria Radio Club; the Pretoria Branch of the SARL and finally to the Pretoria Amateur Radio Club.

It is also clear that when we set the 1st of January 1930 as our founding date, we could even be conservative in our estimate. Thus, your club's new callsign **ZS75PTA**, will heard on the air as from the 1st of January 2005!

This is the first of a series of articles to be published in Watts.

Tjerk Lammers ZS6P
PARC Historian.

Minutes of the monthly club meeting of the Pretoria Amateur Radio Club held at the South Campus of the University of Pretoria on 11 Nov. 2004

Welcome: Hans ZS6KR declared the meeting open and welcomed all who attended and a special word of welcome was extended to Martin Jancuska OK4DJO, the junior of Ivan ZS6CCW and Vlasta, Lynette van Dyk, junior of Bill ZS6KO and Mary Ingleson and F C de Oliveira ZS6FCO

Attendance: 30 members and 5 visitors attended. Apologies were received from Hal ZS6WB, Egbert ZS6AGZ, Kallie ZS6KCS, Allan ZR6AHK, Anne ZR6AUL, Edwin ZR6ESP and Hilary ZR6HAP.

Personal Matters/Lief en Leed: Bertha Iv van Hans ZS6KR is nog steeds in die hospitaal en dit gaan tans beter.

Matters arising from previous minutes: None.

Previous minutes: The minutes of the previous meeting as published in Watts were approved. Proposed by Carlos ZS6AJW and seconded by Alf ZS6ABA

Club Activities:

Rallies: Johan ZR6JHB reported that the Rally scene has finally come to an end for 2004 with the Bosal Cars in action Tarmac Challenge. The event started on Friday 26/11/2004 at Zwartkops Raceway.

The following day the competitors started at Zwartkops and a further 4 stages were run at Gerotek 15km west of Pretoria and the event finished at Zwartkops. Johan thanked Andre ZS6BRC, Sander ZR6SW, Roy ZS6XN, Roger ZR6AKK, Chris ZR6MVK and Pierre ZR6ADZ for providing communications and Magalies Radio Club for the use of the 145,750MHz repeater.

Social: The year end function at Adler's Restaurant, organized by Willie ZR6WGR was well attended and everybody had a great time. Thank you Willie, we are certainly looking forward to the next social event.

Finance: Richard ZR6CK reported on the club's finances and all is well.

Projects: Pine ZS6OB reported that the Technical Group is busy with a lot of ideas. There are a few kits available for building a lead-acid battery charger and other kits will follow soon.

Pine invited everybody to a bring-and-braai at his home on Saturday 11 December.

Ham Diary:

Dec - 3 - School close

-4/5 - ARRL 160m Contest.

-10 - NARC closes.

Jan -13 -PARC club meeting

General: Hans ZS6KR reported that Tjerk ZS6P, Ed ZS6UT and himself were appointed as Assessors for the SARL with regard to the new Regulations for upgrading ZR's to ZS.

Molly ZR6MOL, Doreen ZR6DDB, Martie sw of JB ZR6YV and Sarina, sw of Willie ZR6WGR received small gifts from the Club as a token of appreciation for their catering at club meetings and other events.

Magda van Wyk ZS6MVW also received thanks for providing eats at the various flea markets and catering assistance at the VHF/UHF contest venues.

UHF Constructors Trophy:

Entries were received from: Pine ZS6OB - 70cm Yagi antenna with 15db gain.

Pieter ZS6PVW - 70cm dipole, 70cm J-pole, 2m vertical dipole,
2m Super J-pole, 6m J-pole

Mike ZS6AFG - 2m Wattmeter

Ivan ZS6CCW -VHF direction finder 2m.

The Trophy was awarded to Ivan ZS6CCW for his very neatly built Direction Finder

The Desert Island Trophy was awarded to Hans ZS6KR.

The meeting closed at 21.00 and refreshments were enjoyed afterwards

Thanks to Molly, Doreen, Mary and Vlasta for the decorations and setting the tables.

“After careful consideration of the present status of the Pretoria and Pietermaritzburg Sections of the League, we feel that the time has come when they should be placed in direct touch with the Council and also given greater responsibility than at present. The members, and especially the leaders, of these Sections have shown great enthusiasm for Radio and the League and as a mark of appreciation of what they have done we think that they should now be given an opportunity of proving that they are able to run their respective Sections independently of their respective Divisions, but nevertheless, as a unit thereof...”

So read the annals of the League when, towards the end of 1934, the General Purposes Committee recommended to Council that:

“As from the 1st January, 1935, the **Pretoria Section of Division 6** and the Pietermaritzburg Section of Division 5, shall, provided that their respective membership does not fall below seven full members each, for the purposes of the Constitution be deemed to be Divisions and they shall accordingly have all the rights (save as may be otherwise hereinafter provided) and be subject to all the obligations of a Division of the League in terms of the Constitution.”

The recommendation concludes:

“The foregoing provisions shall be of a temporary nature and shall come into force on the 1st day of January, 1935. The Council reserves the right to cancel or amend them at any time.”

At a council meeting held on the 11th March, 1935, a letter from the Pretoria Section of Division 6, requesting full power to act as an individual sub-section within Division 6, was discussed and the request acceded to. On the 18th May, 1935, Council was advised that the Pretoria Section had been established. The hon. secretary of the Section wrote:

“At a meeting held at my shack on Sunday, 4th May, the last formal details were completed and the following Committee was elected: Chairman, ZU6E, WH Browning; Vice-chairman, ZS6AF, WH Lister; Treasurer, ZU6M, B Scallan; Secretary, AU6B, FA Alexander”.

“On behalf of the executive and the **Pretoria Division** as a whole, then, I wish to bring to Headquarters our respectful greetings and would like to express the hope that we may long continue to work together in complete harmony.”

And so another milestone in the history of the League has been reached.

Under the wise guidance and capable leadership of men such as O. M.'s Browning, Scallan, Alexander, Hobbs and others, the section firmly established itself. Needless to state, Council never saw fit to amend or cancel the concession.

At the end of 1935 the Section had nine full members and four associates, since when the numbers steadily grew. Monthly meetings were regularly arranged, and on the whole, well attended. In the Section's Annual Report for 1936, it was stated:

“The policy of arranging for meetings to be held at the homes of members, at their invitation, has been continued and has up to now proved successful. It has always been the endeavour of the Committee to make meetings as informal as possible and by this means foster the social spirit among members. When lectures were given they were always short and to the point, and discussion among members was encouraged.”

Paging through the records of the Section makes most interesting reading, but unfortunately neither time nor space permit elaborating on the highlights and titbits of the Section's pre-war career. The outstanding feature gleaned from these records, however, is that the close and intimate contact, which the holding of meetings at the homes of members afforded, was undoubtedly the underlying reason, not only for that wonderful goodfellowship which was so characteristic in pre-war days, but also why each and every member appreciated that League membership carried with it a definite responsibility. In consequence, the “responsibility” which had been vested in the Section was taken very seriously and on many an occasion the Section did not fail to make its voice heard in the affairs of the League.

Then came the outbreak of World War II, in 1939, with its disruptive effect. Within a short time most of the 17 full and 16 associate members of the Section were scattered far and wide. A good number had volunteered their services, while others again were called upon to render service in a different way. By the middle of 1940 all attempts to maintain some measure of contact by means of monthly meetings had to be abandoned. But even so, that bond of goodfellowship which had been cemented in the past never disintegrated. No member completely forgot those pleasant days when he could pursue, in company with his fellow-ham, his hobby to his heart's content. Small wonder then that, when signs of the end of hostilities were becoming evident, thoughts were once again being turned to amateur radio.

O. M.'s WG Hobbs, ZS6BN, and W Dibble, ZS6AG, began the difficult task of tracing the whereabouts of former members of the Section. By dint of perseverance they succeeded in bringing together not only some of the old-timers but also others who were interested in amateur radio. In the absence of any signs of revival on the part of the League, it was launched to form the **Pretoria Radio Club**. This club was launched on the 8th of December, 1944, with a membership of eight pre-war licensed amateurs and four prospective amateurs. As in the case of the pre-war Pretoria Section, the first few monthly meetings were held at the homes of members, but it soon became evident that owing to the rapid increase in membership, no individual member, or shall I say, his SW, could cater for such a large gathering. In result, therefore, it was decided that some centrally situated venue had become imperative. The members were fortunate enough to secure a room in the Technical College, through the kind co-operation of the Director of the Bureau of Adult Education.

Early in 1945 the stage had been set for the revival of the League and on the 1st July, 1945, the members of the Pretoria Radio Club became members of the League. That the war had a pronounced effect in stimulating interest in amateur radio cannot be denied, for it is remarkable how rapidly the ranks of the radio amateur were swelled by newcomers. In this influx Pretoria had its fair share at the close of 1945 the membership totalled 43; increasing month by month the present membership of the Branch stands at 94 ordinary and seven junior members.

An interesting post-war development was the establishment of Branches of the League instead of the former system of Divisions with their satellite "Sections." It says much for the clear vision of those men who met at the round-table conference of the League in Johannesburg at Easter-time, 1946, when the present system was decided upon. The vesting of absolute independence in the Branches, the liberty accorded to each Branch to voice its opinion without fear or favour, in short, the formation of one great partnership has certainly gone a long way in building a solid foundation for the League. Pretoria has certainly not shirked the "greater responsibility" extended to it in those memorable days of 1935, and has ever since striven to fulfil the expressed "... hope that we may long continue to work in complete harmony."

Before concluding this brief historical resumé of the **Pretoria Branch**, it is not more than fitting that a few words be said about the years preceding the formation of the Pretoria Section.

As far as is known there are unfortunately no records in existence which could throw any light on the early history of the radio-minded citizens of Pretoria. I have been fortunate enough to obtain some information from O.M. Brian Scallan - licensed in 1929 as ZU6M - who prior to and since that date and up to the outbreak of war, played a leading and active role in amateur radio in Pretoria. According to him, a few persons were since 1924, from time to time, actively engaged in experimental radio transmission. **The foundations of the Pretoria Branch, however, may be said to have been laid in 1930/31 with the formation of the Pretoria Radio Club.** This club was fortunate in having a large and very active membership.

Although at first the radio interests of its members were of a general nature but more particularly in reception and radio theory, a number of its members had or were acquiring transmitting licenses with the result that such interest gradually began to centre on transmitting instead. By 1932 about six members of the Club had obtained their licences and were so active that the League Headquarters began to sit up and take notice of the developments in Pretoria. A deputation was accordingly sent over by Council to Pretoria one afternoon to persuade the local amateurs to throw in their lot with the League. Negotiations were successful, due to the fact that Council had yielded to Pretoria's condition that it should enjoy a certain amount of freedom within Division 6. The rest of the story as to how Pretoria eventually obtained autonomy has already been told.

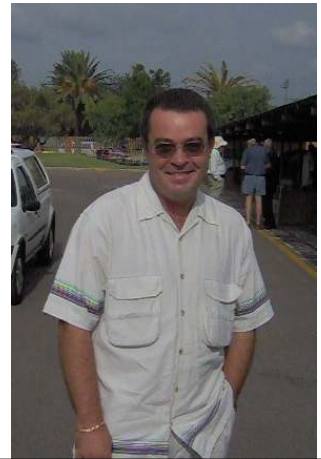
PARC Mega Fleamarket 27 Nov. 2004



Ivan ZS6CCW and son Martin OK1DJO



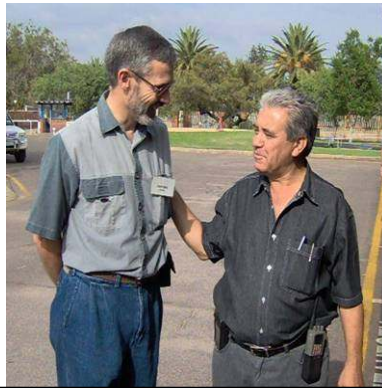
Lizette ZR6LZT en haar ma Magda ZS6MVW sorg vir die eetgoed



Frikkie ZS6MF



Pieter ZS6PVW (middel) met geselskap



Hennie ZR6HEN and Martinho ZS6BQP



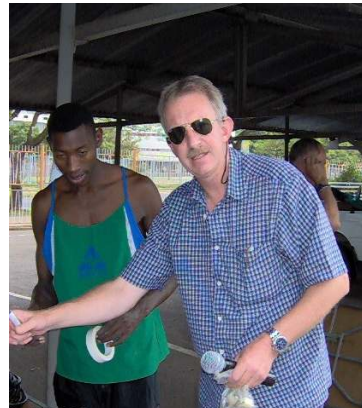
Drinks? Molly ZR6MOL and Richard ZR6CK



Johan ZS6CAQ



Sander ZR6SW



Almero ZR6RY (organiseerder) en assistent



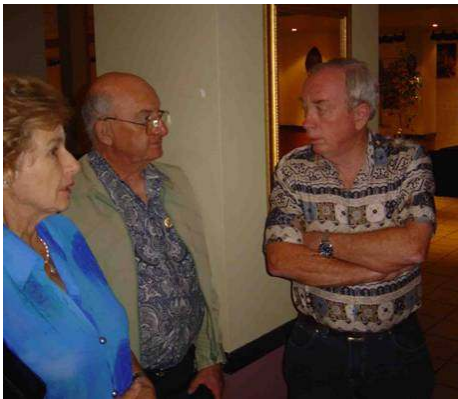
Selwyn ZS6SEL



Almal het iets gebring..

inklus Johan ZR6ANF met sy vrag (regs)

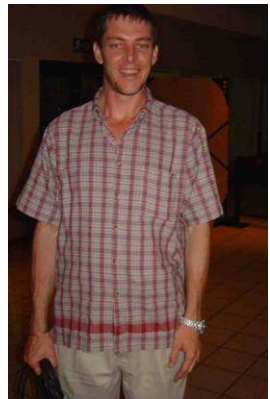
PARC Social 26 Nov. 2004 – Adler Restaurant - UP



Rae and Mike ZS6AFG with Tjerk ZS6P



Sarina, Richard ZR6CK, Willie ZR6WGR en Sylvia



Hy't alles gereë!



L : Sylvia en Molly ZR6MOL
M: Sander ZR6SW en LV
Jeanne ZR6GPC
Pine ZS6OB en LV Erika
R: Vlasta and Sylvia



Birthdays

Desember
Verjaarsdae



December

Anniversary Herdenkings

02 Alf ZR6ABA
03 Stan ZS6SDZ
04 Mike ZS6AFG
05 Pierre ZR6PJH
06 Carmyn, daughter of Gary ZR6GK
08 Robert ZS6ARC
08 Darren ZR6TY, son of Joe ZS6TB
09 Brian ZS6CID
12 Ivan ZS6AUT
13 Edna sw of Peter ZS6RX

05 Louise en Almero ZR6RY (14)
07 Doreen ZR6DDB en Johan ZR6JHB (27)

14 Gert ZS6ZB
18 Mary, sw of Bill ZS6KO
20 Errol ZR6VDR
24 Miemie, lv van Hennie ZR6HEN
31 Elize, lv van Pieter ZR6AHT

Nuwe Lede | New Members

Baie welkom aan Japie Pretorius ZR6JH
and Graham Reid ZR6GJR
Application received from Craig ZR6REV

Sick Parade

Bertha, LV van Hans ZS6KR sterk aan vir nog 'n operasie.



Magda ZS6MVW is 6 Januarie onder die mes

Krukkelys

PARC Diary | Dagboek

Jan xx-xx Hunting Lions on the Air 0000-2400 UTC
13 PARC meeting - PARC HF/CW/SSB award application to be handed in
xx-xx PEARS VHF/UHF Contest 1600-1600 UTC
End SARL call for Tinus Lange Award submissions
Feb xx SARL HF Field Day Contest part 1

Snippets | Brokkies

- SARL approved assessors in PARC for **ZR-ZS assessments** are Hans ZS6KR, Ed ZS6UT and Tjerk ZS6P. If you wish to upgrade, study the requirements downloadable from: www.sarl.org/public/licenses/Assessments/Assessments.asp and make an appointment.
- **SCI-TECH at the Pretoria Showgrounds 28 Feb-6 March needs operators, advisers and P. R. to the visiting public and scholars on any terms of convenience during that week.** Contact George ZS6NE at 012-664-4155. Persons not bound by daily work should please consider giving some help.
- **Nog 'n braai !** Dit was op uitnodiging van Pine ZS6OB by sy QRA in Desember.



THE LITHIUM ION (Li-ion) BATTERY

Article submitted by ZS6BAQ

Pioneering work for the lithium battery began in 1912 by G. N. Lewis but it was not until the early 1970's that the first non-rechargeable lithium batteries became commercially available. Attempts to develop rechargeable lithium batteries followed in the eighties, but failed due to safety concerns.

Lithium is the lightest of all metals, has the greatest electrochemical potential and provides the largest energy content. Rechargeable batteries using lithium metal as an electrode are capable of providing both high voltage and excellent capacity, resulting in an extraordinary energy density.

After much research during the eighties, it was found that occasional shorts from lithium dendrites could cause thermal run-away. The cell temperature quickly approaches the melting temperature of lithium which results in violent reactions. A large quantity of rechargeable lithium batteries sent to Japan had to be recalled in 1991 after a battery in a cellular phone exploded and inflicted burns to a man's face.

Because of the inherent instability of lithium metal, especially during charging, research shifted to a non-metallic lithium battery using lithium ions from chemicals such as Lithium-Cobalt Dioxide (LiCoO₂). Although slightly lower in energy density than with lithium metal, the Li-ion is safe, provided certain precautions are met when charging and discharging. In 1991, Sony commercialized the Li-ion and is presently the largest supplier of this type of battery.

The energy density of the Li-ion is at least twice that of the NiCd and its load current rating is reasonably high. In fact, the Li-ion behaves similarly to the NiCd in terms of discharge characteristics. In addition, the Li-ion has a relatively low self-discharge.

For safety and longevity reasons, each battery pack must be equipped with a control circuit to limit the peak voltage of each cell during charge and prevent the cell voltage from dropping too low on discharge. In addition, the maximum charge and discharge current must be limited and the cell temperature monitored. With these precautions in place, the possibility of metallic lithium plating occurring due to overcharge is virtually eliminated.

There are two basic Li-ion types that have emerged: the coke version by Sony and the graphite version that has now been adapted by most other manufacturers. The new graphite electrode provides a flatter discharge voltage curve than the coke electrode and offers a sharp knee bend, followed by a rapid voltage drop before the discharge cut off point (see Figure below). As a result, the graphite Li-ion needs to be discharged to only 3.0V per cell whereas Sony's coke version must be discharged to 2.5V to obtain maximum capacity. In addition, the graphite version is capable of delivering a higher discharge current and remains cooler during charge and discharge than the coke version. Discharge characteristics of Li-ion with coke and graphite electrode.

The graphite's higher end-of-discharge voltage of 3.0V has a major advantage because its useful energy is concentrated within a tight upper voltage range, simplifying equipment design. It is speculated that a single graphite Li-ion cell will be capable of powering most cellular phones by the year 2000, with notebook computers to follow.

Manufacturers are constantly changing and improving the chemistry of the Li-ion battery. New carbons are being tried for the negative electrode that are said to double the capacity of the Li-ion battery. Further work is required to assure that safety is not compromised because the energy content available with Li-ion approaches that of Lithium metal.

The Li-ion is one of the most expensive commercial batteries available today. Better manufacturing techniques and the replacement of cobalt with a less expensive material will likely reduce its price by 50% after the year 2000.

Other Li-ion systems are being developed that show promising results. According to Fujifilm, their amorphous, tin-based composite oxide material as the negative electrode offers 50% more capacity than Li-ion batteries using the conventional carbon electrode. Other said advantages of the tin-based composite oxide are: enhanced safety, quick charging, good load characteristics and good performance at low temperature. Disadvantages new discoveries bring along are commonly not mentioned in the early stages.

Caution: Li-ion batteries have a very high energy density. Exercise precaution when handling and testing. Do not short circuit, overcharge, crush, mutilate, nail penetrate, apply reverse polarity, expose to high temperature or disassemble. High case temperature resulting from abuse of the cell could cause physical injury.



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Model RS-401 125 - 525MHz 5,20,200W scales

All models R660.00 to Club members and Trade
 Contact Hans ZS6KR QRV Tech cc
 Details page 2 www.qrv.co.za

STATIC-FREE TOWN

● **STATIC** was bad in Richland Center, Wisconsin, according to *Time Magazine*. The good Centerers are avid radio fans and complained of the annoyance they got from vacuum cleaners, electric razors, etc. After making a survey the city officials

requested owners of offending apparatus to install filters, but not many agreed. However, the municipally owned power plant sent men around to install filters where necessary, and billed each recipient thereof for the service. Persons who objected were threatened with having their electricity cut.

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42 Loveday Street