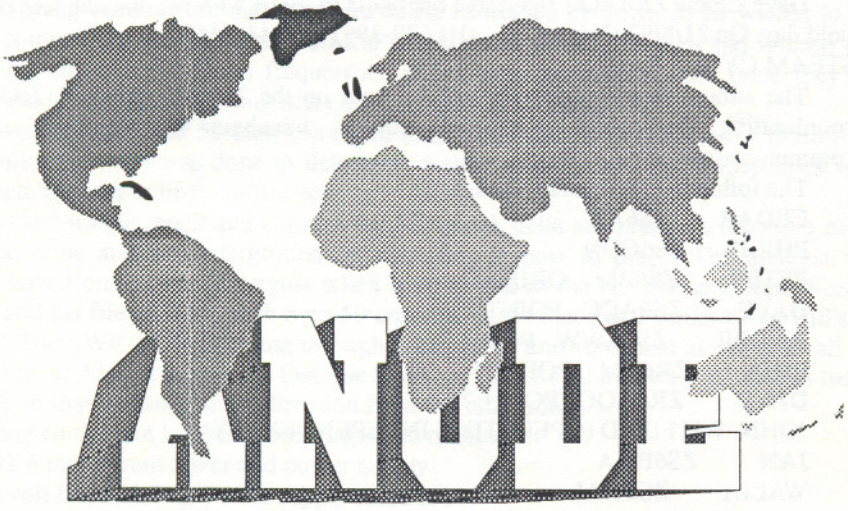
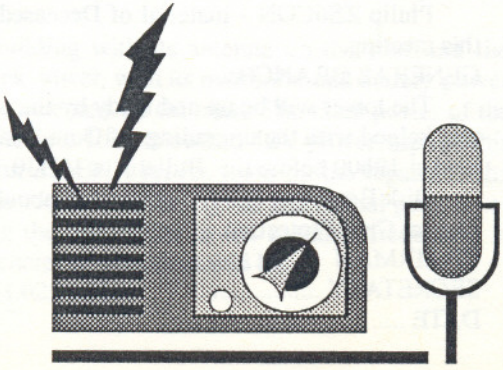
September Issue 1993

Newsletter of the West Rand Branch South African Radio League



Sunday Bulletin 11.30 am sast
Fequencies
145.625 fm 7.066 mhz ssb 51.625 fm
West Rand Repeater

West Rand Branch
Wesrand Tak
SARL
P.O. Box 562
Roodepoort 1725



SOUTH AFRICAN RADIO LEAGUE:
WEST RAND BRANCH
MINUTES OF THE BRANCH MEETING HELD ON 9TH AUGUST 1993

PRESENT:

AS PER REGISTER.

WELCOME:

Cedar ZS6JQ welcomed everybody present, and a special welcome to the speaker for the evening Dwight West ZS6NT. Other guests was Andre Brutten, and Johan ZS6.....

GREETER:

Thank you to Nick ZS6NIC, who was the Club Greeter for the evening, this is a first for our club and will be done on a regular basis.

CQ HOU KOERS:

Dave Cloete ZR6AOC requested operators to assist with the annual CQ HOU KOERS field day. On 21/8/93 Contact tel. (H) 679-3991 (W) 444-4500.

STEAM CYCLE RACE:

The annual steam cycle race will be held on the 28/8/93 and Nick ZS6NIC will be coordinating this event. Nick will contact members to participate in providing communications.

The following members volunteered:

CEDAR ZS6JQ
PHILIP ZS6CON
PETER ZS6ZM ORIENT
DAVE ZS6ACC POINT 7
ANDRE ZS6AWW POINT 7
RINA ZR6RM POINT 7
DAVE ZR6AOC POINT 7A
JOHN WITFIELD (OPERATING INDEPENDENTLY)
JAN ZS6BAA
WALLY ZS6WAL
LAPPIES ZS6BMY
JOHAN ZS6JVV
KEITH ZS6AGF

SWOP SHOP:

Swop shop will be held on 4/9/93 - details will be announced.

QRP MEETING:

On 16/8/93 QRP Ivo Chaldek ZS6AXT will be the host, and will be talking on 1296 MHz and higher.

Philip ZS6CON - material of Deceased estate from Bill Williams will be on sale at this meeting.

GENERAL BRANCH:

The tower will be up and ready by the end of October 1993. Thank you to all the om's that helped with the upgrading of Oom Daantjies station. Wednesday evening Net. will be held at 19h00 before the Bulletin at 19H30.

Dirk Beukman ZS6AU concerned about the safety of church services. Committee will contact Civil Protection.

CHAIRMAN .....
SECRETARY .....
DATE .....

Site Report Back

Much has been achieved since my last report on the advances made by the Houtkoppen working group to equip and man this valuable and useful site. The first objective was to get permission to use one of the permanent buildings away from the main building as it was felt that for best reception and transmission of HF a quiet site would be best. This was achieved and we now occupy one room in the upper lab building. The second thing we tackled with the help of Tony and his students was the erection of antennas for the reception of RS satellite signals in the 10m band. This project has been completed and four matched dipoles with a free wire reflector have been erected. The array runs from East to West and points vertically and has proved its worth as we have achieved good readable signals over the whole of various passes. Assistance was given to Tony and his students in the erection of an array of four 6m dipoles with the same configuration as the 10m ones but at right angles to the, matching problems are being encountered and these are being addressed by Tony, as he wishes to use the array in conjunction with the Astronomical people to do a meteor watch and ionised trail analysis, using distant 6m beacon frequencies which only become audible once they are reflected off the ionised trail, to count and correlate meteorite entries.

All the above antennas have 50 ohm coax feed lines connected from them to the radio room in the lab building, a test was done to determine wether underground or surface lines were better and there appears to be no difference.

The next project was to repair and connect the Micomtek delta antenna with the radio room, this has been done and an underground 50 ohm line is now in place. The antenna was successfully tested on the 1st of August when it was used in the HF phone competition by ZS6ZC Bill and his friend Tony, with over 50 contacts being made in 2 hours using Bill's rig unning 80W. The SWR of the antenna through a matching unit remained at 1:1 over all the bands from 20m to 80m. It was found that the loops are directional and we will have to install a coax switch so that we can change direction from the radio room

The following equipment has been installed in the radioroom:

1 X C42 6 metre transceiver and power supply.
1 X 24 volt / 12 volt DC power supply rated at 20A
1 X Trio all band receiver (old valve type)
1 X Storno 8 channel 2m FM transceiver
1 X Double floppy drive XT computer

It is projected that in the next phase of our occupation the following will be attempted.

1.The 6 metre repeater project. It was decided to experiment with the separation of thetransmitter section from the receiver module and to use two different antennas, approximately 200m apart. The receiverwould have a landline link, which we have already installed,to the transmitter. If this idea proves a success we would have saved the expense of six 1,6m X 5cm diameter silverplated cavities.

The transmitter is to be sited in the main building with its antenna on the roof and the receiver is to be sited at the base of the Micomtek tower, with its own solar and battery power supply, donated by Tony, with a series of dipole antennas on the mast. The rated power of the transmitter is approx 100w so we will need at least a 10A smoothed 12V power supply, this we have not yet obtained. Our thanks go to Ron ZS6BHH for his work on the repairs to the receiver which are just about finished, all that is required is the crystal and a final peak up of the circuit,and then work can begin converting the transmitter to the required frequency. It was decided to use a 1,6 mHz split so the frequencies of operation will be:

TRANSMITTER 52,625 mHz RECEIVER 51,025 mHz

it is hoped that this repeater will be in operation before the end of this year.
There still remains the time delay circuit for the repeater tail which will need to be constructed. Once we have all the relevant parts together we will commission the system.
2. The automatic reception and retransmission of telemetry from the RS group of satellites.
It is hoped that we will be able to use the computer and a suitable receiver, existing 10m antenna array and control circuitry to receive at pre-calculated times the telemetry from RS 10 and other RS satellites. This information will then be down loaded on demand via a 2m link to John ZS6AOP who will perform a " cleaned up " and then send the data on to the relevant control centre to help with the monitoring of the satellite systems.
For this project we will need to write a suitable control programme for the computer as well as make or adapt the hardware to perform the necessary I/O functions. I have a 20 MB hard drive which we can use to upgrade the system and we will try to install it soon.
3. The automatic reception and retransmission of weather fax signals, on demand, via the 6m repeater.
With this project we propose to use the existing 4,5m dish on the roof of the lab and build a down vertor in the already existing radar housing at the back of the dish mounting. Then feed the composite video picture via an interface board into the computer, from which the picture will be rebroadcast on the 6m □repeater on demand, triggered by toneburst.
This project will we hope provide us with a good reliable weather signal when ever we want. Obviously there will be muchexperimental work to be done and any assistance that can be given by members will be greatfully accepted.
4. The erection of a long wire "Beverage" antenna. Many amateurs would like to experiment with long wire an tennas but do not have the room, well the answer is the radar site. There is plenty of room to erect any antenna that one could desire.
The project is to erect a "Beverage" antenna approximately 500m long suspended on 3m poles facing slightly east of north which will be end fed and terminated with a 50 ohm resistor to earth. The poles are on order, thanks to Dave ZR6 AOC, and the wire is with Keith ZS6AGF.
When the poles arrive we will begin the erection of the antenna, the idea being to support the poles with nylon stays so that the position of the poles can be changed if desired and they can be removed if necessary.
That then is a summary of projects envisaged and completed at the Houtkoppen radar site. The most obvious aspect of our all equipment is of necessity easily removable. I wish to thank all the members who gave advice and help, without which we would not have got as far as we have.

Best regards, 73's
Chris Botham ZR6AVA.

From the Chairman's Desk.....

Each edition of ANODE seems to come around quicker than the last; it seems like only yesterday that I was writing about the Cape Town weather, which I might add after having spent a very quick four days there over the end of July, has not changed !!. Two problems which they have and we don't have to the same extent are the rain and strong winds. I wonder how long some of the antenna and tower installations in the PWV area will last in the conditions found in the Western Cape. I think the lessons to be learnt from the "Capetonians" are that over-engineering can never fail !! BE WARNED !!

The most recent edition of ANODE started to reflect our new thrust to make the magazine more member orientated but as always articles of interest from members will be appreciated. Reviewing the August edition showed one glaring fault and that was the large number of Keplerian Elements supplied. At the time of preparing the copy for the magazine I was unaware of just how many pages they would involve. My apologies for this. Instead the future editions will only reflect those elements for RS10/11 and RS12/13. The reason for this is that these are the easiest "birds" to work with a modest station. John Forbes ZS6AOP is also providing on his PBBS (ZS6AOP-1; 144,650) the times of signal acquisition at his QTH in Bergbron (or thereabouts!!) which should make it much easier to work RS10/11. The current thinking is to have these tables provided in ANODE and hopefully this will be done for the next edition. My thanks to Arie Wessels ZS6UY for the article "Electricity- where does it do when it leave the toaster ?" I found this to be a delightful read and worthy of a wider publication than only ANODE and by him having posted it onto the packet bulletin distribution network should ensure that it goes far and wide. The Branch membership continues to reflect new members joining us with the latest being the following: J.H. Grobbelaar of Randfontein Chris Coetzee of Krugersdorp Andre Watkins ZR6JAW That last call sign must be the best seen since that of the late Les Scott ZS6FU (which is now "owned" by Eugene Brits)!! Those of you I have left out please accept my apologies and I wish all of you a very enjoyable time at our Branch. Amateur radio is a marvellous leisure time activity; a high activity level in Branch affairs only makes it more enjoyable. Our bi-ennial Roodepoort International Eisteddfod is around the corner with Sarel ZS6APO and Phillip ZS6CON putting in lots of extra time to make this years event the best to-date. Please reserve the dates 24 September to 3 October in you diary as we will be looking for operators as well as general assistance around the exhibition. Sarel will be in contact with most of the membership in this connection.Extra work around the clubhouse continues; Keith ZS6AGF assures me that the new satellite/VHF tower and antennas will be installed by middle of October. Perhaps we should have a "Grand Opening" evening for this part of the station. Oom Daantji eZS6AMQ 's troubles with antennas should be over by the time you read this; Peter ZS6ZM gave us a challenge at the last Branch meeting which we could not resist. As a result some 10 members are expected to do the repair work called for on 7 August. Thanks to those of you who offered their assistance and equipment for this purpose. Hopefully a proper report will be supplied at the most appropriate Branch Bulletin. To get back to my travels, as you have seen I spent a few days in Cape Town recently and therefore missed the Branch Bulletin on Sunday 1 August but did listen to the re-broadcast on Wednesday evening 4 August.

Many thanks to John ZS6AOP and Bill ZS6ZC for their challenges given out to the rest of the membership for the SARL HF 'phone contest. I hope that those of you who participated found the contest enjoyable and that the new times made it a bit more challenging to work all the zones. The one problem with contests is the completion and submission of log and scoring sheets; if you have any queries with these please contact Wally ZS6WAL for assistance. If these don't make the cut- off date then we stand no chance of winning the Branch Participation Trophy. The Wednesday evening net has been started to provide members with the opportunity to meet on the air and simply have a chat with their friends under the "discipline" of a net controller who for the present will be me. Please join us at about 19:00 before the re-broadcast to discuss issues of mutual interest. I guess in due course we can consider this as being the local equivalent of the "National Interactive Technical Net" and I am currently thinking about inviting guest speakers to be present. As always input about topics will be appreciated. We will however have to watch our timing as we only have some 25 minutes available to us so the questions (and answers) must be brief (something quite difficult for me when one looks at the length of some of our Branch bulletins. !!) Well as always space is up for this month. Remember the Branch Meeting on 13 September but unfortunately at the time of preparing this (4 August) details of the speaker are not yet available. However we trust that the meeting of 9 August with Dwight West ZS6NT will be of interest to those who attend.

Keplerian Elements

Satellite: RS-10/11
Catalog number: 18129
Epoch time: 93216.49568542
Element set: 637
Inclination: 82.9206 deg
RA of node: 202.9005 deg
Eccentricity: 0.0011417
Arg of perigee: 176.6998 deg
Mean anomaly: 183.4224 deg
Mean motion: 13.72321222 rev/day
Decay rate: 8.8e-07 rev/day^2
Epoch rev: 30647
Checksum: 305□

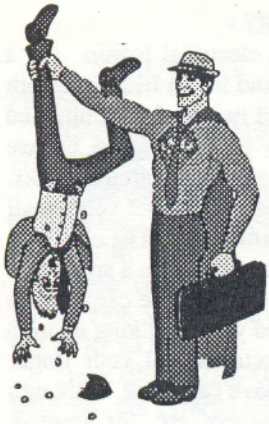
Satellite: RS-12/13
Catalog number: 21089
Epoch time: 93207.07946854
Element set: 411
Inclination: 82.9224 deg
RA of node: 253.2736 deg
Eccentricity: 0.0028626
Arg of perigee: 299.6709 deg
Mean anomaly: 60.1600 deg
Mean motion: 13.74024613 rev/day
Decay rate: 1.8e-07 rev/day^2
Epoch rev: 12386
Checksum: 302

ELECTRICITY

- WHERE DOES IT GO AFTER IT LEAVES THE TOASTER? -

Here is a simple experiment that will teach you an important electrical lesson. On a cool, dry day, scuff your feet along a carpet, then reach your hand into a friend's mouth and touch one of his dental fillings. Did you notice your friend twitched violently and cried out in pain? This teaches us that electricity can be a very powerful force, but we must never use it to hurt others. It also teaches us how an electrical circuit works. When you scuffed your feet, you picked up a batch of "electrons", which are very small objects that carpet manufacturers weave into carpets so they attract dirt. The electrons travel through your bloodstream and collect in your finger, where they form a spark that leaps to your friends filling, then travels down to his feet and back into the carpet, thus completing the circuit. Amazing electronic fact! If you scuffled your feet long enough without touching anything, you would build up so many electrons that your finger would explode. But this is nothing to worry about, unless you have carpeting. Although we modern persons tend to take our electric lights, radios, mixers, etc. for granted, hundreds of years ago people did not have any of these things, which is just as well because there are no place to plug them in. Then along came the first electrical pioneer, Benjamin Franklin, who flew a kite in lightning storm and received a serious electrical shock. This proved that lightning was powered by the same forces as carpets, but it also damaged Franklin's brain so severely that he started speaking only in incomprehensible maxims, such as, "A penny saved is a penny earned." Eventually he had to be given a job running the post office. After Franklin, came a herd of electrical pioneers whose names have become part of our electrical terminology: Myron Volt, Mary Louise Amp, James Watt, Bob Transformer, etc. These pioneers conducted many important electrical experiments. For example, in 1780, Luigi Galvani discovered (this is the truth) that when he attached two different kiectrical current develos no longer actually atnni's discovery led to cine. Today, skilled veterina- ry surgeons can take a frog that has been seriously injured or killed,implant pieces of metal in its muscles, and watch it hop back into the pond just like a normal frog, except for the fact that it sinks like a stone. But the greatest electrical pioneer of all was Thomas Edison, who was a brilliant inventor despite the fact that he had a little formal education an lived in new jersey. Edison's first major invention in 1877, was the phonograph, witch could soon be found in thousands of American homes, where it basically sat until 1923, when the record was invented. But Edison's greatest achievement came in 1879, when he invented the electric company. Edison's design was a brilliant adaptation of the simple electric circuit: the electric company sends electricity through a wire to a customer, then immediately gets the electricity back through another wire, then (this is the brilliant part) sends it right back to the customer again. This means that an electric company can sell a customer the same bath of electricity thousands of times a day and never get caught, since very few customers take the time to examine their electricity closely. In fact, the last year in witch any new electricity was generated in the United States was 1937. the electric companies have been merely reselling it ever since. Which is why they have so much free time to apply for rate increases. Today thanks to men like Edison and Franklin, and frogs like Galvani's, we receive almost unlimited benefits from electricity. For example, in the past decade, scientists have perfected the laser, an electronic appliance that emits a beam of light so powerful that it can vaporize a bulldozer 20,000 yards away, yet so precise that doctors can use it to perform delicat eoperations the human eyeball...provided they remember to change the power setting from 'Vaporize Bulldozer' to 'Delicate'.

Compliments from ZS6UY



Birthdays for September

3rd Cliff ZS6BJU & Simone ZS6SIM'S Anniversary
5th Ron ZS6BHH
8th Thelma xyl of Wally ZS6WAL
13th Nic ZR6AEZ : John ZS6MUR
17th Chris ZR6TAA
21st Alan ZS6BIK :
Rina (xyl of Gus ZR6GRP)
Michelle (daughter of Pete ZS6BIA)
24th Marie (daughter of Gus ZS6AXQ)
25th Kotie (xyl of Vincent ZS6AQG)
26th Francois (son of Abe ZS6MX)
Lappies ZR6AVJ