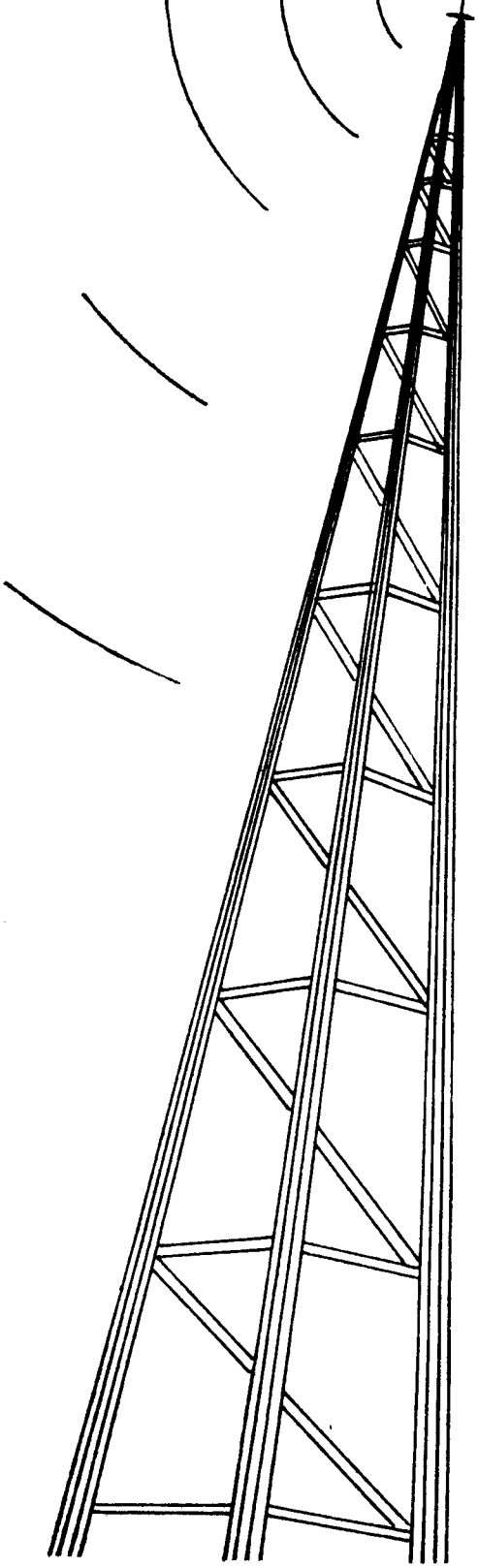
QSX PE



ZS2PE

FREQUENCIES:

Bulletin	3640 Khz
	7102 Khz
National Call	145.5 Mhz
P.E. Repeater	145.05/65
Grahamstown	145.15/75
Lady's Slipper	145.10/70

Port Elizabeth Branch of the South African Radio League

P.O.Box 462, Port Elizabeth. 6000.

PORT ELIZABETH BRANCH.

			Telephone: Home:	Business
CHAIRMAN	Dick	ZS2RS	322111	544574
VICE CHAIRMAN	Brian	ZS2AB	303498	21173
SECRETARY	Marge	ZS2OB	303498	
TREASURER	Frank	ZS2CY	511259	
MEMBERS	Colin	ZS2AO	312471	29148
	Fred	ZR2DQ	31419 (0422)	

****

THE NEXT MEETING OF THE PORT ELIZABETH BRANCH OF THE S.A.R.L. WILL TAKE PLACE AT 8 P.M. ON FRIDAY 16th OCTOBER, 1981 AT YMCA, HAVELOCK [illegible], PORT ELIZABETH.

****

Another year has gone and 1981/82 lies before us, rather like an unknown and deep ravine, but all things being equal, and with a bit of help from our friends - YOU - the Committee will try to cross that ravine without too much effort.
The help that is needed is simple, easy and cheap. The name of the game is PARTICIPATION, being interested in your hobby, Branch affairs, attending meetings and any social gatherings or work parties and feedback on all spheres of activity.
Ever since writing became a means of mass communication, editors have had to rack their brains what to print and where to get it. Newsletter editors also run out of copy and have to rely on other Branch newsletters. Surely in a Branch this size, with such knowledgeable and well-travelled members, we should have no trouble.
How about it?

****

SINCERE APOLOGIES FOR THE LATE ARRIVAL OF YOUR COPY OF QSX-PE LAST MONTH - DUE ENTIRELY TO MISHANDLING AT THE POST OFFICE. THE COPIES WERE POSTED THREE DAYS BEFORE THE A.G.M BUT WERE ONLY DATESTAMPED THE MONDAY AFTER. WE FEEL SURE THIS IS THE REASON FOR THE ATTENDANCE AT THE MEETING. A PITY, BECAUSE A GOOD TIME WAS HAD BY ALL. PLEASE DO TRY TO REMEMBER THAT THE BRANCH MEETING IS HELD ON THE THIRD FRIDAY OF EVERY MONTH.

****

NEWS

WELCOME this month to two new members, ZS2HE F.C. Roberts of P.E. and Daniel van Gass of Knysna. May you have many happy years with the Branch and League.

BON VOYAGE once again to our two intrepid travellers, Cyril ZS2KX and Bette ZS2LO who will soon be setting out for a trip to the Far East. Sayonara and enjoy yourselves.

CONGRATULATIONS To Sel ZS6AXO ex ZS2SS for his fine achievement in winning the Branch VHF Trophy for his work and DX on 6 metres. (See back page)

WHITE HOUSE VISITORS Donald ZR2BW is laid up in hospital and can be heard on 2 metres often. We are glad to hear that Willem, the junior of Louis ZS2KT is on the mend again and that the skin grafts are taking well. Andy ZS1ME and xyl Teresa were both laid low with flu but are out and about again.

HAPPY HOLIDAY to Gus ZS2MC and Shirley who will be going down to Cape Town for about a week and then taking the Trans-Karroo express to Johannesburg, where they will be staying with Basil Haarhoff, ex ZS2ML. Have a good time both of you.

MINUTES OF THE GENERAL MEETING OF THE PORT ELIZABETH BRANCH OF THE SOUTH AFRICAN RADIO LEAGUE HELD AT THE Y.M.C.A., HAVELOCK STREET, P.E. ON 21st AUGUST, 1981.

The Chairman extended a welcome to all those present and especially Chris Barnes.

PRESENT: 18 members and visitors.

APOLOGIES: ZS2LC, ZS2TJ.

MINUTES: The Minutes of the Meeting held 19th June, 1981, having been published and circulated in QSX-PE were taken as read, proposed by ZS2PS and seconded by ZS2AE.

ARISING: The Chairman said that the social gathering held in place of the July meeting had been very well attended by over 60 people and the atmosphere had been very cordial. We would be able to use the same venue whenever we liked, and it was decided to hold the A.G.M. of the Branch there.

FINANCE: The Treasurer reported that subs were still coming in at a reasonable rate.

CORRES: H.Q. Financial Statements for 31/5/81 and 30/6/81.
Letter from SAAMSAT re conference.
Card of thanks from ZS2AB and ZS2CB.

GENERAL: The Chairman said that with the A.G.M. coming up, it was necessary to have the books audited. Gus ZS2VC was proposed as Honorary Auditor, seconded by ZS2AE.

The Secretary was asked to send the following cards:
Sympathy to Trevor ZS2TJ on the death of his mother.
Sympathy to Fred ZR2DQ on the death of his father.
Get well to Mary Armstrong, xyl of ZS2Z.

With regard to the A.G.M., the Chairman said that he hoped there would be A good turn-out, even from a social point of view. He asked members not to stay away for fear of being elected to the Committee. No one would be forced to do this and a simple 'no' would suffice.

On 14th to 19th September, the film "Eye of the Needle" was being screened at the KinePark and as it involved radio work during World War II, the League had been approached to set up stations at various centres in ZS. The P.E. Branch would be doing this with a display of equipment similar to that used in the film. Various members offered the use of this and the following offered to help man the station:
ZS2RS, ZS2PS, ZS2TJ, ZS2AE, ZS2AB, ZS2CB.
The Chairman said he would telex the P.M.G. for a special callsign ZS2SKT.

It was now necessary that the Town repeater be moved from the Medical Research building and it would be sited on HydePark Flats. ZS2AB would make adjustments and slight modifications prior to doing this.

With regard to the Lady's Slipper repeater, it had been decided to purchase a crystal filter, and Brian ZS2AB had written to the U.S.A. in this regard.

A suggestion came from Peter ZS2PS that repeaters be used only for what they were intended and that it was not necessary for fixed stations in the same town to use repeaters. The Secretary was asked to publish something in QSX to this effect.

TheChairman said that Mike ZS2MJ and June ZS2JJ were on holiday in Canada and they sent best wishes to the Branch members.

There being no further business, the meeting was closed at 8.45p.m. and tea was taken. Thereafter two teams were chosen and a quiz was organised by Brian ZS2AE and Marge ZS2CB. This was well received amid much laughter and scratching of heads as to what we had all forgotten. The result was of no real importance as to which team won. The Chairman thanked the Vice-Chairman and the Secretary for handling the Quiz.

sgd:
R.W. Schönborn ZS2RS
Chairman

sgd:
M.T. Weller ZS2CB
Secretary

technical

CARE AND MAINTENANCE OF NICAD BATTERIES.

Part 3 - Damage.

With Acknowledgements to Peter ZS5DN and Durban Branch Newsletter.

When a NiCad battery is discharged to a lower potential than what may be known as the safe point of approx. 1,0 V per cell, one cell may well have been more depleted than the others. If discharge is persisted in, the weakened cell may develop reversal of polarity and it will then act as a resistance in the battery to oppose the main voltage.

During reversal, oxygen is generated at the cadmium plate and hydrogen at the nickel electrode. A slow and partial recombination of hydrogen takes place, causing high pressure blowing off at the vents. Electrolyte is lost, cell capacity falls, and the cell becomes useless and must be discarded.

Cells tend to be conditioned by partial charge and discharge cycles, with their capacity becoming only a little more than was exhibited in the corresponding partial discharge. Conditioned cells may be cured by discharging them to the end point of 1,0 V per cell, and then recharging them. This is better done twice at C/5 charge and C/2 discharge. The cell should then be normal. The conditioned effect is commonly known as "memory".

Blowing off electrolyte due to pressure exceeding 700 to 2 000 kPa may be caused by too high a charging rate, or by operating the cells in too high an ambient temperature. Frequently the excessive charging rate may be due to charger failure. Chargers should be designed on a fail safe basis. Continuous overcharging will modify the discharge curve by depressing the latter portion of it. Normalization of the charge curve may be accomplished by giving the cells two cycles of discharging and charging in the same way as conditioned cells are cured.

To summarise: There are three types of cell failure: firstly temporary and curable, secondly reversal of polarity and thirdly, other damage. In the latter cases cells must be discarded, but in the former, deep cycling is the remedial measure.

Charging should be done by the constant current method, and preferably timed and programmed. Trickle overcharging is permissible at the 20 h rate. Discharge may be deemed to have taken place at the end point of 1,0V per cell. From Fig 1 (QSX July 1981) it may be seen that the percentage charge capacitance remaining when the voltage is 1,0 is very small and the cell will literally be working one minute and discharged the next. Discharge should not be complete, as cell damage may take place.

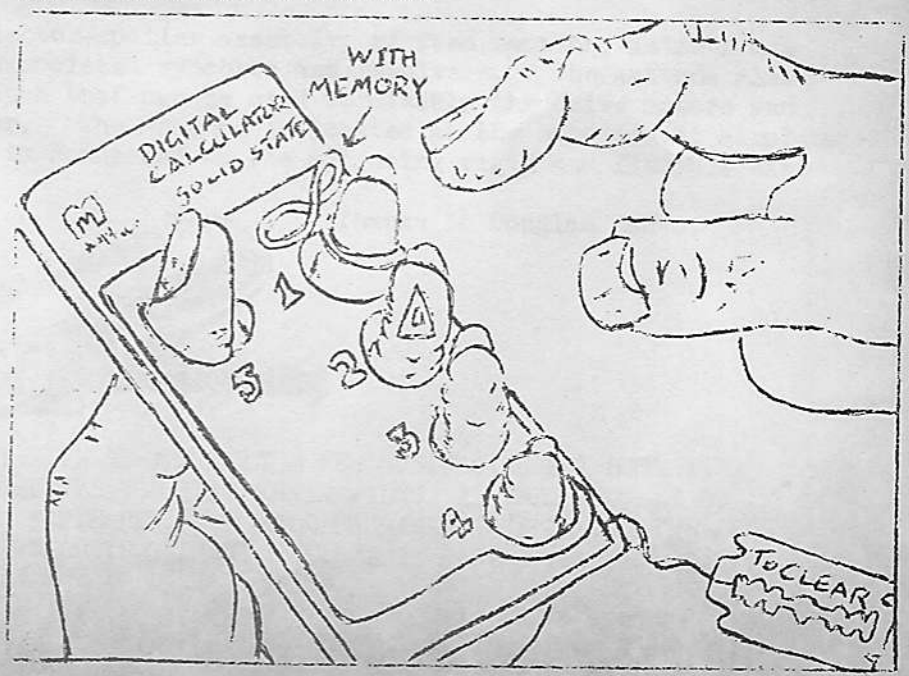
Cells may be stored in a charged or a discharged state.
(Next month: Preventive maintenance.)

Clarke's third law

Any sufficiently advanced technology is indistinguishable from magic.

Girls are strange creatures. They wear slacks to look like boys and see-through blouses to prove that they are not.

****



R A D A R.

WEATHER RADAR SYSTEM:

The weather radar system presents the pilots with an accurate and continuous picture of weather conditions ahead of the aircraft. This presentation of weather conditions in terms of range and asimuth enables course changes to be made to avoid turbulent areas. In addition to weather mapping, the system provides for ground mapping, terrain avoidance and self test.

Weather mapping is based on the fact that water particles present in the air, as rainfall or a cloud, will reflect a radar beam in direct relation to the density or concentration of the moisture. During the normal mode of operation, the receiver translates echo returns from these moisture concentrations into a picture on the radar indicator where they appear as bright and lighted areas. During the iso-echo contour mode of operation, the areas of heaviest rainfall or storm centres are shown as black spots in the lighted areas on the indicator.

The weather radar system consists of two receiver-transmitters, an indicator, a control panel, waveguide, waveguide rotary switch and an antenna. The system has an operating range of 150 of 180 nautical miles depending on the indicator installed.

Each receiver-transmitter supplies the pulses of microwave energy that are transmitted by the antenna.

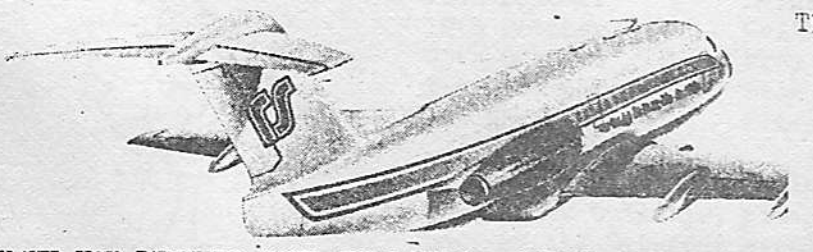
The power output pulses from the magnetron oscillator are of 2,5 microseconds duration and have a pulse repetition rate of 400 plus/minus 20 HZ. Peak output power of the transmitter is 50 kilowatts at a frequency of 9375 (plus/minus 30) MHz in X-band.

The unit consists of synchronizing, video, iso-contour, IF, sensitivity time control, stabilization and test circuitry for the radar system. In addition, it provides filament and plate power for the indicator as well as the pre-amplifier.

The high voltage power supply with the pulse forming network produces a negative 2,5 microsecond pulse each time the thyratron is keyed by a pulse from the emitter follower. The energy pulse is conveyed through the duplexer and waveguide to the antenna. The AFC circuit of the receiver maintains a constant 60 MHz intermediate frequency at the output of the duplexer-mixer. If the transmitter frequency varies from 9375 MHz, the frequency output of the klystron oscillator must continuously follow 60 MHz above the transmitted signal frequency. When the klystron oscillator produces a signal that, when mixed in the duplexer-mixer with the received signal is at 60 MHz, the phantastron stops sweeping and the AFC locks on to the proper signal. The T-R tube fires during transmission forming a short to protect the receiver diodes from damage and re-opens during the receive period. The resultant 60 MHz IF is processed through the 60MHz IF preamplifier. Synchronized blanking pulses turn off the preamplifier during transmission time to protect the receiver circuits.

The Antenna consists of a reflector-spoiler assembly, rf feed section, azimuth and elevation drive systems, and associated synchros and resolvers. The antenna also has an EL switch and an AZ switch that can be used to disable the drive motors and a ferrite rotator and degausser. The antenna is located at the nose of the airplane inside the nose radome. It is connected to the R/T using rigid and flexible waveguide.

Thanks to Douglas ZR6WO.



HAVE YOU RENEWED YOUR SUBS YET? THERE ARE ONLY A FEW OUSTANDING BUT HAVE YOU REALISED THAT IF HEADQUARTERS DELETES YOU FROM THEIR FILES, AS THEY USUALLY DO IF YOU FAIL TO RENEW BY THE END OF SEPTEMBER, YOU WILL PROBABLY HAVE TO PAY THE NEW ENTRANCE FEE OF R10? SAVE YOURSELF THAT LITTLE EXTRA, OR PLEASE LET THE SECRETARY KNOW WHAT YOU INTEND TO DO. THANKS.

BRANCH TROPHIES.

In addition to the VHF Trophy, the two following NEW trophies will be awarded at the 1982 A.G.M. of the Branch.

ZS2AB HOME CONSTRUCTORS TROPHY. Donated by Brian Weller, ZS2AB. September 1981.
This Trophy is made available to the P.E. Branch, to be awarded on an annual basis to the Branch member, who in the opinion of the Committee serving at the time, has constructed the best piece of radio or associated equipment during the Branch year. The Trophy takes the form of an engraved silver cup, which shall be awarded to the winner at each Branch A.G.M., together with a printed certificate. The cup will remain the property of the Branch and must be returned to the Branch just prior to the A.G.M. The accompanying certificate will remain the members property once awarded. The Committee will ask members interested in qualifying for the trophy to bring their respective projects to a meeting for judging, or in the case of a piece of equipment or installation not being readily transportable, the Committee will visit the site of such equipment for judging purposes.
The unit submitted for consideration may form part of a complete system employing other items of commercially made equipment, but units constructed from commercially available kits shall not be eligible for the award. Outer cabinets housing the constructed equipment may be of commercial origin. But more favourable consideration will be given to units which are completely constructed in the home workshop. While there is no restriction on the type or purpose of the equipment submitted for consideration, preference is to be given to items relating mainly to the more specialised modes of communication available to the amateur i.e. RTTY, SSTV, FAX, computer equipment, etc. Aspects of construction which will be taken into account will be decided by the judges i.e. neatness of layout, finish and wiring etc., and the degree of electronic sophistication of the equipment will not necessarily determine the winner. This tropy is made available in the hope that it will spur some of our members on in the field of home construction, an aspect of Ham radio which seems to be sadly becoming a thing of the past.

****

ZS2OB DX TROPHY. Donated by Marge Weller ZS2OB. September 1981.
This trophy is made available to the Port Elizabeth Branch, to be awarded on an annual basis to the Branch member, who in the opinion of the Committee serving at the time, has established two-way contact with the greatest number of DX stations on the HF bands during the Branch year. The trophy takes the form of an engraved silver cup which shall be awarded to the winner at each Branch A.G.M. together with a printed certificate. The cup will remain the property of the Branch and must be returned to the Branch just prior to the A.G.M. The certificate will remain the members property. The winner will be decided by the Committee after scrutiny of the logbooks of those who wish to qualify for the award. QSL cards need not be produced. The certificate will carry certain endorsements i.e. cw only, SSB only, RTTY only, or any other mode only, or mixed. All the available HF bands from 1,8 to 30 mHZ may be used, but special endorsements will be made should the winner have used only the bands below 10 mHZ. Contacts made during various HF contests are permissible.

****

BULLETIN ROSTER.

11th October	Marge ZS2OB
18th October	Colin ZS2AO
25th October	Fred ZR2DQ
1st November	Dick ZS2RS
8th November	Brian ZS2AB

If you have any information or items of interest for the Sunday bulletin, please let the reader have the news by the Saturday evening. This does make the task of the reader much easier - it makes the bulletin much more interesting to hear the snippets of personal news. The phone numbers appear on the first page. Thanks a lot.

KENWOOD

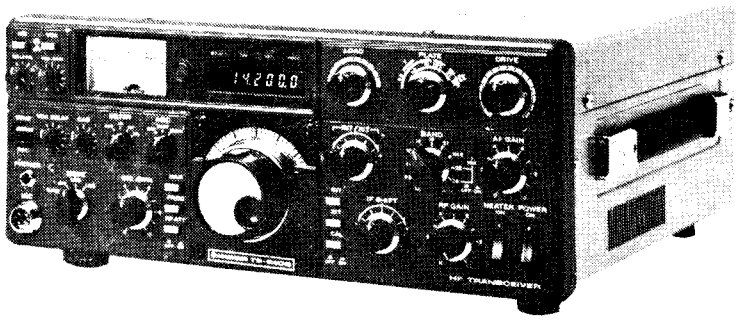
THE TR-9500 UHF ALL MODE TRANSCEIVER TO MATCH YOUR TR-9000

This Rig is identical in size to the TR-9000 and has the same outstanding features that has made the TR-9000 the biggest selling 2M Rig in the world and which turned FM'ers into SSB'ers!

TR-9500

ANNOUNCING KENWOOD'S SUCCESSOR TO THE SUCCESSFUL TS-520 RANGE

The all new TS-530S combines the very attractive styling of the TS-830S with the economy of the now famous TS-520



THE ECONOMICAL H.F. TRANSCEIVER

TS-530 S

We Guarantee Quality and Performance

SUMMIT DISTRIBUTORS

PROP: R.W. SCHONBOEN

25/27 Reed Street
PORT ELIZABETH
P.O. Box 500
6000

Telephone 54-4545
Telegraphic Address: "SUMMIT"