

Q S X
P E

*Port Elizabeth Branch of the
South African Radio League*

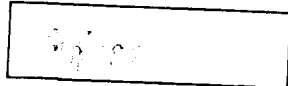
P.O. Box 462, Port Elizabeth. 6000.



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

ZS2PE

Bulletin: Sunday 08h40
HF: 40m – 7098 KHz
VHF: FM-145,700 MHz



I N V I T A T I O N .

Members and their families are cordially invited to attend the Annual General Meeting of the Port Elizabeth Branch to be held at 3.30p.m. on Saturday 21st September, 1985 at the Scout Hall, Cnr. Van Plettenberg Street and Ritchie Crescent, Kabega Park. The meeting will be followed by a Social Get-together and Braai. Full details are after the Chairman's Report.

ACM-AJV

THE ANNUAL GENERAL MEETING OF THE PORT ELIZABETH BRANCH OF THE SOUTH AFRICAN RADIO LEAGUE WILL BE HELD IN THE SCOUT HALL, VAN PLETTENBERG STREET, KABEGA PARK AT 3.30P.M. ON SATURDAY 21st SEPTEMBER, 1985.

DIE ALGEMENE JAARVERGADERING VAN TAK PORT ELIZABETH VAN DIE SUID-AFRIKAANSE RADIOLIGA SAL IN DIE SCOUTSAAL, VAN PLETTENBERGSTRAAT, KABEGA PARK ON 3.30N.M. OP SATERDAG 21 SEPTEMBER 1985, PLAASVIND.

The Agenda is as follows:

1. Welcome and Apologies
2. Minutes of Annual General Meeting September, 1984.
3. Adoption of Chairman's Report.
4. Adoption of Financial Statement.
5. Election of Office Bearers.
6. General.

Die Agenda is soos volg:

1. Welkom en Verontskuldigings.
2. Notule van Algemene Jaarvergadering September 1984.
3. Voorsitter se Jaarverslag.
4. Finansiëleberig.
5. Verkiësing van Komitee.
6. Algemeen.

NEW SPECIAL OFFER TO MEMBERS.

DO YOU OWN EITHER A VHS OR BETA VIDEO RECORDER? IF YOU DO, YOU CAN TAKE ADVANTAGE OF OUR MODIFIED MONTHLY SPECIAL OFFER. OUR VERY GENEROUS DONOR HAS OFFERED US, EACH MONTH, 2 TOP QUALITY VHS OR BETA THREE-HOUR BLANK VIDEO TAPES. THESE ARE SELLING AT THE ALL-TIME LOW PRICE OF R15 EACH. FUNDS GO TOWARDS THE PRODUCTION OF QSX-PE. CONTACT MARGE ZS208 FOR THESE TAPES. FIRST COME, FIRST SERVED.

THIS and THAT

WELCOME On behalf of the Committee and members, we would like to extend a very warm welcome to the following new members: Ron Harvey ZS2RU, Jack Kirsten ZS4KN, Bernie Tyler ZS4CW, Grobbie Grobbelaar ZS2JO and Werner Ahlers ZR2CY and also to Colin Robertson ZR2DU, Owen Wheeler ZR2HZ and Allan Bowles ZR2BL who are new Social members and wish you all a long and happy association with the Branch.

THANK YOU A letter has been received from the Algoa Flying Club who organised the recent Settlers Rally thanking all those who helped out with communications that day. A special thanks to Brian ZS2AB who spent many hours arranging with the hams; to Lionel ZS2DD and Robbie ZS2RB as Base stations; to Dudley ZS2AW for his part in arranging the Grahamstown side; especially to Allan ZS2Z and Jack ZS2SM and Beavan ZS2RL who are not members of the Branch yet gave of their time and efforts unstintingly; to all those who travelled long distances and to all the numerous unnamed operators without whom it would have all been a flop! Very many thanks from the Branch also.

CONGRATS are extended to Sakkie ZS2ID and his XYL in Uitenhage on becoming grandparents for the first time and may the baby bring you all much joy. Also to Langley ZS2LW for getting his phone licence and to Cor ZR2CG for passing the CW test and becoming ZS2CG. Well done both of you.



JAMBOREE OF THE AIR. This takes place at Gilsands Scout Camp on Saturday 19th and Sunday 20th October. The organisation of our stations is being done at the moment with great plans afoot and plenty of volunteer operators will be welcomed. Final details in October QSX-PE.

CHILDREN'S CHRISTMAS TREE and **BRANCH CHRISTMAS PARTY** - sometime in December - full details later.

THE ELECTRONIC MAILBOX. The Mailbox is on the air experimentally at the moment on a frequency of 145,350 but as soon as all the gremlins have been ironed out it will be settling finally on 144,600. It will however be off the air for a period of two weeks from 22nd September to 6th October as there will be no one in attendance should anyone go wrong... go wrong...go wrong....

THANKS FROM THE EDITOR.

I would like to express my thanks to those who have contributed in any way with articles for QSX-PE: Colin ZS2AO for lots of little bits and pieces; Robbie ZS2RB for funnies; Clive ZS2RT also for funnies; Percy ZS2RM for dx and propagation reports; Trevor ZS2AE also for some funnies; to Mike Bosch ZS2FM for his articles and lastly but not leastly to Brian ZS2AB for his proof-reading and sometimes typing! If I have missed anyone out, my apologies, and I would dearly love to be able to have a much longer list to thank next year. How about it?



Instant Printing

9 ST. PATRICK'S ROAD
PORT ELIZABETH
6001

TELEPHONE 22614



FOR ALL YOUR COMMERCIAL PRINTING REQUIREMENTS

TRY US FOR YOUR QSL CARDS!

MINUTES OF THE ANNUAL GENERAL MEETING OF THE PORT ELIZABETH BRANCH OF THE SOUTH AFRICAN RADIO LEAGUE, HELD ON SATURDAY 22ND SEPTEMBER, 1984 AT THE ALOES SCOUT HALL, WALMER, PORT ELIZABETH.

PRESENT: 71 members and families.

APOLOGIES:ZS2LO, ZS2KX, ZS2MC, ZR2EY.

The Chairman extended a warm welcome to everyone, especially to the visitors. He said it was unfortunate that Cyril ZX2KX and xyl Bette ZS2LO were ill and unable to attend, especially as it was Cyril who usually took the Chair during the election of the new Committee.

MINUTES: The Minutes of the Annual General Meeting held 17th September 1983, having been published and circulated in QSX-PE were taken as read, proposed by Brian ZS2AB and seconded by Lionel ZS2DD.

ARISING: -

CHAIRMAN'S REPORT: Dick ZS2RS said that his report had been completely covered in QSX and said that although we were not living in a fool's paradise, he could say that the Branch had had a good year. The AGM '84 had gone off very well and had put Port Elizabeth back on the map. JOTA, CQ Houkoers, the Hobbies Fair improve every year and thanks were due to the Committee and members who helped. The Branch had also provided communications for several Navex rallies. Dick said that he was of the opinion that QSX-PE compared very favourably with other Branch newsletters and thanks were extended to Marge ZS2OB, the Editor, who was ably assisted by Brian ZS2AB and he hoped that everybody read it! He also extended thanks to the Committee for all their help during the past year and thanked members for their support and help during the past nine years he had been in the Chair and he hoped that the new Chairman would receive the support he had. A vote of thanks was proposed by Brian ZS2AB and seconded by Lynn ZR2FE.

FINANCIAL REPORT: The Treasurer said that the figures were somewhat inflated due to the fact that the AGM for the League had been held here during the year and much fund-raising had taken place. Many thanks were due to those who had contributed so generously. He hoped that members had read through the report. He explained about the crystal filters which had been purchased. The report was accepted after a query raised by Lionel ZS2DD had been explained and was proposed by Gordon ZS2GK and seconded by Attie ZR2DY.

ELECTION OF OFFICE BEARERS: Dick said that in the absence of Cyril ZS2KX who usually took the Chair at this stage, and in view of the fact that he was not standing for re-election, he had pleasure in formally calling for nominations for the position of Chairman which went as follows:

<u>NOMINEE:</u>	<u>PROPOSER:</u>	<u>SECONDER:</u>
ZS2OB	ZS2RM	Declined with thanks.
ZS2AB	ZS2GK	ZS2TJ - accepted.
ZS2AE	ZS2RT	ZS2DD - declined.

Dick said that he therefore had great pleasure in declaring Brian ZS2AB elected to the position of Chairman. Brian accepted the Chair saying that he would have a hard time in following Dick and extended a vote of thanks to Dick for his hard work and dedication in the past. This was unanimously passed with a round of applause.

SAY YOU SAW IT IN **QSX-PE**

Brian then called for nominations for the new Committee, stating that, although we had had 8 members for the last year, in view of the preparations for AGM '84, perhaps only six would be required this year. He asked if anyone of the old Committee was not prepared to stand, and Colin ZS2AO said he would be standing down. Nominations then went as follows:

<u>NOMINEE:</u>	<u>PROPOSER:</u>	<u>SECONDER:</u>
ZS2RS (Vice)	ZS2AE	ZS2RM
ZS2AE	ZS2RS	ZS2RT
ZS2OB	ZS2RM	ZS2RE
ZS2PJ	ZS2GK	Bill Hodges
ZS2GK	ZS2OB	ZS2RS
ZS2DD	ZS2OB	Declined.

ZS2RS then proposed that nominations cease and this was seconded by ZS2RM.

Brian then welcomed all to the Committee and especially Gordon ZS2GK who was a new member and wished them all a successful and happy year.

GENERAL: The ZS2OB DX Trophy was then presented to Percy Buckley ZS2RM by Marge ZS2OB. Brian said that unfortunately no one had entered their names or projects for the ZS2AB Construction Trophy and hoped they would next year.

There being no further business, the meeting was closed and members and their families had a very enjoyable social get-together and spit-braai.

sgd:
R.W. Schonborn ZS2RS
Chairman

sgd:
M.T. Weller ZS2OB
Secretary.

DO NOT ADJUST YOUR SET.

The U.K. Government is to start charging for investigating complaints about interference on domestic TV and radio sets. This follows the takeover of the service by the Department of Trade and Industry from British Telecom which ran the service free of charge until it was privatised recently.

The department is also slashing the number of engineers employed by the service known as the Radio Investigation Service (RIS) from 340 to 240. The remaining engineers will spend much more time hunting radio and TV pirates and much less seeking out interference.

In 1979, 35 500 people complained about interference by filling in a form available from local post offices. In 1982 the number rose to 73 300 because of the large number of illegal CB radios which work on the AM bands used for TV transmissions. The next year when CB buffs were able to use legal FM sets, the number of complaints fell to 55 800.

Investigations take an average of 5½ hours and cost £95 each. In 1983, the RIS spent £7.1 million on trying to track down domestic interference and only £0.8 million on hunting pirates. Last year, the RIS made 48 raids on pirates. Already this year it has notched up 143.

The department says that much of the time spent on pursuing private complaints has been wasted. In three out of four cases the cause of poor TV pictures was a fault on the receiver or an inadequate aerial. From now on the RIS is charging £21 to visit anyone who complains of interference. From January 1987 the RIS will make visits only if the viewer has obtained a written report from an electronics dealer. From now on the names of complainers will also be passed on to the National TV Licence and Record office to check whether they have a TV licence.

(New Scientist) Thanks to Colin ZS2AO.

CHAIRMAN'S REPORT

After the tremendous amount of work required prior to the 1984 AGM I was of the opinion that 1985 would be a rather quiet year, but this has not really been the case. The 1984 JOTA was very well arranged and far better supported by the scouting fraternity than it has been in many years, and the SSTV equipment in use at the station went a long way towards improving interest. The presentation made to Dick ZS2RS by the scouts was a very pleasant surprise, and shows that our annual efforts are appreciated.

The Branch Christmas parties went off very well as they usually do, and our thanks go to all the ladies who attended to the catering. These and our other social functions provide an ideal opportunity for members, wives and invited guests to get together and chew the rag without any specific ham activities being undertaken.

The re-introduction of DF hunting during the year provided some exercise for the participants, but the weather was unkind, and we will hopefully stage some further hunts nearer summer.

The long-awaited installation of the Cockscomb 2-metre repeater has been well documented in QSX and was the culmination of a sterling effort on the part of all involved. This effort has not yet ceased, and arrangements are being made to revisit the site to repair the broken antenna.

The RTTY Mailbox project is progressing, and again, has been well covered in QSX, but I take another opportunity to extend sincere thanks to Norman ZS2RI of Computer Park for his fine gesture in donating the Apple 11 computer, to Chris ZS6CCM for sending us the software, to Herman Hertel for his assistance with software, and to Barry ZS2DT for donating the terminal unit.

We invested nearly R100 in two DX Callbooks to provide another service to members, but the demand for information from these has been rather small, perhaps not surprising in view of present propagation conditions. At the price, we will have to be content with the 1985 books for some years. Speaking of books, the Branch library project got off to a good start with very generous donations of books by members and others, and arrangements have been finalised regarding the housing of the library at the scout hall. Dick ZS2RS donated a double wardrobe unit to accommodate the books which number about 600.

The acquisition of the present meeting venue, thanks to Ron ZS2MF, was very fortunate, and has enabled us to move the meetings closer to the majority of members, and I feel sure that this has contributed greatly to the present excellent attendance at our meetings.

QXSX-PE continues to be produced spot on time every month despite sometimes high odds, by Marge ZS2OB who has received a large number of contributions from members, which is very pleasing, but who has, nonetheless, to put in a great deal of hard work trying to ensure that relevant items are not omitted. One disturbing aspect noticed over the year is the large number of items from QXSX-PE which appear in other branch newsletters without so much as a mention of the source, let alone the courtesy of a thanks. A while later the same article appears in another newsletter with acknowledgement to the branch that pinched it from us in the first place!!!

We are very flattered that branches should see fit to reproduce our articles, but we would appreciate an acknowledgement. One unfortunate aspect of the production of QXSX-PE over this past year has been the expense involved. This makes us realise just how large a contribution has been made over the years by Dick and his saltmine operations who have provided sponsorship for QXSX for a long time. We are however, extremely fortunate insofar as printing is concerned, in that our faithful printers, Robin and Sylvia Dunstan of Instant Printing very kindly continue to produce an excellent job at less than half the cost of current printing rates. Without this support we would have had to look seriously at some very inferior and tedious process of printing which would not allow us to produce what I believe to be one of the best-produced newsletters in the League.

The introduction of advertising in QSX this year has helped greatly towards offsetting the production costs, not to mention the generous donation of video tapes, proceeds from the sale of which go towards QSX as well, and our very sincere thanks go to our advertisers and donors, as well as those members who procured the adverts.

Another aspect of our Branch operations which I find most gratifying is the continued support of our members despite the very substantial increase in subscriptions this year. As most of you know, this Branch has a very large percentage of country members who continue to support us even though they are not able to attend meetings and social functions. There are unfortunately, some who have not renewed, a number as a result of moves to new areas where they feel that they would like to join the local gang, and others who, possibly through non-activity in ham radio feel that membership is not an economical proposition. These motives are quite understandable in the present economic climate, and I extend my sincere thanks to all those who have supported us in the past, and hope that in time to come you may join us again. A number of local hams have joined forces with us this year, and to all of you I extend a very warm welcome.

Last month the Branch was involved in what must surely be the most extensive air navigation exercise held in this area in many years, and we provided communications for the Algoa Flying Club from no less than 16 field stations, with Lionel ZS2DD acting as base-station handling 4 channels of VHF and HF, and Robbie ZS2RB stationed at the club.

The Grahamstown area was very ably manned by hams from that area, organised by Dudley ZS2AW, who had help, as did we, from non-members of the Branch as well, and my thanks go to all who were involved in any way whatsoever. As the contents of a letter received from the AFC, which appears elsewhere in this issue, indicate, our help in providing yet another service to the public is held in high regard.

Last, but certainly not least, I express my sincerest thanks to a most willing and able Committee, the members of which have done much to make my first experience in the "hot-seat" enjoyable and without whose support, our achievements this year could not have progressed as smoothly as they did.

Best 73.

Brian
Brian ZS2AB.

ANNUAL GENERAL MEETING - BRAAI.

This will take place after the business of the meeting is concluded and all members and their families are invited. The Branch will provide meat and bread rolls and the wives (ever-willing) of the ever-willing husbands will be asked to provide some salads. Some wine will be provided but any other liquid refreshments should be brought along as well as something to drink it out of! There will be paper plates available and serviettes, but if you want to be a little more posh, then you may bring your own crockery and cutlery!

VERY IMPORTANT: IF YOU INTEND COMING ALONG, PLEASE LET BRIAN OR MARGE KNOW AS SOON AS POSSIBLE SO THAT FINAL CATERING ARRANGEMENTS CAN BE MADE. PHONE NUMBER 303498.

What is black and blue and floats upside down in the Irish Sea?
An Englishman that tells Irish jokes.

A pilot is a person who is so bad at driving that he takes to the air to avoid traffic.

A Flight Attendant is a cabin crewmember who is required to make a passenger happy after every department in the airline has made him angry.

Thanks to Robbie ZS2RB. I.F.A. News Bulletin).

SOUTH AFRICAN RADIO LEAGUE -PORT ELIZABETH BRANCH.

STATEMENT OF INCOME AND EXPENDITURE FOR THE PERIOD 1 July 1984 to 30 June 1985.

INCOME

Opening Balances 1 July 1984:		
Ordinary savings Acc.	1080.90	
Special savings Acc.	534.49	
Transmission Acc.	272.23	
AGM Fund Acc.	688.14	
Fixed Deposits	<u>2000.00</u>	4575.76
H.Q. share of subs & entr. fee	1569.00	
Branch share of subs	636.00	
Social Member subs.	38.00	
Interest (all accounts and fixed depts.)	473.79	
Sale of books, QSL stickers, etc	194.50	
Advertisements in QSX-PE	15.00	
Sale of video tapes	60.00	
Christmas party income	146.50	
Branch meeting refreshments	82.63	
Subs overpaid (to be held over to 1985/86)	20.00	
Overseas postage (ZS2DX)	10.00	

EXPENDITURE.

H.Q. share of subs & ent.fees	1542.00
H.Q. share of subs paid by Branch	23.00
Purchase of DX Callbooks	94.39
Books, logbooks, QSL stickers	308.25
Electricity (Ladies Slipper)	175.25
Printing (QXS-PE)	370.00
Printing (Labels, tickets, etc)	52.43
Typewriter modifications	93.50
Manufacture of sign "Amateur Radio"	176.00
Hire of minibus (AGM)	100.00
Insurance (Hobbies Fair)	40.40
Catering (AGM)	200.00
Catering (Christmas Party)	305.00
P.O.Box rental (Box 462)	8.00
Licence ZS2PE	10.00
Hire of classroom (Technical classes)	10.00
Hire of scout hall (meetings)	60.00
Delegates expenses (1985 AGM)	474.00
Delegates Pool expenses (1984 AGM)	263.18
Helicopter hire (Cockscomb)	250.00
Stationery	171.57
Repeater and Beacon Licences	100.00
Postage (QXS and misc.)	143.68
Subs refund to ZS2PA	10.00
Dishonoured Cheque (S.Schoeman)	30.00
Bank Charges	<u>9.00</u>
	5019.65

Closing Balances 30 June 1985:		
Ordinary savings Acc.	233.75	
Special savings Acc.	566.77	
Transmission Acc.	1.01	
AGM Fund Acc. (closed)	0.00	
Fixed Deposits	<u>2000.00</u>	2801.53
		<u>7821.18</u>

R 7821.18

Audited and certified correct.

P.J. Smith ZS2PJ (Hon. Treasurer)

Decinty
D.W.O. Winter ZS2MC (Hon. Auditor)

SATELLITE COMMUNICATIONS.

It is less than 110 years since Alexander Graham Bell, a Scotsman, sent the first telephone message, in Philadelphia, on March 10 1876, yet in this age of Concordes there is an unprecedented demand for instant inter-continental communications by telephone, telex, etc. In the decade since the first telecommunications satellite became operational, inter-continental telephone traffic has increased by a factor of 17. In addition live television programmes from other continents are regularly brought into our homes. Satellite communications are virtually essential for this latter service, which has enabled us to see epoch-making live events such as men walking on the moon.

Although a single telephone conversation requires a relatively narrow bandwidth, about 3,4KHz, the bandwidth required to carry the thousands of simultaneous telephone conversations taking place at any moment between say, the UK and the USA, is quite large. One also requires a wide bandwidth to carry a high-quality television programme.

Short wave radio signals can be reflected around the earth as they bounce between the ionised layers in the upper atmosphere and the surface of the earth or sea. Relatively low radio frequencies can be used to carry a single speech channel, but for a wide bandwidth signal, one must employ ultra-high frequencies or microwave frequencies. In addition, the use of such UHF's enables a greatly improved signal-to-noise ratio to be obtained with reliability. However, UHF and the microwave frequencies are not reflected back to earth by the ionosphere but penetrate it and are lost into space.

As UHF's are not reflected around the earth, they cannot be generally used for signalling unless the transmitting and receiving aerials are almost in a line-of-sight. The Post Office use microwave aerials in reflecting dishes on their towers to carry many telephone conversations. The beam can travel some tens of miles between the towers, but as the distance increases the height of the towers must be increased to maintain the line-of-sight condition. In theory one could convey a signal across the Atlantic by using a large number of such towers floating on the ocean and spaced at distances of a few tens of miles from one another. Even more impossible would be the task of constructing a single tower at the centre of the Atlantic which is high enough to be visible from both the USA and the UK. Such a tower would be nearly 500 miles in height!

The practical answer to a "communications switchboard in the sky" involves the use of a satellite which receives a signal, amplifies it and sends it to another point on earth. This type of link offers a very effective alternative to a sub-oceanic telephone cable. Although satellites are used for special communication purposes, such as the Moscow-New York 'hot-line' about 8% per cent of their use is for ordinary intercontinental telephone work involving business men and private people.

HISTORY.

A telephone service with France was opened as long ago as 1896 using a copper conductor rather than a coaxial system, but it was not until January 1927 that the trans-Atlantic telephone service was inaugurated using the Rugby 60KHz radio transmitter GBT. The service was extended to India, Rhodesia and Turkey in 1933 and Japan in 1935. The first coaxial submarine cables were brought into operation in 1937 on short runs.

The first trans-Atlantic cable was brought into service in 1956 with 48 speech circuits and gave much better quality and reliability than the earlier radio links. The first trans-Pacific cable was laid in 1963 and sub-oceanic cables have since built up into an international network which is still expanding even in this space age. The TAT-6 trans-Atlantic cable which was completed in 1976 provided 4000 speech circuits.

ECHO SATELLITES.

The era of space communication dawned with the launching of the Echo-1 satellite from Cape Canaveral, Florida on August 12th 1960, inside a 66cm magnesium sphere in the nose of a Delta rocket. About 1000 miles above the earth an explosive charge split open the container and allowed the chemicals inside Echo-1 to vaporise and to inflate this balloon type satellite to a diameter of 100 feet. The aluminised mylar plastic skin reflected both light and radio waves extremely well so that it could be seen by enormous numbers of people as a bright moving object in the sky, even brighter than the Pole star. It may well have been seen by more people than any other man-made object.

Echo-1 circled the earth every two hours, but served only as a passive reflector of the radio waves directed at it. It did not contain any transmitter. It was used to relay the first transcontinental telephone call by satellite made by President Eisenhower from New Jersey to California and to relay various signals across the USA and to Europe. Although it was expected to remain in orbit for a year, it actually completed eight years before it entered the atmosphere off South America and burnt up. A larger passive reflector, Echo-2, followed on January 25th, 1964.

TELSTAR.

Before Echo-2 was launched, however, the American Telephone and Telegraph Company's Telstar-1, the first privately owned satellite, was placed in orbit on July 10 1962. This 170lb satellite had an array of solar cells which converted the energy of the sun into electricity so that Telstar could receive signals, amplify them and re-transmit them. Thus it was a great improvement on the passive satellites.

Telstar 1 provided the first intercontinental television transmissions between the USA and Europe. The more powerful Relay-1 followed on December 13th, 1963, Telstar-2 on May 7th, 1963 and Relay-2 on January 1st 1964. The main disadvantage of all of these satellites was that their period of use was limited to the time that they were above the horizon at both ground stations.

GEOSYNCHRONOUS ORBIT.

Modern communications satellites are launched by powerful rockets which place them at an altitude of 22,300 miles (35 680km). At this particular distance from the earth, a satellite can be made to rotate round the earth once a day at exactly the same rate as that at which the earth rotates beneath it. The satellite therefore remains stationary over a chosen part of the earth's surface remaining in constant radio contact with the appropriate ground stations. Any such satellite can communicate with ground stations over about one-third of the earth's surface.

Satellites which appear stationary at a point above the earth are said to be in "geosynchronous orbit". The first experimental satellites placed in such an orbit were known as the "Syncoms" but it is the Intelsat (International Telecommunications Satellite Organisation) satellites which have provided commercial intercontinental communications.

INTELSAT.

The Intelsat organisation was formed in Washington in 1964 and it aims to provide commercial networks for high reliability international public telecommunications by satellite to all areas of the world on a non-discriminatory basis to all users. There were 14 founder nations, but Intelsat now has 91 member nations. The UK is second only to the USA as a shareholder with 11% of shares. Intelsat owns its own satellites, but the ground stations communicating with these satellites are normally owned by the appropriate authority of the country in which they are situated.

The satellites are launched by the US National Aeronautics and Space Administration (NASA) on a cost re-imbursable basis. The Communications Satellite Corporation (COMSAT) of Washington manages the satellite operations over the whole global area on a cost-plus-fee basis and also operates its own satellites for maritime communication and for operation across the USA. It also represents the USA in Intelsat.

(To be continued)

S A Radio Publications

(Prop: J.L. Krause)

986 Pasteur Chambers
191 Jeppe Street
(Opposite G.P.O.)

Telephone 011-3378472.

P.O. Box 2232
Johannesburg 2000
South Africa

CALLING CQ CALLING CQ CALLING CQ CALLING CQ CALLING CQ CALL

- o 1985 Call Books U S A R48-75
International R47-25
- o 1984 Call Books U S A R35-00 Less 20%
International R34-00 Less 20%

- o 1985 ARRL Handbook R42-30
- o ARRL Antenna Handbook R19-45
- o Satellite Experimenters Handbook R29-50
- o 1982 ARRL Handbook R10-00

- o RSGB Communications Handbook R33-05
- o RSGB VHF/UHF Handbook R30-76

- o NEW! NEW! NEW! NEW! NEW!

UHF Compendium 'English' written and
published in Germany R40-50

The Branch has a catalogue of many more books which could still be available. This catalogue can be consulted at the meeting. An update of books available and prices will be received shortly.

SHOWROOM HOURS.

Monday - Closed Tuesday - 09h30 to 15h30
Wednesday Thursday Friday - 09h30 to 13h30

PRICES DO NOT INCLUDE GST OR POSTAGE.

C O D CHARGES: R2-20 PLUS PARCEL POST CHARGE.



**PETERSEN &
SMITHIES**

THE Engine Rebuilders
Specialists in Veteran car engines.

3 HANCOCK STREET, NORTH END

☎041-543669/0

ASK FOR LEO SMITHIES

HENROSE PRODUCTS (PTY) LTD
(EDMS) BPK

MANUFACTURERS OF PLASTIC BAGS
PRODUCERS OF FRUIT JUICES
"ORANG-U-TANG"
AND "LEKKA LIKS" FROZEN SUCKERS

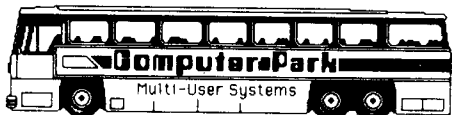
VERVAARDIGERS VAN PLASTIEKSAKKE
VERVAARDIGERS VAN VRUGTE SAPPE
"ORANG-U-TANG" EN
"LEKKA LIKS" VERVRIESTE YSBLOKKE

TEL. 545470

5-7 EDGAR LANE

NORTH END

PORT ELIZABETH, 6001



King Park Centre, Rink Street, Port Elizabeth
Phone: (041) 52-1634

E.P. MUFFLERS

YOUR **Mr. Kloof**
EXHAUST FITTING AND PIPE BENDING
SPECIALISTS.

ALSO:
TOWBARS
BATTERIES
SHOCK
ABSORBERS

MILD STEEL
FULLY
GUARANTEED

STAINLESS
STEEL
LIFETIME
GUARANTEE

54-5420

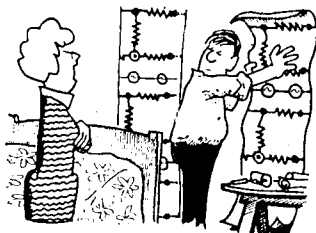
29 EMBASSY STREET, NORTH END, P.E.

Neels Mattheus
tempo
musik

Suppliers of all musical instruments. Sole agents for TECHNICS organs and key-boards.

PRODUCE THIS AD. FOR A SPECIAL
DISCOUNT!

Pick 'n Pay Hypermarket/Hipermark,
Port Elizabeth 6001
Tel.: 30-6264 / 30-6069



"Not on my bedroom wall!"