

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

NOVEMBER 1985

Port Elizabeth Branch

NOTICE OF MONTHLY MEETING

MEMBERS ARE REMINDED THAT THE MONTHLY GENERAL MEETING OF THE PORT ELIZABETH BRANCH WILL BE HELD AT THE SCOUT HALL, CORNER OF RITCHIE CROSSCENT AND VAN PLETTENBERG STREET, KABEGA PARK ON FRIDAY 15th NOVEMBER at 8.15 p.m.
BILL BROWNE ZS2BY WILL BE OUR GUEST SPEAKER.

Committee

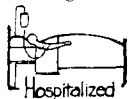
CHAIRMAN:	Brian ZS2AB	303498	VICE CHAIRMAN:	Lionel ZS2DD	321770
SECRETARY:	Marge ZS2OB	303498	TREASURER:	Dick ZS2RS	322111
AWARDS:	Gordon ZS2G	306776	MEMBER	Trevor ZS2AE	321746
QSOX- PE:	ZS2OB	and ZS2AB.			

THIS and THAT

WELCOME On behalf of the Committee and members, we would like to extend a very warm welcome to Pieter Liebenberg ZS2PL of Aston Bay who has recently joined the Branch and also to Jan Ludwick ZS2JU of Kingwilliamstown who had become a Social Member of the Branch and we wish you both a long and happy association with the Branch.

THANK YOU to Werner ZR2CY and Dick ZS2RS for their donation of books to the Branch Library. The Library will be open from half an hour before Branch meetings and during tea break.

CONGRATS Heartiest congratulations to Ron Herman ZR2EP and Sarel Rossouw ZR2EM who recently passed their CW tests, and are awaiting their ZS calls. Well done, and lots of good hamming.



Marge ZS2OB has been in hospital for an operation and was hoping to get out of some work(!) but found that the stay fell between Committee and General Meetings, so no luck!

EXAMS By the time this newsletter reaches members, the November P.M.G.'s exam will be a thing of the past and we hope that the members of our Branch do especially well and good luck to everyone else also.

BULLETIN A suggestion was made at the last monthly meeting that the Sunday morning Branch bulletin be repeated on a Monday evening for those who (a) go to Church at bulletin time on a Sunday morning or (b) prefer to spend a little longer in bed at that time, but who would like to keep up with the affairs of the Branch. The time of transmission would be 8p.m. on a frequency of 3640kHz followed by a ragchew net. If you are interested, PLEASE let us know so that we can give it a trial period. We sure miss those who cannot call in on Sundays and also like to hear the news from your side.



FIELD DAY Operators are needed so that we can make a roster for this competition on Saturday 16th November. If you can help, please let Brian know as soon as possible. Full details will be available at the Branch meeting.

XMAS PARTY The Kiddies Christmas Tree party will take place on Sunday 8th December at the same venue as last year at Butterfield Road. More details later.



PORT ELIZABETH BRANCH COMMITTEE - 1985/86.

l to r: Dick ZS2RS, Gordon ZS2GK, Brian ZS2AB, Marge ZS2OB, Trevor ZS2AE
Lionel ZS2DD.



BRANCH TROPHY WINNERS - A.G.M. 1985.

Colin ZS2A0, Constructors: Percy ZS2RM, DX: Lionel ZS2DD, VHF.

bulletin roster

Many thanks to
Clive ZS2RT for
the photographs.



17th November	Lionel ZS2DD
24th November	Marge ZS2OB
1st December	Dick ZS2RS
8th December	Gordon ZS2GK
15th December	Trevor ZS2AE

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 ZS2OB FOR THESE TAPES. FIRST COME, FIRST SERVED.

MINUTES OF GENERAL MEETING OF THE PORT ELIZABETH BRANCH OF THE SOUTH AFRICAN RADIO LEAGUE HELD AT THE SCOUT HALL, KABEGA PARK, PORT ELIZABETH ON FRIDAY 18th OCTOBER, 1985.

PRESENT: 26 members and visitors.

APOLOGIES: ZS2MC, ZS2MF, ZS2MM, ZS2LW, ZS2GK and Joan Knapp, ZS2DT and ZS2JS.

The Chairman extended a warm welcome to all and especially to Winnie Browne, XYL of Bill ZS2BY.

MINUTES: The Minutes of the General Meeting held on 16th August, 1985 having been published and circulated in QSX-PE were taken as read; proposed by Mitch ZS2DK and seconded by Robbie ZS2RB.

ARISING: (1) The cupboard for the Library was ready at the hall and many thanks were extended to Dick ZS2RS for his generous donation and also to Trevor ZS2AE for his help in modifying it for the shelves.

(2) With regard to the Navex, apparently there had been some problems created as we should have applied for licences to be able to operate as we were passing third party traffic. The cost was R8 per station if the event was sponsored but would be given free if there was no sponsorship. A letter had been received at HQ from the Postmaster General and we had been advised thereof. A letter of explanation and apology was returned and we would apply for licences next time. Bill ZS2BY said that in effect they were special licences to cover the passing of third party traffic and it was better to have a special code call and not use our ham call signs. Colin ZS2AO suggested that we investigate the possibility of obtaining licences to cover all future events where we provide communications. Garth ZS2HB suggested that a motion be put to the League A.G.M. in this respect and he offered to draft the motion for submission to H.Q. before 30th November.

(3) Brian mentioned several boxes of parts which were available after the meeting. These had been donated by Robbie ZS2RB who was getting rid of them. There were several interesting transformers, etc. Anything left over would be dumped.

FINANCE: Brian said that he had handed everything over to Dick ZS2RS the new Treasurer. An amount of R183.28 had been drawn to cover the cost of QSX, postage and the last subs to be sent to H.Q. An amount of R60 had been received from one of the advertisers.

ARISING: Colin ZS2AO asked about the cost of electricity for Ladies Slipper Repeater. Dick mentioned that the Branch had been bearing the cost of the electricity for several repeater systems for a number of years and he intended to approach SATS to take over the electricity supply. If necessary, the Branch would put up solar panels for use with our repeater.

GENERAL: (1) The library cupboard was ready and it was hoped to have all the books available for the next meeting. Many thanks to Dick ZS2RS for his donation, Trevor ZS2AE for his work and to Marge ZS2OB for labelling and cataloguing 600 books. Any further donations of books would be gratefully received.

(2) The DX bulletin had been received from Percy ZS2RM who gets up at 4a.m. every Friday to record this. It was entered into the Mailbox by Barry ZS2DT.

(3) Brian mentioned his recent trip to Cape Town and said that he had had great difficulty finding HQ offices, but apparently a sign would be erected soon. Parking was definitely at a premium in the area.

(4)After many years of not receiving a copy of the weekly HQ bulletin, the Branch was receiving these again and these might come in handy in case anyone had a query regarding something they might have missed. A suggestion was made that perhaps there might be a repeat of the Branch bulletin followed by a rag chew on Monday evenings for those who miss the bulletin on a Sunday morning. The frequency would be 3640kHz at 8p.m. This would be advertised and a trial period would be instituted.

(5)The rules for Branch participation in the S.A.R.L. contests was discussed and it was felt that they were too stringent and therefore eliminated the smaller branches altogether. We would write to the Contest Manager in this connection.

(6)The forthcoming JOTA was discussed and the following offered their services: ZS2 MG, RT, PJ, RB, AE, DD, TJ, RS, DK, AB, OB. The beam would be erected on the mast and several inverted Vees put up. The Branch had won all the awards offered last year and these would be presented formally. The ZS2JAM licence had also been framed and would be presented to be put up at Gilsands.

There being no further business the meeting was closed and tea was taken. A very interesting and informative talk was given by Johan one of the Air Traffic Controllers from the H.F. Verwoerd Airport, on their systems and procedures of radio and radar for the large and small planes.

sgd:
B.A. Weller ZS2AB
Chairman

sgd:
M.T. Weller ZS2OB
Secretary

MOTION BY PORT ELIZABETH BRANCH FOR 1986 A.G.M.

That the Postmaster General be requested to issue the special permits/licences that are required to enable amateurs to provide communication links during special events on the following lines:

1. The permits or licences should be issued on a calendar-year basis enabling the amateurs concerned to participate in any number of events. The amateurs (preferably collectively and through the relevant SARRL branch when appropriate) need only inform the Postmaster General in advance of the event/s involved, indicating whether they are sponsored or not.
2. In the case of sponsored events, the fee charged for the special licence shall be eight rand (R8) for a calendar year, irrespective of the number of events or whether different sponsors are involved.
3. Any amateurs nominated in the special permit may be substituted by another properly licensed amateur should the person nominated not be able to assist in any event.

MOTIVATION:

At present, permits are issued for amateurs to provide emergency and control communications during special events where the use of Post Office facilities is not practicable. If an event is sponsored, a fee of R8 in respect of each amateur station is charged. No fee is raised for the permit if the event is not sponsored. Application must be made separately in advance of each event. The fee of R8 is applied for each event and in respect of each amateur station, even though application may be made by one amateur on behalf of the whole group. The purpose of raising a fee is usually to compensate the Department for the administrative work involved. A great deal of effort can be saved if the permits are issued on an annual basis, and the justification for a separate fee on each occasion should fall away. The permits issued currently include a clause authorising the substitution of a nominated amateur should he be unable to actually participate.

SATELLITE COMMUNICATIONS.

<u>LAUNCH DATE</u>	<u>OPERATIONAL REGION</u>	<u>STATUS AND POSITION</u>
Intelsat IV(F1) May 1975	Indian Ocean	Placed in service over the Indian Ocean at 63°E.
Intelsat IV A September 1975.	Atlantic	New Atlantic Primary Satellite 335°E.

Interruptions of the service provided by an Intelsat IV in the Atlantic region occurred in 1964, apparently because solar storms affected the aeriels directional control system. However, all satellites launched after November 1974 have been modified to alleviate this problem.. The satellites transmit in the 4 GHz (3,7 to 4,2 GHz) band, but receive signals from ground stations in the 6 GHz (5,925 to 6,425GHz) band so that transmission and reception can take place simultaneously. Travelling wave tubes were used in the satellites.

A series of Intelsat-V satellites is planned for about 1979. Each will have about 12,000 telephone circuits and they will probably use the 11 - 14GHz band in addition to the 4 - 6 GHz band. The Post Office is currently making propagation measurements at up to 30GHz to ascertain how signals from satellites at such frequencies will be affected by rain.

UK GROUND STATIONS UTILISING THE FACILITIES AND CURRENT USES OF THE SYSTEM.

GOONHILLY. The ground station in England used for satellite communications is at Goonhilly in Cornwall near to the site of Marconi's original radio telegraph station. Goonhilly and Etam (USA) handle the largest volumes of traffic of all earth stations. Goonhilly became a commercial operation on June 28th 1965 with a steerable aerial in a 90 foot dish reflector. In its first year it had 24 telephone circuits and carried some 40 000 calls - less than a tenth of all intercontinental calls to or from the UK.

Aerial 1 at Goonhilly was re-equipped in 1969 and now operates with the Indian Ocean satellite to provide communications to 25 countries in the Far East, Australia, New Zealand, Japan, Hong Kong etc. Aerials 2 and 3 at Goonhilly operate with the Atlantic satellite, communicating with 15 countries on the other side of the Atlantic. There are now 1300 circuits available through Goonhilly over half of them involving UK traffic. They handle nearly 9 million intercontinental calls per year!

Goonhilly is now part of a global network of 90 ground stations in 64 countries operating a total of over 120 aerials, but the number is rapidly growing. Over 100 countries use satellite services, those without aerials being connected through landlines to other countries. Low noise parametric amplifiers are employed in the receivers with the required 500MHz bandwidth and cooling to minimise noise.

MADLEY. A new earth station is under construction at Madley in Herefordshire. It will probably have 6 aerial dishes in due course, the first of these replacing Aerial 1 at Goonhilly about 1978 to handle all satellite communications to the Far East up to the early 1980s. Aerial 1 at Goonhilly will then be used for Atlantic work, but will later become a standby when two more aerials at Madley take over the Atlantic work. The Post Office intends to erect a microwave tower at Coldwell near Madley to link the aerials to the national telephone system.

TELEVISION.

The use of the Goonhilly aerials for television signals has increased from about 9 hours in 1965 to about 350 hours per year. The demand for intercontinental television (unlike telephone demand) seems to be approaching

saturation. Television accounts for under 2% of use whilst telephone circuits account for about 80%.

COMPARISON WITH CABLE.

The boom in intercontinental communications could not have been met without satellites, although one may well ask whether the boom would have occurred if they had not made the facilities available at a reasonable cost. Cables and satellites each have their own advantages for particular applications and places, whilst high frequency radio links have now been greatly improved. The life of a sub-oceanic cable is considerably greater than that of a satellite. Cables have an estimated life of 25 years, satellites of only seven years, although both of these values may be exceeded. It is uneconomic to provide cable links to remote islands, so such regions are best served by satellites or radio links. On the other hand, cables are generally more vulnerable to enemy attack than satellites. Only satellite links can be used to convey all types of signal (telephony, telegraphy, television, data and facsimile) over long distances.

When a signal travels up to a satellite and back to earth, the journey is about 45 000 miles. This inevitably means that there is a delay of about one quarter of a second or a total delay of $\frac{1}{2}$ second before one obtains a response to any signal. In general, the $\frac{1}{2}$ second delay is unimportant in telephone work, although detectable, but can be serious in some types of data transmission.

OTHER APPLICATIONS.

Hundreds of ships are lost at sea each year, often without any signal to land. Suitable maritime satellites ("Marisats") can provide reliable communications of the quality one normally meets on land. The first Marisat was launched on February 19th 1976 for Atlantic use. Some problems have occurred with the commercial circuits, but the other 75% used by the US Navy are performing satisfactorily. Another Marisat is due in May for the Pacific area.

In August 1974 a joint programme "Aerosat" was agreed in which the use of satellites for providing high quality communications with aircraft in flight will be investigated. The first satellite is planned for 1978. NASA has also placed satellites (such as Westar 1 and Westar 2) into orbit for communications across the USA. Complete newspapers have been sent in facsimile from Massachusetts to Florida using Westar 1; the newspapers have then been published in Florida.

The ATS-6 satellite over Lake Victoria has been used to re-broadcast domestic television to rural parts of India on 860 MHz with FM vision, 625 line signals. Although the beam is directed at India, the signals have been received in Dublin and Sheffield using dish reflectors. Such satellites can be used for educational television in remote areas.

The satellite with the largest number of voice circuits is Satcom-1 with 24 000 circuits, owned by RCA Global Communications and intended to serve the US for telephone traffic. Countries such as Algeria, Brazil, and Norway have leased the capacity of transponders on the Intelsat satellites for their own domestic use.

ISD.

The availability of global satellite multi-channel links has greatly facilitated International Subscriber Dialling (ISD) in which one can dial international numbers without having to wait for line availability and for operator connection. The ISD system first came to the UK in 1963 when London subscribers were able to dial Paris subscribers. In 1970 an ISD service was opened between London and New York.

At present ISD is available from most of the more heavily populated areas to European countries, the USA, Canada, Australia, South Africa, etc. In rural areas the register translators in the exchanges cannot store enough digits for international calls, but it is hoped that the necessary equipment

will be fitted in most areas of the UK by 1980. Intercontinental calls cannot normally be dialled from coin boxes since the rate of charge is too great, however, there are a few international coin boxes taking only 50p pieces at airports, etc. which provide intercontinental ISD facilities.

ISD calls are charged by means of the meter attached to each telephone line which registers the charge in units of 3p. When a call to Australia is dialled, short audio pulses, which one can hear in the telephone, occur every 1,71 seconds and give rise to a charge of about £1,05 per minute. Similar pulses occur at a much lower frequency on inland calls. In calls to the US and Canada the pulses occur every 2,4 seconds on weekdays between 6 a.m. and 8p.m. and every 3,2 seconds at other times (about 75p and 56p per minute respectively.) These call rates are not only cheaper than operator connected charges, but one pays only for the time used without a 3 minute minimum. ISD calls of a few seconds duration can be made to other continents for a few pence.

These current charges can be compared with those in pre-satellite days. In 1927 the charge for a 3 minute call to New York was £15, whilst it decreased to £9 in 1936. Even without inflation these charges are obviously well above the current ones. One may also compare the 9a.m. to 1p.m. peak rate for inland calls of over 35 miles (namely 3p for 10 seconds) with the intercontinental rates quoted previously. The Australian ISD rate is only about 5,85 times and the US rates 4,17 and 3,13 times the inland charge for a peak rate trunk call.

The amount charged for any international call is shared on an agreed basis between the two countries involved and also with any other country through which the call is switched. Accounting information for ISD calls is stored on magnetic drums, whilst the operator supplies the required information in the case of operator-connected calls. The use of satellite communications greatly simplifies the accounting, since only two countries are normally involved.

Even in the case of a complete New York to Paris colour television link by satellite, the charge is only about £2600 per hour. Thus the Intelsat satellites do offer communications at reasonable cost over such long distances.

Practical Wireless. August and September 1976.

Although the information in this article is all history now, nevertheless I hope you have found it interesting reading, and if possible, I will try to get an article on the more up-to-date satellites and procedures. If anyone has such information, I would be very pleased to receive it.

Thanks. Editor.)

THE MARKET PLACE

FOR SALE: KW Viceroy with manual.

KW 77 with no manual, requires attention.
Please contact Ron Clarke, ZS2MF, 103 de Chavonnes
Street, Kabega Park or phone 041-303674.

TO LOAN: To any new hams who would like to make use of:
DX 60 transmitter and Drake receiver.
Please contact Langley Lookwhy ZS2LW, P.O. Box 10109,
Linton Grange, 6015 or phone 041-304423.

CRAFFITI AS SEEN ON LONDON WALLS.

I'd give my right arm to be ambidextrous.

Drink wet cement and get stoned.

Halitosis is better than no breath at all.

Blow your minds - smoke gun powder.

Death is nature's way of telling you to slow down.

Nostalgia isn't what it used to be.

Motorola to supply Skattejag radio links

Skattejag being broadcast on SABC TV 4 is a unique TV programme utilising techniques never before seen on SATV. A great many variables have to be co-ordinated to ensure that everything 'gels' perfectly in each 60 minute episode. Considering that these variables include a complex radio communication system, contestants who have never faced a camera in their lives, unpredictable weather conditions and a large crew spread over the width of the country at any given moment, the production of Skattejag is an impressive achievement.

Making it all happen is producer/director Jenny Lenahan, who has behind her the technical resources of Motorola SA who have developed and produced the very exacting two-way communication system vital to the whole concept.

The idea of the programme is for contestants in the Johannesburg studio to direct the movements of a runner in the field to find hidden treasure within a time limit.

The frequency bands made available by the SAPO were such that very stringent requirements had to be met by Motorola to perfect a system which would provide audio quality to broadcast standard, reliable two-way communication in any type of terrain in a compact, yet rugged unit for the runner as he has to jump in and out of the helicopter and negotiate buildings, caves or as directed by the contestants. The equipment had to be specially designed in South Africa by Motorola engineers to meet South African conditions.

The location of the runner is completely unpredictable, at least within the treasure area. Therefore as the runner can be anywhere between SWA and Kruger Park up in the Drakensberg or down a mine shaft, it was essential to provide a mobile repeater station. A fixed-wing aircraft with a specially designed Motorola repeater on board simultaneously relays the signals from the runner to a base station, and base station to runner. The base station, which is located at an airfield, is connected to the studio by SAPO landline.

The helicopter, which is used to transport the runner, is equipped with a monitor receiver so that the pilot can receive instructions from the runner. The videocamera, recording the runner's movements, is fitted with a high quality Motorola receiver to record the runner's conversation. This sound signal together with the video recording is later combined with the studio recording for the final program mix.

Thanks to Colin ZS2A0 for this article.



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BRANCH CHRISTMAS PARTY: It was decided at the last Committee meeting that in view of the fact that there are so many parties at this time of the year which members have to attend, in the form of staff parties and other associations, some of which inevitably clash with our party and also that prices are usually higher at this time and members have a lot of other commitments, we would hold the Branch party during the early part of next year. We hope that this will meet everyone's satisfaction.

HALLEY'S COMET

On July 2 the European Space Agency launched its 960 kgm GIOTTO spacecraft to Halley's Comet. This satellite joined two Soviet craft, VEGA 1 and 2, launched last December and a Japanese experimental probe. A further Japanese probe PLANET A was scheduled for launch on August 14. All are scheduled to reach the vicinity of the comet during the second week of March next year after it has emerged from behind the sun and hopefully will be at its most spectacular.

If all goes as planned, the Soviet VEGA 1 should be the first to reach the comet, passing within 9000 kilometres of the nucleus on March 6. Three days later, VEGA 2 will fly as close as 3200 kilometres. The day before this craft's encounter, Japan's PLANET A will take ultra-violet pictures from no closer than 180000 kilometres. GIOTTO is expected to rendezvous on the night of March 13-14 and pass within 500 kilometres of the sunward side of the cometary core.

Under control of the Darmstadt West German tracking station, the probe will plunge into the comet's dusty atmosphere at a speed of 68 kms/sec and the strategy is 'to get as close as possible, immediately relay all data to earth in real time and find out as much as we can before the probe dies'. GIOTTO's photographs should show detail as small as 160 metres wide. The GIOTTO spacecraft is cylindrical in shape, approximately 1.87 metres wide and 2.85 metres high with a tripod on top to hold a magnetometer and a dish antenna. It is outfitted with two TV cameras that are augmented by charge coupled devices. These are tiny electronic chips that are extremely sensitive to light. The camera system will not point directly into the dust cloud but will view the comet through a 20° mirror so that the camera optics will not be subject to a spectacular sandblasting. As the probe passes the comet the camera will be swiveled to keep the comet in view if it survives. Continuous photography will begin ten minutes before closest encounter at a distance of 32000 kilometres, however, all the sensors will be activated four hours prior to the main encounter.

GIOTTO was launched by Ariane L14 from its South American launch pad. The transmitters used are as follows:

RF output power in S-band	4,45W
RF output power in X-band	20W
Peak gain at X-band	38,6dB
Peak gain at S-band	27,2dB
Omnidirectional coverage	- 6dB

The data rate will be up to 46k bits per second. Y-band telemetry will be sent on 8428 MHz and S-band telemetry on 2298 MHz. The S-band telecommand frequency is 2116 MHz.

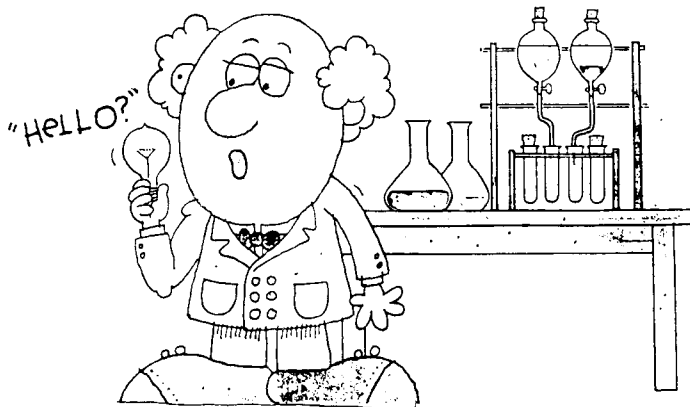
Meanwhile, Halley's Comet has now swung around the sun, conjunction occurred in mid-June at a distance of 53 million kilometres. It is now a morning object and should be optically recovered towards the end of July. It will start to brighten quite rapidly and by the end of the year it will become a naked eye object.

During August, the magnitude will be about 13 and hence visible in largish amateur telescopes. Late in August it will be very close to the stars Chi 1 and Chi 2 in the constellation of Orion. As September progresses the magnitude, or brightness, will rise to about 12 and amateur astronomers should be able to start getting good photographs of the comet. In October the comet moves into the constellation of Taurus and brightens to about magnitude 10 with a tail possibly being visible in telescopes. In November the brightness should start to increase dramatically although the full moon will cause some problems. As it continues moving through Taurus it will pass close to the Pleiades or "Seven Sisters" passing south of the naked eye group on November 16 and it may be possible to locate the comet using binoculars. During December the comet will brighten to about magnitude 9 and will thus be visible to the naked eye under dark sky conditions as it moves through the constellation of Pisces into Aquarius. There is some hope that by now an obvious tail will have developed.

In January 1986 the comet crosses the celestial equator as it moves southward and thus higher into our sky. On 13th January it will pass close to Jupiter and the crescent moon and may be a pretty sight. Unfortunately by the end of the month the comet will have disappeared into the twilight glow as it draws closer to the setting sun. On the 9th February the comet will pass through peri-helion, or the point of its orbit closest to the sun and since this occurs on the far side of the sun, it cannot be seen from earth. By 20th February it should reappear in the eastern sky before sunrise and the comet will now be about magnitude 3 with a considerable tail. In March the comet will move in Sagittarius and on 31st March disappears below the horizon from northern locations like the United Kingdom, but in South Africa it will be passing close to overhead. In April the comet will be at its best as it moves into Centaurus and thus close to the "Southern Cross". Just before dawn it will be high in the sky, with a magnitude of about 2,5 and a tail perhaps 30 degrees long. The moonlight will interfere but luckily we have a total eclipse of the moon on 24th April which will improve observing, provided the sky is not cloudy. During May the comet will continue to fade and by month's end will probably disappear from naked eye visibility but still visible in binoculars. In late August the comet will again be in conjunction with the sun so will be lost to view, and when it reappears in the morning sky in November it will be beyond the reach of all but the largest telescopes. Will Halley's Comet live up to expectations? The latest indications are that it may well do this, or even surpass them. Make an effort to see it - you won't be around the next time it comes back and South Africa is the best place to see the comet.

Acknowledgments to "Satellite Communications"
August/September 1985. Thanks to Lionel ZS2DD)

The success of a good idea depends on knowing what to do with it!



Thanks also to Robbie ZS2RB for this one.



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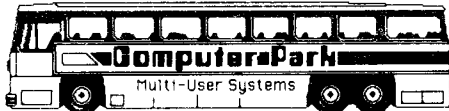
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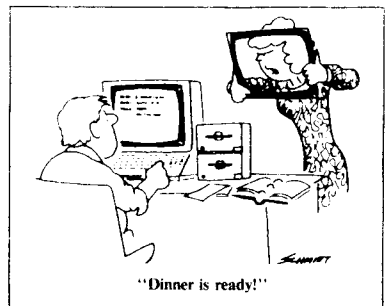
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