Merry Christmas!

SEASONALLY... FROM THE M-D

This year's issues of "Telecom" have recorded a number of the achievements by our people around Australia.

It reminds us that what we achieve as an organisation is the sum of the many individual and team efforts throughout Telecom Australia.

I welcome this opportunity to say a personal thank you for your own contribution. You can be proud of Telecom Australia's continuing success because Telecom is what you have made it.

May I also take this opportunity to wish each one of you and your family a safe Christmas full of happiness.

I look forward to our working together in the New Year.

J. H. Curtis

MANAGING DIRECTOR

Telecom

No. 37 December 1978

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There were sad faces, red faces and smiling faces in that order recently in a mini drama at which Telecom Australia was at the centre in Adelaide t'other day. We'll let the Adelaide News tell the story as it told it in successive editions on Tuesday Nov. 28. (The photo herewith is by courtesy of the News too).

THE EARLY EDITION SAID:

A couple who had the phone put on only a month ago have received their first bill — for $388.71. Now they are trying to sort it out with Telecom, but say they are getting nowhere.

Mr. Jerzy Greda and his wife, Nadzia, of South Terrace, Salisbury, said they made only a few local calls between having a telephone connected on August 10 and when they were billed to September 12.

Mr. and Mrs. Greda are Polish and said their English was not strong enough for them to fight the case so they have left it to their Australian-born daughter, Mrs. Barbara Green.

Mrs. Green said her parents had made no STD or international calls and would have had to be up "half the night" making 3,881 local calls in the month.

THE LATER EDITION SAID

Telecom has admitted an error only hours after it was revealed by The News. Mr. Jerzy Greda and his wife, Nadzia had received a hefty $388.71 bill, only one month after their telephone was connected.

The News revealed the Gredas' plight — and a Telecom official, Mr. Tim Waterhouse, rushed to their Salisbury home with a much reduced bill, apologies — and a bunch of flowers.

"We freely admit there was a mistake and it has been rectified", Telecom Adelaide public relations manager, Mr. Brian Taylor, said today.

"The meter was misread, or possibly even the wrong meter was read in the telephone exchange when the new service was connected on August 10. It was a human error, no question about it."

At the end of the day, there were red faces again, but only from rushing around putting things right — ours and Bill Goodier's — he wrote the original story and then had to completely recast the happy ending.

Smiles from Mrs Greda as acting DTM Adelaide North, Tim Waterhouse presented her with flowers and an amended account. Grandson Luke was a member of the welcoming committee.

State Manager, Murray Coleman and Mrs Coleman talking with Owen McDonald, lines supervisor in charge of cable laying operations, as the final section of cable is laid at Ceduna.

A ceremony was arranged by Telecom Australia, at Ceduna SA last month to mark the laying of the last section of coaxial cable into Ceduna.

CEDUNA PLAQUE CAPS TRUNK PROJECT

Mr J. C. Bergmann, Chairman of the District Council of Murat Bay unveiled a commemorative plaque at the ceremony.

The function was attended by local community leaders and senior Telecom staff from Adelaide, Ceduna and the cable project parties.

Speakers at the function were Mr Bergmann and Mr D. M. Coleman, State Manager, Telecom Australia.

Completion of Stage 2 (Port Augusta-Ceduna) marks the end of the project, Stage 1 of which was the route from Port Augusta to Cobar.

The overall project covering more than 1300 km and costing about $20m, will provide many new telecommunications circuits between Western Australia and South Australia, the eastern states and between Australia and the rest of the world.

More trunk telephone circuits have and will become available to townships along the route, thus improving the standard of service.

The project was wholly undertaken using Telecom Australia resources.

Steep grades over the Flinders Ranges made working with large tractors hazardous. In some sections two 45 tonne tractors had to be coupled together for ground ripping.

For 20 km west of Broken Hill the only way to lay the cable was to use explosives for rock blasting, a job which took several months.

Special attention was given to preserving the natural environment as far as possible and to restoring the earth to its natural state.

Work begins on final link — See page 6

The dog who thinks he's a Cat . . . Akko puts on an excavation demo for guests at the Ceduna ceremony. Interested feet from left are those of Supervising Engineer Fred Nixon, Mrs Nixon, Mrs Truss, Mrs Coleman (wife of State Manager), and Chief State Engineer A. J. Truss.

CO-AXIAL DOG TALES

"Every dog has his day", so the saying goes . . . and Akko is no exception. The two-year-old wirehaired fox terrier was not going to be left out of proceedings to mark the completion of laying Telecom Australia's coaxial cable from Port Augusta to Ceduna last week.

In fact everywhere members of the official party went, so too did Akko.

His interest was not in inspecting the various aspects of laying a coaxial cable (he'd seen it from Port Augusta to Ceduna any way), but he lost no opportunity to show VIPs that he'd learnt something from machine excavation and that he also could dig holes.

It took a little urging to get from owner Eric Crofts what was behind the choice of Akko as his foxy's name. He says he named him after Ken Atkinson, line inspector in charge of the cable jointers.

"He was always calling me names, so I named the dog after him!", Eric said.

At the Ceduna, Wirrulla and Wudinna Telecom camps, men working on the cable laying project owned a total of 24 dogs — all registered and well looked after.

One of the camp dogs named Black Dog was injured while chasing a rabbit near Wilcannia. He was rushed to a vet for treatment for his injuries which included a broken shoulder. Black Dog was hospitalised for three days.

Workmates of his owner were quick to organise a "whip-round" to pay expenses. So spontaneous was the response that there was an over-subscription of $30.

RESEARCH TELETEXT DEMONSTRATIONS IMPRESS PARLIAMENTARY COMMITTEE

Members of the Government Members Committee on Communications and Administrative Services recently made an official inspection visit to Telecom Australia's Monash Research Laboratories at Clayton Vic.

The visiting party comprised Mr A. J. McKenzie MHR (Calare NSW-Chairman), Senator S. J. Collard (Qld), and MHRs J. W. Bourchier (Bendigo, Vic) and E. C. Cameron (Indi-Vic). They showed great interest in:

- **Optical Fibre transmission, explained to them by Graeme Kidd, Section Head, Guided Media.**
- **Filled Cables, demonstrated by Principal Scientist H. Ruddell and Assistant Director Physical Sciences Dick Slade, and**
- **Teletext Systems, demonstrated by Section Head, Computer Applications Graeme Jenkins.**

Principal Scientist H. J. Ruddell outlines developments in filled cables to members of the Committee on Communications Mr Bourchier, Senator Collard, and Messrs McKenzie and Cameron. In the background are Assistant Director Physical Sciences Dick Slade and Director Research Eddie Sandbach. Mr Ruddell told the committee that the first filled cable made to Telecom specifications is currently being installed.

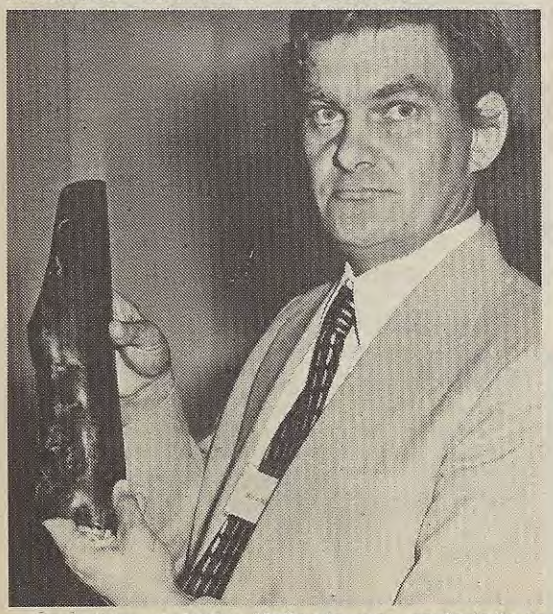
Here is a summary of what Graeme Jenkins told the Parliamentarians on Teletext, using two TV screens:

Recent advances in integrated circuit technology have now made it economically feasible to manufacture enhanced domestic television receivers which can also function as computer display terminals with colour and graphics capabilities. Input may be effected via hand-held key-pads which often also provide remote channel/picture control facilities.

Two distinct (but co-existent) systems are available for transmitting information to such enhanced television receivers. The first of these employs the blanking interval between successive broadcast television frames for the transmission of additional "computer terminal" information in coded form.

Up to 800 pages may be transmitted sequentially in this fashion; the user merely enters his desired page-number, and awaits its arrival (and subsequent display).

This system is known as Broadcast Teletext, and is ideally suited for the transmission of news, sport and weather information, program guides, and the like; it is presently the subject of experimental transmissions by all four major Australian television networks.



Committee chairman McKenzie was particularly interested in this cable attacked by termites which are a serious problem in his NSW electorate of Calare.

The second system known as Wired Teletext, requires a slight further enhancement to the television receiver which enables the latter (upon command) to automatically seize a user's telephone line and dial a local data centre.

The user may then be positively identified (by receiver hardware and/or pass-code) so that he can (for instance) assess telex messages transmitted to him, enter (and be billed for) supermarket, travel accommodation and entertainment orders, and of course be billed for his usage of the system.

COMPREHENSIVE INFORMATION

Since Wired Teletext has a virtually unlimited page capacity, it can provide a comprehensive information repository, providing everything from stock exchange reports for investors to fertiliser recommendations for farmers, and bed-time picture stories for infants.

A tree-structured indexing arrangement is employed to facilitate access to the desired information.

And since the system has real computational capability, it can incorporate computer games, computer-aided instruction, and domestic-interest computer programs (mortgage calculations, taxation estimates, etc.)

Information and services within Wired Teletext are normally provided by authorised information vendors such as newspaper groups, supermarket chains, encyclopedia purveyors, and the like.

Most of these will have their own computers, or share them with other information vendors. Access facilities between these computers and the users (via local data centres) are provided by the telecommunications authority.

TELECOM WILL NOT BE PUBLISHED IN JANUARY. COPY FOR FEB ISSUE By JAN 19 PLEASE

Mansfield wins

Bill Mansfield (36) has been elected Federal Secretary of the Australian Telecommunications Employees Association. He had been acting in the position since the resignation earlier this year of Ken Turbet on Ken's appointment as an Arbitration Commissioner.

GEORGE BLACK DIES

The first Life Member of the New South Wales Division of the Telecommunication Society of Australia Mr. George A. Black has died in Sydney aged 72.

He joined the PMG in Melbourne in 1922 as a junior mechanic in training becoming traffic officer in the Telecommunications Division in 1941 and transferring to Sydney. He retired in 1966 as Assistant Superintendent, Service Standards.

In 1931/32 Mr. Black was closely associated with the inauguration of the Telecommunication Society in Melbourne carrying over his involvement to Sydney where from 1941 he served as the Society's Representative in the Telecommunications Divison. He continued this activity until his retirement in 1966.

Mr. Black was elected Society Life Member in 1966 and despite retirement kept his association, frequently attending general functions. In later years he was well known nationally for his participation in and contribution to national television quiz shows.

On the left is the HF modulator which connects up the video tape and cassette recorders seen below to AVV's clients via Telecom cables. Inset is STO David Coulsell (Trunk Service) who was also heavily involved in the cable TV link-up.

The snowballing technological revolution has quickened the job tempo in greater or lesser degree for every Telecom Australia employee — but for some, like the Telegraphs and Data groups, horizons have dramatically expanded.

Proliferating computers and new electronic business aids demand from Telecom not only the provision of telecommunications links but design and implementation of complex systems to make the most efficient and economical use of them.

As many as 20 distinct Telecom areas can be involved in a major exercise of this kind, which of course technically, is spearheaded by Telegraphs and Data. It is obvious that co-ordination and co-operation are keys to success and it is pleasant to be able to report that our clients commend us highly on our teamwork and flexibility in dealing interdepartmentally and with outside authorities.

Here we tell the story of a couple of very interesting projects.

ADVANCING TECHNOLOGY BRINGS NEW

Telecom Australia staff played a major part in the design and installation of the first cable access television system in Australia — in fact, what is believed to be the first industry cable TV in the world.

The system, now in operation for AAV Australia Pty. Ltd. at its Bank St., South Melbourne premises permits advertising agency clients to watch their television commercials being made at a remote studio from the comfort and convenience of their agency conference room.

And it has these other advantages:

- **The cable link will enable the client to see his commercial exactly as it will appear on the home TV sets of the market. (Previously color was apt to be disturbingly unpredictable.)**
- **Clients' commercials can be committed to one tape and held on standby for immediate review.**
- **The system allows a link up with TV signals from Australia or any part of the world. Material beamed in by satellite can be distributed throughout the AAV system.**

STORY ONE
The Industrial Cable TV Caper

The new cable TV links have greatly extended the value and efficiency of the $3 million of audio video and audiovisual equipment at AAV and has the further cardinal advantage of complete security for the advertiser.

At the heart of the system is a custom built Telecom intercommunications network at present linking eight advertising agencies with AAV Australia Pty. Ltd. studios through dedicated private lines which terminate in AAV's central video control area.

The successful commissioning caps about two years design, testing and installation work by Telecom staff and AAV and AWA engineers.

The project demanded the co-ordination of about 16 individual Telecom departments and brought about major engineering and demarcation breakthroughs.

CHEAP CABLE

The secret of the successful exercise is the use of cheap single quad carrier (SQC) cable for the first time in Australia for this purpose. Priced at little more than 50 cents a metre the SQC cable substitutes successfully for the highly expensive co-axial cable which hitherto made such a link up prohibitive in cost.

Because of design differences and agency locations, the network has been divided into two groups — St Kilda Rd serving six agencies, and City, serving a further two. Expansion is allowed for and it is envisaged most suitably located agencies could eventually join the link-up.

For the St Kilda Rd group, the modulation equipment at AAV feeds into two Telecom designed S QC cables and repeaters installed on two channels at 424 St Kilda Road to overcome cable loss over the 2.3 km distance and to make up for the insertion loss of the passive splitting networks at each drop off point.

Because of the long distances involved and associated high costs, the City group network is fed from the Telecom Television Operations Centre in Lonsdale Street.

DEDICATED LINE SYSTEM

Each Agency is provided with a dedicated communications system identical to the St Kilda Rd group and the same operational methods apply.

The city system is based on SQC cable but the terminal equipment has been provided by Telecom and is located in a mini equipment rack at each agency. The method of transmission is base band. One cable pair in the SQC carries video whilst audio is transmitted on the second pair.

It is necessary for TOC to patch either agency onto the normal AAV — TOC coaxial tube in order to establish the link for

In one of the largest computer cutovers yet, Vic Telegraphs and Data staff planned and carried out the complex telecommunications work involved in the transfer of IDAPS Computer Sciences Pty. Ltd. from Barkly St., St Kilda to Albert Rd., South Melbourne.

Some of the men who helped IDAPS Computer Sciences to a smooth transfer to new premises — from left STO2 Leo Doyle (Datel Installation), TO2 Denis Chambers (Datel Installation) and STO 2 David Blanks (Telegraphs and Data).

CHALLENGES FOR TELECOM

viewing purposes.

The SQC cable is run in normal underground telephone ducting and is tapped off to each agency in the appropriate cable pit in St Kilda Road.

The system is capable of feeding four different simultaneous programs. Each Agency can be switched across either one of two programs channels via a tone control circuit.

The switching is achieved at each subscriber point by initiating discreet tones from AAV via dedicated private lines.

These are the principal Telecom areas and people involved in the AAV cable television project:

TELEGRAPHS AND DATA —
STO David Blanks (Technical consultant)
STO Alan Brown (Private line co-ordinator)
TO 1 Mick McAleer (Line conditioning)
Neal Woolard (Customer Services Sales Officer)

TRUNK SERVICE —
STO Don Coulsell
Engineer David Humberstone

BROADBAND INSTALLATION
Engineer Alan Mellows
TO Keith Lugg

TRANSMISSION MEASUREMENTS
STO Jim Lynch
STO Barry Jess

TRANSMISSION LINE PLANNING
STO John Davies

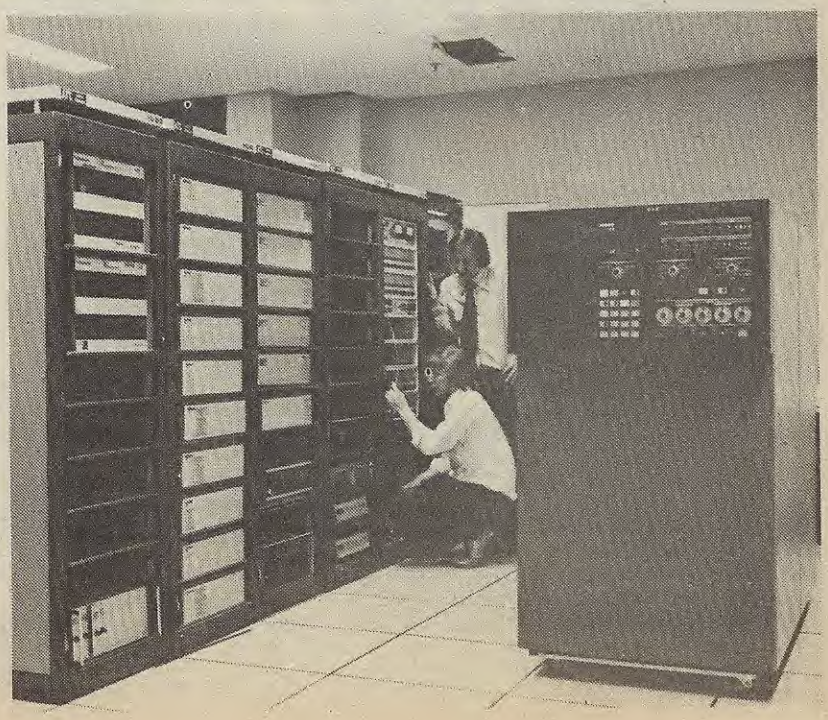
CUSTOMER NETWORKS AND EQUIPMENT DESIGN
STO Albert Durose

TELEPHONE INSTALLATION CENTRES
City: TO Frank Debolster
Sth. Melb.: TO Rod Coates, TO Ian Donkin
Hawksburn: TO Ken Wilson
(Sth Yarra and Nth Brighton Centres were also involved)

COUNTRY PRIMARY WORKS
Lineman John Taylor

CITY OPS
EPM Don Graham

Below: Denis Chambers (standing) and David Berg installing the high density modem rack (96 cards) with on right the communications controller which accesses our modems for the IBM 370 158 computer.



STORY TWO
The IDAPS Computer Cutover Caper

And they did it in such a way that the large computer firm which handles the business of many main permanent building societies in Victoria never lost a beat (or a byte?) as the cutover was carried out between close of business on a Friday and opening at the new premises at 9 a.m. on the following Monday.

The magnitude of the task can be seen in the fact that 82 datel private lines of varying speeds, four Telecom Districts and 11 exchanges were involved and links had to be provided to IDAPS clients in Launceston, Hobart and most main Victorian provincial cities.

The Districts concerned were City, Camberwell, Cheltenham and Ringwood (plus, of course, Telegraphs and Data) and the key exchanges in the move were City West, Lonsdale, Batman, South Melbourne, South Yarra, Windsor and Hawthorn.

Many Telecom staff were involved in the planning of the system and some 15 to 20 on the cutover itself which IDAPS says has provided them with a very flexible operation, very smoothly introduced.

IT'S DENIS

As they watched the successful start-up at the new South Melbourne premises, our techs were unanimous that credit for the smooth changeover should go mainly to TO2 Denis Chambers (Datel Installation).

Denis in turn acknowledged the enthusiastic co-operation and help he had from all Districts and exchanges and particularly from STO2 David Blanks (Telegraphs and Data), STO2 Leo Doyle (Datel Installation), TO1 David Berg and Tech Bryan Jowett.

Denis said some outstanding features of Telecom's part in the project were installation of a high density modem rack of 96 card capacity, underfloor wiring and accessing the main cable direct to the computer floor for security reasons.

Final Ceduna — Brisbane outback trunk links soon to be forged

A team of 60 men together with heavy earthmoving equipment worth about $1 million are converging on Dubbo to start work on the final sections of Telecom Australia's new outback trunk network.

The men, who have been working on Telecom's engineering works in Dubbo and other country centres, will bury a coaxial cable 1.2 metres below ground for a distance of 223 km.

This covers the Dubbo-Coonabarabran and the Moree-NSW / Queensland border sections of the overall project.

$4.8m COST

The estimated cost of these sections, which completes the link from Ceduna in South Australia, via Port Augusta, Broken Hill, Cobar, Dubbo, Coonabarabran, Moree, Toowoomba to Brisbane, is $4.8 million.

A further $400,000 will be spent on special equipment being installed in Dubbo as part of the expansion of the telephone trunk network.

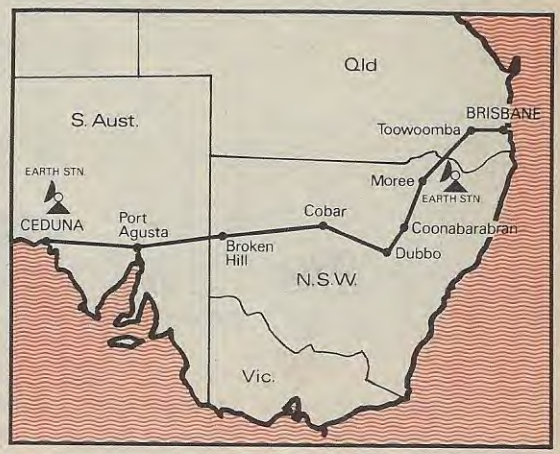
Work on this expansion of Telecom's broadband network started five years ago when the OTC earth station at Moree (the three earth stations are the main links through which Australia has communication with other countries) was linked by coaxial cable to Coonabarabran.

Since then a force of 90 men has been working on the link from Cobar to Ceduna, while another team has completed the Brisbane, Goondiwindi, North Star (NSW border) link.

Once the cable laying of this final section is completed associated electronic equipment will be installed.

This work is expected to be completed early in 1980 and the complete outback trunk system from Brisbane to Ceduna will then be operational.

Its completion will provide Sydney with two independent routes to the satellite earth stations at Moree and Ceduna, an alternative broadband route between the eastern capital cities, and also link remote communities to the national STD network.



5400 CALLS

The four-tube coaxial cable to be laid can carry up to 5,400 simultaneous telephone conversations but this capacity can be increased if needed in future years.

The machinery used in the present operation includes four Caterpillar D9 tractors and a D7. They were brought up by low loaders from Ceduna, where the laying of the coaxial cable in that section has been completed.

Three of the D9 tractors (worth about $20,000 each) will be used to rip the soil to a depth of 1.5 metres. The fourth D9, known as a plough, is fitted to carry the cable reel and lay the cable.

The fifth machine, the D7, is used to reinstate the area after the bigger machines have moved on, and also to close in special excavations.

The ripping tractors will be working up to two weeks ahead of the plough tractor.

The route has already been surveyed and pegged. Preparatory work now completed includes laying pipes underground, through which the coaxial cable will be pulled in sections where the route crosses creeks and rivers, bogs, national roads and railway lines.

Conduits have already been extended from Dubbo to a point 10 km outside the business centre where the new cable ploughing operation will begin.

CUP WINNER

For the first time ever, a special recorded information service was provided for Australia's premier horse race, the Melbourne Cup.

Leading Australian racehorse trainer Bart Cummings, trainer of six Melbourne Cup winners provided callers to a special telephone number his own recorded preview of the 1978 race.

Bart recorded the preview at Melbourne's Lonsdale Exchange on the Sunday prior to the Cup.

The special service was a joint venture between the Special Products Section of Customer Services, Melbourne and the Vic. Public Relations Section.

Needless to say Bart Cumming's preview was an outstanding success. It attracted many thousands of calls, and Arwon, the Cup winner was nominated by Cummings as one of the best chances in the race.

WE AID STORES COURSES

Among the many contributions Telecom makes to the Commonwealth Government's assistance to overseas countries, is the training of people from overseas in Supply and Stores procedures.

In Sydney, courses are conducted by the Department of Foreign Affairs at their International Training Institute at Balmoral on various subjects including a "Supply and Stores Officers Course" which draws lecturers from various organisations including the Telecom Supply Branch.

Officers involved this year are Ray Sakaris, Training Officer; Mary Bourke, Stores Accounting Officer; Phil Mudie, Supplies Accounts Officer; John Wagstaff, Asst. Contracts Officer; Peter Dorhauer, OIC Stores Inspection Group and Mark Day, Forms Officer.

The course, which started in 1974, draws participants from Africa, the Middle East, India, Indonesia and the Pacific Islands. The basic course is of 12 weeks duration but further "in-field" study is arranged or adapted to suit a particular student's requirements.

Recently, "Telecom" paid a visit to the Institute to meet fifteen members of the current course with their Telecom lecturers.

In the photo above, Telecom's students (from L.) Kila Boto Lahema (PNG), Phil Mudie (Supplies Accounts Officer), Julian Counsel (PNG), Kanawi Frank Manoi (PNG), Johannes Kgosiemang Mpetsane and Rejoice Itumeleng Bimbo (Botswana).

WA DEATH

Ted Heasman, Executive Officer, Engineering Department WA died last month at the age of 53. He commenced as a clerk in 1947 and spent his service in the Finance and Accounting and the Engineering Depts.

Ted was treasurer of the API for the past 6 years, a member of its finance committee and a director of the API Credit Society.

Pertinent excerpts from our 1977-78 annual report

All staff this year received a synopsis of the 1977-78 Telecom Australia annual report, briefly reviewing finances and achievements. The report is a very comprehensive, interesting and important document, however, and there is much more in it of prime interest to every staff member. We reproduce some excerpts here.

STAFF

RECRUITMENT, DEVELOPMENT

During 1975, an extensive review was carried out of the policy relating to apprentice/trainee intakes to ensure that the skill mix in the staff in the years ahead will be matched to forecast needs. As a result of the review the intake levels for 1975/76 and 1976/77 were lower than historical levels.

Nevertheless, Telecom is still a large employer of apprentices and trainees. During 1976/77 and 1977/78, the intake of apprentices/trainees was about 1,500 in both years and, as at 30 June, nearly 4,000 full-time apprentices/trainees were employed. This represents about 4.6% of our workforce.

Large numbers of school leavers and others are also recruited each year in occupations such as Clerk, Clerical Assistant, Lineman, Telephonist, Accounting Machinist, Typist and Artisan. A significant number of professional staff such as Engineers, Computer Programmers, Accountants, Finance Officers, Scientists and Generalist Graduates was also recruited.

Special recruitment and other staff studies are conducted to improve management's understanding of human resource utilisation. One such study reviewed procedures for recruitment and selection of telephonists and phonogram operators. As a result, a special offer of permanent appointment was made to approximately 4,000 temporary staff. This was a 'once-only' offer subject to the appointee having had six months satisfactory service.

In another study, a simulation model was developed which looked at succession patterns in Telecom to see if problems would arise with the future supply of suitable experienced senior level staff.

This model has been applied to the Engineer designation and to Clerical/Administrative staff above the Clerk Class 8 level in all States. It highlighted potential problems of a satisfactory supply of senior staff in certain States which are being taken into account in the Executive Development Programme, and in the wider context of Human Resource Development (HRD).

TRAINING FUNCTION

The training function in Telecom involves developing the whole organisation — both individuals and groups — so that change is confronted positively, opportunities presented by change are utilised, and individuals and groups are encouraged to contribute to achieving corporate goals.

In-house specialist training and development continued for a wide range of staff covering induction, on-the-job training and specific skill courses (eg basic supervision, technical retraining). The use of videotaped programmes for on-the-job training and staff information is being developed.

Executives at all levels had the opportunity to attend a variety of internal management seminars. These were complemented with attendance at management programmes in universities and colleges.

Another major development was the introduction of the Engineer Development Programme. This nationally co-ordinated project, aimed at developing and maintaining the technical expertise of engineers, was well received by the staff.

The Study Assistance Scheme attracted staff for a variety of courses. Also, 20 scholarships and awards were granted for programmes of study in Australia and overseas. Ten were awarded for the completion of undergraduate degrees and diplomas and ten for post-graduate study.

The latter included four scholarships at universities in Australia and the United Kingdom to complete Masters degrees in Business Administration, Industrial Relations and Polymer Technology. Six were for professional staff to undertake programmes of work and study in major overseas companies.

These programmes, ranging from eight to 18 months duration, include work with the following organisations; Standard Telecommunication Laboratories (UK), Nippon Electric Company (Japan), Electrical Communications Laboratory (Japan) and two programmes with the Confederation of British Industry (UK).

What we all do

At June 30 this year, Telecom Australia's national workforce of 87,444 included:

Accounting Mach	650
Artisans	2232
ADP	412
Building Services	1665
Clerical/Admin.	9570
Clerical Assistants	6119
Data Processing Ops.	525
Drafting	1434
Engineers	2116
Linemen	22314
Phonogram Ops.	614
Storemen	825
Telecom Assistants	3473
Telecom Tradesmen	3228
Telecom Technicians	5064
Telecom Tech. Officers	9375
Telegraphists	694
Telephonists	8902
Apprentice Artisans	478
Apprentice tradesmen	1636
Other trainees	2290
Transport	411
Typists	1045

Automatic Pay

A computer-based pay system has been developed to meet the needs of our 87,400 staff who are employed under a variety of awards. The system is already operating for staff employed in Headquarters and South Australia and is planned for implementation in all areas within the next two years. It provides for automatic adjustment of all programmed pay variations such as incremental advances, calculation of taxation, and contributions to superannuation. With the use of a few simple inputs, pay records are immediately updated for national awards or group determinations and related adjustments are available in the next pay.

Research Laboratories staff use a mobile impulse generator to test soil parameters under impulsive electrical discharge at Clayton, (Vic.).

MORE INTERESTING DETAILS FROM T

NETWORK

The total fixed asset expenditure during the year was $937m. Among the additions to the network were:

- *2 million pair kilometres of underground cable*
- *287,000 lines of automatic telephone exchange equipment*
- *4500 duct kilometres of conduits*

As a further step in the introduction of high capacity systems at key points in the network, new electronic trunk exchange equipment came into operation at Bendigo (Vic) and work is proceeding on similar exchanges at Wooloongabba (Qld) and Windsor (Vic). Similar exchanges are in operation at Pitt (Sydney), Lonsdale (Melbourne) and Waymouth (Adelaide).

A current major project is the extension of the national trunk network by a coaxial cable from the Ceduna Earth Station in South Australia, via Port Augusta and Broken Hill, to Cobar in New South Wales. It will connect with microwave radio systems to Dubbo and Sydney. The coaxial cable was completed during the year providing 2700 channels from Port Augusta to Broken Hill. This work enabled Broken Hill people to access the national STD network.

The total system will enable increased traffic to be carried between Western Australia, South Australia and the eastern states and will provide alternative routing from Perth, the Ceduna Earth Station and Adelaide to Sydney and beyond. Greater security will be given to circuits linking OTC's international exchanges in Sydney to the Earth Station.

Another significant development in the network was the completion of a new high capacity trunk system, using both microwave radio and coaxial cable, from Sydney to Brisbane. It will supplement existing facilities and also provide a both-way TV circuit.

Installation commenced of a 200 km microwave radio trunk system between Victoria and King Island. The new system will be linked with an existing microwave system between Smithton (Tas) and King Island and provide a second, high-quality trunk system between Tasmania and the mainland. Initially, the new trunk system to King Island will provide hundreds of circuits for telephone, telegraph and data traffic as well as radio programme relay circuits. It can be expanded, as required, to meet future traffic demands, including TV relays.

Building work carried out by the Department of Construction on Telecom's behalf accounted for $60m of the year's expenditure.

Work began on the $23m Exhibition Telephone Exchange building in Melbourne, and a start was made to construct a seven-storey telephone exchange building in Davey Street, Hobart.

Other major buildings under construction include exchanges at Deakin in Canberra and Wellington in Perth.

Senior engineer Roy Wesson watches telephonist Ann Grant operating the computer controlled appointment and reminder service switchboard at Waymouth Exchange, Adelaide.

NETWORK PERFORMANCE

The first installation of a new system which automatically detects and analyses faults in the telephone switching network was completed in Sydney. It continuously monitors live telephone traffic entering the switching network by processing and analysing on a minicomputer the data generated by failed calls.

The analysis enables faulty items of equipment to be rapidly identified and an assessment of network performance is automatically produced. The system will reduce the effort spent on testing and measurement of network performance.

CUSTOMER NEEDS

SPECIAL CUSTOMER SERVICES

Studies were carried out in Australia and overseas and a five year plan was developed to improve Telecom's response to customer needs for special services. A report of the studies was issued in January and the implementation of the plan is directed towards improving:

- **the interface between special service customers and Telecom**
- **the time taken to restore faults**
- **productivity.**

This will be achieved by:

- **automating of customer records by on-line computer with Visual Display Unit (VDU) access**
- **automated remote testing of services**
- **improving staff training and establishing special services centres in each State**
- **providing a special fault reporting number (1107) for special service customers.**

Telefinder

Forecasts predict that 100,000 customers will join Telefinder by 1985. High growth overseas for similar systems has led to terminals being developed to handle 100,000 customers with complex paging signal distribution arrangements. Tenders have been called for such high capacity systems for installation in Sydney and Melbourne during 1980/81.

After Sales

Apart from the on-going maintenance of the network and customers' equipment, Telecom has a unique after-sales advisory service. During the year, more than 45,000 visits were made to customers' premises to advise on the correct, courteous and most economic use of switchboards, extension telephones and telex.

Directories

Surveys showed a distinct customer preference for a single volume Yellow Pages directory in Sydney and Melbourne. This customer need will be totally met with the 1978/79 Yellow Pages directories.

Directory Assistance

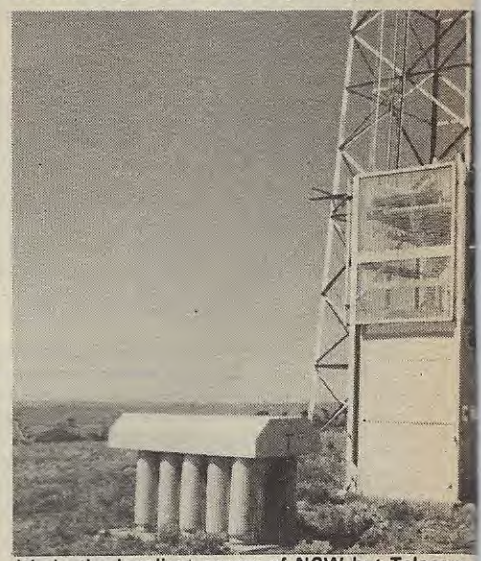
A five year strategy was adopted to improve the manually operated directory information service. An automated system for storing and retrieving names and telephone numbers is being developed to replace the voluminous and cumbersome paper records now in use. Trials of at least one system are planned for a metropolitan area in 1979 prior to the introduction of a national automated system in the early 1980s.

Automatic Billing

The conversion of Brisbane accounts to computer processing was completed and telephone bills for all mainland capitals, including Canberra, are now being produced by computer. Planning was well advanced for the introduction of the system in Hobart, Launceston and Burnie (Tas) in 1978/79.

Feasibility studies for extending the system to country districts were completed and conversion activities commenced for Penrith and Gosford (NSW), Geelong (Vic), Gold Coast and Ipswich (Qld), and Mount Gambier (SA). A programme has been drawn up for several other country districts.

As a flow-on from the computerised billing system, more than one million customers now receive telephone bills on a quarterly basis.



It's in the loneliest corner of NSW but Telecom screen . . . radio repeater at Moomba Pipeline Valu Wanaaring.

In the Pipeline

A new electronic teleprinter is planned for release in September 1978. Called the TX20, it is easy and quiet to operate, functionally attractive, half the weight of present day machines and offers a new range of customer facilities.

As mentioned in the Chairman's Report, the benefits to be derived from this technological advance are being passed on to customers in the form of reduced telex call charges from 1 July 1978.

A new executive telephone suite for business customers has been developed for introduction in 1979. It will meet a growing demand for a telephone suite with multiple call and answering facilities built into one telephone handset.

Following world-wide tender calls, it is expected that a contract for a fully automatic radio telephone service for cars, buses and trucks will be let in 1979.

This contract will be for the provision of a service for up to 4000 customers in both

TELECOM'S 1977-78 ANNUAL REPORT

Melbourne and Sydney. The service, which will give local call, STD and ISD facilities, is planned to commence in 1980/81 and to be progressively extended to other capital cities.

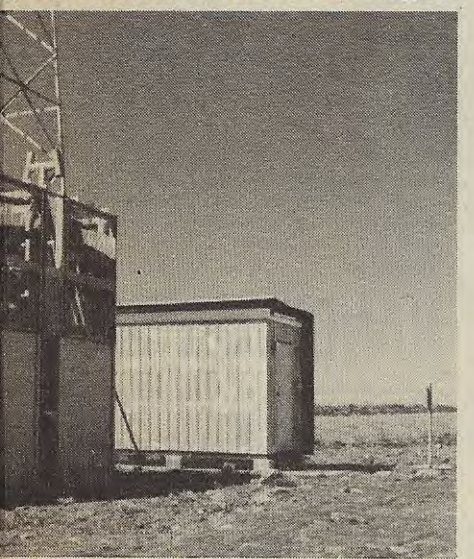
An evaluation of world-wide tenders for new generations of PABX's has commenced and after a detailed examination in Telecom's Research Laboratories, a decision is expected by early 1979 as to the systems to be adopted. The systems cover three technologies — updated electromechanical, electronic analogue and electronic digital.

By admitting fully electronic and computer controlled PABX's to the Telecom network, customers will benefit from an extended range of facilities.

RESEARCH

Electrical Energy

Telecommunications is not an energy intensive activity. However, the expansion of Telecom's operations has resulted in continued growth in expenditure on electrical energy. In



ust still protect its equipment with a bulletproof Site No. 10 at Mt Wood, between Tibooburra and

1965/66 the total annual cost of electrical power to Telecom was $5.5m. In 1977/78 the cost had increased to $17.6m, representing an annual average cost growth of 11%.

An integrated energy management programme has therefore been developed to reduce the growth of Telecom's consumption of electrical energy. The programme sets a target of 5% annual saving in expenditure in 1978/79 and 1979/80, the first two years of operation. This represents a real reduction in energy consumption. For the following ten years, annual consumption is expected to be held constant at the 1979/80 level.

The programme will consist of both staff and plant oriented activities, supported by the collection of data on energy consumption and the use of an effective performance measuring and reporting system. It will aim to keep both staff and management continually aware of the need to reduce electrical energy consumption and of the real part each person can play in energy conservation. At the same time, further initiatives in the areas of plant optimisation and redesign will extend the work on energy conservation already in hand.

The programme is in accord with the national programme of energy conservation recently formulated by the National Energy Advisory Committee and represents an early practical response by Telecom to this call for energy management.

Teletext

Investigation is under way to determine the feasibility of providing a wired teletext domestic information service. This service would complement a system of broadcast teletext being investigated by television stations and manufacturers which utilises unused portions of the signals transmitted by the stations.

In both systems the customer's television set is used as a display medium. The broadcast form is severely limited in the amount of information which is available, whereas the wired system is limited only by the computer system used to support it and could store the largest encylopaedia many times over.

A wired teletext service would utilise existing telephone facilities and would require only minimal additions to equipment used to allow reception of broadcast teletext. It would provide an economical source of information not at present available to the general public.

The Research Laboratories have produced a pilot system and several experimental customer units with colour or black and white displays. The pilot system will enable teletext to be demonstrated and user requirements evaluated.

Data Network

Data transmission services are provided by leased circuits or switched circuits within the telephone network. The technology involved is of necessity oriented towards compatibility with traditional telephone circuit design and is not necessarily an optimum method of providing data transmission. An alternative is data transmission based on a separate digital data network (DDN) within the telecommunications network.

Telecom is planning the introduction of a DDN network. The Research Laboratories contribution is a model 3-node DDN for the study of certain technical aspects of a DDN network. The 3 nodes are located in the Clayton Laboratories and the inter-nodal links have been established via loopbacks to distant points in Australia.

A major aim is to study any significant long term variations in transmission delay that might influence network synchronisation strategy.

A further aim is to collect error statistics and study error mechanisms on the long-haul transmission links of the network. The information collected has been a valuable guide for optimising network performance monitoring methods. The study of error mechanisms has also produced results which indicate how the telecommunications network can be designed to provide the highest grade of service to the data customer.

Industrial TV

Television links are usually provided by means of specially installed coaxial cables which give broadcast quality transmission but at a high cost. This quality is often unnecessary for industrial type applications, such as surveillance or security.

Telecom has been studying alternative techniques which economise by using existing telephone cables for short-distance TV transmission. Telephone cables, of course, are not designed for television use. Their use in this way is limited to distances of 2-3 km, without the use of repeaters, and the pictures which result are subject to occasional interference. Nevertheless, the system is technically feasible and Telecom is formulating policy on possible applications.

Buildings Design

A joint Telecom/Department of Construction Study was established to examine current telecommunication building standards and design and the validity of the criteria previously used.

The need for a re-appraisal at this time arises from a number of factors including:

- ***the advent of processor-controlled, high reliability switching systems with changed building requirements***
- ***the rapidly growing importance of the conservation of energy***
- ***the rapid rise in building costs***
- ***the possibility of providing wider environmental limits for the operation of telecommunications plant, with consequent saving in air treatment plant***
- ***the decreasing floor space requirements of new equipment***

Working groups are exploring the interactions of various factors in an attempt to reconcile the requirements of telecommunications equipment with economical but effective building design.

A short-term objective is the design of a prototype telephone exchange to house AXE local exchange equipment.

IRD Contracts

Telecom recognises the mutual benefits which flow from increased collaboration with the Australian telecommunications industry in research and development (R&D) activities. In July, Telecom announced its intention of increasing the total annual value of its programme of R&D contracts let to local industry to about $250,000 for 1977/78. If experience in this initial period suggests that the programme is successful and manageable, Telecom proposes to increase its annual programme of industrial R&D contracts to a level of about $500,000.

Telecom also supports telecommunications-oriented R&D in universities and other tertiary educational institutions through specific R&D contracts. Indirect support is also given through contributions to and participation in the activities of the Radio Research Board. Both forms of support will continue at about their present levels as a complement to the industrial R&D contract activity.

BROADCASTING

National Sound

Work commenced on the relocation and upgrading of National station 8AL, Alice Springs. The station currently operates at low power from a site located near the centre of Alice Springs. It is being relocated to the site of commercial station 8HA approximately 6 miles from the township and the power is being increased to provide better coverage to settlements distant from the town. The work will be completed in 1978.

Lines staff operate a mobile post hole borer in the Blue Mountains area of NSW.

BROADCASTING (CTD)

National TV

Five National translator stations were brought into service: Babinda, Gordonvale and Mareeba (Qld); Pannawonica (WA) and St Helens (Tas). The National television service now comprises 80 transmitting stations and 80 translator stations.

A major undertaking was the replacement of the National transmitters and antenna system at Newcastle (NSW) ABHN as part of the requirement to clear frequency spectrum for the introduction of FM broadcasting services. The station previously operated on Channel 5 and now operates on Channel 5A.

Remote Area TV

In November, the Government announced that 36 television repeater stations would be constructed in remote areas over the next three years. A television repeater station comprises a low-powered transmitter fed with programme from on-site video tape replay machines. The final technical details and locations of the stations are to be determined by the Post and telecommunications Department in consultation with the Australian Broadcasting Commission.

Overseas Tech. Aid

INTERNATIONAL

Technical assistance was provided in relation to the planning, establishment, maintenance and operation of the domestic telecommunications services of overseas countries. This assistance is given either through the Colombo Plan or as a part of the United Nations Development Programme (UNDP) through the ITU.

In recent years, our major contribution to Commonwealth Government aid under the Colombo Plan has concentrated on a telecommunications mission in Indonesia and on training of telecommunications people visiting Australia under Australian Government Fellowship.

Australia has been assisting the Indonesian Government to upgrade its telecommunications services since 1968.

The project is managed by an Australian Telecommunications Mission (ATM) located in Indonesia and staffed on a progressive basis from Telecom. Over the past 10 years, 69 telecommunications experts have worked with the Mission.

During the year, 19 Colombo Plan assignments were undertaken by Telecom; 17 to Indonesia and two to Malaysia. The latter assisted the Malaysian telecommunications authority in drawing up and implementing a crossbar maintenance programme, and in training local staff in crossbar switching techniques.

Seven overseas people received training in Telecom under Colombo Plan Fellowships in technical, personnel, financial and operating aspects of telecommunications. They came from Malaysia, India, South Korea, Pakistan and Bhutan.

Telecom was also host to 22 other trainees studying telecommunications subjects under the Australia/Papua New Guinea Education and Training Scheme (APETS) and on ITU Fellowships.

Currently, there are four Telecom people in Fiji on the staff of a training school which is funded jointly by the UNDP and the Australian and New Zealand Governments.

The school provides training in telecommunications technical and operating subjects for people from a number of Pacific countries.

Another Telecom expert based at Suva (Fiji) is carrying out a feasibility study of telecommunication needs in the South Pacific area on behalf of the ITU.

At present there are 120 people on long-term transfer to the Papua New Guinea Government which employs them on a contract basis throughout its telecommunications system. Fifty staff went to PNG in the past year.

INFORMATION SYSTEMS

ADP technology is changing as rapidly as any other and investigation of new facilities and planning for their use is a significant and necessary activity. A large training programme for ADP and User staff is also required to maintain the knowledge of current techniques.

As part of Telecom's commercial computer network, a second large-scale general purpose computer facility was commissioned in Sydney to support processing, particularly for New South Wales and Queensland. This facility will help to absorb the growing internal data processing workload and also provide back-up for critical applications on the initial facility at Clayton in Melbourne.

With the establishment of an Information Systems Branch in Hobart, all States are now able to make direct use of Telecom's computer facilities.

A trunk and route details system (TRD) was introduced during the year. The system is the first stage in the automation of trunk network records. It maintains records of the provision and utilisation of trunk and country junctions and provides a reliable and accurate national transmission record which will aid improved productivity by better utilisation of plant. Initial implementation is well under way for New South Wales and Victoria, with early extension planned for the other States.

During the year, a system was developed to automate the preparation of telephonist rosters thus providing improved speed and reduced cost of roster preparation.

Other systems under development included a local engineering system related to fault despatch centre operation and a system to improve the provisioning function for certain categories of material items by use of statistical forecasting techniques.

$20,000 DEIR/TELECOM FILM AIDS HANDICAPPED

The Chief General Manager, Mr Pollock, hosted the launching of a new film on the employment of handicapped people in Melbourne last month.

The $20,000 film, titled 'Who's Handicapped', was jointly sponsored by Telecom and the Department of Employment and Industrial Relations. The launching was attended by senior officers of the Department of Employment and Industrial Relations, Telecom Headquarters and States staff associations and representatives of a number of organisations working for the handicapped.

The film is in colour and lasts for 28 minutes. It is intended to be shown in Telecom to groups of staff to increase their acceptance of handicapped staff in the workplace.

Copies of the film (or video cassette) will be available at Headquarters from Ms D. Stitz (630 6462) and in each State through the Special Placements Officer:

NSW Glen Radford (02) 231 2282

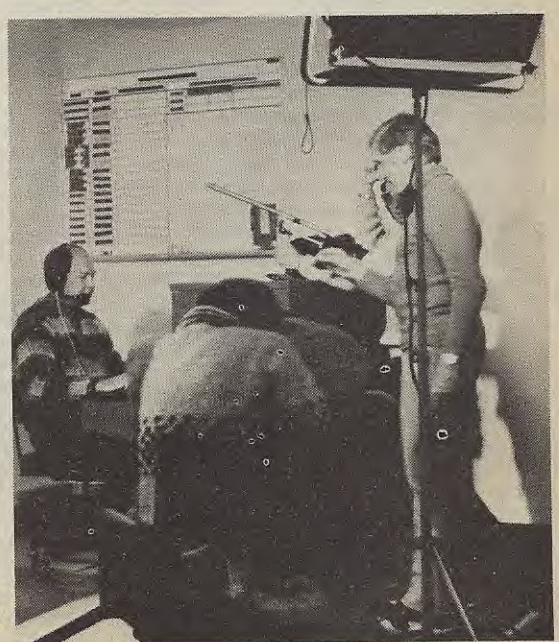
VIC Bob Brown (03) 67 4591

QLD Dave Colborne (07) 225 6837

SA Trevor Parish (08) 225 5801

WA Alan Holmes (09) 325 4751

TAS Dennis Keats (002) 20 8431.



Mr Bill Pollock, Chief General Manager, at the film screening, after welcoming guests. He is seated next to Mr Don Murray of Film Australia and Ms Kathy Hancock of Personnel Department Headquarters. Right: Mr Telfer, an employee of Telecom in NSW, being filmed for a sequence in 'Who's Handicapped'.

Telecom wins Matarra prize

Newcastle District staff entered a float in this year's "Matarra" Festival procession and won the major trophy and medallion in its section. The trophy was received on behalf of the Commission by Miss Mavis Sheedy, Senior Consultant, Advisory Services.

Matarra means "the friendly hand" and is the theme for the week long festival every year which offers a variety of activities for all ages.

This year 134 floats were entered together with numerous bands and marching groups.

Representatives from most sections of the Telecom district worked enthusiastically for long hours to transform a well used low loader lent by Toll Chadwick, a leading transport operator in Newcastle into the award winning float.

TEAM EFFORT

The team included line staff, carpenters, painters and draftsmen with the artistic and decorating talents provided by members of the MAC, Sales Advisory and Service Staffs.

The theme used for the float was "It's a small world with Telecom." A large glittering gold world with countries etched in silver held pride of place at the rear of the float.

From here gold cable followed a central path to a large cable drum in the centre of the float and from there to a miniature broadband tower at the front of the float.

Smaller cables reached out to colorphones which were individually held by small children dressed in various national costumes at various points of the float. The children were seated on small upturned cable drums which were covered in gold and silver paper.

The outer wall of the float was decorated with an alternating pattern of Telecom logos and the "friendly hand" of Matarra. Four girls from the Business Offices and M.A.C. walked at each corner of the float carrying clusters of ballons.

Some of the music for the occasion was provided by a junior band suitably attired in white Telecom "T" shirts. They proved to be most enthusiastic performers and rendered the song "It's a small world," with great gusto.

These beautiful young Australians immaculately turned out in their Telecom T-shirts helped make our Matarra float a sure winner.

Yellow pages in the all-together

The new all-in-one Yellow Pages for 1978-79 was launched in Melbourne at a function at the Melbourne Town House attended by more than 100 guests and Telecom and Directories Australia representatives. Victorian quest of quests winner, model Greta Fahlstrom presented Acting State Manager Frank Waters (left) and Sales Director for Directories, Tony Knight with first copies of the new Yellow Pages.

Business as usual Qld. exchange move

Queensland primary works staff recently shifted a Sunshine Coast automatic exchange to a new site maintaining exchange equipment in full working order throughout the move.

Although working exchanges have been moved before, it was thought to be the first time in Australia the larger type of "C.A.X., known as the "jumbo," had been shifted while operating.

Primary Works No. 2 engineer, Neil Krautz, and seven staff members carried out the move.

Two cranes carefully lifted the building onto a lowloader for the 400 metre journey to the new exchange site at Peregian Beach, on Queensland's Sunshine Coast, north of Brisbane.

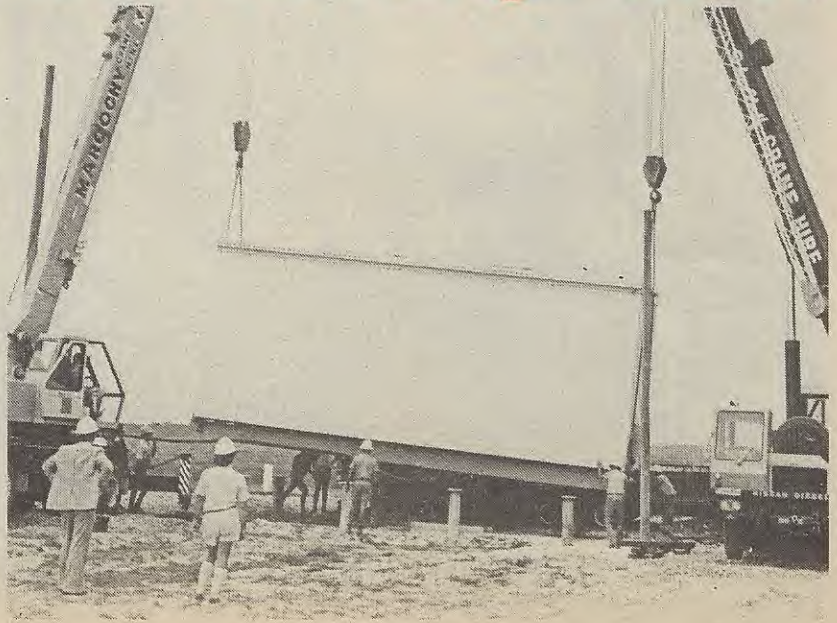
The exchange was kept "on the air" by trailing a plastic subscribers' cable behind the building as it was moved. This cable was cut in shortly before the exchange was removed from its temporary site.

The permanent junction cable and power lines were disconnected during the move and the exchange operated on battery power. The telephone inside the exchange building rang several times during the shift proving equipment was functioning.

Telecom technical staff checked operation of exchange equipment throughout the move. An emergency repair gang stood by in case of trouble, but the move went off without a hitch.

The move took three hours to complete, undercutting the estimated time by almost four hours.

The alternative to the risky manoeuvre was to disconnect exchange cables and re-connect them at the new site. This would have taken about three days and the inconvenience caused to the public would have been unacceptable.



BACK O' BOURKE WITH

A NSW Country Primary Works aerial construction party has been slogging continuously for the past 15 years in the heat, dust (sometimes the mud) and desolation of barren country west and north west of the Darling River in a series of projects to bring upgraded telecommunications to scattered settlements and lonely stations.

The terrain varies from red dust to shale, to slate, to ironstone but always the roads are rough and dusty, except of course when it rains and brings on an even more horrific set of problems.

The many wide and deep creeks, usually dry are then fraught with danger as water rises very quickly and flows even quicker. One, Packsaddle Creek, 110 miles north of Broken Hill has already claimed lives, two in the past 12 months.

NSW Public Relations Officer Jim Guild recently went to see these Telecom men of pioneer spirit and to review the mighty job they are doing for the people of the area and for all Australia. Here is Jim's report:

In 1964, a party of 15 men began replacing the original aerial route from Broken Hill to Tibooburra via Packsaddle, and erecting the line closer to the connecting road.

On this new line an aluminium conductor steel reinforced wire was used which permitted poles to be erected 10 to the mile compared with 32 to the mile previously.

The new line also enabled services to be extended to such places as Byerkana, Fowler's Gap, The Selection and Stephen's Creek which previously had to rely for communications on the Flying Doctor radio facilities.

Packsaddle was the end of the first section of the project. Ron Stephens (Party Leader) is the only remaining member of the original party which worked on this section. Most of the other present day members have been together for more than five years under the control of Line Inspector Stan Corrigan. Stan is a walking encyclopaedia on this wilderness and knows every track and bypass.

The second section of the line continued another 110 miles through Milparinka to Tibooburra and was completed in 1966. Milparinka has one hotel, the police station and the ruins of buildings including the old post office where the first official Postmaster was appointed on May 20, 1890.

A telephone exchange was opened in the Milparinka Post Office in May 1915. The August 1915 telephone directory listed the following subscribers:

(9 a.m. to 6 p.m. Wednesday 9 a.m. to 1 p.m.).

5 Williams, Mrs A "West End Hotel."

3 "Mt. Poole," (S. Kidman).

1 "Tibooburra Station."

2 "Yandama Station" (B. Dawes).

Approval was given in October 1925, to alter the spelling of the name of the Post Office from Milperinka to Milparinka.

Tibooburra Post Office was opened to telegraph traffic in September, 1890 and made a telephone office in December 1908. Today the town has a population of 150 and is situated amongst huge boulder outcrops, unique to this town. It is believed that at some time in early history a large underground disturbance must have forced these boulders to the surface.

Postmistress, L. Kelly remembers our line party well and has nothing but praise for their behavior, friendship, and willingness to assist the townspeople at any time in any manner during their stay.

Since the completion of this project the party has finished work in various country areas including Menindee, Cobar, Nyngan, Hay, Tamworth and Moree and has improved exchange services to small towns and properties with names such as Bokhara, Brewon, Brichinguy, Compton Downs, Dry Lake, Grass Hut, and Whyjonta.

The present day living conditions of the party are a far cry from the old tent camp days of country aerial gangs and are now possibly as comfortable as can be provided.

The party at present is camped just south of Enngonia, while erecting a new line from Bourke to Barringun. This project began in June 1978 and is expected to finish by Christmas, weather permitting.

The party members in 32 foot caravans, divided into four individual units measuring 8 foot by 8 foot. There are five such caravans which permits spare units for visitors when required.

The Line Inspector has his own caravan. Other vans are individually constructed for special services such as the kitchen where the camp cook provides breakfast and dinner from large stoves. The men take pack lunches while out on the road.

An amenities van which serves also as a dining room is equipped with two large refrigerators, cold water and container and television. The laundry van has twin tubs and a washing machine while the ablution van has two showers, four basins and two toilets.

Electricity is supplied to all vans from the party's own generator and hot water is available at all the necessary points. Water is supplied from a 1000 gallon tanker and drinking water from a smaller one.

Another van is set aside for an office and is equipped accordingly. A very essential part of the party's equipment is the two-way radio which is installed in some of the vehicles and is invaluable in keeping a check on the whereabouts and safety of the respective personnel. Drivers travelling long distance, are required to report hourly to base.

The incidence of breakdowns has been reduced somewhat with the introduction of Land Cruiser four wheel drive vehicles instead of station wagons. They are more rugged and far better suited to the rough outback tracks than the conventional vehicles.

The cook travels the 80 miles from Enngonia to Bourke twice weekly to purchase supplies and men share the costs of meals evenly as the price per meal is averaged out and they pay for those meals taken in camp.

Supplies are supplemented by home grown vegetables. The men have cultivated a vegetable garden which is flourishing with peas, beans, tomatoes, lettuce, beet and watermelons. The garden is watered by all excess water from the showers and washbasins.

Pork is used as a change of diet. The men periodically go pig hunting in their leisure weekends and any pigs caught are kept in pens for about a month and fed on grain. This causes the pigs to lose the rankness of taste associated with meat from a wild pig.

At present there is a sow and seven young pigs penned in camp. A sheep or two are often bought and killed by party members and the meat kept in the camp freezers.

Another favorite sport which allows for a change in diet is catching yabbies which are rather prolific in some of the waterholes and lakes in the area. The men travel many miles in their own vehicles, to try their luck. Some of the men play cricket with local teams and may travel up to 60 miles for a game.

There are some married men in the party who have their families living in various parts of the State. Distance is the big problem of course and they may only go home every six months.

If you ask the men why they work away from home in conditions where the temperature varies from 32° to 114°, they just smile and reply "I like the outback and the type of work."

The turnover of staff of this particular party has been minimal, only eight exempt staff have left during the last three years, mainly for personal reasons.

PHOTOGRAPHS BY TELECOM PHOTOGRAPHER BEN CHANDLER

Country Primary Works aerial construction party in camp at Enngonia from left: Doug Umback (party leader), Brian Burton (borer operator), Colin Stephens (truck driver), Stan Corrigan (senior lines officer), Jim Ferguson (leading hand), Phil Sutton (cook) and Kels Campbell (truck driver) both standing, Ron Stephens (party leader, seated on bucket), Bob Jeffrey (truck driver), Alton Elliott (clerk), Francis St. Julian (holding camp steward), Robert Moorhouse (truck driver). Front with Defa Dog, John Burn (truck driver). Right Country Primary Works camp site at Enngonia, north of Bourke.

TELECOM'S DOGGED AERIAL GROUP

The well appointed kitchen van attached to the camping party at Enngonia. Right: Driver John Burn drops in to ask cook Phil Sutton "What's Cookin'?"

Most difficulties experienced have been mainly washaways, bad roads, breakdowns and dust. Surprisingly sickness is almost negligible and accidents very few. Most of the accidents reported are the result of burns from creosote on the poles.

At Bourke recently, the party slung wires over the Darling River high above flood level and right in the middle was placed transposition equipment. To the Line Inspector's dismay, the first time he checked, and fortunately before the line was brought into operation, he discovered a pee wee had built its nest around the wire from an insulator.

There is no possible way a human can reach the nest with any equipment available in Bourke. The only answer appeared to be to ask the help of the fire brigade to water blast the nest off the pole from the bank of the river. At the time of writing the pee wee nest was still in situ.

Such incidents are commonplace to this party and it is the bush experience of the men, and their ingenuity in a crisis that allows communications in this vast barren outback country to function.

Postmistress Mavis Jackson at Tibooburra telephone exchange.

Lines supervisor, Ron stephens, tensions wires in the new aerial route from Bourk to Barringun.

Senior Lines Officer Stan Corrigan reports to base over two-way mobile telephone service.

Line supervisor Doug Umback tests for faults on the aerial route between Bourke and Enngonia.

Your article in the September issue of "Telecom" sought information about J. E. Edwards and his 1878 "Loud-Speaking Telephone". The telephone referred to in the advertisement was not a loud-speaking telephone as we know it today, i.e. a "hands free" instrument used by a group of people together.

Soft loud phone of Divvy Bells Edwards

By FRANK SODEN, Telecom Engineer, at Dandenong (Vic.), well-known collector of old telephones, and president of the Australian Historic Telephone Society.

The term "loud-speaking" in the Edwards advertisement was a relative one — comparing the efficiency of his telephone against others then in use.

We must keep in mind the "state of the art" at that time (1878), when the telephone was still very much in the developmental stage — it had only been invented (by Alexander Graham Bell) two years earlier! Bell's telephone worked on the magneto principle, whereas Edwards used a much more efficient carbon transmitter.

Whereas in the Bell case one had to shout to make oneself heard, with the Edwards telephone (and others using this type of transmitter) one could be heard quite clearly whilst speaking normally. In fact, when Edwards demonstrated his "loud-speaking" telephone it was reported that . . . "it was heard distinctly by a number of gentlemen standing 40 feet away from the receiver . . ."

About the time of experimentation with the new "speaking telephone" (as the instrument was at first called) there were various reports in the daily press. One in the Argus of 5 Feb. 1878 describes one of these conversations: — " . . . at times the answers were wonderfully distinct, every word falling on the ear with refreshing clearness. The voice always, however, seemed to be refined and as it were, thinned away until the sounds seemed to come from fairy-like creatures in the recesses of the telephone . . ."

The Edwards instrument was for conventional use by one person, holding the receiver to the ear.

John Edward Edwards was one of the pioneers of the telephone industry in Melbourne. Born in London in 1841, he developed an interest in electricity at an early age, and worked in some of the leading telegraph workshops in London, including Siemens and Halske. He came to Australia in 1866 and worked in Victorian Telegraph Department workshops.

DIVISION BELLS

He conceived the idea of installing electric bells in the State Parliament to call members to a division in place of the then practice of messengers running through the building calling out "Division, division".

The idea was adopted, and the Victorian was credited as being the first Assembly in the world to be so fitted.

John Edwards became interested in the idea of transmitting music and speech by wire, patented a system in 1878, and erected the first telephone line in Australia in that year. The line was for McLean Bros. & Rigg (hardware importers) from their head office in Elizabeth Street to their warehouse in Spencer Street.

He opened a small telephone exchange in 1880 providing telephone services to a number of business houses and factories in Melbourne. His service was short-lived, being soon taken over by the Government.

The Australian Historic Telephone Society is a society formed by a group of people interested in the subject of early telephony and of collecting old telephones. The Society welcomes enquiries, and membership is open to anyone interested. Write to:

Australian Historic Telephone Society
P.O. Box 194,
Croydon Vic. 3136.

The Society has monthly meetings and produces a monthly newsletter for members.

There is available a 64 page illustrated book titled, "100 Years of Telephone", which describes the invention and history of the telephone. The book is available at the above address at $3, inc. postage. At left is a typical illustration.

J. E. EDWARDS'S

AUSTRALIAN

LOUD-SPEAKING

Combination

TELEPHONE.

No. 1 No. 2

The EDWARDS TELEPHONE was awarded **First-class Prize Medal at the Sydney Exhibition of 1879-80,** and is acknowledged to be a great success. It is guaranteed to work as loud as an ordinary speaking tube, enabling persons miles apart to converse with the greatest ease, as though they were in the same room. Among the establishments in which the telephone has been fixed and given every satisfaction are the following, viz. :

Messrs. McLean Bros. & Rigg's line, since February 1878, when it superseded the Wheatstone ABC instrument previously used.

The Melbourne Omnibus Company's line, two miles long, since October, 1879.

The General Post Office and the Customs Departments.

Mr. Hosie's various establishments in Bourke street east ; and many other places throughout the colonies.

The Telephones are made in various forms, the two principal ones, adapted especially for business uses, being styled Nos. 1 and 2 (as drawn above) ; which can be specially recommended wherever communication is required between the principals and employes in commercial houses, between central and branch banks, between mining managers and the employes in the mine, in large hotels or mansions, and in factories of every description.

These Telephones are of first-class manufacture, simple in construction, and can be used by any person after an hour's instruction and practice.

One Telephone only is sufficient for listening. The right hand is thus left free for writing down the message as received.

Printed directions are forwarded with each set of apparatus.

All orders, accompanied with cash remittance, will receive immediate and careful attention.

Full particulars and estimates will be furnished on application to

J. E. EDWARDS,

133 LITTLE COLLINS STREET EAST,

(ABOVE RUSSELL STREET,)

MELBOURNE.

Wartime line trainees meet

A recent Telecom staff reunion brought together members of five lineman-in-training classes held in Queensland during World War II. Line Inspector Primary Works No 1 section, Charlie Dickson, planned the reunion and twenty of the original 60 class members and their wives took part. State Manager, Paul Dubois, attended as guest of honour. Some members had not seen each other for almost 30 years. They came from Perth, Goulburn and Rockhampton. Former trainees included Chief Manager, Personnel and Industrial Relations, Jack Heywood and Gold Coast District Telecom Manager, Stan Hilton. Classes of 12 trainees each were held in Brisbane from 1938 until 1942 when Australia's war effort forced their postponement until 1946. Charlie Dickson was a member of the first group in 1938 and decided to arrange the "once only" reunion before members were due to retire from active service.

In pic. above STO Norm Absolon and Gold Coast External Plant Manager Keith Heard chew the reunion rag.

Taxis hail us!

SIR — These days it seems the "in thing" is to criticise government establishments in general.

However, on Wednesday, August 16, when a backhoe inadvertently dug up our telephone lines, we found Telecom were on the job only minutes after being called and worked non-stop to restore the service, which, under the circumstances, was not an easy task.

We found Telecom most helpful and are grateful for the prompt and efficient service they gave.

Congratulations Telecom on a job well done.

W. WIGGERS

President, De-Luxe Taxi Co-operative.
TAREE. NSW.

PEOPLE PROBLEMS DISCUSSED

People problems arising from changes in Telecom Australia was the theme of a recent conference of Personnel and Industrial Relations managers at Headquarters.

All Chief Managers, Personnel and Industrial Relations and Managers, Industrial Relations from State administrations attended together with Managers and staff of the Industrial Relations Department at Headquarters.

Other items covered included developments in conditions of service policy, industrial implications of future operational programmes, current claims and arbitration cases, internal communications, requirements and specific items of mutual interest.

The Chief Managers also conferred with the General Manager, Personnel and his staff in a separate session. Here, emphasis was directed to ensuring the continuing development of staff and administration of programmes for staff development, manpower planning, staff welfare and general personnel services. However, attention was mainly directed to implementation of the new lines structure.

This conference was one of a series of routine get togethers providing an opportunity for all State administrations to confer with Hq and among themselves on both personnel and industrial relations issues.

STANDING (L to R) Arthur Hunt (Chief Manager, P & IR, NSW), Richard Baillie (A/g Manager, Pay & Conditions, IR Dept., HQ), Barry O'Sullivan (General Manager, IR Dept., HQ), Athol Westcott (Chief Manager, P & IR, Tasmania), Greg Larkins (Manager, IR, S.A.), Pat Delahunty (Chief Manager, P & IR, S.A.). SEATED (L to R) Alf Eves (Manager, IR, NSW), Brian Sullivan (A/g Manager, IR, W.A.), Alan Mee (Manager, Industrial Services, IR Dept., HQ), Bill Davies (A/g Chief Manager, P & IR, W.A.), Roger Griggs (Manager, IR, Tasmania), John McMahon (A/g Chief Manager, P & IR, Victoria), Neil Doyle (Manager, IR, Queensland), Jack Heywood (Chief Manager, P & IR, Queensland)

Ian's dreamboat hits the water

It all began when Ian, a 27 year old drafting assistant, Grade 2, with Telecom in South Australia, read a series of articles about a yacht which two Frenchmen commissioned a British naval architect to design for circumnavigations.

The yacht was sailed across the Atlantic to the North Pole, 1,600 kilometres up the Amazon River, around Cape Horn to Antartica and Australia and back to France.

Ian was convinced this was the type of craft he was looking for. He discussed its unusual features with designer Robert Tucker, obtained study plans, pored over them for months and eventually redesigned many components so that the only remaining similarity was the hull design.

Four years and seven months ... thousands of hours of work ... thousands of dollars and a third of a million staples later ... and Ian Rowe's dreamboat was afloat.

From here on in, Ian's story covers his methodical approach to his huge undertaking, his application to the task he set himself, the disappointments, joys, satisfaction and pride as he saw his yacht lowered into the water at Port Adelaide at 2 p.m. on July 24, 1976.

For yachtsmen's interest, Ian's "Ace" is 36 ft long overall, has a 10'2" beam, draws 5'. Sail area: Cutter rig; mainsail 180 sq ft, staysail 120 sq ft, jibs 60 — 320 sq ft, ballast 3600 lb, displacement 5 tons.

Ian's intention is to sail his craft at every opportunity. He hopes to take it to Darwin via the east coast and cruise to Queensland and to the Pacific islands north of Australia. He's also got his eyes on a round-the-world jaunt.

When Ian's yacht left his parents' home for launching, a brick garage had to be demolished plus a carport and fence. Trees, too were moved to allow the crane and low loader to complete the exercise.

A proud moment for IAN ROWE as his shapely craft is launched. Ian has his hopes on an eventual world cruise for which the 5-tonner is eminently suitable, the design having been proved in a journey to the North Polar regions and around Cape Horn. That's Ian on deck.

Youth of the Year

Jonathon Huston (15) son of Superintending Engineer, Metro Operations Branch, Perth, John Huston, has just won the W.A. Lions Youth-of-the-Year Quest. The finalists were judged for academic record, general knowledge, qualities of leadership, personality and interest in sport and culture.

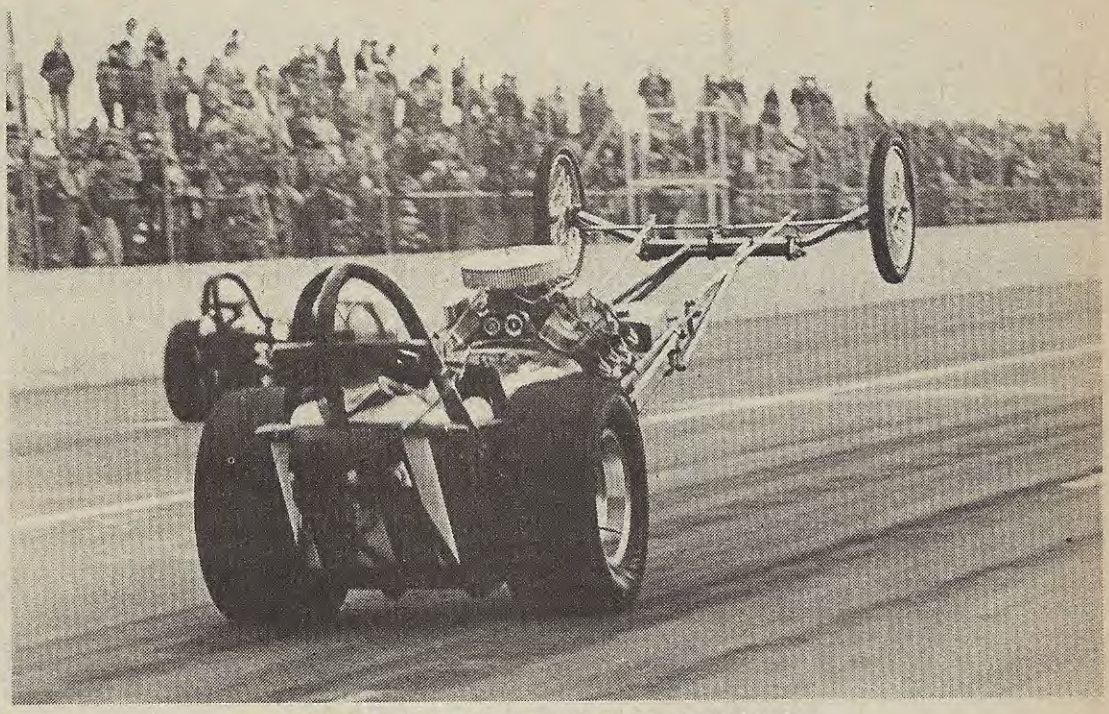
Jonathon will go on now to compete in the Australian final in May next year. His prize for the State quest is a trip around Australia.

Jonathon is also one of several young West Australians on the short list for attendance at the United Nations Convention in Melbourne next year as part of the International Year of the Child.

He is one of eight children, attends Aquinas College and hopes to enter Duntroon Military College when he leaves school the year after next.

RUSS IS SA's TOP DRAGSTER

Telecom Workshops, Adelaide, have a number of drag racing devotees including drivers and supporters but there's no bigger or more successful speed freak in the place than Russell Parker. Just take a captain at his track record:



RUSS' great beastie rears up at the start of a drag.

Russell Parker, driving in 1976 set a new Australian record in drag racing, driving his "B" class dragster to a time of 9.84 seconds for the quarter-mile.

He has not only managed to keep the same record ever since, but has lowered it five times in the past three years. His best time and speed record to date is 9.28 seconds and 144 mph.

Russell's home built car has the peculiar combination of a 302 Ford V8 motor, clutch operated Chrysler automatic gearbox and Austin differential, each chosen for their performance, reliability and low weight, the basic needs of a racing car. It develops 340hp and weighs just 1080 lbs.

The addition of four wheels and a tubular steel chassis to tie it all together virtually completes this race car, as dragsters carry the bare essentials to keep weight to a minimum.

When the car gets excessive traction it tends to stand up on its back wheels as can be seen in the photo. It is spectacular action but it can be rough on the machinery if it comes back to earth too quickly!

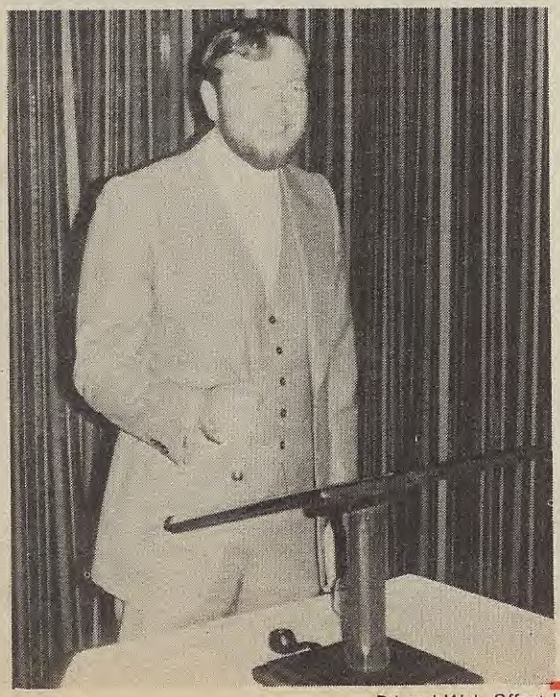
In 1977 Russ won his bracket of the Australian Point Score Series at the Adelaide International Raceway and in March 1978 travelled to Surfers Paradise for the Drag Racing Nations and claimed the "Modified Eliminator" title for 1978.

Consistent efforts at his local track, Adelaide International Raceway over the 1977-78 season, winning many meetings and scoring well in the rest won him the titles of "Top Dragster" and "Driver of the Year" with awards of a billiards table and holiday at Surfers Paradise.

This gave Russ his best year of Drag Racing since he took up the sport fourteen years ago.

Here's a toast to toastmaster Tony

Let's be upstanding and drink to Telecom Headquarters engineer Tony Jessop because he's the District Governor of the Toastmaster Clubs of Victoria, South Australia, West Australia and Tasmania — all 26 of them.



Tony is big too in the Toastmasters Speakers Bureau of Melbourne which provides speakers on a variety of subjects for meetings and functions of civic, and service groups and other community organisations.

One of the most requested subjects is "The Telephone — Yesterday, Today, and Tomorrow" presented by Toastmaster Tony who fills in his weekdays as a Principal Engineer in the Headquarters Telephone Switching Planning Branch.

The Speakers Bureau brochure outline states "This talk traces the development of the telephone and describes today's telephone system and the services available.

Tony says that the presentation is received with a great deal of interest by the groups he has addressed. He finds that the general public is thirsty for news about Telecom and is willing to listen to the problems and plans of our organisation with sympathy and understanding rather than scepticism.

Although Tony undetrook these speaking assignments initially as an exercise to improve his ability to speak effectively before strangers, he has found the greatest benefit is the two-way communication between Telecom and the general public.

The Toastmasters Speakers Bureau provides additional speaking opportunities for the members of Melbourne's 15 Toastmaster Clubs. These clubs are formed to help people improve their ability to communicate, and provide a relaxed atmosphere in which speaking skills can be practised and taught.

All members of Toastmasters joined because they recognised their lack of ability to stand in front of an audience and speak with confidence, so new members are welcomed with sympathy and understanding.

Toastmasters clubs can be found in all capital cities, and in many country centres throughout Australia. They have a particularly strong Telecom staff representation in NSW. If you are interested in joining — ask Tony.

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