

# *The* **BROADCASTER**



Newsletter of the Broadcasting Directorate  
No. 4

March 1986



**RADIO AUSTRALIA ANNOUNCER MELBOURNE STUDIOS**



**RADIO AUSTRALIA TRANSMITTING STATION DARWIN**

The Broadcaster is the in-house Newsletter of the Broadcasting Directorate and is published three times a year to inform and recognise the people who make up this organisation.

Articles appearing in The Broadcaster do not necessarily reflect the views of the management of Telecom Australia.

Written and photographic contributions are welcome. All material should bear the contributor's name and location and be directed to:

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This Issue makes a feature of our International Broadcasting Service, Radio Australia.

Notwithstanding the introduction of satellite broadcasting, short wave broadcasting is far from being a spent force. A perusal of the technical literature reveals that many countries are expanding and upgrading their short wave broadcasting facilities.

When Radio Australia began transmissions in 1939 there were about 200 short wave stations on air throughout the world. Now there are well over 3000 competing for the listening audience. Many of the broadcasters are employing 500 kW transmitters into high gain antennas but it is not always the powerful signal that will hold the attention of the listener. The broadcaster has to show a sympathetic understanding of the program needs and desires of the listener.

For all its faults, fading, ionospheric blackouts etc., short wave broadcasting is still the most immediate, economic and simplest way to bring a message to the peoples of the world.

All the listener needs is a small, inexpensive lightweight receiver which will operate from a couple of torch cells and without any sophisticated antenna and expensive decoding equipment.

JACK ROSS  
*Editor*

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*Front cover:*

Ellia Leong, Chinese Service  
Transmitting Station, Cox Peninsula.







Leon Sebire

## From the Director's Desk

One of the least known of our activities is the Directorate's involvement with the Radio Australia service of the Australian Broadcasting Corporation. Radio Australia is our shortwave radio voice designed to project Australia's lifestyle and values to listeners abroad.

Since the inauguration of a regular overseas broadcasting service from Australia in 1939, the PMG's Department and more recently Telecom, has provided and operated the necessary transmitting facilities.

Our longer serving readers will remember with me the time when our Radio Australia facilities represented the ultimate in transmission technology, preceding the advent of TV and FM, and competing only with medium powered MF services. A visit to Shepparton was an awesome experience as we marvelled at the skills of the 'locals' who were able, from the ambient field strength, to illuminate light globes merely by touching them on any metallic object on the station. In those early days annual listener polls abroad often rated Radio Australia 'top station' and consistently in the top three.

However, in later years, competition for international audiences and for National funds has become more intense, and as a particular Prime Minister once explained to me 'there are no votes in overseas broadcasting'. Radio Australia's position has declined as the 'super-powers' have made the transition to 'super-powered' transmitters located in close proximity to their selected target audiences.

In 1985 the USSR provided a total of approximately 115,000 hours of overseas broadcast program while the USA and UK (British Broadcasting Corporation) provided approximately 105,000 hours and 40,000 hours respectively. Radio Australia presented some 30,000 hours which corresponds to 85,000 hours of shortwave transmitter operations by Telecom Broadcasting Directorate. The cost comparisons are striking, USA expending \$A450M, the BBC \$A160M and Radio Australia (ABC plus Telecom) \$A18M in the year.

With a shrinking world and further advances in technology, it is difficult to predict just how long international shortwave broadcasting will endure. Meanwhile, may the Broadcasters of Telecom keep up the good work.

LEON SEBIRE

## Station Roll Call

### ABAW-2 MT BARKER

Television station ABAW-2 Mt Barker is situated on a hill called Mt Pwackenbak about 5 km from the Mt Barker town site and some 45 km from Albany, a major tourist centre. The station is central to the premium agricultural and wine producing area in the southern part of Western Australia, and adjacent to major flora and fauna reserves in the Stirling and Porongorups Ranges.

Mt Barker experiences moderate summers and cool, wet winters, with the occasional fall of snow in the surrounding district. The environment supports a variety of staff interests and the area is well endowed with many sporting facilities.

ABAW-2 is a conventional high power National relay TV station opened on 6 June 1966. It also houses a stereo FM service which went to air on 2 July 1984 and Commercial TV station GSW9 which was commissioned on 23 August 1968. Being a prominent site in the district, the station is also host to some Telecom radiocommunications systems.

Station staff also have a district responsibility. They maintain National and Commercial TV translators which commenced transmissions on 10 August 1974 on Mt Clarence at Albany, the National Broadcasting Service Transmitter 6AL and its associated ABC studios in Albany, microwave radio repeaters in Mt Barker and Cranbrook, as well as Radiotelephone base equipment at the station and in Albany.

Mt Barker is a staffed station comprising OIC, three Shift Leaders, four Technicians and a Cleaner/Labourer. The Shift Leaders and Technicians work rotation of shifts, allowing the station to be staffed on a seven day a week basis.

BILL NORTON

### 6WA WAGIN

Broadcasting station 6WA Wagin is situated approximately 5 km from the Albany Highway along the road to Wagin, behind a spectacular stand of sugar gum trees. The transmitter is housed in a magnificent old building in which the National Trust has expressed an interest.

Wagin is located in the area known as the Great Southern which is a wool and grain growing area. Settlement of the district began around 1880.

6WA is Western Australia's senior regional transmitter and was commissioned during 1936. The official opening was held on Monday 7 December of that year, with the inaugural program being originated from the Wagin Town Hall. After the official program had been completed, a band which had been brought from Perth for the occasion provided dance music to entertain the large crowd which had gathered from the surrounding towns and districts for the event.

The station began its career in a somewhat 'chequered' fashion when the mast fell to the ground on 25 August 1936 because of high winds. At the time the construction of the mast was almost complete, only the top guy wires and the 'top hat' needed to be fitted.

The original transmitter was a water cooled type, with power being generated on the site. This meant that a large number (17) of people were stationed at the station. These included Fitters and Turners, Diesel Mechanics, Electricians and Technical staff.

It was quite a place in its heyday, with four houses, single men's quarters, and a large number of external buildings of lesser size. Facilities in the early days included a tennis court and a cricket pitch.

The original transmitter was replaced by the current 50 kW STC type in 1957 and the station's coverage area now encompasses the larger part of Western Australia's south west corner, as far east as Esperance and Coolgardie. The station was connected to the State Power System in 1961 so the need to generate continuous power ceased, and as a result staff numbers have now been reduced to six. Old 'warriors' who once worked at the station often call in to indulge in nostalgic memories of the good old days.

BILL SMALLEGANGE



# News Round Up

## ORGANISATION REVIEW STUDY

As a consequence of the recently completed Organisation Review Study, the Managing Director has approved the elevation of State Broadcasting Manager positions in Victoria and Western Australia to Executive, Level 1 status.

Approval has also been obtained for the creation of a Deputy Director Executive, Level 2 position to head up the Central Office branches and support groups. Some minor re-arrangement of functions in this area will follow.

Other recommendations contained in the Working Party Report have been approved in principle and subject to the completion of certain formalities will be implemented in due course.

In concert with the above determinations the Managing Director has also approved reclassification of the Director Broadcasting position to Executive, Level 4.

MAX CHADWICK

## THURSDAY ISLAND AUSSAT DISH

A number of items in earlier editions have explained the features and technical advantages of direct broadcasting via the AUSSAT satellite. The installation of receiving equipment for this service in remote areas, such as Thursday Island, has demonstrated some of the complexities involved in a conversion project of this type.

The AUSSAT antenna system for Thursday Island consists of a 4.6 metre Earth Station Antenna (ESA) with a Cassegrain feed system to a low noise converter mounted at the base of the feeder. The physical size of the dish meant that sea transport from Melbourne to Cairns was the most suitable option. The shipping of two 4.6 m ESA's (the other was for Weipa) was a major exercise in itself.

After a mishap on a wharf in Melbourne, where a crane hook was accidentally dropped onto the crates, replacement dishes were forwarded to Brisbane on the 'Bass Trader' via Burnie and Sydney, and transported by road in the early hours of the morning from Hamilton to New Farm wharves. Shipment to Weipa via Groote Island on the 'Syd McGrath' and from Weipa to Thursday Island on the 'Albany' finalised delivery to Thursday Island Wharf. Materials were shipped under the watchful eye of SLO Dave Southby.

Delivery at the site at Green Hill was accomplished using a low-loader and a crane to lift the ESA while the low-loader negotiated a hairpin bend on the uphill climb. On final inspection after unpacking from the crate, the dish was found to be 'dented' near the feed mount holes! To the relief of all, some 'delicate panel-beating' by LS3 Vern Berry, allowed the feed sub assembly to be correctly positioned.

The dish was ground mounted on a 3200 mm x 3200 mm x 600 mm slab, with the concrete being hand mixed on site.

GREG DOWLING

## RADIO AUSTRALIA STAFF ON TALKBACK PROGRAM

The Darwin Radio Australia station celebrated 12 months on air (for the second time) in early September, 1985. The occasion was marked by a special segment on Radio Australia's regular Sunday program for shortwave enthusiasts 'Talkback'. With the co-operation of the producer of the program Mike Bird, its presenter Judy Cooper interviewed three of the station's staff, assisted by Dianne King operating the Darwin ABC studio facilities.

Station OIC Terry Said, and ST01 Shift Leaders Ted Hurn and Eric Newmann compared the station as it was before Cyclone Tracy with the facilities which have been in use since it was reactivated in 1984. The station's curtain antennas, computer control system and hopes for future expansion made interesting listening when I heard it while on a weekend trip to Broken Hill, the irony of it being that, on this occasion, Radio Australia Carnarvon on 15395kHz provided the best signal for me!

JEROME VAN DER LINDEN



L to R — Eric Newmann, Terry Said, Ted Hurn, Dianne King.

## INSTALLATION — VICTORIAN STYLE

The Victorian Broadcasting Branch has adopted a new approach to remote site installation. Transportable buildings are being purchased against tenders arranged by Engineering & Construction's Rodger Berkin (ST02 Buildings) and delivered to the Installation and Maintenance Depot at Lyndhurst. Internal plant is installed and commissioned with the full facilities of the depot at hand. Sensitive equipment is removed from the building during transportation and reinstalled after relocation to the site.

This method of installation overcomes the frustrations and problems associated with working at remote locations as well as creating obvious savings in incidental expenditure. The projects are efficient and cost effective, and have the added bonus of allowing a flexible approach to works programming.

Presently, equipment is being installed in two transportable buildings at Lyndhurst for a 200 W translator service at Bairnsdale and a 10 kW MF service at Wangaratta.

MARTIN O'DONOHUE

## NEW QUEENSLAND DEPOTS

New broadcast maintenance depots have been established in North Queensland to cater for the maintenance of the large number of stations in that part of the State.

Depots are now operational at Sydney Street, Mackay, Yeatman Street, Townsville and Bunda Street, Cairns. Staff at these centres have responsibility for the maintenance and operation of the broadcasting facilities in their respective areas, except the 4QN Brandon 50 kW station which is fully staffed.

The Cairns centre is responsible for all facilities on Cape York Peninsula up to Thursday Island. The Townsville group covers the area west to Mt Isa and Camooweal, while the Mackay staff has basically a coastal district but includes the Central Queensland coalfields around Moranbah and Dysart.

All depots report to the Broadcasting Operations Manager in Brisbane and are staffed by an enthusiastic group of broadcasters.

CHRIS DUFFY



Thursday Island installation.

## VISIT TO SOUTH KOREA AND JAPAN

Max Chadwick, Assistant Director Operations, attended the annual conference of the Asia-Pacific Broadcasting Union in October 1985. The conference was held in Seoul, South Korea and was attended by some 50 representatives, primarily national broadcasting organisations in the ITU region 3.

Max attended as a member of the ABC delegation and with fellow representative Frank Brogan (Head of Television Engineering, ABC, South Australia) participated in meetings of several Working Parties as well as those of the Standing Engineering Committee.

After the conference, Max spent 10 days in Japan visiting our major contractors. He inspected several new transmitter installations and visited production facilities in Tokyo and Yokohama. A number of interesting discussions were held with transmitter design engineers regarding new technological developments in the field of broadcast transmitter design.

The visit was highly beneficial both from the contributions at the Asia-Pacific Broadcasting Union conference in Korea, and the exchange of information with our manufacturing colleagues in Japan.

BILL MORRISEY

## THAT SINKING FEELING

As a result of a leaking underground water pipe adjacent to the transmitter building at 5MV Berri near the Murray River in South Australia, the footings of one wall of the stone building dropped and cracks up to 50 mm wide developed in various parts of the building. Emergency action was taken to weather-proof a large opening in the fibro cement roof sheeting, to install internal props to support hanging beams and to prop up one of the walls.

The station was originally staffed but is now maintained by staff from the Loxton television station some 16 km away.

The soil in the area consists of near horizontal successions of limestones, silts, clays and sands covered with fine grained wind blown sands. The surface sands are of the collapsing type with a tendency not to support their own weight when inundated with water. There is a history of building structural failure throughout the district which can be directly attributed to this phenomena.

Shortly after the 170 m Loxton TV mast was erected in 1969 it sank some 225 mm as a result of water saturating the sand. A 12 m diameter sealed apron was provided at the base to enable water falling off the mast to be diverted to a safe distance.

ROGER HEDLEY



OIC Roger Hedley checking wall movement.

## ANTENNA WORK PLATFORM

Access to high frequency antennas for maintenance purposes has always been a problem and many ingenious devices have been developed throughout the world. Most rely on supporting a cage or bosun's chair from a catenary suspended between the support masts or towers, but this arrangement reduces flexibility.

Radio Australia Cox Peninsula has a mobile work platform or "Cherry Picker" as it is locally known, for carrying out maintenance works. It was originally purchased for work on

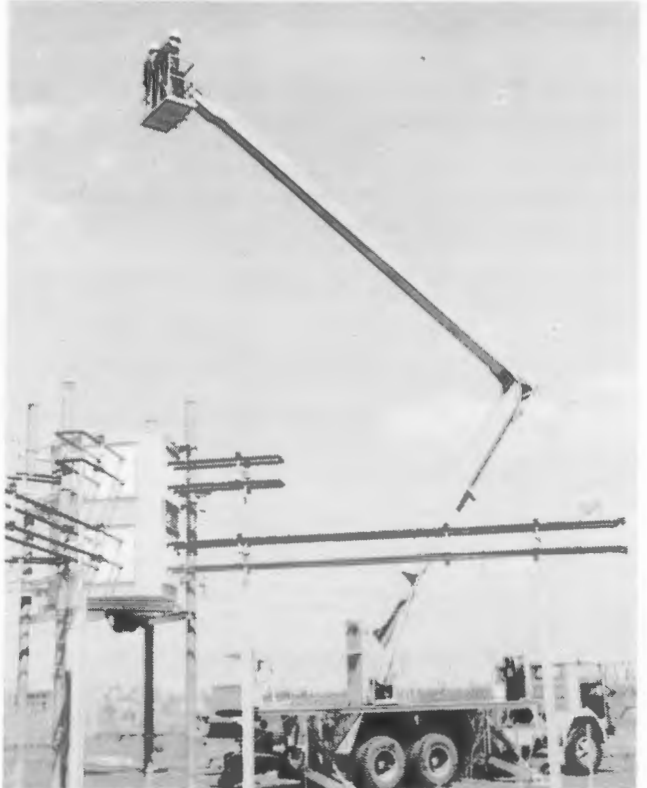
the log periodic antennas, but is now used on the curtains. Although its height is not great enough to reach to the very high levels, it does provide a valuable service.

The work platform is mounted on an International truck, and is powered from a vehicle mounted power take off unit. The working height is nearly 20 m with an outreach of 8.5 m. It will support two workmen and is self levelling with a 360 degree slew capability in either direction.

The operating controls are duplicated in the basket as well as the ground station, with emergency override control, "dead man" control and panic button in the basket, to ensure safe operation at all times.

The truck sub-frame has four hydraulic stabilisers which are interlocked to prevent platform operation until they are locked down. These stabilisers can lift the truck completely off the ground, and prevent the vehicle moving when the platform is in use.

JIM FINCH



The work platform being positioned near antenna.

## NEW TRANSMITTERS FOR 8TC and 8KN

8KN and 8TC were opened in July 1960 with program derived from the Darwin to Alice Springs program line.

The transmitters used at each site were Commonwealth Electronics type MFT3/50 with an output power of 50 Watts. The antenna systems comprised two 21 m masts supporting 46 m four wire capacitive top loading. The stations were both located within the township areas.

In December 1973 8TC was upgraded with the provision of two AWA type BTM-P5 500 Watt transmitters combined to give a 1 kW output which was fed via 50 ohm coaxial cable to a 52 m top loaded guyed mast.

With the establishment of the NT HF services at sites outside of the towns, opportunity was taken to relocate both of the stations with the HF transmitters. As 8KN is now about 15 km from town its power has been increased to 2 kW from a derated 5 kW NAUTEL AMPFET 5 transmitter feeding a 49 m top loaded mast. The power of 8TC has been maintained at 1 kW but the transmitters have been replaced with a HARRIS MW-1A unit with built-in redundancy connected to a 49 m high antenna.

It is interesting to note that at the official opening of 8KN in 1960 the then Chairman of the ABC Sir Richard Boyer said "he regretted the power output of the new station was so low but the ABC hoped to extend its outback service before long". All things come round to him who will but wait.

BRUCE MCGOWAN



## Engineering Highlights

### RADIO AUSTRALIA'S 300 kW TRANSMITTER

The Thomson TRE 2320 transmitter designed and manufactured by Thomson CSF France is the most powerful transmitter in the Radio Australia International broadcasting network.

It is installed at Radio Australia's Carnarvon site in Western Australia and was commissioned on 3 April 1984 to provide improved short wave broadcasting facilities, mainly to South East Asia. The 300 kW transmitter shares the building and facilities with 250 kW and 100 kW short wave transmitters.

#### FEATURES

- The transmitter is designed to provide continuous short wave operation in the 5.9-26.1 MHz frequency range.
- It has a high efficiency RF power stage rated at 300 kW unmodulated carrier power.
- Modulation is by plate and screen control of the final stage, supplemented by partial modulation of the RF buffer stage.
- Cooling is achieved by the 'Hypervapodyne' hydraulic cooling system, consisting of three separate pressurised water circuits.
- An automatic control logic system is employed, comprising integrated circuitry incorporated in printed circuit modules.
- The transmitter has a modern generation microprocessor controlled tuning system employing series 4000 CMOS IC's capable of 50 frequency memory storage.
- Power supply is 22 kV three phase mains drawing 750 kVA.

#### OPERATION

During normal high frequency transmitter operation, the working frequency and antenna are changed several times a day to reach different target areas as well as to counter changing atmospheric conditions. The various tunable components are positioned by servo-mechanisms, which are in turn controlled by the logic control system. This provides for channel preselection automatic tuning and therefore minimum interruption during frequency change can be carried out by remote operation in less than one minute.

The audio chain comprises three AF stages, one transistorized and two tube amplifier stages. This provides amplification, including amplitude and phase correction, from 3.1 Volts up to approximately 180 kW for 'high level' modulation.

The radio frequency chain provides amplification of the 'synthesized' carrier frequency. This is achieved through a transistorized wide band amplifier, and two high power tetrodes operating in Class AB and Class C respectively. The RF1 stage transistor amplifier supplies 100 W to the RF2 stage tetrode, which in turn supplies 3 kW output to the RF3 stage 'Hypervapodyne' TH 573 tetrode of 300 kW output capacity.

The automatic control and safety system ensures protection for both equipment and personnel, switching the transmitter on and off by either local or remote control, sequential operation monitoring, and control of pumps, fans, transformers and rectifiers. The sequencing of the switch on operations and the local incident indications are displayed on a luminous synoptic panel.



22 kV Distribution unit.

The transmitter was supplied in the form of factory wired and fully equipped subassemblies which were interconnected on the site. The transmitter embodies features inherent in well engineered modern generation short wave equipment, such as operational reliability achieved through semiconductors as far as possible, flexibility of operation, relatively efficient design of high power stages, fast frequency changes and micro-processor control.

BRIAN KITCHIN



300 kW transmitter front panel.



Gordon Hall (L) ST01 discussing the water cooling system with Jim McNally, Works Officer.



## Excellence Award

### RADIO AUSTRALIA ANTENNAS TOP OF THE CLASS

Broadcast engineering projects have won two Engineering Excellence Awards in the past four years. The Awards are presented annually by State Divisions of the Institution of Engineers, Australia for works which display engineering excellence.

The first Award was made in 1981 for The Remote Area TV System using the Intelsat satellite and the latest was made last year for the Radio Australia Curtain Array Antenna System in Darwin.

The Radio Australia complex on Cox Peninsula near Darwin was severely damaged on Christmas Eve 1974 as a result of onslaught by Cyclone Tracy. However, some good resulted from the experience. It showed that, notwithstanding the advantages of log-periodic wire antenna systems, they are no match for cyclonic winds.

Tenders were called for a system of curtain type antennas and the Directorate reaped the reward for its part in the \$11 million station rehabilitation program when His Honour, The Administrator of the Northern Territory, Commodore E.E. Johnston A.M., O.B.E., presented the Engineering Excellence Award for a completed work at a function in Darwin on 11 October 1985. The Award was accepted by Graham Shaw, Manager Northern Territory Section of the South Australian Broadcasting Branch.

The judges noted the engineering excellence in conducting all stages of the project, including design and specification, calling and evaluating world wide tenders, administering contractual matters, construction and supervision, acceptance testing and commissioning and system operation.

Brief technical details of the antenna system are:

1. No. of Antennas : 7
2. Support Masts : 47, 67, 94 metres high
3. Antenna Type : Technology for Communications International (TCI) Model 611 wide-band, slewable, folded dipole curtain antennas. 4 bays, 4 rows, horizontal polarisation
4. Frequency Range: 4 or 5 bands, frequency ratio 2:1 (e.g. 13.6 to 26.1 MHz — 5 band antenna)
5. Power Rating : 250 kW carrier plus 100% trapezoidal modulation
6. VSWR of system : 1.6:1 (maximum)
7. Gain : 23 dB over isotropic
8. Front/Back Ratio: 23 dB (minimum)
9. Slew Capability :  $\pm 30$  degrees (horizontally) from centre
10. Construction/Composition Details.  
All antenna wires are constructed of alumoweld wire material — a tensile steel inner with aluminium exterior — for lightweight, strength, corrosion resistance and good conductivity. All parts of the antenna system have been designed to survive wind speeds of 63 metres/second (227 km/hr).
11. Contractor : Andrew Antennas, Melbourne  
GRAHAM SHAW



Graham Shaw receiving the Award from His Honour, The Administrator. (Photo by courtesy N.T. Construction).

## Our Broadcasting Pioneers

### MR W.C. (BILL) ROHDE

Bill Rohde signed on with the PMG's Department as Junior Mechanic-in-Training on 29 April 1924. Two years prior to that, Bill had been bitten by the wireless bug and it hounded him for the greater part of his working life.

Under the Australian Broadcasting Act promulgated in 1929, the Postmaster General assumed responsibility for the control and operation of 4QG as from 1 February 1930 and Bill was directed to report to the station on 3 February to commence duty.

Thus began an association with broadcasting which continued until 1937 and included such highlights as the arrival of the record breaking aviatrix Amy Johnson at Eagle Farm airport 1930, visit of the Duke of Gloucester in March 1934, the Forster Cup yacht race in Moreton Bay February 1936, and in 1931 the installation of 4RK Rockhampton, the first regional station in Queensland.

From 1938 to 1953 Bill worked in the Transmission and Trunk Service areas, and in 1953 transferred back to broadcasting as Divisional Engineer having qualified as Engineer in 1947. Bill found himself responsible for National Broadcasting Service stations in Queensland, Papua and New Guinea.

From 1961, as Supervising Engineer Radio, he exercised control of radio services, including sound broadcasting, television and radiocommunications during a period of rapid expansion and development, until his retirement on 7 December 1972.

Bill still maintains an active interest in all things associated with broadcasting through his involvement with the Postal-Telecommunications Historical Society and the GPO Museum in Brisbane.

DOUG SANDERSON



Bill Rohde



Tom Dagnia

### MR T.E. (TOM) DAGNIA

Tom Dagnia began work with the PMG's Department in 1925 as a Junior Mechanic-in-Training in Western Australia.

His association with the mysteries of broadcasting started in 1930 when he took up duties at 6WF Perth following the takeover of the station from Westralian Farmers Limited by the Department when it formed the National Broadcasting Service. Westralian Farmers had established, and operated, the station since its opening on 4 June 1924 by the Western Australian premier, Mr. Phillip Collier.

During 1932 Tom was employed on the installation of a new 3.5 kW water cooled transmitter for 6WF and temporary studios for the ABC at Wanneroo — now called Hamersley.

Tom spent time with the Royal Australian Air Force during the Second World War on the installation of Radio Frequency Direction Finding stations.

In 1949 he qualified as an Engineer and subsequently spent most of his career in the Radio Section, being involved in the installation and maintenance of radiocommunication services, broadcasting transmitters and the Australian Broadcasting Commission Studios at Rosehill.

Tom retired in 1969 and at the time was in charge of the installation and maintenance of Capital City and Regional TV stations. Unfortunately, after this article had been prepared, news was received that Tom passed away just before Christmas 1985.

KEVIN BUCKLAND





*Carnarvon antenna systems.*



*Shepparton 100 kW transmitter. L to R — Brian Bingham ES & T Supervisor, Alan Dobson OIC Mt Major, John Lush SBM (since left), Brian Rowland E & C Manager, Bruce Wilson OIC Shepparton, Jack Carnell B.O.M. (now Acting S.B.M.).*

## RADIO AUSTRALIA international shortwave radio

Every day, millions of people are informed and entertained by programs in English, Indonesian, Standard Chinese, Cantonese, Neo-Melanesian, French, Thai, Japanese and Vietnamese broadcast by Radio Australia.

The station's brief is to foster an understanding of the Australian nation and people and to reflect Australia's views on world and regional affairs. It also promotes regional awareness among neighbouring countries and provides a link back home for expatriate Australians.

Priority is given to serving people in Indonesia, China, Papua New Guinea, Pacific nations, Malaysia, Singapore, Thailand, the Philippines, Japan, Vietnam, Burma, India, Bangladesh, Sri Lanka and Pakistan.

The English service broadcasts around the clock. It aims to reflect and showcase current Australia, its culture and issues, through music and spoken word programs, and to provide a comprehensive news and current affairs service.

The Indonesian service broadcasts morning, afternoon and evening sessions, providing an entertainment mix of news, information and entertainment. One of the most popular programs is the daily English-language lesson.

Chinese listeners can hear programs in Standard Chinese, mornings and evenings, and in Cantonese each evening. Programs have an emphasis on information about Australia and span music, talks, news and documentaries. English lessons are broadcast daily.

Radio Australia's Papua New Guinea Service broadcasts in Neo-Melanesian and English every evening. Talks, interviews and information programs are among the regular broadcasts, along with modern and traditional music of Papua New Guinea and the Pacific.

The French service presents separate programs daily for the Pacific, Asia and Indian Ocean countries. There is an emphasis on lively music and program which reflect both Australian life and focus on issues important to developing countries.

Thai listeners hear a breakfast time service focussing on information, particularly world news and current affairs, with a strong emphasis on South East Asian events. English lessons are broadcast twice weekly.

The Japanese service broadcasts two evening sessions. The first, for a younger audience, has a high music content. Entertainment and music are balanced in the second broadcast with news and current affairs and information programs.

Radio Australia's program to Vietnam is heard every evening. It includes news, current affairs, topical talks, and a segment on Australia and Australians. A wide variety of music, including Vietnamese opera, is played.

The comprehensive news service, renowned for its accuracy and reliability, is relayed by other broadcasters and quoted in foreign press.

Radio Australia programs originate from a modern centre in Melbourne.

It has 18 studio and control-booth areas, each capable of being used independently or together. A small production studio is available for recording complex music and spoken word programs. There are also two news-reading booths.

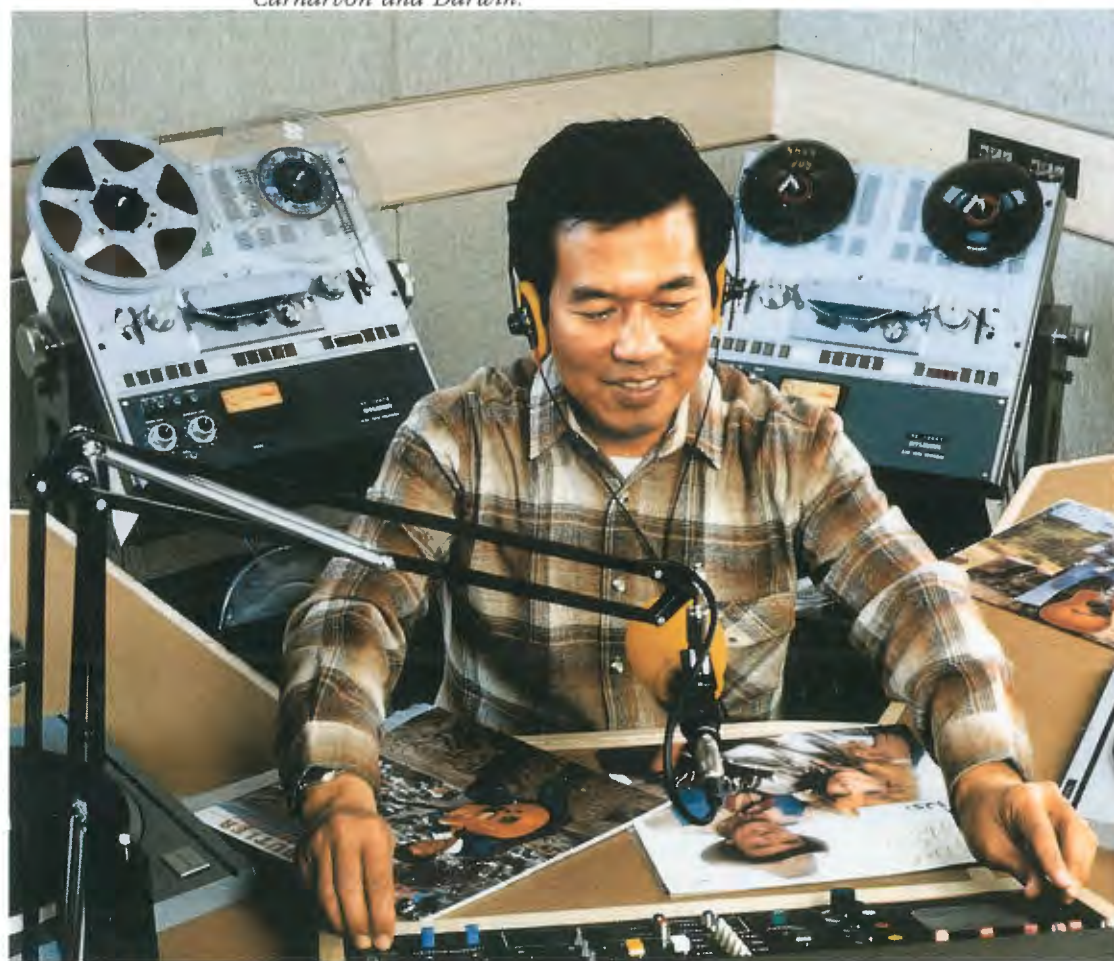
All incoming and outgoing programs are routed through a computerised master control room. It also houses multi-track recorders which make master tapes of all broadcasts, shortwave receivers for monitoring other international stations and a video recording and replay system.

Radio Australia has 17 transmitters, located in the north, south-east and west of Australia. The largest installation is at Shepparton, Victoria. Others are at Lyndhurst, Victoria, Carnarvon, Western Australia, and on Cox Peninsula, near Darwin.

KEITH SYNNOTT



*Primary target transmission areas served by Shepparton, Carnarvon and Darwin.*



*Hidayat Djajamibardja Indonesian Service, Radio Australia studio Melbourne.*



## QUEENSLAND

Frank Davidson T01 at 4QB Pialba retired last September. Frank began as a Junior Postal Officer at Kingaroy, served in the Royal Australian Air Force during the Second World War, worked as a Technician in the Brisbane Studios and at regional stations in the Cairns area, and spent the last 20 years at 4QB.

Chris Jeffrey OIC ABQ2 has switched off his CRO and departed on long service leave. It was known that Chris intended to retire at the conclusion of his leave so a group of friends gathered during November to wish him well at a little function at the Irish Club.

Terry Comerford has taken up duty as the Branch's first Draftsman having transferred from the Telecom drafting office in Brisbane. Terry has special expertise in the mechanical and structural fields and no doubt his talents will be put to good use.

Allan Garner took up duty as State Broadcasting Manager last September and quickly settled down in his new role. Allan had previously worked in the Broadcasting area but in 1966 transferred to Melbourne where he endured the climate for 19 long years before throwing in the towel and returning to the more agreeable climate in the Sunshine State. Welcome back Allan.

Jim South, former State Broadcasting Manager in Queensland, died on Tuesday 12 November. He had been retired since 15 July due to ill health. The loss of such a seemingly indestructible figure with enormous talents and great compassion as well, is beyond words. Broadcasting has lost a fine man, and a good friend.

## SOUTH AUSTRALIA AND NORTHERN TERRITORY

Rodger Hedley OIC ABR3-3 Loxton has returned from Sweden where he celebrated Christmas with his daughter Susanne who was there as a Rotary Exchange Student. Rodger recently took up duty as OIC ABS-2 Mt Lofty following retirement of Harold Stanford.

Glen Moore has been holding the fort as OIC ABGS-1 Mt Burr during the absence on sick leave of Ron Mitchell. All staff wish Ron a speedy recovery.

New arrivals at Broadcast Service Centre include Mark Thistleton Trainee TO, Peter Usher Technician, and Craig Dellow ATT.

Nadia Vernari Assistant Personnel Officer transferred to Central Office as Admin Officer for an extended period. We hope you like Melbourne, Nadia.

A team of nine nominated for the Eyewitness Corporate Cup which involved seven runs along the banks of Adelaide's Torrens River at fortnightly intervals.

Although not all members were able to compete in all seven runs due to sickness, absence in the field on duty and other reasons, it was deemed to be very successful and produced a lot of fit people who achieved much from participation as a Branch team.

Some 403 teams participated, and the Broadcasters finished in position 66. Not bad for starters.

The team comprised Geoff Pretty, Derek Colvin, Steve Mardle, Don Heylen, Brian Turner, Wayne Croft, Nadia Vernari, Angela Strain and Chris Fox.

## WESTERN AUSTRALIA

Kevin Buckland, Manager, Management Services Section, has resumed duty after a three month secondment to Central Office where he was involved in the development of the Broadcasting Accounting and Costing system. Welcome back Kevin. Jeff Keith, Resources and Budgets Officer, relieved during Kevin's absence.

We welcome Karen Troy to the Branch. Karen commenced during September as Allowance Clerk.

## CENTRAL OFFICE

Ted Kealy and John Dupe, two of four newcomers mentioned in the November newsletter, have left the Directorate. Other departures include Gordon Evans to Network Engineering and Stewart Read to General Works.

Fortunately we gained more staff than we lost. Welcomes are extended to Phil Davey, Frank Tabacco, Denise Kemp, Roslyn Berry, Jim Mano, Michael Couzens and Cathy Runge.

Several of our lunch time joggers have sustained a variety of leg and muscle injuries. John Lawrence forgot about his sore foot after his encounter with a truck whilst riding his motor cycle home to Geelong. John is now out of hospital and recuperating.

Nadia Vernari, a visitor from our Adelaide Office, raised the spirits of our remaining Corporate Cup competitors and they finished in the top half of the competition.

Max Chadwick and Bill Edwards recently returned from overseas following official business. Max attended the annual conference of the Asia-Pacific Broadcasting Union in Seoul, South Korea, while Bill visited China to carry out measurements on the effectiveness of Radio Australia transmissions to that country.

## NEW SOUTH WALES

Diane Judge, Staff Clerk, has transferred to PABX Branch and is now Staff Clerk there. To replace her, Jenny Lewis transferred over from Supply Branch. Also in the Personnel Group, Sue Drane, Personnel Officer, moved to Redfern DTB. Ross Preston has transferred temporarily from Information Systems Branch as replacement for Sue.

In the Resources and Budgets Group, Vivianne Fauvette transferred to Trunk Network Engineering. She has been replaced by Melinda Conlan from Country Installation in Queensland. Melinda had formerly worked in Broadcasting Branch. Stuart Watson, a Technician at ABTN1 Middle Brother, has gone to Darwin for several months and by all accounts is doing very well there.

Ian Booth formerly T01 at Broken Hill, transferred to Broadcasting and is now T02 at ABGN7 Mt Bingar. Also new are John Roby and Phil Kosiak, both Technicians.

Congratulations to Ingmar Meins who has now qualified as Technician, and was presented with his certificate by Alex Hanlon, Technical Aide Safety and Training.

Congratulations also to Jenny Murray who is now a Vestibule Technician.

Best wishes are extended on his retirement to George Connelly, Labourer at 2NR Lawrence for the past eight years.

## VICTORIA

After a long and eventful career, Bill Cromarty, OIC Mt Baranduda TV Station has elected to retire. Bill was one of the Station founders, assisting with the installation of equipment before being promoted to Station OIC. Happy flying Bill and best wishes for a long and healthy retirement.

Some new Telecom recruits have joined the Branch over the last few months. Welcome to Henry Nesbitt, Roy Zunic and Glen Clark. Welcome also to Roy Bowditch, Con Giovias, Rena Giovias and Bill Sinclair who have transferred from other Telecom areas.

Congratulations are extended to Trainees Craig Vale, Kevin Ingram, Tony Dennis, Mark Chapman and Andrew Smith who were advanced recently after completion of training.



## ALL IN A DAY'S WORK

Travelling to and from work can have its hassles. Have you ever given thought to the problems some of our staff at broadcasting stations have to face every day in just getting to and from their places of work?

Our spread of stations is so wide in this large continent that some members may be battling through a snow storm while others at the same time are coping with a steaming tropical downpour.

Last Issue we read of staff being snowed in at ABT2 Mt Wellington. This time we trek along with Veronica Pattison Clerical Assistant 2 at Radio Australia Cox Peninsula, and see how she has to cope, even on a fine day.

The station is located on Cox Peninsula in an area close to the Charles Point lighthouse while staff live in Darwin. Although the station is accessible by road, the distance is some 140 km from Darwin, and of course this is too far for daily travel. During construction of the station a jetty was built on Cox Peninsula at a point known as Mandorah and normal travel across the Darwin Harbour is by launch.

In the pre-Tracy days, the station owned two launches which were operated by marine staff who were part of the station workforce. Both launches were wrecked during the cyclone but now transport is provided under Contract.

A number of different forms of transport are involved in getting to and from work. Typically, it takes 1 hour 20 minutes to travel each way.

Staff use their own transport to travel from home to a staging depot at Blake Street in the city. From there they are driven in a Broadcasting Branch bus a distance of about 3 km, to the passenger ferry wharf at Darwin Harbour. They then board the 20 passenger Shark-Cat charter launch "Ocean Express" to make the 10 km journey across the harbour. Except during rough weather, this usually takes about 15 minutes.

On arrival at the Mandorah wharf, staff walk the 100 metre journey and board a second Broadcasting Branch bus for the 16 km road journey to the station.

Probably the most difficult part is getting on and off the launch — particularly during rough weather. It is somewhat upsetting to receive a ducking before starting work and at the same time lose one's lunch.

JOHN WILKINS/RALPH DENISON

- 1 7.05 a.m. Veronica leaving home.
- 2 Boarding bus at Blake Street.
- 3 Full speed across the harbour.
- 4 Disembarking at Cox Peninsula.
- 5 8.25 a.m. Veronica at work.





## Profiles

### ALLAN GARNER

Allan Garner, State Broadcasting Manager, Queensland commenced service in the Postmaster General's Department as Technician-in-Training in January 1948. After qualifying as Technician in December 1952 he worked on various broadcast and radio telephone installations throughout Queensland. During this period he managed to find time to study and subsequently qualified as Senior Technician.

In January 1959, Allan took up a position as Trainee Engineer and qualified as Engineer in February 1963. As an engineer he was mainly involved with the installation of TV antenna systems throughout the State. In December 1966 he transferred to Central Office Melbourne on rotation and continued to work in the television area.

Notwithstanding the climate, Allan decided to stay in Melbourne, and after broadening his experience, progressed to the position of Engineer Class 5 responsible for all National Broadcasting activities. He played a major role in development of phases 6 and 7 of the television network.

In October 1980 Allan looked to further broaden his experience in the broadcasting area and took up an appointment as Assistant Secretary in the Department of Communications. In this role he was in charge of the establishment and operation of all sectors of broadcast transmission services throughout Australia.

The call of the warmer Queensland climate was too much for Allan, and on 25 September 1985 he transferred to his present position. Allan is married with two adult children, and plays pennant squash. He also has a yearning for life on the ocean wave, and is an enthusiastic sailor.



Allan Garner



Brian Cleary

### BRIAN CLEARY

Brian Cleary, Broadcasting Operations Manager, Queensland joined the Postmaster General's Department as Technician-in-Training in 1952. He received appointment as Technician in the Radio Installations area where he worked on the installation of sound broadcasting equipment until 1959 when he became involved in the installation of television station ABQ-2 Brisbane. After completion of the installation, Brian became a member of the maintenance staff.

During that period he qualified as Senior Technician Radio and in 1963 participated in the installation of regional TV stations. From 1967 until 1970 he lived in Mackay as OIC Installation and subsequently as station OIC of the station in that city.

In 1970, Brian took up an office based position in Brisbane as STO TV Maintenance where he oversaw TV maintenance activities throughout the State. In 1976 he transferred to the radiocommunications area where he was appointed as a shift leader at the Mt Gravatt Radiocom Terminal.

Brian returned to Broadcasting in 1979 as STO Sound Broadcasting Maintenance and in 1983 was appointed to the position of STO Broadcast Operations. When the Broadcasting Branch was formed in 1984, he was appointed to his present position.

Brian and wife Val have three adult children. His interests include fishing and boating but his first love is singing. He is a member of various musical groups including the Lyric Opera Company of Queensland.

### LEO MOLONEY

Leo Moloney Engineering and Construction Manager Queensland, joined the Postmaster General's Department as Technician-in-Training in 1946 and was appointed Technician Broadcast Installation in 1951.

After two years of installation activities in the field, Leo transferred to the Telephone Branch where amongst other duties, he was in charge of the largest Manual Local and Trunk Exchange then operating in Australia.

With plenty of spare time available, Leo studied engineering and qualified as Engineer in 1956. He worked in the Lines area for 15 months and then took up an appointment as Group Engineer in the Radio Service Division where he spent nine years in control of various facets of broadcasting operations throughout Queensland including the studio and transmitter installations in Papua-New Guinea.

Transferring out of Broadcasting, he found new challenges in Radio Telephone installation work throughout the State for seven years, with a period of 14 months in Indonesia with the Australian Telecommunications Mission's Trans-Sumatra Project.

In 1972 Leo returned to Broadcasting to take charge of the Phase 7 Thin-Line TV project. After completion of the Thin-Line project he carried out a multi-faceted role as Assistant Supervising Engineer Radio until taking up a position as Engineer Class 3 Radiocom Design early in 1983. In August 1984 he transferred to his present position in Broadcasting.



Leo Moloney



Dave Walker

### DAVE WALKER

Dave Walker, Manager Management Services, Queensland, joined the Postmaster General's Department in 1955 as a Telegraph Messenger delivering telegrams. He soon woke up to the fact that the outdoor life of pushing a bicycle in the hot sun and repairing punctures wasn't for him, so he moved inside into an air conditioned office and worked as a Clerical Assistant.

After a few years of diligent work, Dave was advanced as Clerk Class 1, Engineering Division. In 1970 he was selected as a Traffic Officer-in-Training and undertook a course of two years' full time training. He worked in the Customer Services Department in various Traffic Officer capacities until 1975 when he returned to the Engineering Department as Section Programming Officer for a large external plant construction group.

After two years in this capacity, Dave was promoted to the Branch Programming Officer's position which he occupied for some three years. He then transferred to the Sectional Admin Officer ranks until he joined the Broadcasting Branch in 1984.

Dave is married with three sons and a daughter, and claims that his main mission in life seems to be to drive his children from one place to another.

His interests include boating, fishing, golf, squash and good food and wine. He is both a Telecom and an A.C.O.A. nominee to the Promotions Appeal Board, Secretary/Treasurer of the Beefsteak and Burgundy Club, Manager/Umpire/Scorer and Top Fan of his boy's cricket team, and a representative of the C.P.S. Credit Union.



## From the Back Room

### BUDGETING FOR BROADCASTING

In the final analysis, budgeting is simply a means of planning so that the best possible use may be made of all available resources in achieving certain defined objectives. It is an integral part of forward broadcast engineering planning and provides the means for measuring the efficiency with which these plans are put into operation. The budget establishes, in monetary terms, an objective of performance, and having been established with sufficient detail, it serves as a guide, as time elapses, against which to check actual performance and in turn to keep the performance on program.

This interesting article which clarifies the role the Programming and Resources group in Central Office plays in the budgeting aspect of our work, has been contributed by Harry DeSouza, the group's Manager.

A budget is a forecast of resource requirements — hopefully it would be an 'educated' guess. In the Directorate several budgets are prepared — manpower, assets, financial, material — which enable us to obtain the necessary finance to fulfil our role as 'Agent' for installing and maintaining government funded broadcast transmitting services for our 'Principals', the Department of Communications (DOC).

The budgets are prepared in Central Office from estimates produced by Management Services Sections in consultation with other sections in the State Branches. Whilst the manpower budgets are the responsibility of Telecom's Human Resources Department, the financial budgets are submitted to DOC who negotiate with the Department of Finance on the level of funds the Government is willing to provide in the Federal Budget for broadcasting works programs. The Directorate seldom receives the full amounts sought and it then becomes necessary for Central Office to point out to DOC the penalties for the underprovision of funds which results in deferred maintenance, reduced transmission hours

or reduction in the new works program. In reality, funds approved are almost always less than the desired level and some adjustment and rearrangement of works programs is inescapable. State Branches are then advised of their programs and cash allocation budgets for the ensuing twelve months.

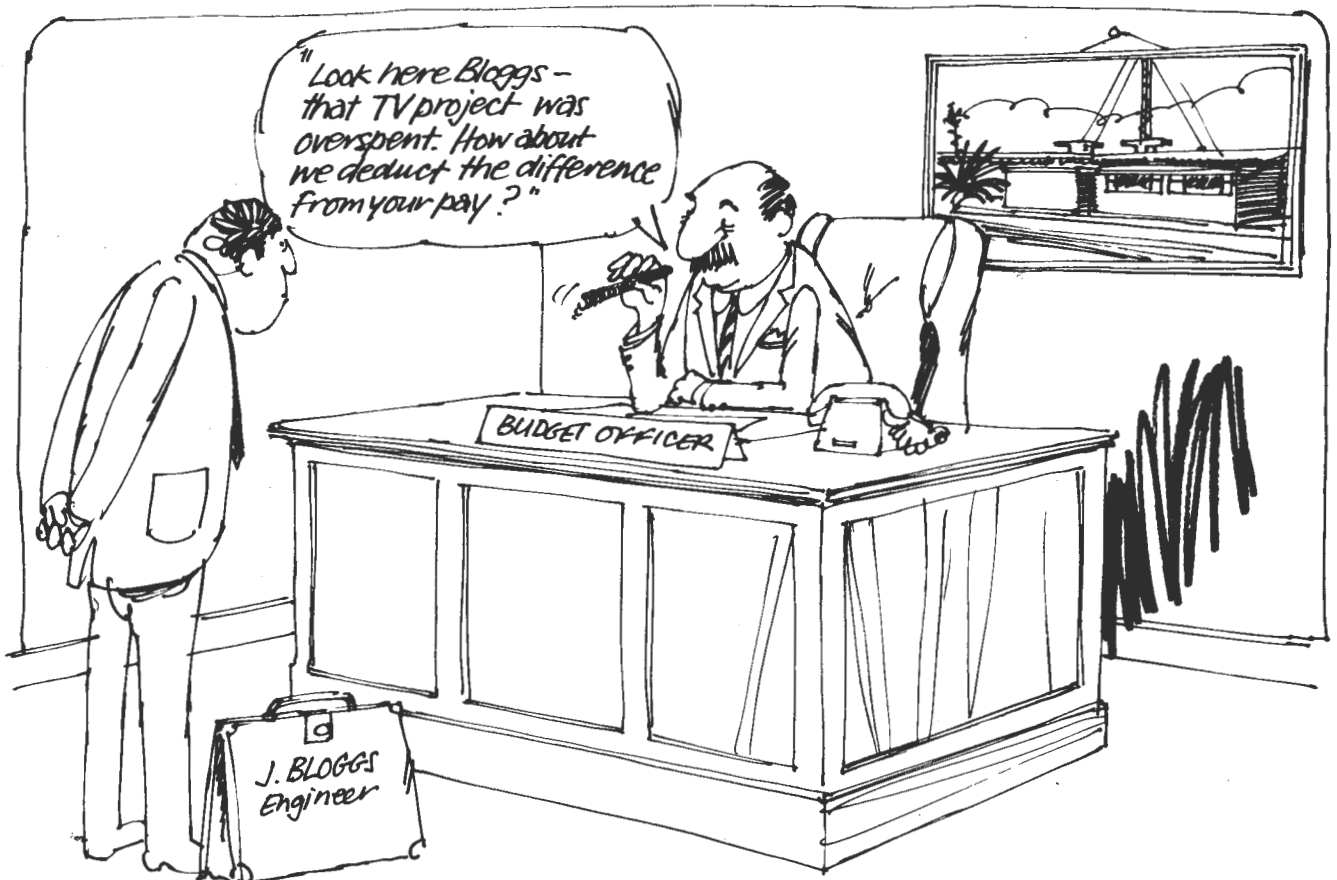
The States' Management Services Sections and Programming and Resources in Central Office continuously monitor actual expenditure against the budget and adverse trends are corrected. In addition, two formal reviews of expenditure are conducted in November and April. The November mid-year review is very important as States have an opportunity to reassess their budgets and seek 'revised allocations'.

This review allows for the possibility of change in direction of program. If the mid-year review indicates a need for additional funds, then Central Office will approach DOC who may seek the additional funds in a supplementary Federal Budget. The Government may approve additional funds in exceptional circumstances (e.g. price movements), but only when offsets cannot be found from within existing allocations. The results of the November mid-year review and subsequent 'revised allocations' play an important part in assessing the States' financial performance when actual results at end-of-year are compared to 'revised allocations'. The April review of expenditure is too late for a change in direction but is important as it provides an indication of the expected end of year situation, and also assists in the preparation of next financial year's programs and allocations.

The Government's final approval of funds for broadcasting at the Federal Budget (and if necessary at the Supplementary Budget in April) requires that the Director attends a Parliamentary Senate Estimates Committee meeting to justify the basis of the estimates (or Additional Estimates).

Budgetary control is not merely a forecasting system. It involves a concerted plan of action based on a careful consideration of all relevant tendencies and factors, and it is in itself a complete system of controlling costs and preventing waste.

HARRY DE SOUZA





## Let's Play It Safe

### THE WOOFER SECURITY SYSTEM

Type: Das Optical Guard System (K9-100)  
Manufacturer: Shepherds, Munchen, West Germany.  
Use: High tech. security system for television and broadcasting station sites.

#### Features:

1. Optical intruder locators — Extensive Yidium Electronic Surveyors (EYES) — operate from 4 lux to strongest daylight. The locators focus automatically and via triangulation relay to central processing range and hearing.
2. Sonic intruder detector — Electronic Audio Receptor System (EARS) — detects the slightest abnormal sound.
3. Long distance friend or foe detector — Nyquist Operated System Entry (NOSE) — a new patented system to allow entry of authorised personnel by detecting certain biological traces.
4. Transport system — Locomotive Extension Guard System (LEGS) — has the ability to move the complete object system at relatively high speed to the site of entry.
5. Status indicator — Teflon Activated Indicator Line (TAIL) — mounted on rear panel indicates friend or foe recognition.
6. Audio alarm — Beam Activated Remote "KALL" (BARK) — is activated on intruder detection.
7. Intruder disable circuit — Transistor Extended Electronic Terrorist Holder (TEETH) — holds the intruder stationary until operator intervention.

Power Requirements: Recharge twice every 24 hours with special fuel e.g. Pal. Recharge time five minutes approximately.

Accessories: Control and programming lead.

#### Example of Program:

The DOG senses intruder via the EYES and EARS. If the NOSE affirms that the intruder is a friend the TAIL oscillates. If not, the LEGS carry the DOG to the intruder sounding the BARK. The intruder is disabled via the TEETH.

Software programmer: Barbara Woodhouse.

ROBIN EDWARDS

### RF RADIATION IN MEDICINE

We read and hear a lot these days about the hazards of radio frequency (RF) radiation on the human body but unfortunately so little attention is directed to highlighting the very important role RF radiation plays in medicine.

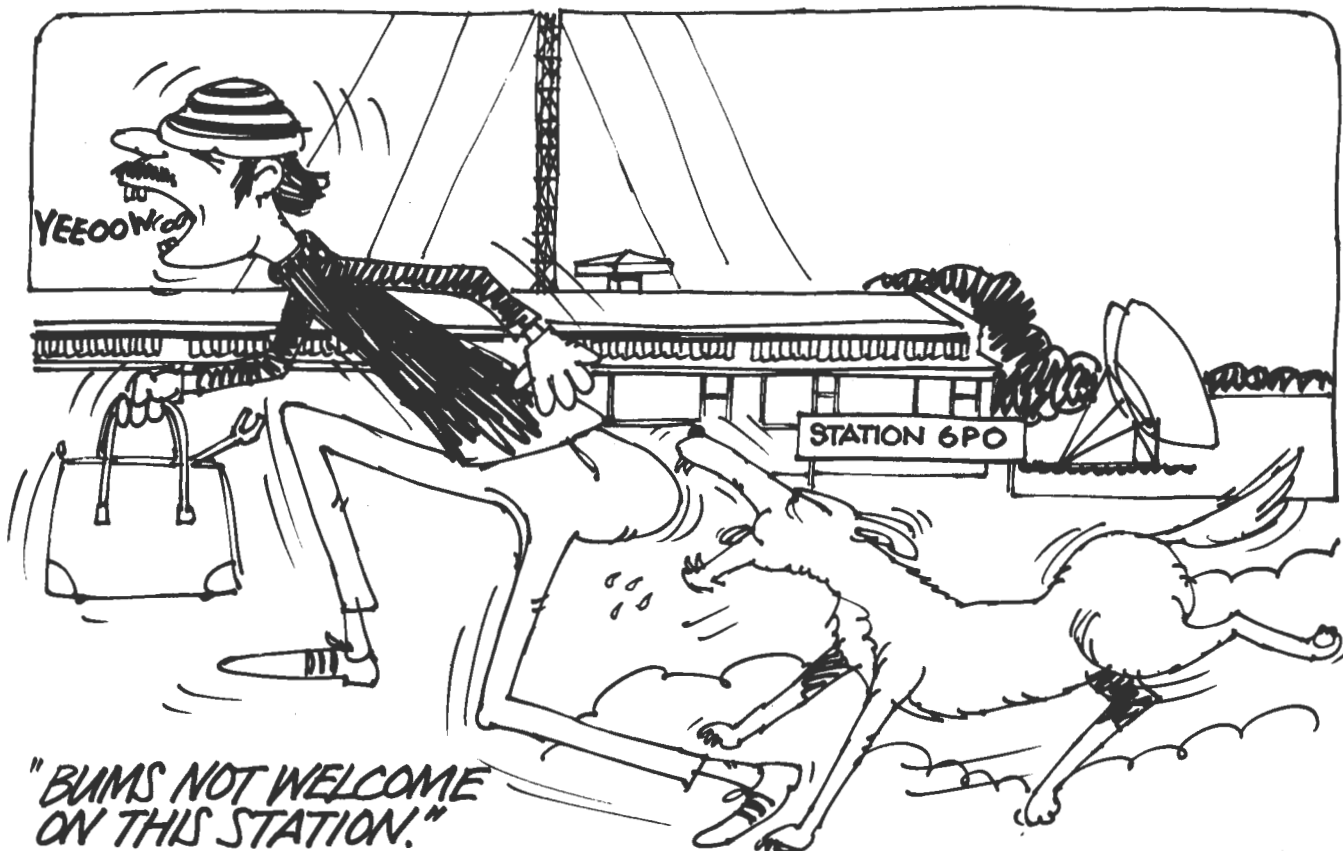
In the June 1985 issue of IEEE Spectrum, Robert Sharp, Assistant Professor of Radiation Biology, and Ned Hornback, Chairman of the Department of Radiation Oncology at the Indiana University School of Medicine, discuss some of the exciting advances being made in using RF in shrinking cancerous tumors, in fusing fractured bones, in healing flesh wounds, and regenerating nerves.

RF fields appear to affect biological systems in two principal ways: by generating heat in the case of relatively strong fields or by nonthermal mechanisms in the case of weaker fields. Strong fields are used mainly to induce heat for shrinking cancerous tumors. Such tumors are considerably more vulnerable to heat than normal tissues are, mainly because tumors, having fewer blood vessels, cannot be efficiently cooled by the blood circulation. By applying electromagnetic radiation to an affected region, a physician can increase temperatures in a tumor to 43-45°C, a range that damages the tumor.

Weaker fields are used for bone healing. The pulsed electromagnetic fields closely imitate the shape and magnitude of the electric fields that are generated naturally within bones. These natural fields are of relatively low frequency and intensity and are produced by a piezoelectric mechanism that converts bone stresses to electric energy. More than 60,000 patients with bone fractures have been treated by RF radiation in the United States.

The RF applications in skin and nerve healing are still largely experimental. Researchers are using both high frequency, high power RF radiation and low frequency, low power fields. Although in all cases the fields are pulsed at relatively low repetition rates (below 1 kilohertz), some researchers use pulses with frequencies in the tens of megahertz and average powers in the hundreds of milliwatts per square centimetre — more than adequate to induce local heating. Others use pulses similar to those for bone healing, which may involve both thermal and nonthermal mechanisms.

GRAHAM WARD





## Letters to the Editor

**Contributors to Letters to the Editor are reminded that full names and addresses must be supplied. Letters should be brief and to the point. Long letters may be edited. The Editor's decision in respect of the suitability of letters for publication in The Broadcaster is final and no correspondence on the Editor's decision will be entered into.**

Sir,

In the November issue of The Broadcaster reference was made to the role of 2CO Corowa in the landing of the DC2 aircraft, the Uiver, at Albury during the Centenary Air Race. Readers may be interested in more background on this historic event.

The 1934 London to Melbourne Centenary Air race, was organised firstly to commemorate the centenary of Victoria's statehood and secondly to demonstrate the feasibility of an air service between Australia and Europe. The airplane, "Uiver", a Douglas DC2 from KLM Royal Dutch Airlines, on the 23rd October, 1934 appeared to have the handicap section in the bag at Charleville.

After leaving Charleville, Uiver ran into a fierce electrical storm which cut radio contact. Without radio navigational assistance, Uiver drifted off course and at 10.00 p.m. 23rd October, 1934, the Border Morning Mail received a call reporting the plane passing over the District, flying high in a southerly direction. Then minutes later, Albury residents heard the same sound on the eastern side of the town travelling towards Melbourne. Thirty minutes later residents heard the drone of a low flying plane and saw the searchlights from the plane penetrating the heavy storm cloud. Air race officials advised Border Morning Mail reporter that radio contact with Uiver had been lost and the plane's situation was grave.

The lights of Monument Hill repeatedly flashed the signal 'Albury' in Morse Code for an hour, but were no good. The Municipal Electrical Engineer had a better idea: to go to the power house and use the town lighting supply for one great Morse signal.

While Albury flashed its name in Morse, the ABC regional officer for Radio 2CO interrupted the normal program from Melbourne at 12:55 a.m. and broadcast a request for car owners to drive to the racecourse and illuminate a landing strip with headlights. The ABC officer actually directed traffic over 2CO air waves to avoid traffic jams being formed.

Finally at 1:17 a.m. on 24th October 1934, Uiver was safely put down on the makeshift airstrip at Albury racecourse where it slid to a stop just short of a fence, bogged to its axles in mud. With history making effort the residents of the district were able to manhandle the aircraft to firm ground. At 10:00 a.m. Uiver took off, headed for Melbourne and won the handicap section of the race and finished second in the speed section. The sad climax to this story was the crash of the Uiver less than two months later in the Syrian desert on the 20th December, 1934.

The Albury West Rotary Club, to mark the 75th year of Rotary International, took on as a project to purchase a Douglas DC2, restore it and mount it as a memorial to the pioneers of air travel and the people of Albury for their actions in October 1934. After restoration, KLM and the Dutch Government granted permission for the KLM Uivers' identification numbers to be used on the replica. On 2nd March, 1980 this memorial was dedicated. A plaque was also presented to Radio Station 2CO as a thank you for the part it played in assisting Uiver to land in Albury.

ALEX HANLON, Technical Aide, NSW

Sir

What common interests are represented amongst staff of the Broadcasting Directorate?

It would be a good idea if groups with special interests such as Bowlers, Fishermen, Cricketers, Photographers, Caravaners, Footballers, Stamp Collectors, Athletes etc. etc. could maintain contact per medium of **The Broadcaster** and also to let others know how they could become involved.

I am an Amateur Radio enthusiast (VK 5UW) and to start the ball rolling, would like to hear from others within Broadcasting who have a similar interest and who would like to band together to keep one another informed of things of interest in the Amateur Radio field.

RON WARNER, Draftsman, Adelaide  
(08-224-0233 or QTHR)

## Achievers

### FLYING HIGH

No, it's got nothing to do with drugs? But according to David Johnstone, A/ST01 Project Installation Group Leader in Tasmania, it gives you a great feeling.

David is an avid gliding enthusiast and a member of a select band of about 100 others in Australia to hold a Diamond Certificate for gliding prowess. He is the only Diamond Certificate holder in Tasmania and holds the Tasmanian altitude record of 25,000 feet (7,629 metres).

A Diamond Certificate is earned by flying at least 500 km from a single launch, securing a minimum height gain of 5000 metres from a launching point and achieving a distance flight along a pre-determined fixed flight plan.

Just to make sure nothing untoward is happening, photographic evidence of turning point landmarks must be taken in correct sequence for the fixed flight plan test and a barograph (recording altimeter) is carried for proof of continuous flight and height gain.

David achieved his distance flight requirement by flying from Waikerie in South Australia via Karoonda to Mildura and then returning to Waikerie a distance of about 506 km.

When questioned about the flight, David recalled:

"One last thermal saved the day. At the 460 km mark, I was almost forced to land. Evening was approaching and conditions deteriorating. A clump of trees provided the last lift that enabled the flight to succeed."

The 25,000 feet altitude record flight took four hours five minutes from a winch launch, with the flight in leewave lift conditions between Bothwell and Mt Field in the southern part of Tasmania.

To fly above 10,000 feet a glider pilot must carry an oxygen supply and a parachute, as well as wear a block-out cream as protection against the sun and thermal clothing.

David has been gliding since June 1976, and is a member of the Bothwell Gliding Club, which is affiliated with the Gliding Federation of Australia.



David Johnstone in the cockpit.



## Broadcasting Milestones

### 3LO MELBOURNE

The Broadcasting Company of Australia Pty Ltd was granted a licence on 22 July 1924 for the establishment of an A Class broadcasting station in Melbourne. The station went on air on Monday 13 October 1924 with call sign 3LO on a wavelength of 1720 metres following three nights of on-air test transmissions. It was the second A Class station commissioned for Melbourne listeners. The first was 3AR.

The official opening ceremony was performed by Prime Minister Bruce in the main studio. It was followed by a broadcast of Dame Nellie Melba's final performance on the operatic stage. The whole performance of La Boheme was broadcast from His Majesty's Theatre.



*3LO Control Room 1924.*

The studio was located on the second floor of Cambridge Building at 197 Collins Street in a suite of elaborately furnished rooms. The main studio was 10 m long and 7 m wide decorated with royal blue floor carpets. Microphones were Western Electric double button carbon types.

The transmitting station was located at Lyons Street, Braybrook, about 10 km from the Melbourne GPO. The transmitter which was manufactured by Amalgamated Wireless (Australasia) Ltd of Sydney giving a power of 3.6 kW to the antenna for a mains input of 17 kW was similar to models supplied to A Class stations in other States.

The copper wire squirrel cage type antenna system using a four wire configuration 50 m long was supported by two steel masts, each 61 m high and weighing about seven tonnes. The masts were spaced 175 m apart and the antenna straddled the building which contained the transmitter and quarters for the technical staff. A small steel tower was installed alongside the building for terminating the antenna feeder and counterpoise system. Large strain type insulators with corona rings were used.



*3LO Transmitter 1986.*

For various reasons, the operating wavelength was considered to be too long and in 1925 it was changed from 1720 m (175 kHz) to 371 m (809 kHz).

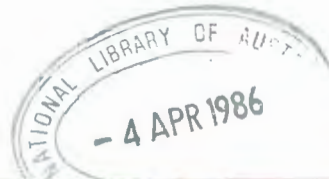
On 1 March 1928 the licence was transferred to Dominion Broadcasting Co. Ltd.

With the establishment of the National Broadcasting Service, the Postmaster General's Department took over responsibility for provision and operation of the 3LO studio and transmitter technical facilities on 22 July 1929. The Australian Broadcasting Company provided the programs until 30 June 1932 then the Australian Broadcasting Commission took over that responsibility.

On 29 October 1938, a new water-cooled 10 kW transmitter was installed to replace the old unit and following decision to locate the two Melbourne National stations 3LO and 3AR in the one building at Sydenham, a radiating system was provided which enabled both transmitters to share a common radiator. The 214 m radiator which is still in service was manufactured by Johns & Waygood and fed by a coaxial tube type transmission line of about 305 m length.

During 1962 the transmitter was replaced by an STC 50 kW main and 10 kW standby combination. A six wire 200 ohm unbalanced transmission line connects the transmitters to the coupling hut at the base of the mast. Operating frequency is 774 kHz and programs are provided from the ABC studios at Broadcast House, Corner Lonsdale and William Streets, Melbourne.

RAY WEEKS



*Acting SBM Jack Carnell (L) and station OIC Russell Rolls.*