

# Television:



## the elusive goal

**History books record that television transmissions in Australia began at 7.00pm on September 16, 1956, with those now near-immortal words of the late Bruce Gyngell on TCN Channel 9, Sydney: "Good evening, ladies and gentlemen – and welcome to television." But TV in Australia actually has a much longer history, going back some thirty plus years to the early 1920s . . .**

**Part 1 – by Kevin Poulter**



**A**ustralian television began in the 1920s, when Tom Elliott experimented with electromechanical television similar to Baird's system. The unlikely location for his futuristic lab was a convict-built windmill at Spring Hill, Brisbane.

Wally Nichols, a 24-year old Sydney photographer, read all he could about Baird's system and built a 16-line TV in 1928 but was forced to cease experiments due to the cost and time involved.

By 1929, Gilbert Miles made the first

Australian television transmission, also using equipment similar to Baird's. His 'Radiovision' experiments were conducted with Donald McDonald, transmitting from 3DB and 3UZ in Melbourne. This company developed early television and facsimile picture transmission.

So television was looking very promising for Australia. The British General Electric Co announced in 1929 they were making 100,000 TV sets 'soon', with 5000 destined for Australia. Transmitters were installed in Melbourne's Menzies Hotel. Two more were planned for Melbourne and one for Sydney. An article announced 3DB expected to have broadcasting apparatus installed 'in a few days'.

A few months later, Ernst Fisk of AWA announced picture transmissions would commence from radio stations 3LO Melbourne and 2FC Sydney as soon as business arrangements were completed. Much of this must have been undercapitalised competitive fanfare, as only experiments continued.

The first long-distance TV reception in Australia was transmitted in 1932 by Marconi Wireless UK to AWA in Sydney, a distance of 21,000 kilometres.

In 1934, T. M. Elliott and Dr. Val McDowell commenced experimental

30-line Baird system transmissions in Brisbane, sponsored by the Royal Society. Then in 1935, Tom Elliott made Australia's first transmissions to a cathode ray tube. By 1938 he produced a 180-line television picture.

### John Logie Baird

On the other side of the world, in the mid 1920s, Scottish inventor John Logie Baird was developing the Nipkow disc-shutter into a working low-resolution TV system. His early transmissions were across the Clyde in Scotland and then he moved to London to refine his system and to convince the BBC that Britain was ready for television.

Remarkably, the cathode ray tube was known before 1900 and in 1925 Vladimir Zworykin even patented an all-electronic colour television system but Baird believed his electromechanical low-resolution system was the future of television. The BBC started broadcasting television on the Baird 30-line system in 1929. The first simultaneous sound and vision telecast was broadcast in 1930.

Baird battled proponents of electronic TV for years, until in 1937 the BBC proposed a solution – a competitive demonstration of Baird's 240-line system against the Marconi 405-line cathode ray type. Baird lost.



Inventors in Sydney, Melbourne and Brisbane all worked on Baird-style mechanical TV around 1927. By 1930, TV broadcasting was even declared 'imminent'. This system was built by T. M. Elliott and Dr. Val McDowell. A large home-made spotlight is positioned behind the inventor's chin, followed by a precision motor, then the Nipkow disc and sensor. The sign 'Television Keep Clear', kept the curious at bay. Just as well, as no electrical safety standards were followed. Note the hanging light with tin-can shade, apparently to spotlight the on-off switch without any light spilling into the darkened room. A reclaimed gramophone box houses some apparatus. (State Library of Queensland photo No. 22152 – [www.aaa1.biz/sc.html](http://www.aaa1.biz/sc.html))



An early AWA table-top receiver. Manufacturers made identical or near identical chassis, creating many variants by changing cabinet styles. The table-top was the base model, then with legs for a few guineas extra. Options included the same chassis with a larger speaker below (console) or wide-boy with speakers down the front side.



An early AWA chassis with turret tuner on side. The first Australian TV picture tubes had very rounded screen and edges, so advertisers proclaimed it was 'to see the image from a wide angle'. Later when screens were flat, the same was claimed, plus 'for minimum reflections'.

He had no choice but to redirect his creative energies to the cathode ray system. This he did quite successfully, though never making a fortune. Baird visited Australia in April 1938 to give an address on television to an international radio convention, organised by the Institute of Radio Engineers.

Baird spent most of his career promoting television. He is therefore recognised in English textbooks as 'the father of television'.

Australia watched and impatiently waited as England and USA established TV services. World War 2 interrupted TV advocates, yet some politicians believed the world's chaos would all be over in a year or two, so governments planned for an Australia in peacetime.

A Parliamentary Standing Committee was set up in 1942 to advise the Government on establishing television in Australia's capital cities. Debates flourished, with some claiming that 'Australia could not afford television, due to

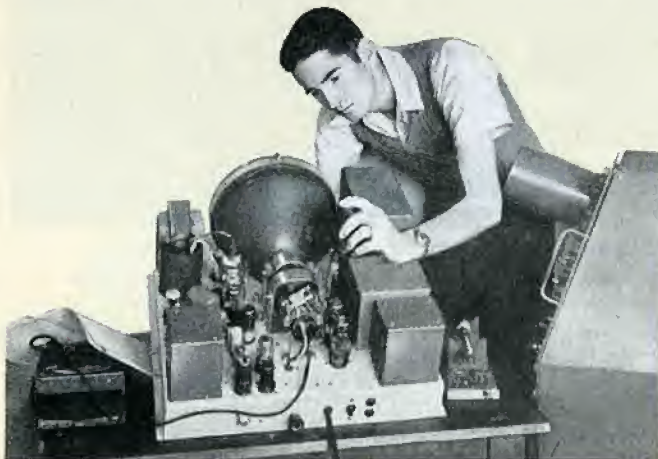
a small population and vast distances'. Some politicians could see that TV was eagerly awaited; it was a potential government financial bonus and could be a great persuader plus a voice for government doctrine and edicts.

### Chifley: commercial TV? No way!

Prime Minister Ben Chifley was absolutely against commercial television, announcing the Australian Broadcasting Commission would solely broadcast TV.

AWA had a long history of leading radio technology and in 1946 a small nucleus of engineers within the AWA Research laboratory was given the task of studying and investigating the basic principles and methods of television.

Aided only by published technical literature and the patents available, the laboratory team set to work. Before they could start building a television receiver, a picture generator was needed to test it and before that, a special video oscilloscope to test the picture generator.



The first AWA television receiver, made in 1948.



Manufacturing AWA Picture Tubes, 1959.

In February 1948, as a result of two years work, the first all-Australian electronic television picture appeared on a CRT (cathode ray tube) screen in the AWA research laboratories. A lecture and demonstration was given at the Institution of Radio Engineers in November 1948.

The picture demonstrated was a geometrical test pattern similar to the pattern later transmitted by television stations many hours each week during downtimes – most useful for consumers and technicians tuning and adjusting receivers.

By 1949, Americans were buying 100,000 TV sets a week, yet Australians could only read how great television and the entertainment was!

### The first camera – and an actual TV picture

With the test picture, AWA had progressed as far as possible without the aid of a television camera. As Australia had chosen the 625-line system, it was not until 625-line camera equipment arrived from Marconi Co. of England in April 1949 that AWA was able to demonstrate an actual television picture.

VIPs were invited to private screenings in the Research Laboratories. AWA's first television demonstration outside the laboratory was a technical lecture on television picture quality, presented at the Institute of Radio Engineers' Annual General Meeting on 18th October, 1949.

The lecture was given by Mr. J. E. (Ernie) Benson, engineer in charge of television development, followed by a variety program featuring a cast of AWA works employees.

The most ambitious demonstration of theatrical stage show television was made to over 500 people at the meeting of the Institute of Engineers, in the AWA Works Cafeteria on December 8, 1949. This was preceded by two short semi-technical talks on television by AWA chief of research W. W. (Wilf) Honner and J. E. Benson. The program was a 20-minute non-stop variety show, employing professional artists under the direction of Humphrey Bishop of radio station 2CH.

During 1949 a number of public demon-



In June 1956, before regular broadcasts, this AWW pilot production run was demonstrated to *'Radio TV and Hobbies'*. The operator is using a tube in his mouth to control the flame, part of the process called 'kinescope blowing'.

## Admiral... Years Ahead

Only Admiral could bring you the latest in Television . . . Slimline.

Admiral Slimline banishes the big bulky cabinet of the past and has introduced showpieces of elegance.



21" Arlington  
252 GNS.

Admiral TV Sets are finished in Maple, Rosewood or Walnut . . . can be mixed, matched or contrasted with any decor.

See the famous Admiral range at your local Admiral retailer.



World's largest  
TV Manufacturer

A 1959 Admiral advertisement.

strations were also presented by others, such as the Shell-sponsored demonstration of PYE equipment in Castlereagh Street, Sydney. Eleven police had to keep tens of thousands of people moving.

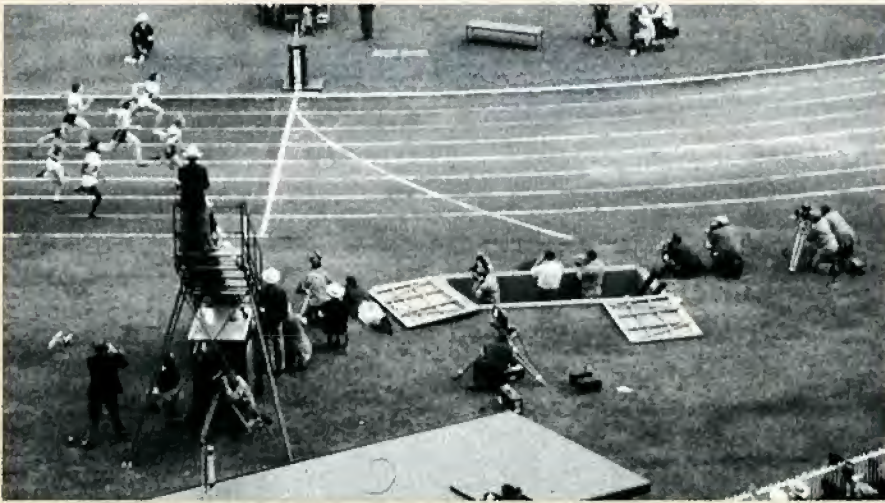
### First medical TV: 1949!

Television developers saw applications in science, medicine, industry, commerce and education. In 1949, one of the first non-entertainment uses of television was demonstrated. Dr W. D. Refshauge of the Women's Hospital in Melbourne was organising a medical congress.

He asked AWA if they could set up a closed-circuit television system for viewing by a large number of delegates. The enthusiasm of the medical authorities for television teaching surgical techniques resulted in further demonstrations in Sydney at King George V and Sydney Hospitals.

Dr F. A. Maguire was present in 1947 at the Waldorf-Astoria in New York when operations at the New York City Hospital were transmitted on a special wavelength to the hotel for 1500 members of the College of Surgeons.

'The demonstrations that we have seen today (in Australia) are 100% better in every way,' he said. 'The picture



**Betty Cuthbert winning in the 100 metres in the 1956 Melbourne Olympics. On each side of the finish 10 judges watch intently in a tiered stand, plus others on the ground – about 25 judges! All the media in this area are employing 16mm cameras. Some would hastily process the film for interstate or international TV use, as video-recorders were not yet a viable proposition. Note the ‘media pit’.**

is clear, vivid and to the smallest detail accurate, smooth with no interruptions and practically no flicker compared to those which I saw two years ago.’

### **PM says “TV would erode morals and family unit” – and sentences us to commercials!**

When Chifley’s government fell in 1949, Robert Menzies reversed the ‘Government monopoly’ policy, encouraging private enterprise to set up commercial stations too. Despite strong public pressure for TV, Mr Menzies was in no hurry, fearing it would erode morals and the family unit.

Sir Ernest Fisk of AWA and most other public and commercial interests strongly advocated for Australian television, knowing it would also generate new sales, opportunities and employment. AWA also knew a TV service in Australia was only a matter of time. In order to keep abreast of overseas developments in television and electronic engineering, AWA sent a constant stream of engineers overseas, often staying up to a year with associated companies, like Radio Corporation of America and English Electric/Marconi.

Staff dispatched to the USA in 1949 investigated the manufacture of cathode ray tubes (kinescopes), plus production techniques and special-purpose valves for television receivers.

In 1950, the Government’s Television Advisory Committee sent a group abroad to study the latest developments like programming and technical progress. They made many recommendations but the establishment of a television service was again postponed due to the economic crisis of 1951.

### **Frustrated public and a royal commission**

Meanwhile, the Australian public was essentially unaware of any progress, so

they grew increasingly frustrated at the lack of real action. ‘Radio and Hobbies’ magazine published part 18 of their TV course in November 1950, followed in December 1950 by the wonder of colour TV and more of their TV course, over six pages. Domestic magazines also displayed TV stars and televisions. The public wondered how long it would be before Australians could also enjoy ‘Tee Vee’.

The title ‘inventor of television’ is shared by many but if any one person deserves the credit, it is the Russian-American inventor, Vladimir Zworykin who developed the cathode-ray tube system. He visited Australia in 1951 and demonstrated a television only 20 inches square, predicting managers could soon supervise production-lines without leaving their desk.

In 1953, public pressure resulted in a Royal Commission, set up to inquire into and report on television. Its recommendations set the pattern for the future of Australian television – ABC and commercial channels. The ABC channels (one in Sydney and one in Melbourne) were to be financed by licence fees – a rather hefty five pounds per annum on receiving sets. Stations would be operated, as in radio, by technical staff of the Post Office.

Commercial station licenses were to be limited to two channels in Sydney and two in Melbourne. Initially these licenses were to operate for three years but were later extended to five years. The Commonwealth Government, having accepted the recommendations of the Royal Commission, passed an amendment to the Broadcasting Act, giving the Postmaster-General authority to set up television transmitters.

At last, in 1954, the Government called for tenders to supply 100kW ERP (Effective Radiated Power) television



**Evidence of the hasty last-minute involvement of television in the 1956 Olympics can be seen in this photo. The ‘floor’ laid on scaffolding to the right is not fixed at all, with the camera tripod wheel amazingly close to falling off. Media and their assistants are squashed in every possible space, with some resigned to standing. The monitors were quickly sourced – mostly PYE’s first domestic receiver, the P101, with protective panels on top.**

transmitters in Sydney and Melbourne. AWA was awarded the contract to supply their Marconi-built 10kW transmitters (100kW with linear amplifier) at four of the six initial stations: commercial stations ATN-7 Sydney, HSV-7 Melbourne plus ABC stations ABN-2 Sydney and ABV-2 Melbourne.

AWA continued further TV demonstrations, including televising the visit of Queen Elizabeth II to Australia in 1954 and the opening of Federal Parliament in Canberra, televised to the Canberra Hospital. As there was no outside broadcast (OB) van in Australia at the time, an Arnott's Biscuit van was hastily converted in two days. These broadcasts were only viewed by a tiny minority.

## License allocation

In order to allocate licenses for commercial stations, the Broadcasting Control Board held public sittings in January and February 1955, interviewing applicants and representatives from interested parties like the arts. Much of the creative input was lost in the overall economic argument.

Licenses were granted to companies already in communications, like newspaper proprietors who showed they had sufficient financial backing for the first years of operation. The Government Royal Commission agreed to a cautious phased program for commercial and national stations.

In spite of the rich success of commercial networks in the USA (revenues of US\$500,000,000 in 1956), it was not proven that Australian TV advertising sponsorship would be enough to fund many expensive transmitting stations.

Television was also seen as a great medium for commerce, training, production, health and education. In 1956, the ES&A bank in Melbourne installed cameras in three of their city buildings, so a customer could go to a special room and see a ledger in another building – primitive compared to the computer and internet systems available to all now.

## 1956 Melbourne Olympic Games – almost without TV

When Melbourne won the rights to stage the world's largest event – the 1956 Olympic Games – some suggested this would be the ideal time for the introduction of television. The event would have television cameras from many nations present and millions more Australians could see the Olympics. If only they knew the trouble this would cause...

Commercial haggling for Olympic rights ensured telecasting was in great doubt weeks or even days before the event. Local broadcasting was so uncertain that stations published programs with no mention of the Olympics. In an era where hundreds of millions of dollars are now paid for screening rights, it's hard to imagine that the networks told the Chairman of the Olympics Committee that they would only film if given free access to the Games.

In 1954, Associated Press in New York advised the



PYE's involvement in the '56 Olympics evolved at a rate of knots. At first they were supplying Channel 9 with cameras, then it was found the military communications equipment was too bulky for the games, so they became the games communications supplier. Later it was found few of the 1200 press and radio men in the media room could see the scoreboard, so PYE General Manager Jack Carey (left) supplied a Lynx industrial camera and Enio Rayola (right) made a motor-drive to slowly scan across the scoreboard. The image was converted to RF and shown on at least 15 PYE P101 receivers.

distance from Melbourne to USA meant that film would be televised days out of date. This was a major factor in Americans indicating no interest in paying for screening sponsorship.

Shell's Australian Managing Director was charged with marketing television rights. Britain had a new commercial channel, Associated Rediffusion and in October 1955, the company agreed to 25,000 pounds for exclusive rights (except Australia) and agreed to negotiate US sales, for about \$500,000.

Rediffusion's negotiations with Westinghouse immediately failed. Then Rediffusion changed sides, representing the US networks. It should be noted Rediffusion held an interest in TCN Sydney and HSV Melbourne, so rather than representing the Olympic Organising Committee (OOC), Rediffusion was soon intent on derailing negotiations.

Melbourne's OOC stood firm and was bombarded with a campaign against the sale of exclusive rights as 'exploitation', with a 'calamitous' effect on film and television. NBC told the Australian government that the Games were news and therefore in the public domain. They also threatened to stop American television coverage useful to Australia, like visits by prominent politicians.

The roof fell in when Rediffusion announced that the US rights offer had been withdrawn and they no longer were interested in the exclusive rights. Emotions ran high as worldwide networks demanded free access to the Olympics and even stated that anything less was undemocratic – against the free-flow of information.

This is just a short synopsis of the press rights battle that waged on for years, right up until the line, threatening all



As PYE's involvement in the 1956 Olympics grew, a Communications and Television room was necessary, but most times it simply housed a fridge, specially brewed Olympics beer and a few chairs. A second similar room did house PYE Australian-made base stations.

media coverage of the Olympics. A link to the complete story is in the credits page.

As the event opened, only a small number of independent US, Japanese and Eastern Bloc stations screened the Melbourne Games. The BBC believed that those digging in their heels were contributing to long-term media freedom, so they read Olympic stories in front of still photographs. Australian stations published full programming, without the Olympics. Television moguls were tough negotiators.

1956 became the year television would at last commence in Australia. Radio manufacturers like Astor and HMI (EMI) hastily converted space and expertise in their factories over to television. AWA was ready, adopting a similar design to the RCA Victor deluxe chassis with 22 valves, considered the Rolls Royce of Television at the time. Perhaps it was but AWA had always set high standards for radio performance and reliability, plus the residents in the hilly terrain of the Sydney basin benefited from superior performance.

On July 13, 1956, TCN-9 (Sydney) began experimental transmissions, with HSV-7 (Melbourne) commencing tests just three days later.

### ***"Good evening ladies and gentlemen – and welcome to television"***

At 7 pm on September 16, 1956, Bruce Gyngell, resplendent in a dinner suit with a carnation, announced the opening of television in Australia.

TCN-9 Sydney was transmitting from St. David's Hall, Surry Hills, hastily rented as a studio, as the official studios at Willoughby weren't ready. The cameras wobbled as they tracked over the uneven floorboards but for the first few months, St. David's was the home of television, beamed to an estimated 3000 to 5000 sets.

On October 27, TCN-9 became the first to commence regular transmission for three hours a night, then HSV-7 Melbourne, ABN-2 Sydney, ABV-2 Melbourne and ATN-7 Sydney were all on-air by December 2nd. HSV-7 Melbourne opened with a variety show telecast from the

Tivoli theatre, hosted by Eric Pearce and Danny Webb.

By the Olympics, Melbourne TV was somewhat ready at the last second to cover this major international event. Ampol sponsored Channel 9 and their service stations would be converted into special tele-theatres to allow mass viewing.

At Wesley College Melbourne, a Philips 50,000 volt television projector displayed a 13ft x 10ft image of ABV-2 and HSV-7 Olympic test transmissions. Up to 500 people at a time watched for a fee of five shillings, to benefit charity.

### **You want *two* OB vans?**

As negotiations went right up until the last moment, Channel 9 airfreighted an extra camera from England to provide adequate coverage. Channel 9 only had one outside broadcast van parked outside the MCG but wanted to cover the swimming as well. So a VW Kombi was hastily converted into an OB van, utilising a wooden console and gear meant for the studios.

The system was linked by a microwave dish over the 35km 'as the crow flies' between the MCG and the Mt. Dandenong transmitter. As channel 9 was not officially on air, their Olympic transmissions were test broadcasts.

Proof of the last-minute haste in televising the games can be seen in the photograph of TV cameras at the event. The scaffold platform boards beneath the camera dolly are not fixed at all. One wheel is perilously close to the edge of



This 17-inch set was home-made by F. Straford in 1957 from a kit of parts that cost approximately 125 pounds – about half the retail price. It was based on an AWA circuit, with the tuner and IF strip pre-aligned, to avoid costly test gear. The set has a light shade and safety-glass panel on the front, angled down to avoid reflections.



## HEALING *Manhattan*

Designed by America's Mr. Television. Backed by the largest all-television plant in the world . . . Engineered for the exacting by Healing.

See the "Manhattan" in glorious walnut, maple and mahogany timbers at Healing Dealers. 239 Gns.

**A 1957/58 Healing Manhattan with the American designer on screen.**

the raised stand. Packing is pushed out of the way. Beside the camera, domestic console TVs rather than monitors sit in the outdoor situation, with temporary weatherproofing panels added.

In brilliant 29°C sunshine, 103,000 people watched in wonder as the masses of athletes from all nations entered the MCG for the opening of the Melbourne Olympic Games.

At 3pm on Thursday November 22, 1956, H.R.H. the Duke of Edinburgh delivered the opening speech, followed by a thunderous 21-gun salute.

A young Australian athlete, Ron Clarke, carried the blazing Olympic Torch to light the Olympic flame. A choir of 1200 voices sang Handel's Halleluiah Chorus, then John Landy delivered the Olympic oath.

This moment in history nearly didn't happen, as he arrived at the rostrum to find . . . nothing! No promised typed sheet. Fortunately, he had transcribed the oath a few days before and reached into his pocket to save the day.

In addition to TV cameras, many 16mm cine cameras filmed the spectacle for television and movie theatres. AWA/Marconi and PYE were the leading suppliers of studio cameras and equipment.

### Three VHF comms "networks"

Angus Dawes and Ian Hyde of PYE Melbourne were given the exciting assignment of setting up and providing VHF telecommunications for the Olympic Games. The Army was to supply radio communications but only had

bulky HF equipment.

So three PYE VHF networks were set up, one exclusively for the Duke of Edinburgh, who was bringing his Lagonda vehicle on the deck of the Royal Yacht 'Gothic'. The Duke could communicate while driving around Melbourne from a PYE UK, VHF mobile to a base station sited at Xavier College Kew, then over a PMG landline to the 'Gothic' at her moorings.

The second and third networks were for MCG officials and the marathon route. With a 60-foot mast and all telecommunications installed at the MCG, the PYE crew retired to the 'PYE Communications and Television Workshop'. In reality, this room most times only housed chairs, plus specially-brewed Olympic beer in a large refrigerator. A similar room, the 'Communication and Television Control Centre' did house locally-built base stations.

Soon it was evident the press couldn't see the scoreboard from their otherwise excellent viewing position in the upper deck of the members stand. So a PYE Lynx industrial television camera driven by a panning mechanism filmed the scoreboard, for viewing by the press on dozens of television monitors. The monitors were the first locally assembled PYE televisions, model P101.

There were many requests to install more P101 monitors, including the Managing Director of PYE asking for one in the second floor lounge of Phairs Hotel, the Indian team's request for one in their Olympic Village room and another on board a visiting American destroyer.

The PYE service van was a Vanguard, with a collection of official pass stickers almost covering the passenger windscreen. This gave them access to the MCG member's car park and Olympic Village, in fact almost anywhere. When picking up a TV antenna from Homecrafts city store, they double-parked in peak hour. On their return, a parking inspector was carefully directing traffic around the Vanguard and not a ticket in sight!

GTV-9 filmed the Olympics, with cameramen wearing grey dustcoats. Because PYE supplied all the television equipment to GTV-9, Ian Hyde was able to visit their outside broadcast van for the closing ceremony.

The director, Norm Spencer contrived a great closing scene with one camera panning up the track to the Olympic flame with the Olympic flag superimposed over, then a fade to black.

On completion, a voice came over the engineering link 'Spencer, how many times have I told you to go to black before you close!' Spence looked at the group and said 'I went to black didn't I?' They all nodded. Spence grabbed the microphone and said 'I went to \*\*\*\*\*g black'.

In the rush and confusion to dismantle the communications and television systems, many PYE P101 televisions went missing. One sailed to America on the destroyer.

Listener-In TV newspaper declared 'Letters have poured into all three stations expressing wonder and admiration at the clarity and scope of the coverage. Some had been sceptical about TV until they saw the Olympic Games coverage and were now buying sets.'

Television had clearly arrived

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### NEXT MONTH:

**TV Boom and Bust. As sales rocket, many sets destruct.**