

"That's one small step for man, one giant leap for mankind."



Scodos

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S ☆ C ☆ O ☆ D ☆ O ☆ S

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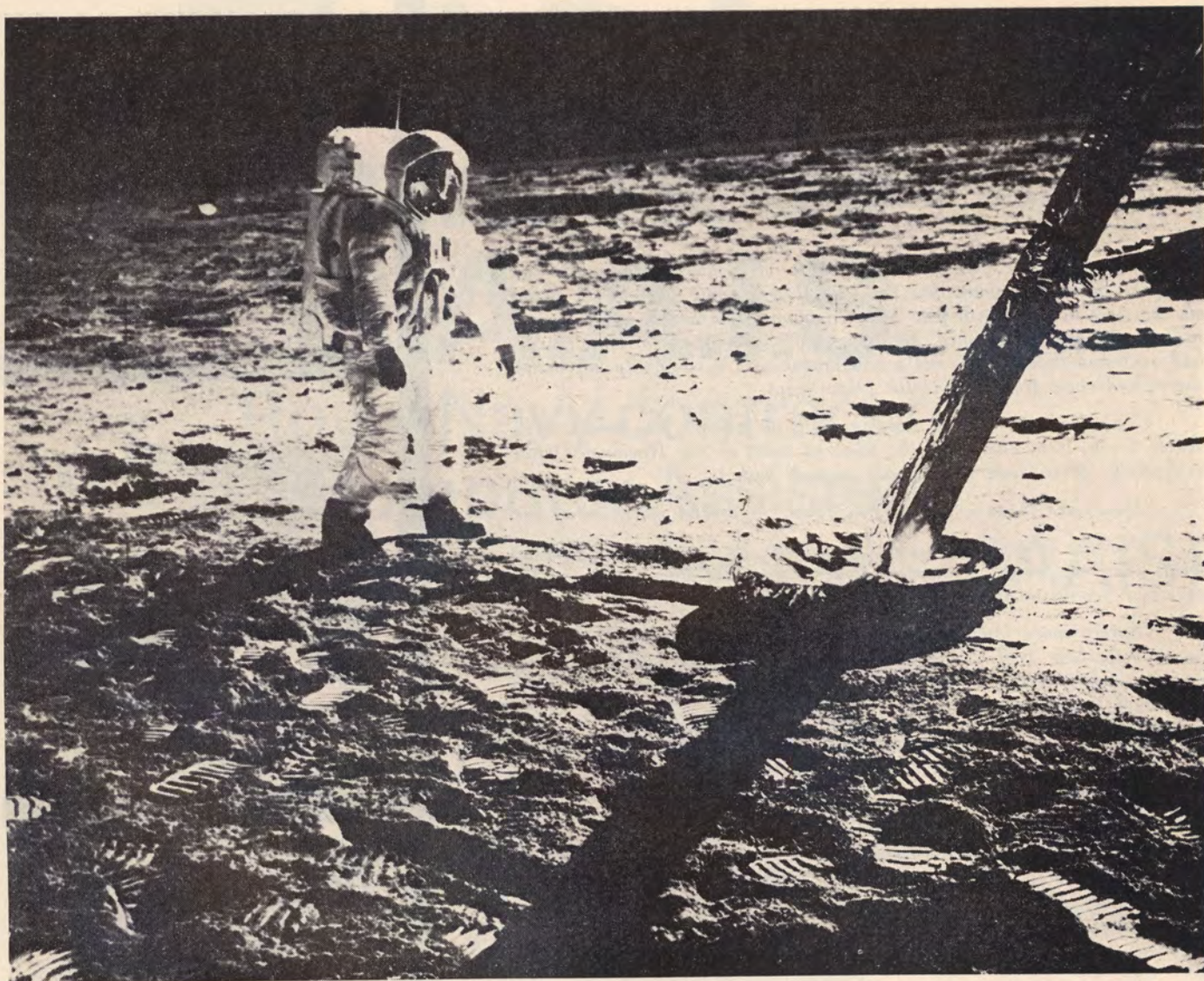
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"That's one small step for man..."

"To have shared in this mission is to have taken part in the greatest event of our time." It was our Carnarvon Tracking Station that said this, but the words summed up the feelings of hundreds of Australians — in Supply, other Government organisations and private enterprise — who were involved in Apollo 11. By now that flight is history, although there is still a spate of Apollo 11 photographs, slides, films and publications coming on to the market. There will be tremendous interest, of course, in subsequent moon-landing missions. Already the Saturn V rocket for Apollo 12 is on its launching pad at Cape Kennedy. Man will stay on the moon for ever-longer periods. He will study earth and the universe from orbiting laboratories; within 15 years he may go to Mars, and who is to say where space exploration will end? But there will never be another occasion like the eight days of Apollo 11, when the world held its breath while three brave men made one of mankind's oldest dreams come true. We know it has all been said before, and by more gifted or eloquent people. You may well ask: Why revive it again? Our only excuse is that of all the Australians associated with Apollo 11, we in Supply were probably most involved, either physically or emotionally. Scodos, therefore, asked its correspondents at Carnarvon, Honeysuckle Creek, Tidbinbilla and Deakin to write an "inside" Apollo 11 story. Their accounts follow here » » » » » » » » » »

SUPPLY'S PART IN THE APOLLO 11 MISSION

CARNARVON

We supported the mission with our 30-ft.-diameter Unified S-Band antenna and the 29-ft.-diameter FPQ-6 radar.

In addition, during the earth orbits, the acquisition aid antennas received telemetry from the spacecraft.

The two earth orbits were supported, with a highlight during the second orbit when the "go for trans-lunar injection" was given through us.

Three tracking periods of about 11 hours each were accomplished without incident during the trans-lunar coast, followed by some 15 tracks of the CSM-LM during lunar orbit.

The touch-down and moon walk (EVA) were followed by all of us with intense interest.

Our participation in the Gemini project made us realise that it was the culmination of the Mercury / Gemini / Apollo projects.

For some of us it meant even more — those who had worked at Muchea (the old Mercury tracking station near Perth) during the Mercury project.

We were unfortunate in that no TV was available at the station.

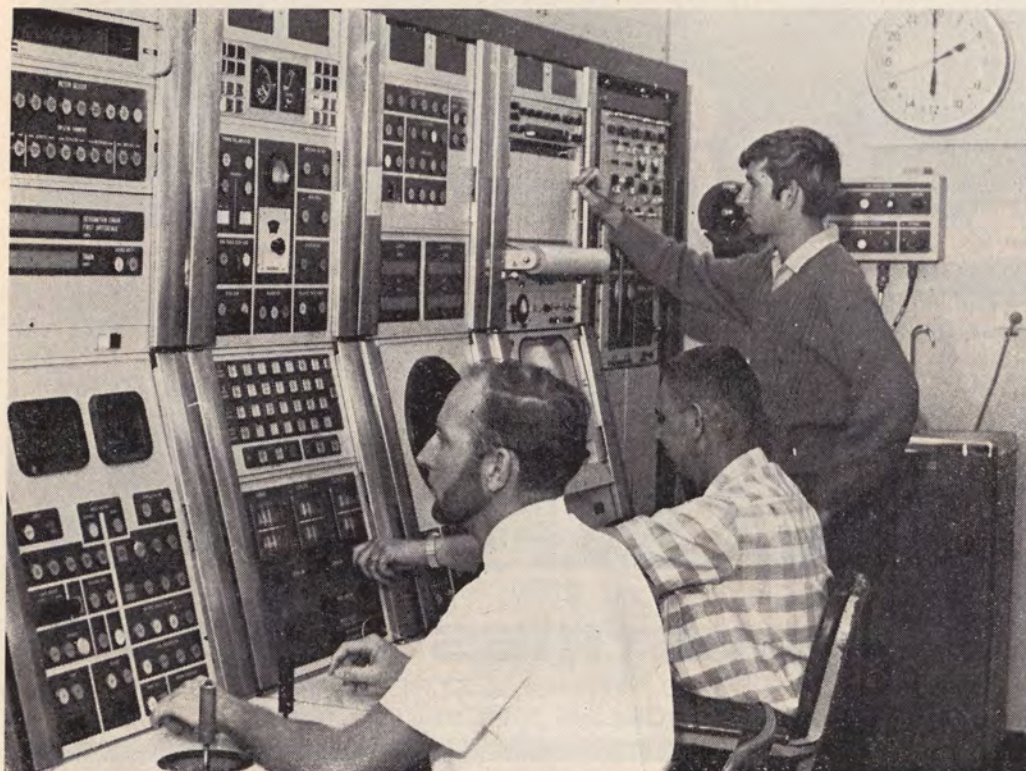
The ABC had made arrangements with the OTC earth satellite station at Carnarvon to receive the EVA TV via satellite and send it to Perth some 600 miles away, via the recently-completed coaxial cable.

A small monitor was placed in the local theatre, where staff who

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Carnarvon Tracking Station: Operating console of tracking radar.



Indirectly, Australia's other three tracking stations helped to make Apollo 11 possible.

Island Lagoon was a prime station in the Lunar Orbiter (moon photography) series which enabled NASA to select lunar landing sites.

Orroral Valley collected data on space environment from various unmanned spacecraft. These data are used extensively in the forward planning of Apollo launches and contribute to the safety of the astronauts.

The ATS Station at Cooby Creek has provided back-up facilities for communications links and for the video-recording of TV pictures from Apollo spacecraft.

APOLLO 11 MISSION

were off duty — together with local townspeople — could view the EVA.

Some enterprising people arrived with binoculars and rifle telescopes to see the 14-inch TV monitor from the back of the crowded hall.

We are anxiously awaiting a film of the mission to see what we missed out on.

Before the Lunar Module lifted off the moon's surface, we began supporting the scientific package (EASEP) left on the moon by the astronauts.

Dual support of the CSM and EASEP continued part way through the trans-earth coast.

We then became prime for EASEP until the CSM was within 13 hours of splash-down.

Back-up support to the CSM was provided from this time for some 10 hours.

We then became prime until our final loss just before re-entry, about 20 minutes from splash-down.

Celebrations were duly held at a suitable venue after splash-down, when the staff were able to let their hair down after eight days of solid effort and concentration.

The following message was sent to the network after the mission:

"Carnarvon joins in thanksgiving for the safe return of the astronauts.

"We are proud to have been partners in the Gemini and Apollo programs leading to this historic success."

For the record, we used more than 100 miles of magnetic tape.

HONEYSUCKLE CREEK

As with previous Apollo lunar missions, we were joined by Tidbinbilla to provide dual antenna capability.

About one hour after launch, the spacecraft was tracked by our Canberra complex for about five minutes on the first earth orbit.

The three days of trans-lunar coast tracking were uneventful.

At acquisition on July 20, the CSM-LM were in lunar orbit 4 and were tracked on successive orbits through No. 9.

When tracking was picked up at about 11.15 a.m. on July 21, Eagle was on the lunar surface, having touched down about five hours earlier.

When Ed Mason, Chief of Goddard's Public Affairs Office, arrived in Australia to assist with Apollo 11 arrangements, he thought he knew Neil Armstrong pretty well.

"Neil always plays it by the book. If the moon walk is scheduled to start at 4.12 p.m. (Aust. E.S.T.), then that's what he'll do", said Ed.

Willson Hunter begged to differ: "You don't expect any young, warm-blooded American to sit in the LM for hours just waiting around?"

There was only one way to settle this friendly argument. It resulted in an extra bottle of whisky for the Hunter household.

That was fine, but better things were to come. Early in August America's Secretary of State, Mr. William Rogers, visited Canberra for an ANZUS conference.

Out of the blue, he asked Willson and Marjorie Hunter to fly back with him to the U.S. to attend — with 1,500 other guests — the State dinner President Nixon gave to honour Neil Armstrong, Edwin Aldrin and Michael Collins.

The Hunters were due for some leave anyway. They were going to spend it in Australia (gem hunting?), but this opportunity was too good to miss!

Although the complex was not tracking at the time, practically all personnel — whether on site or at home — listened to the live voice broadcast of the touch-down.

For the lunar surface activity, the complex was joined by the CSIRO's 210-ft.-diameter radio telescope at Parkes.

As scheduled, the egress was not to occur until about 4.15 p.m. when only the Australian stations would be tracking.

However, as is now well known, Neil Armstrong elected to come out earlier, and at 12.39 p.m. pulled the lanyard which deployed the TV camera.

With a sudden flicker, the Eagle's ladder and the bleak lunar landscape appeared on the monitor screens.

Shortly after — to be exact, at 12.56 p.m. and 20 sec. — Armstrong climbed down the ladder and became the first man to set foot on the moon.

The Parkes antenna

had not yet acquired, due to elevation constraints, and it was a matter of great pride for us that the TV picture of the first step relayed to the world was received and processed through Honeysuckle.

One of our senior R & D men was overheard to say: "I've been associated with rockets for more than 20 years now, but I still can't get over Apollo 11!"

Later that afternoon various items of equipment were thrown from Eagle's hatch to reduce the weight before lift-off.

Houston reported definite indications in the data from the passive seismometer each time an item of equipment bounced on the moon's surface.

The complex acquired shortly after noon on July 22 as Columbia, now alone since Eagle was jettisoned several

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Honeysuckle Creek: Operations console.

SUPPLY'S PART IN APOLLO 11 MISSION

hours earlier, circled in orbit No. 29.

At 2.57 p.m., at the start of orbit 31, the service propulsion engine was fired behind the moon for the journey home.

We acquired within seconds of the predicted time to relay the data and voice that revealed a 100% successful trans-earth injection.

As with the outward journey, the earth-bound tracks on July 22, 23 and 24 were uneventful.

Our track on July 24 was the longest of the mission, lasting from 12.40 p.m. until 2.29 a.m. on July 25, only 20 minutes before splash-down.

However, that afternoon it was business as usual, as we were scheduled to maintain daily tracking of the passive seismometer experiment left behind by the astronauts.

Our staff is proud to have supported this mission of superlatives.

TIDBINBILLA

Our Manned Space Flight Network Wing was part of the Canberra complex.

The operations teams were involved in many hours of intense activity during each phase of the mission.

The support staff, working unobtrusively behind the sidelines, also did a fine job.

Although station operations ran smoothly for most of the mission, one unpleasant incident occurred.

We want to mention it because of the magnificent response it evoked from a number of areas. The background is as follows:—

The MSFN Wing had been asked by Mission Control to track the LM during the critical EVA period.

Because an emergency take-off from the lunar surface could be required

Senator Ken Anderson on July 25 sent the following message to Dr. T. O. Paine, NASA's Administrator:

"It is with a deep sense of thankfulness that I offer you my congratulations on the magnificent success of the Apollo 11 mission.

"I am very grateful for the opportunity of having been present to represent the Australian people at this historic launching.*

"I know that all in the Department of Supply and its contractors — indeed, all Australians involved in the program — are proud to have been associated with your team.

"I would like you to pass on our congratulations and best wishes to the astronauts and their families and to all our friends who contributed so much to this great achievement.

"We look forward to a continuing close association in the exciting years ahead of us."

*The Minister, accompanied by Mr. Lloyd Bott, witnessed the Apollo 11 launching at Cape Kennedy on July 16.

during our view period, and because our transmitter could fail during such an emergency, a back-up transmitter was considered essential.

Tidbinbilla: Unified S-Band control and equipment room.

At 6.25 p.m. on July 18, our back-up transmitter was damaged by an electrical fire at the power input circuit breaker.

The initial assessment of time for repairs was judged to be about one week.

However, within about two hours it became obvious that concentrated effort on rewiring and cleaning could considerably cut this time.

As repair work had consumed the available spares stocks, a concerted effort was made to find a source of "back-up" spares.

Fortunately a quantity of miscellaneous parts was located at Island Lagoon Station, Woomera.

Thanks to the efforts of personnel at Island Lagoon, and of the local airlines, these spares arrived in Canberra on July 19.

The Jet Propulsion Laboratory, Pasadena, California, also pulled out all stops to provide more spares which

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arrived in Canberra at noon on July 20.

By putting maximum effort into the rebuilding program, power was restored on the evening of the 19th — 28 hours after the fire.

After running the system overnight to prove

its capability, it was declared "green" on the 20th, in time for the critical EVA period.

Apart from a serious onset of flu at our station during the latter days of the mission, the remainder of the task proceeded smoothly.

"Australian-staffed stations performed magnificently in bringing yesterday's historic Apollo 11 telecast to the world and in communicating with the three astronauts," Senator Ken Anderson said on July 22.

He said: "All Australians can be proud of the Apollo 11 role played by the tracking stations at Carnarvon, Honeysuckle Creek and Tidbinbilla and by the CSIRO's 210-ft. radio telescope at Parkes."

(The three tracking stations are managed by Supply on behalf of NASA. Our Department provides the Station Directors; the contractors at the stations are Amalgamated Wireless Australasia Ltd., Standard Telephones and Cables Pty. Ltd. and SpaceTrack Pty. Ltd., a subsidiary of Hawker de Havilland Australia Pty. Ltd.)

The Minister said: "Equally important was the part played by the NASA Communications Center at Deakin (Canberra), which is staffed by my Department.

"I wish to thank all staff members at these facilities for their complete dedication and their wonderful response during yesterday's critical phases.

"The support of the Australian Post Office and of the Overseas Telecommunications Commission (Australia), by supplying the communications links with the U.S., has also been a great contribution to the Apollo 11 flight.

"The Australian Broadcasting Commission and the Federation of Australian Commercial Television Stations combined to furnish back-up outside-broadcast links, some of which carried the actual Apollo 11 TV signals.

"Yesterday from 12.51-1.02 p.m. both Honeysuckle Creek and Goldstone (U.S.) received the Apollo 11 telecast from the surface of the moon.

"Both stations fed the signals to the Mission Control Center at Houston, Texas, U.S., from which they were relayed via satellite to the world TV pool (Honeysuckle's signals were split off in Sydney for direct transmission in Australian TV stations).

"From 1.02 p.m., until the end of the transmission at 5.57 p.m., the world saw the Apollo 11 telecast via Parkes (its video signals were also split off in Sydney for direct relay to Australian TV networks)".



NASA Switching Center at Deakin (Canberra): Voice communications switching board, linking all Australian tracking stations with the world-wide NASA communications network. The same circuits are used for conversations between the astronauts and the Apollo Mission Control Center at Houston, Texas, U.S.A.

DEAKIN

As with all NASA space-tracking activities, we were responsible for the switching and co-ordination of fault finding and restoration of all operational circuits — including TV — in the Australian area.

Communication circuits, totalling more than 40,000 circuit miles, were provided to Honeysuckle Creek, Tidbinbilla, Parkes, the NASCOM video switching center at Sydney, Carnarvon and Tananarive (Malagasy Republic).

These stations are connected to the Houston Control Center via the Canberra and Goddard Space Flight Switching Centers, over circuits provided in the COMPAC and SEACOM undersea cables and in the COMSAT communication satellite.

When a station in the Australia area tracks a spacecraft, a continuous monitor is kept on the quality of the teletype, high-speed data and voice transmissions passing through the center,

so that any anomalies or apparent circuit malfunctions can be detected and corrected.

Our operations require a vast co-operative effort with the PMG and OTC personnel directly involved in maintaining the various circuits in Australia, and with the switching centers at Guam, Honolulu and Goddard Space Flight Center.

To this end a complex system of order wires has been provided. The main order wire, known as the world-wide order wire, links together all switching centres — at London, Madrid, Honolulu, Guam and Canberra.

Control is exercised by the NASCOM terminal at the Goddard Space Flight Center near Washington.

The second order wire is known as the Australian fault net. It was initiated during the early Mercury flights and has become an efficient

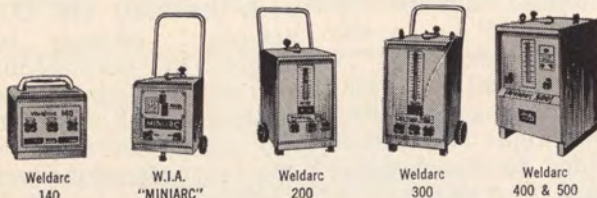
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HOW NEWS MEDIA GOT BACKGROUND

The Apollo 11 mission started on July 16, but for a number of Head Office people "D-Day" was July 11.

This was the day on which our Public Relations Section had to send out about 160 Apollo 11 information folders to newspapers, press agencies, correspondents, radio and TV stations throughout Australia.

All Australian organisations, involved in Apollo 11, had combined to provide background information (articles, photographs and diagrams) for the folder.

Those represented were CSIRO, Australian Post Office, OTC, ABC and Supply.

Our Department also provided the 12 x 10 in. folder itself, with an attractive cover and pockets inside to hold the material.

With each folder went an excerpt of NASA's Apollo 11 press kit. This 250-page document did not arrive in Canberra until July 9.

We condensed it to about 120 pages, but it still took most of July 10 and half the next day to duplicate, collate and staple the 19,200 pages involved.

Angela Facini and Haydn Taafe, of the P.R. Section, collated the press kit until about midnight on July 10.

On July 11 we had to borrow 11 people from Registry, General Services and Office Services to complete the job.

In between, our main duplicating machine temporarily broke down and a frantic appeal was

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THANKS FROM HOUSTON

Mr. Clifford E. Charlesworth, Apollo 11 Flight Director, sent this message to Australia:

"I would like to congratulate the personnel of Honeysuckle Creek and Tidbinbilla and the CSIRO personnel at the Parkes 210-ft. radio telescope facility for their outstanding support of man's first lunar surface expedition.

"The flight operations personnel fully appreciate the tremendous effort required to achieve the readiness posture which made possible the greatest television spectacular of all time.

"Even more important to the flight operations team at the Mission Control Centre was the continuous EVCS* voice and data provided by the Australian stations which were essential to the success of this critical phase.

"I thank you for your efforts and your significant contribution to this great adventure."

*Extra Vehicular Communications System, relating to voice communications with the astronauts and reception of biomedical data from them during the lunar surface activities.

SUPPLY'S PART IN APOLLO 11 MISSION

method of co-ordinating and controlling fault tracing and restoring communication circuits in Australia.

Operating under our control, the Australian fault net is arranged to include all strategic PMG stations which can provide fast and effective circuit restoration.

Major stations included during Apollo 11 were the PMG centres at Carnarvon, Mullewa, Geraldton, Perth (all WA), Adelaide, Sydney, Parkes and Canberra, the OTC stations at Sydney and Perth, and the communication areas

at the Honeysuckle Creek, Tidbinbilla and Carnarvon tracking stations.

With this system a faulty circuit in Australia

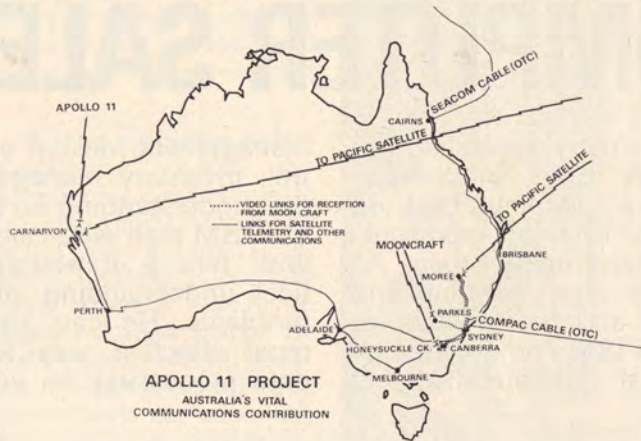
can be restored in about three minutes.

To reduce further the possibility of circuit failures occurring during a manned mission, the

PMG ensures that all work on trunk routes carrying NASA circuits is suspended during the flight.

If an emergency occurs, the PMG and we decide on a suitable time — normally outside a tracking period — when the circuits can be released to carry out the emergency work.

This spirit of co-operation, so willingly given by all concerned, is the biggest single factor in providing the high standard of communications in the NASCOM network in Australia.



PM's first visit to Honeysuckle



Mr. Gorton (second from left) inspects the Receiver-exciter section of the Unified S-Band area. Mr. Reid is on the left; on the right are technicians Michael Linney (standing) and Colin Cochran (seated).

At 8.45 a.m. on July 21, the Prime Minister, Mr. Gorton, and Mrs. Gorton arrived at Honeysuckle Creek for a visit of about 50 minutes.

Mr. Gorton was taken on a tour of the station by the Station Director, Mr. Tom Reid.

Later the PM was briefed on aspects of the Apollo mission by Mr. Reid; the Secretary, Mr. Alan Cooley; the Deputy Secretary (Management and Supply), Mr. Lloyd Bott; and NASA's Senior Scientific Representative to Australia, Mr. Willson Hunter.

The PM's tour began at the antenna control centre, where he was shown how the 85-ft. dish can be whirled around with finger-tip control.

At Mr. Reid's invitation, Mr. Gorton operated the control, sending the antenna spinning.

He then saw the communications and telemetry equipment and the computer and command centre.

The Prime Minister wrote this message in the visitors' book:

"This day men were first sent through space and landed on a satellite.

"Mankind can now gaze at each other with mild surmise as to what future travel in space may bring."



The Prime Minister (second from left) with Messrs. Bott, Cooley and Reid.

Canberra display seen by thousands

On July 14-26 (coinciding with Apollo 11), Supply organised a highly-successful Apollo display in Canberra's Monaro Mall. According to the Mall Manager it was the most popular exhibition ever held there.

Much of the success was due to the five Supply information officers at the display — John Huggan, Kev Moroney, Guy Sherman (all American Projects Branch), John Vincent (Orroral Valley) and Ray Holswich (Personnel).

After the first week it was obvious that the 10,000 Departmental Apollo hand-out brochures — reserved for Canberra — would not be sufficient. Thanks to CDO, new stocks arrived just in time.

The U.S. Embassy kindly lent us some models and a lunar chart for the display, and they gave us a number of Apollo badges and attractive booklets to hand out.

One of our information officers wrote:

The intense public interest in the mission was reflected in the barrage of questions from people of all ages.

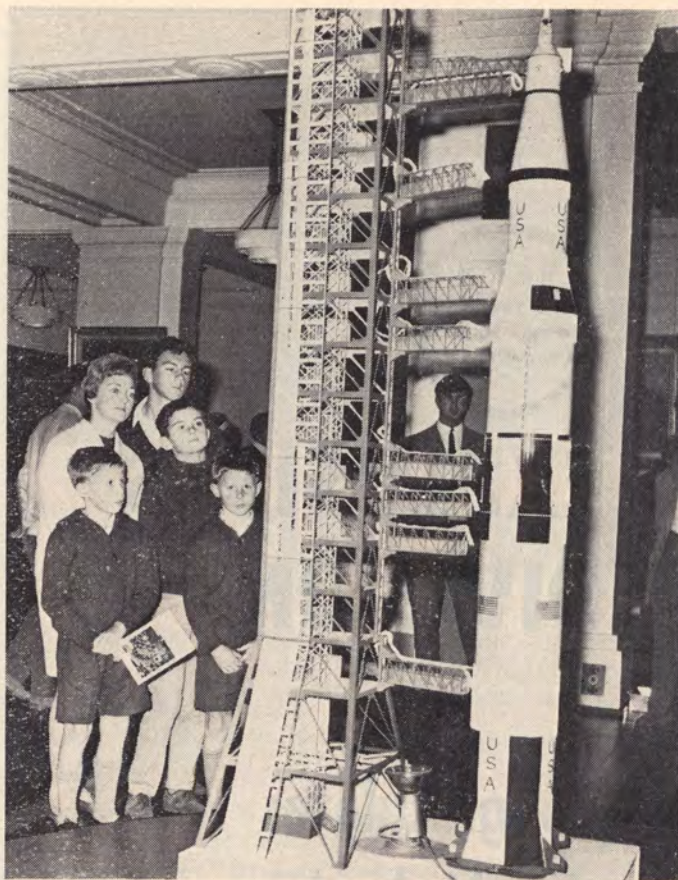
Small boys soon discovered that coloured photographs of the astronauts, being sold for 5 cents each at a shop in the Mall, were available for the asking at our display.

Highlights included:

- The shattered nerves of Ray Holswich when the outstretched hands of a small child sent a plastic model of the CSM into a near-earth orbit with subsequent splash-down on the tiled floor.

- The man who didn't understand how the astronauts could hope to hit the quarter-moon he could see at night, let alone achieve a circular orbit around such an oddly-shaped body. He didn't believe John Huggan's explanation, and came back the next day for a second opinion.

- The young lady who, on being offered a photograph of the astronauts with a "witty" apology for the lack of autographed copies, said she didn't mind as she already had one at home, autographed by the Apollo 10 crew. Questioned further by a puzzled information officer, she said it had been presented to her father who worked at Supply. When



asked who this might be, as the officer might know him, she quietly replied that her name was Cooley. Thereafter, the "witty" remark was deleted from the repertoire.

These magnificent models of the Saturn V rocket, Apollo spacecraft and gantry (shown here at an earlier Departmental display in King's Hall, Parliament House, Canberra) were part of our exhibit in the Mall. The models were made by test equipment technician Wally Smallwood, of Honeysuckle Creek's STC contract staff, in his spare time.—(Photo courtesy The Canberra Times.)

On Thursday, July 17, Radio Holland unexpectedly rang your editor at home. They sought Apollo 11 interviews with Dutch-born technicians working at Honeysuckle Creek and Tidbinbilla.

It took two more calls from Holland to make the necessary arrangements, and by that time some of your editor's half-forgotten Dutch had started to come back.

The first interview was with Bill Kempees, Chief Engineer at Honeysuckle Creek, at 3.30 a.m. (Aust. E.S.T.) on July 21.

Bill's Dutch over the years had also become rusty, and he wished to know the questions beforehand so he could prepare his answers. Apparently this interview went quite well.

For the second one, scheduled for 9 p.m. that day, John Valk, Rudy Langeveld and John Jorritsma made special arrangements to be at Tidbinbilla together.

However, the call came early, when only John Jorritsma was in.

- The bright young thing who was sure each astronaut was to be paid \$24,000,000 for making the moon flight.

- The problem of dealing with small children who crept behind the barriers intent on larceny of the models. Any attempt at forcible ejection brought malevolent looks from mama, until a technique was adopted of pinning an Apollo badge on the child, smilingly chucking it under the chin, and then forcibly ejecting it.



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MINISTERIAL VISIT TO FACILITIES IN S.A., W.A.

Our Minister, Senator Ken Anderson, recently visited defence and space installations at Woomera and in Western Australia.

He was accompanied by Mr. Lloyd Bott, Deputy Secretary (Management and Supply).

The Minister spent several days visiting the Carnarvon Tracking Station and the U.S. Naval Communications Station at North-West Cape.

He then travelled to Dampier to inspect Mt. Newman, Mt. Tom Price and the Dampier harbour facilities.

Senator Anderson finally visited the Mt. Goldsworthy mine, iron ore projects at Yampi, Cockatoo and Koolan, and the Ord River scheme.

The Minister is shown here during his visit to our Carnarvon Tracking Station. Back row (from left): Cr. Wilson Tuckey, Carnarvon Shire President; Bob Wright, Minister's Private Secretary; Paul Ots, Deputy Station Director; Senator Anderson; Colin Smith, AWA Senior Representative; Ray Jacomb, Station Director. Front row: Mesdames Tuckey, Smith, Oats, Anderson and Jacomb.

Gerry Somers calls it a day

Mr. Gerry Somers retired on June 13 after 50½ years in the Public Service.

He started in the Fourth Division on December 13, 1918, as a Telegraph Messenger with the PMG's Department in WA.

For 18 years he worked in various positions of Postman and Storeman with that Department.

In 1937 Gerry transferred as a Clerk in the Accounts Section, PMG's Department until 1943, when he was temporarily transferred to the Stores and Transport Branch, Ministry of Munitions, WA.

From 1946-48 he was Administrative Officer of the old Commonwealth Disposals Commission, Department of Supply and Shipping, in WA.

In his early years Gerry was a well-known sporting identity in Perth.

He played 1st Grade Australian Rules football and was a cricketer of some note.

Gerry first came across the borders (officially) in 1948, when he joined the S & T Branch, Maribyrnong.

In the next 13 years he occupied many positions including that of Controller, Production Orders, Statistics and Stores Branch, Department of Defence Production.

In 1958, when the Department of Defence Production amalgamated with Supply, Gerry, as Chief Inspector of Stores, was given the task to

review storeholdings throughout the Department.

Three years later he was appointed Manager, Stores and Transport Branch (Vic.) and in February 1968 he took over from Les Murphy as General Manager (Stores and Transport).

Fitted into Gerry's distinguished career were some other notable accomplishments.

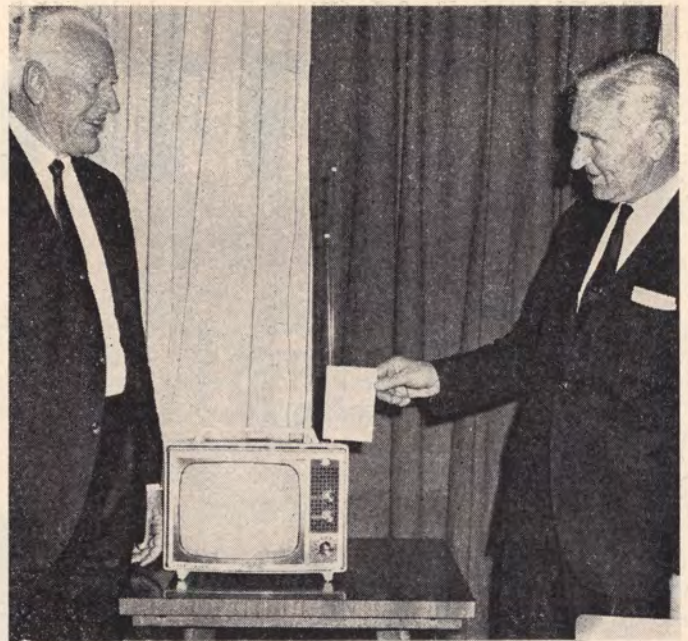
One was his secondment as Transport Manager, Department of the Interior; another was — at the Department of Territories' request — his undertaking a review of transport activities and costing in New Guinea.

On his retirement Gerry intends to visit his son who is living in Hong Kong.

Many Supply officers, with representatives of the PM's Department and the Department of Works, farewelled Gerry Somers at a dinner at the Ainslie Rex.

Mr. Lloyd Bott, after reading messages of appreciation from the Minister and Secretary (both unavoidably detained), said: "In a wonderfully - successful career, you have made a tremendous contribution to our family in Supply".

Mr. Roy Davies, First Assistant Secretary (Planning and Procurement), supporting Mr. Bott's remarks, said Gerry had done a magnificent job and given of



his very best to the Department.

Mr. Somers, in reply, said he had always had the co-operation of everyone in Supply, particularly in S & T, and

his success was due to teamwork.

Photograph shows Gerry Somers (left) receiving his presentation of a portable TV set from Lloyd Bott.

— NEWS MEDIA (Continued from Page 14) —

made to other Commonwealth Departments: "Can you please run off 160 copies each of 10 pages?"

Fortunately the machine was quickly repaired, and in the end it was only our good friends in Army (Russell Hill) who had to come to the (duplicating) rescue.

Back at Anzac West a large conference room was commandeered where, in ordered confusion, nimble hands moved along the 30-ft.-long table to collect the 10 publications and nine illustrations required for each folder.

Next, folders and press kits had to be placed in large addressed envelopes, and these had to be parcelled up in six lots for air-express delivery to all news media.

By then it was about 5 p.m. and the helpers

were down to two, including Haydn Taafe.

Haydn's wife Ann (Col Rouse's secretary) decided that, as she had to wait for him anyway, she might as well give a hand. This was much appreciated.

At about 7 p.m. the parcels were taken to the airport — just in time to catch the last planes to Sydney and Melbourne and beyond.

The parcels went to the Public Relations Officers of the Australian Post Office in each capital city.

Each PRO, in turn, delivered the envelopes for city media by hand on July 14 and sent the others on to country media.

Many media — press, radio and TV — used the material contained in the information folders and the press kits.

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of this size had been exceeded.

These type of slings have many applications, such as bridge building, oil exploration, etc.

* *

Supply second-move people turned out in force for the Central Office Social Club's first official function for 1969 — a cabaret. The 230 people present voted it a great success.

Club president, Maurie Cullen, and Mrs. Cullen welcomed guests.

The official table shows (from left) Mr. Des O'Connor (First Assistant Secretary, Finance and Management Services), Mrs. O'Connor, Mrs. Lawrence, Mr. Tom Lawrence (Deputy Secretary, Research and En-



gineering), Mrs. and Mr. Cullen, Lt.-Col. Bill Buttner (Army Liaison Officer), Mrs. Buttner, Mr Lloyd Bott (Deputy Secretary, Management and Supply) and Mrs. Bott.

* *

The Lithgow Small Arms Factory is arranging an exhibit embracing many aspects of the Department of Supply.

This will coincide with Lithgow's Festival of the Valley on November 15-22, culminating in a procession and incorporating the crowning of a queen.

SAF is sponsoring two candidates — Robyn Boyle and Faye Renwick — whose committees

have been actively canvassing support.

The theme of the festival is the centenary of the opening of the Great Western Railway to Bowenfels (Lithgow), over the historic Zig Zag, on October 18, 1869.

* *

GAF's RSL Sub-Branch has for many years helped its members and their families in time of need.

In 1967 Scodos published an article on the activities; there has been no change of heart among the Sub-Branch Executive or members since then.

At the annual meeting, Norman Jones (Spare Section) was elected president.

Leo Kelly, who had been president for the past five years, did not seek re-election.

Ron Edwards, who has been secretary for the past seven years, also stood down.

Jack Joseph, previously assistant secretary, was elected secretary; Ron accepted the post of assistant secretary.

A unanimous resolution was carried recommending the election of Leo Kelly as a Life Member of the League in recognition of his long and valuable service to ex-Servicemen.

This honour has now been bestowed by the State Executive of the

League. Congratulations, Leo!

* *

During a recent weekend the SA Production Branch silently moved out of Da Costa Building into its new location in the CBA Building, King William Street.

* *

Our Deep Space Stations at Island Lagoon and Tidbinbilla played a prime role in tracking NASA's twin Mariner 6 and Mariner 7 spacecraft as they flew past Mars on July 31 and August 5 respectively.

For Island Lagoon this was the culmination of a long period of support for both spacecraft since they were launched from Cape Kennedy on their epic voyages on February 24 and March 27 respectively.

At a distance of about 2,000 miles from Mars (and some 60 million miles from Earth), the spacecraft sent back clear, exciting TV pictures of the Martian surface.

* *

The Yarrawonga Golf tournament between Victoria and Central Office, held on the Queen's Birthday weekend, was an outstanding success.

Central Office golfers who played on top-quality provincial courses were John Holmes, Paul Mackay, Ron Harris,

Frank Twyford and Jack Walding.

Mulwala and Canberra made up a team to play the Victorians who — ably led by Ted Flannery — proved too strong.

The Calloway event was won by Hugh Munro (AFF), with Jack Walding runner-up on a double count-back from John Holmes.

The weekend proved so successful that it was agreed to make it an annual event.

Central Office golfers should make a mental note to reserve the 1970 weekend for this tournament!

* *

Our Stores & Transport Branch (NSW) has received yet another National Safety Council of Australia Award of Merit Pennant for a year without lost-time injuries.

The award was presented to the Maroubra Stores Area by the retiring General Manager of Stores & Transport, Mr Gerry Somers, with Mr. Arthur Sampson, Director of Safety.

This means three Stores and Transport areas in NSW have now received a tangible reward for safety consciousness.

The photograph shows (from left) Messrs. Somers, Frank Freeman (Manager S & T NSW), Sampson and Noel Ballard (Area Foreman).

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A display of Carbology cutting tools and metrology instruments was organised in the Mulwala Explosives Factory canteen by McPhersons Ltd. recently.

On show was the latest equipment in the range which includes cutting tools, drills, reamers, sawblades, etc.

Films were shown pointing out the effectiveness of tungsten, followed by demonstra-



tions (see picture) in the maintenance workshop.

The evening was attended by members of local engineering firms and MEF staff and employees. Supper was provided.

★ ★

Work is about to begin on a small pilotless target drone, Turana, to meet a Royal Australian Navy requirement.

Turana will be designed and developed by GAF with the assistance of Australian industry.

Powered by a small gas-turbine engine, the drone will be recoverable and capable of being launched from ships or land.

It will be in service within two years and will provide GAF and industry with a useful design and manufacturing workload.

Australia's larger pilotless target aircraft, Jindivik, so far has achieved overseas sales worth some \$20m.

It is confidently expected that Turana will also be sold to other countries. There have already been expressions of interest overseas.

Turana will be much smaller and cheaper than Jindivik and will play a complementary role.

The new target will be

based on existing techniques and on experience gained in the design of the Ikara anti-submarine guided weapon system.

Turana can therefore be designed and produced relatively quickly.

★ ★

Scientists of WRE and the U.S. Environmental Science Services Administration have started a co-operative acoustic sounding program in the U.S.

The program will use American facilities for calibrating Australian-designed equipment for recording the structure of the lower atmosphere.

This project comes under the recently-negotiated Australia/U.S. Agreement for Scientific and Technical Co-operation.

In acoustic sounding, a beam of sound waves is directed from the ground into the atmosphere and a record

made of the sound reflected back.

Australian progress in acoustic sounding has attracted world-wide scientific attention.

It will be used as a research tool and in many practical applications such as the study of air pollution and detection of low-level turbulence in aircraft landing paths.

The technique has already been proved with meteorological facilities available in Australia.

Mr. L. G. McAllister (Principal Research Scientist) and Mr. J. R. Pollard (Experimental Officer, Class III), of WRE, left for the U.S. on July 29.

They were joined later by Mr. P. J. R. Shaw, of the Commonwealth Bureau of Meteorology.

The experiments were expected to take two months.

★ ★

The Orroral Valley Tracking Station is playing a vital role in supporting NASA's Orbiting Solar Observatory (OSO-G) launched in August.

In conjunction with the STADAN Station at Johannesburg (South Africa), Orroral Valley for the first time in the OSO series helped to control the "switch on" of the many sections of the seven scientific experiments carried by the spacecraft.

These experiments are designed to study evolutionary changes in various features of the sun, with special emphasis on solar active regions.

Orroral Valley is also providing tracking and

telemetry support for OSO-G.

For nearly four years now the station has been closely associated with unmanned scientific satellites which give the world invaluable practical information on conditions affecting everyone, including data which contribute to the safety of astronauts.

★ ★

The fleet air arm of the Royal Australian Navy is to have 10 Macchi MB-326H jet trainers to replace its Vampire and Sea Venom aircraft, both of which have been in service with Navy since 1955.

The trainers will be built under licence in Australia by the Commonwealth Aircraft Corporation Pty. Ltd., Fishermen's Bend, Victoria, as the prime contractor and Hawker de Havilland Australia Pty. Ltd., as the major subcontractor.

The estimated cost of the Navy purchase, including spares and ancillaries, will be \$7.6m.

This will be an extension of the present production order of Macchis for the RAAF.

★ ★

Five sounding rockets, designed and built by WRE, were fired at Woomera in July to coincide with passes of the American Nimbus satellite.

Three of the rockets, which provided information on the atmospheric temperature, winds and ozone content to a height of 40 miles, correlated measurements taken

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by the satellite in the Mt. Gambier - Woomera - Darwin strip.

One rocket carried experiments designed by WRE and the Physics Department of the University of Adelaide to measure the solar radiation in the ultra-violet and its absorption by the atmosphere.

The rocket-satellite upper-atmosphere research experiments, which were pioneered by WRE, are undertaken in co-operation with NASA.

The measurements being made by the Woomera rocket experiments are supplemented by a network of balloon soundings of the atmosphere by the Bureau of Meteorology and CSIRO.

★ ★

Tours of inspection by schoolboys have developed into a regular feature at the Alexandria Auto-



motive Workshops of the Stores & Transport Branch (NSW).

The tours are arranged by the Youth Employment Division of the Department of Labour and National Service.

In the past 12 months some 260 lads, in six visits, have seen the workshops.

The photograph shows

Foreman John Lunn with a group.

★ ★

A seven-man party recently left our new Antarctic station at Casey by tractor train to set up an ice drill and supply equipment at Cape Folger, about 12 miles away.

The expedition paved the way for nine months of field work by a two-man glaciological team consisting of Ross Anderson (of Melbourne) and Syd Little (of Brisbane).

The two men will drill three holes in the ice to a target depth of 1,500 ft.

Radio operator Mike Riley (of Sydney) spent five weeks with them to lend assistance and provide radio contact with Casey.

These drilling operations are a new phase in a continuing study by our Antarctic Division.

They will increase our knowledge of the internal temperature and movement of ice masses, and the interdependence of those factors.

Studies of the ice cores, recovered from the holes, will give the history and

Four Supply people were decorated in the Queen's Birthday Honours:

Roy Davies, First Assistant Secretary (Planning and Procurement), was made an Officer of the (Order of the) British Empire, for public service.

Fred Farrar, Leading Hand Car Driver (S & T), received the British Empire Medal in recognition of his service as permanent driver to the Governor-General, Lord Casey, for four years.

Ken Hill, GAF Avalon Maintenance Engineer, also received the B.E.M., for meritorious service (Ken and his team were mentioned in our second last issue for their magnificent fire-fighting work).

Ron ("Silver") Thompson, who retired from the Small Arms Factory at the end of last year, was awarded the Imperial Service Medal.

Congratulations to all four!

age of the ice over thousands of years.

★ ★

Australia has agreed to the building of a 210-ft.-diameter antenna on the site of the Deep Space Station at Tidbinbilla.

NASA has awarded a contract for the construction of the antenna to the Collins Radio Co. of Richardson, Texas.

This will be the first 210-ft. "big dish" to be erected for NASA in Australia.

NASA already has one at Goldstone in California; a third one will be built near Madrid, Spain.

Combined, the three antennas will be able to communicate with the American spacecraft that are scheduled to explore deep space in the 1970s and 1980s.

The new antennas, expected to cost about \$10m. each, will be fabricated in the U.S. and shipped to their overseas locations.

The 5,000-ton reinforced concrete pedestals, on which

the antennas will be mounted, will be constructed on site.

Fabrication is expected to get underway towards the end of this year, with the systems becoming operational in 1973.

★ ★

Our Deputy Secretary (Research and Engineering), Mr. Tom Lawrence, recently gave an interesting talk on "The Department of Supply — its origins and functions" for members of the Royal Institute of Public Administration (A.C.T. Branch) at the Hotel Canberra.

Because of the subject, and as it was a public meeting, many Supply people attended. In fact, the room was packed.

Mr. Lawrence had delved deeply into the history of our Department, and he came up with many facts which even old hands in Supply were not aware of.

Tom Lawrence has kindly promised to make his talk available for publication in Scodos.