TROLLEY WIRE

Magazine of the SOUTH PACIFIC ELECTRIC RAILWAY AUSTRALIAN ELECTRIC TRANSPORT MUSEUM

WESTERN AUSTRALIAN ELECTRIC TRANSPORT ASSOCIATION

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THIRTY CENTS



DECEMBER 1970



Welcome Aboard

The SPER and the AETM take this opportunity to extend a warm welcome to members of the Western Australian Electric Transport Association as regular readers and contributors to TROLLEY WIRE. The WAETA has adopted TROLLEY WIRE as their house journal and we trust their association with us will be a beneficial and a happy one.

WAETA Elections

The recent elections held by the WAETA resulted in the following members being elected as office bearers of the Association.

President D. Tyler
Vice President L. Richardson
Treasurer P. Brazendale
Secretary R. Francis
Councillor R. Edwards
Councillor J. Stanbridge
Publicity Officer L. Tyler

Malcolm Butler sights up roofing timbers on the AETM depot extension prior to nailing and subsequent bolting.

Photo: John Hoffmann



Western Australian Electric Transport Association

The Western Australian Electric Transport Museum was founded on the last run of trolleybuses in Australia - on a special commemorative tour by the Australian Railway Historical Society on 30th August, 1969. During the course of the tour, a number of members discussed the possibility of preserving in operating condition, for eventual operation in a museum, examples of this form of passenger street transportation. At 5.30 pm, in trolleybus 846, a meeting was held and the WAETA became a reality.

To date the Association has acquired the body of tram 121 purchased by museum member Don Tyler after the

FRONT COVER: 0-class cars 803 and 885 at Ryde terminus on the last day of service, Saturday, 17th December, 1949.

Photo: Ben Parle

TROLLEY WIRE

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NEW MEMBERS.

The Board and Shareholders of the SPER welcome the following members to the Museum:-

James Angel

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Graham Duffin

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Behold, I bring you good tidings of great joy, which are for all people.



N728 being unloaded at Ryde on Friday, 6th November. Threatening skies and blustery conditions did not hamper the operation.

closure of the Perth Tramways in 1958; "Canton" trolleybus 38 donated by Perth real estate agent Mr. P.W. Markham and Sunbeam trolleybus 846 purchased by members Don Tyler and Jack Stanbridge. Donated by the MTT was electrical equipment from the Wembley substation including a 22 Kv transformer and mercury arc rectifier complete with spare parts; a modern switchboard from the Vincent Street substation; together with sufficient overhead equipment to erect two miles of overhead and numerous other spare parts and equipment.

The Association also has its eye on a number of tram bodies from various Western Australian systems and is also investigating possible sites for an operating museum.

Around the Depots___

LOFTUS

Work continues on the overhaul of N728. Patterns have been made for the new suspension bearings and two have been cast. Bob McKeever will machine these when he finishes boring out the housings on the motor. The bogies from under 948 which are being reconditioned for 728 were fitted with axles for GE67 motors which are somewhat narrower than the GE90's to be fitted; consequently it was necessary to lightly machine the axles to provide proper bearing for the bigger motors. After considering doing the job at Loftus, it was finally decided to send them elsewhere and they have subsequently been machined and returned and now await re-assembly of the bogies.

New underground mains have been installed from the SCC supply point to the substation for the new 100 amp 415V 3 phase electricity supply and the new distribution board will be wired in during December. It will however be some time before the three motor/generator sets are available for use as the 2 sets at present in use will be overhauled in turn before being reconnected.

The new doors on depot roads 2, 3 & 4 have been installed and only minor finishing jobs are necessary to complete the front of the depot. Bob Cowing and his crew will now turn their attention to the roof over the new mealroom and workshop.

Finishing touches are being given to F393 The remainder of the blue glass in the quarter lights has been fitted as have the side destination boxes. The waist panels and saloon bulkheads have been lined out and the end doors refitted.

Coupled set operation came one step nearer at the end of November when the wiring on the E-class cars 529-530 was finally sorted out. Some of the connections on one car

at the coupling boxes were interchanged so that, although the jumper leads were connected correctly, the trams could not operate properly. It is believed that the mistake occurred sometime as far back as 1952 and well explains the sluggish performance of these cars on tours in 1955/56 on the Main Sydney system after their return from North Sydney. Much work remains to be done on the cars, however, before they can join the traffic fleet.

BTMS News

During August, the Brisbane Tramway Museum Society operated their replica horse car, 41, over some 200 yards of the reserved tramline at the former Chermside tram terminus. After fitting doors and communication bells and strengthening the floor, the tram was moved by trailer to Chermside on 9th August. During this movement the tram struck a tree and received severe structural damage which rendered it unfit for service.

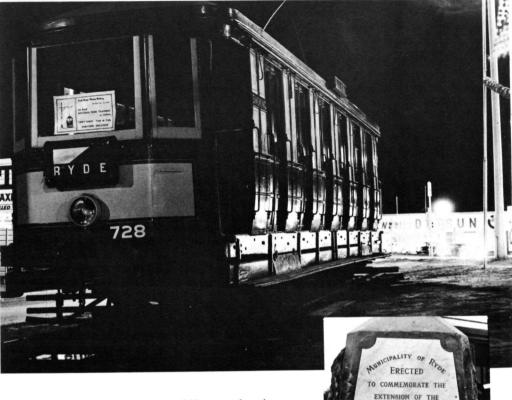
When the damaged tram arrived at Chermside it was thoroughly examined. The truck escaped damage but the body had suffered to an extent that passengers could not be carried. It was decide to go ahead with the opening ceremony but to postpone all operations to the following Sunday.

Repairs were carried out by the Brisbane City Councils' Milton Workshops and 41 now holds the distinction of being the last tram to be outshopped from the Workshops!

The repaired car operated at Chermside on 16th and 23rd August and a total of 1280 tickets were sold over the two days. The horses, Andy and Patricia, soon became accustomed to their new job and by the second day of operation had almost learned it by heart. A bookstall run by the Society also did brisk business. The operation of 41 also received extensive coverage in the press and on TV.

Replica horsecar 41 in operation at Chermside on the first full day of operation.
From a Kodachrome by Dave Rawlings





Above: Appearing like a ghost from the past, 728 sits under the street lights at Top Ryde. Right: The plaque on the monument commemorating the opening of the tramway to Ryde in 1908.

N 728 Goes to Ryde

Trams returned to Ryde for a brief period in November when the SPER's N-class car 728 went on display at Top Ryde for the Ryde Municipal Council's Centenary Celebrations.

SYDNEY TRAM SERVICE

TO RYDE

UNVEILED BY THE

HON. C. A. LEE M. L. A.

MINISTER FOR PUBLIC WORKS SATURDAY, DECEMBER 12th 1908

D. M. ANDERSON

Transferred from Loftus to Ryde by road on Friday 6th November, 728 was unloaded onto a length of track which had been laid down by the NSWGR a few days previously. The operation was completed without incident although it was necessary to move the track over a few feet to enable the truck and cranes to manoeuvre freely.

The tram was manned by Society members during the day and an armed security guard cared for the vehicle during the hours of darkness. Members worked out that, although the surrounding area had changed considerably during the twentyone years since the last tram had run to Ryde, 728 was very close to the position occupied by the former Ryde tram terminus.

On Saturday, 7th November a costumed party, which had travelled from Strathfield to Ryde on the vintage train, and accompanied by the Mayor, Alderman W.W. Harrison, arrived to have photographs taken against an authentic period backdrop - 728. Among the many residents and visitors who inspected the tram were Senator Sir Ken Anderson and Lady Anderson. Sir Ken's father was Mayor of Ryde when the tramway opened in 1908.

A small booklet was produced for the occasion and many copies were sold while exchanging reminiscences with visitors. Some still remain and can be purchased from the SPER Bookshop at 15 cents each.

728 was returned to its home depot at Loftus on Tuesday, 10th November, the movement again being carried out smoothly. Our thanks are due to those members who made themselves available to assist with the moving of the tram and also in answering questions and controlling children while the tram was at Ryde, and to the Ryde Council for the part they played in enabling 728 to be put on display.



Visitors and members of the costumed party mill around 728 on Saturday, 7th November. The monument commemorating the opening of the tramway to Ryde is in the foreground.

I.E. Thomas, Patron - WAETA

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It takes a considerable degree of ruggedness to climb to the top in the passenger transport industry. Even to survive 48 years while making the climb from the era of trams to today's exacting demands through a vastly increased population is a rare feat. Ivor Evan Thomas, Chairman of the Perth Metropolitan Passenger Transport Trust, joined the Midland Junction workshops of the WAGR as an apprentice fitter in 1922.

On completion of his apprenticeship he was transferred to the Tramways Department - then under the aegis of the WAGR - as a draughtsman. The tramways was then the generating authority for electricity which it sold to local governing authorities in the metropolitan area.

There followed various appointments as rolling stock foreman, chief draughtsman, rolling stock superintendent and Deputy General Manager of the Tramways.

His elevation to the last position in 1958 coincided with his appointment to the Trust, of which he became Deputy Chairman in 1959 and Chairman in 1964 on the retirement of Mr. E.W. Adams.

Earlier this year the WAETA invited Mr. Thomas to become patron of the Association. We are happy to announce that he greatly honoured the Association by accepting the invitation and we would express our appreciation to him for this notable gesture of support.



Electric Loco for Museum

The electric locomotive which worked the sidings at the East Perth power station until 1968 is to be preserved and placed on display in the railway museum being established it Bassendean by the Western Australian Division of the Australian Railway Historical Society.

The locomotive was built by Metropolitan - Vickers in 1924 for the Western Australian Government Electricity Supply. Of 3'6" gauge, the locomotive has 4 x 150 hp traction motors. The 600 volts DC was supplied from a light catenary within the powerhouse area while tramway type overhead wiring was used elsewhere.

The State Electricity Commission, its present owners, have repainted the locomotive a light green in preparation for its display. At one stage the electric railway was under the control of the Commissioner for Railways through the Western Australian Government Tramways, which was a branch of the Government Railways.

THE RYDE TRAMWAY

Prior to the opening of the long bridge across Iron Cove between Rozelle and Drummoyne in November, 1882 and the Gladesville Bridge over the Parramatta River between Drummoyne and Gladesville in 1881, the transport needs between the Ryde and the Field of Mars districts and Sydney were provided by the Parramatta ferry.

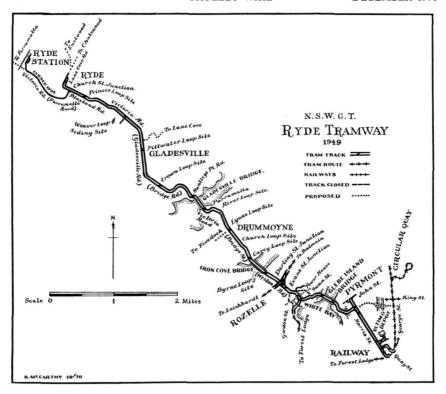
A service along the Parramatta River commenced with the "Rose Hill Packet" in 1789; this and later boats served the Ryde district spasmodically until the formation of the Australian Conveyance Co. in 1833 when the new ferry "Australia" introduced regular sailing schedules along the river. By 1843 other competitors had entered the field and in 1866 the amalgamation of the separate undertakings operated by Messrs C. Jeannerett and D. Joubert to form the Parramatta River Steam Ship Co. all but banished the lesser rivals due to this company's frequent and dependable service using high speed and comfortable steam boats. This company served the Ryde and Parramatta districts until 1900 when it was sold to the expanding Sydney Ferries Limited.

During 1878 residents of the Ryde district located away from the river were active in their endeavours to have the proposed Sydney to Newcastle railway pass through their area via Pyrmont, Balmain, Drummoyne and Gladesville and their success seemed at hand when the specifications of the



O-class cars 857 and 1455 stand at Ryde terminus in 1949.

Photo: Ted Davies



Iron Cove and Gladesville Bridges dictated that those structures should be able to carry a line of railway; but the Strathfield to Waratah route was selected in 1881 and the section northwards to Hornsby opened on 17th September, 1886 with a station on the Western section of the Ryde area.

Although the direct railway route to Sydney was lost, the residents next amended their demands to that of a light railway or tramway and in this respect success was finally achieved in the form of an electric tramway but another 24 years were to pass before these plans reached fruition.

From the short steam tramway between the Railway and Hunter Street in Sydney, opened in 1879, a major tramway system soon grew serving the inner suburbs of the city and by 1892 the steam line reached the Balmain-Rozelle region. Due to the steep grades beyond Rozelle the extension of a steam tramway to the Ryde area was impracticable, without costly deviations or cable assistance on the grades, but the Minister for Works expressed hope in 1897 when he promised an electric tramway extension to Drummoyne within 12 months of the successful introduction of electric traction on the main Sydney tramway system.

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An eletric extension tramway of 2 miles from the recently electrified Balmain line to the Sydney end of the Gladesville Bridge was opened on 28th December, 1902, operated by electric trams from Ultimo Depot working through Forest Lodge. The Tramways Department had envisaged the operation of this line as a feeder to the through Balmain route with passengers changing cars at Darling Street, but the fear that a precedent would be set in the introduction of transfer tickets caused a direct service to be worked to the city. The through line to Circular Quay covered 7 miles 2 chains, with the last 1 mile 70 chains beyond Moodie Street, Rozelle being of single track with 5 passing loops.

The long awaited construction of the extension of 3 miles and 51 chains beyond Gladesville Bridge to Hatton's Flat, Ryde, was celebrated with a "Turning of the First Sod" by the Minister for Works, Mr. C.A. Lee on 12th December, 1908 and the monument to commemorate this event still stands at the Top Ryde terminus. The same Minister was able to be present on the decorated first tram along the line on Saturday 11th June, 1910 when he released a gold buckle on the ribbon across the line on the western end of the bridge, cut a ribbon and laid a foundation stone with a silver trowel at Gladesville and finally cut a ribbon with a pair of silver scissors at Ryde. The "Sydney Morning Herald" commented that the Hon, C.A. Lee therefore had three further momentos to add to his growing private museum.

One thousand children welcomed the arrival of the first tram to Ryde with a specially prepared song and then participated in a sports' programme while the Minister was



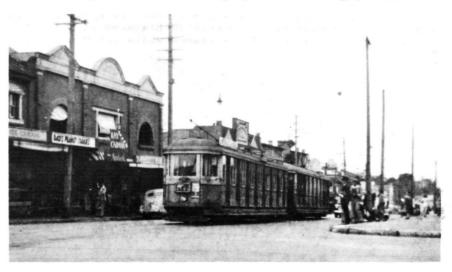
A coupled set of P-class cars climb Victoria Road past the Mount St. Margaret's Hospital in 1949.

Photo: Ted Davies

treated to a banquet where he promised further extensions to the tramway beyond Ryde. Mr. Lee also stated that "The tram seems to be the NSW metropolitan flag and the population follows this flag". The line was opened for excursionists on the following day and to regular traffic on Monday June 13th.

The journey time for the service of some 11 miles was 76 minutes from Circular Quay, this being partially due to the single track extension beyond Gladesville Bridge with no less than 5 passing loops which could cause a gigantic service tie-up should one tram on the line be running late. The task of constructing a second duplicate track beyond Rozelle commenced in 1906 but not until 1936 when the tracks on the two bridges were duplicated was the task completed. This enabled the journey time to be gradually reduced over the years to 61 minutes.

With the opening of Rozelle tram depot on 17th April, 1904 trams on the Drummoyne (and later the Ryde route) were provided from that source but from 15th September, 1912 Ultimo Depot again housed the vehicles for the Ryde line. The increased traffic along the Rozelle to Circular Quay line caused by the Ryde extension was relieved by a link line opened on 14th November, 1910 between Evans Street, Rozelle and Miller Street, Pyrmont which enabled the Ryde and Drummoyne services to be rerouted over Glebe Island Bridge and the existing Pyrmont trackage, thus re-



Some of Sydney's unusual cars also visited Ryde. Here O/P 1451 and the hybrid partially rebuilt 1443 prepare to cross the junction of Devlin Street and Blaxland Road, a few hundred yards from the terminus, on 12th November, 1949.

Photo: Ben Parle

ducing the lnng trip by almost a quarter of a mile. To further relieve tramway congestion in Railway Square an alternative approach to George Street was established on 27th March, 1911, linking Harris Street, Ultimo with the city thoroughfares via Ultimo Road and Quay Street.

The only other major route deviation on the Ryde tramway took place on 11th October, 1915 when the Balmain line along Gordon Street between Evans Street, Rozelle and Johnston Street, Annandale and the Ryde tramway along Robert Street between Evans Street and Swan Street, Glebe Island were relocated to junction at White Bay. This construction resulted from the expansion of railway facilities at Glebe Island and the erection of White Bay Power House.

Of the planned extensions to the Drummoyne and Ryde tramway to Eastwood, Woolwich, Chatswood, Lane Cove, Parramatta and Five Dock only the 1 mile and 25 chains of track between Church Street, Ryde and Ryde Railway Station This line, operated as a feeder service was constructed. to the established trunk service, carried few passengers during its short period of operation between 7th September, 1914 and 12th March, 1934 but its main purpose served as a physical connection with the railway which enabled trams for the isolated North Sydney network to be transferred from Sydney along the railway tracks to St. Leonards hauled by steam tram motors on Sunday mornings. Thus the road deviation caused by the elimination of the Ryde Station level crossing by an underbridge and not poor patronage caused the closure of this short tramway in 1934.

During late 1915, the Ryde to Ryde Station line was subjected to 1,200 volt traction tests in place of the usual 600 volt current. Six sections of the NSWGT carried catenary overhead suspension; the Sydney Harbour Bridge, the Brookvale to Narrabeen section of the Manly tramway, the Summer Hill line, the opening span of Glebe Island Bridge, the Suspension Bridge suspension span and the Ryde to Ryde Station tramway. In most instances this overhead construction was due to long intervals between cross span wires or to provide additional electrical feeder area, but at Ryde and Narrabeen this type of overhead was provided for possible 1,200 volt operation. For the 1,200 volt experiment the two Ryde substation 600 volt rotary converters were connected in series, and three 0-class tramcars. 1277. 1278 and 1279 were provided with dual voltage equipment. The extent of the trial period has not yet been ascertained and the principle was not applied to the Narrabeen line, but the three trams continued to carry the dual redundant equipment from June 1915 until some time between February and December, 1940.

For several weeks from 6th September, 1922 the outer end of the Ryde Station tramway operated as an isolated system worked by two L-class trams. This special

working was due to the track being progressively lifted as the Water Board excavated a disused water main from beneath the rails. One L car sufficed for regualr service while the second tram served as an emergency vehicle.

To enable the two trams to be stabled behind locked gates each night at the Ryde station yard on the railway-tramway connecting line, the cars had to be coupled and one pushed by the other beyond the overhead wire. At the end of service each evening, the isolated crew was directed to deposit their tool box and driving handles with the Ryde stationmaster. A flagman with a lamp guarded the excavation and in the further interests of safety, the single line staff was carried on the car on the Sydney side of the blockade, but the principle of "one tram in traffic" on the isolated portion of the track precluded the need for an emergency staff token to be provided.

The transport advisory committee reported in 1932 that no possible way existed of improving the tramway journey time of 61 minutes between Circular Quay and Ryde under existing conditions and although this committee felt that motor omnibuses could provide a faster service by working across Pyrmont Bridge, these buses could not hope to cope with the heavy peak period loadings experienced by the tramway. In 1909 the short cut tramway route to the City across Pyrmont Bridge was surveyed but the Tramway Department dropped the scheme due to wharf congestion along the way and the fact that a shorter tramway route would reduce the five fare sections to four thus cutting revenue.



City bound 969 and 1445 rumble down Blaxland Road from Top Ryde on the last day of service 17th December, 1949.

Photo: Ben Parle

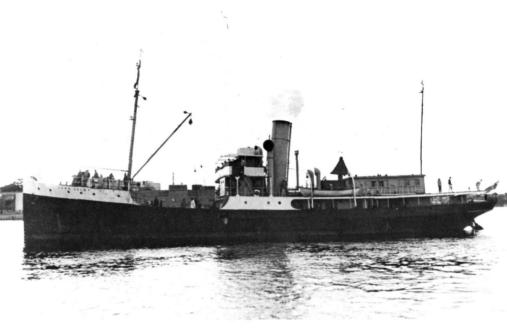
Just prior to World War II, trolley buses were proposed as an alternative to the Ryde trams but the war prevented further changes to the Sydney tramway scene. The Transport Department had introduced a bus service between the City and Ryde via Concord on 8th December, 1935 but the inner end of this service was truncated to Pyrmont to conserve fuel during World War II.

The first step in the eventual closure of the Ryde line was the introduction of an express bus service running across Pyrmont Bridge and then parallel to the tramway outwards from Pyrmont to serve through passengers from beyond Gladesville; this peak period working was introduced in June 1949. Industrial troubles, together with coal and power shortages, caused the establishment of a Sunday bus journey in place of trams to Ryde on 11th July, 1948 and with the exception of two Sundays towards the close of 1948 when trams returned to the line, the Sunday bus operation to Ryde became permanent.

The arrival of enough new bus chasses from England enabled the Ryde line to be closed beyond Gladesville on Saturday evening 17th December, 1949 when coupled cars 1699 and 1731 made the last run. The next conversion to buses beyond Lyons Road, Drummoyne occurred on Sunday evening 19th March, 1950 when tram 1901 closed the service. Sunday tram operation had been reintroduced to Gladesville on Christmas Day, 1949.

The Drummoyne tramway was expected to function for the time being as new trams were being constructed for the Sydney tramways and plans envisaged the retention of a compact city network for the future. In fact, on 26th January, 1950, the Commissioner for Transport, Mr. Windsor, announced that tramlines would be constructed on the new Iron Cove Bridge to enable this operation to continue. On 28th May, 1950 part of the former Ryde tramway was reopened beyond Drummoyne to Gladesville Bridge but a change in policy resulted in the cancellation of the remaining 150 vehicles of the 250 on the current tramcar order and the eventual closure of the Sydney tramways. The Drummoyne to Gladesville Bridge tramway closed for a second time on 7th July, 1951 and the Drummoyne to Rozelle and the White Bay to Railway Square via Pyrmont service closed with the end of traffic on Saturday evening 27th June, 1953. The last tram over this section was 2031 which made a chartered farewell trip on the following day. On this day also, 28th June, the new Ryde Bus Depot opened for traffic marking a return to the mode of transport which the trams had replaced in 1910.





Ship Ahov!

The fleet of the "Port Jackson and Lady Hopetoun Maritime Museum" was increased on Sunday, 16th August, 1970 when at 11 am the Queensland pilot vessel "John Oxley" steamed into Circular Quay.

The "John Oxley" is a single screw ship of 544 gross tons, length 160 ft., beam 32 ft., draught 15 ft., and the triple expansion steam engine can provide 1,400 indicated horse power through a single screw. The vessel was built by McGlasson of Paisley in Scotland in 1927 as a coal burning vessel but was converted to use oil in 1947.

The "John Oxley" was recently presented for sale by tender and although the maritime museum submitted a substantial amount as a purchase price this proved inadequate to match the highest bid. The Queensland Government then generously decided to donate the vessel to the museum under certain disposal conditions and after several months of planning the "John Oxley" left Brisbane at Noon on Fri-

Above: The "John Oxley" in Sydney Harbour after its arrival from Brisbane.

Photo: Brian Burke

day, 14th August for the 500 mile voyage to Sydney.

The crew consisted of several professional mariners assisted by almost 40 museum members and enthusiasts who paid their passage for the right to work on board during the trip. Although permanent accommodation is provided on board for a crew of 16 plus 6 officers and 10 pilots, room is available to house a complement of over 50 in comparative comfort for short periods.

The voyage was undertaken in such good time that the "John Oxley" steamed up the Hawkesbury as far as Cottage Point on Sunday morning so that the arrival in Sydney Harbour would be on time. Ships of this size were once familiar and regular sights on the Hawkesbury River until the early 1930's but the "John Oxley" visit was so unusual in this day and age that she was soon surrounded by many pleasure craft curious as to this unannounced event.

The "John Oxley" was met at the Heads by the HMASubmarine "Oxley" and the steam tug "Himma" which, together with other craft accompanied the new arrival to Sydney Cove.

During August the "John Oxley" berthed near Darling Street wharf but since then she has moved to the Gas-Works Wharf at North Sydney and not to Blackwattle Bay with the other two exhibits, the steam launch "Lady Hopetoun" (see TW. Dec 1965) and the steam tug "Waratah".

The growing fleet has been "showing the flag"; the "Waratah" and the "Lady Hopetoun" participated in the harbour and fireworks pageant during the Bi-Centenary Celebrations in April while during late September the "John Oxley" and the "Lady Hopetoun" were exhibited on water in the Captain Cook Dock at Garden Island over Navy Week.

1022 Steams Again

Following approaches by the NSW Steam Tram and Railway Preservation Society, that Society's former Emu & Prospect Gravel & Road Metal Co. Ltd. No. 1 (a Vulcan Iron Works, USA, 0-4-0 built in 1912) and gravel dump truck were exchanged for NSWGR loco 1022 from the NSW Rail Transport Museum, the movements taking place during October. 1022 is almost identical to the locomotive swapped, also being an 0-4-0 saddle tank built by Vulcan in 1916. It became inoperative on 28th June, was officially condemned on 9th October and under Railway Department standards could only have been a static exhibit in the Rail Transport Museum. However, under private ownership, 1022 was easily able to acquire the necessary boiler certificate to allow it to continue in service. The Society now has an additional serviceable light locomotive to share operations with their steam tram motor No. 103A.



1022 hauls C-class trailer 95 at Parramatta Park on Sunday, 15th November, 1970.

Photo: Greg Bass

Atlanteans in Sydney

The development of Sydney's bus fleet took a step forward recently when the first Leyland Atlantean rear engined double deck bus entered service with the Department of Government Transport.

A contract for 200 vehicles has been placed and the bodies are being constructed by Pressed Metal Corporation of Revesby, NSW, on chasses imported from the United Kingdom.

A number of new features are incorporated which combine to give a design radically different to other vehicles in the DGT fleet. A stainless steel frame with aluminium and fibreglass panelling is used in the construction of the body. Front and centre doors are provided and access to the top deck is by a centrally located staircase. An automatic counter indicates when there are ten or fewer vacant seats on the upper deck. The counter is operated by equipment built into the stair treads.

Provision is made for destination and route blinds to be displayed on the front and side of the vehicle with route numbers being displayed on the rear, front and side. Interior lighting, including destination and route number boxes, is by fluorescent tube.

Forced air ventilation is provided by four fans directed along the ceiling of the lower deck and at seat rail level on the top deck. Insulation is used between the roof and ceiling to maintain cooler interior temperatures during the summer months and to prevent interior



Leyland Atlantean 1001 on display in the carpark behind DGT head office on 8th May, 1970. This car park was once part of the old Bridge Street tram depot yard.

Photo from Kodachrome by Vic Solomons

condensation in winter. Two mirror systems have been installed; one to provide an internal view of the centre door and step, and the other for viewing the upper deck.

A vertically mounted diesel engine developing 168 hp provides a maximum speed of 40 mph. There are four forward gears with a semi-automatic gear change and the steering is power assisted. The external colour scheme of "Mandarin Blue" and "Riviera White" complete the new image.

Length of the new buses is 30'9" and the width $8'2\frac{1}{2}$ ". This is 2'3" longer and $2\frac{1}{2}$ " wider than the existing double deck fleet.

The first of the order, numbered 1001, was outshopped from the builder's plant on 3rd April, 1970 and completed an inspection tour to all depots before being used on driver training duties. 1001 was placed on the roster at Mona Vale Depot and entered revenue service on 29th June, 1970.

BACK PAGE: Perth D class 99. Built by the WAGR in 1921-22, the D-class were the only 2-motor multiple unit cars in Australia. They had Brill 39E maximum traction trucks and were fitted with Van Dorn pattern Westinghouse couplers.

Photo: Reg Francis collection

