TROLLEY WIRE

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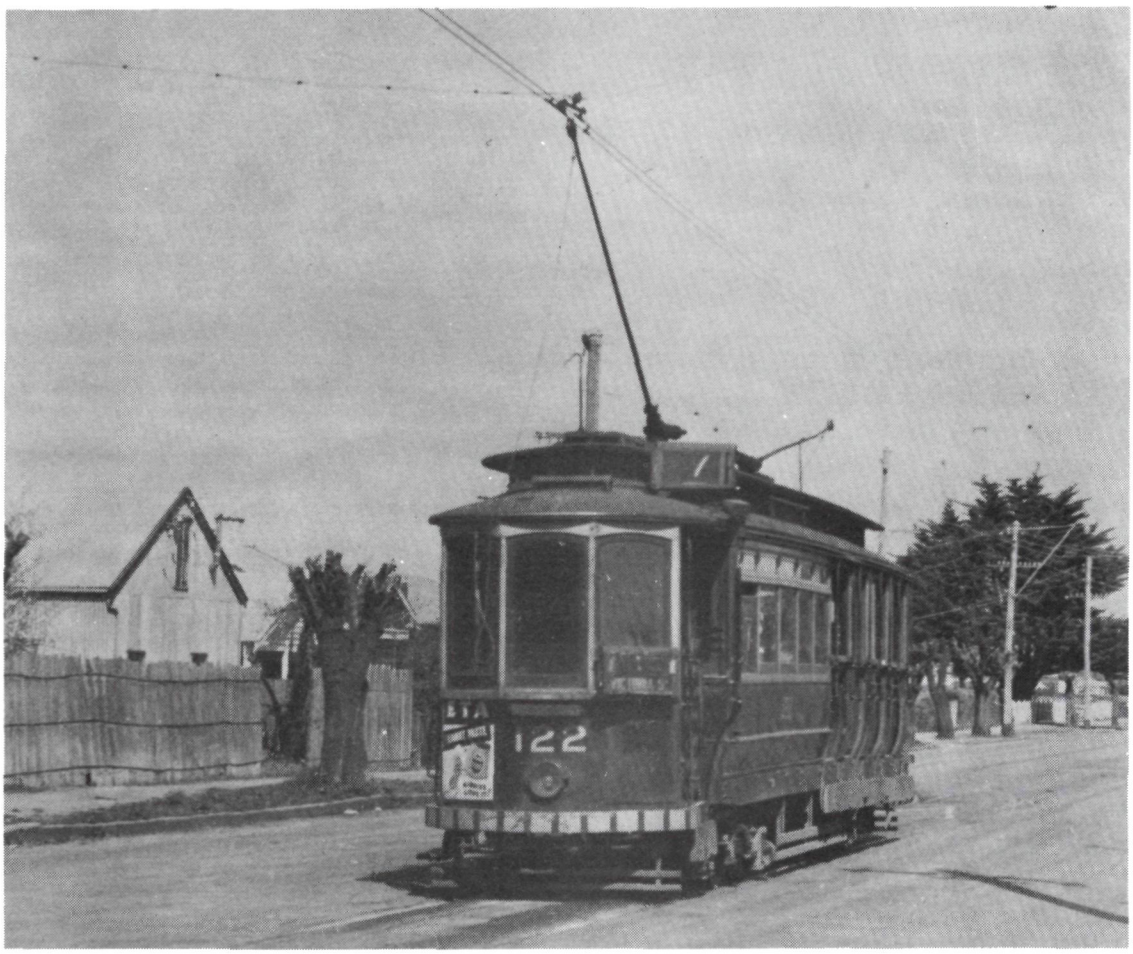

OVERHEAD MAINTENANCE IN ADELAIDE 1932

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PLUS More Notes and News etc, from around Australian museums.

FRONT COVER.

D122 electric tram at St.Peters Terminus Adelaide, 29th August 1956.
K,McCarthy.

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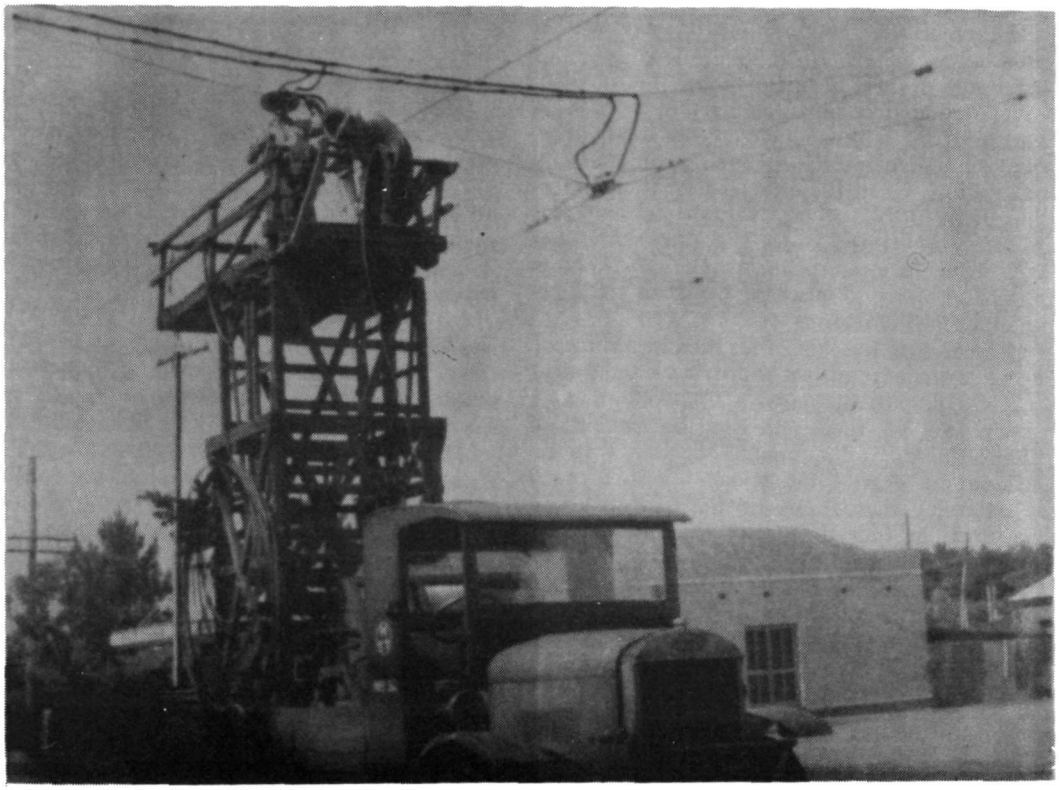


OVERHEAD MAINTENANCE IN ADELAIDE - 1932

By S. A. Fisher, A.M.I.E.(Aust)

From 1929, regular conferences have been held of managers of Australian and New Zealand transport authorities. Many technical matters were discussed at these conferences, matters which will be of interest to those operating tramway museums today. The following paper was originally given to the 1932 Australian and New Zealand Tramways Conference.

CONTACT WIRE – When the Adelaide Tramway System was inaugurated both 3/O B & S gauge round and grooved hard drawn copper contact wire was used.

As the life of grooved wire has been found to be shorter than that of round, and owing to the difficulty of preventing grooved wire from twisting on its axis between points of support and the abnormal wear which occurs immediately under the ears, round wire is now used for all new work and renewals. In some instances the wear under the ears takes place so rapidly that the ordinary grooved-wire ears have to be replaced by envelope ears to protect the wire.

Contact wire should not be stressed to a tension in excess of the yield point, which in hard drawn copper is approximately 60% of the ultimate tensile strength.

On new construction work a dynamometer is used for tensioning the contact wire, but on renewal work wire is stressed until the sag is slightly less than that in old wire to allow for the slight increase in sag that takes place when the drum kinks straighten out. New trolley wire is stressed to 1,400 lbs at 70°F., which gives a factor of safety of 3.25 at minimum air temperature of 35°F. The sag at 70°F. is approximately twelve inches on spans of forty yards.

Types of contact wire in use are Hard Drawn Copper, both grooved and round; Cadmium copper, grooved and round; and phono-electric round.

Linesmen checking anchor ears on each side of a Section insulator in Fullarton Road, Parkside.

John Radcliffe

Phono-electric or Cadmium copper wire is used when renewing curves, except those of large radii or on light traffic routes.

The reduction in diameter due to wear is measured by a gauge, and the percentage reduction in cross sectional area is obtained by calculation. When the cross sectional area is reduced by 33-1/3% of the original area the factor of safety in tension under the worst conditions is 2. When it reaches this stage the wire is renewed as soon as possible for both electrical and mechanical reasons.

The average number of car crossings obtained using round hard drawn copper wire on straight is 2,000,000 and on curves 1,200,000.

Up to 1932 there had been no renewals of phono-electric or Cadmium copper wire on account of wear. From measurements taken it is estimated that phono-electric wire will average three or four times, and Cadmium copper wire two or three times the life of hard drawn copper wire. The net cost of renewing copper trolley wire in 1932 was £115 to £156 per mile, depending on the number of curves to be dealt with.

The use of copper alloy in place of hard drawn copper wire raises the question of scrap value of wire taken down. The scrap value of hard drawn copper wire is usually about one-third of the value of new wire. The scrap value of copper alloy wire was unknown in 1932 as up to that time, none had been available for sale.

CONTACT WIRE FRACTURES occur more particularly at the ends of heavy fittings, such as section insulators, joint ears, frogs and crossings, and are usually caused by fatigue in the wire at the abovementioned points, where the vibrations in the wire are damped out. These fractures which develop gradually, usually result from a small crack beginning at the top of the wire and increasing in depth until the wire fails through loss of tensile strength. In order to prevent the wire from falling to the roadway, short anchor wires which bridge over these fittings are used.

Prior to the use of the anchor or bridge wires lengths of contact wire had been annealed by falling and becoming welded to track rail, and co-incidentally the feeder circuit breakers in the Converter Stations failed to open on account of the necessarily high setting of the tripping device. The 'up' and 'down' contact wires are now cross-connected at intervals of four poles, or approximately 160 yards in order to minimise the length of wire that might become annealed should the anchor wire fail also. There is very little risk of annealing taking place where the two contact wires in parallel are feeding into the fault.

The average number of fractures from all causes, taken over a period of five years, was 17 per annum; equivalent to one fracture per 357,915 car miles. These occurred on wire which had been in service from ten to fifteen years. The majority of fractures occur during the winter months, when at times the air temperature falls to 35°F.

SHOES & TROLLEY WHEELS – In 1923, thirty per cent of the cars were equipped with Miller malleable cast iron shoes or slippers, and the remainder with six-inch diameter brass wheels. The result of this experiment was most unsatisfactory. The rate of wear of the contact wire and ears was so rapid that it was deemed advisable to revert to the wheels exclusively. In this instance the contact wire was unlubricated.

It is understood that much the same results have been obtained on other systems where shoes and wheels have been run in conjunction over the same routes with unlubricated contact wires. Recent installations of the shoe type of collector seem to have been very successful when used on lubricated contact wire and not in conjunction with wheels.

STEEL POLES – Trouble has been experienced due to severe rusting of tubular steel poles at the ground line beneath the cast iron pole bases and under the bosses holding bracket arms of centre poles. In several instances poles have corroded through the full thickness of metal for approximately 30% of the circumference. Systematic inspection is carried out, when the fittings are raised and the poles are treated with a rust preventative and hot tar or paint.

Painting is the principal item in the maintenance of steel poles, which are repainted at five-year intervals at an average cost in 1932 for span poles of 8/1d, and for centre poles16/5d.

The maintenance of six miles of catenary construction erected over open ballast double track on the Glenelg route consists of semi-annual inspections from top of tower trucks of all overhead fittings when all screws, nuts and bolts of fittings are tightened and ears and droppers are set in alignment with catenary dropper clamps, as seasonal changes cause the wire to creep so that the droppers bear against the sides of dropper links.

WOOD POLES – The maintenance of wood poles consists of painting at five-year intervals,

at an average cost in 1932 of 9/1d each. An annual inspection for white ants and rot is carried out. Treatment is with a liquid preparation, the base of which is creosote. During this inspection all poles are treated for a height of 18 inches above and 12 inches below ground line with the preparation and one coat of hot tar, and also by injecting the preparation into holes bored diagonally to the heart of the pole. This is more or less effective in checking the progress of the ants and killing the spores of the fungi which cause decay. It is necessary to heat the preparation before use.

Cost of treatment in 1932 was 2/- per pole, and cost of the material was 6/- per gallon.

The average life of mixed hardwood poles has been found to be in the vicinity of 15 years, and ironbark poles from 20 years.

A considerable number of ironbark feeder poles erected in 1908 were still in very good condition in 1932 and appeared likely to last a further five years or more.

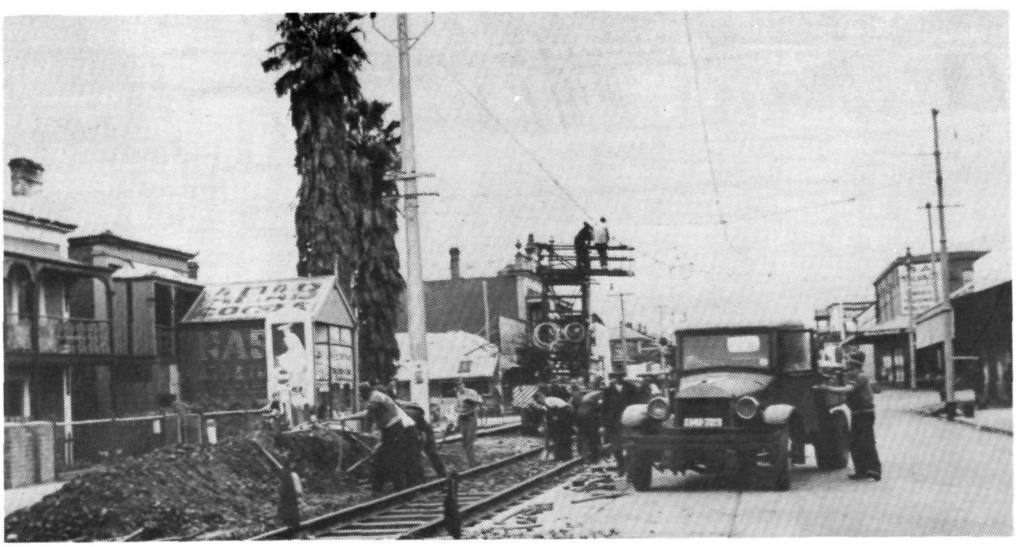
SPECIAL FITTINGS – Using traffic statistics and replacement rates, it has been possible to calculate the average life of a number of common overhead fittings. These data have been worked out from figures obtained during the operations of the Municipal Tramways Trust in Adelaide between 1909 and 1932 and are given in Table 1.

Table 1. Average life of overhead fittings.

Name of Fitting	Car Crossings	Material
Adjustable Crossing	1,100,000	Gunmetal
15° Frog (open pan)	932,000	"
" " (closed ")	334,000	"
Round Wire Ear (12")	335,000	"
6° Y Frog (renewable pan only)	525,000	Sheet Steel 1/16" g
Section Insulator (Miami)	672,260	Gunmetal

HISTORICAL NOTE: *Maintenance procedures described in this article continued basically unchanged in Adelaide until the street tramway system closed in 1958. The catenary overhead suspension on the Glenelg tramway was changed to diagonal span suspension in 1952. Many of the tubular steel poles erected in the period 1908-1912 are still in use in Adelaide, though their five year repainting has long since ceased. The AETM's St. Kilda Tramway overhead is suspended exclusively using these poles which have been restored to their original green and grey colour scheme and fitted so far as is possible with a full complement of decorative cast iron.*

Cadmium copper or Phono-electric wire – was used for renewing curves. Track and overhead reconstruction being carried out at the corner of Rundle and Young Streets, Kent Town, on the Kensington tram route in Adelaide. *A.H. Blanche*



Bracket arms being installed in cast iron bosses on centre poles in King William Street, 1908. Corrosion under the bosses became a problem in later years.

The Critic

Major maintenance was carried out on the catenary overhead of the Glenelg tramway every six months. Requirements were unlikely to have been reduced by trials with pantographs and bow collectors. Car 377 is seen with a Fisher bow collector.

A.H. Blanche

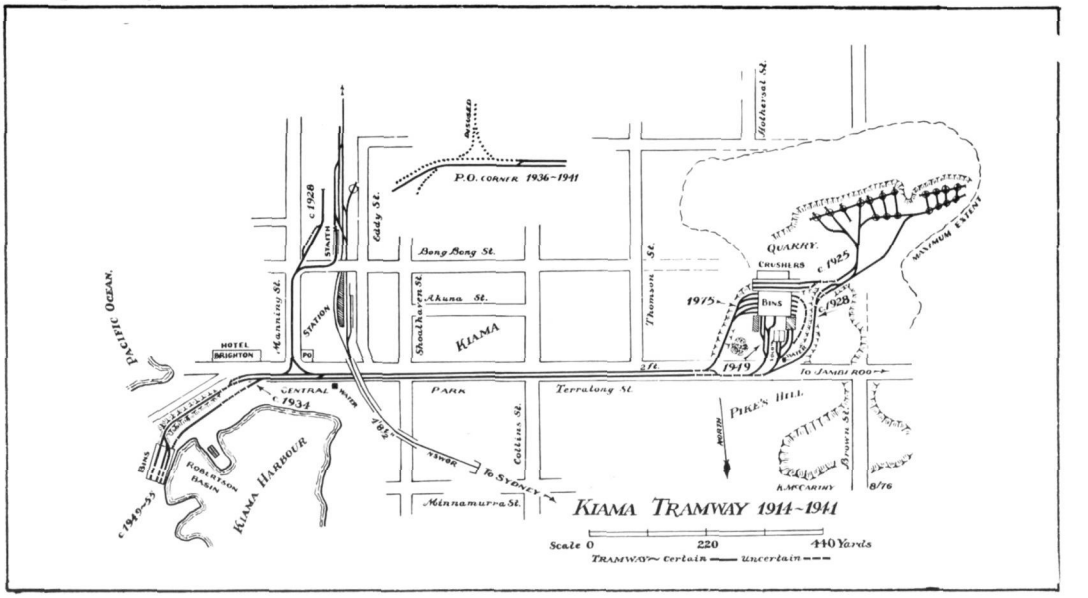
City depot, Hobart, January 1958, seen are Bogie cars 118, 134 and 142, note the complex arrangement of the clips and ears because of the Trolley buses sharing the same air space as the trams bow collectors.

late K. Train.

TRAMWAYS OF KIAMA, N.S.W.

PART II.

Compiled by K. McCarthy



This Map is based on personal observations when some track was still in place and on photographic evidence. The dates indicate the period of this evidence, while broken lines indicate uncertain data.

The Second Tramway 1914 to 1941

The second Kiama tramway developed into a successful undertaking and because of this success it failed to be newsworthy in the contemporary press. As a result there are few reports on its day to day operation.

The "Kiama Independent" for September 2nd, 1911 announced that the Minister for Public Works, on behalf of the "State Metal Quarries", had taken over the works and plant of the Kiama Road Metal Coy. This government body planned to link the Pike's Hill quarry, west of the township with the Harbour wharf by a tramway along the route of the unsuccessful venture built in the 1880's. To do this, land was to be leased from the Sydney Harbour Trust (Maritime Services Board), The Lands Department, Kiama Municipal Council and J. Pike.

During the first month of government control the State Metal Quarry quarried and crushed 4,124 tons of stone, 3,730 tons of which were delivered at a profit of £375. By the start of 1912 the undertaking could not meet the high demands so the adjacent McSweeney's Quarry was purchased which increased the original 3½ acre area into 21 acres.

At the start of 1912 the proposed tramway alignment was presented to Kiama Council when the route, in relation to shop fronts, was discussed. One proposal considered by State Quarries at this stage was to work the proposed tramway with electric locomotives, but as the electric supply lines did not reach Kiama from Port Kembla until 1923, steam traction was eventually employed on the tramway obviating the need for the construction of a generating plant at the quarry.

As the prosperity of the stone trade increased so the condition of the road surface in Terralong St. deteriorated. During the latter part of 1912 the dust could not be laid with water due to the town water mains being closed for cleaning, and when the supply reopened, sea water was used by the water cart on the up hill journey and town water on the return trip.

The "Kiama Independent" for January 3rd, 1914 revealed that the plans of the Tramway, for a 2ft gauge system, had been completed for inspection by the Minister for Public Works, who immediately ordered a start to be made on the construction. Construction work was well

under way during February 1914 while by June considerable stone filling near the Harbour, adjacent to the Brighton Hotel, was being undertaken to give an alignment for the tracks to reach the bins.

The two loading staiths erected at the Harbour in 1883 consisted of two bridge structures overhanging the quay side with a draw bridge type tipping device at the end. At this stage stored gravel had to be heaped on the ground and loaded by hand into the ships. When the SS 'Carara" called at Kiama in July 1887 to receive its cargo of stone, it was hand loaded from barrows wheeled along rigged planks. In January 1893 Salmond and Denne erected store hoppers at the wharf in which 2,000 tons could be stored and emptied into vessels moored alongside. These were similar to hoppers installed by McSweeney some time before, thus both Pike's Hill quarries had the means for a quick shipping turn around, and carts could now deliver stone to the quayside regularly, instead of the peak rushes experienced, before the store facilities were provided, when a ship arrived in port.

The main Terralong St. tramway was reported complete in early July 1914 while the branch tramway along Manning Street to the Kiama railway station yard reached completion three weeks later. The two steam locos ordered to provide motive power for the tramway arrived during May 1914 and by mid August these were gainfully employed, at last, in the stone traffic, having displaced 100 stone carts. The tramway served local needs as well, for during October 1914 stone tipping was being undertaken by the trains to build up Central Park adjacent to Terralong St. in the shopping area.

The two locomotives used to open the system were small 0-4-0T Baldwin products from USA, builder's numbers 41072 and 41073, carrying PWD road numbers 21 and 22.

The "Kiama Independent" of March 24th, 1915 reported that a new larger tram engine had been delivered for the stone trade. This was a large 0-4-0T saddle tank engine built by the Davenport Coy. of Iowa U.S.A., builder's number 1517, with 12" d x 14" cylinders. At Kiama this unit carried PWD number 23. Like the two Baldwins, this loco carried a large bell used to warn road and pedestrian traffic along the street tracks.

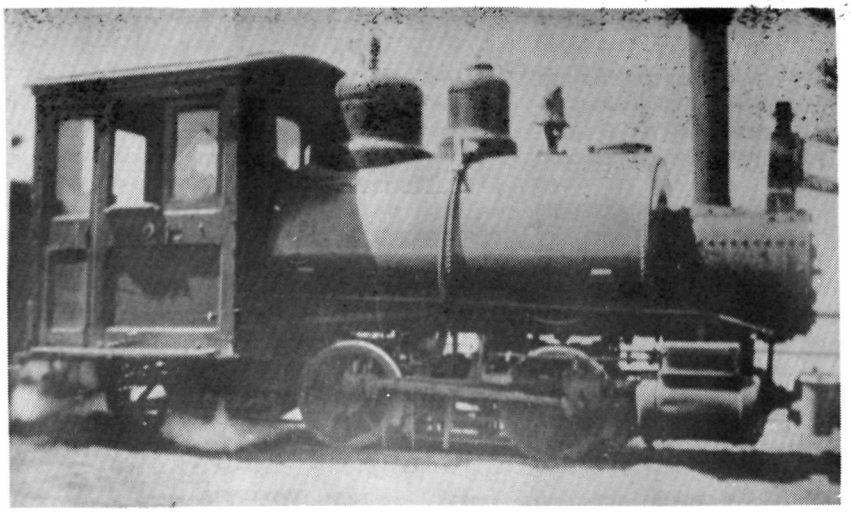
The tramway was constructed with 41 lb/yd rail, the main line along Terralong Street being of double track, with a single track branch tramway to the railway station yard laid along the centre of Manning Street. The main junction outside the post office consisted of a triangle with a cross over beyond the western leg in Terralong St. At the wharf end of Terralong St. a length of single track continued along the public reserve to terminate on top of the bins on the eastern quay of Robertson Basin. The main line from the Harbour to Pike's Hill amounted to a route distance of 0.9 miles while the Manning Street branch added 0.2 miles to the system.

A two road loco shed stood at the Pike's Hill terminus where the main line formed a large balloon loop passing under the large store bins at the crushers. Until the early 1930's, the main quarry floor, south of the terminal store bins, was at a higher level than the balloon loop, a single ramp track connected the main street tramway with the temporary network which served the quarry floor. The track on the floor of the workings was altered as the working face of the basalt cliff progressed across the quarry, but a photo taken in the mid 1920's suggests that a temporary track was located parallel and near the working face with a more permanent parallel track some 40 yards further back. Link lines joined the two, employing turntables for the physical connection. The 2 ft gauge stone wagons in the quarry were man handled and horse hauled until 1927 when a petrol electric loco arrived from the Avon dam construction.

Loco water tanks served the tramway at the engine shed and in Terralong St. near the government railway bridge. The falling gradient in favour of the load towards the harbour lightened the locomotives' work, but runaway wagons created problems. A runaway involving four trucks occurred in March 1916 while in February 1923 a disaster was narrowly averted when the engine driver noticed some runaway wagons approaching down Terralong St. With great presence of mind he steamed towards the trucks, then reversed so that the runaways collided gently and were smoothly brough to a standstill.

The "Newcastle Morning Herald" of November 1st, 1930 stated that guard Frank Hogan slipped off the steam loco bumpers and was knocked to the ground and pinned during shunting operations at Kiama. He was rushed to the Kiama District Hospital in a critical condition.

The stone trade stagnated during World War I but the 1920's brought boom conditions to the industry. By late 1923 the regular two daily N.S.W.G.R. trains which carried gravel from the Kiama station transhipment siding were increased to seven daily, clearing a total of 2,650 tons, while steamers regularly took on

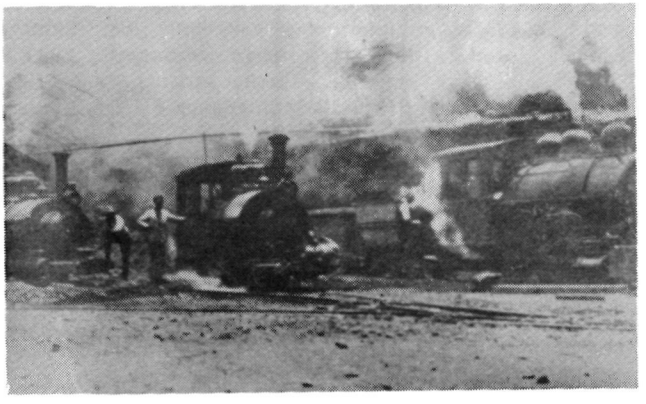


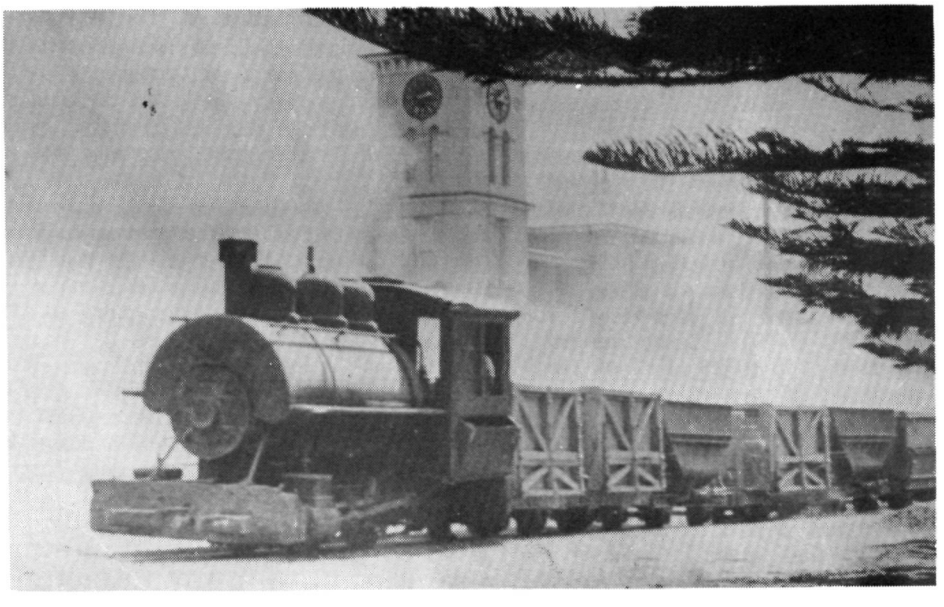
above
PWD No.21 Baldwin in Terralong St.,near the Post Office,c1930.

right
'Steam up'.The two Baldwin locos PWD 21 and 22 and Davenport PWD 23 at Pike's Hill loco shed ready for a hard day's work c1930.

below
Davenport loco PWD 23 heading for the wharf bins in Terralong St, c1930.

all K.Magor collection.





gravel at the Harbour. In October 1925 the SS "Kiama" was making one regular trip each day. At this time the harbour side would not have been a restful place, as in January 1926 on a single evening the "Boambee" (220 tons) and the "Kembla" (290 tons) arrived at 1.30am followed by the "Kiama" at 3 am. All three were quickly loaded and had cleared the port by daylight.

During the busy period a fourth steam loco joined the Kiama fleet. This was an 0-4-0T Fowler side tank engine, builder's no. 16089 of 1923, which received the PWD fleet number 35.

To serve the 26 miles, 2 ft gauge construction railway between Goondah on the N.S.W.G.R. main Southern Line near Bowning and the Burrinjuck Dam site, the N.S.W. Water Conservation and Irrigation Commission imported four Krauss locomotives of the 0-4-0T design in 1908. With the completion of the dam, this railway closed in 1928, but around 1924 one of these engines was released for further services at Kiama. This was "Robin", builder's no. 5870 of 1907.

The stone wagons on the Kiama Tramway were all built to the four wheel design, to four distinct patterns. The main two types were box like vehicles, one class of composite wood and metal construction and the other of all metal material. The floor of these units was of an inverted "V" shape with side flap doors along the entire body length fitted as a lower side panel on both sides. The third design consisted of a metal tapered hopper, fixed to the chassis, with a bottom opening trap door instead of a fixed floor, while the fourth type was the conventional side tip hopper wagon where the "V" shaped hopper was free to tip to either side on trunions. All vehicles were fitted with outside axle boxes.

The stone trade collapsed in 1929-30 during the trade depression. Although the electricity line reached the quarry towards the close of 1923, the steam crushers were not replaced by electric powered plant until July 1930. Although more efficient than the aging steam plant, this change caused the work force to be reduced from 200 to 50 men at the State Quarries and from 150 to 35 in the Railway Quarry at Bombo. A blow which greatly hurt the commercial life of Kiama at that critical economic time.

During June 1932 the State Quarries announced that the SS "Kiama" would be sold. This vessel had arrived from Glasgow on December 28th, 1902 when it replaced the "Civility" on the regular Kiama stone run. The newer SS "Bombo", built on the Clyde for this trade in 1930 shared the job with the "Kiama" for a short period, but the slack trade was now well within the capabilities of the "Bombo".

The "Kiama Independent" of October 19th, 1935 announced that the State Metal Quarries were to be sold. Quarries Ltd. purchased the undertaking for £169,000 in December 1935, at a time when the economy was slowly recovering from the depths of the trade depression. The New State Quarry at Bombo re-opened in mid 1937 after being closed for five years.

Quarries Ltd. immediately initiated a search for newer motive power for the tramway. Two Davenport locos, identical to the one introduced new to Kiama in 1915, had been employed on the Cordeaux dam construction between 1918 and 1926, and by 1936 were standing disused at Menangle N.S.W. These units had been employed by the Menangle SandCoy. between 1927 and 1932 hauling sand from the local pits to the N.S.W.G.R. Menangle goods yard for the Sydney Harbour Bridge construction. These carried PWD numbers 64 and 65 at Cordeaux and builder's numbers 1595 and 1596 of 1917. PWD 64 was stripped at Menangle but No.65 arrived at Kiama in 1936.

Photos taken at Kiama soon after this period indicate that the two Baldwins were dismantled by Quarries Ltd., the stone trade being within the capabilities of the two Davenport and the Fowler units. The Krauss stood at the Pike's Hill engine siding at this stage in a partially stripped condition. Post cards of this era also suggest that the branch to the Kiama Station goods yard fell into disuse.

The petrol electric loco mentioned earlier was still available for use in the late 1930's but photos of this period suggest that the transport on the quarry floor was being handled by non rail vehicles by that time. This unit was furnished by Gibson Battle of Sydney in April 1921 to work on the Avon Dam construction east of Bargo N.S.W. It arrived at the Kiama tramway during 1927 and was the last engine to be scrapped during the general quarry site clean up of 1963-4. When examined in 1961 the petrol engine and generator had been removed from the frame, but the following details could still be discerned: The loco was carried on four wheels and fitted with a steam loco type cab at one end. The traction motor was a large Metropolitan Vickers unit, Number B432888/2/02, DC type series wound, 40 BHP, 220 volts, 720 rpm and 156 amps. A fibre pinion transmitted power from the motor into a gear train with the final transfer to the runn-

ing wheels by means of a sprocket chain.

The last motive power change on the 2 ft gauge line occurred about 1938 when one serviceable Davenport loco was constructed from the parts of 1596 and 1517, the former loco providing the maximum amount of material for this composite unit.

On April 29th 1939 the "Kiama Independent" stated that the Kiama Council was pressing Quarries Ltd. to provide an extra man on each train as well as a guards van as two people had recently been killed by the stone trams. In September 1939 Australia again became embroiled in a European war which soon escalated into World War II, while the east coast was in the grip of a severe drought between 1934 and 1944 with only occasional short lived relief. During March 1940 the Kiama water supply failed completely, the first time since the opening of the waterworks in 1900. This caused the trains to cease operation on the tramway during this and other times of low water. The drought period received minor respite during intermittent periods but Kiama mains again ran dry for a fortnight in May 1940 but some relief followed in December 1940 after a wet spell only to see critical times again after July 1941.

The writer visited Kiama as a boy in February 1941 and the street tracks in Terralong St. showed every indication that trains were in operation at that time. This partial service ceased at the start of March 1941 when the SS "Bombo" was requisitioned by the Royal Australian Navy for war service, leaving no available ships for the Kiama Harbour stone trade.

to be continued .....

THE STORY OF THE FACSIMILE STEAM TRAM IN SYDNEY.

Peter Stock,
Parramatta Park Steam Tramway.

The purpose of this article is not to discuss every tramway exhibition that has ever been held in N.S.W. Rather it deals with one specific item, the facsimile steam tram. Sydney folk, with long or short memories, will remember the "old steam tram" that graced most major processions held here since just before World War II.

The first time that the facsimile steam tram appeared was only one year after the closure of the last government steam tramway at Kogarah, and indeed five years before the closure of the private steam tramway at Parramatta in 1943. The facsimile steam tram was accompanied in this particular procession by a reproduction of a horse tram. Thus the story of the facsimile steam tram can be divided into roughly three separate eras: 1938, 1951 and 1956 to 1973.

The 1938 Procession:

As part of a multitude of events organised for celebrating the Sesqui-Centenary of Australia's foundation (1788-1938), a large procession through the streets of Sydney was held. Appropriately called the "Progress Pageant", this procession was held on Wednesday, 26 January. The Tramway Department entered both an old horse tram and an old steam tram.

The horse tram was a reproduction of the 1861 Pitt Street horse trams. The Department utilised C-car 94 for this purpose. Holes were cut in the canopies, with rooftop seating and vertical ladders being added. The car was fitted with pedestal bearings and flangeless wheels. The front wheel set was of swivel construction, the car being steered by the direction of the horses.

The steam tram and double-deck trailer reproduction required a different approach. Steam tram motor IA, withdrawn only one year earlier, now under the care of the Museum of Applied Arts and Sciences, Ultimo, was utilised. The body of the motor was removed and permission granted to rebuild it back to the original 1879 outline. After this conversion, the body of what became No. I, was mounted over a tractor for mobility.

As for the doubled-deck trailer, the Department did not possess a suitable vehicle to convert. Therefore an entirely new body was built over the frame of electric tourist car H 739. The well-known photograph of a Sydney steam tram at the corner of Market and Eliza-

beth Streets was utilised in planning the pattern for construction. The photograph was printed back to front, with the result of this reproduction having the stairs facing the wrong way. The vehicle was mounted on steam tram trailer bogies with tyres suitably turned down for operation over road surfaces.*

After the procession, the horse tram reverted to its former guise, ending its days as a mobile office at Randwick Workshops, before scrapping in 1962. The body of IA was reunited with the remainder of the motor, whilst the facsimile double deck was scrapped.

The 1951 Procession:

On Monday, 29th January, 1951, another procession was organised in Sydney, this time to celebrate 50 Years of Federation.

This time the Department participated, but only with the steam tram. The body of IA was again borrowed from the MAAS. The motor had spent much of the time between 1939 and 1950 under cover at the Sydney Technical College. This was in a doorway at the east end of Mews Street, Ultimo, in a position approximately behind the old Broadway Fire Station. It was moved from there in late 1950 to either Randwick Workshops or Sheas Creek Store to have the body removed for use in the Jubilee procession.

A new double deck trailer was required as the previous one from 1938 had been scrapped. In the 1950-51 construction, the frame of electric car K 746 was utilised. The car was built to the same general dimensions of the earlier reproduction, even to perpetuating the incorrect steps.

At the conclusion of this procession, the motor body was again returned to the MAAS, whilst this time the double deck trailer was retained in store.

** The original A-class d/deck trailers built by Brill and Company in 1879 had a lower deck seating capacity of 60 passengers in 6 compartments with upper deck seating of 30 passengers back-to-back on longitudinal seats. In the case of the reproduction, however, the lower deck seated only 40 passengers in 4 compartments, with a corresponding reduction in upper deck seating to 20 passengers.*

The 1956 to 1973 Waratah Parades:

The first of these procession was held in 1956 on the first Saturday after the Labour Day weekend in October. They became a regular annual feature of Sydney until the final procession in 1973.

In 1956, the Department again participated in the new procession, using the combination from the Jubilee parade. However in 1957 permission was not forthcoming from the MAAS for the use of the motor body. The decision was taken to construct an entirely new motor body. The new body was built at Randwick Workshops during 1957, and appropriately numbered No. 2.

The combination was used yearly until the abandonment of Waratah Week and the Waratah Parades. The last time the combination paraded in Sydney was in October 1973.

The motor body was placed in store at Randwick Workshops whilst the double deck trailer was absorbed into the MAAS collection. At this time the trailer is not available for inspection.

During 1974 the Steam Tram Preservation Society (ST & RPS) became interested in preserving the motor body. The society approached the NSW Public Transport Commission seeking permission, to acquire the body. Permission was generously given by the authorities, and late in October, 1975, the body was transported to Parramatta for storage. The society was able to exhibit the body when, in conjunction with the Parramatta Rotary Club, the body was once again mounted on a tractor and joined in the Parramatta Foundation Week procession of 1st November, 1975. (See TW, Dec., p.19.)

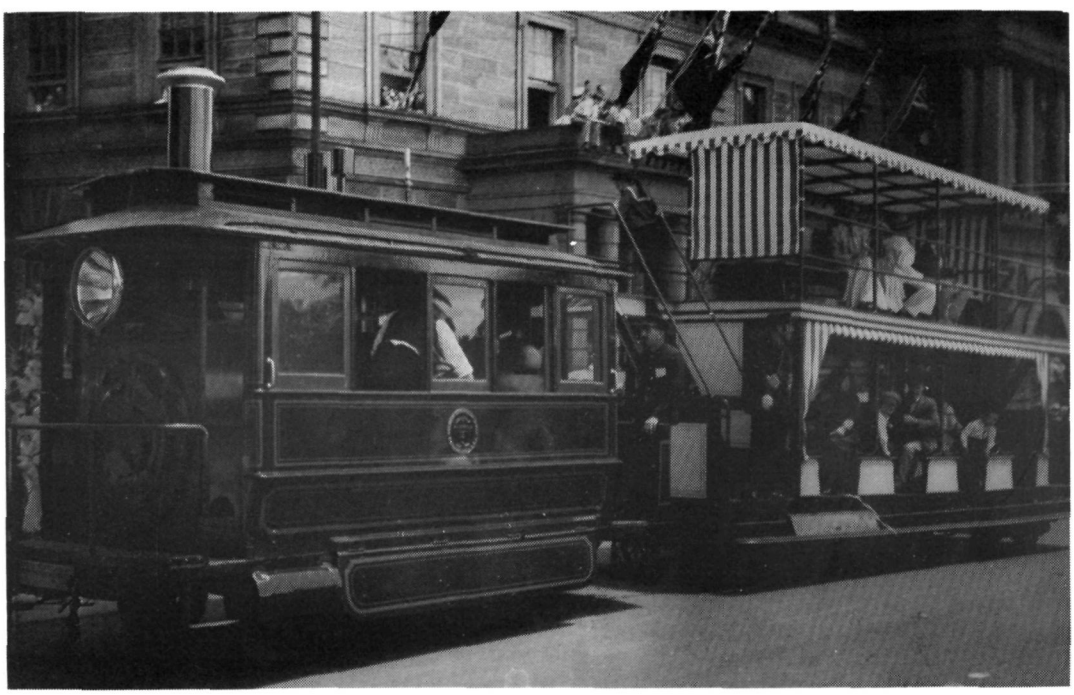
A Description of the Facsimile Motor Body.

Built at Randwick Workshops, 1957, and numbered No.2. Constructed to the general outline and dimensions of the original two-man motors of 1879. The body was designed for mounting over a tractor. The layout and fittings as depicted in the facsimile are not quite accurate for the purist, although some of the fittings are of great historical tramway interest. The first of these are the two gongs. No. 2 is fitted with gongs from the old North Sydney cable trams. The original motors were not fitted with gongs, but from the standpoint of spectator appeal these are probably necessary. The whistle in this case being operated by compressed air, although nitrogen was used last November. The builders plates are, as far as we can ascertain, the genuine Baldwin plates from the original No. 2.

A few of the cabin fittings are not quite accurate. One is that the right-hand side of the motor is enclosed as for the subsequent rebuilding into one-man motors. The dummy throttle levers are diagonally opposite with the throttle spindle entering the dome in an "east-west"

The 1938 Sesqui-centenary procession. Showing horse-tram (car C 94) preceeding the steam tram.

The 1951 Jubilee Parade. Motor IA (converted to two-man motor No. 1) hauling new d/deck trailer car built on frame of K 746.



direction, whereas on the original motors, the throttle lever entered the dome from the bunker end.

In every regard, however, the standard of construction of the body is excellent, and the minor errors do not distract one bit from its spectator appeal. In the procession at Parramatta last year, society members were beseiged with small boys (and not so small boys) asking to be able to give "the whistle a go" or to have a "pull on the bell, please mister".

Acknowledgements

The author wishes to acknowledge the help and assistance freely given for this article by Frank Moag, Len Manny and Ken McCarthy, thus allowing the story of these tramway oddities to be recorded in this magazine.

A DISTINGUISHED VISITOR

In late October, the Director of the Science Museum, London, Dr. Margaret Weston, arrived in Australia. Dr. Weston had been brought out as a consultant on science museums for UNESCO. She was to spend four weeks in this country examining as wide a range of museums as possible. Progressing across Australia, Dr. Weston arrived in Brisbane in time to present the keynote address at a seminar "Planning and Development of Science Museums" held under the direction of the Australian Commission for UNESCO.

On her return from Brisbane to Sydney, Margaret Weston undertook a final week of engagements which included, on the afternoon of Wednesday 24th November, a visit to the Sydney Tramway Museum. Since her appointment as Director of the Science Museum, Dr. Weston had been much concerned with the establishment of the National Railway Museum at York, and consequently, the tour organisers had tended to stress the visits to railway museums in this country. The visit to Loftus was thus the first to a tramway museum.

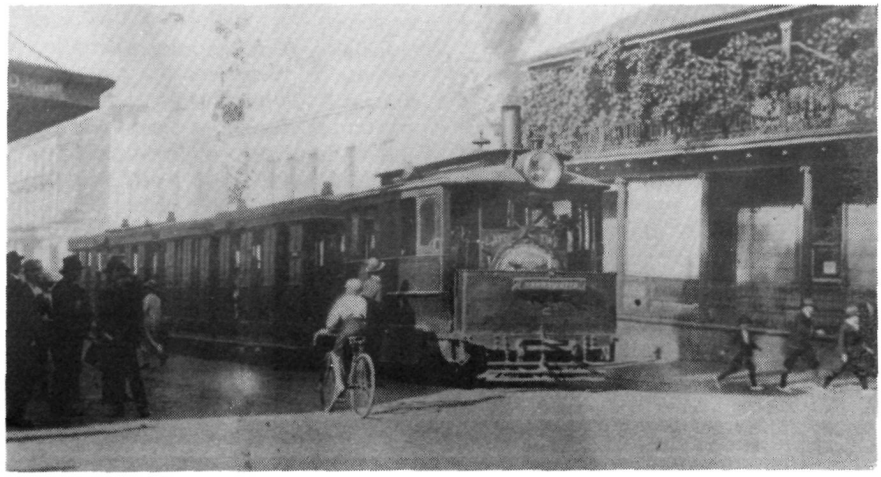
Dr. Weston was escorted to the museum by SPER member Bill Denham, where she met members Norm Chinn, Ken McCarthy, Laurie Gordon and Peter Kahn and later observed Chris Jacobs at work on the Brisbane Phoenix car. A tram ride enabled her to observe the layout of the museum surroundings. This was followed by an inspection of the depot and sub-station. Afternoon tea completed, a brief discussion group was held in which proposals for the new site were shown, while several questions were put to Dr. Weston concerning the possible future action that might be taken by the Society to further its aims. These she parried in rather a charming way. She had seen sufficient evidence in Australia of the need for some outside assistance that our venture appeared on the surface to be no different to the others. Any major recommendations will have to await her formal report to UNESCO.

Margaret Weston proved to be a very lively and astute person, although very much the senior public servant when she wished to be. It was therefore with some surprise to those present that, on travelling up the track in one of the fleet, she suddenly sighed and began to reminisce about the sights and sounds of trams as she once again heard the growl of the traction motors.

On the trip to Loftus, Bill Denham had been able to offer extensive background information on the Sydney Tramway Museum and the tramway museum preservation scene in Australia. This, coupled with the visit which was notable for its quiet informality, enabled Dr. Weston to make several interesting observations on the return to the city. She had been informed of the relatively low level of outside assistance and commended the museum for having progressed so far in the fact of what she considered must have been very daunting opposition. She was impressed by the earnestness of purpose shown by those members present and extended her thanks to those who gave up their time to make the visit one of the highlights of the week.

In the morning prior to the visit to Loftus, Dr. Weston had been on an official tour of the Sydney Opera House, and it was with some pleasure that Bill was able to show her photographs of the Fort Macquarie tram shed which formerly occupied the site. While officially noting that the Opera House was a magnificent landmark, in a quiet aside she was heard to remark that as museologists shouldn't we agree that a technological museum would have been more appropriate. She knew of course, that such a course of action had been planned at some stage but set aside in favour of the present development.

50 YEARS AGO.



Motor 2A and its two trailers bound for Parramatta Station, at the corner of Church and George Streets, Parramatta on 31 December, 1926, the last day of operation of the line. – *D. MICKLE*

The following brief notice appeared in Weekly Notice No. 1 of January 1927, dated 1st January, 1927.

ARNCLIFFE, PARRAMATTA, MAITLAND and BROKEN HILL LINES

Weekdays and Sundays

Commencing Saturday, 1st January

The services on the above lines ***will be discontinued.***

And thus was curtly announced the beginning of the end of the steam tram era in New South Wales. It really followed by only a short time the end of the beginning.

Steam trams came to Sydney on 28 September 1879 and other Government systems were opened in

Newcastle	19. 7.87
Kogarah	10. 9.87
Enfield	3. 9.91
Broken Hill	15. 2.02
Parramatta	18. 8.02
Manly	14. 2.03
Maitland	8. 2.09
Arncliffe	13.10.09
Cronulla	12. 6.11

The steam systems built after the turn of the century were basically intended to use up the rolling stock rendered surplus by the electrification of the main Sydney system. The lines at Manly, Enfield and Newcastle, except those to Speers Point and West Wallsend from Wallsend were also subsequently electrified, those at Manly being converted before the Cronulla line opened.

The four lines closed at the end of 1926 were definitely uneconomic; the situation not being helped by unrestricted private bus competition.

As is usual the politicians denied all rumours of impending closure until the last minute when the customary about face was made and the closures were announced in official handbills issued on 16 December 1926.

The rolling stock on the Arncliffe, Maitland and Parramatta lines were redistributed to the remaining system or sold for reuse or scrapped. There is evidence that some of the motors at Broken Hill were used for a time on the isolated Broken Hill - Menindee railway but all the rolling stock were eventually scrapped there.

The tracks were progressively removed but it is interesting to note that a short length remained near Arncliffe station until removed on 16 July 1953 and thus remained out of use for a longer period than it had been used.

The remaining steam lines at Newcastle, Cronulla and Kogarah followed until the government steam tram in New South Wales was extinct on 4 July 1937, being outlived only by the private George Street line in Parramatta until 31 March 1943.

AN INTRODUCTION TO TRACTION MODELLING

by A. W. PERRY

While our various museum groups collect 'models' all in the 1:1 (full size) scale, modellers operate in various scales. When starting into the specialised form of model railways known as 'Traction Modelling' we have to first decide whether it will be heavy (mainline railway) or light (interurban and city tramways) traction and then local, overseas or some combination of these, but always observing prototype principles in design, construction and operation. This need not unduly limit us in our approach to modelling for provided we use commonsense there IS (nearly) "always a prototype in traction".

If the model system does not have to be compatible with an existing model railway it will be space, skill, personal taste and possibly finance that will decide our choice of scale. Commercially there are some 1:160 (N) scale tram bodies available, but 1:87 (HO) and to a lesser extent 1:76 (English 00) are the scales best catered for in Australia as regards ready to run cars and kits. These 16.5 mm gauge models are all of foreign prototypes. There are a limited number of modellers scratch- building 1:87 scale cars in the eastern states but the beginner may feel incapable of such work even after talking to one of these modellers. Other choices are 1:64 (S, very rare), 1:45 (0 the correct one of the 3 scales offering), 1:32 (1), 1:24 or 1:22.5 (3) and 1:16 (4) scales.

In the past scales were defined as a ratio of so many inches or fractions thereof to the foot, e.g. ¼" to 1' (This is one of the alternative scales for 0). Most of the older modellers still prefer this method but in line with the introduction of the metric S1 into Austrlaia we now tend to use a ratio of the model's size to that of the prototype, so where previously a 48' long car would be expressed as 48' x ¼" = 1', something 48 metres in length would, in the same scale, be expressed as a ratio of 1:48 and would be 1 metre long as a model. No matter what units of measurement is used as soon as 1:48 is seen it should be clear what size it is.

To provide a means of contacting fellow traction modellers the Model Traction Association (MTA) was formed in NSW by modellers in the various traction/tramway societies formed over the last 30 years. This semi-formal group has members in all mainland states, but only a branch in Sydney. It maintains friendly relations with the only traction modelling group interstate, the TMSV's 1:24 scale 59 mm gauge modellers in Melbourne, as well as other modellers throughout Australia. Its main purpose is to advocate a definite set of basic standards for each scale and gauge to permit a maximum degree of inter-running by models and to hopefully improve the supply of parts required for traction modelling, despite so few modellers in so many scales. The knowledge of a modellers existence is considered more important than MTA membership.

We emphasis scale as separate from gauge as Australasia is (was) a country of many prototype gauges, thcugh 4'8½" (1435mm) and 3'6" (1067mm) gauge tramways predominated. Using the 1:64 (S) scale standard gauge models run on 22.25 mm track while narrow gauge Perth models would use 16.5 mm track and would be called Sn3½ to distinguish them from 1:87 (HO) models using the same track gauge. If you want to model a narrow gauge system within a moderate space this might be the best solution. The now defunct Hamo models are very close to this scale and scratch builders can use HO train wheels for their tram models, the larger 1:64 scale making them just about right. Of course for standard gauge 1:64 scale cars it would be necessary to regauge the wheels on new axles. As far as is known only one tram modeller in Australia uses this scale.

O scale means 1:48 in the USA, where it has a considerable following and 1:43.5 in the UK where it too has a reasonable following, while 1:45 used in Europe and to a limited degree in other countries is correct in relation to track gauge. Only a few O scale traction modellers are known in Australia.

1 Scale, 1:32, has a growing popularity in both standard and narrow gauges, but mainly in the Sydney area. O scale wheels and rails are adopted to these modellers needs and although about 50% larger than O scale models it roughly equals the space requirements of a model railway in that scale. The author must admit to some degree of bias towards this scale though well aware of the attractions and limitations of all scales. Choice of scale (gauge automatically results from this choice) is purely a personal one based on YOUR OWN capabilities and limitations, but, PLEASE try to chose one with a reasonably large following already. It will be to your advantage if the following is a local one but even if not at least you will help our hobby by limiting the propagation of traction modeling scales. The fewer scales used the better the chance of economically producing basic

components like truck side frame castings which not only suit models of standard and narrow gauge cars but those on various 'odd bod' gauges, providing all models use the same scale.

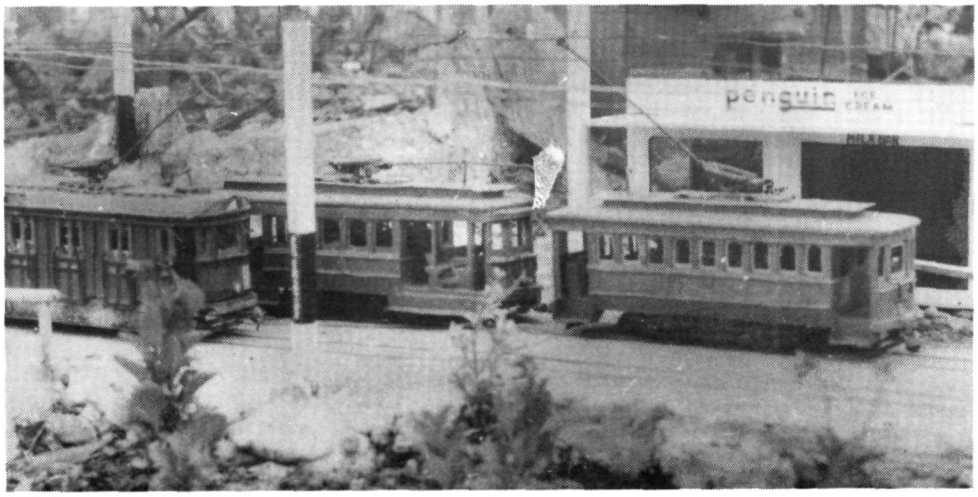
3 scale, 1:24, using 59mm gauge rather than the 63.5mm gauge of steam locomotive model engineers originated in Sydney as the result of wishing to use a more accurate track gauge for the scale and much finer track and wheel standards than those of the steam men. Its strongest following is in Melbourne, with commendable standards and there is a limited following in N.S.W. With one exception persons modelling trams on 63.5mm gauge use the correct scale for 4'8½" of 1:22.5, now used commercially by LGB model trains. LGB have just added an oldtime German tram to their 4 wheel German interurban electric loco, all of 1,000mm gauge prototype using 45mm gauge, usually wrongly called 1 gauge. LGB is available in most eastern state capitals.

Eclipsing even LGB in size and with a growing following in Sydney is 4 scale, 1:16 on 89mm gauge. The largest scale model trams operating in Australia, a model of a Sydney R car measures 35¼" (895mm) over bumpers! The author cannot help but feel this is more for the modeller of tramCARS rather than tramWAYS, due to the space required. But there is no doubt that this scale is an attraction at any model exhibition. Its sheer size, in these days that HO and N scale layouts predominate and O scale is a rarity, is a major selling point, with detail that you can SEE.

The TMSV group's 1:24 scale models are also quite visible and their's is the largest scale tramWAY and possibly our longest exhibition one at 56' (17m)! Both the 1:24 and 1:16 scale groups have adopted O scale train wheels to their needs on new axles and use the very much over scale brass rail marketed, allegedly, for O gauge lines.

Visit the Melbourne or Sydney major exhibitions to see this traction in action.

"O" gauge models of steam motor 32A (clockwork) and trailer 2B on the gauntlet track at "Lambton Bridge" on the outdoor layout of Ken McCarthy. March 1951
Ben Parle.



" O " gauge models on the outdoor layout of Ken McCarthy at a location depicting "Maitland Rd.,Mayfield".Seen in this view are LP704,breakdown tram 126S and rail scrubber 131S.December 1952. K.McCarthy.

STANDARD GAUGE MODELS			MODEL TRACK GAUGE	OTHER MODEL SCALES USING THESE GAUGES	NOTES
NAME	SCALE	ft/ ratio			
Z	1:220		6.5mm		
N	1:160		9 mm	HOn2½ 009 (00n2¼)	1
–	1: 87	3.5mm	10.5mm	HOn3½ Sn2¼	
TT	1:120	1/10"	12 mm	Hon3½ Sn2½ 00n3	
HO	1: 87	3.5mm	16.5mm	On2½ Sn3½	
EM	1: 76	4 mm	18 mm		2
OO	1: 76	4 mm	19 mm	On3 Sn4 1n2	
S	1: 64	3/16"	22.23mm	On3½ 1n2½	
O	1: 45	17/64"	32 mm	3n2½ 1n3½	
1	1: 32	3/8"	45 mm	3n3½ 3nM	3
	1: 24	½"	59 m		4
3	1:22.5	17/32"	63.5mm		
	1: 16	¾"	67 mm	4n3½	
4	1: 16	¾"	89 mm		

NOTES:

1. 009 denotes 1:76 scale using model track gauge of 9mm
2. Suitable for Swiss 800mm prototypes
3. 3nM denotes 1:22.5 scale and Metre gauge prototype
4. Suitable for European 950mm gauge prototypes

On2½ indicates scale/gauge relationship only approximate

1:25 scale can be useful for model gauges of 32mm or more

1:50 scale can be useful on 12, 18, 19, 22 & 32mm model gauges.

MUSEUM Notes & News

from ALBION PARK

Illawarra Light Railway Museum Society

Trackwork Progress.

During October and November, siding construction and associated pointwork progressed in the chain wire compound, and by the end of November, 1000 feet of 2 ft gauge track was in position at the Albion Park museum. Since obtaining the lease in February 1974, ILRMS site progress has been restrained by continual wet weather. October 1976 produced only five fine days out of thirty one in Wollongong, while November has shown little improvement.

Over the last two years more than 250 tons of unscreened gravel, road base and coal wash have been tipped and levelled to form track beds and an elevated floor for the rolling stock compound. During the last two months approximately 30 tons more have been delivered which will enable the station yard area in front of the Yallah building to be raised, and the low ground between some of the parallel siding roads to be built up to the track level.

The extent of track construction by the end of November, is shown in the accompanying map. Point construction had progressed far enough by November 6th to enable the boiler-frame-bunker unit of Shay No. 2, the two Ball's Head hopper wagons and Quanaba No. 1 Fowler loco to be shunted into the store sidings. All rail mounted items are now in the chain wire compound and the Croome Road track is clear for train operation.

Inspection Car.

The four wheel inspection car, powered by a single cylinder petrol engine of World War I vintage, arrived at Albion Park on November 20th. This was obtained from the Victoria Mill railway at Ingham, Qld. on February 20th 1973 and since that time has been stored in Sydney.

Full details of this unit appeared on page 17 of "Trolley Wire" October, 1973. It will be put to good use taking small parties of visitors around the museum area.

Design features still seem to indicate that this inspection car was built by the Drewry Car Coy. Ltd. of London, but it is hoped that details of its origin will be verified when the vehicle is stripped for rebuilding.

Standard Gauge Rolling Stock.

During October and November the side wall of the (ARHS exhibit) CHG gaurds van was scraped back to bare wood and the first paint coat applied. The broken glass has been replaced and the interior scrubbed clean. A large quantity of hardwood planks have been obtained to replace the worn floor boards and foot boards while brake gear components are on hand to enable the van to be restored to its original purpose.

Research is now being conducted to see if this van was built new for the AI&S or purchased from the NSWGR. This question of identification should not be too hard as the Port Kembla Steel Works only owned one such vehicle. It was introduced in 1928 as a brake van for the private trains working between Wongawilli Colliery at West Dapto and Port Kembla, which traversed the NSWGR tracks between Unanderra and Brownsville. These trains were usually hauled by the 4-6-4T steam loco "Iron Duke", similar in design to the NSWGR "S" class suburban engines, until displaced by the introduction of diesel electric locos in 1951. The preserved CHG gaurds van was withdrawn from this service at this time, and the diesel era also saw the introduction of high capacity bogie coal hopper wagons, with hired NSWGR eight wheel gauge vans bringing up the rear.

Site Progress.

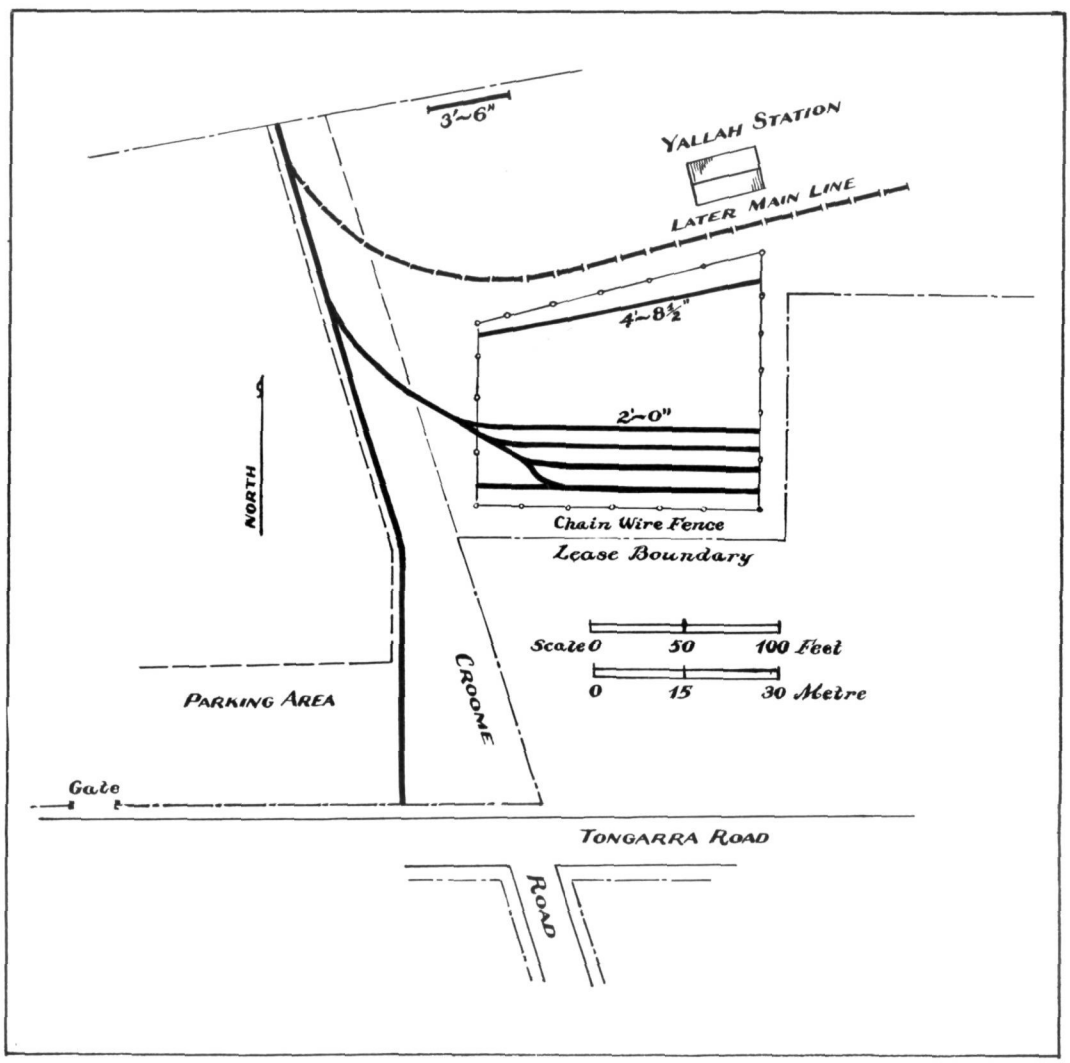
The bottom row of weatherboard removed from the Yallah Station building to enable the floor joists to be freed from the original foundations have been replaced and some paint priming carried out.

The last fence panels of the eastern wall of the chain wire compound were enclosed during

October, only some 75 ft of the western fence has now to be completed to give adequate security to the museum rolling stock. This final fencing project will require the construction of several large gates which will be designed to allow access to the compound area by heavy transport and cranes.

Perry Locomotive.

The boiler of the ILRMS 0-6-2T 2 ft gauge steam loco (Perry) "Tully No. 6" received a detailed inspection by a boiler inspector during November. He pronounced the boiler to be in generally good condition. As expected, the lower tubes will have to be replaced, (tubes are on hand for this job) and some attention paid to rivets in the fire box, but there is now no doubt that "Tully 6" will take to the tracks again under its own steam in the future.



CORRECTIONS FOR OCTOBER 1976

Page 11
3 Leyland Regent types with petrol engines - should read-
3 AEC Regent types with petrol engines.

Page 29
Reference to car 1918 - should read - Car 191 B

Page 30
Credit for photo of 'Z' car. C. Mottram.

from BYLANDS

Tramway Museum Society of Victoria

Depot.

As anticipated in the last report, the cladding of the front gable of the Shed had been completed. Additional beams have been erected to secure fittings for the door's top bolts. In recent months, four fire extinguishers have been placed in the Depot. Members should make themselves familiar with their location and use. A small extinguisher has been placed in horse tram No. 256.

Track.

During October, some 20 lengths of the west rail between the north end of the yard and "One Tree Hill" were de-spiked to enable this section to be re-gauged. Once this rail is secured at standard gauge a walkway for the horse will be constructed, thus providing a one kilometre round trip for our visitors.

Rolling Stock.

Work continues on No. 180 on Wednesday nights and Saturday afternoons. The interior has received its first coat of varnish and has been sanded back prior to applying the next coat.

Exhibition.

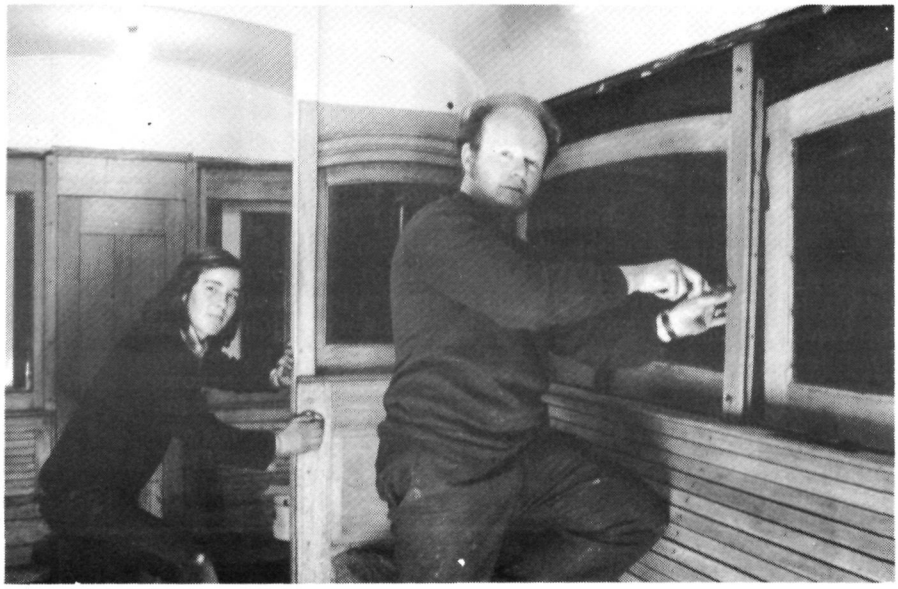
The Society contributed the half inch to one foot model tramway layout to an exhibition conducted at the Coburg Town Hall between 15th and 17th October, by the Northern Model Railway Association. Two display boards formed a back-drop to the stand and contained suitable large photographs of Society activities.

Preston Workshops.

On Wednesday, 15th September, 1976 the Assistant Manager of Preston Workshops chanced to find a stranger with camera in the car park area at lunch time. Questioned, the stranger stated that he was a "private citizen and a T.M.S.V. member", implying that he thus had a right to be on Tramway Board property. He was firmly advised to the contrary, and told that he would be made welcome if he sought permission from the Office - but he would be most **unwelcome** if he walked in without taking the small trouble of announcing himself. The person then argued that he was on a quick lunch hour visit and that he could use a telephoto lens over the fence! The Assistant Manager was not impressed by the former point and intimated that he was aware of the attributes of telephoto lenses; the person was advised that the key point is where the photographer's feet happen to be standing! All members of Australasian tramway museum societies and readers are asked to note this incident – and not to repeat it! The M. & M. T. B. staff in general and those at Preston Workshops in particular grant us many favours – and we hope that they will continue to do so. Incidents like this "blot our copybook". Persons wishing to inspect Preston Workshops are always made welcome, but the Management has a standing request to us to arrange periodical group visits rather than for individuals to come one by one. This is not that practical for interstate or New Zealand visitors, and they are always made welcome as individuals. Whilst Melbournians are shown around individually, the staff at Preston Workshops would appreciate it if those concerned could leave their visit until a Society visit is arranged.

1:24 scale trams on 59mm track on the TMSV itand at a recent exhibition.

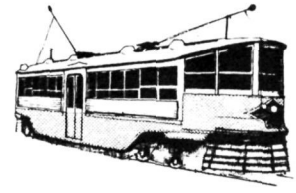
K. S. KINGS



Don Storey and Ron Scholten working on the interior of 180 at Malvern Depot, on 25th August, 1976.

Interior lighting in the Depot is excellent. Looking from the front to rear, the fluorescent tubes are on the rear sides of the lower cords of the roof trusses. On the right XI.467 is one of several trams internally iluminated by lead lamps.

from CANNINGTON



Western Australian Transport Museum

Bus operation has ceased at the Wanneroo Lion Park. London RTL 547 and Pert Metro 81 have been moved to Cannington to take up running and are temporarily housed in the tram depot.

Accommodation problems will arise at Cannington with the forthcoming transfer of the bodies of Perth K class 126, PerthI class 63 and Fremantle 29 to the site.

To accomodate the extra equipment, extensions to the depot area are in hand. Our thanks go to Kim Chipper for the Acquisition of chain-mesh fencing and posts from Westrail at a most reasonable price, which he has donated.

from FERNY GROVE

Brisbane Tramway Museum Society

DEPOT

As indicated in October TW, work has been procedding on the second depot building. Because the second shed is based almost entirely on reclaimed land, the foundations have had to be redesigned to meet Brisbane City Council regulations.

Unlike the first shed, where the track was dug into the floor, the second shed baseplates are set above the floor level and the track, 60 and 75lb T rail from Ipswich Road Depot, will be laid onto sleepers on the floor. As will be recalled, the track in the first shed was set on concrete buns with steel sleepers at regular intervals as gauge sleepers. This system has been found to be entirely satisfactory, but lack of time has made it impossible to use this method on the current job.

WORKSHOP EXTENSION

Work started late in October on the extension to the rear of the workshop building to facilitate the housing of the longer FM and Drop Center cars. Incorporated in the plan is the extra provision of members facilities at the rear of the building.

TRACKWORK

Despite the extreme heat experienced in Brisbane recently, good progress has been made on the trackwork in front of the 2 depot buildings. The curve from the point leading off from the workshop to the depot yard has been raised by packing and tamping. Attention has also been given to securing the checkrail on this curve using the welder and the hook bolts obtained from Ipswich Road Depot.

The junction point from the main line to one of the two sheds has been laid and double check rails installed on the curve. 60lb rail has been used to near the west end of the sub-station building. The 3 track fan for depot 2 was then winched into position from on top of the depot 1 fan. This later trackwork was then moved into its approximate position. It was found that very little modification will be needed to 1 and 3 tracks but a new crossing will have to be made for number 2.

This work has been undertaken as a matter of urgency so that Drop Center 231 can be moved out of the workshop to make room for equipment to be received from Milton Workshops.

Because of the excessive heat Wednesday night work parties have been tried and have been successful.

ELECTRICAL

The good news in this department is that the BCC has installed the 11kv power line to the substation in November. Electrical Supervisor John Hudson has been busily preparing for this day for some months and the switchgear and transformer have had all wiring and points cleaned and ready for connection.

At the same time the BCC bored the holes

for the overhead poles and placed these in position and they were later concreted by members.

TRAMCAR MOVEMENTS:

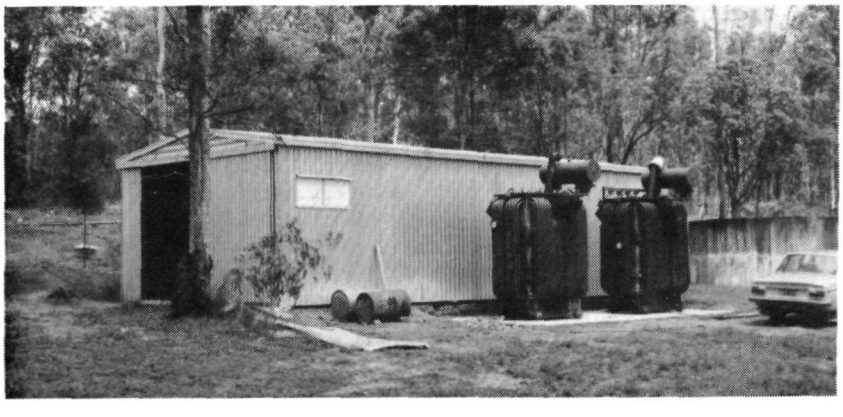
During late September, using the muscle-power of several members and the ever-handy tree puller, Dreadnought car 128 was placed in loving fashion, onto the mainline track at the rear of the workshops. This was managed by jacking one end up at a time, and winching the car sideways, skidding the truckframe on two substantial and well-oiled lengths of 102 lb grooved rail. The car was moved easily using this method and no damage was sustained to it, bodywise or mechanically. It will be stored in the second depot with other cars moved from the workshops.

FUTURE ACQUISITIONS

During a recent visit to the Milton Tramway Workshops, the Council of the Society, together with Mr. R. Green, from the BCC Transport Department made a thorough inspection of the workshop complex. With the impending closure of Milton and the transfer of activities to the new bus workshops at Toowong much equipment will become available. As a result an extensive list of equipment, tramway and other, was drawn up and will be submitted to the BCC for approval. The list includes items such as grooved rail and pointwork, bench grinder and saw, bundy clocks, desks, cabinets and painting facilities. One of the more interesting items is the complete, ornate, wooden staircase from the Coronation Drive administrative building.

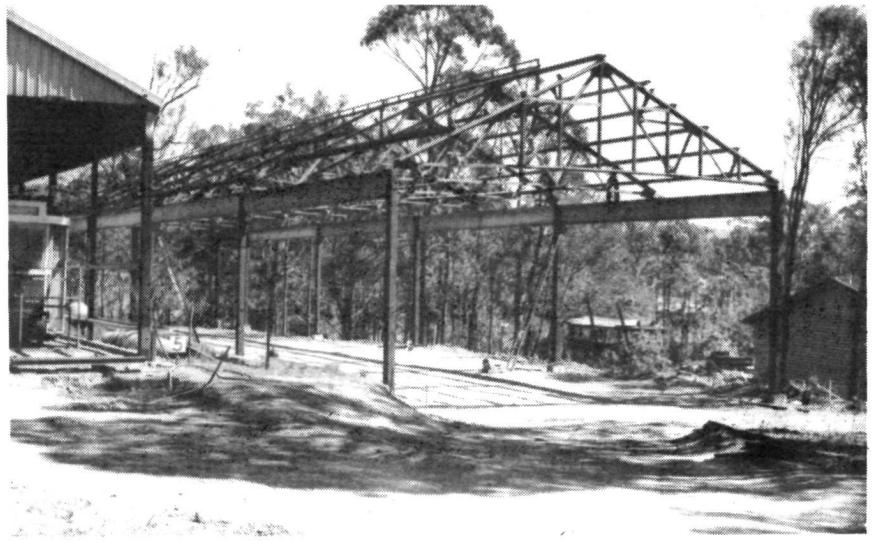
The Society has taken delivery of AEC bus number 80. This bus was the centre point of a display the Museum put on in the "History on Wheels" exhibition at Indooroopilly Shoppingtown during early November. The BCC repainted the bus in the early colour scheme of silver, complete with 'B.C.C.' monograms. The exhibition featured numerous examples of early transport, mainly vintage and veteran cars, and the Society's exhibit created great interest and gave the Museum increased publicity.

At the Council meeting of the Society in September, consideration was given to a report submitted by caretaker Phil Smith on a comparison between the two Sydney Rl tramcars at St. George and Inglewood. Phil had recently visited the two properties where the cars were stored, and had made a detailed examination of the condition of the trams. Acting on the substance of his report, it was decided that the Rl at St. George, 1969, had suffered severe structural deterioration through termite infestation, and that the tram at Inglewood, 1936, would be the better to acquire for preservation, and to use 1969 parts. As a result of this decision, Phil went to St. George on Tuesday the 21st September, and began to dismantle useful parts from 1969. He was joined for the week-end following by Dennis Parry, his father, and new member Jack Beetham. By the weekend's finish, all usable parts from the tram had been loaded onto a truck loaned to the Society by Keith Taylor of Strathpine, and a trailer loaned by Gordon Smith, and these parts were brought back to Brisbane, and are now in the Storeshed. Both the vehicles were provided free of charge, and the entire transport costs of the operation, which involved travelling distances of approximately 550 miles, amounted to only $23, the cost of the fuel. We are deeply grateful to the members and non-members who were involved in this project. A fund to cover the anticipated $400 costs of bringing 1936 to Brisbane has been opened and nearly half that amount donated by members already, however more donations are needed, and the Society hopes that members who are unable to contribute physically to the Museum will support this worthy fund.



opposite page
Two transformers stand patiently awaiting the imminent arrival of the 11 KV power at Ferny Grove. – *TIM ATHERTON*

below
The second shed takes shape alongside the first one at Ferny Grove.
– *P. HYDE*



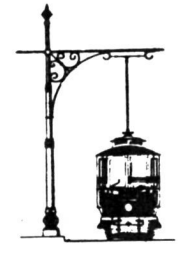
from HOBART

Tasmanian Transport Museum

The movement of rail vehicles to the museum site at Glenorchy was undertaken on 16 October 1976. The weather was fortunately fine and the movement was remarkably free from incident. There are now 12 major exhibits on the site.

Full details of the move and other news from Hobart will appear in February TW.

from LOFTUS



South Pacific Electric Railway

ROLLINGSTOCK.

Brisbane 548 is now receiving the external undercoat, thanks mainly to the efforts of Chris Jacobs. Work on this car has been slow but the final results show much promise of being well worth waiting for.

Some long overdue external protective work has been carried out on OP 1089 which has been stored out in the open, off site, since being purchased in 1974. This car has been in the open since sold by DGT in 1956.

OVERHEAD

Further work has been undertaken on the overhead. The four main depot tracks have now been wired and are in use. Isolating switches

are fitted to each track. The lead from track 3 in the yard to track 4 has never been wired, due to the lack of a supporting pole and the unusual situation now exists of wire inside the depot but no connecting wire outside.

SITE DEVELOPMENTS

A further meeting was held on 23 November 1976 regarding the new Loftus site when representatives of every conceivable body that can find the smallest possible excuse to have a say in the proposed development were represented. The main factor that is, or more to the point has been made a problem, is the provision of sufficient parking space and road access to same. This has now been referred to the new Traffic Authority and very little can be done until this is resolved. The only comfort to be gained from this situation is the apparent belief of the various authorities that the Museum will be a major attraction and consequently create traffic problems on the somewhat inadequate surrounding road system.

PUBLIC RELATIONS

After a break of some years the Society has recently provided speakers for local organisations, namely the Loftus Apex Club, Miranda Rotary Club and Sutherland Historical Society.

K 1296 made a rare appearance on the main line at Loftus on Saturday 4 September 1976 for photographic purposes. The 4 wheel cars do not see much use at present.

from PARRAMATTA

Steam Tram Preservation Society

FOUNDATION (OR FLOUNDATION) DAY:

The Society has for a number of years operated the Steam Tram in conjunction with the local Foundation Week celebrations. This year was no exception, the special steaming taking place on Sunday, 1st November. The festivities within Parramatta Park promised to be better-than-ever with the extensively advertised Enavite/National Heart Foundation Bicycle

Rally, as well as bands, a hot-air balloon, helicopters, etc, etc., and, of course, the steam trams.

Fortunately, for the local ducks the day dawned with a torrential downpour, followed by heavy showers throughout the morning. Our early-bird members, hoping for a break in the weather, had motor 103A and car 74B operational at 10.30 am. The inclement weather, however, put off the prospective "loads" of would-be passengers, although Jack Midgley did operate two trips (voyages?) before the lunch-time break. But, who could forget the sight of the sodden conductor, Len Manny, gurgling "fares please"?

During lunch, the weather began to clear with the sun breaking through about 1 pm. The "hoards" then began to beseige the trams, as well as a visit by Kim Holland, Miss Parramatta City Council, an entrant in the local Foundation Princess competition. Kim posed for photographs with the tram crew on the apron of 103A, but being overcome by such a glamourous occasion this scribe neglected to load his camera correctly – hence no photos.

As daylight-saving commenced that day, it gave us an "extra" hour of daylight. The loadings after lunch were consistently heavy, culminating in a final figure of just over 1,700 fares!!

The Cathay-Pacific Hot-air Baloon rising over the Hot-water Trams, Foundation Day 1-11-'76, taken between showers!
Peter Stock

Fourth Annual General Meeting:

The Fourth A.G.M. since incorporation (our 22nd A.G.M. since foundation) was held on Saturday, 13th November.

The Annual Report for 1975-76 was tabled. The report indicated that 12,716 tickets were issued, with a total of 17 steaming days being operated during the period in review. "Tram-mites" totalled 170. These figures are reflecting a greater awareness of and support for the steam trams.

Election of three new directors took place with the Board now being composed of Bruce Irwin (Gov. Director), Frank Millier (Deputy Chairman), Peter Stock (Secretary), Len Manny (Treasurer), and Jack Midgley (Works Manager). Frank Moag continues as the Parramatta Liaison Officer.

Works Report:

The Vulcan (1022) and the Stephenson locomotives were prepared, by the two Ronnies and their apprentices, for the annual boiler inspections. The inspections were satisfactorily undertaken on the 6th November. During October our Public Amusement Registration was also renewed.

Consolidation of the track-bed continues in the vicinity of the Boer War Memorial. The foundations at this location are being packed with blue-metal ballast. Drainage problems which have been manifesting themselves here after heavy rain will be effectively eliminated.

from ST. KILDA

Australian Electric Transport Museum

MUSEUM DIRECTORY INSTALLED

A Museum Directory has been installed adjacent to the Depot fan area, and may be consulted by visitors after they have passed through the entrance building. By means of a series of single boards which can be rearranged at the start of each day's operation, it is possible to show the cars being run in traffic on that day, the location of static exhibits in the tram and bus depots and the numbers of any vehicles which are not on display through being in the workshop. Sketches of each vehicle help visitors identify the various cars and buses.

IMPROVEMENTS TO CAR 303

A number of minor improvements are being continually made to car 303 which has been in traffic every week since it arrived from Bendigo. Temporary flexible couplings which had to be fitted to the air system of the car in Bendigo have now been replaced with new couplings. Running noise has been much reduced by the installation of a new trolley wheel and harp of standard Adelaide design. Lifeguard fittings have been repaired and repainted for reinstallation. Some interior revarnishing has been carried out.

CONSOLIDATION OF PROJECTS

In preparation for the next COTMA Conference to be held in Adelaide over the Anzac weekend 1977, AETM members are attempting to consolidate and complete a number of existing activities. Much of the interior refinishing of the No. 2 end of car 192 is now completed and repainting of the exterior is well advanced. Re-enamelling of the Asbury Green interior of car 381 is also largely completed. A concerted effort by Mark Skinner and John Pennack to repack the lake section of track between Samphire Road and Mangrove Street has resulted in a marked improvement in riding characteristics on this part of the line. Upgrading has also been carried out elsewhere as necessary. Chris Steele has been completing site works and drainage associated with the trolleybus shed, and is installing new birdproofing panels over gaps left in the doors to accomodate trolleybus overhead. Robert Magnussen has welded up new columns to replace one of the original timber poles in the tram depot. This is the first major maintenance the building has received since it was completed in 1965. A small but worthwhile project being carried out by Jim Burke involves masonry repairs and repainting of the former Adelaide City safety zone pylon.

John Pennack removes old paint and varnish from the No. 2 end saloon of car 192 at St. Kilda. *PAUL SHILLABEER*

BUS STOP

Articulated buses are still being demonstrated around the country. Concurrent with the operation of the M.A.N. bus in Sydney during August another was in Perth. It was shown to M.T.T. staff and officials and was not used in public service. It ran with NSW trade plates A3722 during its stay in the west. The one used in Sydney has subsequently been in Adelaide.

It is likely that these two demonstrators will be purchased by the Department of Capital Territory and join the third import in service there.

A Volvo articulated bus operated a free service in Sydney on route 417, Circular Quay to Railway (Country Trains) in the off peak period during the week 15 to 19 November 1976. It operated out of Randwick Depot.

A familar sight in Sydney streets for over 40 years has disappeared with the withdrawl from service of the last Half cab double decker by the Public Transport Commission.

The honour of the last operation fell to 2366, an AEC Regent of 1950 with body by Commonwealth Engineering. Operating from Waverley Depot it ceased service on 23 November 1976.

A farewell tour using 2619, an AEC Regent of 1953 with body by Clyde Engineering and 2671, a Leyland Titan OPD 2/14 of 1953 with body by Clyde Engineering was held from Burwood Depot on Sunday 5 December 1976. A decreasing number of these buses are still in service with private operators and many are used as caravans, mobile showrooms and support vehicles for motor racing. Many are preserved.

Reader Ross Beard has kindly supplied us with some more information on the Cheetah Landliner (See TW February and April 1975). A Landliner was operated by Peninsular Bus Lines Pty. Ltd. from Frankston (Victoria) down the Mornington Peninsular from 1946 to early 1948 and was then sold to WAGR. Comparison of the photo on page 7 of Februay 1975 TW reveals a different body style to the two vehicles pictured on page 40 of April 1975 TW. This first vehicle was undoubtably the one purchased from Victoria.

City Section

NEWS OF THE MELBOURNE & METROPOLITAN TRAMWAYS BOARD

The November, 1976 Newsletter of the National Trust of Australia (Victoria) indicated that the West Melbourne cable tramway engine house has become a Classified building. The citation reads: "Former Cable Tram Engine House, Corner Queensberry and Abbotsford Streets, North Melbourne. Built in 1890 to house the steam driven engines to provide power to pull the underground cables. Closed in 1936 when the North Melbourne cable trams ceased operating. Currently used as a garage, the building is in polychromatic brick with sandstone decorative features on a bluestone base."

Route maps have appeared during November at tram stops in Bourke Street, City. They are triangular in shape fitted around the pole holding the stop sign. Two sides face the footpath, while the third (blank) is parallel with the kerb. One side contains a route map of the Bourke Street routes while the second displays a map of the city area. All city thoroughfares have their routes shown in different colours, and it is reported that maps will be provided along all routes. New stop signs have been placed at all city area Bourke Street stops, being of the standard Melbourne design. However, they read "Tram Stops Here" or "Hail Tram Here", depending on whether they are compulsory or conditional stops.

On Thursday, 7th October, the old Essendon Airport terminus was abandoned and the new terminus brought into use. No. 991 was the last tram from the old line about 8.55 a.m. with No. 783 commencing service from the new track about 3.45 p.m. The new line had been built during late September, and the day's work necessitated cutting and removing the curves and inserting straight track in their place. Whereas the old line turned through a right angle eastwards across both carriageways of busy Lancefield Road, the new track continues a short distance straight ahead, still in the reservation formed by Matthews Avenue and the west carriageway of Lancefield Road. The overhead footbridges at the new terminus and opposite the TAA buildings were completed before the changeover. The service was maintained from the Niddrie crossover to the works area by each alternate tram using the "up" and "down" lines for its return journey.

Track on the South Melbourne route in the Eastern Road/Park Street section was relaid during October, while work was carried out on the southern pointwork in Nicholson Street, at Victoria Parade late in November. After a lull in commissioning Z class trams, No. 56 was noted late in November, and No. 57 is also reported in service. Tenders are being called for another 100 new tramcars.

The M. & M. T. B. contributed towards the Ministry of Transport stand at the Royal Melbourne Show during the latter half of September. The Board's unit consisted of a mock-up of the end of a Z class tram with working controls and destination signs. It proved extremely popular with the public, as did a press-out coloured cardboard replica of a Z class tram, many thousands of which were distributed by stand attendants.

W6 – 991, The last tram from the old Essendon Aerodrome terminus, turning into Matthew Avenue, as the track gang breaks the "down" curve. 8.55 a.m. 7th October, 1976,
R. SCHOLTEN

MUSEUM DIRECTORY

AUSTRALIAN ELECTRIC TRANSPORT MUSEUM (SA) INC.
St. Kilda, South Australia.

Trams – Trolley Buses – Electric Locomotive

Trams operate Sundays & Public Holidays 2 - 5 pm. No public transport available. Interstate visitors please contact the AETM if transport required.

In emergency phone (08) 297-4447

Correspondence: The Secretary,
AETM (SA) INC.,
Box 2012 GPO.,
ADELAIDE. S.A. 5001.

BALLARAT TOURIST TRAMWAY
Ballarat Botanic Gardens, Wendouree Parade, Ballarat, Victoria.
(Ballarat Tramway Preservation Society Ltd)

Tram Rides – Static display of trams, photos
– Sales Department etc. –

Operates Saturdays, Sundays and Public Holidays (Christmas Day excepted) and most days during Victorian School Holidays and the Ballarat Begonia Festival 11 am – 5 pm.

Telephone Tram Depot (053) 34-1580,
Bungaree House (053) 34-0296

Correspondence: The Secretary, B.T.P.S.
Box 632, P.O.,
BALLARAT. Vic. 3350.

BRISBANE TRAMWAY MUSEUM SOCIETY
McGinn Road, Ferny Grove, Queensland.

Static Display of trams and trolleybuses

Correspondence: The Secretary, B.T.M.S.
McGinn Road, Ferny Grove,
QUEENSLAND. 4055.

ILLAWARRA LIGHT RAILWAY MUSEUM SOCIETY
Albion Park, N.S.W.

Inspection of exhibits by arrangement, phone (042) 71-3707

Correspondence: The Honorary Secretary,
Box 1036, P.O. Wollongong.
N.S.W. 2500.

STEAM TRAM & RAILWAY PRESERVATION (CO-OP) SOCIETY LIMITED
Parramatta Park Steam Tramway, Parramatta. N.S.W.

Steam Trams are operated on the 3rd Sunday of every month, from 1.30 pm to 4.30 pm.

The Society possess1 steam tram motor, 2 steam locomotives and 5 various trailer cars.
The surrounding parklands are suitable for picnics, barbecues, etc. and contain historical buildings.
Public transport is available. Rail to Westmead station then walk across parklands to the depot.

Correspondence: (SAE would be appreciated)
The Secretary, S.T. &. R.P.S.,
Box 108, P.O., Kogarah.
N.S.W. 2217.

SYDNEY TRAMWAY MUSEUM
Princes Highway, Loftus. N.S.W. (South Pacific Electric Railway Co-op. Society Limited).

Electric Trams from N.S.W., Queensland and Victoria.

Tram rides Sundays & Public Holidays (except Christmas Day and Good Friday) 10.30 am to 5.00 pm.

5 minute walk south from Loftus Railway Station.

Correspondence: The Secretary, SPER,
Box 103 G.P.O., Sydney
N.S.W. 2001.

VICTORIA'S TRAMWAY MUSEUM,
Union Lane, Bylands, Victoria.
(Tramway Museum Society of Victoria Limited).

Horse tram rides, museum site, trams, photos and other items on display, Sundays 11.00 am to 5.00 pm.

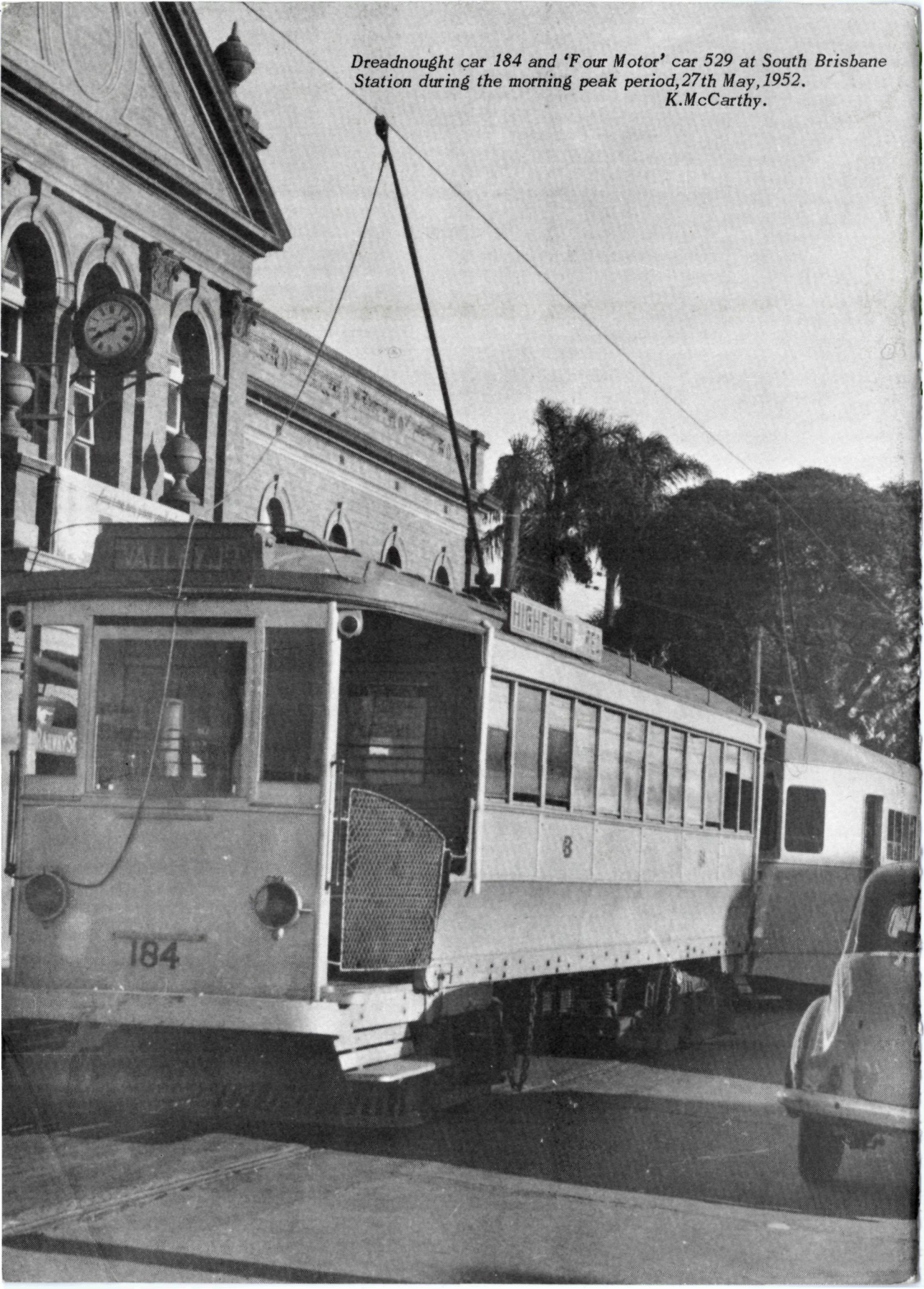
Correspondence: The Secretary, TMSV.
Box 4916, Mail Exchange,
MELBOURNE. Victoria. 3001.

WESTERN AUSTRALIAN TRANSPORT MUSEUM (INC)
Bus Operation, Bullens Lion Park, Wanneroo, W.A.
Tramway Museum, Cannington, W.A.

Correspondence: The Secretary,
Box 33 P.O., Maylands.
W.A. 6060.

AND BEST WISHES FOR

A HAPPY NEW YEAR



Dreadnought car 184 and 'Four Motor' car 529 at South Brisbane Station during the morning peak period, 27th May, 1952.
K.McCarthy.