

TROLLEY WIRE



No. 252

FEBRUARY 1993

\$6.00



BALLARAT HORSE TRAM COMPLETED

TROLLEY WIRE

AUSTRALIA'S TRAMWAY MUSEUM
MAGAZINE

FEBRUARY 1993

No. 252, Vol.34, No.1 ISSN 0155-1264

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Published by the South Pacific Electric Railway Co-operative Society Limited, P.O. Box 103, Sutherland, N.S.W. 2232

Subscription rates (for four issues per year) to expire in December:

Australia	\$23.00
New Zealand	\$25.00
Elsewhere	\$27.00

All correspondence in relation to "Trolley Wire" and other publishing and sales matters should be forwarded to:

P.O. Box 103, SUTHERLAND 2232

The opinions expressed in this publication are those of the authors and are not necessarily those of the publishers or the participating societies.

Typeset and Printed by Image Output

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FRONT COVER:

Ballaarat Tramway Co. horsecar No. 1 in Wendouree Parade during a trial run to accustom the horses before the inauguration of the horsecar on 7 November 1992.

CAROLYN DEAN

BACK PAGE:

TOP: A view of W4 class 670 in the depot yard following completion of its restoration at Haddon.

NOEL GIPPS

BOTTOM:

Newly arrived Nagasaki 1050 class 1054 and freshly repainted Sydney R1 class 1740 in the depot yard at Loftus on 14 December 1992.

ROBERT MERCHANT



Article author and horse tram restorer, Dave Macartney with some of his handywork.

WARREN DOUBLEDAY

THE HORSE TRAM JOB

By Dave Macartney

No day trip to Ballarat in the sixties was complete without a stroll along Anderson Street near the city centre and a pause outside No. 22 to gaze up the drive where the distinctive end of a horse tram could be seen. It was always a temptation to march up to the front door and request an inspection, but timidity prevailed.

A couple of decades passed, a tramway system closed, a museum operation opened, and a depot was expanded. A return to Anderson Street was in order, but this time to do business. The horse tram had been in the Leviston family's back yard for some sixty years, and had served as a

sleepout for Harry Leviston for thirty of those years. By 1985 Harry had moved back into the house, and the horse tram was now in use as a tool shed. The approaches to the family were successful - if we would install a new tool shed the tram was ours. The visible side and end of the tram had been painted over many times through the years, but the far side was hard up against the fence and was in its original colours, with the number '1' proudly displayed on the upper side panel.

Half a dozen of us assembled at Anderson Street on Friday 13 December 1985 for what should have been a simple lift with a crane, to find that the crane driver had taken one look at the cramped location and quit! A tandem trailer was hurriedly rented and the tram removed by a combination of leverage, winching, brute force and some bad language. By late afternoon No. 1 was securely locked up in the BTPS depot, perched on top of a cable tram truck, and seven years work could begin.

During the following weeks, some of the moss and dirt was removed from the unrepainted side to reveal the original lettering on the rocker panel, which hadn't even been visible previously. The iron roof which had preserved the original canvas one for sixty years was removed.

Little was done in 1986, as a major fund-raising campaign was launched. Many corporate and charitable organisations were contacted, and a few thousand dollars amassed. An application for some Bicentennial funds was made, which resulted in 29 months of correspondence, during which time our grant went from \$5000 to nothing to \$1000 and finally to \$1500. We worked for that!

Another horse tram existed, in a back yard in Sebastopol street, though not in very good condition. A visit seemed in order, but the tram involved (number unknown) had been burnt by the owner during the previous week on the assumption that it would be of no use to anyone. Always make your interest known!



A view of the end of the horse tram during its removal from the Anderson Street property on 13 December 1985.

DAVE MACARTNEY



The inside corner of the saloon complete with original varnish and cobwebs.

DAVE MACARTNEY

In December 1986, twelve months after acquisition, the first orders were placed. Sixteen new window frames were ordered from our joinery, and enquiries made to find suitable timber for the replacement main frames. Spruce was recommended, but in the event the most suitable timber available turned out to be Oregon. Sim's Timber Yard had just received a new shipment from the Weyerhaeuser Lumber Co. of Snoqualmie, Washington, so the necessary supplies were acquired from this. Railfan magazine for May 1986 had featured an article on the activities of the Puget Sound Railway Historical Association at Snoqualmie, which includes a operating railway museum with no less than three 2-6-6-2 Mallet logging locomotives and about ten trolley and interurban cars which operate Maitland-style towing a generator. A Mitchell Beazley Woodworking Instruction Manual was purchased, and was in constant use whenever two pieces of timber needed to be joined together in a correct manner. Fears that we would lack the necessary skills proved groundless, as the main requirements are

infinite patience and a fair bit of trial and error. Tramway museum people often say they lack the necessary technical skills - what they are lacking is application. There's always a solution.

Work officially started in March 1987, when the BTPS weekday team of Dave Macartney, Garry Wood and Jacqui Edwards commenced some serious dismantling. This trio, plus Warren Doubleday on weekends, would eventually carry out the job right through to the finish. It soon became obvious that the car was in much worse shape than it appeared. The main frame was heavily eroded away, while the side pillars failed to reach all the way down to the frames. The head coach builder from Sovereign Hill was called in for advice and condemned all four corner pillars, so Garry spent a day up at "The Hill" using their bandsaw to cut out a range of parts which would be required.

By April it was obvious that the roof would have to be removed. This was achieved by centring the body in the back door of the shed, hauling it up with a rope over the lintel, then



A rose between two thorns. The restoration team, Dave Macartney, Jacqui Edwards and Garry Wood. Why do they look so miserable?

PAUL McDONALD

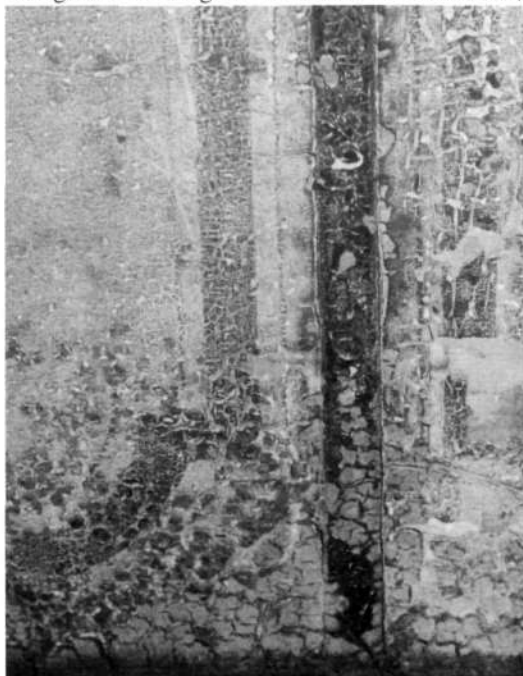
wheeling the frame away from under it. The idea then was to lower the roof and side pillars down and walk it in by standing underneath with our hands above our heads. Fine in theory, but in practice the roof was heavier than it looked, causing much buckling at the knees, while the widely varying heights of the crew caused it to tilt down alarmingly, transferring even more weight onto the shortest participant, the unfortunate Jacqui. It was finally brought down to floor level without too much damage to the uprights, though the door lintel has a bend in it to this day.

In the absence of the Stephenson style axle trees which bolt direct to the frame, a Melbourne cable truck was shortened in wheelbase to suit the new underframe which was now rapidly taking shape. Most of the truck was from cable trailer 88, which had been at Ararat since the late 'twenties, with some of the brake gear from 461, which had been located at Camberwell. While the truck was dismantled for refurbishment, the job of painting the eight coil springs was delegated to Jacqui. Dave

patiently explained to her what a time consuming job it was dabbling a thin brush into the inner recesses of the spring, but fifteen minutes later she was back - finished! Ever the lateral thinker, she had filled a tray with paint, rolled the springs up and down in it, and the job was done.

By the middle of 1987, the frame was on the wheels and the new floor installed, while Garry was laboriously hand shaping the four corner pillars, a very complex job, and fitting new sections to the bottom six inches of each of the ten intermediate side pillars. While used as a sleepout, a wardrobe had been installed which had required four of the curved roof ribs to be cut, so replacements, steam bent to the correct radius, were obtained from Tasman Industries in Echuca, who do this kind of work. A fifth rib was acquired to replace one burnt out when a lamp caught fire in the corner of the car many decades previously, during its service days.

In August, the roof slats were removed. It had been hoped to use these again, and many hours were spent stripping old varnish, but in the end they all had to be replaced due to splitting along the grain. The original slats were of bass wood,



The original lining on the waist panel, badly cracked and crazed but still clearly visible.

DAVE MACARTNEY

which is normally used for making cigar boxes. It is cut very thin and is so flexible that you can bend it through 180 degrees over your knee, even when it is a century old. The replacement was standard hardwood, cut as thin as possible, but no match for the bass wood in terms of light weight or flexibility. In the words of Henry Crunn: "You can't get the wood, you know". It looks all right though, especially since the shed guttering overflowed all over it during a rain storm, which gave it a nicely weathered appearance.

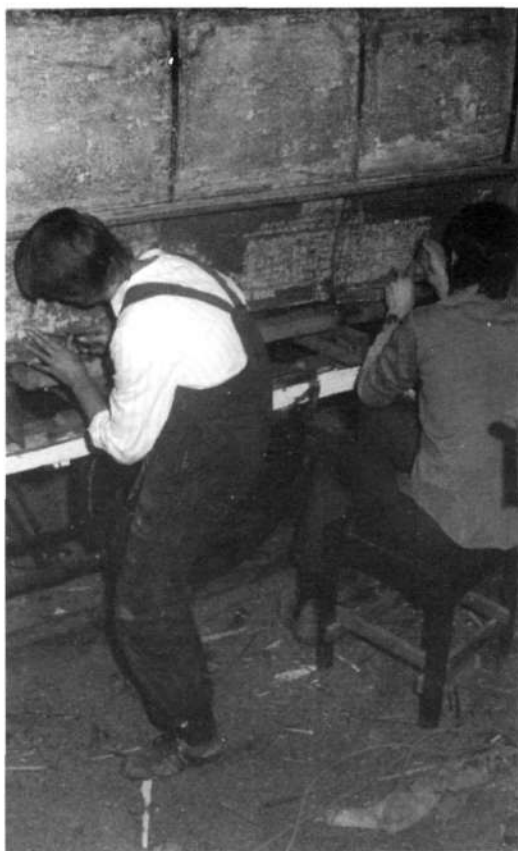
Varnish stripping was a curse. The whole interior was covered with many layers of old dark varnish, which had blistered terribly then hardened to an incredible degree. Heat gunning turned it into a soft, sticky mush while giving off acrid fumes; paint strippers removed minute quantities only, while dry scraping was as unpleasant as it always is, but on a larger scale. Often hours would be spent stripping varnish only to discover that the timber underneath was unserviceable and would have to be replaced.

By year's end, all four corner pillars were installed and the roof frame, minus the slats this time, was refitted, again via the door lintel. After a year's work, we had a frame held together by ropes, swaying in the slightest breeze, all ready for the body panelling to begin.

First to go in were the saloon doors, one of which had to be totally rebuilt below the window level. Plywood mudguards were installed over the wheels, and a start made on manufacturing a top deck seat out of bit and pieces removed from bogie car No. 39, which was just starting to be converted into the museum display area.

By March 1988, the windows were glazed and varnished, but now Garry left to get a real job, so things slowed down. The top rails over the windows were re-installed, as were the upper side panels, but the lower side panels and end panels were manufactured new due to the poor condition of the originals. The lower side panels were formed by attaching a single sheet of 4mm plywood to establish the curve, then laminating a second sheet over the top to give the necessary thickness, while gluing the two sheets together made the curve permanent.

Once the panelwork was installed, complete with hessian glued to the back to minimise



Uncovering the original lettering on the horse tram in December 1985.

DAVE MACARTNEY

rattling and drumming, the roof slats could go on and the windows fitted. The middle of the roof was pushed up into a curve with a screw jack, and reinforcing rods placed from bulkhead to bulkhead to hold the curve in order to absorb the weight of the top deck seat and passengers. New internal quarter panels were designed and installed where the oil lamps had originally been. Due to a total lack of information on the internal lighting arrangements, this has been omitted until such time as an oil lamp turns up. By early 1989, the cover strips were covering the joins in the panelling and the main body was virtually complete, but the hardest part was still to come.

So far, almost every job was one of replacement, with a life-expired pattern to work

from. Now we had to face the end canopies and spiral staircases, and design them as well as build them. Dave attempted the canopies and Warren the stairs, while Jacqui did the most sensible thing and quit! She would drift in and out of full-time jobs including motherhood, the most full-time of all, over the next few years, but always returning to the tramway for more part-time work, while even Garry re-appeared for the final stages in 1992, after becoming disillusioned with working for other people.

Sixty dollars worth of kauri was obtained for steam bending to the required contour for the canopy ribs, but only two ribs ended up being produced, the rest falling victim to snapping, twisting or being completely the wrong radius. No doubt steam bending can be learnt by trial and error, but it's an expensive business as the failure rate can be high. In the end, the ribs were built by buying some sheets of 4mm plywood, cutting them into strips, then laminating seven thicknesses together while bending the whole thing around a curved former with eight or ten G-clamps. With a lot of planing, shaping and filling, the ribs eventually assumed the appearance of solid timber. They proved to be both light and strong as well. The outer frame of

the canopies was also built up out of laminated plywood, the whole assembly fixed together, then slatted up, which required each slat to be individually tapered in order to preserve the correct appearance. All up, it took two years from start to finish to make up the canopies, with a lot of wasted material and time in between.

Meanwhile, Warren was grappling with the problems of spiral staircases. After copious calculations, a staircase was eventually built out of corrugated cardboard, which proved that these calculations, no matter how bizarre, were correct. Each of the seven steps was a different size and shape - it just doesn't work any other way. With the theories proven, the cardboard staircase was reproduced twice in metal, and access was finally gained to the upper deck, where canvassing of the roof was complete and the knifeboard seat was finally in place.

By now, 1991 had arrived and painting of the main body was under way. When the upper side panels had been stripped of all paint, one was found to have a drawing in indelible pencil of two bareknuckle boxers squaring off and a



Newly unearthed lettering which is of a quite distinctive style.

DAVE MACARTNEY

caption reading "A drunken man fighting a sober one". Obviously some late Victorian humour by one of the carbuilders while the boss was not looking. This now disappeared beneath primer, undercoat, and no less than seven coats of Marigold Yellow paint. The Geranium Red of the stairs and aprons took a similar quantity. Those basic colours so beloved in the 19th century take many coats before they acquire the necessary depth.

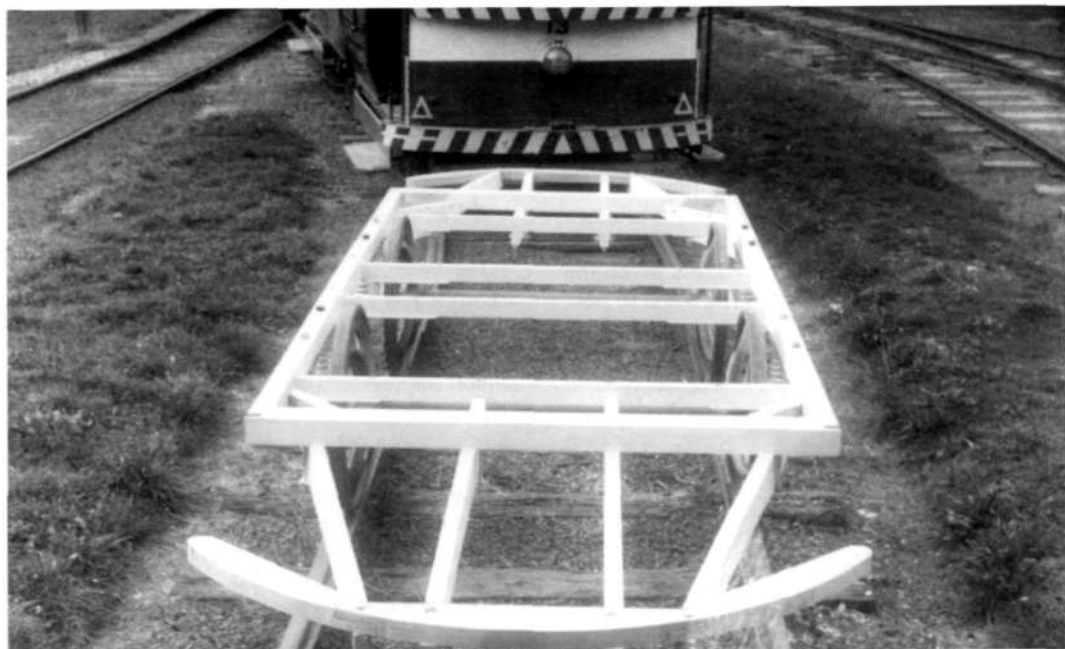
With the exterior coming along, it was now time to finish off inside. As no photographs or drawings existed, the interior seating was designed from scratch. Eventually, traditional slatted longitudinal seats were fitted, using some surplus ribs from electric cars to obtain the correct contour, with new slats. The end supports were fashioned from one of the original oak corner pillars, which blunted a couple of handsaws in the process. The intermediate supports were obtained by buying a couple of fancy staircase balusters and cutting them in two! Doug Brunker from Victor Harbor was able to provide a Duncan & Fraser bellcord bracket which enabled the required number to be reproduced locally.

By early 1992 the sunshade louvres were prepared. These were from our two cable trailers, as the original horse tram ones were in very poor shape. Many parts were similarly interchangeable; it would seem that the entire car-building industry of the 1880s worked to the one set of standards. These louvres were too fragile to withstand varnish removal by physical means, so chemical warfare was resorted to, and they were acid dipped. This is rather a last resort, being expensive - \$22 per shade - and causing a softening of the timber. It is difficult to get a quality varnished finish. Jacqui was now in the motherhood business and looking for some work to do at home, so the louvres were sent there for staining and varnishing. They were dried by hanging them on the clothes-line, to the astonishment of the neighbours.

By May, the painting had advanced onto the staircases and aprons, and some handrails were starting to appear. The more elaborate fittings were from the Beaumaris horse tram, augmented by standard rightangle steam fittings. With the handrails in place, the catwalks across the end canopies could be installed, enabling upstairs passengers to move

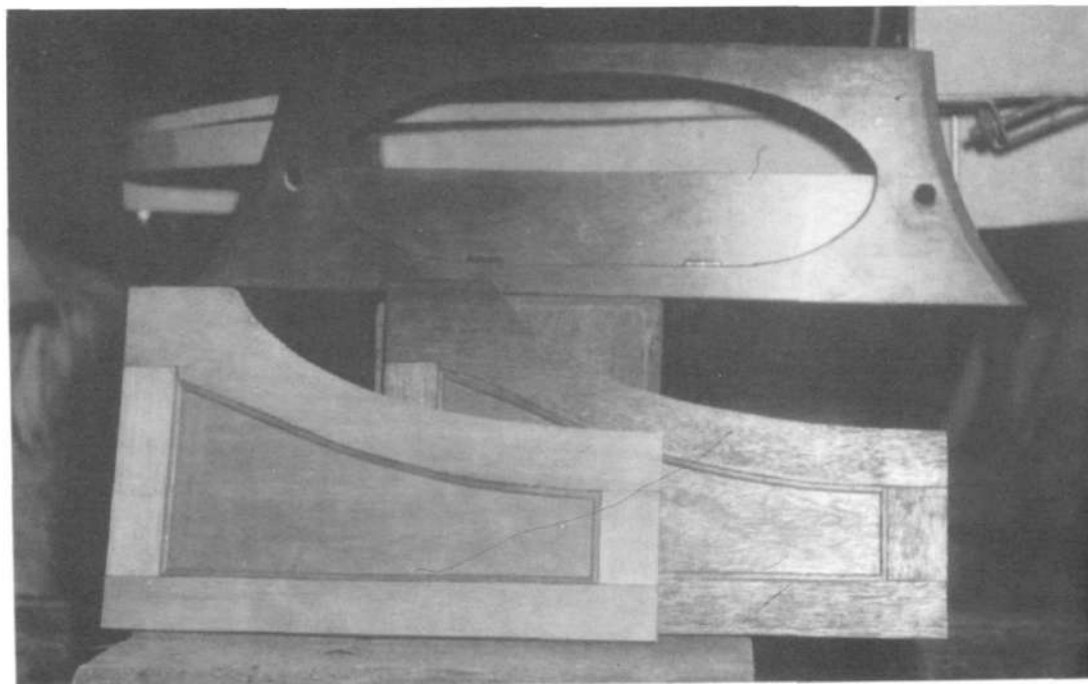


The original roof prior to dismantling. April 1987.



The completed oregon underframe in May 1987. The eight metal tee-shaped brackets which connect the cross bearers to the sideframes are the only original items below floor level.

DAVE MACARTNEY



Scratch-built meranti and plywood quarter panels and kauri ventilator panel, November 1988.

from one side of the car to the other. Handbrakes could now be connected up.

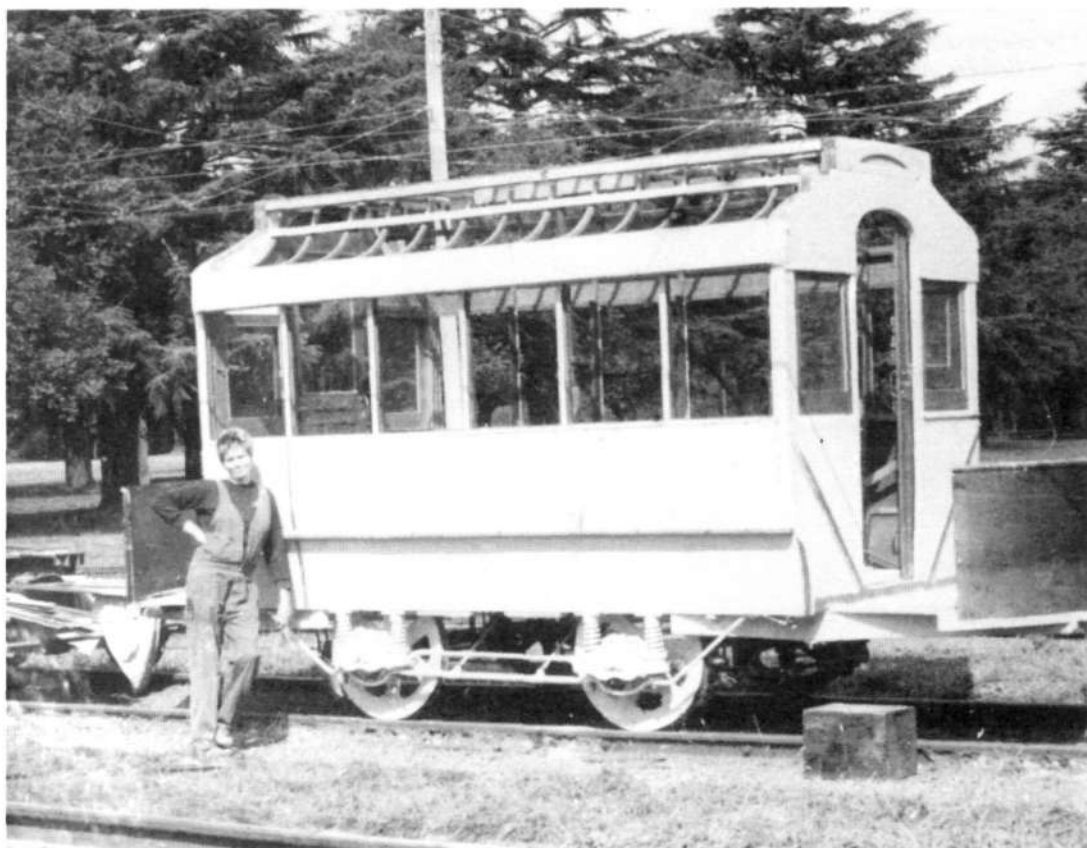
A launch date of 7 November 1992 had been fixed, so the usual last minute panic began. A pair of advertising boards were produced from scratch in three weeks to prevent those on the ground catching a glimpse of ankle from ladies on the upper deck. The only advertiser in horse tram days was Havelock Tobacco, but given the legislation in this area these days, we had to pass up a golden opportunity to sign up a paying advertiser. As our ESCo electric car is to be restored without its roof ads, it was decided to duplicate a couple of these on the horse car. Suttons Pianos and Carter & Werner, Opticians got the nod, both being out of business, although Society President Richard Gilbert owns a Suttons player piano.

Garry produced a pair of platform gates in two days from a couple of indistinct photos, then

started to assemble a corner of the horse tram as received, cobbled together from the many parts discarded during restoration. In fact, the final product is 10% original and 90% replacement; a dilemma for those people who lie awake worrying about such things.

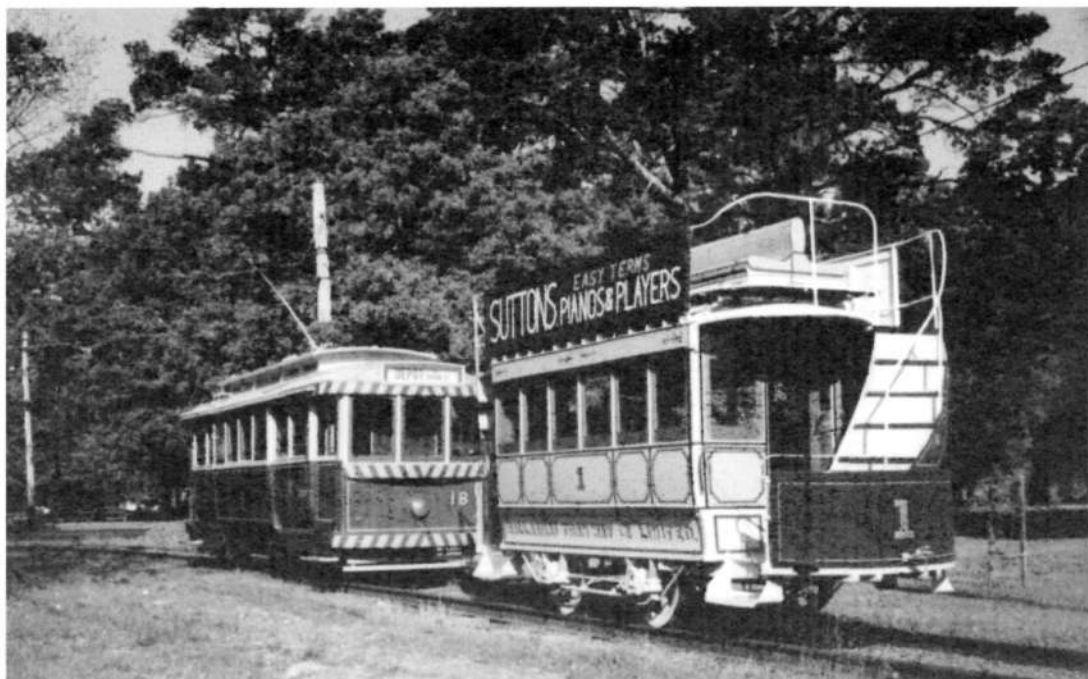
A visitor during the last week was Mr Harry Leviston, who had used the car as a sleepout for thirty years. He was most impressed with it all, though the fact that the car had been turned around since it left his yard had him a bit disoriented for a while. His seal of approval was much appreciated by the staff, and fortunately he was free on the Saturday and was able to be among those present.

November 7th proved to be a fortuitous choice for the launch, being the only fine Saturday for months. Professor Weston Bate spoke a few words, "Ajax" and "Hercules" clip-clopped off up the Parade, and the horse tram job was over.



Jacqui should be admiring the completed body panelling but appears to be admiring the photographer instead. Spring 1988.

DAVE MACARTNEY

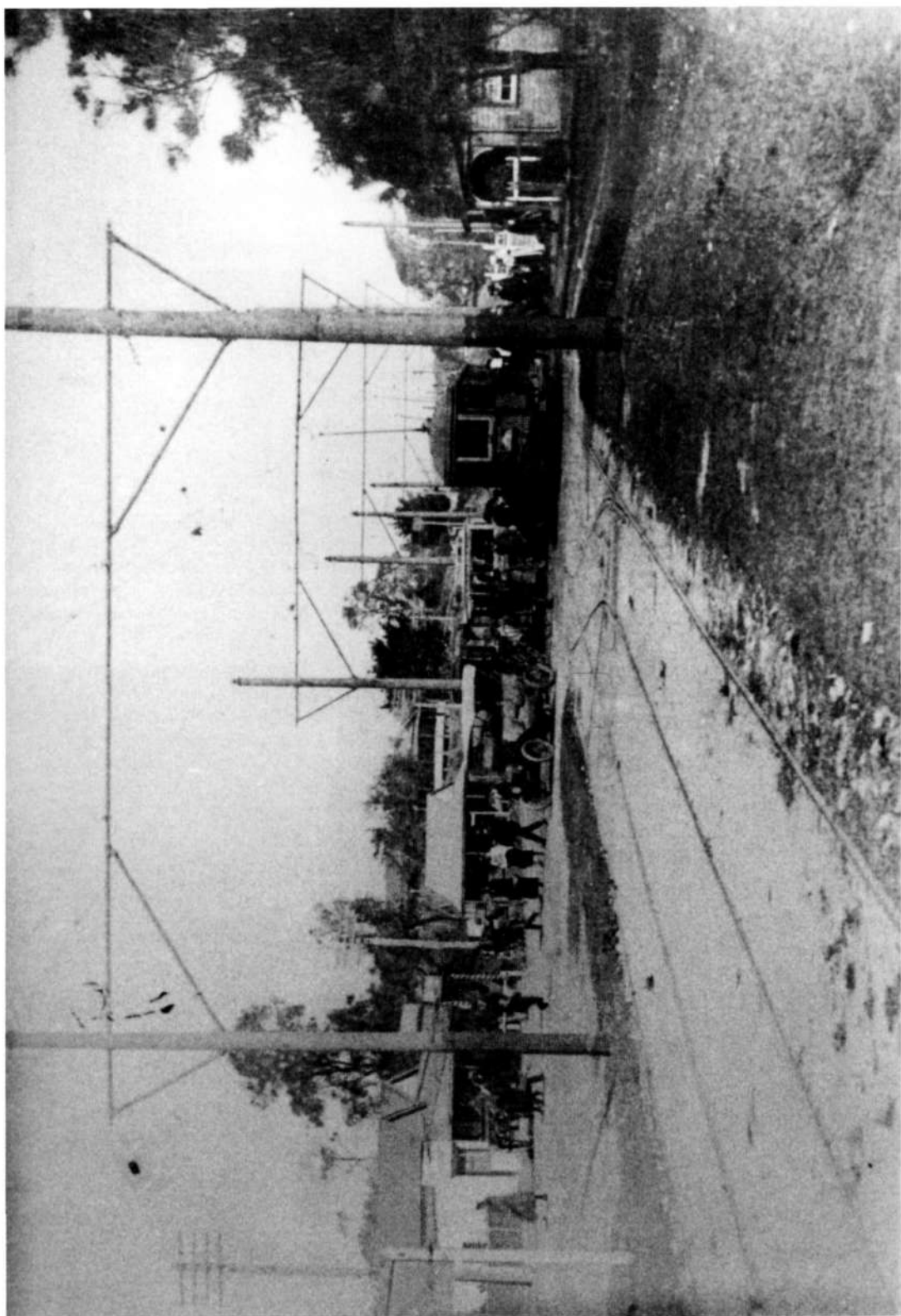


The old and the new. So sudden, in historical terms, was the revolution in land passenger transport modes during the final years of the 19th century and the opening years of the 20th, that a mere 26 years separates electric car No. 18 and horsecar No. 1.



Ballarat Tramway Company horsecar No. 1 of 1887 proceeding north in Wendouree Parade, drawn by two magnificent Percherons on 7 November 1992, the day of the car's launch. A horseless carriage is just visible behind the tramcar.

WILLIAM F. SCOTT



THE MANLY TRAMS

PART H. 1925 TO 1935

THE HALCYON DAYS OF THE MANLY TRAMWAYS

By K.A. McCarthy

The previous parts of this series have appeared in Trolley Wire for October 1979, December 1980, August 1981, June 1983, December 1984, February 1987 and November 1990. This section deals with the 'Halcyon Decade', the final period when major improvements continued to be carried out on the Manly Tramways prior to the downward slide to omnibus substitution in 1939.

Further Terminal Changes at Manly

No sooner had the major terminal changes taken place at Manly Wharf in August 1914 (TW Feb 1987) than increases in tram services resulted in the new facilities being inadequate.

Major property resumption would be necessary to carry out further improvements in the confined street spaces outside the Manly wharf entrance. During January 1917, Dr Arthur MLA requested the Minister for Public Works to receive a deputation about these matters. The resumption of the large Pier Hotel was part of the proposal.

The Secretary for Railways stated on 3 February 1917 that the Railway Commissioner felt no need at that time for property resumptions and maintained that the existing terminus arrangements were efficient.

Due to wartime conditions, the matter stood dormant until 26 June 1919 when Dr Arthur and a deputation waited upon the Chief Railway Commissioner to urge property resumptions and major changes in the terminal arrangements at Manly Wharf. On 25 August the Chief and Assistant Commissioners inspected the location and directed that the Traffic Manager and the Tramway Engineer prepare a report on the project.

The report, presented on 20 November 1919, made various suggestions:

a. The new track at the wharf should be constructed with 15 feet centres to facilitate loading.

b. Three tracks and additional crossovers should be constructed in Belgrave Street so that trams could be marshalled before reaching the passenger pickup point.

c. The tram traffic direction around the terminal loop should be reversed from anti-clockwise to clockwise to avoid up and down trams crossing each others' paths in Belgrave Street.

d. One track and one parallel siding to be reconstructed in the tramway reserve between The Esplanade and Gilbert Street, replacing the three sidings of 1914. The new track in this reserve should be located further west to provide a greater track length for standing room in The Esplanade.

e. Belgrave Street and The Esplanade to be widened to accommodate the improved trackwork.

The estimated cost of the project was:

Track and overhead wire	£5695
Street widening	£ 377
Total	£6072

Allowances were not made for property resumptions.

On 25 November 1919, the Government Real Estate Agent was requested to provide land resumption costs and expected income from the resale of surplus portions. A reply of 10

Narrabeen terminus circa 1916. Passengers are transferring from the tram to the Pittwater Motor Company bus for Newport.

V. SOLOMONS Collection

February 1920 estimated property resumption costs to reach £28,000 and to this figure a further £12,000 would be added as bonuses on renewal of leases. The total amount of £40,000 would be relieved by £3,500 as income from the sale of excess land.

Nine days later, the Railway Commissioner directed that the matter be held over for the time being until funds became available.

Dr Arthur MLA, together with fellow Members Messrs Scott Fell and R. Weaver, and accompanied by the Town Clerk and Mayor of Manly, again met the Minister for Works on 27 October 1922 to reopen the matter. This approach was successful as four days later the Commissioner asked the Minister for Works to consider resuming all of the Pier Hotel property opposite the Manly Wharf entrance.

On 23 November, information was received that the lease and brewer's 'tie' on the Pier Hotel would expire during September 1924. The Manly Council would take over the property and resell £11,000 not required for tramway purposes. The Tramway Department agreed to contribute £5,000 towards the council's costs. The Manly Council entered into an agreement on this matter on 3 May 1923.

Construction Commences

Hotel demolition commenced during January 1924, but as late as October 1924 the Tramway Engineer reported that portions of the land required for tramway relocation were not yet available. A further seventeen months were to elapse before track construction commenced.

By 1924, conditions at the old wharf terminus were chaotic during busy periods. The critical problems were revealed in a report sent to the Traffic Manager from the Tramways District Superintendent of North Sydney on 23 September 1924. On Saturdays and holidays it was necessary to use the West Esplanade as well as the cargo wharf track in East Esplanade as starting points for the seven trams which departed from Manly Wharf at the same time.

The critical periods were the departures at noon, 12.30pm and 2.00pm on summer Saturdays and at 8.40am on summer public holidays. In addition, five private motor buses also used the wharf entrance as a terminus. Three of these worked routes to The Spit while a

further two served the Bower Street area.

This report suggested that the tracks on the cargo wharf should be removed and relaid in East Esplanade so that road traffic would not be blocked if trams terminated in that location during busy periods. This proposal had been approved by Manly Council as early as 1915.

Details of the tramway goods service planned for Manly and centred on the cargo wharf were outlined in Trolley Wire for December 1984.

Traffic Manager Doran revealed additional information on this tramway goods service in a report of 24 February 1925.

"The siding at the Manly cargo wharf was constructed by the Public Works Department in connection with the Manly tramway extensions towards Narrabeen and a proposed tramway goods traffic scheme. This track had never been used, nor is it likely to be used for tramway goods traffic as the Port Jackson & Manly Steamship Company, which leases the wharf, is against loading tramway trucks along the pier. These trucks are inconvenient to other vehicles using the jetty."

The Traffic Manager recommended that the cargo wharf tracks be removed and relocated in East Esplanade for emergency services and, if required, for termination of the new Harbord service. The new siding should be situated in the middle of the roadway and extend for 200 feet, sufficient for parking two coupled sets of 80 seat trams.

By May 1925, the estimated cost of the terminal conversion had reached £6465 while the relocation of the cargo wharf track added £393 to this amount.

Railway Commissioner O.W. Brain approved the final track plans on 8 July 1925, the final layout having been approved by Manly Council two months prior to this date.

Tramway Engineer George Cowdrey reported on 20 August 1925 that the special crossings for the new Manly layout were being manufactured. Due to heavy seasonal traffic handled by the Manly tramways, the conversion had to be undertaken during a period when minimum chaos would result. The decision was reached that the project would be carried out after the

Venetian Carnival of 7 February 1926, with the new layout operational by Easter.

The permanent way gang commenced work on 8 February 1926 and the new track was cut in on Wednesday, 10 March. Although only one track was available for incoming trams in Belgrave Street by that date, trams were able to traverse the terminal loop in the new clockwise direction.

Although further major alterations were again proposed for the Manly Wharf terminus at various times between 1929 and 1937, the 1926 arrangements remained in use until the closure of the tramway in September 1939.

Water Sprinkler Car

By the close of the 1920s, major roadway reconstruction reduced the need for the water

sprinkler tramcars. By September 1929 eleven sprinkler cars were still in service in Sydney:

North Sydney . . 2 cars	Manly . . . 1 car
Waverley 1 car	Tempe . . . 2 cars
Ultimo 3 cars	Enfield . . 2 cars

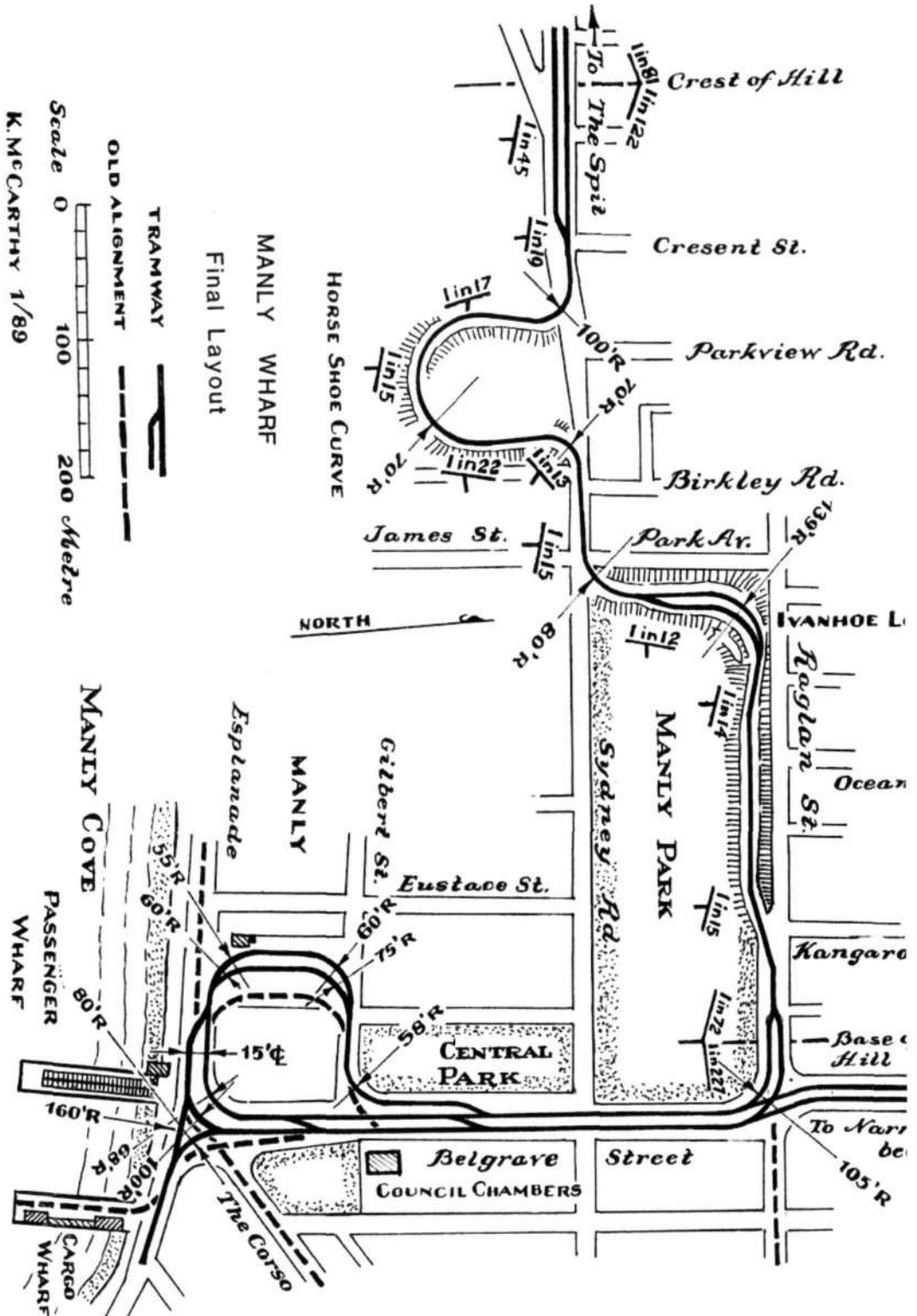
The identity of the Manly sprinkler car at this period is not clear.

On 3 November 1927, Manly sprinkler 28W, the only four-wheel car of this type on the NSWGT roster, was withdrawn from service and transferred to Randwick Workshops on 25 April 1928. The official records mention that it was replaced by a larger sprinkler car. Approval was given for 28W to be scrapped on 17 May 1930. The Brill 21E truck fitted to this car was retrieved for further use under rail scrubber (former D class) units.



Tram tracks through the Dee Why shopping centre circa 1935. This view looks northwards along Pittwater Road at the Pacific Parade intersection where the tram route crossed from the western to the eastern side of the road.

V. SOLOMONS Collection



Stoppage of Manly Ferry Services During Storms

Prior to the opening of the Sydney Harbour Bridge in 1932, the Port Jackson & Manly Steamship Company tended to operate their ferries as long as safely possible in heavy seas and cyclonic conditions.

During the late 1920s and early 1930s, Sydney suffered a phase of cyclonic and heavy sea conditions which caused Manly ferry services to be cancelled on several occasions.

This table gives details of the cancellation of Manly ferry services during the late 1920s:

Date	Holiday Period	Details
15. 4.27	Good Friday	Last boat operated at 9.00pm.
16. 4.27	Easter Saturday	6.20am was only trip operated.
17. 4.27	Easter Monday	Last boat operated at 9.30pm.
19. 4.27		10am was only trip operated.
5. 3.28		Five trips not operated in am business period. Three in one direction, two in the other.
19. 3.28		Four trips not operated in am business period, two in each direction.
21. 5.28		Two trips not operated during the morning.
14. 6.28		After the 11.30am trip, an hourly service operated throughout the day until the last trip at 10.45pm.
16. 8.28		Four trips not operated during the am business period, two in each direction.
25. 8.28		Three morning trips not operated.
30. 5.29		One morning trip not operated.

It must be emphasised that heavy sea conditions at the Sydney Harbour heads were not the only element which caused cancellation of ferry trips. A combination of surges and tidal conditions often created difficulties with mooring at Manly jetty. Where two or three trips were cancelled on specific days in the above table, these tidal conditions may have been responsible for the problem.

Ferry cancellations threw a heavy load on the Manly to The Spit tramway, as well as the North Sydney tram routes from The Spit to the inner harbour ferry wharves from where Sydney Ferries Ltd vessels could be joined for a calmer journey to Circular Quay.

Chaos of July 1931

On Monday evening, 6 July 1931, the Manly tramway system was thrown into chaos due to the worst gale to hit New South Wales since 1889!

A detailed report of the problem is presented here together with special arrangements which were gradually evolved for future emergencies. It must be kept in mind that after the opening of the Sydney Harbour Bridge in March 1932, and the extension of the North Sydney tramway services into Wynyard Station, the tram journey from Manly to Sydney was simplified, but a physical break still remained at The Spit bridge. After March 1932, the peak hour loads on the Manly to The Spit route suddenly reversed as many former ferry travellers elected to take the new land route to Sydney.

Although the Tramway Department endeavoured to prepare timetables to enable trams on this route to connect with trams on the North Sydney side of The Spit, as well as Manly ferry arrivals and departures at Manly Wharf, both needs were difficult to satisfy.

The tramway arrangements for carrying passengers by the land route during the cyclone of 6 July 1931 were far from satisfactory. The last ferry was expected to depart from Sydney at 6.35pm and from Manly at 7.15pm. To assist the trams, the White Transit Company of Flat Rock, Willoughby, was requested at 3.00pm to provide a bus to operate between the North Sydney and Manly side tram terminals at The Spit.

The regular ferry service had to be closed, however, at 4.30pm as the vessel had taken a heavy battering on the crossing. To assist the additional tramway staff, an extra motor bus was ordered from White Transit Co. By 5.00pm the Tramway Department had ordered three additional buses and these operated between Spit Junction and Manly.

Under normal conditions, fifteen trams were required to operate the Manly services between 4.30pm and 6.00pm. Five trams were defective due to water damage to motors, leaving six single cars to work the Manly to The Spit route and four on the lengthy Narrabeen and Harbord lines.

The gale reached its peak at 5.00pm and while traffic inspectors tried to direct passengers at The Spit crossing into buses, the passengers were more interested in seeking shelter due to instinct. In spite of all these problems, traffic was cleared from The Spit by 7.20pm. Due to power supply limitations, a maximum service of coupled cars working to a fifteen minute frequency could only be provided between Manly and The Spit. To clear the traffic at The Spit on this occasion, some services on the other Manly routes had to be cancelled to cater for traffic between 6.20pm and 7.00pm.

A second report prepared by the North Sydney District Superintendent differed from the first compiled by the Chief Traffic Manager E. Willis. It was claimed that at 4.15pm, seven of the 23 trams at Manly were defective. After 4.30pm, another six vehicles developed problems, leaving ten trams for peak services. The six trams operated on The Spit route were marshalled as two coupled sets and two single cars.

Passenger transfers across The Spit bridge were made in blinding rain and a fierce gale. People on the bridge were afraid to cross the short unroofed footway across the opening spans. Transport Commissioner S.A. Maddocks reported that no senior tramway employees were at their posts at The Spit at 6.45pm but platform tramway crews gave most satisfactory service during the emergency.

The two White Transit buses commenced operations between the south side terminus at The Spit, across the bridge to the north side terminus at Seaforth. The access road from the

northern bridge approach down to the former punt ramp was in such poor condition that after 5.30pm the buses operated directly from the south side of The Spit to Manly. Route telephones could not be used to co-ordinate these operations as the phone system was 'alive'. Two further buses from Mr Cook of Manly took up operation at 6.50pm and the fifth vehicle, obtained from Mr H. Bottle, entered service at 6.57pm.

The thirteen trams withdrawn from service on 6 July 1931 due to defects were:

3.00pm .. 1099, 1265, 1331, 1101, 1110, 1251
4.10pm .. 1109
4.30pm .. 1090
4.55pm .. 1214
5.00pm .. 1273, 1343
5.55pm .. 1108
6.00pm .. 1102

The following services were cancelled during that evening:

Dee Why Relief .. 3 cancelled
Narrabeen.. . . . 3 cancelled
Harbord. 1 cancelled
Total 7 services

Only four single trams were available for the heavy Narrabeen and Harbord services during the height of the storm.

The five buses and the following trams cleared the passenger traffic from The Spit crossing between 4.43pm and 7.05pm:

4.43pm .. 1103
5.00pm .. 1102-1108 coupled
5.20pm .. 1334
5.49pm .. 816
5.50pm .. 1208-1096 coupled
6.10pm .. 1346
6.28pm .. 1105-1090 coupled
6.35pm .. 1334
6.43pm .. 816
6.50pm .. 1208-1096 coupled
7.05pm .. 1346

In January 1932, the following buses operated in the Manly district:

Company and Route	No. of Buses
Manly West Bus Co. North Manley to Balgowlah and Pine Street, Manly	2
H.C. Bottle Manly Wharf to Narrabeen	4
C. Cook Brookvale to Curl Curl and Dee Why	2
North Harbour Bus Co. Manly to Cliff & Bower Streets Manly Wharf to Condamine Street, Balgowlah	1 2

removed the need to hire the few buses available from local private operators.

Organised Emergency Arrangements

On 21 June 1933, emergency arrangements to cover problems such as those experienced on 6 July 1931 were finally released.

When the ferry service was suspended, the North Sydney District Superintendent was authorised to provide six buses each carrying tram conductors. These would assist the Manly to The Spit tram services and operate as directed by the Inspector-in-Charge.

North Sydney Depot was to provide six O type tramcars to leave Wynyard for The Spit at 12 minute intervals from 4.31pm; this would strengthen the service on this route to a six minute frequency with the regular tramcars from 4.28pm. Additional services would be provided from Cremorne Wharf to The Spit

After December 1932, vehicles used on the new government bus service were available for emergency tramway replacements. This



Looking south towards Manly from Dee Why Loop. At this location the tram tracks crossed Pittwater Road at the Pacific Parade intersection. A police 'lockup' booth can be seen at right.

while a single tramcar would operate between Spit Junction and The Spit from 4.50pm to the close of traffic. The Cremorne line frequencies consisted of three divisions of coupled E class cars during normal peak traffic periods. This was to increase to six divisions when the Manly ferries were cancelled and three of these divisions would operate through to The Spit instead of terminating at Cremorne Junction (Military Road).

By 1932, the Manly to The Spit route could provide a ten minute service with coupled tramcar sets. The Manly Daily of 10 July 1931 had reported that, during the cyclonic period on Monday and Tuesday 6 and 7 July, only three trams were available to carry 1200 passengers! Buses would be the cheaper solution to supplement the Manly to The Spit tramway as an additional £500 was needed to install electrical booster equipment to increase tramway frequencies.

These emergency plans also directed that from 4.50pm one tram would be parked at the southern side of The Spit bridge and another on the northern side to provide additional shelter for waiting passengers. All staff were to be supplied with handlamps to direct the public.

Curl Curl (North Manly) Lagoon Bridge

The major cause of tramcar defects during the cyclone of 6 July 1931 was the North Manly or Curl Curl Lagoon bridge. Drivers were instructed not to cross the bridge or approaches when water reached a depth of 6 inches over the tracks.

The tramway crossing was situated parallel to and upstream from the road traffic bridge and consisted of two wooden trestle structures, one crossing an opening 47 feet wide, while the northern span crossed a 60 feet wide channel. The tramway negotiated these structures on gauntlet or interlaced track.

In 1919 a new bridge was planned by Warringah Shire Council. By July 1924 the estimated cost for a 56 feet wide concrete bridge was £9600, with an additional £4690 for relocating the tram tracks onto the new roadway and raising the low approach road on the southern side. In September 1924, Manly Council decided to delay action on this shared

project pending the clarification of the then-new Main Roads Bill.

In March 1920, Dr J.J.C. Bradfield was of the opinion that a single 70 feet channel opening would be sufficient on the new bridge instead of the two existing channels, providing the low southern approach was raised onto a causeway.

On 26 August 1935, Manly Council called a meeting to revive the North Manly bridge reconstruction project but the deputy Transport Minister refused to attend! An engineering report received by the Department of Road Transport and Tramways on 8 August 1935 stated that the trestle bridges were sound enough for a further twenty years of tramway traffic!

During June 1933, the following emergency arrangements were released for working traffic across the Curl Curl-North Manly bridge during floods:

When the water level reached marker posts situated at the end of the flood basin, the North Sydney District Superintendent was to provide three buses during normal traffic periods and six in peak hours. Local trams were to operate from Manly Wharf to the south side of the obstruction, at Manly Depot. Isolated tramcars were to work between Brookvale and Narrabeen. Buses would operate from Manly Wharf to Brookvale.

The buses would follow a diversion via Belgrave and Carlton Streets, East (North) Steyne; Greycliffe Street and Queenscliffe Road to Pittwater Road. Tramway conductors would be provided on each bus and ordinary tram fares charged. Prior to the introduction of government services in December 1932, relief vehicles to replace trams on the flooded Curl Curl Lagoon section were obtained from White Transit Company of Flat Rock, Willoughby.

Passengers with tram-ferry season passes were not required to pay on the replacement buses and would be issued a sixpenny ticket by the White Transit conductor. Those without passes were required to pay the bus conductor.

An archive note of circa 1931 revealed that the White Transit Company operated the following routes at that period:



Sydney O class 1109 crossing the Curl Curl Lagoon bridge bound for Narrabeen on 30 September 1939.

H. CHAMBERS

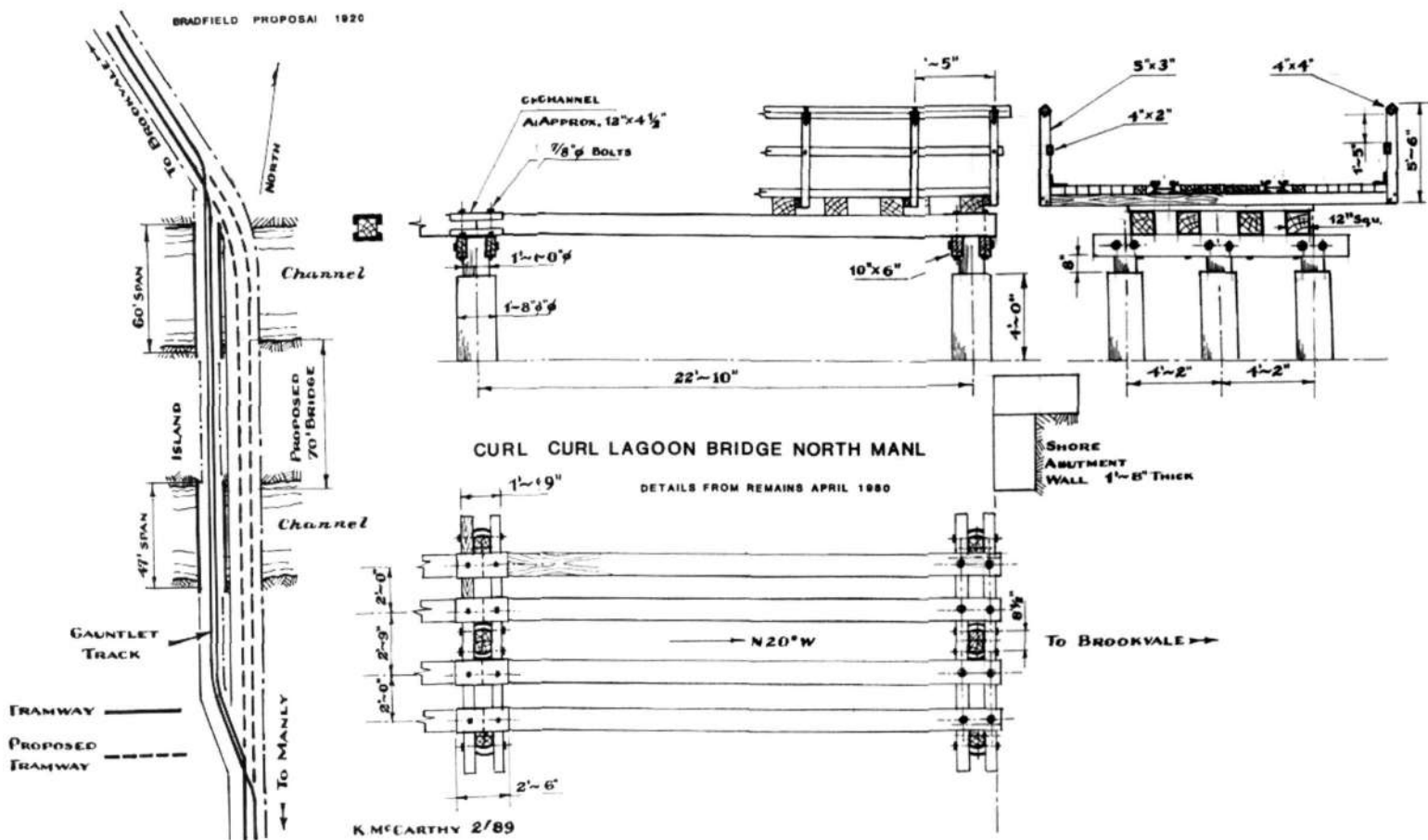
19 Balmoral to Milsons Point
 51 Chatswood to Milsons Point
 52 Chatswood to Spit Junction
 144 Manly to Spit Junction
 233 Edinburgh Road, Willoughby to Milsons Point.

The Horseshoe Curve

The single track sections at both ends of the Manly to The Spit tramway created operational headaches. The very steep nature of the terrain

at those locations prevented duplication of the track being carried out without resorting to heavy earthworks and some deviations.

As it left Manly, the route of The Spit tramway traversed the amphitheatre of Manly Park on heavy earthworks to gain the heights on a reasonable grade. Once Sydney Road was reached, an awkward horseshoe curve still



needed to be traversed to gain further altitude between Birkley Road and Crescent Street. During January 1921, the Tramway Engineer reported on action which could be taken to avoid the horseshoe curve and ascend the grade along Sydney Road. The horseshoe curve grade varied from 1 in 19.72 to 1 in 10.9 due to the 100 feet and 70 feet radius curves.

The grade in Sydney Road at that point was 1 in 8.75 but, if filled and cut back in places, this could be eased to 1 in 12.8 at a cost of £10,750. This deviation would shorten the tram route by 3 chains and eliminate the curve and maintenance costs.

The Engineer suggested that the cost could be shared on the basis of £6925 paid by the Railway Commissioner and £3825 by the council. The cost of duplicating that section of the single track tramway for a distance of 19 chains between Ivanhoe Loop and Crescent Street was estimated at £4800. This would include relaying 8 chains of existing track on new alignments.

The portion shared with Manly Council and other instrumentalities was based on:

Half cost of retaining wall	£ 600
Half cost of cutting and filling.	£1300
Half cost of water and gas alterations.	£ 225
Total of shared costs	£2125
Cost of track duplication.	£4800
Total cost to Tramways.	£6925

An income of £4820 was expected to be raised from land sales subdivided on the horseshoe curve tramway property. Tramway Traffic Manager Doran's attention was drawn to the fact that Manly Council had received a large loan to regrade Sydney Road between Crescent and Belgrave Streets, Manly. On 7 March 1934, Doran replied to the North Sydney District Superintendent that no further action on this track duplication would be taken.

In May 1937, the Balgowlah Progress Association requested that the 46 chains of single track between Crescent and Belgrave Streets be duplicated. Mr P. Timmory investigated this request and found that new levels in Sydney Road to avoid the horseshoe curve would cost £10,750, of which the council was expected to pay £3825. As the single track portion caused little delay to tramway traffic at

that period, Timmory suggested that the decision on this work be held over until a decision on the future of the Manly tramways concerning the retention or conversion to bus operation was reached.

Condamine Street Link

During September 1911, representatives of the Manly Municipal and Warringah Shire Councils attended a deputation with the Minister for Works at which tramway extension proposals were discussed. One proposal concerned a link route to branch from the Manly to The Spit tramway in Sydney Road at Condamine Street. The tramway would descend northwards down the latter thoroughfare to Lovett Street from where it would head north-east across the river flats and Curl Curl Lagoon to join the Manly to Brookvale route in Pittwater Road between Wakefield Street and Hope Avenue.

A detailed survey of this route was taken in January 1925 but no action resulted on either occasion. After the closure of the district tramways, this became a trunk route for Warringah bus services bypassing Manly destined for Wynyard.

Accelerated Services

By the close of the 1920s, private bus operations were causing serious reductions in tramway patronage. Bus competition was of major concern in the Manly-Warringah districts. Buses were able to reach out northwards beyond the Narrabeen tramline, which terminated at the lagoon bridge, and to serve new residential areas on the elevated locations situated some distance from the tram routes. Whereas the bus proprietors were once satisfied to conduct tramway feeder services, by the late 1920s many had extended their operations along the tram routes to Manly Wharf.

This competition with established government services was of concern to the State Government of that period, both Labor Party and the conservative United Australia Party-Country Party coalition.

The Labor Party occupied the State Government benches with Jack Lang as Premier from 1925 until 1927 and again from

1930 until 1932. The conservatives were in government with T. Bevan as Premier from 1927 until 1930 (Nationalist-Country Party coalition) and from 1932 until 1941 with B. Stevens and later A. Mair as Premiers.

Between June 1930 and November 1932, four Transport Acts were introduced:

- June 1930..... Transport Act
- August 1931..... State Transport Co-ordination Act
- March 1932..... Ministry of Transport Act
- November 1932.. Transport (Division of Functions) Act.

The last two were largely concerned with the logistics of controlling the State's transport undertakings. The 1930 Act resulted in the establishment of Transport Trusts in Sydney and Newcastle to regulate services. Under this Act, bus services were reduced and competitive services to government operations closed. The 1931 Act established a Board to co-ordinate competitive bus services. From 1 Curl Creek, bus operation in direct competition with tram or railway services were taxed one penny per passenger per section.

The losses on the Manly tramways during this period were:

Year ended	30 June 1929 .. £17,150
	30 June 1930 .. £34,816
	30 June 1931 .. £28,956
	30 June 1932 .. £19,835

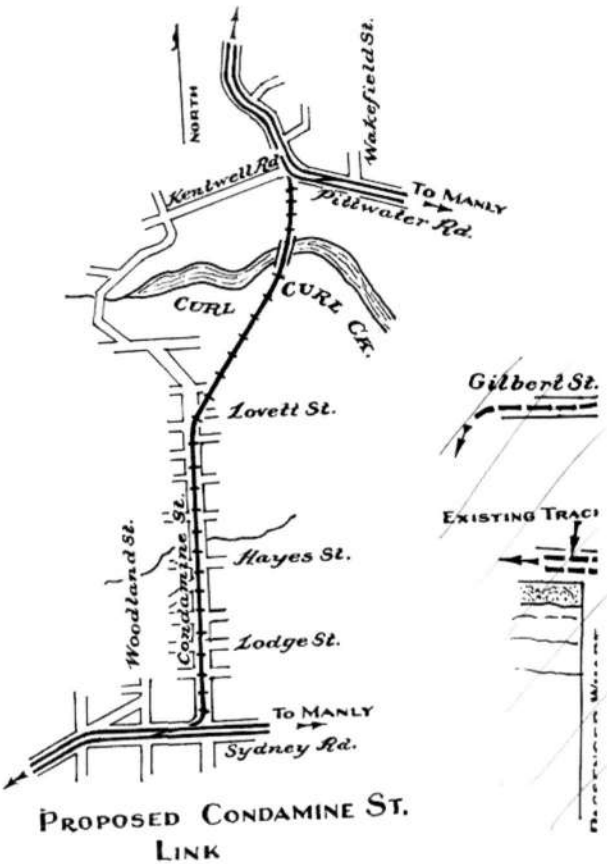
The first step taken to improve tramway patronage resulted in the introduction of off-peak, daytime concession fares from Manly to The Spit from 21 May 1930, and to Narrabeen and Harbord on 15 June 1930.

Comparative fare tables for the concession fare scheme were:

Section	Regular Fares	Concession Fares
1	2d	2d
2	3d	3d
3	4d	4d
4	5d	4d
5 and 6	6d	4d

This concession fare scheme continued in use on the Sydney tramways until the first post-World War II fare rise on 1 July 1947.

Mr R. Jamieson, Shire Clerk of Warringah Council, expressed concern in a letter to the Tramway Management Board during November 1931. His Council felt that the Shire residents were suffering from the cancellation of the private bus services and requested that Narrabeen trams depart first from Manly Wharf, an accelerated tram service be provided, and the single track between Brookvale and Dee Why be duplicated. C. Neale, the then Chief Traffic Manager, replied that it would be unsafe to speed up the tram services any further. Conditional stopping places had accelerated the tram services in the Manly district and finance was not available for the Brookvale to Dee Why extension.



Fare sections remained unchanged on the Manly tramways following the opening of each route, with the exception of The Spit line where the section point at Melbourne Street was changed to Condamine Street, and that from Maretimo Street, Balgowlah to Ethel Street from 21 May 1930.

Overlapping fare sections were introduced between Sydney Road and Ethel Street on The Spit line from 21 March 1932, between Brookvale terminus and the Council Chambers on the Narrabeen route from 30 January 1933, and between Manly Depot and Keirle Park (Curl Curl Lagoon bridge) from 16 March 1934. A temporary overlap section had been provided at Brookvale for the duration of the local show during 1932.

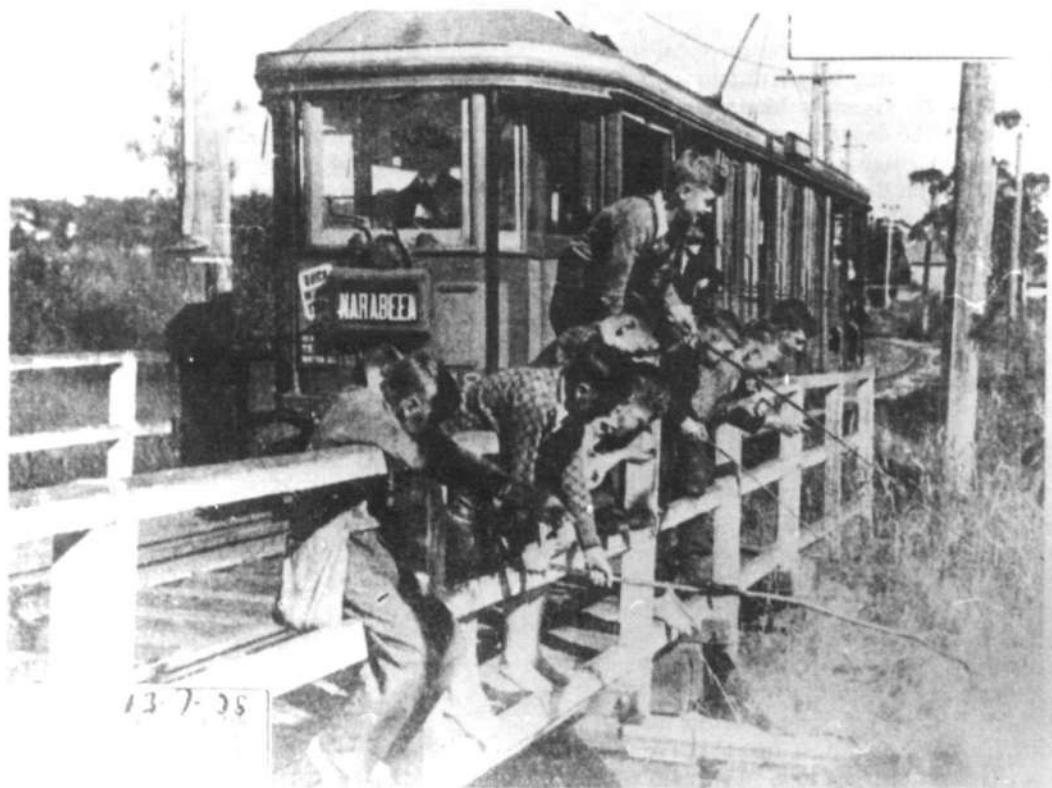
The crossover to turn back the Manly to Balgowlah tram service was situated at Woodland Street, one block west of the Condamine Street section point. The

Commissioner stated during August 1933 that passengers could travel the additional distance with a single section fare but they could not join the tram at Woodland Street for the return trip to Manly.

Shortly after the opening of the Narrabeen tramway, round trip tickets were issued which provided travel by train from Sydney to Hawkesbury River, launch to Newport, bus to Narrabeen, tram to Manly and ferry to Circular Quay. Following the introduction of a government bus service between Newport and Manly, these tickets were no longer recognised on the trams from 1 November 1935.

For a period from 27 June 1927, advertisements appeared on the back of tram tickets issued on the Manly tramways.

The conditional stopping places system, mentioned above by C. Neale in his reply to the Shire Clerk of Warringah Council, was



O class 1348 crossing South Creek bridge between Dee Why and Long Reef Loops, 12 July 1938.

DAILY TELEGRAPH photo

introduced on the Manly system from 6 September 1931. The local trams were fitted with internal pull cords and buzzers which enabled passengers to signal the driver when they wished to alight at a conditional stopping place. This system reduced the running time between Manly and Narrabeen from 39 to 37 minutes, a running time which had occupied 50 minutes in 1913. The Manly to Harbord journey remained unchanged at 13 minutes, but The Spit route, which originally required 25 minutes, was reduced to 20 minutes.

With the elimination of competitive bus operation along the tram routes in June 1930, local Progress Associations, especially those situated along the Narrabeen route, agitated for improved tramway services.

During December 1930, Mr Reid of the Collaroy Progress Association complained that the short distance trams to Balgowlah (Woodland Street) and Harbord departed ahead of the Narrabeen and The Spit trams from Manly Wharf during the evening peak period. These trams, catering for local traffic, held up the following longer distance cars. The Secretary of the Tramway Management Board replied that if the departure order was reversed, the long distance trams would be held at the first passing loops on the single track sections and this would not bring about a reduction of the journey times!

Mr Harry Walton of Narrabeen perhaps voiced the best argument. In a letter to The Sydney Morning Herald on 10 November 1931, he felt that, as the bus services had ceased operation, the Narrabeen tramway service should be speeded up. He concluded, "Forty minutes to do six miles is too absurd for words!"

From Wednesday, 25 November 1931, five Narrabeen trams were arranged to depart from Manly Wharf during the evening peak period ahead of the Dee Why cars. This applied to the 5.29pm, 5.46pm, 6.00pm, 6.16pm and 6.32pm departures. These trams carried the supplementary sign "FIRST STOP DEE WHY" and did not set down passengers before Dee Why Loop. A minimum adult fare of fivepence forced the short distance local passengers to use the following Dee Why tram.

Although the Daily Telegraph stated that the new arrangement reduced the journey time by

15 minutes, the actual saving was five minutes. The time from Manly to Narrabeen ranges from 31 to 33 minutes, or 16 instead of 21 minutes between Manly and Dee Why Loop.

This accelerated service was introduced for a trial of one month. It proved so popular that it became permanent from 19 February 1932 and was extended to the Saturday mid-day peak period from 27 August 1932.

The tramway improvement scheme also included a combined tram and ferry concession ticket. These weekly tickets were introduced from 1 May 1931. The cost varied according to the number of tram sections travelled. Rates were based on the cost of sections travelled over six days less 10% while the ferry component was also reduced by 10%. A one-tram-section season tram-ferry ticket cost five shillings and eightpence as against six shillings and threepence. This was based on six return trips by tram totalling two shillings less 10% = one shilling and tenpence and weekly ferry fares of four shillings and threepence less 10% = three shillings and tenpence.

With the introduction of the passenger tax on private buses from 1 November 1931, H. Bottle's White Bus service announced on 9 December 1931 in the Manly Daily that local bus services would be reintroduced from Thursday, 19 December, connecting with ferries at Manly Wharf.

The fares, including tax, would be:

Manly to Condamine Street . . . 4d
 Manly to Dee Why 6d
 Manly to Collaroy 8d (previously 9d)
 Manly to Narrabeen Tram Terminus. . . 10d (previously 1/-)
 Manly to Narrabeen Peninsula. 1/-

Intermediate sections were:

1st section 4d
 2 sections 6d
 3 sections 8d
 4 sections 10d
 5 sections 1/-

This advertisement concluded with the message: "We are looking forward to continued support of our patrons and assure them that the same courteous and dependable service will be given by our staff."

The Tramway Traffic Manager reported on 14 January 1932 that the reopening of Bottle's bus service had reduced patronage on the Narrabeen tramway by 36 passengers per trip during business hours. The Narrabeen Peninsula bus service, however, was withdrawn on 15 February 1932.

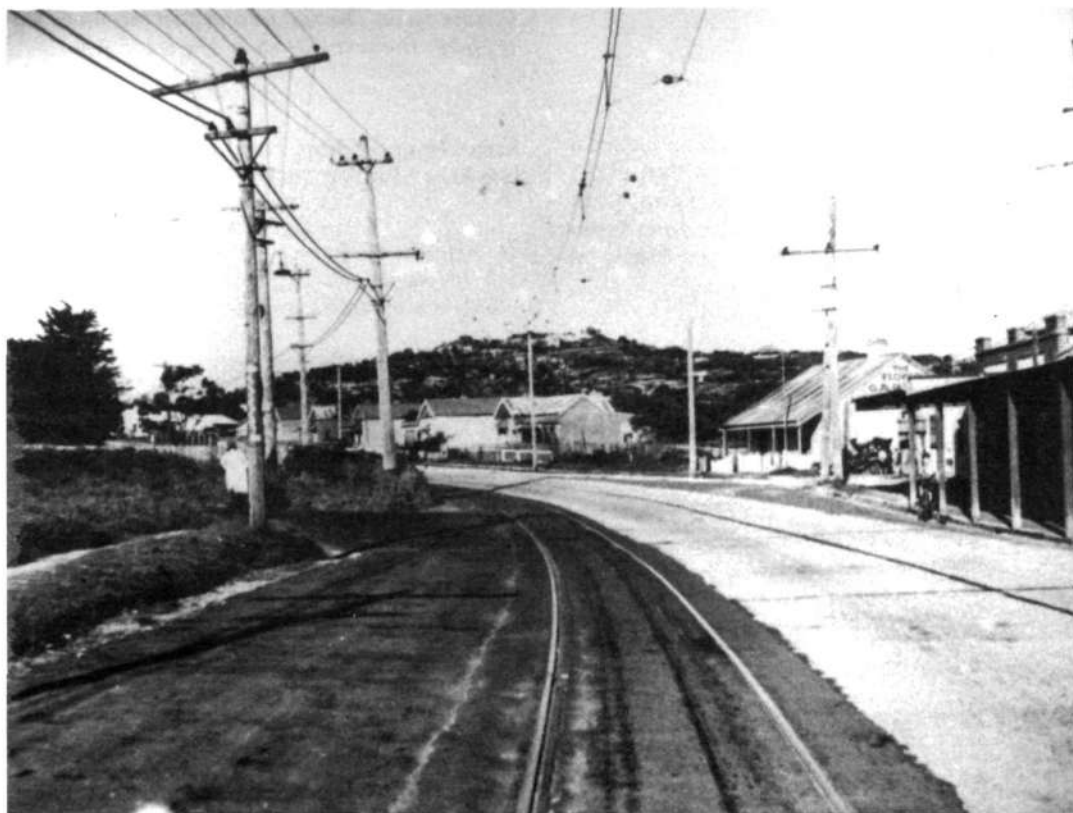
During March 1932, the northern progress associations requested non-stop accelerated tram services on the inwards journey during the morning peak traffic period. Such an accelerated operation was difficult to provide due to passing loop restrictions on the single track. Any inwards acceleration would result in passengers reaching Manly Wharf early and then be subject to a five minute wait for the

ferries.

Two weekday trips for Narrabeen had been timetabled to depart five minutes later in the morning peak period since the private bus services were curtailed. These were the 7.15am and the 7.27am departures. Relief trips left Dee Why Loop ahead of the Narrabeen cars collecting Brookvale and North Manly passengers.

Manly to The Spit Problems

The opening of the Sydney Harbour Bridge on 20 March 1932 resulted in a change of travel habits for many people living along the Manly to The Spit tram route. They reversed direction to join Wynyard-bound trams at the Mosman side of The Spit.



Pittwater Road, Brookvale, looking towards Dee Why at the Victor Road and West Street intersection about 1930. The side of road location of the tramway is evident and the catenary overhead wiring is clearly visible.



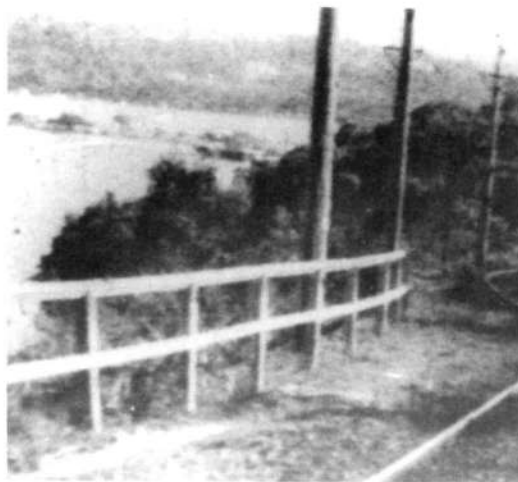
O class car at The Spit terminus on the Manly side of Middle Harbour taken from The Spit bridge.

During 1933, requests were made to introduce a first stop Condamine Street (Balgowlah) accelerated service during the evening peak period on trams bound for The Spit from Manly. This caused a review of the Manly to The Spit operations.

Scene from a 9.5mm home movie taken by the late Stan Madden during 1938.

O class car in the new green and cream colour scheme approaching The Spit terminus on the Manly side of Middle Harbour.



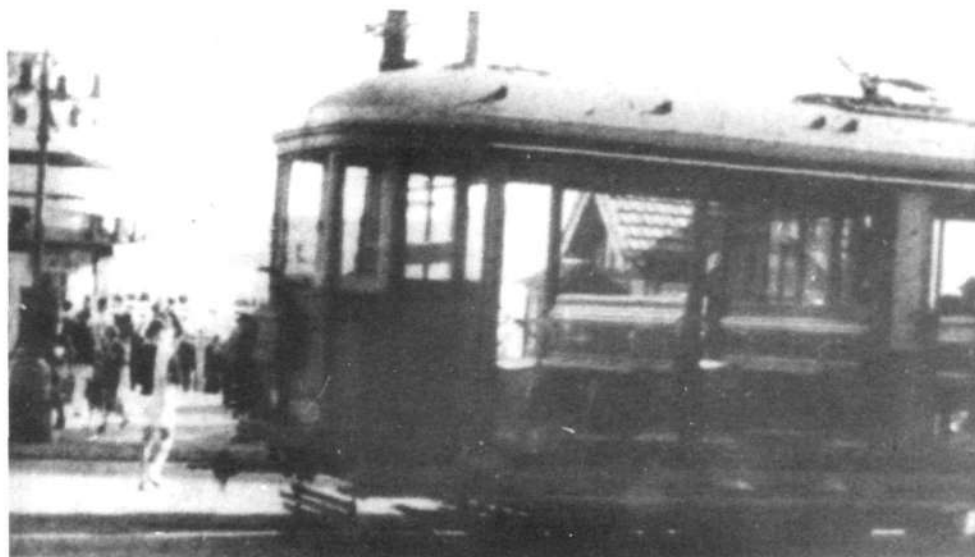


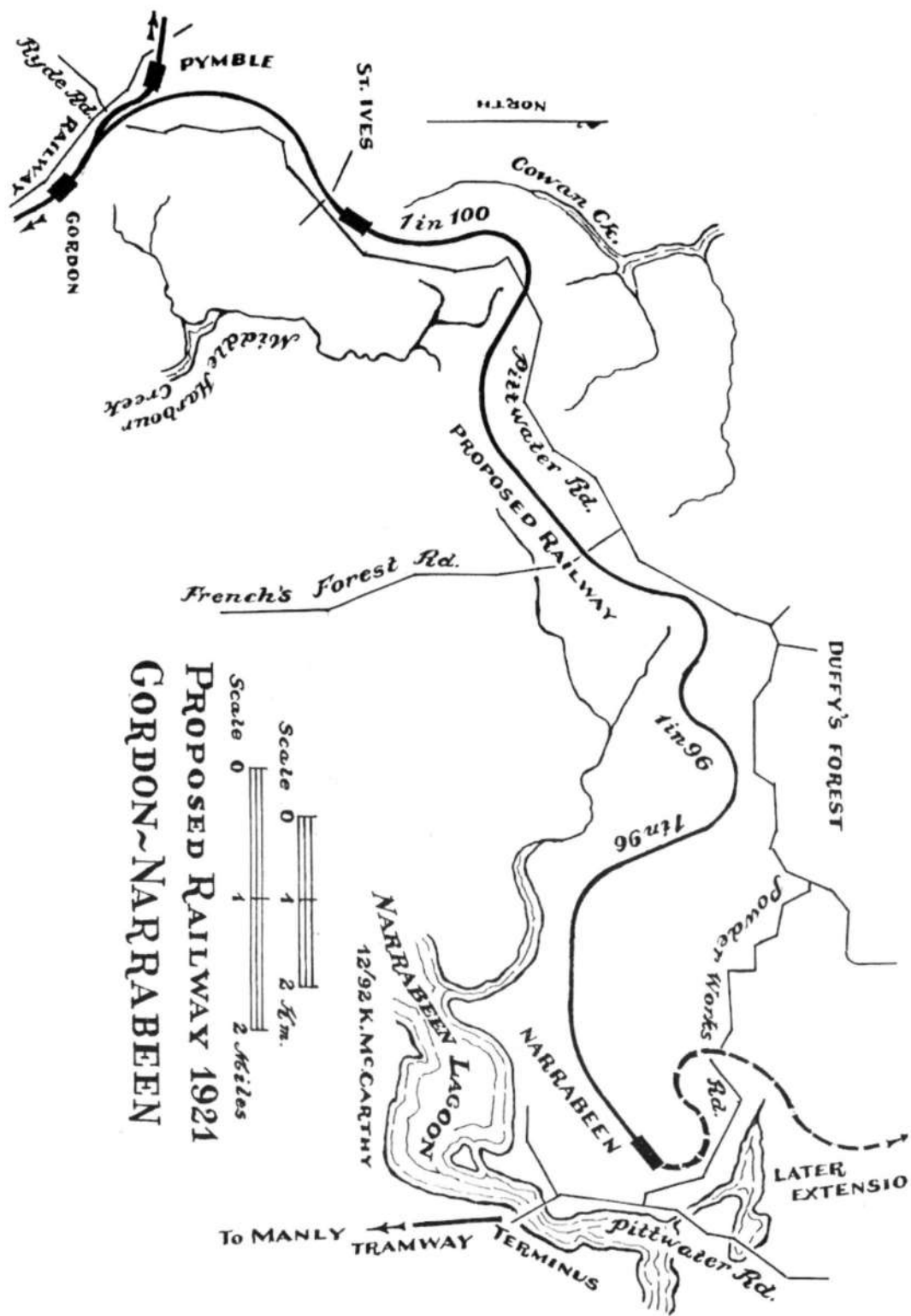
Looking towards The Spit from Parsley Loop in the moving tramcar.

The conductor comes to collect the fares near Parsley Loop. The Spit is in the background.



O class car at Manly Wharf.





Thursday 17. 8.33

Ex Manly Destination	Passengers at West Street	Passengers at Ethel Street for The Spit	No. of Tram Seats
5.09pm Ethel Street	27		160
5.09pm The Spit	19	46	80
5.33pm Ethel Street	33		160
5.33pm The Spit	27	60	80
5.53pm Ethel Street	37		160
5.53pm The Spit	30	67	80
6.04pm Ethel Street	30		160
6.04pm The Spit	14	44	80
6.18pm Ethel Street	24		160
6.18pm The Spit	4	28	80

Tuesday 29. 8.33

Ex Manly Destination	Passengers at West Street	Passengers at Ethel Street for The Spit	No. of Tram Seats
5.09pm Ethel Street	23		160
5.09pm The Spit	19	42	80
5.33pm Ethel Street	21		160
5.33pm The Spit	16	37	80
5.53pm Ethel Street	25		160
5.53pm The Spit	26	51	80
6.04pm Ethel Street	18		160
6.04pm The Spit	15	33	80
6.18pm Ethel Street	27		160
6.18pm The Spit	17	44	80

On 1 April 1935, non-stop peak services were finally introduced on The Spit route during the evenings. All Spit trams departing from Manly between 5.00pm and 6.30pm Mondays to Fridays did not set down passengers before Condamine Street, Balgowlah. A minimum fare of threepence was charged on these trams to discourage passengers for first section stops from boarding the car.

The final part of this history, which has been prepared over the lengthy period of ten years, will appear soon. This will deal with the gradual decline of the Manly system and its' closure on 1 October 1939. The final part also includes a section on post-1939 activities in the form of an epilogue. When the writer assembled the notes for the first article on this topic, which appeared as "Trams to Pittwater" in *Electric Traction* for May and June 1961, an active 'Railway for Warringah League' gave some hope for the establishment of an electric railway into the territory once served by the Manly tramways. More than thirty years later, the return of rail transport to Warringah seems as remote as ever, despite the interest of the North Sydney, Mosman, Manly and Warringah councils in a light rail system to serve the peninsula area.

HERE AND THERE

NEWS ITEMS OF INTEREST FROM ALL OVER

Perth's Northern Railway Opens

The Perth-Joondalup section of the \$276 million, 29km Northern Suburbs Railway was officially opened by the Premier of Western Australia, Dr Carmen Lawrence, on Sunday 20 December 1992.

Following a commissioning ceremony at Perth Station, 900 invited guests travelled up the line on three special four-car electric trains. Stops

were made at the three completed stations - Leederville, Edgewater and Joondalup - which were also officially opened by the Premier. Hundreds of people turned out at Leederville and Edgewater, while thousands were at Joondalup for the Festivities which included fireworks and a rock concert.

A limited public service called "Discoverides" - stopping at the above three stations only - commenced on 21 December, with trains

leaving Perth every 30 minutes between 9.25am and 2.25pm daily. This will operate until the line's full high-frequency service and feeder-bus system are launched on 7 March following the completion of the other four stations at Glendalough, Stirling, Warwick and Whitfords.

Construction work on the line moved at a furious pace in the latter part of 1992. Track-laying began three months behind schedule in July, due to delays in the widening of the Mitchell Freeway at the Perth end, and was completed just three weeks before the opening. The overhead power-supply masts were erected before any track was laid, and this enabled the wiring to be completed on schedule. Testing of the line, and driver-training, began on 14 December.

Trains travel at speeds of up to 110km/h on the new line, which for most of its length runs down the median strip of the Mitchell Freeway. The

speed limit for the adjacent freeway traffic is 90km/h. Transperth forecasts that patronage on the new line will be 40,000 to 45,000 each weekday within three months of the commencement of the full service. This is slightly more than the combined patronage of Perth's other three suburban lines to Armadale, Midland and Fremantle.

Melbourne News

Tuesday, 22 December saw the opening of the 1.2km \$4.89 million extension to Airport West. First Tram honours went to Z1 class 60, leaving the terminus for the city at 5.27am, while the second tram was B2 class 2053, the first tram of that class to carry passengers on route 59. An official opening took place later in the day, with 2053 leaving the depot at 2.00pm, arriving at the new terminus at 2.26pm. Speeches were made by State Transport Minister Brown and a Federal MP, although Mr Brown's words were



With the Perth skyline in the background, the first of three special four-car trains approaches Leederville Station on opening day, 20 December 1992.

MICHAEL STUKELY



largely unheard owing to interjections from a small group of anti-government demonstrators. The ceremony was somewhat low key, as the work was initiated by the former Labor Government and was Federally funded.

Preparations prior to the opening included the new transfer of five B2 class trams to Essendon depot, training of crews in this type tram, cleaning the rails of the new extension, and testing of the route for pantographs. On 8 December, 2060 tested the overhead as far as the old terminus, while transfer of B2 class to Essendon took place as follows: 2060 on 15 December, 2003 and 2004 on the 17th, with 2053 and 2055 on the 21st. Former Sydney scrubber car 11W became the first tram to the new Airport West on the morning of 17 December. Soon after the track was cleaned, Z2 class 176 and B2 class 2003 travelled to the new terminus, although the reasons for their journey is not known. No extra trams have been provided for the route, the two minutes and one intermediate stop in each direction being absorbed from recovery time.

The scene at Leederville Station - first stop on the line -during its opening ceremony on 20 December 1992. The Premier of WA, Dr Carmen Lawrence, can be seen in front of the black screen on the platform.

MICHAEL STUKELY



The first train waits at the platform during the opening of Leederville Station on 20 December 1992. The leading cars (AEA 222, AEB 322) were used on the COTMA Conference tour to Armadale on 30 May.

MICHAEL STUKELY

No extra B2 class cars are expected for service until a new scissors crossover has been installed in Elizabeth Street, City, north of the existing crossover, allowing for greater terminus space.

By mid-December, earthworks for the extension of the East Burwood line had reached Blackburn Road.

Trackwork

Three weekends in November and December saw St Kilda Road services disrupted due to trackwork. These were 7/8 November, 5/6 and 19/20 December. Buses were used in place of trams on the affected sections, while on the last occasion trams were diverted via Kingsway and back to St Kilda Road, circumventing the work site. No extra running time was allowed for this detour and services were subject to considerable delays for much of the weekend.

The work consisted of replacing some of the worst patches of worn rail and broken rail

joints. The patches ranged from about two metres up to ten metres in length, although a few longer sections were also renewed. With much of the track between Flinders Street and Commercial Road totally worn out, it will be a long time before all the patches join up to once again provide a smooth ride.

Services

As a cost-cutting measure, on 6 December the new Victorian Government introduced new permanent rosters, which had been normally used in the quiet post-Christmas holiday period when passengers and road traffic are at a minimum. Requiring a few less staff, the reduced running times allowed for a service just a little under the normal in peak hours. However, the use of these timetables in the pre-Christmas rush period resulted in considerable late running on most routes. It was not unusual for trams to leave Domain Road on outbound trips in time, and return to Domain Road on the inbound trip up to thirty minutes late. On just



2060 has been allocated to Essendon Depot and is shown at the new terminus of the Airport West extension on 24 December 1992.

RAY MARSH



2055 runs towards the city along the Airport West extension. Essendon Airport is in the background. 24 December 1992.

RAY MARSH

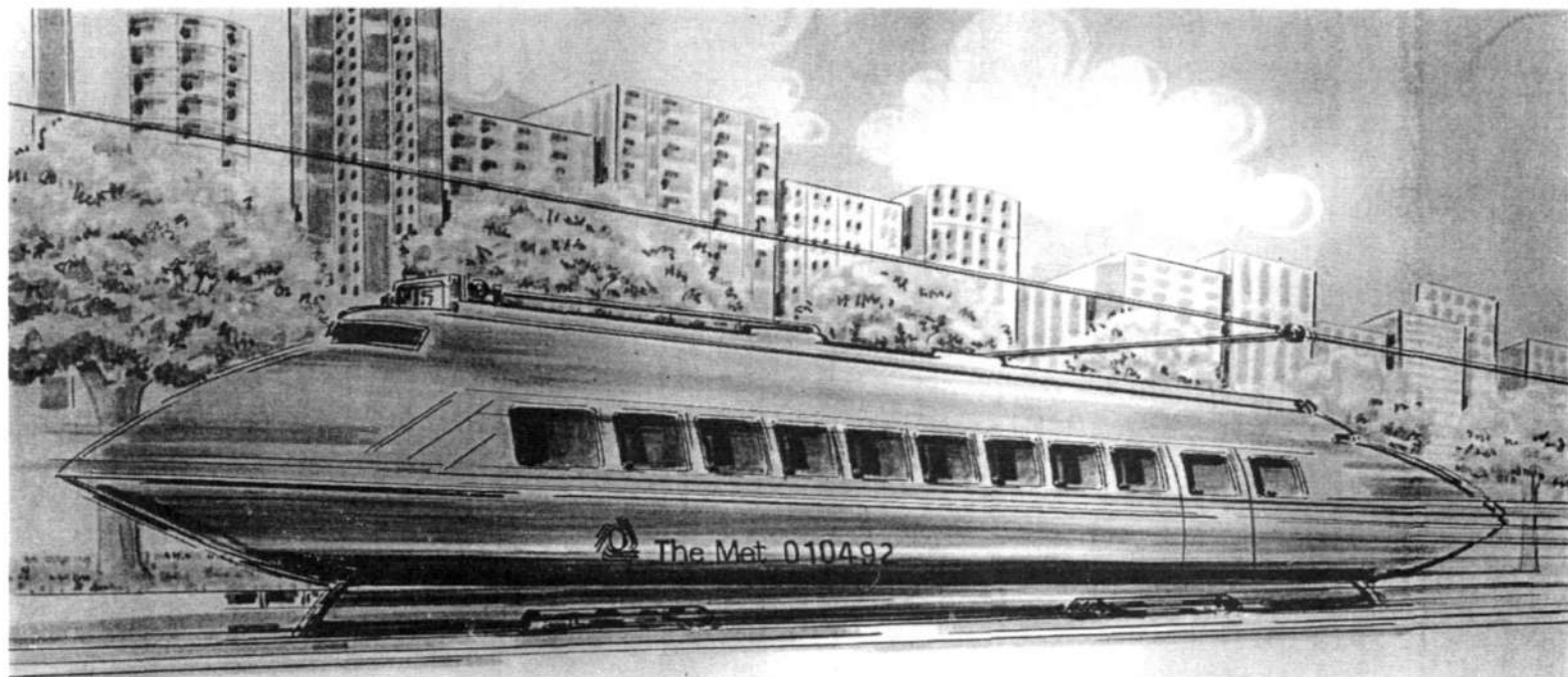


Excavation work had reached Blackburn Road on the East Burwood extension works by December 1992. The existing East Burwood terminus is at the top of the hill.

RAY MARSH

Get the bullet in St. Kilda Road.

TROLLEY WIRE



It's the only way to get to the city. Melbourne's New Bullet Tram. You'll want to be taken for a ride.

It hits the rails soon and it'll take you from the top of Swanston St. to the St. Kilda Junction in just 62 seconds.

That's at least 10 times faster than usual.

When to get the Bullet.

The tram will leave once every hour. To make the trip as smooth as possible, traffic lights will be synchronised

to provide a non-stop passage down Swanston Street and St. Kilda Road.

Other trams will be rescheduled to provide a clear route for the Bullet Tram.

Bullet safety.

There's no safer way to travel. The Bullet features inertia seat belts and is equipped with safety air bags.

When maximum capacity is exceeded, passengers

simply sit on another passenger's knees for the duration of the journey. This will ensure a more cushioned ride.

Bullet proof tracks.

The new Bullet Tram tracks will be insulated with rubber reducing the danger to pedestrians of foot burn.

The Bullet Tram. It's simply a better way.

Very Fast Tram Authority.

FEBRUARY 1993



The new Thornbury Junction being installed over the weekend of 28/29 March 1992. This view is looking south-west on Sunday 29 March with concreting in progress.

PETER DUCKETT

one day in December, 259 services were terminated short of their intended destinations on St Kilda Road services alone. In the peak hour, one tram in five actually made the complete journey to Bundoora on some days.

By early January, the timetabling section working overtime making new rosters which basically reflect the present service frequencies, but with increased recovery and running time. The frequencies of the past are gone forever, but the new levels are only a slight reduction.

As a reaction to proposed staff and service cuts, there were 24-hour strikes on 20 November and 13 December.

The introduction of Z class trams on routes 9/10/11/12 took place on Wednesday, 18 November, operating between West Preston, City and St Kilda. Z2 class 209 was noted on the St Kilda end of that route on the first day. however, a dispute affecting driving instructors at all depots has resulted in the suspension of training, so at the time of writing only occasional services were Z operated, the Zs being run only when the rostered driver was qualified for that type of tram.

This now leaves routes 1 (South Melbourne Beach - East Coburg) and 15/16 (St Kilda - City - Moreland) as the only routes which never operate modern cars.

Melbourne's Very Fast Tram? This ad appeared in the Melbourne press on April Fool's Day last year. It is reproduced courtesy of DDB Needham Melbourne Pty Ltd who report the response was very favourable and they received quite a bit of media interest. The advert was taken in good spirit once they had deciphered the tram's number.

Tramcars

On 4 November, W6 class 992 was temporarily fitted with a type of deadman's handle on the brake valve, and demonstrated to union representatives and management. Following some slight modifications, the two restaurant trams, 442 and 937, were fitted with such equipment.

The modified brake handle is hinged slightly on the driver's side of the vertical stem, and there is an extension which overhangs beyond the far side of the brake valve. For normal driving, the driver holds the handle down against a spring, and the brakes operate normally. If the spring handle is released, the overhang pushes down on a switch which operates an air plunger. This turns off the linebreaker control switch behind the driver (much as in the Birney type trams) and at the same time applies the air brakes and sand.

Thus fitted, 937 became the first one-person operated W type tram when it left South

Melbourne Depot at 4.40pm on 16 November 1992.

The two restaurant trams have also been fitted with orange flashing turn indicator lights which can also be used as hazard lights. The lamps have been fitted immediately below the existing tail lights and on the corners of the trams.

Upgraded Z1 class 67 has been sent to Preston Depot but has not entered service. The union apparently considers the car to be unsuitable for a roving conductor due to alleged rough riding.

There is now only one tram, W5 class 821, in service fitted with weather blinds. W2 class 646 was last used around October during the asbestos in controllers 'scare'. W5 class 685 and 763 were withdrawn early in December. 763, however, has been enjoying a second life. In December 1990 it was taken out of storage to be used in connection with a programme to upgrade the stud markings put on the road to indicate to drivers the location of overhead insulators, point changing contactors, and



The deadman's brake handle fitted to restaurant car 937. The switch is the roller on top of the box at the right extremities of the brake handle. The indicator flasher control is behind the controller.



New Restaurant Car 937 shows its new livery during its fitting out at South Melbourne Depot on 23 October 1992.

PETER DUCKETT

clearance from other tracks at crossovers, etc. When the programme ended, the tram was not immediately taken away from South Melbourne Depot, so after a few weeks it was quietly put back into service, and thus it remained for a further two years.

Prior to the withdrawal of these blind-fitted trams, the ban on their use on Swanston Street had been lifted and they were occasionally seen in service there.

Kew Depot has received two Z3 class cars, Nos 155 and 156, to supplement the A1 class trams used on the Chapel Street (routes 78/79) service.

The L class vintage tram still operates from Elizabeth Street to the Zoo on Sundays and most public holidays. Although its use was rather spasmodic in the past, it has become very reliable over the last two years.

On 2 December, the former Victorian Railways 5ft 3in. gauge single truck enclosed crossbench tram No. 20, which had been privately preserved by long-time enthusiast Bob

Prentice, was moved to Preston Workshops for re-gauging and restoration. Bob was not to see his car restored. Unfortunately, Bob passed away on 6 December after a long illness.

The test track at Preston Workshops, on which withdrawn W class trams had been stored, has been cleared. Many are stored in the old Thornbury Depot, but some 22 are stored in the old Hendersons Springs factory in Alfred Street, North Melbourne. 720, the first W5, and 1038, the third last W7, are believed to be among them. They are stored minus bogies.

With the order for 130 B2 class trams coming to an end, the Met will have enough modern trams to provide the passenger equivalent to about 500 bogie cars, and this is expected to be sufficient for future passenger needs. The W class are thus expected to virtually disappear.

Fares

Fares rose by an average 10% on 1 January. A major change was the reduction of the 3-hour ticket to 2 hours, and the deletion of prices from

the tickets. The Zone-1 2-hour ticket now costs \$2.10 and the All Day Zone 1 is \$3.80. Visitors are warned that the outer ends of the Bundoora and East burwood lines are not in zone 1 and a supplementary ticket for that portion (a 2-hour Zone 2 costing \$1.40) must be purchased.

Tourist Tram Service

The staff selected for this service were eventually told it would not commence before the end of 1992, and were given the option of returning to their original depots, which most did. The service has now been offered to tender.

Security

On 27 October, the Government abolished the Transit Patrol, which was responsible for patrolling suburban trains, stations and other transport property. Their duties have, in the main, been taken over by the state police, who are not required to patrol, but to attend incidents. It is believed there has been an increase in vandalism, negating the saving in wages. Some patrol officers, however, have gone over to ticket checking.

Museum Upgrade

The tramway artefacts museum 2 Stanhope Street, Malvern (near the depot) has been upgraded. It contains an historical display of photographs, models, uniforms, tickets, etc., of the Melbourne system. At this stage, the museum has no regular opening hours, but enquiries can be made with the museum's curator, Norm Maddock, who can be found in the Malvern Depot canteen on weekdays.

Victorian Government Reforms

On 6 January the Victorian Government announced further details regarding implementation of the Government's public transport reform programme. Brief details of the reforms were conveyed to staff in a circular issued the same day.

The reforms include the contracting of government metropolitan bus services; contracting rail passenger services on nine country routes (see below) to the most efficient train or bus service; modal substitution on specified tram and train routes where buses will



Bob Prentice's Victorian Railways single truck No. 20 leaving 13 High Street, Prahran, its home for nearly 33 years. The car is en route to Preston Workshops on 2 December 1992.



Z class 67 at Latrobe University on 21 October 1992. The car now features a pantograph, B class type seating and removal of conductor's consoles. By early January 1993 it had not yet entered service.

RAY MARSH

be substituted for the current services after 8.00pm each day and on weekends; tenders are to be called for the provision of all-night bus services on weekends on nine main metropolitan routes from the city.

The cleaning of trams, trains (including train washing), stations, tram depots, tram shelters and buildings is to be contracted out. General building maintenance, passenger shelter maintenance and cleaning and maintenance of plant and equipment will be contracted out, as will construction activities.

The introduction of a state of the art automated fare collection system and its introduction is to be phased in over an 18 month period. Suburban trains will be converted to Driver Only Operation with

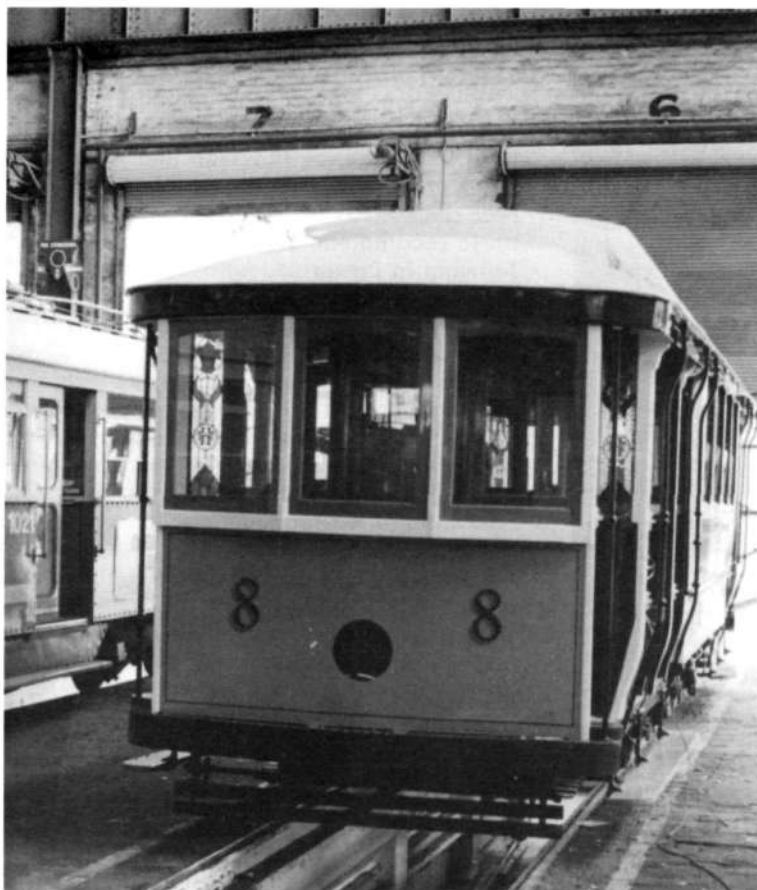
implementation being phased in over an 18 month period.

The Labour Government commissioned the consulting firm, Indec Pty Ltd, to review the total maintenance function and the major thrust of recommendations in this report have been endorsed by the new Government. Among these recommendations are the closure of Jolimont in favour of improved utilisation of the modern Epping depot and Newport, Spotswood, Bendigo and Ballarat facilities; retention of Ballarat and Bendigo Workshops; closure of East Preston Tram Depot - current operations at East Preston will be relocated to Preston; transfer of component overhaul, repair activities and manufacturing from running depots to existing dedicated facilities including relocation of wagon maintenance from North Melbourne to South Dynon and closure of the Preston Workshops manufacturing facility.

The transfer of on-train catering to State Rail and Australian National, retail trading operations and staff canteens to commercial management, as well as rail freight reforms, were also mentioned

While many of the intended changes had been leaked to the press over a period of time, details of which lines would be affected, and how, only became known in newspapers the following day. There were, however, some 'bombshells' such as the closing of East Preston and North Fitzroy Depots. While the latter could be justified as it would no longer belong to the much larger bus depot (which would go to private operators) the rationale behind East Preston is not known. Presumably the trams will be moved to Preston Workshops and the old Thornbury Depot.

Route 82, Moonee Ponds - Footscray would be closed completely, and service withdrawn on Route 9, the hump shuttle from St Georges Road to Plenty Road. The following tram routes would be replaced by private buses after 8.00pm and at weekends: 55 West Coburg; 69 Kew - St Kilda; 79 North Richmond - St Kilda; 72 Camberwell; 59 west Maribyrnong; 70 Wattle Park; 3 East Malvern. It would be foolish to believe that this will be the end of the cuts, as other routes with very light evening patronage have not yet been mentioned. It would appear that eventually only a few 'core' routes will run at night and on weekends.



The restoration of Bendigo 3 to its original condition as HTT No. 8 is progressing well at Preston Workshops and is seen here on 2 December 1992.

JEFF BOUNDS

There are many similarities in the plans outlined above when compared with the Lonie Report of 1980. The major difference is that this time there is a new Government in power with four years in office ahead, and there is considerable media fuss over a stated public transport loss of \$5 million per day. Little has been said, however, about the considerable cost of lease-back funding for all of the modern public transport fleet. While exact figures are extremely hard to obtain, the monthly payment for each B lass tram is believed to be between \$20,000 and \$28,000. Z and A class trams would have to be at a lesser rate, and the buses also, but the cost per three-car suburban train would have to be considerable. The subsidy to private bus operators is never mentioned, but must also be a hefty sum.

Without doubt, some economic changes are required on the tramway system. No tramway system in the world employs conductors to the extent that Melbourne does, and fare levels do not take into account their utilisation. As for services, even the Lonie Report stated that service levels did not then match demand, and in the interim little has changed. Travel patterns have changed considerably. The recession has seen many thousands of jobs disappear from the city centre, and as the tram system focuses on the city, many thousands of passengers have thus been lost. At the same time, many office blocks have been built along St Kilda road, and the reverse peak flow appears heavier than the peak flow on this thoroughfare. No St Kilda Road shuttle has ever been introduced in peak hours to cater for this traffic. Hopefully, in the future savings will be made to reflect demand, rather than what looks good on paper.

By early January, the Secretary of the

Tramways union threatened industrial action in response to the reforms but has yet to convince the workers to strike. The Transport Minister and the Premier have both stated on several occasions that they would be happy to close down the system for a month or two if necessary to get their way, and with memories still fresh of the five week dispute in 1990, workers are reluctant to become trapped a second time. With large numbers of Melbourne workers on holiday in January, a strike would have had minimal impact, and the approach of a Federal election also has to be taken into account.

Electric train services on the Upfield line and from Newport to Williamstown will be closed, along with the Stoney Point diesel-operated service, country services beyond Geelong, Ballarat, Bendigo and Seymour, the Mildura line and Dandenong to Leongatha. Local groups and bus operators would be invited to tender to run services on these lines. As previously mentioned, suburban rail services after 8.00pm

would also be subject to 'modal substitution', with the only lines left running being from the City to Hurstbridge, Ringwood, Moorabbin and Werribee.

The shedding of 8500 jobs in the public transport sector was expected to save \$250 million per year and many staff have applied for the redundancy package offered before Christmas.

No timescale has been clearly defined, but all reforms are expected to be in place in three years.

Newspapers on Saturday, 9 January 1993 carried full page tender notices headed "An opportunity to run your own railway (or replace it)". It dealt with country train services, food concessions and cleaning, and also sought operators for the proposed tourist tram service.



Car 237 has changed radio stations from 'Fox FM' to 'Triple M'. This car is based at Kew Depot and runs in normal service like other advertising cars but features 'MMM' music! The car is shown leaving Victoria Parade into Gisborne Street in December 1992.

RAY MARSH

New Video

Lisbon and its Trams

Following the successful launch of Eisenbahn-Kurier's English-language series of railway films, this German company has released its first tramway video, on Lisbon's famed tramway system.

Did you know that nearly two hundred vintage trams are still running every day in the Portuguese capital and form an essential part of its public transport system? This film introduces the most fascinating tram routes one at a time. In the process we become acquainted with the different types of tramcar still running. These include both J.G. Brill and home-built cars, the latter being equipped with English control and running gear or recycled Brill equipment. The cars are fitted with the traditional poles and trolley wheels, referred to as "rollers", running on round wire with clamp fittings.

The programme opens with a brief look at the city of Lisbon from a vantage point overlooking the Tagus River, a brief history and some coverage of ornamental wrought street lamp brackets and tiled walls.

Single truck and bogie cars of turn-of-the-century design, or boxy home-builts ply their

trade over the hills and valleys of this fascinating city. Of particular interest to the enthusiast is route 28 which climbs some 80 metres from the Baxia. Between Sao Tome and Graca is the most tortuous section which includes a two-dimensional reverse curve leading into one of the steepest gradients on the system, an interlaced curve, single track streets so narrow that it is possible to reach from the car and touch the buildings on either side, and signalmen perched in narrow doorways with red and green discs to regulate the tramway traffic. Single truck cars are used exclusively on this line.

There are excellent closeups of the overhead, interior views showing the unusual twin handbrake wheels, trams circling a delightful fountain, tram 2 restored to 1901 condition for tourist service and a works car. Also included are night shots in the very narrow streets, and coverage of Lisbon's three funicular railways and a most unusual cast iron lift tower.

This video is highly recommended for any tram enthusiast's collection.

Lisbon and its Trams by Ek-Videos, 50 minutes colour, VHS. \$49.95 plus postage. Our review copy from ARHS Sales, P.O. Box E129, St James, NSW, 2000.

- R and K Cowing



SW5 class 787 in Upper Esplanade, St Kilda on 19 September 1992. 787 was one of only two cars rebuilt to the SW5 design from W5 in 1956. 787 had been in storage from September 1952. The car was withdrawn from traffic after an accident in Swanston Street on 7 December 1992.

JEFF BOUNDS

LOFTUS

South Pacific Electric Railway

National Park Line Progress

Good progress continues to be made on the extension of our main line south toward its link-up with the former SRA branch line to National Park. Ballast motor/overhead line car 99u and Brisbane 'Phoenix' 548 have both ventured over the 60 or so metres of new track completed to date. In conjunction with this work, brush and dead trees have been cleared from the right of way.

Eight new span poles have been erected, and brackets and overhead hardware are being installed. A further eight new span poles have been erected along the branch line by the SRA to replace those which were removed.

David Canini has been active with his Drott and the right of way has been levelled and the damaged portions of the face of the old Scouts Platform adjacent to our former site have been

made safe, with the ash fill from the platform being removed and utilised for track foundations on the extension. The old timber platform face has suffered badly from the ravages of time, white ants and finally the recent bush fires, and will be demolished as it is in danger of collapse. As it was backfilled with ash, it will provide us with a handy source of material.

The track south of the highway level crossing has been completely welded by contractors IRC. Trams to the Royal National Park will run over a fully welded track from the crossing equal to the most modern light rail practice.

Dave Bennett and Glenn Killham are progressing with works necessary for the new substation required to feed the former railway line, and Frank Cuddy and Bill Parkinson are making great progress with the electronic controls for the level crossing signals. This work is being closely co-ordinated with the Roads and Traffic Authority, who have completed the installation of flashing amber early warning lights to further upgrade the existing safety signals at the crossing.

The last remnants of the SRA overhead wiring over the branch line were removed in the early hours of Sunday, 15 November 1992 and modifications to the Loftus Junction area signalling system were carried out on Sunday, 22 November. We are still awaiting advice from the SRA as to when the disconnection of the track from the main line will be carried out, so we can slew the former branch track to connect with our track extension.

Works Report

Additional track has been installed in the Road 5 extension and this will permit another load of concrete to be poured and provide under-cover storage for another tram.

Work is also progressing well on the brick facing of the retaining wall at the north-



R1 class 1971 in service during the afternoon of 6 December 1992.

BOB MERCHANT



With its bogies positioned on the track beside the truck, 1054 is ready to be lifted from the open container on (in?) which it travelled from Japan.

BOB MERCHANT

eastern corner of the display building.

The interior of the substation has received a repaint and is a credit to our Electrical Branch. Maintenance painting is also being carried out in external locations which are subject to weathering.

Track drains have been installed in the up and down tracks in Tramway Avenue, opposite Cross Street and these are of the type formerly used in Sydney, using four transversely laid sections of old rail. These are both authentic and functional and add to the general scene.

Tramcar News

R1 class car 1933 is being fitted out to become a temporary museum shop which will provide significantly improved facilities for our visitors and staff. Good progress is being made under the project leadership of Don Campbell, with a full internal repaint and new access steps already in place. Geoff Olsen has attended to the lighting and power requirements, and arrangements are being made to have floor coverings installed.

1933 will continue to stand in Cross Street until this base-of-the-triangle link between the depot and the main line is commissioned.

The repainting of R class 1740 has been completed. It has made a great difference to the appearance of this car after its enforced outside storage.

The finishing touches were applied to R1 class 1971, our first tram to be restored from near write-off condition to as-new condition. The car re-entered service at a special function on Sunday, 6 December 1992.

Work on O class 957 has slowed considerably in recent months so that a start can be made on removal and replacement of structural timber on O/P class 1089, which is now located inside the workshop. However, work on both cars is proceeding to plan.

Tony Cody has been busy on Brisbane dropcentre 295, replacing the many parts which had been removed to permit the replacement of timber affected by dry rot. A start has been

made on the repainting of this car, which will be a welcome addition to our traffic fleet when completed.

Nagasaki 1054

After numerous unavoidable delays, partly due to its literally missing the ship, our long awaited newest exhibit from Japan was loaded at the Japanese port of Hakata on 14 November and, contrary to previous advice, it arrived at Port Botany, rather than Melbourne, on 29 November.

Delays in passing through customs, for various reasons including the change in ports and customs moving office, meant that 1054 did not arrive at Loftus until 12 December.

The car was unloaded onto its bogies in Tramway Avenue and, once on the track, the pantograph and lifeguards were refitted. It was towed to the depot yard and was run up and down under power within four hours of arrival.

Due to the much different wheel profile on this car, the wheels require some back-to-back

reprofiling before operation over our track to avoid the risk of damage to our points and other special work. The car was lifted onto shop trucks on 16 January and the bogies moved to our workshop for removal of the wheelsets.

Conductress' Day

The commemoration of the 50th anniversary of the employment of the first conductresses on the Sydney Tramways took place at a special function at the museum on Sunday, 6 December. The use of conductresses was necessary to overcome the acute shortage of male staff during World War II, and to cater for the additional passenger loadings which arose due to the rationing of petrol.

A number of the original conductresses were in attendance for the function and, as most of them were employed at Rushcutters Bay Depot, the opportunity was taken to also recommission R1 class 1971 at this time. We also operated R class 1740 and R1 class 1979, which resulted in three Sydney corridor cars, all of which are ex-Rushcutters Bay cars, being in service at the same time.



Retired conductresses hold the 'ribbon' as R1 class 1971 breaks through to mark its return to active service on 6 December 1992.

BOB MERCHANT



1992 marked the 50th anniversary of the first conductresses to be employed on the Sydney Tramways. These war-time conductresses are seen being trained in putting the pole on the wire. This training was being carried out at Ultimo Depot in 1942, using R class car 1738. Below, the conductresses try their hand with the trolley rope.





Another view of R class car 1738 showing the bomb blast protection fitted to a number of this class based at Rushcutters Bay Depot. These cars ran the service to Watsons Bay along the clifftops from South Head Lighthouse and were exposed to possible shelling by enemy shipping and submarines. The blast protection consisted of a board screwed over the fixed top portion of the side windows, with a narrower board to cover the exposed glass of the panes when in the open position. Brackets each side of the driver's front and side windscreens held boards which were placed in position by the crew. The windscreens were opened and, in theory at least, were protected from any direct blast damage with the boards in place. Two trams, R class 1740 and R1 class 1971, at the Sydney Tramway Museum were fitted with this equipment, the screw holes for the side boards being still visible in the bodywork.

Scenes from the video, SHOOTING THROUGH



PARRAMATTA

STEAM TRAIN AND RAILWAY PRESERVATION SOCIETY

A Vulcan Visits

On 27 September 1992, the tramway saw an interesting visitor in the remains of 0-6-0 locomotive No. 530. 530 was on its way from the Hunter Valley to Yass and for an hour or so was reunited with a KA class tramcar.

The engine was built by the Vulcan Foundry in 1879 and, with two sister units and three Manning Wardle engines of similar configuration, was a member of the P127 class. These engines were used mainly on the branch tramways and 530 (or 128 as it was then numbered) is believed to have worked the Camden, Carlingford and Richmond lines before going to Yass in 1901. It remained at Yass until 1910, then helped to construct the breakwater at Jervis Bay, and ended up at Kallingo Colliery, near Cessnock. It saw little service there before being set aside for repairs which were never carried out. 530 lay abandoned until rescued by the Richmond Vale Railway Museum about ten years ago.

An agreement with the ACT Division of the Australian Railway Historical Society was reached whereby 530 would be transferred to Yass for display in the new railway museum being created at the former Yass Railway Station. On the way from Richmond Vale to Yass, they stopped off at Parramatta Park, lowered the remains of 530 onto our track and we united 530 with our KA tramcar 778 which was one of two built for the Yass line in 1891. For a few hours the original Yass tram was back together again after 82 years.

ABC 60th Birthday

The result of our running for the 60th birthday of the Australian Broadcasting Corporation held in Parramatta Park on 1 November 1992 was 3000 paying passengers. Allowing for children under 4 years and family groups with more than four people, our actual number of passengers probably exceeded 3500. To achieve this figure required the continual running of steam motor 103A at around 2.5 trips per hour for an eleven hour period, mostly with two

trailer cars. The members who worked so tirelessly to ensure the track and rolling stock were up to the required standard, and those who acted as crew and marshals in very trying conditions with crush loadings and heavy rain, deserve our heartfelt thanks. Their dedication and professionalism shone through, allowing us to achieve the best possible result.

Works Report

Many man-hours were spent preparing for the abovementioned event. The main tasks were the fitting of brakes and painting trailer 74B to enable us to operate two-car trams for this event. A special thanks to Albert Taylor for assisting with the brake rigging on 74B, thus allowing 103A to haul 191B and 74B with full through vacuum brakes most successfully and safely on the day. Laurie McCulloch and his



Diesel motor 133A shunts KA car 778 to the end of the line with the aid of a shunters truck on 27 September 1992.

team of painters spent the few weeks leading up to November 1st painting 74B, which looked very good even with only one coat.

One last-minute snag occurred when it was discovered during October that one of the boiler plugs in the smokebox of 103A had been incorrectly fitted, thus damaging the thread in the tubeplate. After contacting several other societies, all of whom were extremely helpful, it was discovered that steam tram boiler plugs are an odd thread pitch. We couldn't find a tapered boiler plug tap to suit anywhere. During the week prior to November 1st, Three Spires Engineering at Enfield were contacted and they offered to supply a tap made to order at a cost of \$850. It was ready on 29 October, with only two days to spare. The offending thread was tapped in the tubeplate that afternoon, under the supervision of Ron Mills, and a new plug was installed. 103A was lit up at 6.00pm and in steam by 9.00pm. A very slight weeping from

the plug necessitated re-tapping on Saturday morning. She was lit up again on Saturday afternoon, and has performed flawlessly ever since. A big thank you is due to Ron Mills, Frank Moag and Jason Roberts for standing by while 103A was tested. They all had a very late dinner on Saturday night.

We hope to wire 103A's headlights, cab lights, gauge glass lights and provide jumper sockets for wiring to the trailer cars during the Christmas break.

1022

The eccentric straps, valve rods, expansion links, die blocks and various pins from 1022's valve gear were taken to the Rail Transport Museum at Thirlmere in November for reconditioning. They were in a very sad state, it probably had been 30 to 40 years since their last overhaul.



The remains of 1879 vintage 530 and the KA car at the end of our line. The Vulcan Foundry built locomotive was on its way to the new ARHS museum at Yass Town.

BYLANDS

TRAMWAY MUSEUM SOCIETY OF VICTORIA

Members' Day

Sunday, 6 December was the date of our traditional end-of-year Members' Day. This year we welcomed our good friend Max McDonald and his wife Jean as our guests for the day.

Whilst at the museum Max turned the first sod for our new Visitor Reception Centre. This building is to be named "The Max McDonald Visitor Reception Centre".

Also visiting us was Peter Batchelor, Shadow Minister for Transport, and his family to whom we were able to express our appreciation for the grant we received from Peter Spyker, whilst Minister for Transport, for the purchase of concrete pipes for the first bridge replacement just north of McKertchers Road. Peter also inspected our Museum and the valuable collection we have at Bylands and Kilmore.

Car news

Restoration of W class car 220 is well in hand now. Rod Atkins and Bob Serle, with the help of others are making reasonable progress.

Since the cable tram returned from Swan Hill, where quite a bit of work was carried out by Newton Williams after the damage done in Kilmore by the swinging gate, we had to withdraw it from service due to the hydraulic power unit leaking badly due to the 'O' ring seals failing. Our friends at Clancys in Kilmore carried out the repairs.

Museum Works

The concrete pipes for the first watercourse crossing north of McKertchers Road are now on site.

In preparation for the reconstruction of the building which will form our Sales and display Kiosk, the trench to divert the drain across the track formation was excavated on Sunday, 8

November 1992 and the pipes laid on Saturday 14 November. The same day, the earthworks for the building foundations were started by Barry coad and completed on the Sunday. Prices for the stumping for the base bearers of the building have been called for.

Re-sleepering has recommenced in earnest on the main line and a siding is being constructed opposite the site of the Sales Kiosk to allow at least four trams (two per track) to be available for service at the Union Lane terminus.

Maintenance to the Depot Fan overhead has been carried out as well as the erection of wire for the siding at Union Lane.



Max McDonald turns the first sod for the kiosk building on 6 December 1992. Rod Atkins and Peter Batchelor look on.

DAVID WHITE



Geoff Dean, Andrew Hall and Russell Jones on the removal of the motor from car 644.

DAVID WHITE



SW2 class 644 has its bogie removed for a motor replacement on 6 December 1992.

DAVID WHITE

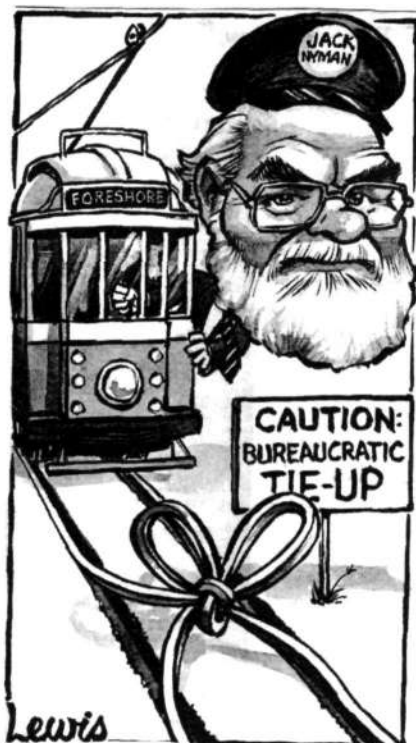
NEWCASTLE

MAITLAND TRAMWAY PARK AND MUSEUM

SW2 class 432 was moved to Lee Wharf by semi-trailer on Saturday, 28 November in preparation for running our tourist service along the former wharf railway tracks and all necessary approvals are in place.. Unfortunately, to date red tape has prevented us from running and our proposed commencement date, originally September and then Christmas, has come and gone.

The problem has been a white line the authorities decided had to be painted beside the track, especially along the eastern end, which runs beside the busy thoroughfare of Wharf Road hard up against the now disused loading bays of Nos 1 and 2 Lee Wharf. A traffic and safety committee of Newcastle City Council and the Roads and Traffic Authority had spent months on the problem of where to put the white line without coming up with anything definite.

Thankfully, decisions have now been made and the RTA will paint the required line during the second week in January 1993.



ST KILDA

AUSTRALIAN ELECTRIC TRANSPORT MUESUM

Awards and Grants

After the acts of vandalism reported in August 1992 Trolley Wire, 1992 has ended on a very high note for the AETM.

On 19 August, the AETM attained full accreditation with the History Trust of south Australia. Full accreditation recognises the Museum for its high standards of museum management in terms of administration,

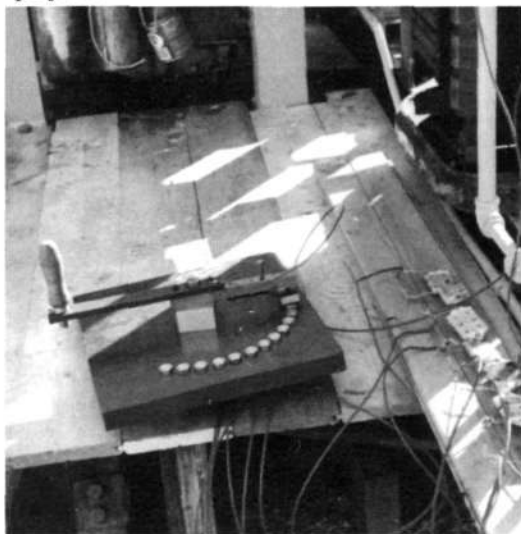
collection management, conservation and restoration, displays, educational facilities and security. We became the third museum in the state to attain such accreditation and the first in the metropolitan area (the other two being museums at Millicent and Naracoorte). The SA Minister for Arts and Cultural Heritage, Ms Ann Levy, conferred the award at a ceremony at Old Parliament House Museum in December.

The award, together with an accompanying cheque for \$10,000, was handed to AETM President Colin Seymour.

We have also been successful in obtaining a grant of \$12,000 from the SA Department of Arts and Cultural Heritage for extensions to the workshop to house the wheel lathe, vertical borer and the ex-MTT wheel press.

The Salisbury council was successful in its application for Federal Government funding (approx. \$90,000) to relay about 300 metres of the museum tramline in mass concrete. The relay covers the poorest section of our line - the slope from Shell Street up the hill to the playground stop. The reconstruction commenced early January 1993 with trams terminating at mangrove Loop in the interim.

Salisbury Council has also arranged to purchase a reel of new trolley wire from the STA of SA to replace the two sections stolen in may 1992. This will enable our multiple jointed temporary wire to be returned to stock for depot works and for services to return to the terminus pending satisfactory track repairs. Our thanks to the Mayor of Salisbury, Ms Pat St Clair-Dixon, who has been the prime instigator of these projects.



The generator field controller. This is now mounted up on the brake valve stand. The resistances have been increased in number and placed near the motor resistances.

IAN SEYMOUR

To finish the year, we received word from the History Trust that we had received a small grant of \$1500 to assist with relocation and restoration of our tramway signal cabin.

New Service Vehicle

Ian Seymour has completed construction of the small self-propelled diesel-electric shunter on one of our spare W2 trucks. The project was carried out as part of Ian's studies at Regency TAFE College for which he received a distinction.

The shunter was put through its paces in a series of tests at the end of October 1992. In the first test, it successfully towed the museum's biggest tram, H1 type 381 at 26 tons, to the playground terminus and back at a speed of about 10km an hour. For the second test, cars 264 and 294 were coupled and towed to the loop and back at a speed of about 5 to 8km/h. Ear muffs are definitely required!

Ian reports: "The Associate Diploma of Mechanical Engineering of sixteen subjects requires a final project of either a construction, design or an investigation and report on some subject. A contract must be submitted at the start of the year stating what your project will be and you must adhere to this. A book comprising a work diary, parts description, calculations and results was submitted to Regency TAFE. A ten minute video was viewed at the final presentation showing closeups of the shunter and towing 381 down the line. I originally estimated some 250 hours for this work but the actual time (February to October) was 655 hours! I achieved a 'distinction' for this, the only one after a stream of 'passes', with personal gains of immense satisfaction, a damaged bank account (total cost \$4770), and accelerated hair loss!"

Ian supplied some brief details of how "Fuggly", as he has named it, works: Speed control is done by regulating the generator's field with a controller made from brass screws on an SRBF board, rather like the old stud motor controllers. A K35 controller is used for the initial motor resistance when first moving, then straight to full series. The motors of the W2 truck have been wired permanently in series. A Westinghouse self-lapping brake valve has been used. As the compressor is always pumping when the engine is running, a



This view taken mid-1992 shows the diesel motor with its lifing frame, brake cylinder and rigging, and an ex-trolleybus air reservoir in an early trial layout position.

IAN SEYMOUR

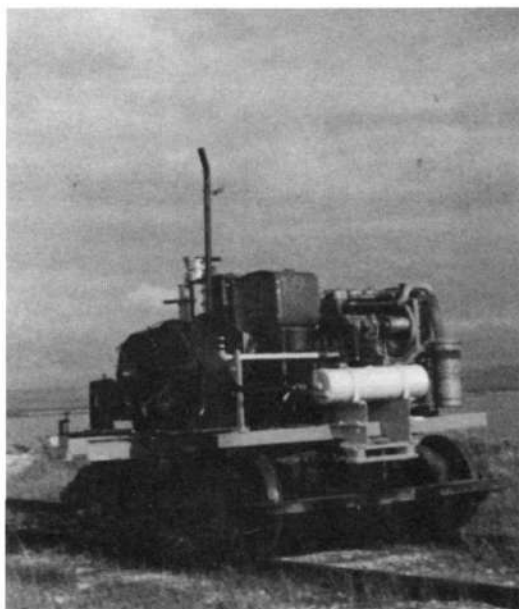
controlled air leak with a valve keeps the air pressure at 80 psi. The diesel engine is kept running at between 1400 to 1600 rpm and is generally left alone, except for start-up and close-down. Electric jug elements and bar radiator heater elements are used on the generator field control. No fuses are used on the control or motor circuits as the diesel engine stall if excessive current flows.

Although completed to TAFE requirements, more work will be carried out for museum purposes. This is likely to take the form of cladding of the sides and construction of a roof, seating, tidying up of 'temporary' features, and lighting.



Peter Letheby and John Pennack driving 'Fuggly'. Two resistance boxes are now used instead of the one shown.

IAN SEYMOUR



The shunter at the lakeside loop.

IAN SEYMOUR

The shunter will be very useful during power failures and will be able to tow the works car and the tower wagon over our new concrete track to relay the overhead wire.

PERTH

PERTH ELECTRIC TRAMWAY SOCIETY

Operations

Fremantle 29 continued to perform well as the second car every Sunday through Spring. Patronage improved considerably in October/November and was well above the levels for the corresponding period in 1991. No doubt the added attraction of No. 29 contributed to this; as expected she has proved to be very popular.

Overhead

Owing to Perth's unusually wet Winter in 1992, soil water-tables in the Park have remained high

Other News

Ballarat 34 has replaced D 192 in our regular service fleet.

Compressed air piping has been extended to half-way along the body shop for cleaning down trams under restoration. Moisture traps have been installed on three outlets in the workshops and on one in the body shop.

Much moving and tidying of stores item at the back of the museum has been taking place to make way for a possible balloon loop linking road 2 out of the body shop and a slewed over road 6 to enable trams to be turned to even out paint fading from the continual exposure of the northern side of the trams to the sun.

Lighting has been reinstalled in the Inspector's cabin and in the safety beacon.

Minor maintenance work, such as white ant poisoning and gutter and roof leak repairs, has been carried out on the old shed.

Initial planning work has been carried out for the extension of the building to house the wheel lathe and the resiting of the signal cabin on stronger pillars.

for an extended period. This has resulted in some problems with wooden poles rotting, particularly in the Swamp Straight area. Two poles collapsed, and temporary repairs were carried out.

PETS then had the opportunity to purchase ten concrete poles (as used by Westrail on Perth's suburban railways) from Westrail's contractors, Barclay Mowlem. While these poles were rated as 'seconds' Westrail's point of view, they are ideal for use on the tramway. Plans were already in hand to replace the rather inadequate wooden poles at Farm Gate Curve (at the east end of Swamp Straight), and new pole positions



The track upgrading contract carried out by Ron Waters and his team on the Stockmans Crossing East-Bullpen Curve section was well under way in May 1992.

LINDSAY RICHARDSON



A new concrete pole is lowered into position on swamp Straight by the Barclays team on 1 November 1992. Ray Blackmore is assisting with the PETS tractor, and Noel Blackmore is second from left.

PAUL EDWARDS

were pegged. The new concrete poles were installed by Barclays with assistance from PETS members during November, both at Farm Gate Curve and at the problem sites in Swamp Straight. Ray Blackmore plans to transfer the overhead to the new poles during the February closedown.

Track

Kevin Clarke's track team was very busy in the final quarter of 1992. A major effort was put in along Swamp Straight, where lifting and packing and some realignment was carried out. Problems here had been exacerbated by the very wet conditions.

Another section which received a good deal of attention was Farm Gate Curve. here the outside rail was lifted and packed to a 50mm superelevation through the full length of the curve, some rail joints were crowed and defective sleepers replaced.

During the September/October school

holidays, a three-day track maintenance camp led by Lindsay Richardson was attended by our younger members, Paul Edwards, Michael Parry and Craig Winslow. This team successfully lifted and packed a total of 21 rail joints in the Village street, along the full length of the straight section and on the curve outside the Leather Shop. This has resulted in a greatly improved ride over these sections.

Around the Car barn

The overhaul and reassembly of the Museum's Lincoln welder has been completed by Noel Blackmore, and it has been tested successfully. Among his multitude of activities, Noel has also arranged for the manufacture of new finials for the tramway overhead poles in the Village.

Prices have been accepted and final preparations were being made in December for concreting the floors of the traction sub-shed and the electrical section of the engineering shed.



Service car W2 class 368 waits as the first concrete pole is positioned at Farm Gate Curve on 1 November 1992.

Cleaning of a Melbourne no. 1 truck commenced in November, in preparation for its overhaul. It is required for exchange on W2 class 329.

The rewiring of SW2 class 426 was completed by Charlie Bite and Bill Gilbert in November. Repairs to the roof were carried out and the car was then successfully tested. No. 426 made its inaugural run with fully functional lights in the evening of Saturday 12 December, during the Society's Christmas Party.

The Christmas Party, organised in the member's Leisure Garden by Social Officer Martin Grant, was a great success, with the largest-ever turnout of members and their families and friends.

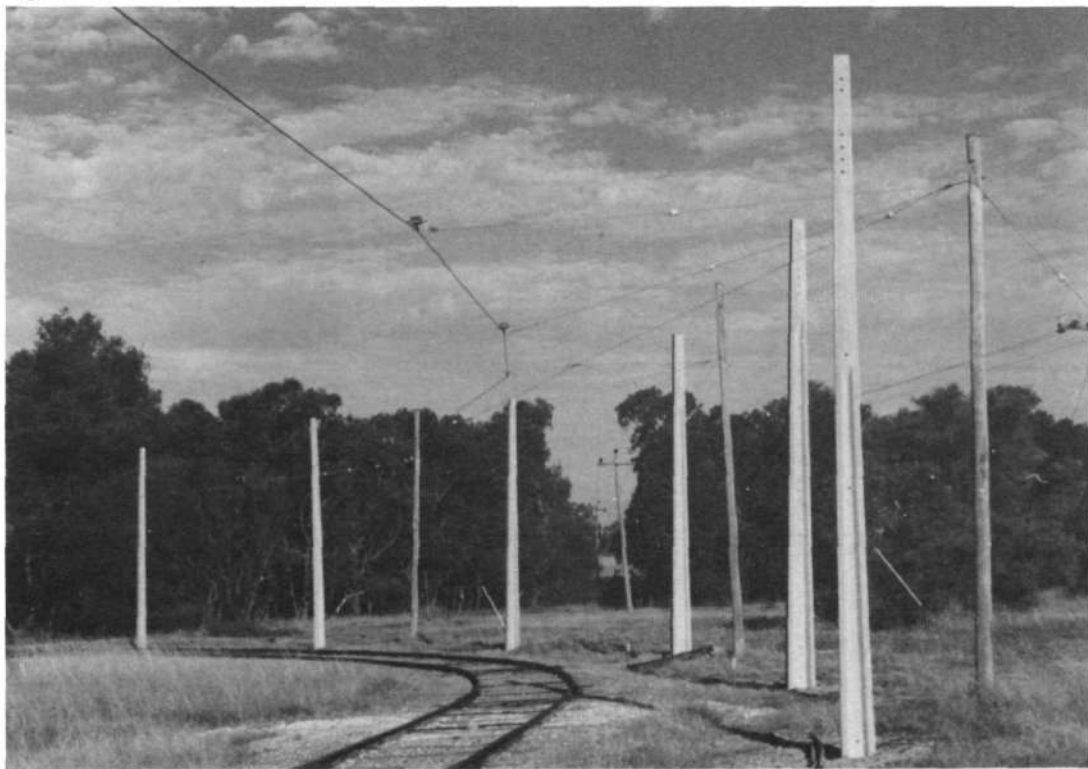
New Role for No. 64

The body of Perth E class tram no. 64 is to have a new home. PETS have entered into an agreement with McDonald's Restaurant in

Morley, whereby the tram body is to be refurbished and transferred to McDonald's for use as a dining area at their restaurant. PETS will have first option of obtaining the tram should McDonald's wish to dispose of it at any time.

For many years, the rather decrepit no. 64 has resided on sleeper supports at the back of no. 1 road adjacent to the Members' Room in the Oketon Geddes Carbarn, where it has been used as the 'dormitory car' for members staying at the Museum during sleepover weekends.

No. 64 is the third member of its class in PETS' possession (along with nos. 67 and 66). As its condition is very poor in comparison to no. 67 (our next restoration project), there was very little chance of it being restored or indeed receiving any attention in the foreseeable future. When the McDonald's proposal was brought to council by Ric Francis, it was seized upon with enthusiasm: not only will the car body receive much-needed refurbishment at no cost



Six new concrete poles can be seen in place around Farm Gate Curve, 12 December 1992.

MICHAEL STUKELY

to PETS, but its removal will free a space in the carbarn, allowing a body with higher priority for restoration to be brought in.

On 13 September, no. 64 was jacked clear of its sleepers and placed on trucks; it was then towed by the tractor to the Lindsay Richardson Carbarn, where the refurbishment was to be carried out. On the same day, the body of Fremantle 28 was moved from the Lindsay Richardson Carbarn to no. 4 road in the Oketon Geddes Carbarn, where it is now in use as the new 'dormitory car'.

Work on the body of no. 64 was started by McDonald's contractor in late November. By Christmas it was looking like a different tram with much rotted timber having been replaced,

HADDON

MELBOURNE TRAMCAR PRESERVATION ASSOCIATION

Trackwork Stage 3

Work has steadily continued on the mainline track on the south side of the museum. All of the rails as far as the south-east curve, which is situated near the top end terminus, have now been laid and fastened in position on the steel sleepers. Levelling and aligning the new track formation has been completed on the south side main line and now awaits final filling.

Tony Smith and the track gang have completed the survey work for the alignment of the terminus area tracks and will shortly commence bending the rail for the south-east curve and the run into the terminus.

The problem of obtaining a suitable track vee crossing for our double track terminus area has been overcome with the adaption and modification of a railway vee crossing. Work involved included building up and reprofiling the centre section of the crossing using specially cut and profiled pieces of rail. This method was selected to give a longer life to the crossing when in service.

John Withers has been busy overhauling the point motor that will be used to operate the

new side-sheathing (as used on later Perth trams) installed, and the cab floors built up to the level of the saloon floor. A pair of 1067mm gauge railway bogies obtained from Westrail are being cleaned and prepared for placing under no. 64, which will rest on a car-length of track at the restaurant.

Oops Department

The back page photos on the November issue of Trolley Wire were taken during 1958.

The list of total kilometres travelled by our service cars on page 33 of the same issue omitted W4 class 674. It travelled 1722km in the twelve months.

terminus points. All point components for the terminus are now in position and will shortly have rails connected to them.

Bogie Storage Road

Work has been completed on the construction of the bogie storage road situated on the north side of the museum, and filling has been positioned in preparation for spreading.

With our often very wet weather, we will have to ensure the bogies are not exposed to the elements for too long otherwise rapid deterioration will result. Initial considerations have been given to suitable covering of the bogies once they are in position on the storage road.

Signalling System

As our track layout is largely single track, great emphasis is being given to the signalling system which will control the safe movement of vehicles around the museum. Following consultation with other members, Noel Gipps has completed the extensive design work necessary for the system to function as required.

Work has commenced on the overhaul and installation of the equipment that will make up the system. Two ex-railway signalling cabinets purchased some time ago have been overhauled and positioned near the south-east curve and just west of the entrance level crossing. These cabinets will be used to house the relays that will control the signalling relays.

Noel Gipps and John Withers are working on the construction of the relay panels which will be mounted in the relay cabinets.

As with any signalling system, large amounts of cable are required to be run and the installation of multi-core signalling cables at various points around the museum has commenced. This has required the location and digging of trenches, and installation of cables in suitable conduits.

Craig Tooke, assisted by Tony Smith, has been busy recording the location of these new underground services so that permanent drawings can be prepared.

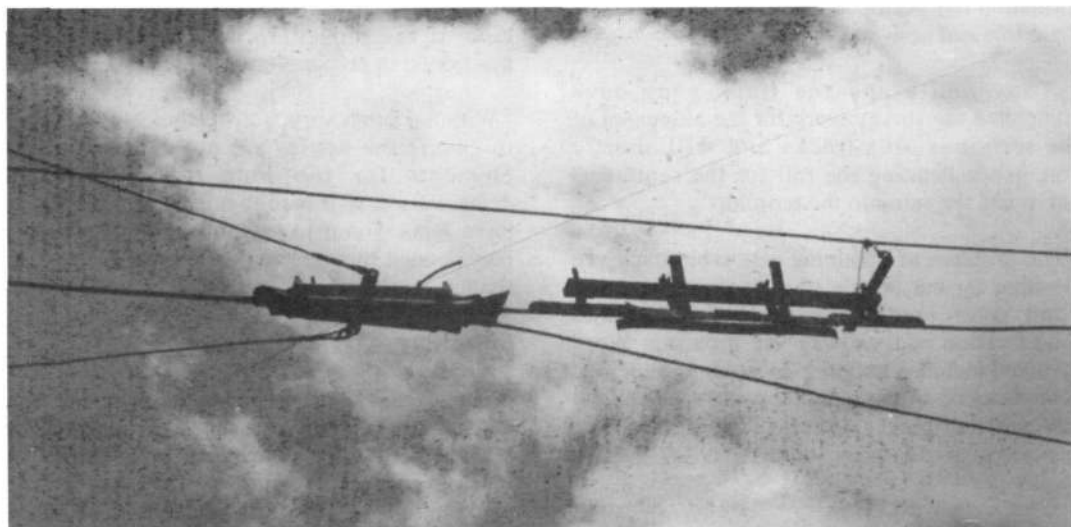
Tony Smith and Arthur Ireland have been busy overhauling signal heads. Most of the major components have been sandblasted to remove many years of accumulated paint and they have now received the first coat of metal primer.

The signals themselves will be operated by



Tony Smith working on the modifications being made to the running shed doors.

ARTHUR IRELAND



Recently erected and suitably modified overhead skates for use with the signalling system.

CRAIG TOOKE

either overhead skates or micro switches that detect the position of the point blades. The previously overhauled overhead skates have been erected up on the overhead near No. 4 road points, the workshop/main line points, and the start of the north-west curve. The skates have been tested to ensure they are correctly positioned and do not foul trolley poles as they pass through.

W2 Class 407

Restoration work on this tram continues to make steady progress. Arthur Ireland, who is leading the work on this tram, is currently overhauling the No. 1 end motorman's external doors. This work includes the removal of old paint and the replacement of rotted timber components.

All of the external fascia boards and window pillars have been rubbed down, primed and have received the first coat of undercoat. The external saloon panels are being rubbed back in

preparation for undercoating, and the motorman's windshield windows have been removed and are being overhauled.

The fitting of new metal gutters gave us the opportunity to improve the seal between the gutter and the canvas roof. The failure of the gutters in service in Melbourne was primarily due to the accumulation of water in the join between the gutter and the roof. To overcome this problem, silicon sealer has been used to fill the gap and it has been formed to provide a valley to channel the water away from the gutter and hopefully prevent it from rusting out again.

Internally, our cleaners have been busy scrubbing and cleaning the ceiling to remove many years of accumulated dust and grime. The scrubbing and cleaning of ceilings used to be done annually on the trams. However, as with many other maintenance tasks, this cleaning was not carried out in later years and, as can be imagined, there was no joy in carrying out this



Rails in position, track levelled and aligned on the main line.

CRAIG TOOKE

task. Arthur Ireland and Tony Smith will not be looking forward to the next time this task has to be done.

Miscellaneous

Various other tasks have been undertaken over the past few months, including repairs to the

tractor motor, replacement of the running shed and workshop gutters and down pipes, and the alteration and strengthening of the running shed doors.

All in all, a busy few months laying the foundations for a number of major projects to be completed in the months to come.

BENDIGO

THE BENDIGO TRUST

Commissioning SW5 class 808

On 27 August 1992, No. 808 was commissioned for tourist service. It was made possible by a reciprocal loan arrangement with the Public Transport Corporation whereby Bendigo bogie car 138 went to Melbourne for operation on the Met system. The State Electricity Commission

has provided sponsorship for the tram.

Our staff and volunteers changed 808's Met green paintwork into the familiar Bendigo Columbian Red and Gum White livery. A sound system was installed, including a public address system, and our most modern tram was ready for tourist service.



SW5 class 808 in its new Bendigo Tramways livery.

DENNIS BELL



Birney cars 11 and 15 ready for the "Push" to commence.

DENNIS BELL



Two local real estate teams pose with Birney cars 11 and 15 before they compete. Despite the banners, the cars are not for sale.

DENNIS BELL

No. 808 was built by Preston Workshops in 1937 and is the only tram in our fleet fitted with No. 15 trucks.

A Tram Push

Participation Day is a day each year when Bendigo residents are encouraged to participate in physical exercise. On Wednesday, 7 October 1992, McDonald's and The Bendigo Tramways united in presenting a "tram push" to the local populace. The trams used were Birney cars 11 and 15, both weighing 8 tonnes each. The trams were lined up side by side on the double tracks in Pall Mall and the plan was to see how quickly a team of six persons could push their tram a distance of 100 metres.

The event created a huge amount of interest and over 40 teams competed. The outright winners were a team from our local radio station 3BO, with a time of 32.47 seconds.

Commissioning of No. 21

Single truck car No. 21 was commissioned for tourist service on 13 October 1992 and the generous sponsorship of Cadbury-Schweppes assisted in making this possible.

No. 21 was built in Adelaide in 1917 and, after some delay, it entered service on the Footscray system. After careful research in conjunction with Preston Workshops, Bob Prentice, Michael Norbury, and Bob Lilburn, the original Footscray colour scheme was achieved. In fact we were fortunate in receiving a 1917 document with the Footscray Tramways Trust logo on it. Our signwriter enlarged it and painted a copy on each side of the tram.

No. 21 looks quite different travelling through our streets, as this is the first car in this colour scheme to operate in Bendigo.



The team from Australia Post in action. Birney car 11 is being pushed down Pall Mall on 7 October 1992.

DENNIS BELL



Single truck car 21 wears its striking new Footscray Tramways livery on 13 October 1992.

DENNIS BELL



Yes, derailments do occasionally happen and 122's leading truck decided to find its own way to the tram shelter at the City Centre on 12 September 1992. It was quickly driven back on the tracks and, after inspection, resumed normal service.

DENNIS BELL

BALLARAT

BALLARAT TRAMWAY PRESERVATION SOCIETY

Saturday, 7 November 1992 proved to be a fortunate choice of date for the last and biggest special event in a busy year. The weather was perfect, an oasis of sunshine in the wettest season since 1917. In the morning, we played host to the quarterly meeting of the Central Highlands Historical Association, an umbrella group of all the district historical societies. This led into the opening of the display area of the museum, established around the body of car 39. Professor Weston Bate, Chairman of the Museums Advisory Board and prolific writer on historical matters, declared the Museum display open.

The display is still far from complete, with only one of the five major boards in its final state, as it is felt desirable to gauge public reaction at this stage in case any fine tuning needs to be made to the overall presentation. The five major boards, each containing six 12 x 16 prints, will cover the northern wall. The small end walls currently display destination rolls, but will probably end up as home to wall timetables or photo murals in the course of time.

The western saloon of 39 contains the sales area, with magazine racks and a glass display case, with access through the old bulkhead doorway into the office area. The former centre section of 39 has another glass display cabinet, this time for artefacts, where the centre doorway used to be, and a leaf type display of photos standing opposite. The mechanism for this item was used for many years by the drivers' roster clerk at Jolimont Electric Train Running Depot. All the original rosters are carefully preserved underneath our photos, and no doubt will cause a minor sensation at some future date when they are rediscovered.

The leading saloon retains the original seat along the southern wall, opposite which is a video screen with a five minute introductory film continuously playing. Underneath the trapdoors is a 22E truck complete with sectioned electric motor, though this is not yet on display. The driver's cab completes the presentation with labelled controls.

There is still much to be done with the museum display but it is a vast improvement on the 'temporary' display of the past twenty years,



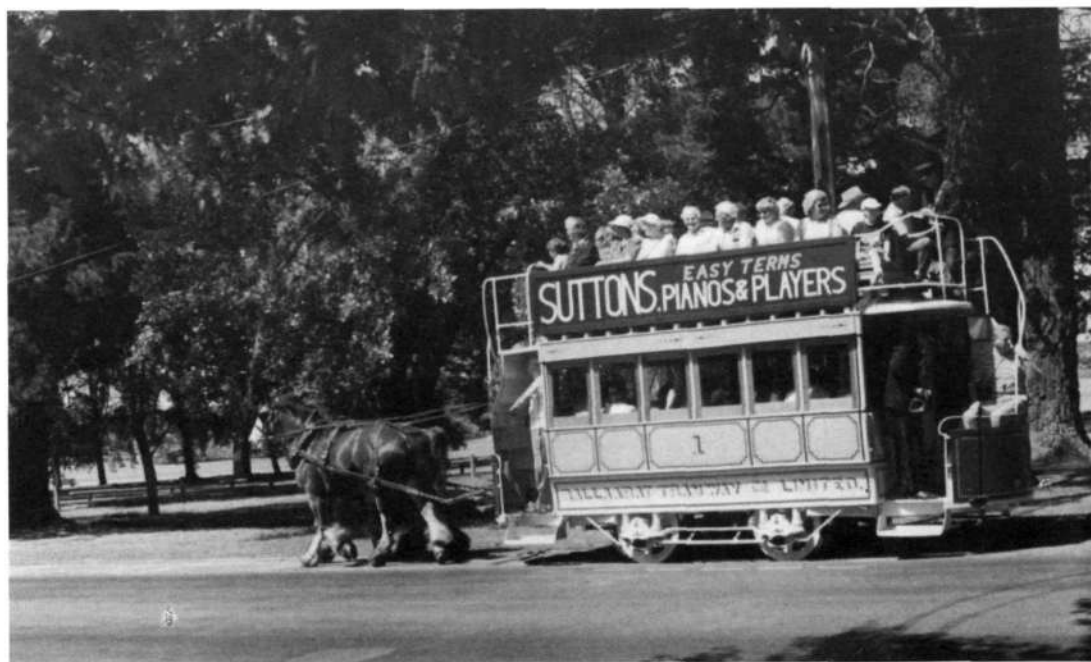
The fully reconstructed Ballarat horsecar No. 1 heading north in Wendouree Parade from just beyond Depot Junction. The initial runs for inauguration attendees occurred between this point and the location of the former Gardens Loop, south of Lake Lodge.

WILLIAM F. SCOTT



Hand pushing the horsecar across Wendouree Parade in preparation for its inaugural run.

CAROLYN DEAN



Leaving Depot Junction on the first trip with a full load of 45 passengers.

CAROLYN DEAN

which moved from one unserviceable tram to another, ending up in No. 11.

Once our visitors of November 7th had their fill of the museum, it was time for Professor Bate to launch the horse tram. Speeches over, the car was propelled down to Wendouree Parade by human power, where "Ajax" and "Hercules", a pair of fine Percherons, were waiting to take over. A number of trips were operated over a short section of line drawing considerable interest in the process. The horses' owners, who supply horses to Sovereign Hill, offered to run one trip over the full length of the line. Needless to say, this offer was snapped up instantly, and No. 1 headed off to the far distant St Aidan's Drive at a brisk trot. The horses consumed a plastic rubbish bin full of water after their efforts, so no wonder they could only work for two hours a day back in the horse tram era.

Late December saw a rearrangement within the depot to prepare for the next projects. The

horse tram has been moved to the bottom of road 2, where the track has been extended and the overhead removed. Suitable display lighting will be provided in the near future. The small workshop area that was located here has been moved behind the old end wall of the original shed, where it will less in the way of the public. The spot on road 5 occupied by the horse tram for most of the last seven years is now occupied by ESCo No. 12, which will now have some exploratory work done on it to establish what needs to be done, and record exactly what is there now.

The Society has received a Government grant to install interpretive signage in Wendouree Parade so that the public will know what they are looking at. Confirmation of the grant had barely arrived before we received a letter from the Museums Association requesting a paper on interpretive signage, as we were clearly experts in the field! Now, will we write the paper before we do the signage?



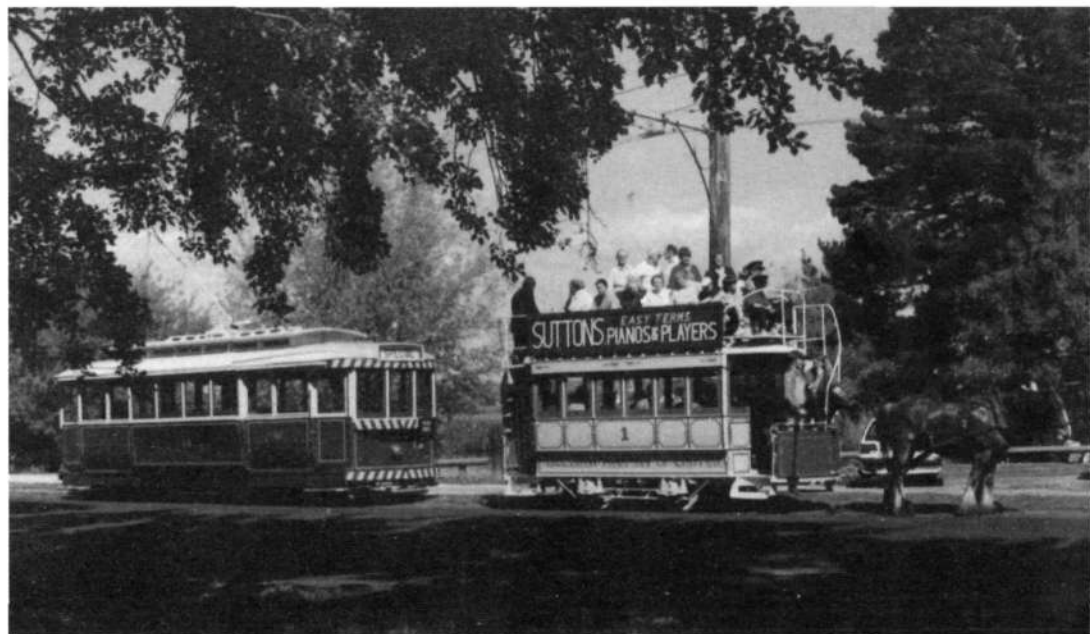
Changing ends as in the horsecar era. The Percherons came from Sovereign Hill Gold Mining Township with the horsemen, thus making the inauguration possible.

WILLIAM F. SCOTT



An against-the-light view of the horse car during a layover near Depot Junction and illustrating the other of the two davertisements on the modesty boards.

WILLIAM F. SCOTT



At the St Aidans Drive terminus, on the full round trip of the line with tram No. 18.

CAROLYN DEAN



a sper magazine