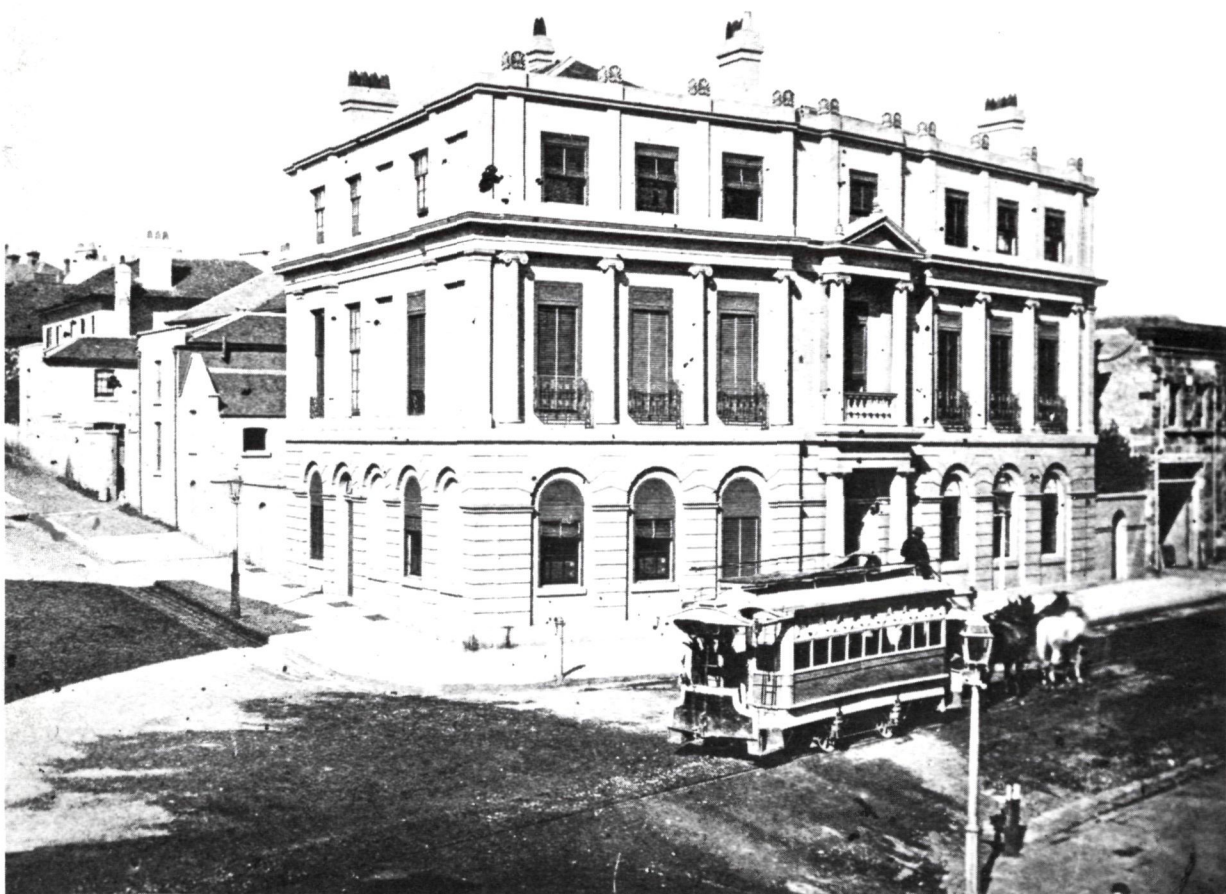


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WHEN HORSEPOWER MEANT THE HORSE

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EDITOR

PRODUCTION

SUBSCRIPTIONS

DISTRIBUTION

Laurence Gordon

Bob Merchant

Norm Chinn

Mal McAulay

Peter Hallen

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From Across The Tasman

Despite its small size and sparse population New Zealand has much of interest in the transport field. There is also much happening – some good and unfortunately some not.

Electric transport is presently in decline, although there is promise of mainline AC electrification, with Auckland the victim of a confidence trick with the trolleybus system being closed for rebuilding which was promptly cancelled after new vehicles and equipment had been ordered. The remanent of the Denedin trolleybus system faces its second and final closure in March.

In Wellington, however, the scene is brighter with the electric powered Kelburn cable tramway being rebuilt and re-equipped; new Volvo trolleybuses in service and new suburban electric trains arriving although the electric locos see little use. At Arthur's Pass the status quo remains.

On the museum front, the QEP tramway at Wellington still runs to its temporary terminus but MOTAT at Auckland has extended the tramline to the Zoo and a rebuilt Boon car is now in service on the Ferrymead tramway at Christchurch.

Two TW staff members recently visited New Zealand and over the next few issues we will cover the electric transport scene across the Tasman.

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FRONT COVER: *One of only two known photos of the Pitt Street horse cars, both at the corner of Hunter Street travelling south to the railway. It should be noted that there are three dark horses and one white one pulling the tram on this occasion.*

WHEN "HORSE POWER" MEANT "THE HORSE"

By K. McCarthy

The anniversary articles presented in this magazine from time to time have continued to be favourably received by readers. These occasions have been used to present material on topics which have not, at that stage, been fully researched; readers have usually responded by passing on additional information to be used at a later date when a more detailed treatment is published.

The 1981-82 period gives the opportunity to record some horse tramway anniversaries:-

- + 120 years since the opening of the Pitt Street horse tramway in Sydney, the first street tramway in Australia.
- + 50 years since the closure of the Moonta and

Gawler tramways in South Australia.

+ 25 years since the closure of the Victor Harbour tramway.

+ 40 years since the closure of the freight working on the Port Broughton tramway.

Some additional information has been obtained on the Moonta undertaking since its treatment in these pages during October 1980, while other new data and photographs have come to hand on other horse tramway workings. This new material is presented here, not as definitive material, but as an attempt to pass on to readers new aspects of the subject.

THE PITT STREET HORSE TRAMWAY. SYDNEY N.S.W.

Early Development of Sydney Public Transport.

It is believed that the first stand for public coaches in Sydney was established at King's Wharf during 1830. Later, coaches with glass windows, as seen in London at the time of the Coronation of George IV (July 1821) were introduced for public hire in Sydney. These vehicles continued in use in Sydney for years after vanishing from London streets.¹

In 1845 Mr. J. Howard introduced a line of omnibuses which operated along George Street from Circular Quay to what is now Railway Square. Howard charged 6d. (5c) for the through bus journey but this low fare caused protests from the cab drivers as the omnibuses took away much of their business.

A meeting held in the old Metropole Hotel during the late 1850's investigated alternative means of street transport and the Pitt Street horse tramway emerged from this gathering.

At this stage the N.S.W. railway system only extended as far as Campbelltown from Sydney and West Maitland from Newcastle, a distance of 73 miles. By 1861 the population of Sydney had reached 56,470 in the city area with an additional 36,732 in the suburbs.² Plans at that stage were being formulated for trunk main line railways, but branch lines as well as extensions beyond the key country centres were planned to be of light weight construction worked by horse traction. These light

railway proposals were opposed by John Whitton, the Engineer-in-Chief from 1857, with such vigour that all construction, with the exception of the Blacktown to Windsor-Richmond line, opened in 1864, were built to take standard locomotives and rollingstock.³

Pitt Street Tramway Proposals. The Robertson-Cowper Ministry was impressed with the horse tramway proposal, especially as a standard gauge (4'8½" gauge) track between the Sydney railway terminal at Redfern and the wharves at Circular Quay would possibly be a suitable, but much cheaper alternative, to extending the steam railway further into the city area. Mr. Robertson introduced the Pitt Street Tramway Bill into the N.S.W. Colonial Parliament on 14 September 1859 and the proposal was referred to a Select Committee for consideration on 29 September.⁴ This committee reported on 25 May 1860 that the proposed tramway would lessen the cost of the conveying railway rolling stock and goods traffic between Quay and the railway terminus and would also facilitate the passenger traffic.

Residents and businessmen in Pitt Street did not want half of their street occupied by a tramway, while the Sydney Municipal Council feared that the tramway construction would destroy £150,000⁵ worth of municipal property in road damage as well

as drainage and water main diversions. John Sutherland, the Mayor of Sydney and M.L.A. for Paddington (later to become Minister for Works) complained that the tramway would result in government interference with the civic control of the streets, while other opposition to the tramway scheme was based on the expected traffic congestion due to Pitt St. being no wider than 34 feet.

As the city corporation opposed the scheme, the government was forced to enact a Bill to carry out the project. The Select Committee recommended that the government should be responsible for keeping the road in repair around the tracks if the tramway was constructed while the method of traction should be restricted to horses. This committee felt that the tramway would "afford great accommodation for the conveyance of produce as well as for passengers who will probably be taken up and put down at parts of the city that will be most convenient for their respective places of business".⁶

The Successful Bill. The Minister for Works, Mr. W. Arnold, introduced the tramway bill during February 1861. During the second reading, he argued that the scheme would offer a commodious means of conveyance for passengers and would be carried down the centre of the street leaving 16 feet on either side between the rails and kerbing. The motion was passed 35 to 16 by the Legislative Assembly and then sent to the Legislative Council. In this Upper House the proposal received a hostile reception but passed the second reading 11 to 3.

After being debated during several sessions the Bill lapsed but was passed in the following session after being restored to the business paper. The Act received the governor's assent on 3 May 1861.⁷

C.F. Train's System Accepted. Captain Martindale R.E. was the Commissioner for Railways in N.S.W. from 22 July 1857 until the appointment of John Rae on 15 January 1861. Martindale returned to Britain where he received a posting in Ireland, a transfer which did not particularly please him as his specialty was fortification design and construction. He was originally transferred to N.S.W. to design and advise on fortification matters.⁸ Martindale recommended C.F. Train's tramway⁹ system for the Pitt Street venture and Train's tender for the supply of two tramcars, rails and fastenings was accepted in April 1861, before the Bill received the governor's assent.¹⁰

"The 'Sydney Morning Herald' for 20 April 1861 reported that the Bill for the Pitt St. tramway had been passed in both houses of parliament. The point was made that some concern was still held for the proposal to construct the track down such a narrow thoroughfare as Pitt Street, but as the trips would be few in number, and the cars drawn by horses at a slow rate, little inconvenience would occur.

This report stated that as most of the wool exported from Sydney was sold and placed on board ships at Circular Quay the tramway would be of great value in carrying produce to the place of shipment.

The Municipal Council had opposed all stages of the Tramway Bill, but the Commissioner for Railways accepted responsibility for interference to sewers and water pipes, would maintain the roadway between the rails and would be liable for injury sustained.

Material Ordered from England. Reports of late May 1861 still expected several more weeks of delay before tramway construction could commence.¹¹ By that stage the two tramcars and rails ordered from England had not arrived. These rails were of "the most recent improvement; the upper and lower sides are alike and can be reversed when desirable; in the one case the raised portion of the rail meets the edge and the flange of the wheel and in the other it fits into a groove prepared for it in the timber supports.

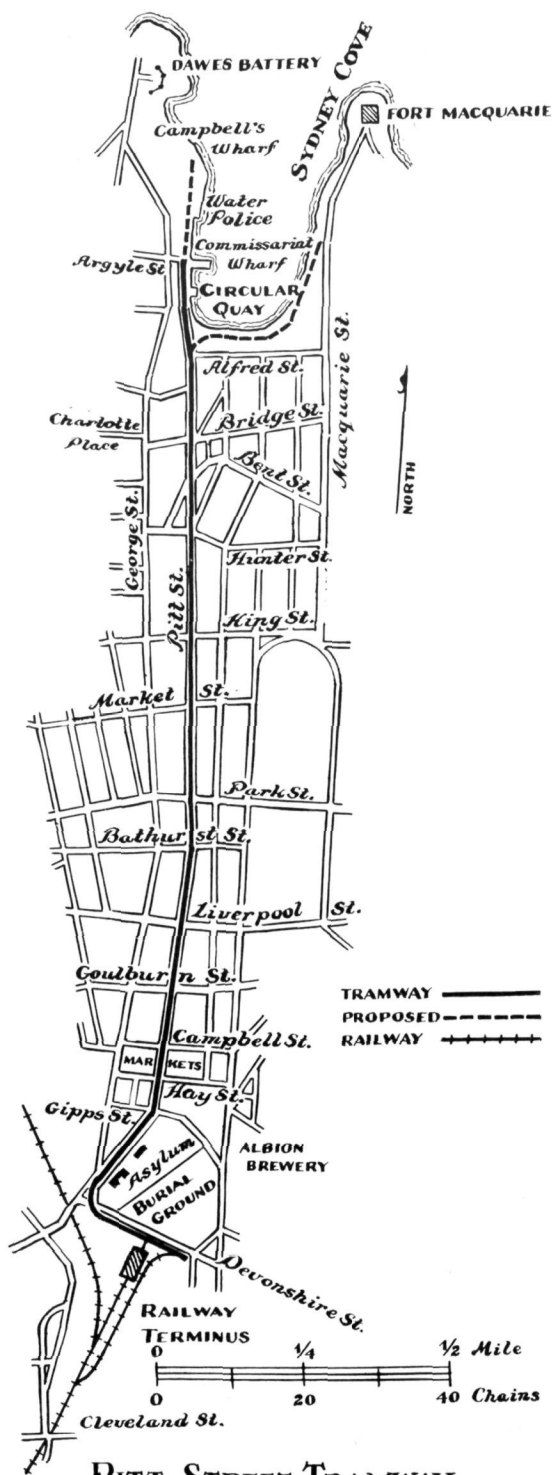
"The rails are laid on longitudinal logs which rest upon transverse sleepers placed at short intervals, the rails being secured in their places by spikes driven through the logs and clenched at the bottom of the sleepers.

"The elevation of the rails above the level of the roadway would appear to be unavoidable but the height of this elevation will be only an inch and a half. There must necessarily be some inconvenience attending the construction of the tramway in so narrow a street but these are likely to be compensated by the advantage of having the railway carried through the heart of the city to the spot where most of the foreign vessels receive their cargoes."

The report concluded "As there are only three trains starting from and three arriving at Sydney (terminal) after ten o'clock in the morning, there is no reason to apprehend much danger of collision to traffic from the passing of a short train through Pitt Street only six times a day".

Arrival of the Tramway Material from England. The two tramcars and the permanent way material arrived on the sailing ship "Marcianus", a 914 tons vessel of the James Baines and Coy. Blackball Line. This ship reached Sydney on Friday 26 July under the command of Captain McGill with ten passengers. Served by a crew of 26, the vessel left Liverpool on 26 April 1861, stood off in the Mersey River on the following day and sailed on 28 April. The equator was crossed on the 23 May and the meridian of the Cape of Good Hope reached on 20 June.¹²

During June the ship experienced a rough passage. The foremast was sprung on 9 June and the cross jack yard carried away. A violent gale was



PITT STREET TRAMWAY

1861-1866

K. MCCARTHY 11/81

experienced on 11 June, some of the bulwarks were lost and the long boat shifted by seas breaking on board.

The ship carried 15 railway waggons, 84 wheel sets, 2 tramcars, 895 rails, 974 plates, 3683 brackets, 21 bags of spikes and 184 packages for the Railway Commissioners. A more detailed railway department return indicates that the ship carried 2 brake vans and 7 horse boxes constructed by Wright and Sons, 7 carriage trucks from Ashbury and Sons plant as well as the 2 tramcars.¹³

A press report of 19 August 1861¹⁴ stated that all the carriages and brake vans being landed from ships from London and Liverpool were in a damaged condition. Although the carriages were secured with tarpaulins and packed in double cases the water from the rough passage had penetrated the vehicles and rotted the cushions. These damaged cars were delivered on the "Resolute", "Marcianus", "Bard of Avon" and "Nagasaki". Although this damage was covered by insurance, the vehicles would have to be repaired at Redfern terminus resulting in delays in entering service. The report concluded that the cost of transporting this rolling stock from England amounted to more than the construction cost.

This was approximately correct as far as the tramcars were concerned. The £521 construction cost increased to £906-3s-3d landed in Sydney. Freight amounted to £323-1s-7d, insurance £20-5s-0d, English and colonial charges £14-16s-8d.¹⁵

A later press statement felt that these additional charges could be saved and the additional work caused by sea damaged avoided if rolling stock was built in the colony.

Trouble on the "Marcianus". The rough passage was not the only problem experienced on the "Marcianus" during the passage. The "worst possible feeling" existed between the officers and men. This ill feeling resulted in assaults and on arrival in Sydney the captain and several officers were brought before the Sydney Water Police Court on assault complaints.¹⁶ While moored at Pott's Wharf in Sydney Harbour on Friday 2 August 1861, seaman Kennedy struck second officer Brown with a capstan bar. Brown was immediately taken to the Sydney infirmary, but died two hours later. At the inquest held on Monday 5 August, Kennedy claimed that Brown had called him the "son of a whore" while unloading bags of salt in the hold.¹⁷

The murder trial was heard on Wednesday 30 September in the Central Criminal Court. Seaman Jacob Gibson from Norway stated that six men were working in the hold at 11am when George Kennedy struck Edwin Brown. Gibson stated that he had not heard the words at the time of the deed but Brown had abused Kennedy during the voyage

using such language as "son of a whore" and "son of a bitch". Gibson said that he would not have thought that the blow would have caused "so much mischief as it did".

Seaman William Brown submitted that he had heard officer Brown call Kennedy a "son of a whore" in the hold, to which Kennedy had replied that he was the son of a decent woman.

After hearing evidence from medical practitioner Edwin Egan, Wardsman Patrick Dowling, Police Inspector Henry Carr and Mr. Ellis, the legal representative for the prisoner, the judge instructed the jury that "by law all homicide was presumed to be murder and cost upon the person committing the homicide the onus of reducing it to manslaughter".

After an hour's retirement the jury found a verdict of "guilty of manslaughter." The prisoner was then sentenced to seven years hard labour on the roads or other public places.¹⁸

Tender Accepted for Constructing the Tramway. During July 1861 tenders closing at noon on Tuesday 13 August, were called for the construction of the Pitt Street tramway.¹⁹ The Minister for Works considered these tenders on Thursday 15 August and awarded the job to Mr. Mark Faviell for the quoted price of just under £1,500.²⁰ Two months were allowed for completion and as a considerable portion of the material had already arrived it was expected that construction could commence immediately.

Description of the Trackwork. Just after the announcement of the award of the track construction contract further details of the tramway appeared in the press. The track materials, which were part of an indent dated 14 June 1860, were submitted to English tenders. George Francis Train was the successful tenderer.²¹

His step rail consisted of an iron plate, 5 inches wide and 1 inch in depth, with a step 1½ inches wide and ½ inch deep along two of the four edges, diagonally opposite each other, so that the plate could be reversed and inverted for further wear.

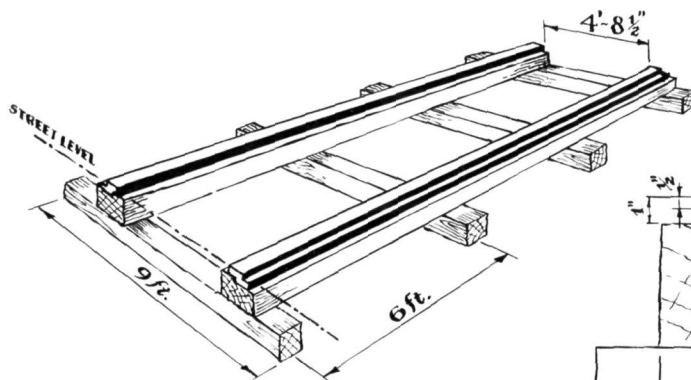
"It was first understood, and probably intended, that the rails should be laid so that the flanges of the wheels should run where there is a fall of half an inch in the rail; it appears, however, from the sections (drawings) of the tramway that the rails are to be turned and the flanges (will) traverse the inner extremities of the rails".²²

This action converted the "step rail" to a normal "edge rail". This action was carried out to enable coarse flanged railway waggons to ride on the wheel treads rather than on their coarse flanges which would have been necessary had the rail been laid as G.F. Train's specifications intended.

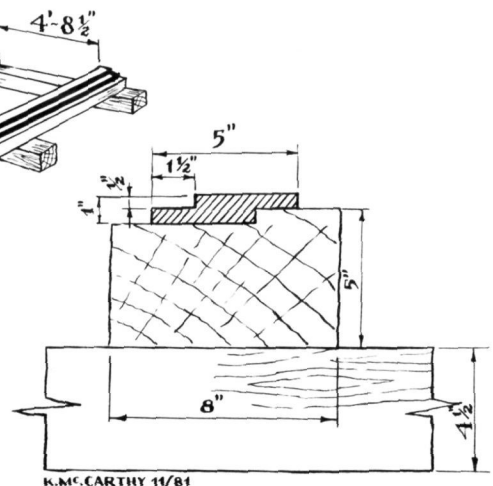
A contemporary report stated "The disturbance to the roadway will be that inside the rails where there will be a fall of an inch and one outside of half an inch". The rails were supplied in 24 feet lengths and weighed 50 lbs. to the yard.

The track in the final specifications was supported on transverse 4½" x 4½" ironbark sleepers, 9 feet long, spaced at 6 feet intervals, Longitudinal 8" x 5" ironbark baulks were fixed on top of these cross sleepers to carry the rails which were held down with bolts and spikes. Stone pitching was the recommended material for the road formation along the track but as this would have added considerably to the cost, ordinary road metal was used on the Pitt Street tramway.

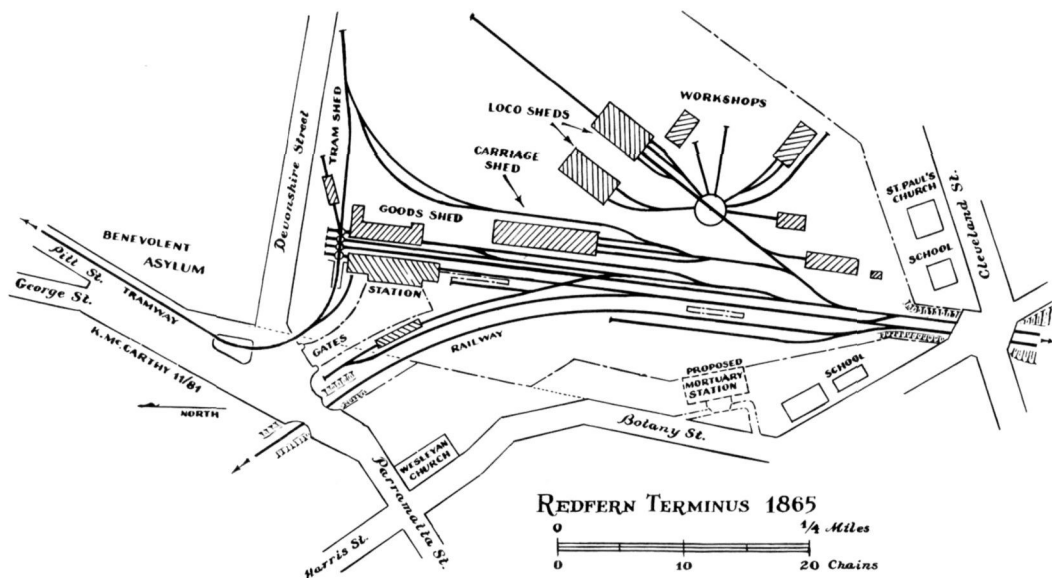
Description of the Route. Two major curves were located on the route, one near the old Haymarket (located near the Pitt and Hay Streets corner) and the other at the Benevolent Asylum (situated at



PITT STREET TRAM TRACK
SUGGESTED APPEARANCE



K.M.C. CARTHY 11/81



what is now the corner of Railway Square and the western end entrance of the Devonshire Street subway). Except for the grade of 1 in 30 at Brickfield Hill, the remainder of the route was reasonably level.

To avoid a cutting at the entrance to the Sydney railway terminal yard the tramway track was constructed on the same level as the station platform where the cars could await the arrival of the trains. On leaving the terminal yard the track was positioned to cross the triangular street island in front of the asylum from where it proceeded northwards along the centre of Pitt Street to the western side of Circular Quay at the Commissariat Stores at Argyle Street.

A later northwards extension of the tramway to Campbell's Wharf was planned near Dawes Point and another branch line around Sydney Cove to the wool stores at the eastern side of the Quay was also envisaged. The tramway proposals stated that passengers as well as goods would be carried, but the press pointed out that the construction of a goods shed at the Quay was not planned at that stage.

Details of the Rolling Stock. The "Sydney Morning Herald" for 21 August 1861 reported that the two imported tramcars were similar to the vehicles adopted by Mr. Train on his English street railways. These cars were of light weight construction and capable of carrying 60 passengers each. A later report expanded on these details and described the "comfortable cushioned seats along either side" of the interior saloon while outside "along the centre of the roof there is a double row of seats constructed with every regard to convenience, and (are) easily ascended by steps (ladders) on each side of the

doors". A communication cord attached to a bell at either end was fitted inside the car to indicate requested stopping places to the driver.

The article commented that this cord may be later removed as it was the intention of the operators to nominate stopping places rather than have the cars stop at every passenger's door.

Track Construction. The first track excavation commenced on Monday 16 September 1861 at the corner of Bathurst and Pitt Streets.²³ The contractor, Mr. Mark Faviell, planned to continue construction at that time towards the Quay while he expected the project to be completed in seven weeks. Only a small portion of the street would be excavated at the one time and the work would be fenced and protected by lanterns at night time.

By mid October 1861 two additional track gangs were at work on the tramway construction.²⁴ The second group was working from Hunter Street while the third was involved near the present Railway Square. Track was being extended in both direction these two locations as well as from the original Bathurst Street excavation.

At this stage the contractor still had three weeks in which to complete the work of laying track along the remaining one third of the route. The road surface was packed around the rails at this juncture and seemed to present few problems for the road traffic wishing to cross the tramway. The report indicated that the road material on the inside edges of the rails would have to be cleared before the trams could use the route.

By mid November the construction contract had been completed from the railway terminus to Argyle Street, at Circular Quay.²⁵ The rails at the railway station met the railway at right angles and

two tracks branched off in the station yard. The one intended for goods waggons connected with the railway track by a turntable while the other, for passenger traffic, was carried up to the station. These rails were at the same level as the surface of the railway platform.

Some sections of the community suggested that the tramway should have been taken through the property to the east of the Benevolent Society Asylum to meet the railway tracks end on. This was the route eventually taken when the Redfern railway terminus was extended to the new Sydney terminal at Eddy Avenue in 1906. This tramway proposal could not be contemplated as the Act only authorised tramway construction along Pitt Street, while the design of the tramcars would not enable passengers to readily join the vehicles in the normal railway platforms.

Trackwork Problems. In the short space of two months after the start of track construction problems were experienced with the permanent way. At several places along the route the rails had curled upwards lifting the longitudinal sleepers. At first the fault was thought due to the timber being machine cut rather than hewn and dressed by hand, but this problem was later evident on both cuts of sleepers. This fault was found to be caused by the expansion of the step rail in the hot spring weather. No allowance had been made for expansion where these iron plates abutted together causing the centres of the rail strips in some locations to bulge upwards. This problem was increased by the use of unseasoned ironbark timber for the sleepers. The speed in which the contract had to be completed left no alternative in this matter. By late November the faulty portions of the track were being repaired.

Contract for Providing Horses. By late October 1861 negotiations were being finalised for the horsing of the tramway and the "collection of tolls".²⁶ During November the Railway Department announced that some train arrival and departure times would be adjusted so that one tramcar would have adequate time to work along the tramway and return in time for the next train arrival or departure.

On Tuesday 26 November 1861 the tender of Mr. John Woods for the provision of tramway drivers and the supply of horses was accepted²⁷ while in Monday 16 December the announcement was made that the 10am train from Sydney would leave at 10-15am and the 4-45pm would depart at 5pm.²⁸ The train departing from Campbelltown of 9-45am was altered to 10am and the 6-15pm was changed to 4-45pm. No alterations were made to the Sunday services.

Trial Operation. On the morning of Wednesday 4 December the first trial run along the tramway was conducted with two railway trucks drawn by

horses.²⁹ Although some further work would be needed to clear the soil away from the rails before the tramcars could operate, the tramway was found to be in good order.

Trials conducted with the passenger cars during the following week were not as favourable. The tramcar derailed several times on the sharp curve leading from the station yard into Pitt Street, but this problem was rectified by raising the outer rail further on this curve. The straight track was still uneven due to the problem of unseasoned sleepers, but this was expected to be gradually corrected in the course of normal maintenance.³⁰

The main cause of the tramcar derailments, as compared with the successful trails with the railway waggons, was due to the small $\frac{3}{8}$ inch flange fitted to the tram wheels. G. F. Train had designed these flanges as small as possible to enable tramcars to leave the tracks when passing obstructions. The Pitt Street Tramway Act, unlike the English provisions, compelled all other vehicles to make way for the tramcars and railway trucks so the trams would only have to be lifted from the tracks to pass "these cars and railway trucks".

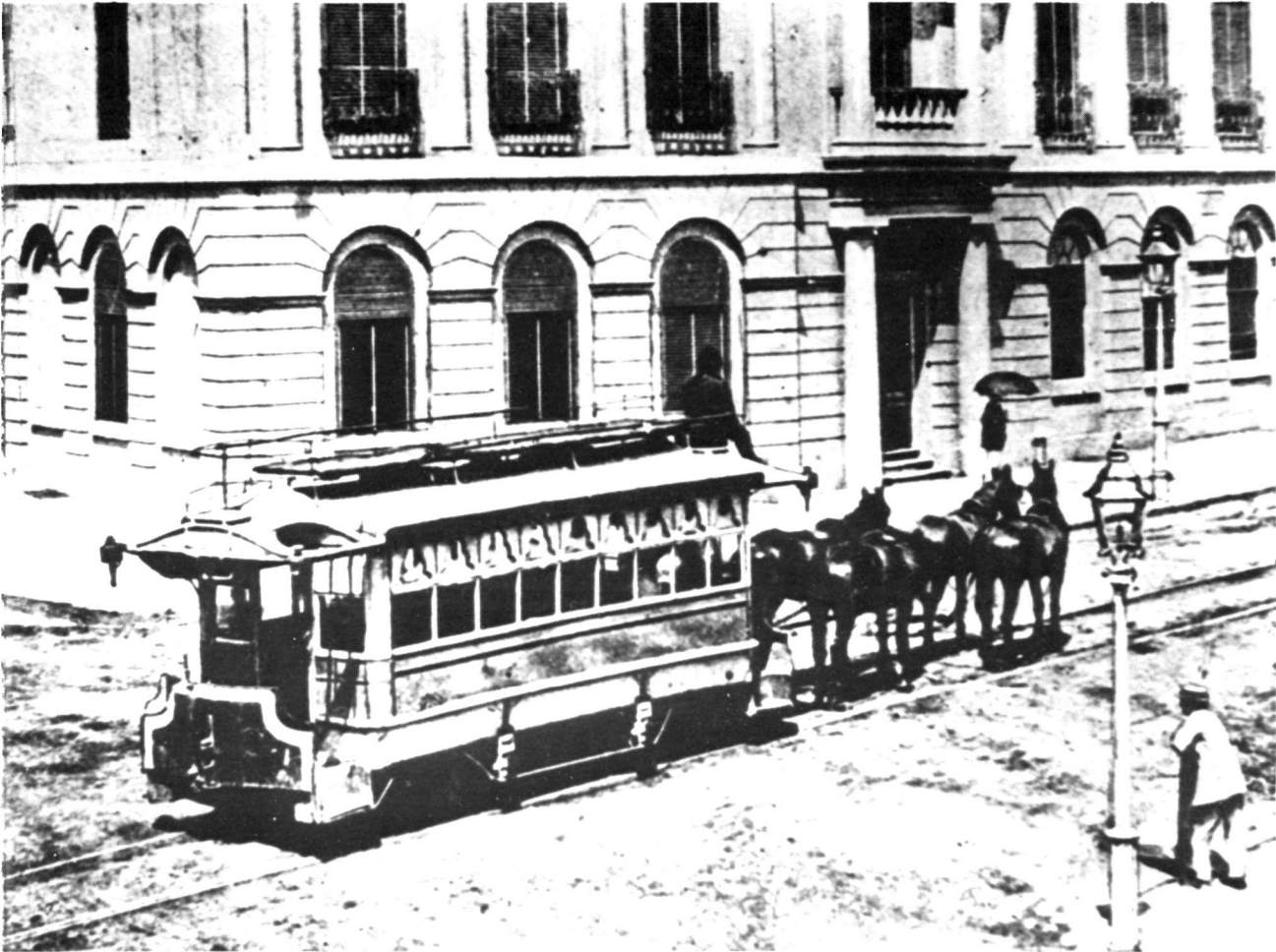
By mid December the tramcar wheels had been reprofiled to increase the flange depth. The problems which emerged during the trials caused some of the original opponents of the project to judge "the whole affair a failure".

Opened for Traffic. The tramway opened for traffic on Monday morning 23 December 1861 when one of the tramcars, drawn by four horses, left the railway terminus soon after 6 am. The return trip departed from the Quay at 6-25am taking up passengers for the 6-45am train from Redfern. This first $1\frac{3}{4}$ mile journey of a street tram in Australia occupied less than 10 minutes!³¹

With the arrival of two trains at Redfern the tramcar departed for the Quay crowded with passengers who were set down along Pitt St. where ever they so desired.

The opening day report stated that no trouble had been experienced on the sharp curve at the entrance to the railway terminus nor on any of the uneven sections of the track. "The motion of the car is extremely easy and comfortable and passengers accustomed to the rattling and jolting of the 'buses' will appreciate the means now afforded of entirely escaping from these annoyances".

This same report revealed further details of the tramcars. The cars could seat thirty passengers inside and a further thirty on the roof seats, but one trip on that opening day carried at least 75 passengers. The "outside of the car has a rather gayish appearance, the body being a lively yellow; in the centre a lion and an eagle, taking the place of the unicorn, being represented with the motto "Unity is



The other of the two Pitt Street horse car photos, this time with four black horses. It has not been possible to determine if the same car is in both photos.

the strength of the Nations". The names of the cars are respectively "Old England" and "New Australia".

"There is a driving box at either end of the car and arriving at the Circular Quay the driver shifts his place and the pole and the horses are transferred" to the opposite end for the return trip.

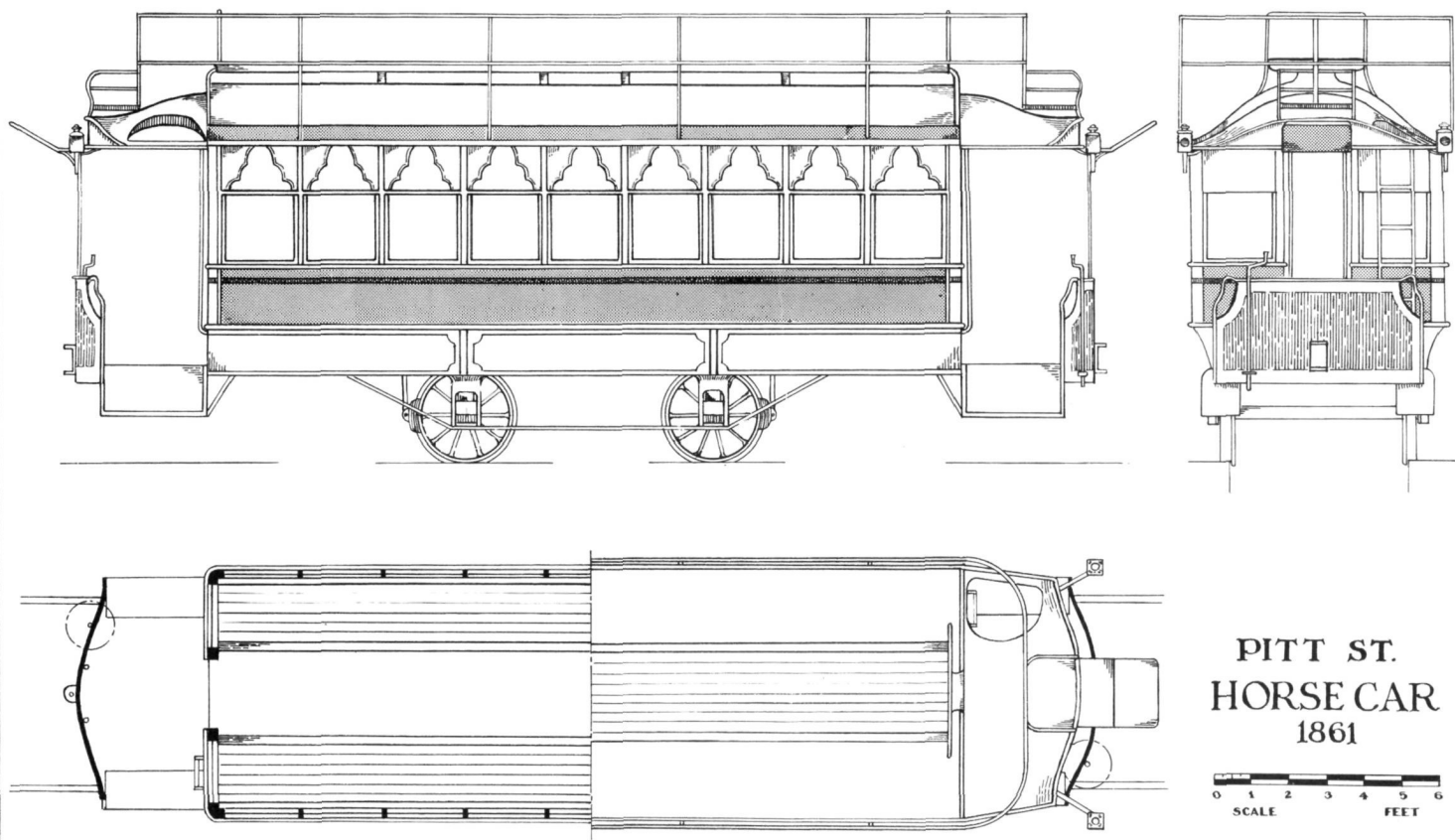
The single far cost 3d on the tram, being 1d cheaper than the previous omnibus fare. No charge was made for children travelling with an adult.

The initial Pitt St. Tramway Timetable listed trams as leaving the Quay at 6-25am, 9-55am, 1-40pm, 4-40pm and 6-10pm on weekdays while on Sundays the cars departed at 8-10am and 4-40pm.³²

George Francis Train. George Francis Train, an eccentric entrepreneur, was born in Boston U.S.A.

on 24 March 1928.³³ Four years later, when his family resided in New Orleans, his mother and three sisters died from yellow fever. His father sent young George to his maternal grandmother in Boston. His uncle engaged him as a clerk in the family shipping business during 1845 and this proved to be the first step in a successful commerce career.

During 1850 George worked as manager of the firm's branch office in Liverpool England and in 1853 he arrived in Melbourne to establish a subsidiary mercantile house. He constructed a warehouse at Port Melbourne and an office in Flinders Street. It is believed that George Francis Train initiated the movement which resulted in the construction of the private steam railway between Port Melbourne and Melbourne during 1854. He



PITT ST.
HORSE CAR
1861

also imported the first Concord coaches from U.S.A. and encouraged Freeman Cobb to use these to start the famous Cobb and Coy. coach line.

Francis Boardman Clapp, also a native of Massachusetts, arrived in Melbourne in 1853 and was appointed the agent for the Concord coaches. In 1857 Clapp advanced into the coaching business, co-ordinating some Victorian services with the Cobb and Coy. workings and in 1860 tried to obtain approval for the construction of a horse tramway along Bourke St. to Collingwood without success.

Clapp was the director of a Company which developed horse bus lines in Melbourne from 1869 and this eventually expanded into the Melbourne Tramway and Omnibus Company which opened the first route of the successful Melbourne cable tramway network on 11 November 1885.

During his 2½ years in Australia George Francis Train visited both Sydney and Tasmania. He left Melbourne in November 1855.

Interest in Horse Tramways. In 1858 Train noticed the success of horse worked street railways in Philadelphia. He returned to England and endeavoured to convince the Liverpool Corporation that horse tramways would be an asset in that city, but without success. G.F. Train was successful on the other side of the Mersey at Birkenhead.³⁴ His tramway from Woodside Ferry to Birkenhead Park opened for traffic on 30 August 1860 with two single deck and two double deck four wheel saloon horse cars identical to the Sydney vehicles.

These tramcars were based on those designed by Andrew Palles for use in Philadelphia.³⁵ The vehicles were imported in sections and assembled in Birkenhead by coach builder Robert Main. Trains step rail caused problems and this was replaced soon after by grooved rails. At this time the opportunity was also taken to regauge the tramway from 5'2" to 4'8½" and to reroute it through adjacent, but more convenient streets.

During 1860 Train canvassed London authorities for permission to build horse tramways in that city. Only after lodging cash guarantees of 10 shillings per yard of track, to be used to remove the track if the undertaking was unsuccessful, was he able to construct three isolated horse tramways.

The first, between Marble Arch and Porchester Terrace in Bayswater opened on 23 March 1861, that from Victoria Station to Parliament Square on 14 April 1861 and the third, from Westminster Bridge to Kennington Gate on 15 August 1861. As a result of opposition caused by omnibus and cab interests as well as protests raised following accidents on the tramways, the Bayswater line closed in September 1861, the Victoria St. route on 6 March 1862 and the Kennington Gate line ceased on 20 June 1862 when the track was torn up under sheriff's orders while the trams were still running.

During late 1861 the fact emerged that the Turnpike Commissioners had no power to approve tramway construction.

Although lithographs show the London tramcars at Marble Arch to be named "Napoleon" and "Victoria" these were only the results of a promotional letterhead artist. The Marble Arch cars carried the names "Princess Royal" and "Her Majesty" while the Victoria St. tramcar was named "The People".

The tramcars on these three London routes also resembled the Sydney cars. Although contemporary sketches show double decker cars in use, it is now believed that only single deck vehicles were employed in London. The Marble Arch route was worked by three cars, one is known to have operated at Victoria St. while at least two ran on the Kennington Service.

A similar undertaking opened in Darlington on 1 January 1862 closed in 1866 due to problems with the step rail, but the route opened between Hanley and Burslem in the Potteries District on 13 January 1862 continued in operation.

The success of the Potteries tramway was mainly due to the step rails being replaced with grooved rail in 1864.

Train's Later Activities. On his return to the U.S.A. Train was involved in the railroad boom. He was one of the organisers of the "Credit Mobilier" a construction facilitator or dummy company of the Union Pacific Railroad Coy. then building the eastern portion of the first U.S.A. transcontinental railway between Omaha Nebraska and Sacramento California. This connected with the western part built by the Central Pacific at Promontory Point Utah in April 1869.

The later Congressional Inquiry into the affairs of the Credit Mobilier was to cause a scandal with far reaching repercussions for future railway financing methods.

In 1872 Train nominated as an independent candidate for the Presidential elections in U.S.A. He failed to make any impression on the poll. The election was a two sided contest, Republican candidate Ulysses S. Grant was elected to a second term as President with Henry Wilson as his Vice President against the Democrat candidates Horace Greeley and B. Gratz Brown.³⁶

Just prior to this presidential campaign, Train travelled around the world in eighty days giving Jules Verne the idea on which he based his famous novel. In 1890 Train repeated the journey in 67½ days and a third trip two years later further reduced the time to 60 days.

From the time of the Presidential campaign Train was considered an eccentric. Following the death of his wife in 1877 Train lived as a recluse and it was only towards the close of his life that he

returned to more "rational" ways. He died on 18 January 1904 after writing his autobiography "My Life in Many States and Foreign Lands". (Heinemann 1902).

Advantages of Tramways. One economic theory advanced in 1861 in favour of horse tramways argued that as horses could pull a greater pay load on rails the fares can be 33% cheaper than those charged on omnibuses. In London it was found that the wealthier members of the community used cabs while the poorer classes, who could not afford omnibus fares, walked. The more spacious design and comfort provided by tramcar construction was expected to make tram travel attractive to the middle classes, while the reduced fares would be within the reach of the poor.³⁷

At Birkenhead it was found that the tramway caused property values along the route to rise by 20% and as the tramway company was responsible for the repair and maintenance of the adjacent road surfaces and as the popularity of tram travel removed much heavy traffic from the roadway, the general highway rates were expected to fall.

Designated Pitt Street Stopping Places. On 27 December 1861, just four days after the introduction of the Pitt St. tramway service, designated stopping places were introduced. These were located at Bridge, Hunter, King, Park, Bathurst and Liverpool Streets. This change was made to improve the trams ability to connect with each train at Redfern. The half mile between the station and the first stopping place at Liverpool Street gave cause for complaint. A correspondent complained in the "Sydney Morning Herald" for 6 March 1862 that this long distance caused people to jump from the moving car and just recently a passenger was injured when alighting in this manner.

A later letter under the name of "Daily Passenger" complained that the late running of the tramcars caused some passengers to use cabs as they feared missing the connection. In addition, trains were sometimes delayed up to 15 minutes awaiting the arrival of the trams at Redfern.³⁸

Dangerous Driving. Driver Patrick of the horse car "Old England" was called before the Police Court during late February 1862 for driving too fast and recklessly.³⁹

Just before this matter was raised, John Bell was driving his dray across the tramway at Gipps St. on Saturday evening 15 February 1862. It seems that he was in a drunken state when he collided with the tramcar horses forcing them off the line. The tram was under the control of driver Patrick Delany. Bell was found guilty, in the Police Court on the following Monday, of wilfully destroying two traces and a belly band of the tram horses valued at 50 shillings. Bell was ordered to pay the cost of damages or be imprisoned for seven days.⁴⁰

J. Wood's Control Extended. From the end of September 1862 Mr. John Woods took over the lease of the Pitt Street tramway which allowed him to operate the tramcars along the line as often as he wished.⁴¹ The only stipulation directed him to meet every arriving and departing train at Redfern. This contract could be cancelled at three months' notice by either Mr Woods or the Railway Commissioner.

The rent charged amounted to "2½% on the entire outlay". John Woods also contracted for the conveyance of goods traffic along the tramway at 2s6d per ton.

In the meantime the service on the tramway had been increased with trams leaving the Quay on weekdays at 6-25, 9, 9-55 and 11 am, 1-35, 3-30, 4-35, 6 and 6-10pm. The last two departures would have required both tramcars in service.⁴²

Goods Traffic on the Tramway. During 1862 the southern railway was being extended from Campbelltown to Picton. The crossing of the Nepean River at Menangle required the construction of a large three span plate girder bridge. The iron for these spans was shipped from England in January 1862 but the ship carrying spans one and three was wrecked. The middle span arrived during May 1862 but the girders were carried by horse hauled road waggon from the wharf to the railway terminus. The "Sydney Morning Herald" criticised the Railway Department for not using the facilities of the Pitt St. tramway for the carriage of this ironwork, but remarked that no preparation had yet been made for the handling of goods traffic on the tramway.⁴³

On Monday 13 October 1862 the tramway "was brought into use for the first time for the conveyance of goods". The replacement iron plates for the third and first spans of the Menangle bridge had arrived on the ship "Ocean Empress" and these were conveyed along the tramway in railway waggons hauled by four horses and then taken to Menangle without being transhipped at Redfern.⁴⁴

The Sydney Tramcars. The origins of the two Sydney tramcars is not clear. George Starbuck, the manager of Train's London tramways, opened his tramcar building business in Birkenhead during 1862 and continued constructing tramcars to the original Birkenhead, London and Sydney design for the next ten years.⁴⁵

It is quite feasible that Train ordered adequate vehicles for several other documented proposals in the 1860-62 period and two of these cars were forwarded to Sydney. His initial English trams were imported from U.S.A. in sections by Elijah Prentiss, the principal of an American importing business in Birkenhead, who was also in partnership with Train. These vehicles were assembled by Robert Main in Birkenhead.

Evidence suggests that a further two tramcars

and a quantity of rails were sent to Melbourne by G.F. Train for the F.B. Clapp Bourke Street tramway of 1860-61.⁴⁶ This aspect needs to be further researched and the ultimate use to which these two tramcars were placed is a query which also needs to be answered.

The two tramcars delivered in Sydney in 1861 suffered storm damage and arrived in a weakened state. Press reports of October 1862 indicated that one of the tramcars was then undergoing repairs⁴⁷ and consequently the (other) car has been occasionally overcrowded; after next week both cars will again be brought into use⁴⁷.

A Railway Department rolling stock report with entries up to May 1864 shows an additional tramcar, 10 horse boxes and 2 carriage trucks built in the Railway Workshops at Redfern terminus. The last entry in the non-goods category on this return shows this tramcar as costing £378-0s-11d and carrying No. 3. This would mean that the new tramcar would have been constructed between 1862 and July 1864.⁴⁸ By that stage the two original cars carried numbers 1 and 2.

A further Railway Department report for the year ended December 1865 reveals that tramcar (2nd) No. 2 entered service during May 1865 having been constructed at the Sydney Railway Workshops. This car weighed 3 tons 2 cwt 3 qts and was carried on four 2ft-6in diameter wheels.⁴⁹

The entire Sydney tramway rolling stock roster therefore consisted of four tramcars; 1 and 2 supplied by G.F. Train in 1861 and 3 and (2nd) 2

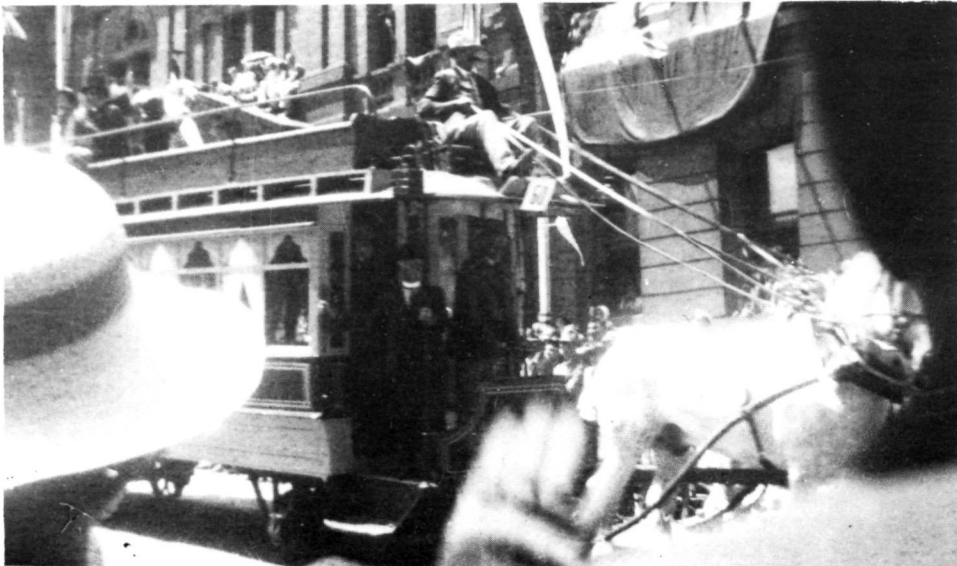
built later in the Redfern Railway Workshops. It is doubtful if the original tramcars lasted until the 1866 closure. Original number 2 would have certainly been withdrawn from traffic prior to May 1865.

The English tramcars built to Train's specifications were 24ft. in length,⁵⁰ 7ft wide and drawn by two horses. Repeated reference to the capacity of the Sydney cars state that 30 passengers could be seated in the saloon. This would require a saloon length of at least 22ft.⁵¹ Photographs suggest that the platforms at each end would be at least 3ft. each making the length of the Sydney tramcars around 28ft. The Sydney tramway also used four horses to haul each car.

Other Tramcars. Between 7 May 1862 and 1901 a horse tramway service operated along the one mile harbour end of the 13 mile 3 ft gauge Dun Mountain Tramway which transported chrome ore to the New Zealand port of Nelson. The passenger portion of the operation linked the Port with Trafalgar St. Nelson.⁵²

The first of two cars used on this service was a four wheel end loading saloon tram with five windows on each side and longitudinal outward facing benches on the roof. This was constructed by Mr. Kearey of Pitt St. Sydney in February 1862. The following contemporary report provides details of this tramcar when it was placed on inspection at Mr. Kearey's coach works in Pitt Street on Saturday 22 February 1862.

"The carriage somewhat resembles the Pitt St



Former Sydney electric tramcar C94 rebuilt to resemble an 1861 Pitt Street horse car, in the January 1838 sesqui-centenary parade. - late J. McCarthy



*The Sydney built Dun Mountain tramcar at Nelson New Zealand.
- G.C. Stewart collection*

Tramway cars, having a landing at either end; it is, however, smaller in size, the width of the gauge being only three feet and the dimensions of the vehicle ten feet by five. Provision has been made for thorough ventilation by a succession of openings in the roof, occupied by perforated plates in imitation of cane; and the apertures at the side are furnished with shutters, as well as with glass windows. There are double seats on the roof, which are easily ascended from the landings, and around which is an iron railing for the protection of passengers. The carriage is constructed to hold forty passengers and to be drawn by one or two horses; as may be required, the shaft being removeable from one end to the other; the weight of the carriage is about a ton. The timber used in its manufacture is cedar and blue gum, the body of the vehicle being beautifully grained in imitation of forest oak, which gives the exterior a very light and elegant appearance; the panels are all cedar. The carriage has cost £300; it has been examined by Mr. P.N. Russell, on behalf of the company who expressed himself satisfied with it. The entire work was performed at Mr. Kearey's manufactory; and it is a specimen of colonial workmanship, it does credit to the establishment. This is the first railway carriage of any kind manufactured in these colonies and there can be little doubt...that it will lead to the manufacture

in Sydney of the carriages required for our own tramways and railways".⁵³

Composer Killed. On Friday 15 January 1864 a noted member of the Sydney community, composer Isaac Nathan, was run down and killed as he was alighting from tram No. 2 at the Goulburn St. corner. The coroner judged this to be an accidental death, but commented that communication between the front and rear brakemen was not satisfactory enough to stop the large tramcars in an emergency. From this time onwards the tramway was ridiculed by the press as well as in parliament.⁵⁴

Future of the Tramway. It appears that a petition for the removal of the tramway was drawn up as early as June 1862.⁵⁵ On 28 November 1865 Mr. Buchanan moved in parliament that the Pitt St. tramway was a dangerous nuisance and should be removed without delay. An amendment by Henry Parkes referred the subject to a Select Committee. On 27 March this Committee recommended the closure of the undertaking, when the lease terminated at the end of the year, and the removal of the rails. On 4 April 1866 this report was adopted 27 to 12 in the Lower House.

The Pitt St. Tramway Repeal Bill. On 6 November 1866 the Repeal Bill was debated in Parliament. The arguments advanced for and against tramway retention are summarised:-⁵⁶

1. A large majority of the people are against the tramway.

2. A large waste of public money will result in the removal of the line.
3. The line is a great convenience to the public and only an inconvenience to a few.
4. One of the few public works in the colony which is remunerative.
5. Looking at the magnificent buildings being erected along Pitt St. it would appear that the tramway has done no harm to trading there.
6. The work had cost £6,000 to set down and what little defect does exist with the rails could be rectified for £500.
7. If the Pitt St. merchants were polled the majority would retain the tramway.
8. No goods shed has been erected at the Quay as promised and the trams have been solely for the convenience of a particular class.
9. Rails have not been laid down correctly and numerous accidents have occurred.
- 10 "It never had a chance"...The representatives of the city, after an enquiry by the Corporation, opposed the laying of the tramway. Several lives have been lost through the tramway and numerous accidents have occurred.
- 11 The rails were laid so that no vehicle could cross with safety unless at right angles.
- 12 The only people who found the tramway a convenience were those in the suburbs and it should not be kept in existence to oblige them seeing that it is a dangerous nuisance to the rest of the colony.
- 13 There will be an expense involved in removing the rails, but they can be used elsewhere. They should have remained in a heap at Redfern terminus and never laid down.
- 14 Anyone wishing to drive up Pitt St. generally diverts to George Street with the result that that thoroughfare is overcrowded, because of the space taken by the tramcars. George Street will be relieved when the trams are removed.
- 15 A parliamentarian stated that if he sends someone from the Quay towards the railway station on an errand, he instructs the messenger to travel by way of Kent Street thus avoiding Pitt St.

The repeal Bill passed the second reading the Lower House 23 to 3, The Third reading was passed on 7 November and the Bill moved to the Upper House. On Thursday 15 November 1866, during the second reading in the Legislative Council, identical points were raised to those expressed in the Lower House. Two further aspects were mentioned:-

1. The tramcars should be replaced by a railway extension to Hyde Park or by a new route from Darling Harbour to the Quay.
2. Buses can handle the passenger loads at present.⁵⁷

The Bill finally passed the Third reading in the Upper House on 22 November.

Last Day of Operation. The trams operated for the last time on Monday 31 December 1866 and on the following morning Mr. John Woods commissioned four large omnibuses on the route. Two of these had been built especially for the conversion. These buses followed the tramway timetable and the fares remained at 3d. for the through adult journey.⁵⁸

On Tuesday 1 January a gang of 30 or 40 men started the removal of the rails, most of which had been removed by the end of that week.⁵⁹

Tramway Proposals. When the Pitt St Tramway was first proposed, Railway Commissioner Martin-dale intended using discarded "Barlow" or bridge rails from the original Sydney to Parramatta railway, but Train's patent step rails were adopted and this move caused the main objections to the tramway as the trial period of operation progressed.⁶⁰

On Tuesday 17 September 1861 a meeting was held of interested residents to discuss the advisability of forming a company to build a horse tramway or railway to Botany using G.F. Train's patents. Mr. Holt promised to subscribe £1,000 to the project while Mr. Lord offered to match this amount if the company was formed.⁶¹

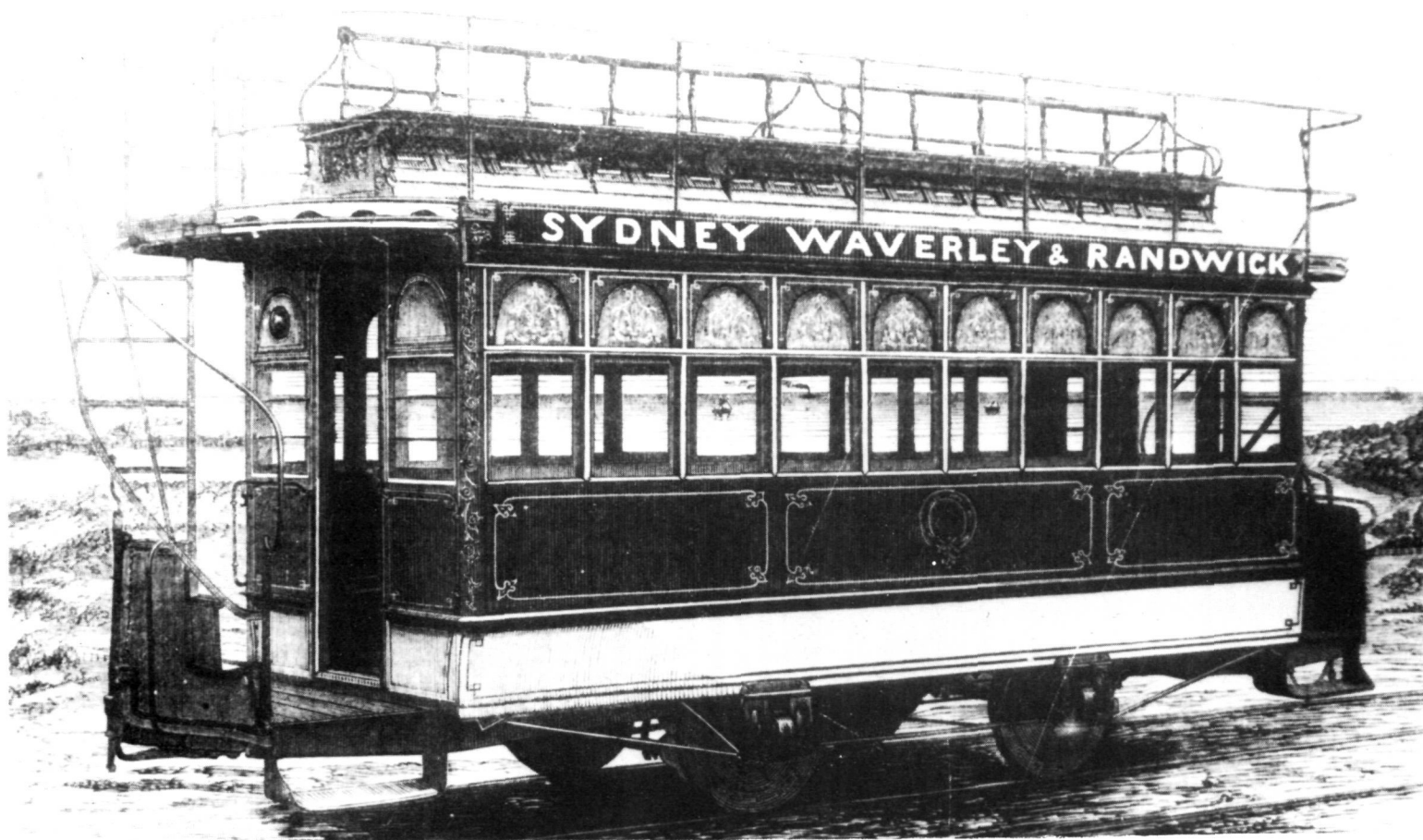
By 1862 plans for this scheme had progressed to a stage where likely routes were being investigated. At this stage the horse tramway proposal from Redfern to Botany had been amended to one for the construction of a light railway to branch from the Sydney to Parramatta railway at Newtown. This would be worked by either horses or a light railway engine.

The scheme failed to reach fruition and rail worked transport did not reach the Botany area until 1882 in the form of a steam tramway route. **Further Use for the Pitt St. Tramcars.** Both tramcars were transferred to the railway rolling stock lists after the closure of the Pitt St. line.

Tramcar (2nd) No. 2 appeared as a single deck railway saloon car in 1867 and was shown as 1st class car No. 9 by July 1869. It transferred to duplicate stock in 1890 and was written off between 1895-7.

Tramcar No. 3 became 2nd class railway carriage No. 48 in the July 1869 lists. It was classed as a single deck car with brake gear. In September 1875 this car was reclassified as composite brake car No. 6 and was written off during 1895-7.

At this stage photos have not been found of these two vehicles in railway service, but it is believed that they were used on the Campbelltown to Camden and the Blacktown to Richmond railways. In railway service the cars were entered as weighing 5.8 tons.



The Hudson Brothers double deck horse car which was used to open the Sydney Station to Hunter Street tramway, along Elizabeth Street in September 1879 pending erection of the Baldwin steam tram motors ordered for this undertaking. - N.S.W. Government Printer

Reintroduction of Horse Cars. On 13 March 1879⁶² a Bill for the construction of a steam tramway from the railway terminus to Hunter Street along Elizabeth Street and not Pitt Street, was introduced by Mr Lackey in Parliament. This received assent on 7 May 1879 and the progress of a parallel Bill permitting the construction of a railway extension from Redfern to the Quay was stopped by prorogation.⁶³

This tramway was planned to be a temporary expedient to take visitors to The International Exhibition being held in the Garden Palace at the Botanical Gardens. The service proved so popular that the tram service was retained and extended to eventually become the largest tramway undertaking in the southern hemisphere.

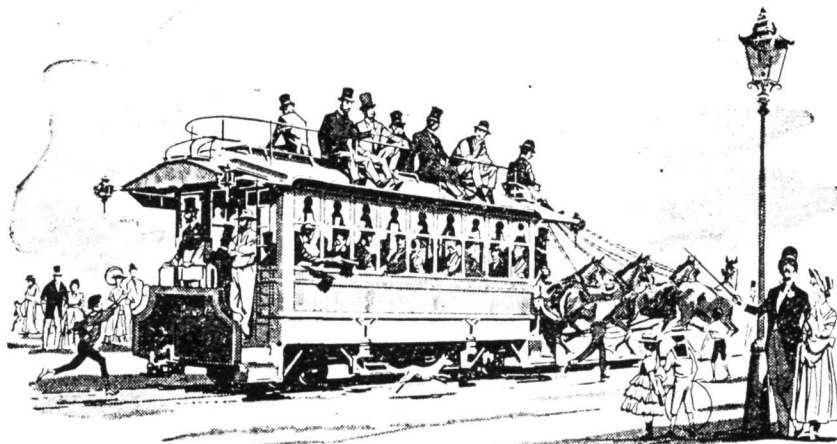
The steam motors ordered for this tramway were not ready for the opening of the new tramway on 16 September 1879 so horse operation commenced using two cars constructed by Hudson Brothers as an emergency measure in case the steam rolling stock deliveries were delayed. The Hudson cars were modelled on the 1861 tramcar design, by then outdated. The 1879 cars, however, carried 10 windows on each side of the saloon while the upper deck seats were reached by a primitive spiral (helical) staircases in place of the iron ladders on the 1861 vehicles.

One steam tram shared the service with a horse car on 28 September 1879 and on the following day the second steam tram motor was available enabling complete steam services to be worked from that day onwards.

The assistance of Rev. C.B. Thomas, and Messrs. D. Estell, K. Magor, F. Moag, V. Solomons, R. Willson and C. Woodside is acknowledged in the preparation of this article.

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The First Tramway

Sydney's first tramway was opened in Pitt Street on December 23, 1861, running between Circular Quay and Redfern railway station.

It was drawn by horses and, judging from early popular support, seemed destined to become a valuable feature of Sydney life. However, after only a few months it became a subject of bitter controversy. Parliament was bombarded with petitions, primarily from irate shopkeepers and people who drove horse-drawn vehicles in Pitt Street.

The general view of these critics was that the trams were a "menace"—an opinion that clearly had some foundation because the wrong rails had been sent from England. These rails had a flange of 4 in. whereas the cars needed a flange of 1 in. The problem was solved when an observant engineer noted that everything would be all right if the rails were laid upside down. Accordingly, the rails were reversed and the wheels fitted, but the result was that the rails jutted above the level of the street. Private carriages and carts jolted violently when they crossed the rails and the carriage trade began to avoid Pitt Street to the consternation of shop-owners.

Pressure of opinion eventually forced the N.S.W. Parliament to act. In September, 1866, the line was closed and the rails were torn up.

Sydney's next tramway was built to serve an international exhibition in the Palace Gardens, Macquarie Street, in 1879. It ran from the railway station to Hunter Street, and was drawn by horses to begin with although these were only temporary because of the late arrival of four steam motors from the United States of America. The line had six double-deck cars, also from the United States. This tramway was opened on September 16, 1879, and immediately

became highly popular. The system was extended rapidly and by 1896, when city lines began to be electrified, there were 391 miles of rails and 114 steam motors in use. The Railway Commissioners took control of Sydney's trams until 1930, when a separate Government Tramways Department was set up.

Because gradients in North Sydney were too steep for steam traction, a cable tram was opened from Milson's Point wharf to Ridge Street in May, 1886, and an extension to Crows Nest was opened in 1893. The line was merged with the North Sydney electric system in 1900. A second cable tramway was opened from King Street wharf in the city to Ocean Street, Edgecliff, in 1894; this line was electrified in 1905.

The first electric line in the inner city was opened in September, 1899. It ran along George Street from east Circular Quay to the railway station thence to Pyrmont.

Two privately-owned steam tramways operated in Sydney suburbs. One of them was established in 1884 and ran from the gates of Parramatta Park to Red-bank wharf on the Parramatta River. In due course, it became a tourist attraction of historical interest and was not closed down until 1943. The other private tram ran between Rockdale and Lady Robinson's Beach, (which is now Brighton-le-Sands) from 1885, was electrified in 1900, became a public line in 1914 and was closed in 1949.

Many of Sydney's trams have now been replaced by buses and the remaining lines are all due to disappear.

Adelaide's first (horse-drawn) tramway was opened in 1878; Melbourne and Brisbane both originally established tramways in 1885, Hobart in 1893 (this is the oldest surviving electric tramway in Australia), and Perth in 1899.

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Advertisement Sydney Morning Herald Saturday 13 June 1959

Isaac Nathan - Australia's First Tramway Fatality

By Peter Roberts

Peter Roberts is an Arts graduate of Sydney University and the Sydney Conservatorium of Music. He has spent many years as a music teacher in the schools of the Department of Education of N.S.W. and has just completed an eighteen months tour of duty as lecturer in a tertiary establishment in Wales.

Although Peter Roberts is not a tramway enthusiast, he has a sympathy for that form of transit, having spent his boyhood years at Watson's Bay.

At about five o'clock on the afternoon of Friday, 15 January 1864 an elderly Jewish gentleman with the remnants of grey curls hanging on his shoulders prepared to alight from the Pitt Street horse tram as it approached Goulburn Street. As he rose he said to his fellow passenger with whom he had been talking during the journey, "God Bless You". He stepped from the tram, it moved suddenly, he fell and was crushed beneath it. He had become Australia's first tramway fatality; his name was Isaac Nathan.

Nathan had been born in England at Canterbury in 1790, the son of the cantor of the synagogue in that city. In later life, in Australia, Nathan claimed descent from Stanislaus II, the last king of Poland who had been forced to abdicate in 1794, and an unknown Jewish mistress. He was, however, unforthcoming with evidence of this so one is tempted to dismiss the claim as an attempt by a man to impress in a colony where gentility and birth were regarded by many as synonymous.

Nathan studied music in London under Domenico Corri who himself had trained under Nicolo Porpora, Haydn's master. He became a singing teacher and a writer of fashionable songs for fashionable ladies. He was appointed singing master to the Princess Charlotte, heiress to the British throne (Charlotte's bevy of instructors ranged from an Anglican bishop to a guitar player borrowed from the court of the king of Spain) and he was later to become Music Librarian to King George IV.

In 1814 Nathan collaborated with Lord Byron to bring out **Hebrew Melodies**. This was something after the pattern of Moore's **Irish Melodies** -

His main interest is the playing and/or restoration of old and unusual musical instruments. When the approaching 120th anniversary of the opening of the Pitt St. Horse Tramway was mentioned to him, he offered to prepare this article on Isaac Nathan.

It appears that a famous French composer met a similar death in the same decade so a later article in the same style may even yet appear in "Trolley Wire"!

though posterity has determined that Moore's work has the more enduring charms. Byron wrote twenty six poems for **Hebrew Melodies** and some are still vaguely familiar, such as "She Walks in Beauty like the Night". People old enough to remember the school-boy anthologies of yesteryear may remember such lines from "The Destruction of Sennacherib" as:

The Assyrian came down like the wolf on the fold;

And his cohorts were gleaming in purple and gold;

Nathan's collaboration with Byron was short-lived since Byron left England in disgrace in 1816, but he cherished the memory of the relationship to his dying day. In 1828 he published his **Fugitive Pieces and Reminiscences of Lord Byron**. In 1853 when he built a home in Randwick, he called it "Byron Lodge".

In 1812 Isaac had eloped and married Rosetta Worthington who came from good Anglo-Irish stock and had even been presented at the Vice-Regal court in Dublin. The insult of having a musician in the family was more than her relatives could stomach so they disowned her completely. She wrote a sentimental novel, bore Isaac six children and died in 1824. Within two years he had remarried. His second wife was a dancer, Henrietta Buckley. She was also to bear him six children. She refused to have his elder children at home so they were packed off to boarding school and work. Yet this was a prolific period in Nathan's life. He wrote songs, comic operas and burlettas, many of them successful. He also wrote a quite verbose **History of Music**. Nonetheless, it was difficult to make

ends meet. On more than one occasion creditors were escaped by means of a trip to Bristol.

Nathan's modern biographer, Mrs Mackerras, also suggests that Nathan did some cloak and dagger work for the Royal family. This most probably involved collecting documents about the love life of the Duke of Sussex so that they did not fall into improper hands. Unfortunately, he had not been paid for his labours when the king, William IV, died. The new queen, Victoria, refused to honour any promise of indemnity from the last reign. With debts mounting the only thing Nathan could do was emigrate. So, with grand piano and family (except for one daughter about to marry in England) he set sail for Sydney on the "York" in 1840.

Nathan was not the first serious composer to come to Sydney. He had been preceeded in 1836 by Vincent Wallace, the composer of *Maritana*. But Wallace did not stay long (indeed he left in a clandestine manner in 1838 for South America as a result of debts). Nathan was the first to settle. Not that there was much to be earned from composition in the infant colony. Much of his energies were taken up with teaching and performing. At various stages he was attached to St Mary's Cathedral, the Normal School of Music and gave concerts at Government House. But his importance to the history of Australian music is as our first resident composer of any competence.

In 1846 Nathan wrote an oratio *Leichhardt's Grave* in memory of the explorer who had been missing for two years. The fact that Ludwig Leichhardt returned to Sydney in time for the first performance only increased the popularity of the work. In 1847 Nathan produced his opera *Don John of Austria* at the Victoria Theatre in Sydney. Its style may have harkened back to the very early years of the century and the "Herald" said that the music was "better suited to the drawing room than to the stage" yet it still remains one of the handful of operas actually written and produced in Sydney.

Nathan became interested in the music of the aborigines and arranged many of their chants as part-songs with piano accompaniment. To one vocal quintet he even added a 16-part interplay of "koo-ee" (the then spelling) calls .. "so that Ladies .. may pass a few leisure moments in Kooing, after the fashion of the antipodes". Professor Covell in his history of Australian music suggests that these settings of aboriginal music "stand as a kind of comic monument to the failure of one civilization to understand anything essential in the musical character of another." In defence of Nathan, Professor Covell points out that "it would be hard to think of any other musician of his time who would have done at all better in transcribing Aboriginal calls or melodies for a European or European-derived society.



Isaac Nathan

The later part of Nathan's life was spent living in Randwick. In 1859 he stood for the first municipal council there but failed to be elected. Financial troubles, however, forced him to sell up and move back into the city, and his last home was at No. 442 Pitt Street. It was to this he was returning when he was killed by the tram.

Nathan was buried in the Camperdown Cemetery and his tombstone describes him simply as "composer". This is appropriate for he represents the beginnings of serious musical composition in Australia.

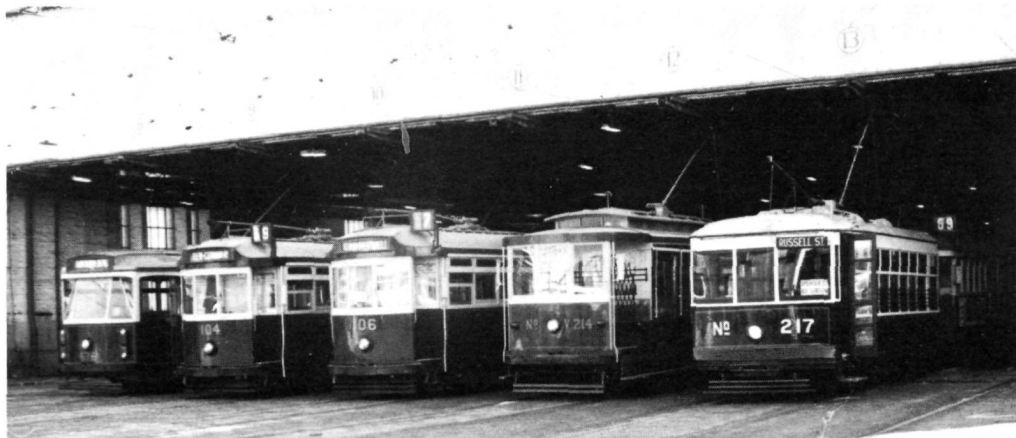
Footnote: It is perhaps interesting to note that the Australian conductor, Sir Charles Mackerras, is a great-great-grandson of Isaac Nathan.

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CITY SECTION

TRANSPORT NEWS FROM MELBOURNE



The TMSV 'Chocolate and Cream' tour on 30.8.81 included the spectacle of the five Melbourne trams in those colours lined up for photographs at Malvern depot. L 104 and 106 were used for the tour, tourist trams X2 676 and V214 were brought specially from Camberwell depot, while Birney 217 normally resides at Malvern. -K.S.Kings

TRAMWAYS

PERSONNEL

A conductress from Malvern depot, Jesse Wilson, retired from the Tramways Board after 39 years continuous service. As at her retirement she holds the record as the longest serving female employee. This record was celebrated with various functions and celebrations.

ROLLINGSTOCK

Scrubber car 10w was noted at Preston Workshops on 14 November along with 16w.

There is currently a major reorganisation of rollingstock in south eastern depots, with consequent movements elsewhere. W5 cars are now becoming numerous on Swanston Street routes. This is part of the W2 replacement programme. W7 cars 1036 1038 1039 1040 ex Preston are now at Glenhuntly. Other movements are: W5 681 to South Melbourne, 682 683 684 685 to Glenhuntly, 740 836 to Malvern, SW5 785 to Brunswick, 837 839 also to Glenhuntly, SW6 859 also to Malvern. All these cars came from Essendon. Former Brunswick W5 cars 769 770 771 797 798 772 are now at Malvern.

Z3 cars are now operating from Brunswick, Camberwell, Essendon, North Fitzroy and Preston depots. 184 is the highest numbered car

of this class in service. Another six Z cars began running from Essendon depot on Monday 19 October, making a total now of 18 on the Airport and West Maribyrong routes.

L cars 101 102 103 105 are stored in Thornbury depot. W3 cars 652 657 665 moved to Preston Workshops on 8 December for disposal.

Several cars have now entered service with the new type aluminium sliding doors. SW6 937 959 968 908, W6 997, W7 1024 and SW5 785 have received these doors during overhaul.

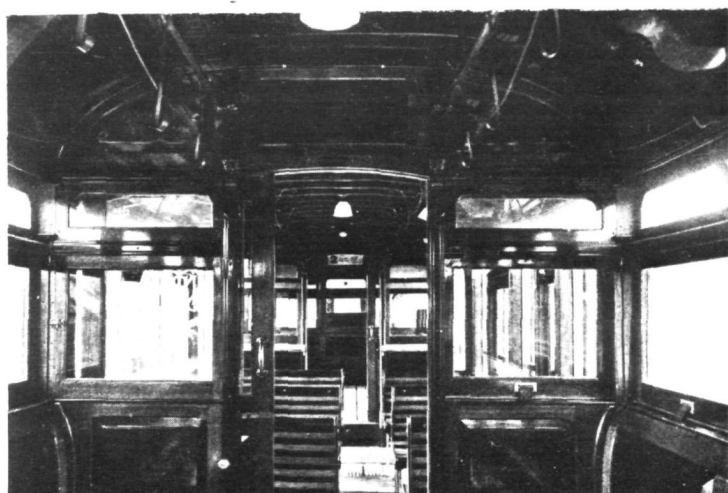
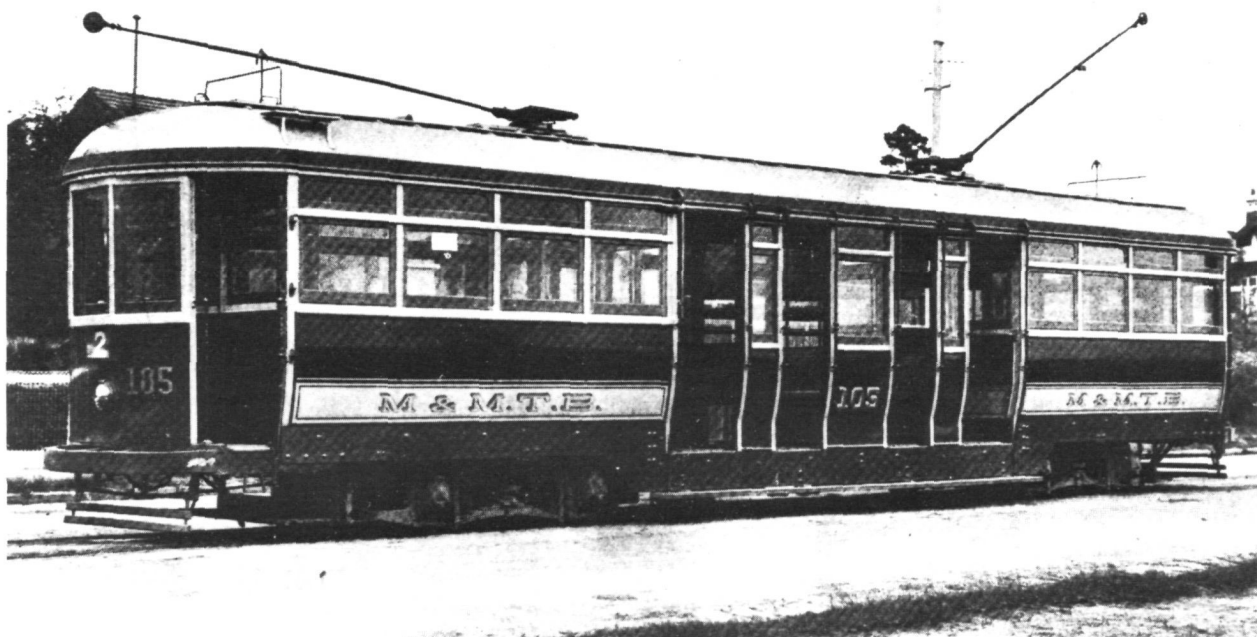
SERVICES

Tourist car V214 has recommenced the summer tourist service from Batman Avenue to Hawthorn.

Suburban electric trains ran to St. Kilda and Port Melbourne on Sundays for the last time on 16 August. Periodical tickets are being honoured on adjacent MMTB tram and bus routes.

The North Fitzroy freight only railway line from Royal Park closed on 1 August and this would appear to have rendered the tramway/railway crossings with Lygon and Nicholson Streets and St. Georges Road superfluous.

Melbourne will have free public transport on each Sunday throughout December and January.



ABOVE: L105 in original condition in 1921. Although ordered by the P&MTT the L class entered service under the M&MTB, although 105 carries the P&M route number - 2 - on the front apron. - M&MTB

LEFT: The interior of L105 when new. - M&MTB

BELOW: L105 and ex Sydney double deck bus 2615 on tour at Carnegie nearly 60 years later on 7 February 1981. - D.Featherstone





Z68 in Elizabeth Street City, at the widened safety zone at Bourke Street, which has been fitted with new style glazed shelters. 10.12.81. - K.S.Kings

WORKS

The safety zone in Swanston Street, for northbound trams at Flinders Street, was widened, lengthened and fitted with a new type prow on Sunday 23 August. The two zones in Swanston Street, northbound at Latrobe Street and in Elizabeth Street northbound at Bourke Street, were similarly treated and also provided with passenger shelters in November. These feature a glazed metal frame with the back curving forward over into a narrow roof, which seems to finish too far from the side of the tram and thus provide insufficient rain protection.

Track on route 6, Glen Iris line, was relaid in November between St. Kilda Road and Charles Street, near Prahran Station. This new work replaces one of the last remaining stretches of wood block paved track in Melbourne. The first stage of this work was completed by 10 November. As part of this programme, the track from Charles Street to the crossover at Chapel and High Streets will also be relaid.

BUSES

The Westgate bridge bus route had its am peak service increased to 6 minutes from November.

As noted in August TW, the AEC Mk6 buses are being withdrawn from service. The MMTB placed 100 in service during 1964 and their retirement commenced in 1980. As at 1 November 1981 only 15 remained in regular service; all were attached to Footscray depot. Three are at Hawthorn for driver training. A further narrowed

vehicle is in service with a private operator, this time with Shaves Bus Service at Mt. Waverley.

RAILWAYS

ROLLING STOCK

There has been two major renumbering programmes carried out on suburban rollingstock this year.

The first one involved the Martin & King silver driving trailers. These trailers were the subject of controversy from their introduction in 1973 and the AFULE subsequently placed bans on the cars, which originally were to run in six car sets marshalled M-D-M-D-M-D. The trailers were coded D and numbered 301 to 400. However, during delivery a number of the cars were altered to ordinary trailers and subsequently those which had been delivered in the original form have now had the driving equipment removed. The sets have now been remarshalled with additional motor cars as M-T-M-M-T-M. The 63 driving trailers involved are now numbered 951T to 1013T.

The second renumbering concerns M cars of the Tait stock. The new Com-Eng motor cars have been allocated 301M to 500M and Tait cars in this series have been given numbers of scrapped cars, or if due for early scrapping moved to the 475M to 499M group. The following cars now carry new numbers:

304M	to 242M
305M	to 264M
301M	to 291M

TROLLEY WIRE

306M to 297M
361M to 299M
309M to 300M
376M to 445M
374M to 450M
308M to 457M

It will be seen that the last three cars still carry numbers in the required series.

Seven new three car trains have now been delivered by Com-Eng. Set 313M-7T-314M was received on 3 December.

Driver training has been taking place on the Flinders Street to Caulfield section of the Dandenong line.

ELECTRIFICATION

As a step towards electrification of the Geelong line (first promised to be completed by 1960) a new duplicated section of the line was

DECEMBER, 1981

opened between Little River and Corio on 20 September. This project, the final stage of the Geelong duplication cost \$8.7 million.

The completion of this work coincided with the introduction of the new interurban service on 4 October when the number of daily services was increased from 20 to 25 with additional services on weekends also.

Concurrent with duplication has been a major upgrading of public and staff facilities at stations.

Electrification work commenced late in 1980 with the erection of several masts beyond the junction of the Altona line at Galvin. The work was temporarily suspended due to a lack of funds but the government made sufficient available to enable Werribee to be reached in 1983. Further masts have been erected as far as Paisley. It is hoped that the project will be completed to Geelong by 1985.

A three car set of the new Com-Eng airconditioned suburban cars on trial. - VicRail



★ Museum Notes and News



ELECTRAIL

Work has commenced on the restoration of a third 'doggie', 13/M, at Newport. Rewiring of 24D took place in July, however it was found that the roofs of both 24D and 107M were in a very poor state and would require more work than originally anticipated. As a result they will not be available for the 1982 Transport Cavalcade.

VicRail has agreed to retain two additional rollingstock items, Tait cars 230D and 290M, for Electrail.

ALBION PARK . . .



Illawarra Light Railway Museum Society



Tony Madden with the newly constructed fire fighting tank car. - K.McCarthy

December 15 1981 marks the tenth anniversary of the first meeting of the Illawarra Light Museum Society Ltd. The next report will give a very brief account of the group's attainments over the last decade as well as priorities for the next decade. Although a detailed work timetable has not yet been formulated the Society feels that 1984 would be an appropriate time for the official opening of the project. The sesqui-centenary of Wollongong and surrounding district is being celebrated at that time and this provides a 2½ year period in which the main line circuit can be completed and the project consolidated.

ST KILDA . . .

Australian Electric Transport Museum



SITWORKS CONTINUE

As part of the continuing programme to upgrade the surroundings of the St. Kilda museum, the AETM purchased a point linkage slasher in September for use on the diesel tractor. This equipment has permitted the whole of the museum grounds to be mown with only a limited input of labour being required. The outer car park and the tree reserve areas which could not be included within the hand operated mowing programme are now maintained in trim and tidy condition, thereby improving the overall appearance of the site to visitors.

TIME CLOCKS OBTAINED

Several time recording clocks were recently obtained from the STA for use and display at the museum. The basic mechanism of the clocks and their recording mechanism date from the commencement of the electric tramway system. The clocks were modified for electric operation some twentyfive years ago, and in more recent years, they have been given fibreglass cases in place of the original sheet metal ones. Despite these changes, the clocks are still of considerable historical interest.

TRACK AND OVERHEAD

Excavation has commenced for the installation of pointwork from the main line to the new tracks 7 and 8 leading into the new building.

The first of the steel trolleywire erected in the museum yard in 1972 and leading from the main line to track 2 has been replaced with copper wire as the steel wire was becoming increasingly worn.

BUILDING IMPROVEMENTS

To improve safety for any members working on roof maintenance, safety mesh is being progressively fitted under all skylights.

Following the collection of contributions from a number of members, an air conditioner has been installed in the members lounge adjacent to the original depot building.

SILVER JUBILEE CELEBRATIONS

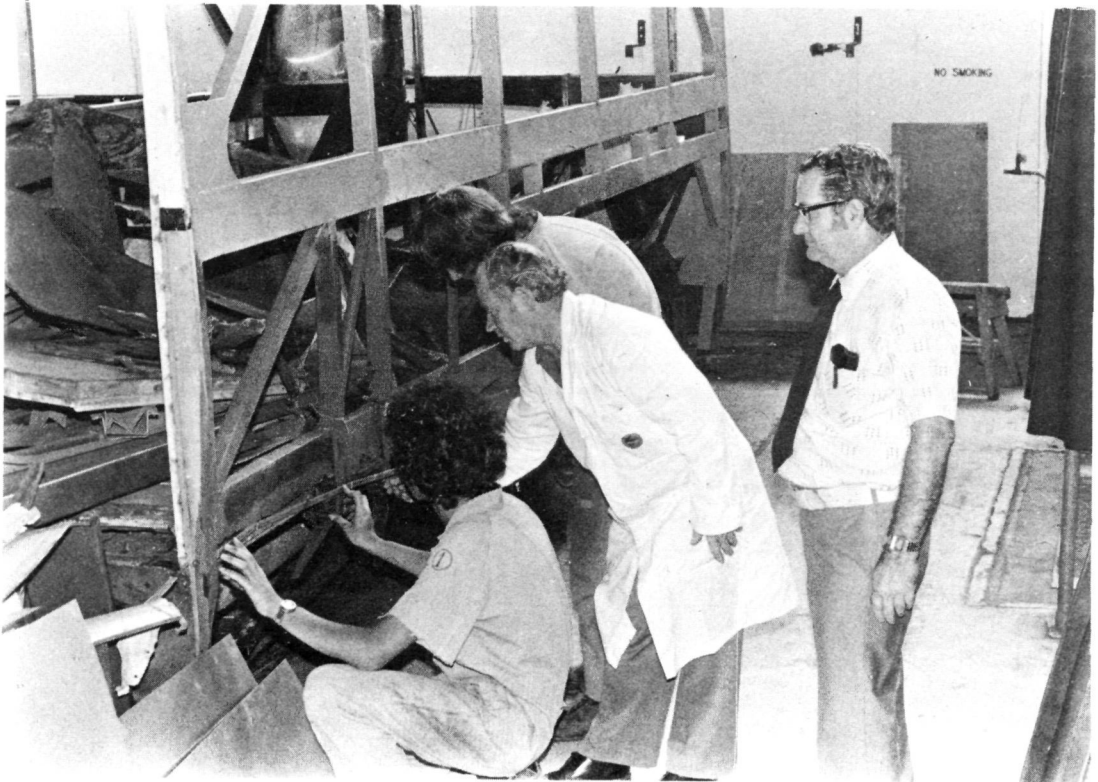
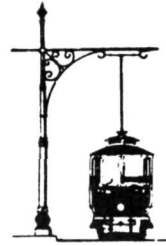
A special charity gala day is to be held at St. Kilda on Saturday 20 March 1982 to celebrate the silver jubilee of the establishment of the Museum's activities in 1957. Proceeds from the day will go to the Adelaide Children's Hospital Easter Appeal sponsored by television station ADS 7. Numerous other groups will also be contributing to the celebrations on the day.

F1 282 is seen leaving the side of road reservation in Shell Street St. Kilda to enter the park near the St. Kilda Beach terminu. - John Radcliffe



LOFTUS . . .

South Pacific Electric Railway



Instructors Sid Cooper and Fred Graham with apprentices and TB19 at Chullora. - Dennis O'Brien

Work has commenced on the restoration of trolley bus 19 at the SRA Apprentice Training College at Chullora. It is probable that this job will cover a period of three years.

The signal box, which as previously recorded had been extremely vandalised, was taken down and moved to the new site prior to the September school holidays. The depot junction semaphore signal was also removed at the same time. The foundations were subsequently removed and the area filled and levelled. In conjunction with this, additional filling was placed around the depot fan and along the main line into the side yard and the platform surface repaired.

The pointwork, rail and other items stored near the front of the depot have been moved to the new site together with the Railway Square signal box, which has also sustained some damage.

Further earthworks have been undertaken on the

new site to allow installation of the pointwork for the depot tracks, the lead onto the traverser and the connection onto the main line.

Installation of the remaining four tracks in the eastern side of the new depot building is underway. the rails are being welded to steel cross bars and will be supported on longitudinal concrete beams which will be poured in situ.

Meanwhile, there have been more arrivals in the new depot. The towerwaggon, double deck bus 1615 and 42u have been joined by the Dennis fire engine, deckers 2619, 1694, 1619 and half cab 1275.

Completion of the chain wire fence around the new site has failed to keep intruders out, they have come under, over and through it - yes, the wire was even cut. On one occasion the depot was entered and equipment stolen from the Dennis and the drink vending machine broken open.



Would you believe its a tram depot? The western side of the new building at Loftus in early December. From left to right – Albion 1619, AEC 1694, Albion 1615, AEC 2619 with the Bedford tower waggon and the Dennis fire engine. Out of sight next to the side wall where it is too low for deckers is Leyland half cab 1275. - K.McCarthy

FERNY GROVE ...



Brisbane Tramway Museum Society

ELECTION RESULTS

The results of the annual Society elections for the 1981/2 year are:

President	T.Atherton
Vice Presidents	P.Burden
	A.Ward
Secretary	A.Gilmartin
Treasurer	P.Hyde
Councillors	J.Hudson
	S.Churchward
	C.Braken

The Society participated in the Cavalcade of Transport on Saturday 28 November with buses 80 and 241 and ten bench tram 65 which was carried on a BCC supplied low loader.

To rectify problems that occurred with the track at the front entrance a section of curved rail was required which was curved with the rail bender, unfortunately powered by the tractor and not from the 600V DC supply. The rail was curved to a 41ft 6in radius.

However the office bearers do not get off lightly as the following management positions are also held:

Museum Manager	T.Atherton
Workshops Manager	P.Burden
Works Manager	A.Ward
Electrical Manager	J.Hudson
Traffic & Services Manager	S.Churchward
Grounds Manager	C.Bracken



From across the Tasman

photos by Peter Hallen
and Mal McAulay

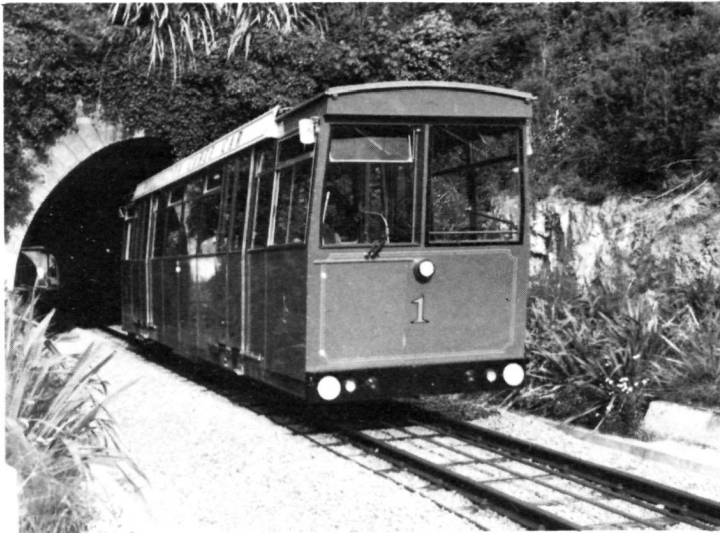
ABOVE: Wellington Fiducia type car 239 at the temporary outer terminus of the Wellington Tramway Museum's Queen Elizabeth Park tramway at Paekakariki.

BELOW: Tokyo Shibaura Electric Co. built EO class electric loco 51 (formerly EA 1) from the Arthur's Pass electrification in the yard at Christchurch.





ABOVE: Christchurch Boon car 152 running on the Tramway Historical Society's tramway at Ferrymead.



LEFT: Swiss built car 1 on the rebuilt Kelburn cable line in Wellington. A single metre gauge track with passing loop has replaced the former double 3ft 6in gauge tracks.

BELOW: Princes Street trolleybus depot in Dunedin. Only four routes and 11 buses remain. The four visible are 10 8 79 51.





Courtenay Place, the hub of the wellington trolleybus system with BTH bus 97 bound for Waddestown.

BACK COVER:

TOP: Saturday 5 December 1981 and Auckland 11 is about to lead the opening procession of trams to the Zoo on the second stage extension of the MOTAT tramway at Western Springs.

BOTTOM: The first two car set of the new Hungarian built suburban electric trains for Wellington on Sunday 6 December 1981 soon after arrival.

Sunday 6 December 1981 and Wellington Volvo trolleybus 223 stands in the depot immediately after arrival from the body builders in Auckland.





From across the Tasman

