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TROLLEY WIRE

AUSTRALIA'S TRAMWAY MUSEUM MAGAZINE

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Australian Electric Transport Museum member William Adams's H car 365 was the first tram to test clearances on 18 March at the City of Salisbury's newly constructed platform and ramp at the Playground terminus. Colin Seymour

Front Cover:
Perth Electric Tramway Society's Fremantle car 29 climbs the gradient towards the Village after departing Mussel Pool on 4 December 2015, while Perth E 66 can be seen following in the distance, on the Triangle.
Michael Stukely

Originally published in *The Railway and Tramway Record*, 23 April 1925, page 18.

THE DEADLY "P" CARS

Provide Capital for Doctors and Undertakers
American Abortions Adopted by Sydney Tramway Management
Why? Ignorance or Dollars – Which?

By "Javelin"

Synchronising with the return of the traffic manager from a trip a couple of years ago, a new type of car was added to the already long list of different types of car in use. It appears these cars, i.e., the equipment in them, is similar to that in use in other parts of the world, particularly in the United States. No doubt the persons responsible for their introduction to narrow tortuous, and congested streets of Sydney were out to secure a vehicle capable of standing the rough usage the Sydney trams are subjected to by being compelled to do the work of railways, and also with a view to conserving power. Whether they are a success in this respect is a question on there is a very pronounced difference of opinion – if the average driver were asked to express his opinion regarding these cars, each and every one of them would unhesitatingly reply: "Emphatically, no, they are by no means a success."

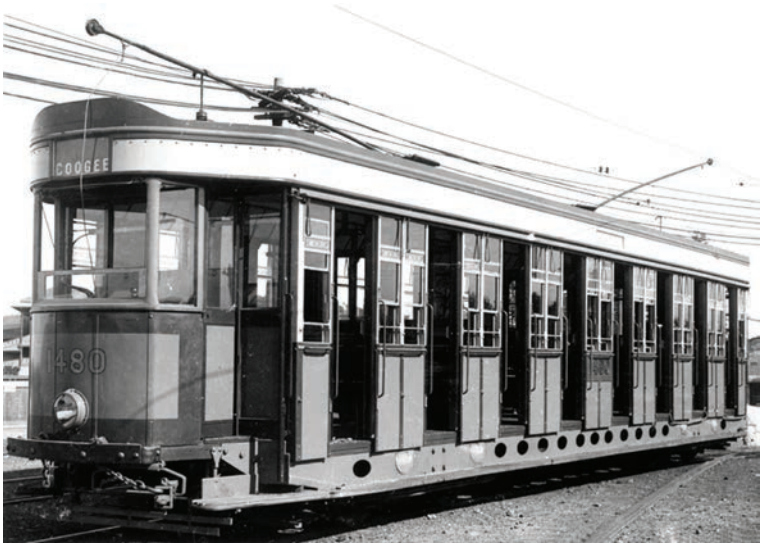
Of course the local designers could not be expected to have a sound, practical knowledge of these cars; neither could our officers. And there is no gainsaying the fact that a very grave mistake has been made, or something worse has been done, by introducing them here, into Sydney traffic until those responsible were thoroughly satisfied that they were capable of doing all that was claimed for them.

This grave mistake or graft product has caused very strong feelings of hostility against these cars by the employees who are compelled to work them, and with the rapid approach of winter they are causing many a heartache to the staff, for the men view with no small amount of alarm another bitterly cold season on these cars, owing to their faulty construction.

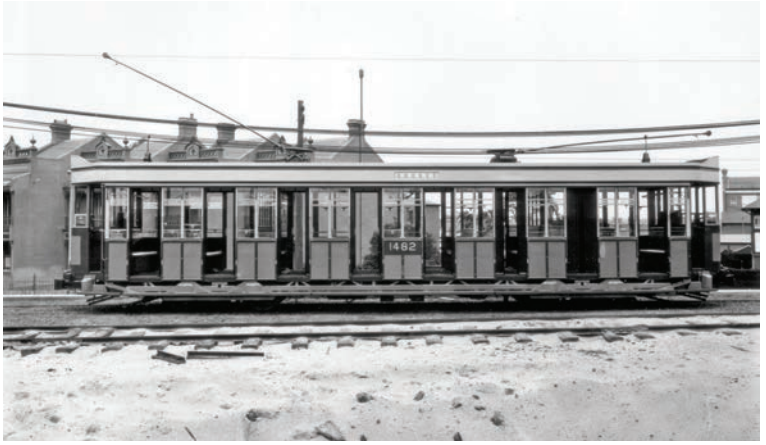
It is common knowledge to the department and its officers that the "P" type cars are a dismal failure when required to deal with peak loading in an expeditious manner. There is scarcely a day passes that there is not a big block in traffic caused by them; and this scribe, as well as the rest of the traffic staff (and the public, too) has seen traffic repeatedly held up from 15 to 50 minutes owing to some failure of the complicated equipment.

Their jibbing propensities are well known, and it is extremely annoying and painful trying to get them away from a stopping-place on stiff grades and curves, especially when there is a good load of passengers aboard this new type of car.

On many occasion (it is a daily occurrence) they have had to be driven back a few car-lengths in order to get



The first P cars, 1480 and 1481 were experimental non-coupling cars. Car 1480 entered traffic on 16 September 1921. It is seen here in the yard at Randwick Workshops.
Rly P591 – RIM Collection



The first standard P car, 1482 in Randwick Workshops yard. It entered service on 19 January 1922.
MS8190 – STM Archives

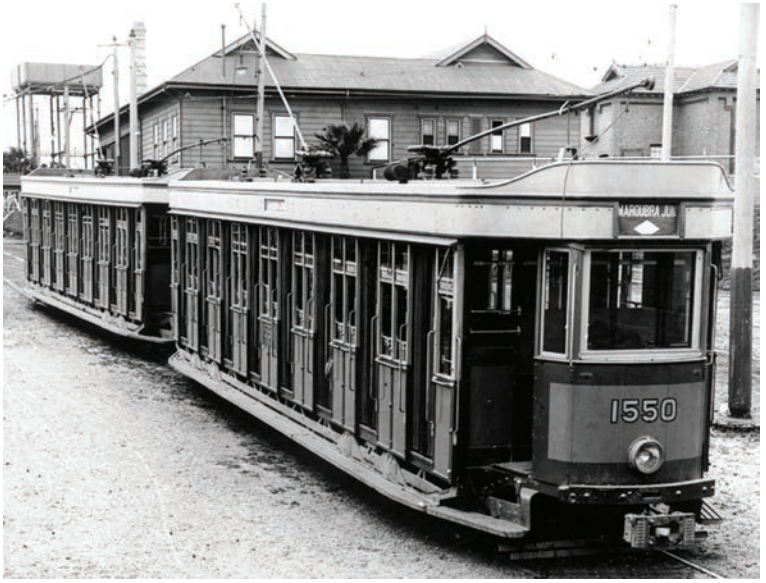
sufficient power to take them around curves and up steep grades.

There is, too, more than a modicum of discomfort about these cars from the conductor's point of view. The doors are not wide enough (they frequently jamb to) to allow the conductors to do their work expeditiously, and sometimes they are forced to collect the fares through the windows, and at each door is placed a rough piece of iron – (no earthly reason for it!) – which unmercifully rubs the skin off the shins of the conductors.

If any individual were to do his level best to devise some means of causing the greatest amount of inconvenience, bad feeling, hard swearing, and conducing nerve troubles, he could not have succeeded better than putting these objectionable and irritating "P" type cars into traffic. And, notwithstanding the efforts of our Union to have some necessary alterations effected, not the slightest thing has been done for the benefit of the men, who have to put up with these tantalising "inflictions" from the land of the wooden ham.

Of course, these cars are very nice to look at, and all that sort of thing, but they undoubtedly are an ignominious failure as far as general utility is concerned. They are the cause, week after week, of much wailing and gnashing of grinders and loss of temper by the wage-plugs who have to earn their livelihood belting them along (and at times coaxing them to get a move on) Sydney's congested thoroughfares.

In the remote hope that something might be done to make these cars more suitable for traffic in the city and



P class cars 1550 and 1586 in the pre-1933 livery standing in Dowling Street depot yard.
Rly P1274 – RIM Collection

P 1638 entering Bridge Street Yard. M Pinches from V Solomons Coll

suburban streets (they were a rank failure in America), I will now deal with a few of the complaints that are widely known.

Trolley Poles – These have been and are still, a source of much trouble and annoyance, delay and damage, as they are continually leaving the overhead wire, causing continual renewal of span wires, frogs, etc. What are known as retrieving trolley poles have recently been introduced. These have the chronic habit of leaving the overhead wire miles away from the curves and frogs – or on the straight – and much difficulty is experienced at times in replacing these poles on the wire – another newfangled idea, and by no means a success.

Sand Gear – The sand gear is quite unsuitable to our macadamised roads, where the tracks are covered in mud during the wet season. The amount of sand distributed on the rail amounts to about ten grains per square inch, which is quite ineffective, and of no assistance to the driver. Air escapes freely, too, when the sand is applied, and if the air fails, so does the sand. The reservoirs on the cars, too, are weak, and using up air when applying sand is wasteful.

The most effective sand gear is found on the "N" type of car, and if drivers rigidly carried out their instructions and examined the sand gear when preparing cars for traffic, very few "P" cars would leave the shed.

Warning Bell-punch – This necessary part of the car equipment is entirely unsuitable on the "P" cars, and in many cases is a grave and ever-impending danger to pedestrians and vehicular traffic. In order to get any noise out of them at all it is necessary to stamp very heavily with the heel of one's boot, and the anguish and anxiety of drivers when in a tight corner, wondering if they will be able to sound a loud warning, is unfortunately too well known to us all. It is an incident that happens many times during a shift.

These bell-punches, too, have a nasty habit of jambing, (sic) and need readjustment at practically every stopping-place. A two-inch hole is provided to accommodate a 3/8th bell-punch, and the depth to the gong hammer is half-an-inch deeper than the standard bell-punch.

Headlights – Something sensible should be done in the way of focussing, in order to prevent the V-shape shadows that are thrown out about ten to twelve feet distant from the driver.

Destination signs – These are constructed on the wrong principle, and are continually getting out of order, and there is insufficient space provided for the operator. One some of these cars the driver has to stand up on his toes to peep through a hole about the size of a two-shilling piece to adjust the sign.

Timber – The class of timber used on these "P" cars, especially in the drivers' cabins, must have been green as grass, as cracks fully 1½ inches wide are common, and in some cases the doors show a cavity of over an inch, which helps to increase the draught.

Deadly Draught – That the drivers' cabins of these cars are frightfully draughty is well known, but, up to date, no suggestions of modification or improvement have been listened to. The drivers have again and again pleaded that something should be done to make the cars less occasions of discomfort and health peril,

P 1714 in George Street at the GPO circa 1933.
From postcard in D. Critchley Collection

and we have suggested, too, a simple and relatively costless means of improvement – the removal of at least the draught peril of the driver's cabin.

But it has all been of no effect. The commissioners, their cant and humbug of "Safety First" notwithstanding, are evidently quite indifferent of the ruin of the driver's health in the cold and cheerless, draughty cabins of the "P" cars, as they are terrible risks to the conductor's lives on the perilous platforms on which they are compelled to do their work for a paltry pittance. It is absolutely impossible, in the winter months, for a driver to do a shift on these cars without catching a chill or contracting a cold. Lumbago, neuralgia, rheumatism, sciatica, pneumonia, and all sorts of complaints are handed out in a bounteous manner during the cold and wintery weather. The 'heads' know perfectly well that the drivers' platforms on these cars are dreadfully draughty, but all our numerous complaints concerning them have so far failed to trickle through their tick think-boxes or to their hearts – if they have any – which we are seriously entitled to doubt.

The plan for the removal of the grievance of the men in respect of these cars is simple and easy, and relatively inexpensive. Another side-door attached to each car end will stop the deadly, death-dealing draught, and make matters a bit more comfortable and safe for the drivers. As things are now, these "P" cars are veritable "little Hells" for the drivers, and none of the employees look forward to the forthcoming winter with any degree of pleasure, but to a time fraught with peril to their health and the welfare of their wives and families.

We will put it to the departmental "heads" this way: Do they think it a fair deal to perch men in the front of draughty, badly-constructed cars when the South Pole is breathing big blasts around? Do the same cosy-corner, comfortably-working officials think there is any necessity for the pilots of these cars to be exposed to deadly, piercing chills, draughts, and descending rainstorms, when a couple of cheap side-doors would prevent it?

As the cars are now, they are simply and truly run in the interests of the doctors, to provide them with rheumatic, pneumonic, neuralgic, and neurasthenic patients, and corpses for the undertakers.

At social functions we frequently hear our superior officers remark that the Sydney tramwaymen are "the finest body of tramwaymen in the world." If they really believe what they say do not these self-same officials think that this fine body of men is deserving of much better things than the dog-box treatment that is being meted out to them regarding these draughty, health-destroying cars?

P class cars at Circular Quay circa 1930.
From postcard in D. Critchley Collection

FROM THE ARCHIVES

By Vic Solomons

Dewirement Indicator Lights on Sydney Tramcars

The February 2016 issue of *Trolley Wire* mentioned R class car 1917 was destroyed in the fire at the Sydney Tramway Museum's former National Park depot and that it had been fitted with dewirements indicator lights. Readers may be interested to have some details provided about the indicator lights as fitted to R 1917.

The Tramways Chief Engineer, Mr H.B. Edwards sent a memorandum dated 19 March 1948 to the Secretary of the Department of Road Transport and Tramways in which he advised that three R class cars, 1917 (Waverley depot), 1745 and 1748 (Newtown depot) and three O class cars, 1114, 1210 and 1271 (all at Waverley depot) had been fitted with dewirement indicator lights and were running normal all-night services.

Dates the indicator lights were fitted:

R 1917	5 February 1948
O 1271	25 February 1948
O 1210	27 February 1948
R 1745	3 March 1948
R 1748	5 March 1948
O 1114	11 March 1948

On 19 May 1948 Mr D. H. McBurney, Engineer for Workshops and Rolling Stock, advised the Engineer for Substations of several defects with the lights on cars 1114, 1210, 1745 and 1748.

In a memorandum to the Engineer for Substations on 19 August 1948, Mr S. C. Johnson, Engineer for Running Maintenance, listed a number of defects in the cars concerned, mainly due to the dry-cell batteries that powered the lights becoming exhausted and having to be replaced on a number of occasions. This was due to the laxity of the traffic staff when stabling the cars failing to remove the trolley poles from the overhead wire and switching off the car lights.

On 12 August 1948, the Chief Engineer submitted a report detailing the cost of fitting indicator lights to 1500 tramcars. The high cost of fitting out this number of cars plus the cost of replacement batteries was considered excessive. On 30 August 1948, the Minister for Transport decided that the costs involved could not be justified.

Accordingly the Chief Engineer directed the Chief Traffic Manager on 12 October 1948 to place out of action the equipment on the six cars concerned and the lenses of the indicator lights be painted over to match the adjacent panels.

R class 1745 at Glebe Point terminus on 26 March 1948 showing its indicator light in position.
Don Chandler

O class 1210 at Young Street, Circular Quay after removal of the dewirements light circa 1950.
Unknown – STM Archives

IN THE GROOVE AT WATSONS BAY

By John Croke

Here is a tramway tale told to me by the late Roy Nash.

I was telling Roy one day of a story Dad told me about his coming home from work in the city, in the immediate post war years. Quite often, the people on the Coogee line were treated to the luxury of a very tired set of L/Ps. Due to Moreton Bay figs on the tracks, the tram would often overshoot the Gregory Avenue stop near the Show Ground, by the full length of the coupled set.

Roy remembered this happening when he was conducting, and said the situation at Watsons Bay was worse. Due to the figs, trams often went off the end of the track at the terminus in Cliff Street beside the hotel. The Union asked the Department if the tracks could be extended, using second hand rail from locations where new track had been laid. Perway, after inspecting of the location, noted that the grooves in the road caused by the tram wheels were dead straight.

Instead of extending the track, the solution was to extend the overhead. If one bogie overshot, just change ends and drive back on to the rails. If both bogies went off the end on a rainy day, the wet road surface created the circuit and the tram was driven back as before. If both bogies left the tracks on a dry day, staff were instructed to get the bucket which Perway had organised with the publican, throw water on the road to make a circuit, etc. Failing all else, wait for the next tram, hope that it did not also leave the rails, tow the isolated car back on, swap trams and run late while trying to make up time. I imagine that most times, the next service ran in two divisions, with the first car stopping only when required to make up time.

When I was on the buses, the boffins often tried to make us believe that ingenuity only existed in the bus era. I retired unconvinced.

This picture happens to show R1 1965 and K 1296, the latter on an excursion; but more importantly it shows the end of the line at Watsons Bay in 1956. It seems that at this time, the grooves beyond the end of the rails were very short. Noel Reed

Part of the Report of the Eighth Meeting of the Australasian Association for the Advancement of Science held at Melbourne, Victoria, 1900, Published by the Association, 1901

THE GEORGE STREET TRAMWAY CARS

By Henry Deane, Engineer-in-Chief for Railways

Cars [for the George Street tramway] were provided by the Railway Commissioners direct, they being advised as to selection of design and details by the late Mr P.B. Elwell, M.Inst.C.E. (Electrical Engineer, NSWGR&T)

The following is a brief account of their design and construction:

There are four types of cars used, three of which are either provided with motors and controllers, or they are used as trail cars only.

Four-wheeled Closed Type: Length over headstocks, 25 ft.; length over saloon body, 18 ft.; width, 6 ft. 8¼ in.; weight, including two motors' equipments, 7 tons 19 cwt 2 qrs.; seating capacity , 26 passengers; or with motor and trailer, 52 passengers. The seats are longitudinally placed, and there are sliding doors at each end.

Four-wheeled Combination Type: Length over headstocks, 28 ft.; Length over bulkhead pillars, 23 ft.; length over saloon body, 10 ft. 2 in; width, 6 ft. 8¼ in; weight, including two motors' equipments, 8 tons 3 cwt 2 qrs.; seating capacity, 34 passengers, or with motor and trailer, 68 passengers. There is a central saloon and open compartments, with bulkhead at each end. The saloon seats are longitudinal. The outside seats are transverse and reversible. Sliding doors are provided at each end of the saloon.

Bogie Combination Type: Length over headstocks, 37 ft. 6 in; Length over bulkhead pillars, 30 ft. 8¼ in; length over saloon body, 12 ft. 1¼ in; width, 7 ft. 1½ in; weight, including two motors' equipments, 10 tons 10 cwt 2 qrs.; seating capacity, 48 passengers, or with motor and trailer, 96 passengers. The car is arranges with a centre saloon and open compartments, with bulkheads at each end. The seats are placed

Brand new Four-wheeled Closed Type cars in George Street c1899. Later classified as C class. Kerry & Co.

longitudinally, and the outside seats are reversible. Sliding doors are provided at each end of the saloon and in the bulkhead. The bogies are constructed on the maximum traction principle.

The motor equipment of the above cars consist of two GE 1000 motors, a controller at each end, as well as a circuit-breaker and a fuse. All cars are fitted with the standard air brake, and the lighting is effected with 100 V incandescent lamps, in series. A head light, consisting of 200 volt 32 candle power lamp, is provided.

St Louis Type: Length over all. 37 ft. 4 in.; length over bulkhead pillars, 28 ft. 7 in.; length over saloon body, 11 ft. 5 in.; width, 7 ft. 2¾ in.; weight, including two motors' equipments, 11 tons 10 cwt. 2 qrs.; seating capacity 46 passengers; or of the coupled cars, 92 passengers. Each car is arranges with an end saloon, having longitudinal seats. The seats in the rest of the car are transverse and reversible. Sliding doors are provided at each end of the saloon. The bogies are constructed on the maximum traction principle.

These cars are run in pairs. The motor equipment for each car consists of two GE 1000 motors and one controller at the outside end, and the electrical connections are arranged so that all four motors are worked from the one controller. The lighting and brake fittings are similar to those of the other cars. Each car is fitted with a trolly (sic), but only the forward one is used at a time.

Although the GE 1000 motor is the one adopted as a standard, there are included in the car equipment twenty No. 49 35 h.p. Westinghouse motors.

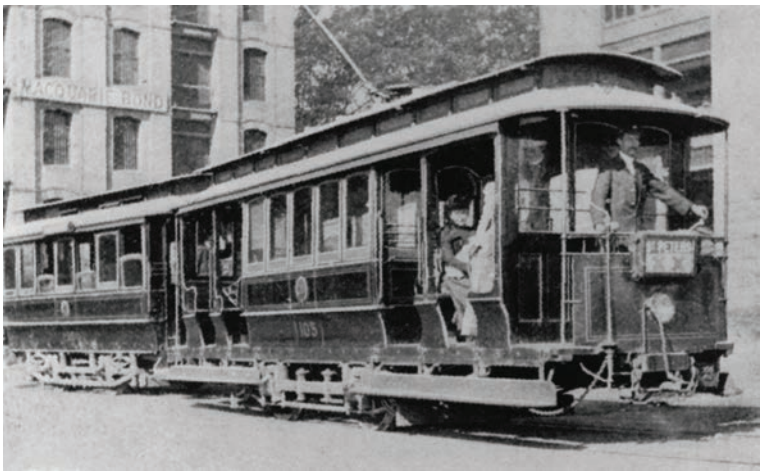
The above particulars of the cars have been kindly furnished by Mr O.W. Brain, Acting-Electrical Engineer.

Editor's Note:
The cars described are:
Four-wheeled Closed Type – C and T class;
Four-wheeled Combination Type – D class;
Bogie Combination Type – F class;
St Louis Type – G class.
The Brill type G cars had not entered service when this report was compiled.

Bogie Combination and St Louis Type cars (later F and G class) in George Street outside the GPO. David Jones' store is in the background

STM Archives

Four-wheeled Closed Type cars (later C and T cars) in the Ultimo Depot yard prior to the introduction of the George Street line in 1899.
Govt Printer – RIM Collection



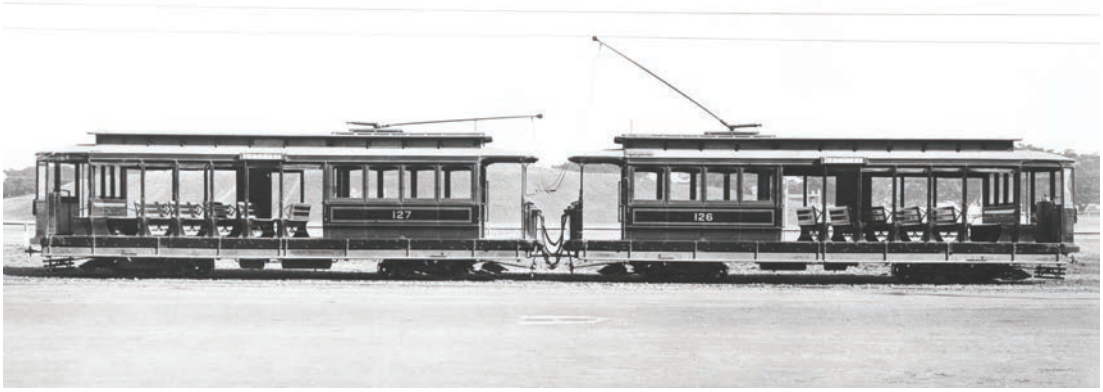
Four-wheeled Combination car D 105 with T trailer at Circular Quay East c1905.
VC Solomons Collection

THE NEW SOUTH WALES RAILWAY BUDGET of 20 October 1899, page 39, had reported some months earlier on this same subject.

George-street Tramway

Work in connection with the George-street Tramway is being pushed forward to completion, several trial runs having been made with the cars, and it is probable that it will soon be handed over to the Railway Commissioners to operate. The following description of some of the rolling stock which it is proposed to use on this line will be of interest.

The motor cars are all of the closed type. The body of the car is 18ft long over the outside framing, with platforms 3ft 6in in length at each end. The latter are carried on sills under the body to reduce the height of the steps, and give easy access. The total length of the car over the buffers is 25ft 7in, the width being 6ft 0¾in at the sills and 6ft 8¼ in at the waist rails. The seats are longitudinal, and the doors are placed in the ends near the side to admit of easy access and exit when the platforms are crowded. Burrowe's car shades are fitted to the side windows; also Greenwood's Sash Holders to regulate the opening of the windows as required. Eight of the lantern roof windows are pivoted to swing open, thereby ensuring good ventilation. Electric headlights are fixed in the dasher plates at each end, as well as an ingeniously designed destination box, so arranged that it can be lit at night with the electric light, the destination of the car being always visible at a glance. Four electric push buttons are fixed in each car inside, and one in each end platform for signalling purposes between the motorman and the conductor. The seating capacity is for twenty-six passengers but there is also standing room on the platforms for twenty more. Peckman [sic] trucks with 6ft 6in wheel base and 33in steel tyred wheels are used under the car. There are two G. E. 1000 motors. Air brakes are also fitted. The total weight of the motor-car fully equipped is just under eight tons. Twenty six of the trail cars are of the



American Car Company of St. Louis (later G class) cars 127 and 128 at Moore Park. The American Car Company of St. Louis became a subsidiary of the J.G. Brill Company in 1902.
Rly P7079 – RIM Collection

Four-wheeled Combination Type (later D class) trail car at Moore Park.
Govt Printer – RIM Collection

same type as the motor cars; the remaining fourteen are of what is known as the combination type, being made to seat twenty passengers in the open portion and fourteen in the saloon.

The engraving shown above gives a good idea of these latter cars.

The length over buffers is 28ft 6in and the width over the waist rail 6ft 8¼in. All the cars are of colonial manufacture and are built of colonial timbers excepting the sills of the enclosed type and the glass frames and doors. They are varnished in the natural wood and decorated on the waist panels with gold and white lines, and the Australian coat-of-arms - also numbered with gold letters on each end of the body. The trail cars weigh 5 tons each.

It is also intended to place on this line eight imported double bogie combination motor cars, by the American Car Co, of St Louis. These will be run in four trams of two cars each. This type of car, which appears to be regarded with much favor [sic] by the tram travelling public wherever used, presents a handsome and imposing appearance. The length of the car over the corner pillars is 28½ feet, the length over the head-stocks being 37ft 4in. It is 6ft 9½ in wide at the sills and 7ft 1¾in at the waist rails. The closed section is 11ft 4in over the end panels and has two double doors; it is finished in ash with three ply veneer basswood ceilings; the seats are longitudinal, seating fourteen passengers. The open compartment is also finished in ash and has seven cross seats accommodating 35 passengers, the total seating capacity of the car being for 49 persons. The painting is finished in brown and buff with gold and white lines on the top panels and brown lines on the bottom - polished brass fittings are supplied throughout - “Peckham” maxim [sic] traction trucks with 4ft 6in wheel base are used under the car. The weight of the car, with motors, brake equipment, etc, is about 11½ tons.

Closed type - later C class
Closed trail type - later T and C class
Combination trail type - later D class
Double bogie combination type - later St Louis G class 124-131

Originally published in the *Electric Railway Journal* Vol.46 No.23 of 4 December 1915.

ONE-MAN CARS IN AUSTRALIA

In an article written for the *Electric Railway and Tramway Journal* by P. J. Pringle, general manager Electric Supply Company of Victoria, Australia, it was stated that in the city of Ballarat there are seven tramway routes radiating from the business center and that all the cars on four of the routes and on the extremities of the three other routes have been operated under the one man system since October, 1913. In the city of Bendigo also one-man cars have been in operation since September, 1913, on two of the four electric railway lines in the city.

The motormen in these one-man cars receive a somewhat higher rate than those on standard cars, but where the extremities of the line are operated on the one-man system the motorman is paid a higher rate only for the hours he is actually working on these sections. California type cars are used, the open section being enclosed with chain so that passengers must enter and leave by the front door, and each car is equipped with one fare box, which is temporarily fixed by the motorman at the side of the door in the front bulkhead.

When cars are traveling from the suburbs into the city passengers pay as they enter, when traveling from the city to the outskirts they pay as they leave. The average speed is approximately 8 m.p.h., and the company reports no difficulty in keeping the cars on time. In the beginning a few cases occurred where passengers climbed over the rear gates and left the cars without paying, but a few prosecutions in the courts rectified

Ballarat 12 shows how the trams appeared prior to one man operation or for two man operation after windscreens fitted in 1912.
Ballarat Tramway Museum

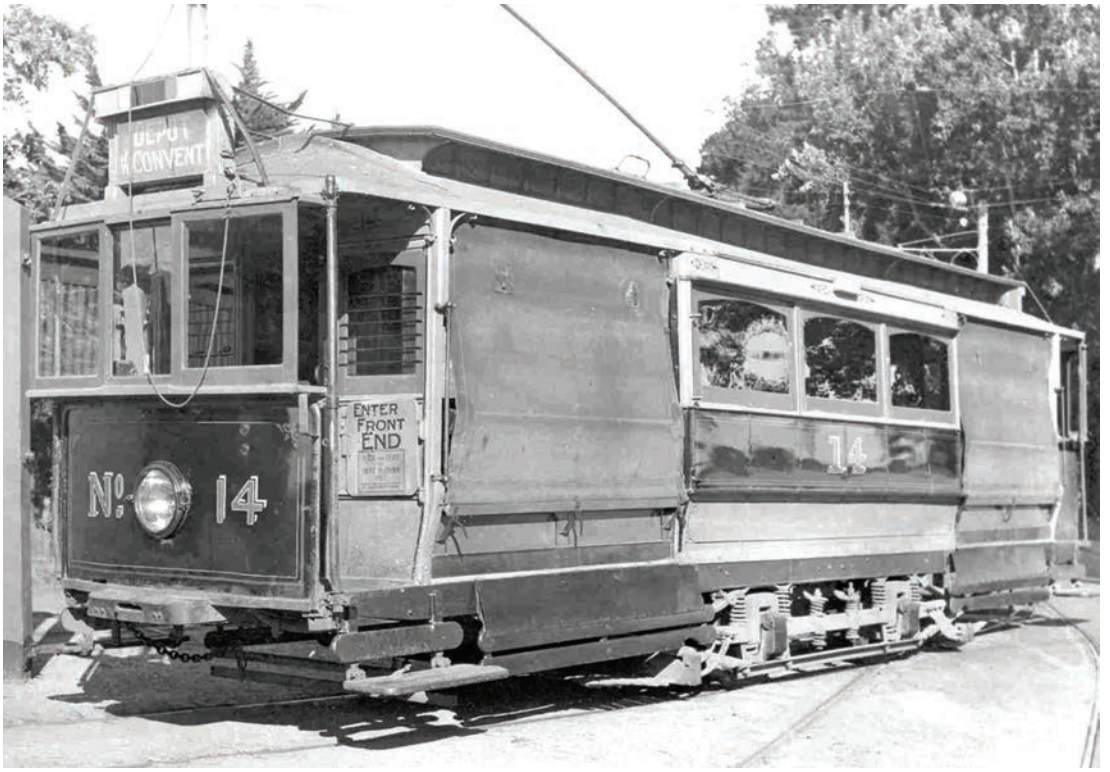
This view showing the changes proposed to be made to operate one man initially – closing off one of the entrances with a sign, locating the seats to face inwards and fitting a chain as well. These two photos are a set up to show how it was going to be done.
Ballarat Tramway Museum

this difficulty, and since March, 1914, no trouble whatever has been experienced on this score. On the routes run entirely with one-man cars loads of from forty to fifty passengers are very frequently carried without any difficulty.

Variable fares are in force. On one route operated partly on this one-man principle there are several fare values reaching a maximum of 8 cents, and in this case all fares ranging from 3 cents up to 6 cents are paid into the fare box. In the case of 8-cent and 7-cent fares to the city, passengers are given special tickets by the motorman which are collected by the conductor, who joins the car at the boundary of the 6-cent fare zone. Those who are on the car at the time of his entering pay him according to the ticket that they produce and they are then given an ordinary passenger's receipt check. Paper tickets are stated to have been dispensed with and celluloid tokens are used in their stead, these making a very considerable saving in cost, as they are used over and over again.

Ballarat 8 shows how they operated initially – no chain and the seat external kickboards had not been moved outwards.
Ballarat Tramway Museum

Ballarat 14 shows their appearance when the SEC took over – blinds drawn as they often later appeared, outside kick boards moved outwards and a cover placed over the former steps to remove any standing position.
Ballarat Tramway Museum



Originally published in *The Electrical Engineer and Merchandiser*, 15 November 1933.

NEW TRAMCARS FOR MELBOURNE

The Melbourne and Metropolitan Tramways Board recently completed the first of a number of cars of new design, known as the W4 class. In general they are similar to the W3 class bogie cars, which have been the board's standard type, but the design has been modified in several particulars in order to provide more comfort for passengers. The body of the new car is wider in order to accommodate upholstered cross seats in the saloon in place of the longitudinal wood seats which have been standard in all previous designs. The greater width of body gives wider aisles between seats in the open compartment, and this extra width will be a convenience to both passengers and conductors. The upholstered seats in the saloon are fixed and in pairs, placed back to back. The space below the seats is boxed in, giving extra clearance over the 33in. diameter wheels. This allows the floor level and step heights to be kept lower than in the W3 class cars. The wide entrances which were a feature of the W3 and W2 cars have been retained.

The diagram shows the general arrangement of the new car. The car is 46f t. long, 8f t. 4in. wide over pillars, and 9ft. over footboards, and 10f t. 4in. high from rail to roof. The weight is 16½ tons. There are three entrances along each side to the loading vestibule, which has cross bench seats to accommodate 16 persons. This vestibule provides for smoking accommodation. Saloons open off either end of the vestibule, and are provided with sliding doors, and at the end with a communicating door to the motorman's compartment. The total seating capacity is 48, and the crush loading capacity 150.

The bodywork has been built of steel, electrically welded, wood work being used only for interior facings on the steel work. Considerable strength, combined with lightness, has been achieved with this design. The sills are of 3½in. x 2½ in. x 5/16in. angle steel, the belt rail 2in. x 2in. x 5/16in. angle, and the cant rail 2½in. x 2in. x 3/ 16in. angle. The corner posts are 2½ in. x 2½in. x ¼in. angle, the saloon pillars 1½in. x 1½in. x 3/16in. tee section, and the roof ribs l¼in. x ¼in. x 3/16in. tee section. The pillars of the centre vestibule are of wood, curved inwards at the bottom to allow for the standard width of footboard to be used without exceeding the overall width of 9ft. The bolsters, which are 10in. wide x 7in. deep at the c.entre, are of the box type, built up with ½in. top and bottom plates and ¼in. web plates, strengthened with ribs, all held together by electric welding. The cross members are 4in. x 2in. x 7.09-lb. channel section, and the end sills 5in. x 2½in. x 10.22-lb. channel. Panels are 14-gauge, and the letter board 16-gauge special panel steel, all electrically welded to the pillars and cant rail.

The roof is of 5/16in. ply wood, covered with cotton duck, laid in white lead, and supported on roof sticks of Australian Blackwood. The interior finish of the ply wood roofing is in the natural color. Tongue and groove Vanikoro kauri ¾in. thick forms the flooring. The hatch doors, which are of wood, are built with specially designed aluminium framings to fit neatly into their recesses, and are provided with flush fitting hatch lifts. The bulkhead framing, saloon lining and doors are made of Tasmanian mountain ash, panelled with ornamental Queensland maple, ·while pillar facings and mouldings are of Australian Blackwood.

The saloon seats are built with Blackwood framings and panelled to match the interior design of the car. They are fitted with special soft sponge rubber cushions and backs, and are fully upholstered in brown leather. The cross bench seats in the smoking vestibule are built of Tasmanian mountain ash and Blackwood framing around three-ply moulded forms, and supported on light pipe framework.

The interior finish of the car is in ·the natural colour of the wood, and the timbers are of ornamental quality, combined to give a pleasing effect. The floors in the saloons have been covered with 3/16in. thickness solid rubber of green color to match the pain t work of the car, and the floor of the smoking vestibule is set in with hardwood slats. Aluminium anti-slip angle finishing pieces are fitted to all doorways and along the footboards. Polished plate-glass, 3/16in. thick, is used for the end windscreens, while on the remainder of the car 26-oz. mechanically drawn glass .is u sed. The windows are provided with sashes and louvred blinds, which open their full depth, and run in extruded brass sections to the pillars to form the sash guides. The entrances are provided with canvas weather blind s, fitted on spring rollers, for use in wet weather. The grab handles are all made of stainless steel, and strap handles of Bakelite. The exterior finish of the car is in chrome green and cream enamel, decorated with gold lining, and the board's monogram and car number in gold. The roof is of stone color, and the trucks are sprayed ·with black enamel.

The interior lighting is carried out by two lamps in each saloon, and three in the smoking vestibule. These lamps are fitted with opal dome-shaped shades, 10in. in diameter, and are provided with reflectors of polished nickel, all mounted in aluminium cast frames, finished in bronze lacquer. The headlight, which is of the board' s own manufacture, is cast in aluminium, and fitted with polished nickel parabolic reflector and condenser lens. The lamps are all 100-volt, 60-watt gas-filled traction type, of Australian manufacture.

The trucks are of the board's recent design; similar trucks have been used for some time on another type of car, and have many favorable features. The wheels are 33in. diameter. The trucks have steel section side frames and long, semi-elliptic springs rigidly attached to the axle boxes, and joined to the side frames by a pin on one end and a sliding shoe on the other. The bolster is of box section, built up of mild steel plates, electrically welded, and supported on helical springs carried on a spring plank swung on long swing links. The whole effect combines to give an easy-riding car.

The brakes are of the clasp type, operated by air cylinders mounted on each truck side frame. The air cylinders are connected to the straight air brake system through a relay valve by a flexible hose. The handbrakes are interconnected throughout the car. It has been found that the use of clasp brakes gives smooth riding and braking, reduced brake shoe wear, and less maintenance. The use of the two brake cylinders on each truck eliminates the use of a heavy brake cylinder on the car body, and all the brake levers, rods, pins, etc., with their loss of efficiency and weight.

The car is equipped with four 40-h.p. Metropolitan-Vickers motors, made in Australia. The gear ratio is 13/77, and the free running speed 28 mph. The schedule speed is 11 mph, with eight stops of 5 seconds per mile. The controllers are of the G.E. series-parallel type, and were made in Australia. The line breakers were built by the English Electric Co. and the compressor and motorman's valves by the Consolidated Brake Co. The hand brakes, trolley bases, destination signs and route numbers are of the board's own manufacture.

These cars have been designed and built under the supervision of the board' s chief engineer, Mr. T.P. Strickland, MIE.E, and his staff at the local tramway workshops.

Fig. 1.—Outline Arrangement of W4 type Tramcar for Melbourne

TRAMS AND RENAISSANCE: A POSTCARD FROM FLORENCE

By Guido Boreani

Photos supplied by the author

In this article the Italian spelling of Florence, Firenze, is adopted.

Firenze had its first horse tramways in 1879, when Società Tramways Fiorentini (TF) opened the first line to Peretola, using Belgian capital. Next year steam trams began to run between Firenze and Prato, Poggio a Caiano, San Domenico and Signa. In 1890 a new company, Società per la Tramvia del Chianti e dei Colli Fiorentini opened a new line, again with steam traction, to Greve and San Casciano.

This company wished to build a tramway to Fiesole, but the steep grades from San Domenico to Fiesole made steam traction possible only by way of a long detour. To overcome this problem the company chose to try the newly developed Sprague system of electric traction and so on 19 September 1890 it inaugurated the first electric tramway in Italy. A few days later a tram ran out of control downgrade and derailed, smashing against an abutment and killing several passengers. The cause was the inexperience of the driver who lost control of the car. The line was closed for a few days, and then reopened with no more mishaps.

In the late 1890s TF electrified the horse tram network and also part of the steam lines. As elsewhere, TF did well until the First World War, but by the mid-1920s rising costs, declining revenues and growth in the number of road vehicles put the company in serious difficulties. TF still generated its own power with a coal fired plant using reciprocating engines.

In the meanwhile all the trams were rebuilt to a standard design, with closed platforms and railroad-style roofs. 12 new cars were built on Radiax trucks bought from the French division of Brill: these were the last trams built new for Firenze.

The tram network reached its maximum extent in those years, with 155 motor cars, 96 trailers (of which 68 were former horse or steam trams) and a network of about 200km, including the interurban lines, still partly steam worked. The last steam tram ran in 1935.

TF became bankrupt in 1935 and the city signed a contract with Società Trasporti Urbani, a Fiat subsidiary that already had converted the Livorno tramways to trolleybus operation. STU bought the TF stock and began the renovation of public transport. In November 1937 it introduced trolleybuses on line 9

Piazza della Signoria with trams waiting at the terminus in the mid 1920s. Noteworthy is the old horse tram used as a waiting shed/office.

A train of a standard (Brill truck) motor car with two summer trailers crossing the Ponte alle Grazie over the Arno River in the late 1920s or early 1930s. The bridge (ponte in Italian) was named after the neighboring church of Santa Maria delle Grazie.

to Settignano. In February 1938 line 7 to Fiesole was converted to trolleybuses, owing to major roadworks that condemned the historic tramway. STU also demonstrated a bogie tram borrowed from Torino, with a view to introducing bogie trams to Firenze but any further development was stopped by the outbreak of war.

Firenze did not suffer not heavy damage in the war until August 1944 when German troops, before abandoning the city, destroyed all bridges except the monumental Ponte Vecchio, bringing all public transport to a halt.

As soon as the war ended STU decided to break its contract with the city, so in 1946 a new municipal body, Azienda Tranvie e Autofilovie Fiorentine (ATAF – in English the Firenze Tramways, Buses and Trolleybuses Board) was founded to take over public transport in the city.

War damage was soon repaired and ATAF again considered buying bogie trams: Firenze was the only big city in Italy served only by four-wheel trams, all on Brill 21 or Radiax trucks. But nothing came of these plans, which were changed to provide for trolleybuses, and later diesel buses, to replace the trams. The last Firenze tram, on line 17, ran on 20 January 1958: Firenze was the first big city in Italy to abandon its tramways. Trolleybuses lasted until 1973.

But happily the history of tramways in Firenze did not end here: in the wake of the success of reintroduction

A Firenze tram nearing the historic Duomo in the late 1930s.

of trams in France, a few Italian cities decided to follow suit. After long years of planning, disputation (typical of the character of Florentines), changes of mind and eventually, construction works, the new tramway became a reality in 2010.

The Santa Maria Novella main railway station (like the Ponte alle Grazie, named after a nearby church) with two trams, in the early 1950s. The streamlined tram with a four digit number (possibly 1053 or 1055) is a rebuild of an old Viareggio tram. The Viareggio tramway was destroyed in 1944 and never rebuilt; the surviving cars were sold to Firenze.

Originally published in *Street Railway Journal*, Vol. XVI, No. 5 for 1899.

COMBINATION CARS FOR NEW SOUTH WALES

The Government of New South Wales has made a new departure in a recent purchase of cars for street railways. They have chosen the well-known California type, or rather a modification of it very similar to that adopted by the metropolitan Street Railway Company, of New York City. The cars consist of a closed compartment at one end, and an ordinary seven bench open section. These cars are mounted on Eureka maximum traction trucks, and are arranged to be operated in a rather peculiar manner. The cars are to be run in trains of two, with the closed sections next to each other. Brakes, controllers, etc., are operated in each case from the open end of the car ahead. The cars are 36ft 4ins long over the dashers, 6 ft 5¾ ins wide at the sills, and nearly 7 ft wide over the posts. The limiting width is 7 ft 5 ins. These cars are arranged to pass a curve having a radius of 46 ft. The power equipment consists of two GE 1000 motors. The cars are fitted with duplex Standard air brakes, one controller operating the brakes on both cars. The trolley poles are mounted as usual. The arrangement of seats, steps and drainage pipes through the grab handles is quite similar to that of the Metropolitan Street Railway cars.

In building these cars the Brill Company has employed a modification of its ordinary system for the shipment in the white. The two end of the cars are constructed on different plans, so that the separation of each part for shipment may be most easily effected. The division comes at the junction of the open and closed compartments. This compartment, it should be noticed, is 11 ft 2½ ins long for the closed end, and 3 ft 8 ins long for the open. There is one seat on the open platform. This end of the car is provided with a bulkhead and curtains coming to the floor, so as to make a complete enclosure when necessary. Although the cars are to run in trains, no provision has been made for a passage from one car to the other. The train is, therefore, run with two conductor and one motorman, the electric as well as the air brake connections being carried to the controllers at the open ends of the car. The closed compartment is finished with bronze trimming inside. The seats are of veneer, covered with Wilton carpet. Angle iron bumpers, an electric headlight for each car and brill folding gates at each opening are the leading features of the finish.

HERE AND THERE

AUSTRALIAN AND OVERSEAS NEWS

Adelaide – shuttle tram service ceases

Following the introduction of a new tram timetable on 26 January 2016 the shuttle tram service between South Terrace and West Terrace in the city was abolished and replaced with a 10-minute service frequency from Glenelg to the Entertainment Centre (previously 15 minutes). The new timetable also extended the peak hour 5-minute service frequency in both the mornings and afternoons. Because of the Australia Day public holiday on 26 January, the new weekday service commenced the following day. The new timetable also introduced more frequent tram services on Saturdays.

The former shuttle tram service was introduced when the Glenelg tram line was extended from Victoria Square to City West in 2007. With the opening of the extension to Entertainment Centre, Hindmarsh in 2010, City West was replaced by West Terrace. Shuttle trams generally ran in between the normal service trams to and from Glenelg during the weekday off peak, thereby providing a service frequency from South Terrace to West Terrace of 7.5 minutes. The purpose of the shuttle tram service was to provide a similar frequency to the Bee-Line bus service which was replaced by the trams in 2007.

Sydney's new light rail vehicles unveiled

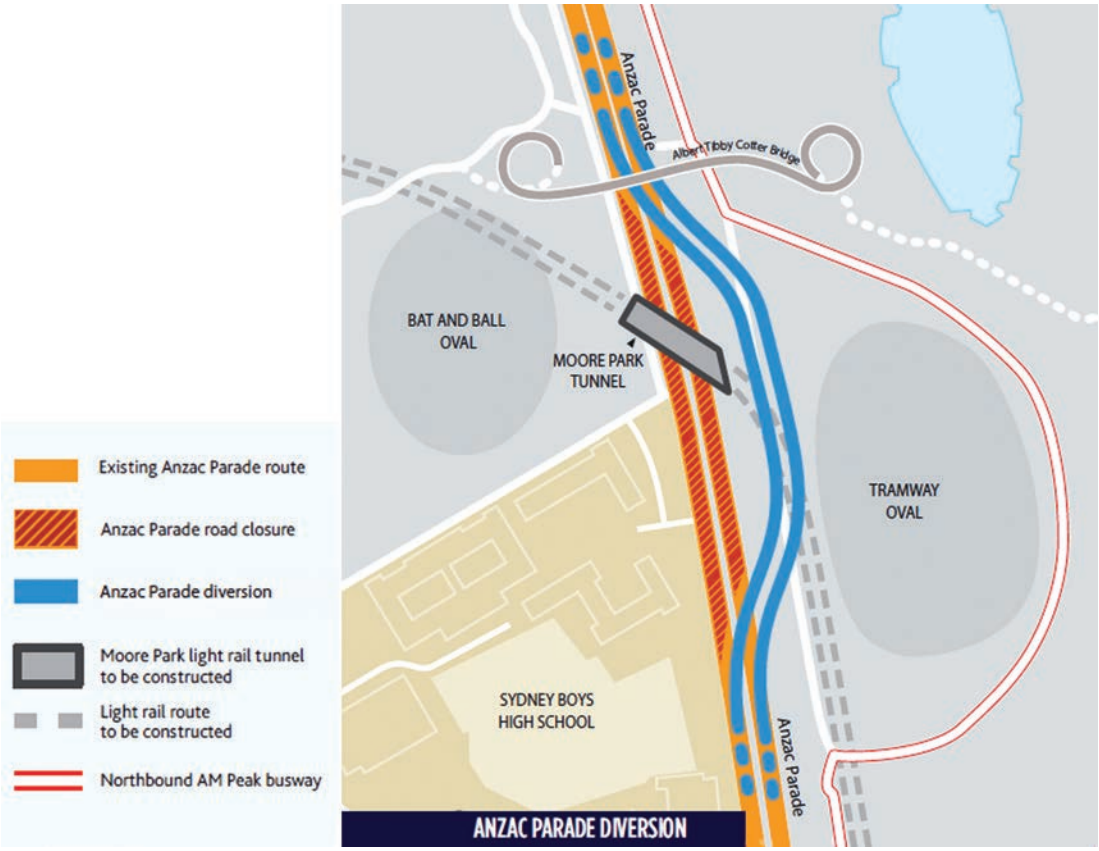
Sydney's new Citadis light rail vehicles, designed by ALTRAC Light Rail partner Alstom, have been unveiled. The new trams will have large windows, ergonomic seats, CCTV and improved accessibility, with double doors and dedicated areas for wheelchairs and prams.

Production of the trams commenced in February at Alstom's factory in La Rochelle, France. When they enter service in Sydney, they will operate from the Randwick stabling yard, adjacent to Doncaster Avenue.

A total of 60 trams will run on the CBD and South East light rail route. The cars will run in 30 coupled sets. With an overall length of 67 metres, the sets will be capable of carrying up to 450 passengers per service – equivalent to nine standard buses. The South East line will have sufficient capacity to carry up to 13,500 commuters in both directions during peak periods. The configuration of the coupled sets will be similar to the cars running in Casablanca and Rabat in Morocco.

The new trams will be environmentally friendly, being quieter than car traffic and using ten times less energy than a car per passenger kilometre.

Rail stacked at Kingsford on 31 March, ready for track laying to begin. Chris O'Sullivan



From April, work will start to build a temporary six-lane road adjacent to Anzac Parade between Lang Road and the Albert Tibby Cotter Bridge. The diversion will be used by traffic while the light rail tunnel under Anzac Parade is being built. The temporary road will reduce the construction time to less than one year and will significantly reduce the extent of any inconvenience on the travelling public.

The light rail tunnel under Anzac Parade will be a key part of the link between Central station and the sporting and entertainment precinct at Moore Park.

When tram services commence, fewer buses will be using Anzac Parade, leading to less traffic congestion during peak periods and at major events.

Gold Coast Bulletin credited with light rail extension

The second stage of a light rail project that will bring significant economic benefits and link Brisbane to the Gold Coast in time for the 2018 Commonwealth Games has secured government support, after a continuing campaign by the *Gold Coast Bulletin*. Extending the Gold Coast's light rail line to the heavy rail station at Helensvale, which connects to Brisbane's CBD and airport, had long been planned, but the project's funding and time frame were uncertain.

Prime Minister Malcolm Turnbull, a long-time supporter of light rail, expressed his support for the second stage of the project in October 2015.

The Gold Coast Bulletin began its campaign when stage one was completed in 2014, with the newspaper referencing light rail an average of 12 times in every edition since July that year.

Phil Mumford, the chief executive of GoldLinQ, the company operating the light rail system, said the newspaper was crucial in bringing the project to fruition.

"The Bulletin's campaign ensured the voice of the community was heard and helped secure funding from three levels of government. Without this campaign and the Queensland Government's commitment to delivering Stage 2, this extension wouldn't be


Gold Coast Bulletin

WE DID IT

Bulletin and its readers secure Stage 2 of light rail

happening, I'm dead certain of that," Mr Mumford said.

"It was a great strategy at the right time and its persistence paid off."

The editor of the Gold Coast Bulletin, Catherine Webber, identified the importance of completing the light rail project, and commissioned two independent surveys that found 82 per cent of locals rated the project as their highest priority for the city.

Kathleen Skene, a senior reporter following the project, said the results of the survey were astounding and confirmed the need for the paper's campaign.

"We had never seen any single project have such public support right across the board – the top leaders of business down to everyday punters wanted to see this done. It was an absolute no brainer, getting the light rail connected to the heavy rail," Ms Skene said.

"(The outcome) underscores that newspapers still have, not just the same influence, but a bigger influence than we've ever had before. We've got more readers than we've ever had before and there are few other organisations that can do what a newspaper can do."

Throughout its 454-day campaign, the Gold Coast Bulletin published statements from influential figures across the tourism, health, development, education and media sectors that highlighted the benefits of the project and the critical nature of completing before the Commonwealth Games.

In the 12 months following its opening in June 2014, 6.18 million trips were made on the 13km first stage of the light rail line. The new line has also led to urban renewal and new development project approvals along its route.

"There are very few people on the Gold Coast who won't benefit from the stage two connection, even if it is just in terms of the development projects that it will start," Ms Skene said.

Funding for the project had hit an impasse between the Commonwealth and Queensland governments prior to Malcolm Turnbull becoming prime minister.

"I think that the local members themselves didn't have the data we had access to and I think they underestimated the public support for the extension," she said. "So we were able to put it out there and present it so that they had no doubt as to what their voters wanted them to do."

New Preston depot and workshop opened

The extensively rebuilt new Preston Tram Depot and Workshop was formally opened on 17 April 2016. Those officiating were the Minister for Public Transport, Jacinta Allan, local MP Robin Scott and the Chair and CEO of Yarra Trams. The event was part of a well-attended public open day. Trams had started running from the new depot on 27 March.

Victorian Minister for Public Transport Jacinta Allan opens the new Preston Depot complex on 17 April.
Mal Rowe

The layout of the new Preston Depot scanned from the open day brochure. What is referred to as the "South Yard" is the depot and the "North Yard" is the workshops. Mal Rowe

E class 6006 in the new depot sanding pump bay on 17 April. Mal Rowe

The new facility is the product of a $190 million rebuilding of the former Preston Workshops. It was the largest redevelopment ever undertaken of a heritage site while it remained operational in Australia, with Yarra Trams continuing to use it as a heavy maintenance facility throughout construction. The project created around 250 on-site construction jobs and many more in the manufacturing supply chain.

The new depot is large enough to stable all 70 of the new E class trams in service or on order, which will add capacity for close to 15,000 extra passengers. It is also home to Yarra Trams' skills development program, which includes Australia's first driver's cabin simulator.

At the date of the opening of the new depot there were 33 E class trams operating on the network, on routes 11 and 96. In November they will start running on route 86.

The former East Preston Depot, which closed on 26 March, will be used in the short term for the storage of surplus trams. The site is destined for sale for residential development.

Near-new Z2 110, seen in Bourke Street in December 1979, shows the clean lines of the Z1 and Z2 cars in their original colour scheme, without external advertising.
Richard Jones

Two more W8s

Two more W series trams are to be upgraded to the W8 configuration at the Bendigo Tramways workshop. This will bring the class total to six.

The announcement was made by Minister for Public Transport, Jacinta Allan on 3 March when she farewelled the fourth W8, car 1010, at the Bendigo depot.

A decision has yet to be made on which two cars will be added to the program

End of the road for Z1s and Z2s

The era of the first Z series trams, the Z1s and Z2s, came to an end late in April 2016.

Final service operation of these trams took place on 22 April, with a farewell tour the following day using cars 52 and 71.

The first of these trams entered service mid-1975. After a launch for VIPs and the media on 30 April of that year, the first public passenger operation took place on Monday 5 May. The new trams were a far cry from those they replaced – W2s from the 1920s. Based on prototype car 1041 of 1973, the Zs introduced a completely new body layout and mechanical and electrical equipment as well as a new orange colour scheme. Under-seat heaters warmed passengers in winter.

The cars were classed Z until 1978 when those from No. 81 to 100, which incorporated design modifications, were designated Z1, with the remainder of the class being similarly reclassified as the modifications were retrospectively applied. Nos 101 to 115, then in the course of delivery, were classed Z2. No. 5 was classed ZC during the time it was fitted with chopper control equipment, subsequently becoming a Z1 when this equipment was removed.

The farewell tour on 23 April 2016: Z1s 52 and 71 in Swanston Street beside Franklin Street signal box. The well-worn appearance of the cars is testimony to some 40 years of service to the people of Melbourne. Mal Rowe

Apart from a few early withdrawals resulting from major accidents or fires, the Z1/Z2 fleet remained intact until the arrival of the C and D series cars from 2001 onwards. It was expected that the remaining Z1s and Z2s would be withdrawn after the 2006 Commonwealth Games, but traffic demands resulted in a lengthy reprieve. It was not until the E class cars were ordered that the fate of the early Zs was sealed.

Two Z1s are preserved: No. 5 is at Bylands while No. 81, elaborately decorated in a Pakistani theme, is in the Melbourne Tram Museum at Hawthorn. (Nos. 11 and 74 were obtained by the Bendigo Tramways, and No. 74 operated there for a period, but both were subsequently disposed of.) Of the Z2s, 101 is being held for preservation (currently stored at the former East Preston Depot) and 111 is operational at Loftus.

Sydney reciprocating grinder runs in Auckland

Sydney reciprocating grinder No. 3 made its first run at the Museum of Transport and Technology (MOTAT) in Auckland on 16 February 2016.

Built in the 1920s for Sydney, this tram has had a remarkable and well-travelled history. It was transferred from Sydney to Newcastle in about 1935, and was the only tram to return south after the Newcastle lines closed. With the Sydney system later heading for closure it was sold to Melbourne in 1958; on arrival there it was fitted with a wide driver's cabin, a great improvement on the roll-up canvas blinds which had previously provided the only protection for the operator. Phased out of service in Melbourne, it came to the Sydney Tramway Museum in 1971; then in 2011 it was shipped across the Tasman to MOTAT. The grinder required substantial work before entering service in Auckland. The motor needed major work, all main traction cabling was either replaced or repaired (as a result of major earthing faults), and a cage guard was made up to satisfy safety requirements. The car also received repairs to the cab and roof, and virtually a full repaint.

Leyton Chan at MOTAT reported on the first day's operations as follows: "Grinding went remarkably well, we were taking corrugations out of the stretch along Motions Road which had been getting worse over the past few years. It will take a few more passes to get a smooth and continuous rail head (this is second hand railway rail which is all over the place) but we got a good feel of what it could do in the hour or so we had it out today."

BOOK REVIEW

Wellington Tramway Museum
The First Fifty Years 1965 – 2015
By Keith McGavin
A4 portrait, 48 pages including card covers
94 colour photos, 7 tables, 1 map
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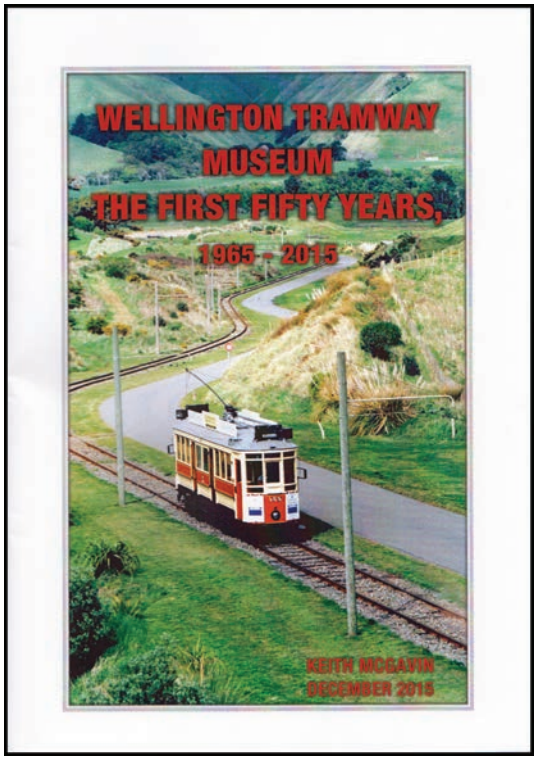
for details.

The reciprocating grinder with its Melbourne cab stands ready for use at MOTAT on 10 February. Albert Chan



This 48 page soft cover A4 book provides a thorough history of the development of the Wellington Tramway Museum during its 50 year life to date.

There is an overview introduction which provides a background to each of the tramway cities, with Wellington the sole survivor after Auckland closed in 1956. With little time on their hands the local group had barely six months before the final trams ran in May 1964, to establish a Tramway Museum and find a suitable site. An incorporated body was formed on 17 March 1964. A site was duly found in Queen Elizabeth Park some 50 km north of Wellington and negotiations for occupation of that site were concluded in the same month as the closure. Some innovations to raise funds were employed, including the support of a key local industry person.

What follows is a well-illustrated and well chronicled account of events from 1965 to 2015. Several other Tramway Museums, including the National Tramway Museum in Crich, U.K., Sydney and Copenhagen, Denmark, have also seen 50 year anniversaries in the preceding year or so before Wellington. Many readers will note a familiar story emerging, such as the search for a suitable site, and the need to remove trams from protected storage to offsite locations without adequate cover from the elements, souvenir hunters and vandals. This was an era when outsiders and sceptics regarded the dedicated few as having a 'pipe dream' which could not be achieved, however by the opening date on 19th December 1965, Fiducia tram 235 was able to break the ribbon and run over some 300 metres of track.

The first five years to 1970 are well summarised, including the ambitious acquisition of Brisbane Dreadnought 133 and Dropcentre 236 standard gauge trams incompatible with the narrower Wellington gauge. Perhaps this was foresight as 236 is now leased to the THS in Christchurch and 133 was used in the King Kong movie and is now likely to join the Wanganui Tramway Trust. The subsequent years are set out according to milestones and progressive achievements with the erection of the main tram barn in 1974, extensions of the beach tramway in 1985 and finally to the beach terminus in 1988. Achievements since included a new four tram workshop whilst passengers carried by 2007 had exceeded 20,000. The Kapiti Coast Tramway has become a well-established tourist attraction in the area.

The book concludes with a summary of the Museum Today and the Museum in the future. The challenges familiar around the globe with reducing numbers of volunteers are noted and a number of vital questions are posed to consider for the future. Appendices are informative concerning the Museum rolling stock, along with an informative locality map.

Overall, this is a most interesting book especially suited to a dedicated Tramway Museum member, and clearly demonstrates that young dedicated volunteers with a vision were more than the 'Pie in the Sky' dreamers they were labelled with 50 years ago.

Howard Clark

Letter to the Editor

Isaac Nathan has long had the sad distinction of being Australia's first tram caused fatality. He died on 15 January 1864 and his death is detailed in the Coroner's report on page 4 of the *Sydney Morning Herald* of 21 January. Peter Roberts wrote Nathan's biography in *Trolley Wire*, December 1981, and he was mentioned in Ken McCarthy's history of the horse tram line in the same issue.

However with the advent of Trove's newspaper archive it is clear that Nathan was not the first tram fatality. Thomas McGowan, aged 6, fell under a tram at about 6:15pm on 26 April 1863 and his feet were crushed by the tram's wheels. The tram was heading south in Pitt Street between Queens Place and Bridge Street. Thomas died four days later in the Sydney Infirmary as the doctors were unable to operate on him due to his loss of blood and weak pulse.

At the Coroner's inquest in May there was no clear explanation of how Thomas fell under the car's wheels; no one saw the accident nor could any of the witnesses agree on seeing him before it. There was even disagreement as to whether he cried "Oh, my poor feet" or "Oh my leg, oh, my poor leg". The jury's verdict on his death was recorded as an accident with no one to blame. The full report of the inquest is in the Empire of 7 May 1863, page 5.

Duncan MacAuslan

Modern trams in Morocco

Text and pictures by Dale Budd.

A recent visit to Morocco gave an opportunity to see two cities which have new tram systems: Rabat, the nation's capital, and Casablanca, its largest city.

Rabat, with a population of 580,000, has two lines with a total route length of 19km, opened in 2011. Casablanca has a single Y-shaped line with a route length of 31km, opened in 2012. A second line is under construction and it is planned that this city of 3.4 million people will have a network of more than 80km by 2022.

Both systems use five-section Citadis 302 cars, similar to Melbourne's C2 class but single-ended, coupled back to back. There are no driver's cabs at the inner ends: a coupled set is 65 metres long. Rabat also has some double-ended five-section cars.

A tram turns towards the city centre of Rabat, with the river and Salé in the background. Rabat operates 19 coupled sets and 6 double-ended five-section units, a total of 44 cars.

In Rabat a trams-only bridge takes the line across the Bu Regreg River to the northern district of Salé.

Trams at United Nations Square in the centre of Casablanca. Note the turnstiles at the platform ends: passengers must have tickets to gain entry to the platforms.

A tram in Rue François Villon on the western section of line 1, a quiet suburban street not typical of the busy Casablanca system. The city currently has 74 trams coupled into 37 sets.

A tram winds its way into United Nations Square. There is economic pressure in Casablanca for the adoption of external advertising, which would detract from the trams' striking colour scheme.

FERNY GROVE

BRISBANE TRAMWAY MUSEUM SOCIETY
PO Box 94, Ferny Hills, Queensland 4055 www.brisbanetramwaymuseum.org

Peter Hyde

Commemorating the closure of Brisbane's tramways

On Wednesday 13 April, we held a most successful evening commemoration of the closure of Brisbane's tram system. With the benefit of experience from previous evening openings, the commencement time was brought forward to 5:00pm. With the forecast showers not eventuating, several hundred visitors, members and friends enjoyed the experience of trams after dark. The hamburger and sausage sizzle stalls sold out completely by around 7.30pm.

Around the museum

While work continues on the restoration of FM 400, Dreadnought 136 and Trolleybus 34, our members have been active in undertaking other more mundane tasks around the museum. These include repainting two sets of tramway signal lights and installing them as displays on span poles near the terminus and repairing and repainting outdoor picnic furniture.

On 11 March the six trams used in regular operation were turned around. This is done early every year to equalise wheel wear as the layout of the museum's running track contains two fairly tight curves in the same direction. The turning is achieved by using the triangular workshop access tracks. As these are not wired, a wandering lead is required.

On the electrical front, an isolating switch has been installed at the substation to completely switch off all 240/415v power supply to all buildings on site should this be required in the event of fire or other emergency.

Waiting for the show to begin! The trams are preparing to leave the depot. Thomas Wyndham

Visitors join Baby Dreadnought 99 for the first trip of the evening. Thomas Wyndham

View in the workshop showing Dreadnought 136 wrapped in plastic to protect the interior while work is carried out on the roof. The bogies for FM 400 are in the foreground.

Peter Hyde

Slow and steady: removal of panels and replacement of rusted supports continues on Trolleybus 34. The large fan testifies to the unusually long-lasting summer heat this year.

Peter Hyde

Neil Cameron applies the finishing touches to the former Stafford Road waiting shelter.

Peter Hyde

BYLANDS

TRAMWAY MUSEUM SOCIETY OF VICTORIA
38 Piccadilly Crescent, Keysborough, Victoria 3173 www.tramwaymuseum.org.au

From *Running Journal*

Around the Museum

Our Marketing Manager, William Fedor has been busy, continuing the upgrading and repainting the interior of the Visitors Entrance Centre in our new corporate colour scheme, and improving the displays and other signage around the museum. With the Men's Shed no longer in this building, a large area for redevelopment now exists at the rear of the Visitors Entrance Centre. William has spent many hours working out how best to use this space. Apart from enabling us to enlarge our visual and interpretative displays, the area is of sufficient size to accommodate an auditorium for the presentation of archival films and possibly an archives room and a private area for our members. It could also be used to provide a display area for community groups.

Significant work was undertaken during the summer months to improve the appearance of our site. A large quantity of sleepers, purchased for construction of the Exhibition Shed trackwork many years ago, was relocated and stacked with other sleepers near No. 2 shed. Rails obtained in the past from the former South Melbourne Depot were also moved to a more suitable location. In addition, the tram bogies and cable tram wheelsets that were dumped several years ago on the main line at depot junction have been moved to the pit track. These changes will enable large vehicles to gain better access to the Exhibition Shed fan area.

A major effort has been put into cleaning up our trams, both internally and externally. A small team has spent many hours in our No. 1 shed and the results are impressive. One downside was the discovery of a broken internal saloon bulkhead window in W2 646. This is in the process of being replaced.

In recent years the Society archival material stored at Bylands has not received the care and attention it has deserved. Member Mal Rowe has offered to undertake a program that will see our archives sorted and also digitised, which will make the task of cataloguing so much easier. It will also allow the easier reproduction of items for future display.

The recently rebuilt flagpole has now been refitted to its original location outside the Visitor Entrance Centre at Bylands. Graham Jordan

New signage being erected on the toilets at Bylands. Michael Fedor

W2 646 gets the treatment and is clean once more.
Michael Fedor

BALLARAT

BALLARAT TRAMWAY MUSEUM

PO Box 632, Ballarat, Victoria 3353 www.btm.org.au

Dave Macartney and Warren Doubleday

Restaurant tram

Restaurant tram No. 3, previously Melbourne restaurant car No. 939, was formally launched on Tuesday 5 April. No. 3's entry into service followed a lot of work at the depot to rejuvenate, repaint and alter the internal layout of the tram, and administrative work to obtain the necessary Rail Safety Accreditation.

Ms Sharon Knight, MLA, state Member for Wendouree, launched No. 939 in its new role as Ballarat No. 3. The ceremony was also attended by other members of the Victorian Parliament, members of the Australian Parliament, councillors of the City of Ballarat and representatives from the Victorian Department of Economic Development, Transport, Jobs and Resources (DEDTJR). At the same time, the joint venture with the Returned Services League, Ballarat Branch, for an Interpretative Centre on the south side of our depot was launched. This project will provide further exhibition space for both organisations.

Funding to enable the tram to be restored to operating condition was primarily provided by DEDTJR through the Transport Investing in Regions initiative. The Museum provided the remaining funding, with assistance from local suppliers.

Peter Waugh prepares a coffee in Cuthberts 939 at the time of its formal launch on 5 April.
Warren Doubleday

The tram has been named 'Cuthberts 939' after Sir Henry Cuthbert, the first chairman of the Ballaarat Tramway Company, which operated the horse tramway from 1887 to 1903. Internally it has received a new kitchen, and the shorter saloon at one end of the tram has been altered to give a club layout rather than separate tables. The Museum received excellent press and TV publicity for the launch, with both our website and Facebook statistics skyrocketing afterwards.

An espresso machine has been fitted to the kitchen, and on the day of the launch it served coffee equal to Melbourne's best, and excellent cake. After the launch the tram ran in service along the Parade, offering coffee, tea and soft drinks to willing patrons, of which there were quite a few, or just a ride. An enjoyable day resulted, helped along by lovely Ballarat autumn weather.

The tram will not be used as a restaurant as it was in Melbourne, but as a function tram that can be hired for a variety of purposes on either a bring-your-own-food or arrange-your-own-caterer basis. We are also planning to use it for afternoon teas on an occasional basis. These will possibly be booked events. The tram has its own website, www.cuthberts939.com.au. For details of the tram refurbishment and its history, a web page has been provided on the Museum's home page – www.btm.org.au/trams/939.html

Summer and autumn operations

Our extended hours experiment carried out in January proved to be a success, with better than average passenger numbers recorded. Two drivers were rostered each day, enabling the workload to be split, which was particularly welcome on a hot day. On 24 January the horse tram was in operation on the northern end of the line, running in conjunction with No. 26 on the southern end. In all, 498 passengers availed themselves of this once a year event.

Some visitors from the Helsinki Tramway Museum in Finland attended on 16 January, no doubt glad to be avoiding the northern winter. We also hosted visitors from two UK railway museums and a visitor from Salzburg.

The Begonia Festival in mid-March attracted over 7,000 passengers for the three days, the milder weather bringing people out in great numbers. As usual, Nos. 661 and 671 did the bulk of the work, with various single truckers being deployed at busier times. The trams ran faultlessly, largely due to the considerable amount of preparation that was carried out in the weeks preceding.

Other projects

The basic paintwork on No. 18 is complete, though the truck is still off the premises. The motors have returned from UGL, and are receiving attention.

On 4 March two replacement overhead poles were installed. One, in the Gardens opposite the Loop, replaced the pole destroyed when a tree fell on it some months back. The other replaced a leaning pole at the king points on the depot.

Major track work to Nos. 2 and 3 roads took place during the second week of April. This involved replacing all the sleepers that had been covered in the

Passengers on board Ballarat horse car No. 1 waiting for the next trip on 24 January with Ballarat tram No. 26 behind providing a connecting service.
Peter Winspur

Gardens loop sees four trams – 27, 661 and 33 in the loop with No. 40 on the straight on 14 March. How did Alan Bradley manage to photograph this with nobody wandering in front of the trams?

Alan Bradley

The scene at depot junction during the Begonia Festival Parade on 14 March.

Alan Bradley

past by crushed rock as well as some other sleepers. At the same time, the curved rails on No. 3 road were replaced with new 57kg/m tramway rail obtained from Yarra Trams in Melbourne, who bent the rail to the required curvature. The project to renew sleepers in the whole depot fan will continue over the next few months as part of our depot landscaping project.

During March and April a fire alarm system was installed in the shed to protect the assets from potentially serious fire damage. The system will also be able to monitor our security system.

Ballarat Council has provided three traffic warning signs of a modern design for street use. These will replace existing non-standard signs, some of which date from the SEC system. The former SEC signs will become static exhibits. Three new A-frame signs to advertise our service in Wendouree Parade have been purchased as well.

In another step to keep pace with visitors to Ballarat, the Museum has had translated its welcome aboard brochures into Chinese (simplified), Indonesian, Japanese and Korean. These are available at the depot and also for download on our website.

Replacing life expired sleepers on No. 2 road in front of the depot on 11 April.

Warren Doubleday

HADDON

MELBOURNE TRAMCAR PRESERVATION ASSOCIATION

324 Sago Hill Road, Haddon, Victoria 3351 www.mtpa.com.au

Anthony Smith

Restoration of W5 792

Work is progressing steadily on the restoration of this tram, with all side panels having been replaced. This was achieved during February when the south side drop-centre chassis panel was replaced. During this process, a badly rusted side gusset was also cut out and renewed. This is a significant milestone in the restoration of 792 and Frank Schroeders and his team are to be commended for their efforts and the high standard of the work.

Repairs to the roof canopy frame at the No.1 end have been completed, and during March the replacement destination front fascia and sill plates were fitted to both end canopies. Also during March the new ribs for the vent roof were completed and delivered to Haddon. These have now been French polished and placed in store till required. The ribs were manufactured by the Bendigo Tramways, who are currently machining new roof slats for the vent roof along with replacement side fascia boards.

Work is currently concentrated on the final sanding of the cabin ceilings and upper bulkheads and preparing the roof sides for recovering. To ensure the roof slats are firmly attached to the ribs, additional screws are being installed along the entire length of the car. This is a slow and time consuming job due to the number of screws involved. It is also a necessary one in case any of the original fastenings should fail in the future. Once new side fascia boards are fitted it is intended that this section of the roof will be covered in fibreglass. Rebuilding of the vent roof section will then commence.

Overhead work

During March, Kym Smith and his team completed the rebuilding of the support network on the north-west curve. This involved the provision of new support span wire and the realignment and tensioning of the

Anthony Smith putting extra screws into the roof of 792. Jacqui Smith

VR 41 rounds the North West curve whist testing the new overhead. Anthony Smith

View of newly fitted bow rail and destination fascia.
Anthony Smith

Centre right:
New roof ribs for use in the rebuilding of the vent roof section on 792.
Daniel Edwards

Frank Schroeders fitting a new panel to the south side drop-centre chassis of 792.
Anthony Smith

trolley wire. Work will shortly commence on a similar reconstruction of the south-west curve support span work to complete this project. Once this is completed the only major work that will be required on the overhead system will be the provision of trolley wire in the new carbarn at the lower terminus. It is expected that the troughing required to support the wire will be installed during the second half of the year.

Isuzu cherry picker repairs

The repair to the motor of our recently acquired cherry picker truck has been completed by Frank Schroeders. The motor had developed an internal leak that allowed coolant water to enter the lubricating oil system. Other work on the repair and servicing of this vehicle is being undertaken.

Frank Schroeders working on the motor of our recently acquired cherry picker truck.
Anthony Smith

LOFTUS
SOUTH PACIFIC ELECTRIC RAILWAY CO-OP SOCIETY
PO Box 103, Sutherland, NSW 1499 www.sydneytramwaymuseum.com.au

From SPER News

Sydney Vintage Tramway Festival

The Museum held another highly successful Sydney Vintage Tramway Festival in late February to coincide with the anniversary of the closure of Sydney's last traditional tramways in 1961.

With some targeted free publicity and an extensive campaign on Facebook, we had good crowds turn up for the day. This year's theme was a little more sombre as the Museum acknowledged the role the Sydney tramways played in moving troops and soldiers around the city during the Great War before embarkation to the European battlefields. Military training camps at Moore Park, Centennial Park and Randwick Rifle Range all had tramway access as did the troopship embarkation points at Circular Quay and Woolloomooloo.

To assist in bringing this era to life we welcomed members of the 18th Battalion Great War Living History Group to the Museum. These volunteers, including museum member Jacob Kennedy, set up authentic displays of Great War artefacts and memorabilia in Lakewood Park. The six soldiers and one nurse were only too happy to answer questions from our visitors and they made a stirring sight as they formed up and marched to O 805 which would take them to 'Wooloomooloo' and the awaiting troopship. The Museum extends its thanks to the 18th Battalion Great War Living History Group for their participation in our event.

18th Battalion Nurse Ronelle with a display of World War 1 medical equipment and typical Comforts Fund parcels for the troops. Facebook

The 18th Battalion Great War Living History Group form up in front of O car 805.
Robert Merchant

Melbourne cable grip car 322 made its first public appearance and was displayed in Cross Street. Robert Merchant

Sydney cars C 29 and 290 prepare for a trip to the Royal National Park, while R1 1979, P 1497 and O 111 await their turn for a run north.
Robert Merchant

The Tramways Broomwade air compressor was attached to the AEC Matador to make its first appearance on the day.
Robert Merchant

Ballarat 37 in the workshop on 27 February. It has had power applied and moved under its own power for the first time since the completion of its restoration.
Scott Curnow

A selection of Sydney's tramway history was available for visitors to experience with six Sydney trams in operation. In keeping with the theme, most of the trams dated from before the Great War and thus may have been used by servicemen and women during their stay in Sydney. With the co operation of the Powerhouse Museum, O class 805 was again in service but this year it was not coupled to O 1111. Instead the two cars were rostered separately allowing visitors the sight of two similar trams passing each other.

A surprise for our visitors was the first public showing of Melbourne cable grip car 322 in Cross Street. With only a few jobs left to complete, its display marked the end of a rebuild and restoration lasting almost six years. Congratulations to Warren Howlett and Terry Thomas and their crew for an amazing job. The tram truly glowed in the sun.

The Ford Blitz and the Museum's double deck bus 2619, the AEC Matador with the Broomwade air compressor, and the Bedford tower wagon were well received by our visitors. Inside the Display Hall the second hand book stall contributed very well to the day's revenue.

The Sydney Road Transport Museum supported the event by providing a vintage bus service between the Museum and Sutherland. This year they brought along a Leyland Atlantean which is always a crowd pleaser.

1st Engadine Rover Crew were again tasked with the traditional Scout sausage sizzle and they did not disappoint.

Creating and running a successful Festival has always been a team effort, so congratulations to everyone involved in preparing for and running the day. The result of this great team effort was the best revenue result since the gala 50th anniversary day in 2011.

Track and associated work

It is expected that work on Army Hill may be completed within six months, allowing resumption of services to Waratah Loop, the current northern limit of our tram line. It will become an actual loop once the line is extended into Sutherland. The points at the loop will be Melbourne-style sprung blades identical to the Pitt Street crossover, the blade units for which are already concreted into position.

Army Hill will be in mass concrete from the level crossing to the terminus. The line has been concreted from the track drain to the blade units by the Wednesday and Saturday infrastructure teams, the form work has been built for the Army gate driveway over the points, and by the time this issue is published it will have been concreted.

It is hoped that in around a month, two car-lengths on the northern side of the army level crossing will be made available for terminating trams, thus 'reasserting' our use of the army crossing. The work required is mostly leveling of the ground around the new track slab to make it safe for conductors changing poles.

Sutherland extension

Danny Adamopoulos has been having discussions with Sutherland Council for the scoping and integration of our track to coincide with the redevelopment of Rawson Avenue from President Avenue to Pitt Street, Loftus in the 2016 to 2018 period. These are preliminary dates, but we are working to have two sections of track laid as part of the works, one under the Cronulla railway line bridge and the other the driveway crossing just north of current substation building entering the old Sutherland railway goods yard.

Our Museum draftsman, David Bennett has prepared detailed track plans that have been related to Council plans to show how we can fit our track in the allotted space, particularly under the railway bridge.

When the time comes to move ahead we will need funds to pay for contractors and materials to expedite the work. Although we have a stock of rails for the extension, there are a lot of other sundry materials needed to make it all go together.

More surplus concrete arrived on 6 February and was placed on Army Hill. Martin Pinches

Workshop and maintenance

The signal formerly located at Cooperative Junction is being re assembled after having the post and signal items shot blasted and powder coated. A new base had to be made as the original one was too badly corroded. This signal protected the tramway where it crossed the railway junction of the Cooperative Colliery and Wallsend Colliery on the outskirts of Wallsend.

The 12-year restoration of Ballarat 37 is now complete. The car was taken on successful trial runs to National Park on 27 February and 12 March, and will soon be placed in the display hall until its centenary celebrations in June.

As noted in the report of the Sydney Vintage Tramway Festival, Melbourne cable grip car 322 is now complete and ready for display.

Sydney C 37 will shortly be placed in the workshop for wiring of its lighting and traction circuits. Plumbing of the air brakes will also be carried out. It is hoped to have this car operational by the end of the year.

Geoff Spaulding reached a milestone with Sydney P 1729 on his latest visit from the South Coast on 2 April. After many very frustrating hours, Geoff installed the last of the 32 side opening windows on the car. In the process of fitting the windows many hiccups in their re-installation were experienced which

The Melbourne-style pointwork for Waratah Loop under construction. The loop, which will become an actual loop once the line is extended into Sutherland, is the current northern limit of the museum's tramline. Martin Pinches

created major obstacles to installation and the smooth operation of the replacements. Obstructions to the windows included broken glass, menus, pens, cutlery, coins and even a pair of glasses! Geoff has test fitted two of the fixed etched glass 'smoking' signs to one upper bulkhead, and they look very good.
AEC double deck bus 2619 is nearing completion of its long restoration with all interior seat frames now secured in position. All the roller doors in the workshop have had electric motors installed, making opening and closing much easier.

The Tramway Historical Society in Christchurch have recommenced work on the three bogies for Sydney P 1729 and PR1 1573, following the return of W2 244 to city service in Christchurch after rehabilitation. Also, in the spirit of co-operation between museums we have an opportunity to obtain a pair of GE 247 motors for one of these trucks from the Wellington Tramway Museum which will save transport costs.

Launceston 14 is gradually being restored in Bendigo courtesy of our chief sponsor, member Hugh Ballment. Eight Brill Winner seats for the centre saloon have been obtained from Len Millar and Darren Hutchesson, and these have been delivered to Bendigo where roof restoration works are currently under way. Launceston Tramway Museum (LTM) life member John Binns had previously arranged for the local casting and fabrication of hand rails and other items for this car. When they find alternative workshop space, he and other former members of LTM will fabricate the bulkheads and cross bench wooden seats for the car. In the meantime, current members of LTM have obtained the completed metal side panels, originally arranged by John, and these and the various castings will soon be sent to Bendigo.

Overhead work

During March, the Overhead Department received permission to use 99u for overhead line work. The tower on this vehicle has been extensively modified by our Tuesday night team. The handrails have been raised to make for an OH&S compliant safer work platform. Similar modifications are currently being carried out on the Bedford tower wagon.

ST KILDA

AUSTRALIAN ELECTRIC TRANSPORT MUSEUM (SA) INC

PO Box 213, Salisbury, South Australia 5108 www.trammuseumadelaide.com.au

Colin Seymour

New Playground tram stop and line work

The City of Salisbury recently undertook further improvements to the Playground adjacent to our tram line. These included construction of a new tram stop and disability access ramp for our use as well as installation of several new and replacement overhead poles.

The length of the general loading area of the new tram stop is sufficient to accommodate an H type car, with a raised section at the eastern end to enable disabled access primarily to W7 1013 and, at a pinch, to other larger doorway drop-centre trams. Following completion of work on the tram stop, boarding of trams at the Playground and at the museum will occur on the north side only, thereby enabling the door barriers on trams to remain down on the southern side at all times.

Trams have been tested for clearance at the new Playground platform. H 365 was the first tram so tested on 18 March, with F1 264 following later the same day. Another eleven trams - most of our current operating fleet - were tested on 20 March. Cars E1 111 and R1 1971 and works car W2 354 were also tested prior to operating. Eight trams were tested during operations giving visitors an unusual variety of trams to ride – one visitor rode all eight! Cars G 303, B 42 and C 186 ran the first three trips and were put away after their run, leaving cars H 360, W7 1013, W2 294, F1 282 and E 118 spread evenly on the depot fan to provide the remainder of the operations.

When W7 1013 was tested at the Playground platform the opportunity was also taken to test the folding ramp housed in car 1013 that was acquired recently from a 2000 series rail car. The logistics of providing disabled access to museum trams still need to be carefully worked out.

H 365 was the first tram to test clearances at the new Playground platform and ramp on Friday 18 March 2016.
Colin Seymour

Overhead work

Following the installation of the new poles at the Playground, the overhead wiring was transferred to the new and replacement poles on 5-6 April, with the redundant overhead then being removed from the curve past the Playground that is no longer in use. Our usual contractor, North East Demolitions, assisted with the job by providing an elevated platform, with works tram 354 also being used.

New pit

Work on construction of the new pit on Road 6 in the new shed was completed in early December 2015. A three week wait was then required for curing of the concrete walls and floor. At 1.515 metres, the new pit is much deeper, and this has greatly improved underbody access to our trams for servicing and maintenance.

Motorman Mark Jordan and Conductor Colin Seymour testing the wheel chair ramp portion of the new platform on 20 March 2016. Kym Smith

Conductor Colin Seymour tries out the potable ramp from the tram to the new concrete platform wheel chair ramp. Kym Smith

A view of the new pit on Road 6 on 18 March 2016. Colin Seymour

The 1.5 metre pit almost allows full standing under a tram as demonstrated by William Adams and Jack Pennack on 18 March 2016. Colin Seymour

Over summer the back half of Road 6 was re-laid in preparation for concreting. New running rails were cleaned and placed in position with additional lengths of rails being cut up to form steel bearers to hold the track in gauge. The whole assembly was then welded solid. The track will be set in concrete when funding becomes available. The first tram over the pit was C 186 on 31 January when it entered the workshop for servicing of its control system and brake gear.

Trackwork

Five sleepers were replaced at the commencement of the lakeside track on 20 December 2015. Six sleepers were replaced on 27 February 2016; four near pole 26 and two near pole 29.

Air compressors

Extra DH 16 air compressors have been supplied to the workshops, courtesy of Tony Smith of the Melbourne Tramcar Preservation Association at Haddon. One in operating condition has been placed in the workshops for examination and adjustment.

A replacement air compressor has been fitted on to W7 1013 to allow it to enter traffic again. Kym Smith was able to borrow a lifting trolley from Glengowrie Depot to lift the new air compressor onto the tram from our new pit on Road 6.

Testing equipment

In conjunction with the recent work taking place on the air compressors, work has commenced on setting up a permanent testing facility. This will enable the pneumatic and electrical testing of equipment such as air compressors, governors and safety valves.

To help build the test rig a number of components have either been purchased or sourced from our inventory of spare parts. This will be attached to the main workbench to enable bench testing of components before they are fitted to a tram. We thank Jack Pennack, Mike Crabb, Geoff Moore and Kym Smith for helping to develop the test rig.

WHITEMAN PARK

PERTH ELECTRIC TRAMWAY SOCIETY (INC)
PO Box 257, Mount Lawley, Western Australia 6929 www.pets.org.au

Michael Stukely

New Carbarn project

On 23 December 2015 the WA Planning Commission issued its Approval to Commence Development for our new Carbarn. Three weeks later the City of Swan issued a building licence to the builders, Northwest Shedmasters. Following a site meeting attended by Lindsay Richardson and Bryan Adcock for PETS, and the Construction Supervisor and our contact for the builders, areas requiring further clearing and preparation for materials storage and access were identified. A hired bobcat and operator then spent four hours on site with an excellent result.

Work by the builders commenced in the first week of February with the creation of the set-outs for the shed pillars. Concrete pours of these foundations were then delayed due to the heatwave conditions in February. By 19 February, the pours were completed, and the erection of the steel framework then proceeded at a fast pace with most of the main structural steel in place by 12 March.

Tramway points for new Carbarn fan

The acquisition of eight sets of tramway turnouts and mates (five right and three left-hand), with crossings, had been arranged by Bob Pearce and Lindsay Richardson through COTMA, and the materials were stored for PETS at the Ballarat Tramway Museum's Bungaree site. We thank Alastair Reither (BTM) for arranging the storage and sorting of these materials. Some of these sets of points will be used to access the three new Carbarn roads, and others are reserved for future projects.

Lindsay Richardson visited Ballarat from 22-25 January to select the required items and coordinate their loading for transport to Perth. The task was organised by Warren Doubleday and linked with a visit by Clinton Pearce (MOTAT, Auckland, New Zealand), and we thank these gentlemen for their excellent assistance. Two flat-bed containers arranged by Bob

Fraser Douglas applies masking tape in preparation for repainting the window frames on W6 998, on 9 December 2015.
Michael Stukely

Construction has begun: the concrete footings for the new Carbarn have at last been poured and the materials laid out for the side wall pillars, on 19 February.
Michael Stukely

Just five days later, on 24 February, much of the main steel framework for the new three-road Carbarn is in place, with one further panel still to be erected at each end.
Lindsay Richardson

Pearce were on site for loading which commenced on the Saturday mid-morning, and the selection and loading of the pointwork was completed by early Sunday afternoon. Also loaded were the six remaining trolley poles from an earlier batch for PETS, together with trolleybases. In addition, three shorter lengths of pre-curved grooved rail were loaded to use as patterns for use with the turnouts to the new Carbarn. After transfer from the flat-beds, a single container was transported to Whiteman Park, and unloading began on 10 February.

Traffic operations and service cars

Trams ran on seven days per week as usual in the summer school holidays, with mixed results. There were good levels of patronage on the milder days, but several very hot and dry periods led to a number of very quiet days and the loss of about 13 service days from December to February when running was not permitted due to the high fire danger.

W2 329 and 441 were again the main service cars in December and January, with Fremantle 29 seeing significant service and Perth E 66 also regularly running in early December. In February, E 66 saw the heaviest service, with 441 also well used; both FMT 29 and W2 329 ran a smaller number of trips.

On 20 February, Perth E 66 (driven by Bob Pearce) and Fremantle 29 (driven by David Brown) were chartered to convey guests from Village Junction terminus to

Unloading the ex-Melbourne tramway points components (received from Ballarat) from the container, with Ric Cheeseman at left and Roy Daley guiding the Hiab crane arm of the Mercedes-Benz truck on 24 February.
Lindsay Richardson

The completed elevated work platform that has been installed by the Wednesday team members on the roof of Melbourne W7 1023 during its conversion to a works car, on 20 January.
Lindsay Richardson

The interior of W7 1023 being fitted out as an overhead line workshop, on 20 January.
Lindsay Richardson

The newly erected gabled roof over the brick-walled transformer compound on 14 November. The eastern half of this shed, with the floor now concreted, will be used as a storage area for electrical parts. The improvements were funded by the Oketon Geddes Trust.
Lindsay Richardson

The ex-WAGT tower wagon on 2 December, repainted by Fraser Douglas. This vehicle is to be displayed in Whiteman Park's Revolutions Transport Museum, which is near the Village Junction tram terminus.
Lindsay Richardson

Mussel Pool for the wedding of Noel Blackmore's grandson, Gordon. After the ceremony and photos, guests boarded the trams for the return trip.

General

Melbourne SW6 891 is undergoing final electrical adjustments and the installation of air horns prior to its recommissioning for regular traffic. Body repairs and repainting of W6 998 were also progressing well by early April.

An area of scrub at the east end of the lower hardstand (rail storage area) has been cleared for future storage of tramway grooved rail not required for the new Carbarn. Relocation of rail to this site was commenced by Roy Daley on 12 March.

Signwriting of the Society's name on the cab doors of the Mercedes-Benz truck was arranged by Pat Ward, with outstanding results. The overhaul of the hydraulics of the all-important bucket tractor, also organised by Pat, was completed with excellent results.

A new Notice of Accreditation has been issued to PETS following the transition of regulatory functions from the WA Office of Rail Safety to the Office of the National Rail Safety Regulator from 2 November. It is pleasing to note that the new document is significantly simpler than the earlier one.

The Mercedes-Benz truck on 9 December showing the newly painted cab (by Fraser Douglas) with the PETS sign-writing on the door. Michael Stukely

Ballarat Tramway Museum's function tram, ex Melbourne Restaurant tram No. 3 (alias No. 939) was formally launched on Tuesday, 5 April. The tram has been named 'Cuthberts 939', after Sir Henry Cuthbert, the first chairman of the Ballaarat Tramway Company, which operated the horse tramway from 1887 to 1903. Warren Doubleday

In the late afternoon light, Perth E 66 pauses on the Triangle in Whiteman Park while taking members and friends to the Perth Electric Tramway Museum's Anniversary Dinner on 28 November 2015. This was its first passenger carrying run since the closure of Perth's last tram route (18 Inglewood) on 19 July 1958. Michael Stukely