



MELBOURNE
TRAM MUSEUM

The Bellcord

*Journal of the Melbourne Tram Museum
Number 60 – December 2023*



Front cover

The electrically powered Victorian Railways gantry crane at the southern end of the Melbourne goods yard is used to unload W class tram body No 304, newly arrived from Holden's Motor Body Builders Limited of Adelaide. Four horses are hitched to the jinker to transport the tram to Preston. In the background on the other side of the Flinders Street extension is the Department of Agriculture building. The tram entered service in August 1924. Photograph courtesy of Public Record Office Victoria.

In this issue

2023 marks the centenary of the W class tram – the iconic symbol of Melbourne, our city. This issue of *The Bellcord* celebrates 100 years of this classic tramcar design, an example of which can be seen at the Melbourne Tram Museum, [W class No 380](#).

What drove the development of the W class tram? Russell Jones explores the impetus behind this new tramcar design.

Warren Doubleday delves into the construction of the very first W class trams, before the basic design was adapted to become a variety of sub-classes.

And finally, a change of pace, describing a recent donation to the museum. This fine photograph shows the Victorian team that competed in the 1948 interstate tramway football carnival. Tramway football had a long and proud tradition, and not just in Melbourne. Noelle Jones outlines the history of the interstate carnival, in which teams from New South Wales, South Australia and Victoria competed for the Sir William Goodman Shield.

Many thanks for your support of the Melbourne Tram Museum over the past 12 months. Best wishes for the holiday season and we hope to see you at the Museum in the New Year.

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Editor: Noelle Jones

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The seventeenth Annual General Meeting (AGM) of the Melbourne Tram Museum was held at Hawthorn on Saturday, 23 September 2023, with 13 members in attendance.

The Chairman and Treasurer tabled their respective reports, highlighting the Museum's return to normal operation following the COVID shutdowns and the healthy financial state due to several funding grants. Funding has been allocated to several projects, including installation of LED lights, painting of walkways, installation of a heart defibrillator and production of promotional material.

At the close of the financial year there were 106 current members. Membership subscriptions remain at \$30 for adults and \$15 for children.

The four committee members up for re-election – Mike Ryan, Carolyn Cleak, Rod Atkins and Alan Scott – were re-elected unopposed.

Office bearers for 2023/24 are:

- Chair – Kevin Taig
- Deputy Chair – Rod Atkins
- Secretary – Mike Ryan
- Treasurer – Shána De La Rue
- Committee Members – Warren Doubleday, Russell Jones, Carolyn Cleak and Alan Scott

Errata – The Bellcord No 59

Mal Rowe is grateful to Dean Filgate for correcting the lengths quoted for the PMTT straight sill cars. It should have read: These trams were also rather long – 32 feet (9.75 metres), and were placed on a truck with a wheelbase of only 6 feet 6 inches (2.0 metres).

Some later versions of the design had the dimensions originally quoted.

None of the PMTT cars were converted to all-night trams.

According to contemporaneous Tramway Union magazines, the opening date of Glen Huntly Depot was 12 May 1923 – some three months earlier than that cited in our article on the history of the Depot. Many thanks to Brian Weedon for this discovery.

An [updated version](#) of this issue is now available for download.

Scrubber tram No 4 was the last survivor of the original PMTT straight sill trams. It was taken out of service in 1947. This photograph at South Melbourne illustrates the very high steps that made these trams unpopular. Photograph from the Peter Duckett collection, Melbourne Tram Museum.





100 years of the W class tram

In May 1923, the manager and secretary of the Melbourne & Metropolitan Tramways Board (M&MTB), W.O. Strangward, made a major announcement. The M&MTB planned to spend £9.0 million (equivalent to \$833.4 million as at December 2022) over the next fifteen to twenty years on expanding Melbourne's electric tram system. This was close to two and a half times the initial capital value of the M&MTB at its formation in November 1919.

The plan was known as the [General Scheme](#), which proposed conversion of Melbourne's cable tram system – then the largest in the world – to electric traction, as well as massive expansion of its existing suburban electric tram routes. About £4.2 million would be committed to converting the cable tram lines to electric traction, while expansion of the suburban electric network would cost somewhere between £4.0 million and £5.0 million.

At the time, the M&MTB had close to 600 cable trams, as well as an assortment of 216 electric trams built to twenty-one different designs.

Above: photograph of M&MTB W class No 287, c1926. Note the equal width doors in the drop centre, the identifying feature of the first W class trams. Photograph from the Peter Duckett collection, Melbourne Tram Museum.

In comparison to the construction of major infrastructure programs today and the associated reduction in public appetite for risk taking, the ambition of the General Scheme was breathtaking in its scope. This was supported by the buoyant economy and the pent-up demand for housing after the austerity of the war years.



Tom Percival Strickland (1875-1955), Chief Engineer of the M&MTB from 1921 to 1938. Detail from a 1924 M&MTB official photograph, in the collection of the Melbourne Tram Museum.

Construction of housing in the new outer suburbs of Melbourne was therefore a key priority of the State Government. Unlike today, private motor vehicle ownership was restricted to the professional and moneyed classes. Establishing reliable and robust public transport in these new suburbs was vital to their successful development.

The M&MTB's Chief Engineer, [Tom Percival Strickland](#), was committed to develop all aspects of the General Scheme. This encompassed:

- Determining routes
- Designing infrastructure, including bridges, culverts, road, gradients, as well as buildings such as depots, workshops and substations
- Identifying land resumptions and road diversions
- Statistical analysis of potential passenger traffic and revenues
- Selection of motive power method
- Vehicle design and manufacture
- Developing budgets for material, construction, manufacturing and labour.

As motor omnibuses in the early 1920s were not yet a reliable and robust form of street public transport, tramways were determined to be the most cost-effective method of supplying public transport to these areas. Electric trolley buses were also considered, but the parlous state of Melbourne's roads did not bode well for their reliable operation, or for passenger comfort.

After rejection of petrol and petrol-electric tramcars in favour of electric traction, this left the method of electrical power delivery in question.

- Battery-powered trams were rejected on weight, range and lack of power storage.
- Surface contact systems such as the Lorain system were rejected on safety grounds. With both positive and return rails or studs located on the roadway, failure of any component was almost guaranteed to have fatal results for road users.
- An underground conduit system such as that used in London, Washington and New York was rejected due to cost and maintenance issues, particularly its vulnerability to flood damage in low lying areas. Flood damage had been a persistent issue with Melbourne's cable tram tunnels in South Melbourne and Port Melbourne.

This left overhead wires as the method of electrical power collection for the new trams, as it was proven, comparatively low cost to build and operate, and safe. The next step was to design and build the tramcars that would operate the new electric tram system.

To meet the needs of the M&MTB and its General Scheme the new trams had to be easy and relatively cheap to build, capable of carrying large passenger loads, and able to handle both Melbourne's changeable weather and the heavy loads of city peak hour and football traffic.

The Lorain system

This surface contact system for power delivery was used in [Wolverhampton](#) in the United Kingdom from 1902 to 1921, when it was replaced by overhead wires. A modern equivalent is [Alstom's proprietary APS system](#) currently used in Sydney to eliminate unsightly overhead wires.



M&MTB photograph of prototype W class No 219, December 1923. From the collection of the Melbourne Tram Museum.

These basic requirements drove the design parameters for what would become the W class design. Another key requirement was that the M&MTB would need a lot of trams built quickly to meet its expansion plans.

The W class trams were known as bogie drop centre cars. Passengers boarded the trams through three doors in the drop centre, which was of a semi-open design – only two steps were needed to board. At either end were closed saloons up one more step – therefore boarding did not require significant athletic ability.

Two classes of similar trams had already entered service in Melbourne – the twenty drop centre cars of the Victorian Railways, which ran on the St Kilda to Brighton Beach and Sandringham to Black Rock lines, and the six L class trams ordered by the Prahran and Malvern Tramways Trust – one of the municipal trusts taken over by the M&MTB. These had proven to be successful in traffic, and the M&MTB was keen to replicate this success.

The W class tramcar was not innovative, even within the context of Australian tramways. In comparison, the Sydney P class design of 1918 was built with a lightweight steel underframe, advanced pneumo-electric multiple unit controls and Tomlinson couplers. This allowed easy operation of two coupled trams by a single driver, including both coupling and uncoupling procedures. All of these features were state of the art for electric trams at that time.

Strickland was intimately familiar with the characteristics of the Sydney P class design, as prior to his appointment to the M&MTB in 1921 he was the Chief Assistant Electrical Engineer to the NSW Government Railways and Tramways.

Instead of designing complex state of the art trams, Strickland created a simple, robust tram optimised for rapid production. The W class tram would not have been out of place on urban tramways fifteen years before.

The M&MTB did not want to be at the mercy of commercial tram builders, as no single Australian company had the capability to build so many trams within the required timeframes, or at an acceptable price. Therefore, the M&MTB decided to build its own factory for constructing and maintaining the new tram fleet – Preston Workshops.

The first two W class trams – Nos. 219 and 220 – entered service in late December 1923, built by the M&MTB at its small workshops in Holden Street, North Fitzroy, as Preston Workshops would not be fully operational until 1926. Operating initially from Malvern Depot, they proved to be reliable and capable in service.

A total of 752 trams would be built to variations of the original W class design, with construction only ending in 1956. Three more trams based on W class blueprints were built by the Victorian Railways in 1942 for the Brighton Beach line.

Acknowledgements

Thanks to the resources available at the Melbourne Tram Museum, National Library of Australia (Trove) and the Reserve Bank of Australia.

A few modified W8 class trams still run in heritage service today on the City Circle.

The evolution and longevity of the W class was largely influenced by two key decisions taken at the beginning of its life.

The first was the conservative design which was more than adequate to meet decades of wear and tear, long beyond the trams' designed thirty-year lifespan. A few examples would last for more than 60 years in continuous service before retirement.

Secondly, the construction of Preston Workshops gave the M&MTB the capability to build and, more importantly, maintain its trams. It then had the capability and budget to keep its W class tram fleet in excellent running order throughout the period of anti-tram sentiments from the 1950s to the 1970s. Together with the W class trams' ability to move huge crowds every day, this blunted much of the public criticism directed at the M&MTB for resisting calls to switch to bus operation.

As W class trams were omnipresent in the streets of Melbourne for most of the twentieth century, any film or photograph of a W class identified it as being on the streets of Melbourne.

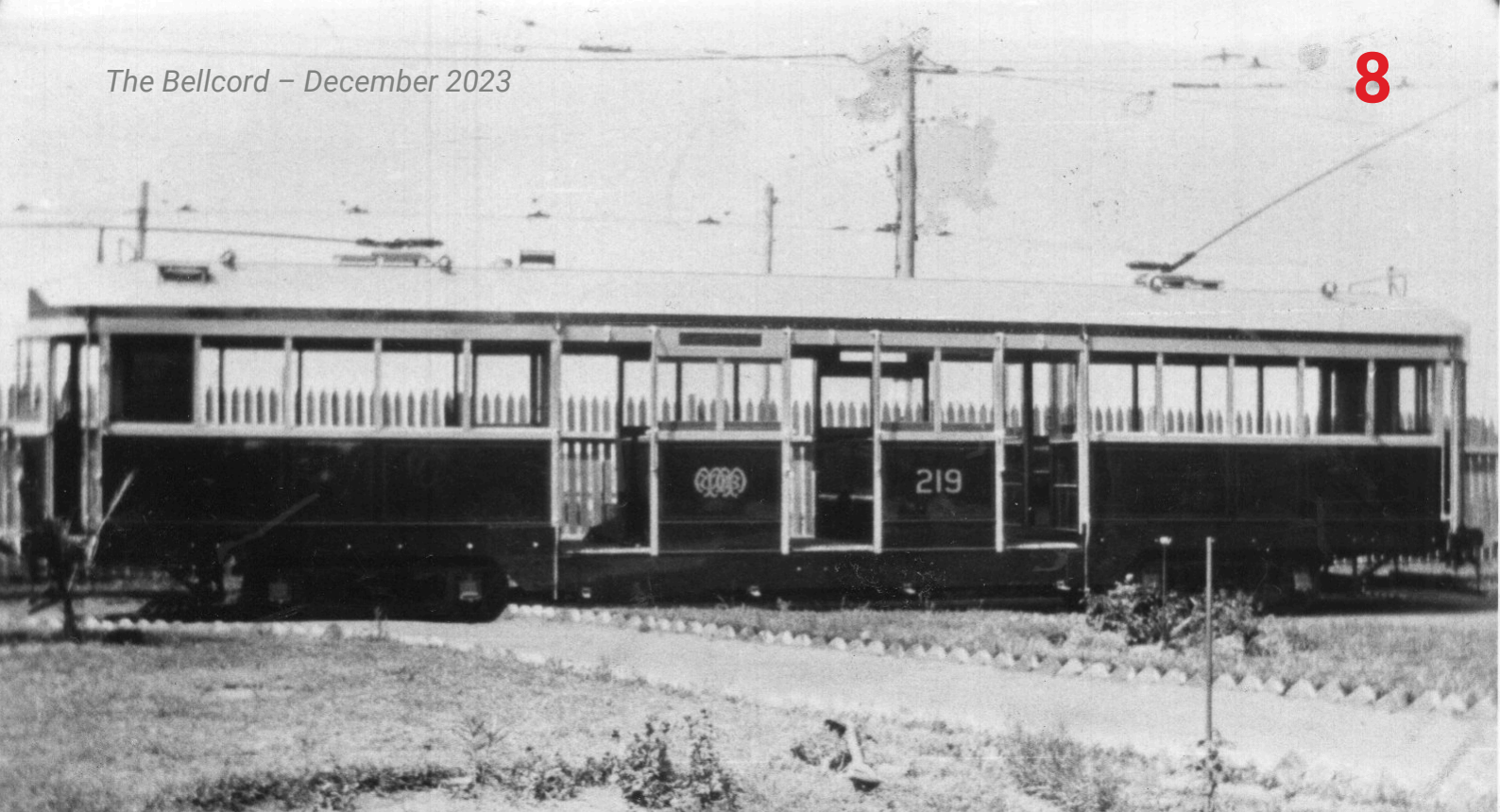
For example, the 1959 movie *On the Beach* was instantly recognisable as being filmed in Melbourne due to the presence of W class trams, as was the 1976 AC/DC music video *It's a Long Way to the Top (If You Wanna Rock 'n' Roll)*.

From 1960 onwards, civic leaders attempted many times to create a symbol that would represent Melbourne, akin to the status of the Sydney Opera House. They had missed the icon right under their noses – the humble Melbourne W class tram.

W class trams under construction in the body shop, Preston Workshops, 1926. Photograph from the Peter Duckett collection, Melbourne Tram Museum.

Russell Jones





Building the W class tram

The focus in this article is on the construction of the very first W class trams – namely those with three equal doorways in the drop centre of the car, with seats in the centre section facing the middle of the car. Tramcar [W380](#) at the Melbourne Tram Museum is representative of this layout.

To convert the cable system to electric traction, the Melbourne & Metropolitan Tramway Board (M&MTB) needed an easy-to-build, cost-effective tramcar of a standard design. The W class tram was the solution. Its drop centre provided a lower step height than the earlier straight sill (flat floor) Q class trams built by the Board. The W class tram entrances were all located in the centre of the car so the conductor could easily observe the doorways. In comparison, the earlier Prahran and Malvern Tramways Trust (PMTT) and the Hawthorn Tramways Trust (HTT) drop centre cars had additional doors at each end that were harder to observe (as described in [The Bellcord No 53](#)).

Above: photograph of the incomplete W class No 219 at Preston Depot (Thornbury), date unknown but probably December 1923. The tramcar does not yet have windows or step boards and is fitted with long poles from a Birney car. Note the early version of the M&MTB monogram. From the Keith Kings collection, Melbourne Tram Museum.

In City services, such as along Swanston Street, rapid loading and unloading are essential. The initial layout of the W class trams with three equal sized doorways only partly achieved this. The later W2 class layout replaced these with a smaller centre doorway and two adjacent doorways wide enough for two passengers to pass through at the same time, improving loading and unloading. Other improvements included better destination signage, and use of four motors as in the PMTT-designed L class and the VR trams. The new W class tram had a passenger capacity of about two cable car sets, consequently saving in crew manpower.

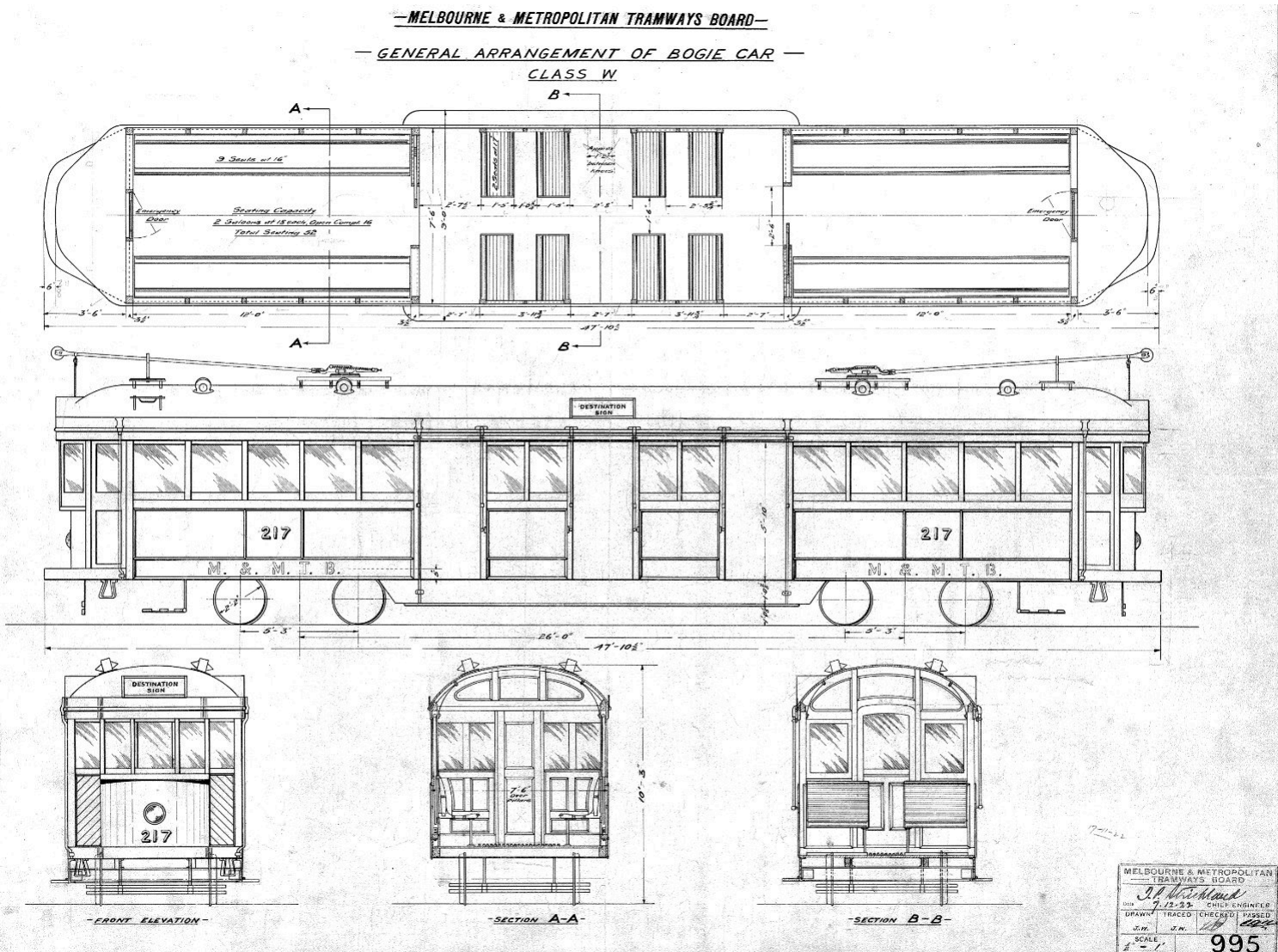
The PMTT L class bogie tram, with its curved sides, detailed interiors and greater weight (19.5 tonnes as built, compared with a W class weighing about 17 tonnes), would have been considered expensive as well as using more energy. The lighter weight for the W class was achieved by designing the tram with flat sides and a simpler structure.

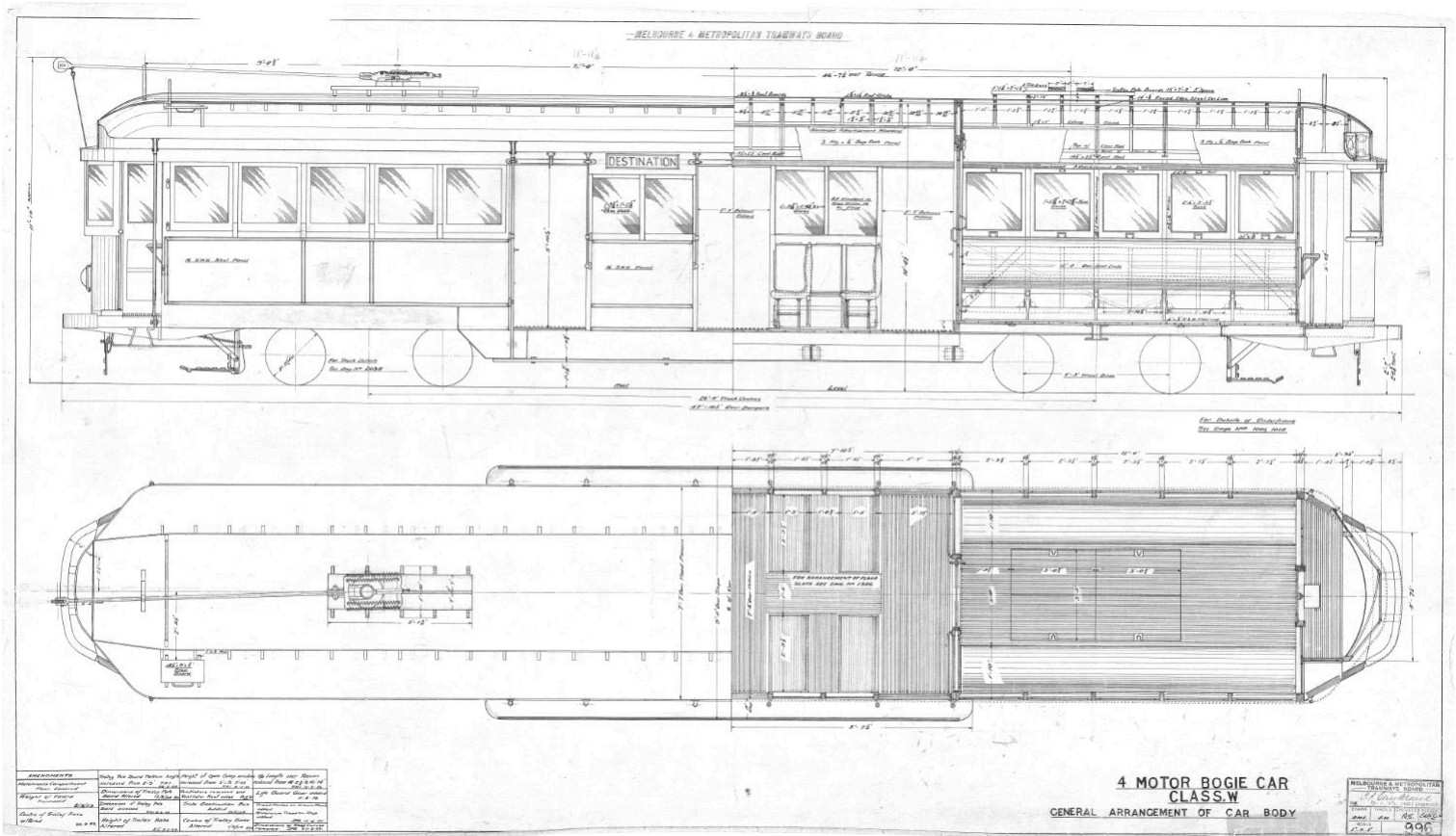
The Board approved the general design of the tram on 27 July 1922.

The Argus of 27 April 1926 reported on the chassis or the underframe of the tramcar body:

In one place are the rough girders which form the “backbone” of the chassis and the undressed timber which is fashioned into the frames... One of the first parts of the process of carbuilding consists of laying out the heavy iron girders which form the chassis. Each of the two main side girders is built in three sections, which are secured by special angle brackets and joined in the completed chassis by a series of cross girders, giving the finished frame surprising strength and rigidity. Of next importance to strength is lightness, and, with a view to reducing running costs and depreciation expenses, a great deal of thought has been devoted to the removal of every possible piece of metal from the tram frame.

The earliest W class drawing in the Museum’s drawing collection: R995, dated 7 December 1922. The tramcar is shown as No 217. The drawing was created at about the same time as the M&MTB’s purchase of the two X class Birney trams which became Nos 217 and 218.





The second earliest W class drawing in the Museum's drawing collection, R996, dated 26 January 1923, better represents the W class body than does R995, although over the next few years there were 14 changes to this drawing. These were mainly around the trolley pole location and the size of its base, as well as documenting the evolution of the body from one with roof ventilators to a ventilated roof.

The Drawing Register shows the timescale of the tram's development with body details, truck or bogie drawings, brakes, lifeguards and schedules (lists of parts, components, etc). By April 1923, many detail drawings had been completed showing tram sections, seats, body metal work, motor supports, outline of equipment components and various body components. From November 1923 to early 1924 drawings were still being prepared for the handrails, sand hoppers, door runners and the many small brackets. These were probably drawn from workshop sketches used to make the items in order to fully document the tramcar construction and for the contracted body builders.

Drawing R1066, originally dated 22 May 1923, lists the size and type of timbers to be used in the body: Oregon, blackwood, white Baltic pine, Tasmanian red myrtle, plywood, Queensland maple, hoop pine, mountain ash, stringybark and celery top pine.

Tramcar bodies

The first two W class trams, 219 and 220, were built at the rear of the cable car house on the corner of Holden Street and St Georges Road, North Fitzroy. This was prior to the completion of Preston Workshops in 1925 to 1926. Background on the use of this location for car building – covering a repeat order of Q class cars before the Ws – is described in *The Bellcord No 49*. It was not until 1926, when all the "shops" were built, that a W class tram was fully built at Preston Workshops.

The Holden Street car builders operated in very cramped conditions. The Board leased another building in Holden Street in June 1923 for use as a carpenter’s shop, to make some of the many wooden components of the W class tramcars. The steelwork for the chassis was made at the North Fitzroy Cable Car Repair Shops in Nicholson Street – which had the facilities to undertake the steelwork fabrication – and was then transported to North Fitzroy Tram Works. Specialised woodworking and steel working machinery was purchased by the M&MTB and later transferred to Preston Workshops.

The 1923-24 Annual Report advises that the completed cars were transported to the Preston Depot (Thornbury) for painting and electrical equipping. The report records that machining of the woodwork for construction of new electric rolling stock was carried out at the Cable Repair Shops as well.

Contract body builders

The North Fitzroy Tram Workshop could not achieve the level of output needed to meet the target of 120 tramcars ready for service by September 1925. Tenders were advertised Australia-wide during mid-June 1923. The tender for 60 bogie car bodies was awarded at the 26 July 1923 Board meeting to Holden’s Motor Body Builders Limited of Adelaide for £82,980 (£1383 each) with the proviso that the M&MTB’s Chief Engineer (T.P. Strickland) negotiate with James Moore & Sons of South Melbourne for additional cars. The other tenderer was Pengelly & Co of Adelaide. This tender resulted in questions raised in Parliament, as well as in local newspapers, as to why the work was not being done in Victoria, demonstrating the parochialism that remained from the days of Victorian industry protection prior to Federation. The Ballarat Star of 23 August 1923 reported that the first four sample cars from Holden (Adelaide) were to be delivered by December. The first Holden built car – 279 – entered service in April 1924.

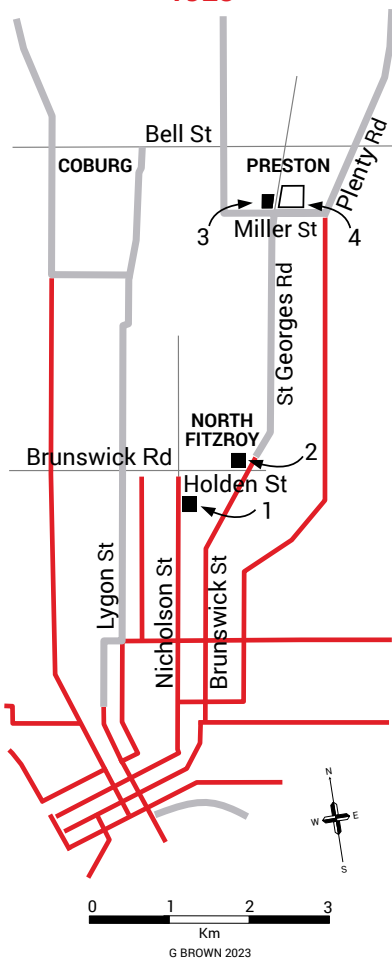
During August 1923, negotiations concluded with James Moore & Sons to provide 30 cars, given in the Minutes at £1429 per car including contingencies, with the first car to be delivered in six months and then two per month. Another contract for 30 W class car bodies was subsequently awarded to this company.

Tram bogies

Each tram requires two bogies, or trucks, complete with frames, axles, bearings, wheels and brake rigging. The bogie, later known as the No. 1A truck, was modelled on the USA Master Car Builders High Speed Interurban Truck. The Minutes do not record whether the M&MTB purchased a licence and drawings, or just copied them.

Drawings R1006 and 1008 (both dated April 1923) and related drawings detail the many parts that had to be first made and then fabricated into a completed bogie ready to be fitted with a motor.

**M&MTB Tramway Workshops
(Northern System)
1923**



- Cable tramway
- Electric tramway

- 1 Cable Car Repair Workshops
- 2 Holden St Tram Workshop
- 3 Preston Depot (Thornbury)
- 4 Site of future Preston Workshops

A small “workshops locomotive”, No 8A, was built to transport the unfinished tramcar to the Preston Depot (Thornbury) for painting and electrical equipping. Early 1940s photograph from the Peter Duckett collection, Melbourne Tram Museum.



It was recorded in the 1923-24 Annual Report that:

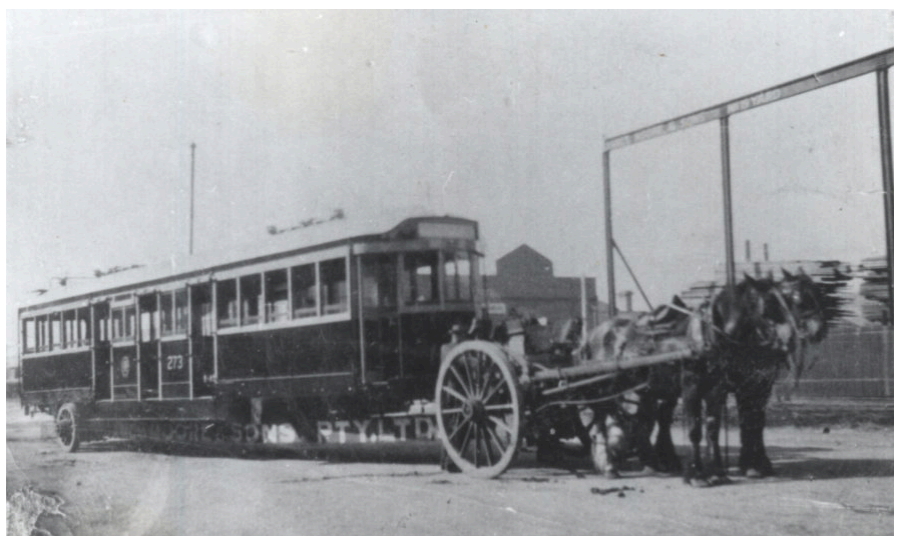
Repair [cable tram] Shops have constructed the trucks required for all the new drop centre bogie cars, and the underframes, body iron work and hand-brake gear for the cars built by the Board.

To facilitate this work, additional machinery was provided.

The Repair Shops did not have the capacity to build all the bogies required to meet the M&MTB's tramcar production schedule. Tenders were called during September 1923 for 30 pairs or 60 bogies. The contract was awarded to Perry Engineering of Adelaide, at a cost of £8940 or £149 per bogie.

Axles, wheel centres, tyres (that go on the wheel centres), and forging of equalising bars were tendered out and awarded to Australian-based contractors.

M&MTB W class No 273 leaving James Moore's yard in South Melbourne, late 1925. Other photographs of W class trams on a jinker show three or more horses being used. Photograph from the Bob Lilburn collection, Melbourne Tram Museum.



Tram body being built at Holden's Motor Body Builders in Adelaide, showing construction of the chassis. The make-up of the chassis of a W class tram can also be seen in the training room at the Melbourne Tram Museum. Photograph courtesy of Dr John Radcliffe, in the collection of the Melbourne Tram Museum.



Electrical equipment

In the 1920s, suppliers such as the international manufacturers General Electric and Metropolitan Vickers (the successor to Westinghouse UK) supplied a complete set of electrical equipment. Described in the Minutes as “four-motor equipments”, this included four tramcar motors, two controllers, switches, circuit breakers, lightning arrestors, trolley poles, and a set of resistance grids, but excluded the compressor and related equipment.

The first set of 60 were split between Metropolitan Vickers and Australian General Electric (“Australian GE”), a subsidiary of General Electric USA. The other tenderers were English Electric, Gibson Battle as agent for Brown Boveri, and British General Electric (“British GE”). The Board ordered the MV101A motors with controllers from Metropolitan Vickers and BTH 265 motors with K35JJ controllers from Australian GE. The cost for each four-motor equipment set from Metropolitan Vickers was about £883 with import duty of 27.5% included and a delivery time of 15 to 27 weeks. Each set from Australian GE cost £881 with 27.5% duty and a delivery time of four and a half to seven months. It appears a duty of 40% was imposed on the controllers as they would have come from the USA, rather than from the UK.

Import duty was levied by the Federal Government. It was a complex system, designed to give Australian industries some protection. According to a brief history of our tax system, published by The Treasury:

Although the states retained control of land and income taxes, customs and excise duties were by far the greatest source of taxation revenue at the time of Federation.

The Board employed a customs advisor to assist in processing the paperwork in a timely manner.

When the next order for “four motor equipments” came to be awarded at the end of 1923, Metropolitan Vickers (20 sets) and Australian GE (30 sets) were again recommended along with English Electric (10 sets) who would have provided some locally made equipment. In March 1924 the Chief Engineer changed his recommendation for purchase to 35 sets from Australian GE and 25 sets from Metropolitan Vickers. The Chief Engineer also requested authority to accept an offer from Australian GE for K35JJ controllers to replace rejected controllers from Metropolitan Vickers. This is the first time that such an issue was raised with the Board.

The Victorian Minister for Public Works had to approve such purchases. His office asked for further data during May 1924 and particulars regarding supplies being obtained from Australian manufacturers. It was not until late July that the Minister gave approval to order 20 four motor equipments with General Electric control, 40 General Electric controllers and circuit breakers and 30 four motor equipments complete from Metropolitan Vickers except for controllers and circuit breakers.

Advice was received from the Comptroller General (Customs), that the Federal Minister had decided to admit 10 four motor equipments manufactured by English Electric under tariff item 404, duty free. This was conditional upon the Board ordering 40 motors (10 equipments), 20 Lightning arrestors, 20 trolleys, 10 sets of Resistance grids and spares from English Electric. These were Dick Kerr 34A model motors and Q2G1 controllers.

K35 electrical controller at TMSV Bylands, August 2012. Photograph by Mal Rowe.



The first and second tender schedules do not detail the type of controller Metropolitan Vickers offered at the time. Drawing R1204 (14 December 1923), held by the Museum, shows the wiring diagram for a Metropolitan Vickers No MV T4A controller with rheostatic magnetic braking. With this type of electric car brake (which is fitted to Z class trams) the retardation is caused by the drag of track magnets on each rail when energised by current from the car motors acting as generators. The equivalent drawing for the General Electric K35JJ controllers is dated 1 December 1923.

Air brake equipment

The first tender for air brake equipment was awarded to Australian GE in late May 1923. The second tender for 60 sets was also considered by the Board at the last meeting of 1923. This was interesting in that Australian GE was awarded the work for compressors and air tanks, but the brake valves, handles, drain cocks and safety valves were awarded to Matthew Coates acting as an agent for Westinghouse. Duty on such equipment was 40% with a three to four month delivery. The cost of this equipment from both manufacturers totalled £9542 including spares. Each set cost about £154 excluding spares. At the time the brake valves were of the manual lap type, not the self lapping type later fitted to Melbourne W class tramcars.

Year	W class trams completed
1923	2
1924	60
1925	80
1926	51
1927	7
Total	200

Other equipment

The Board also considered tenders for wheel sets and the manufacture of 120 sets of tramcar blinds. The latter was awarded during October 1923 to R F Benson, as agent for the Curtain Supply Co USA at £45 each.

The rollout

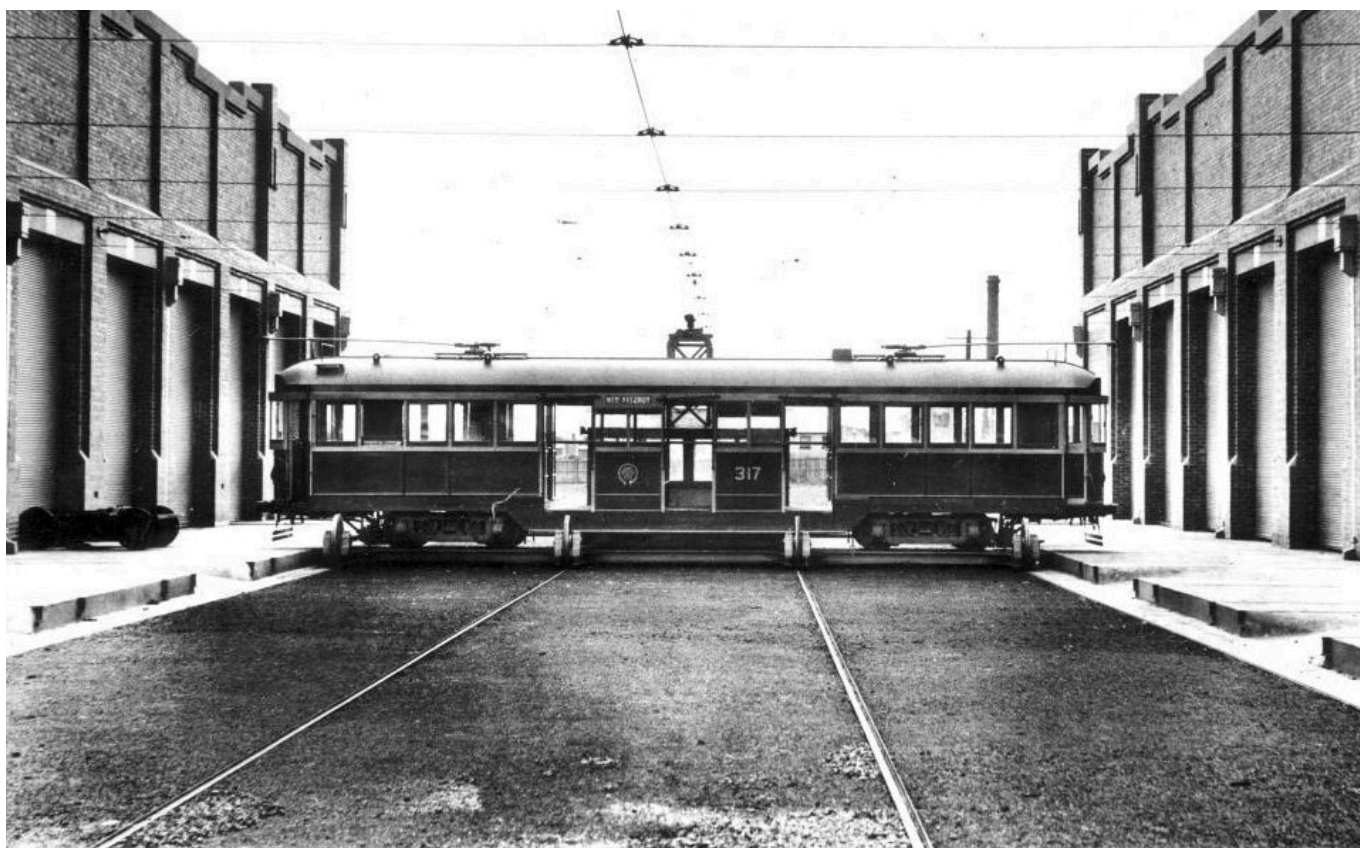
At the 30 August 1923 Board meeting, the Chief Engineer advised that 120 authorised bogie cars would be completed by September 1925. An analysis of the in-service dates shows that by the end of August 1925, 99 cars had been built with a further seven completed during September 1925.

As part of any rollout of new equipment there are many other considerations to be managed, such as depot space, training of drivers, conductors and maintenance staff, and ensuring sufficient spare parts in store. Spare parts for both motor controllers and air brake equipment were ordered at the same time as the contracts were placed.

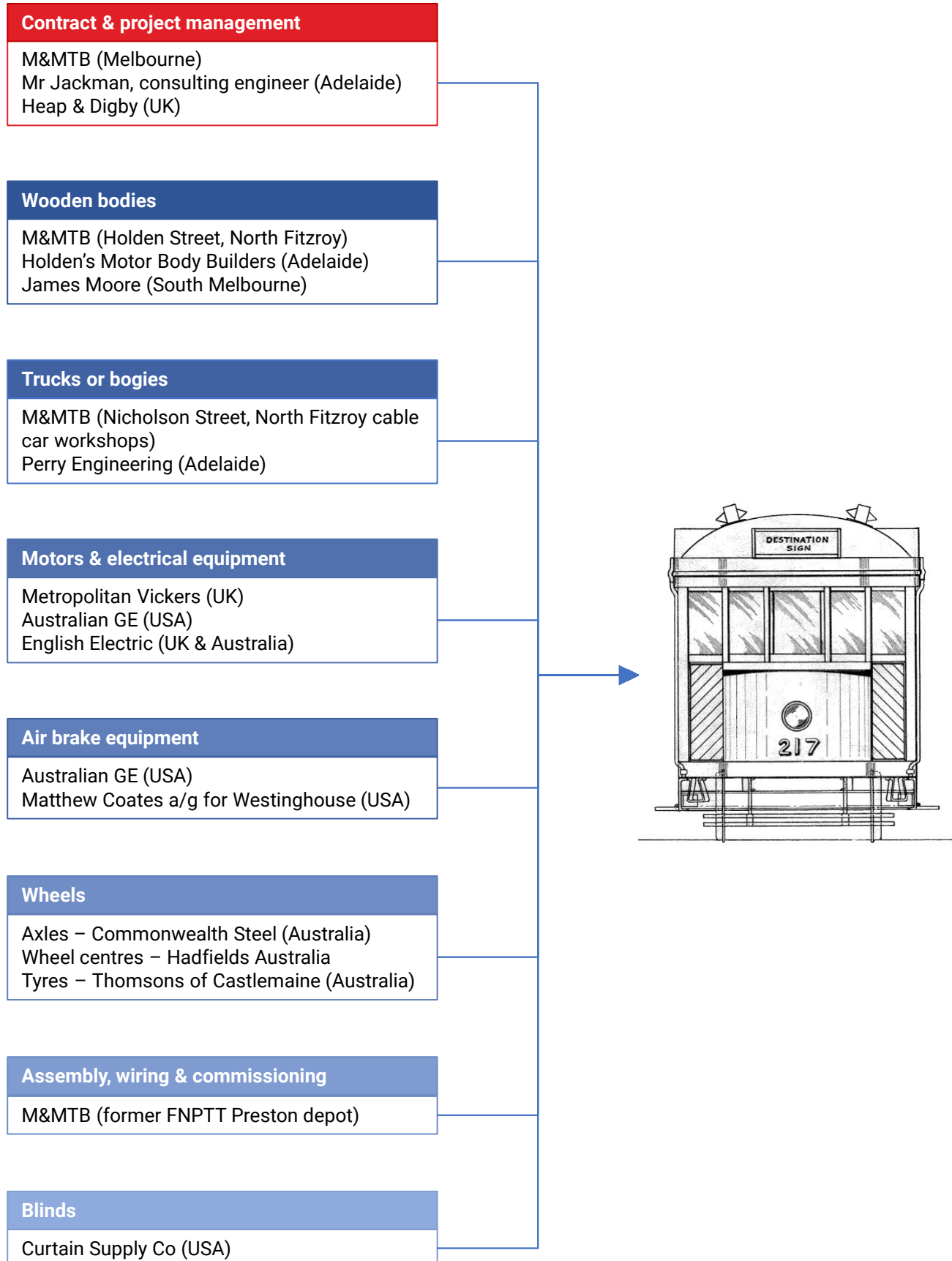
Commissioning the first two – Nos 219 and 220

Information about the commissioning and formal testing of the first tram is slight. So far no relevant reports have been located in Trove or in the Public Records Office Victoria. Commissioning and some training of the Trainers, would have commenced as soon as possible, using the tracks out of Preston Depot (Thornbury), in particular in St Georges Road.

M&MTB W class No 317 on the traverser at Preston Workshops, circa October 1925. From the collection of the Melbourne Tram Museum.



Extract of original 1922 Drawing R995 showing W class bogie car No 217 with schematic of suppliers, contractors and M&MTB groups involved in building the W class tramcars, as at 1923-24. Note that Drawing R995 was created at about the same time as the M&MTB's purchase of the two X class Birney trams which became Nos 217 and 218.



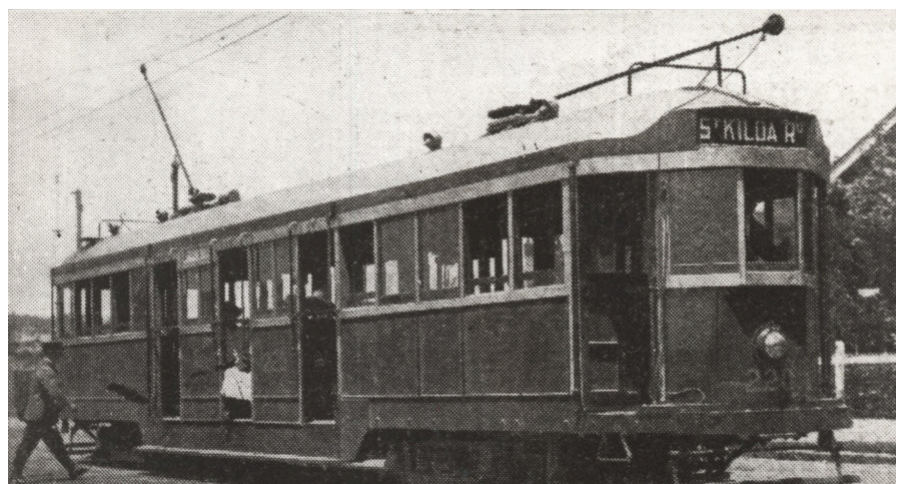
It would appear that late delivery of motor control equipment and other parts was a significant factor in delaying the rollout for service to the public. The tramcar card for tram 219 shows it being put into service with “35HH controllers borrowed from the Vic Railways, 8” Cylinder and Trolley bases off St Louis (Birney) car. Own controllers (K35), 10” brake cylinder (US bases removed (February '24))”. An 8 inch or 200mm diameter cylinder would have meant the tram had a lower braking capacity than those fitted with a 10 inch or 250mm diameter cylinder which was standard for the rest of the new W class fleet. The card shows that it was transferred from Preston incomplete on 8 December 1923. Tram 220 was also sent incomplete to Malvern Depot just before Christmas 1923.

The entry into service of the two new W class cars was reported in Melbourne newspapers. The Age reported on the new cars on 4 January 1924 and The Argus reported on 8 January that the two cars were in service at Malvern Depot. The Prahran Telegraph reported on 11 January, that two cars were in service on the Glen Iris line and gave a detailed description of the tramcar itself and its attributes.

After these two cars entered service, there was a gap of about three months before the next three entered service during March 1924, again working from Malvern Depot. New tramcars entering service then became much more regular, for example 12 new cars were put into service during September 1924.

Conclusion

The provision of 120 new W class tramcars during the period 1923 to 1925, followed by another 80 finished by early 1927, was just part of a much bigger project. This was to convert St Kilda Road and Swanston Street to electric traction with new track, depots and substations, then roll out the tramcars as they were built. It also encompassed convincing the City of Melbourne that overhead span wire construction, rather than centre poles or even conduit, was the way forward.



Photograph of the newly built W class No 220 in The Sun News-Pictorial, 5 January 1924. From the Keith Kings collection, Melbourne Tram Museum.

Want to know more about building the W class tram?

An expanded version of this article can be found on the Museum's website at www.trammuseum.org.au/papers/wclassbuild.htm.

The Chief Engineer, [Mr Strickland](#), oversaw all of this work, very much like [George Smith Duncan](#) oversaw the installation of the cable tram system. Although the new trams subsequently had their central or drop centre section modified to a form that better suited Melbourne's conditions, the W class tram was very successful. It provided a model that was to evolve to the W7 and then the W8 type. The project had a few issues like all projects do, nonetheless it met the production target needed for the cable tram to electric conversion.

Warren Doubleday

Acknowledgements

Many thanks to Geoff Brown, Noelle Jones, Mal Rowe, Geoff Warburton and Brian Weedon for their assistance, as well as to the resources of the Public Record Office Victoria and the Melbourne Tram Museum.

The information used is drawn from various sources, including: the M&MTB Minute books (Volumes 1 to 4, November 1919 to September 1924) held by Public Records Office Victoria; the M&MTB Annual Reports; articles by Norm Cross and Keith Kings; drawings held by the Melbourne Tram Museum; and, other papers within the Museum's collection. Nonetheless there are still some gaps in the information known about the design and commissioning processes.

Postcard showing Swanston Street, c1926 and W class No 328. From the Ron Scholten collection, Melbourne Tram Museum.



Victoria rules!

The 1948 interstate tramway football carnival

Back in the day, tramway football was hugely popular in Melbourne.

From the latter half of the 19th century, many employers actively encouraged workplace recreational pursuits. These activities were perceived to bring a number of benefits for both employees and the firm, including the ability to attract and retain employees, foster organisational loyalty and improve employee welfare, as well as to promote the firm within the wider community. While workplace football was initially an employer initiative, it later gained the support of unions as a mechanism for furthering union membership and solidarity.



Victorian Tramway Football Association team and officials at the Interstate Football Carnival, Sydney, August 1948. Back row: J Ahern, F Forsey, W Crawford, J Blizzard, A Tewendale, W Warner, L Dowley. Second row: K Horden, J Stapleton, A Taber, J Broadbent, L Comley, J Rowe, A Hosking, S Armstrong. Third row: S Boardman, A Borlase, K Hudswell, H Daley, B Parsons, R Blackwood, T Westhead, L O'Brien, J Evans, A Hayes, W Burgoyne. Seated: A Shapley, L Montgomery (Asst Manager), A Charter, W Luff (Capt), R Hodder (Manager), A Allen (Vice Capt), A Cruishank, C Peterson (President), A Fogarty. In front: F McCarthy, A Mills, R Ryan, J Winkle, A Fisher.

Photograph from the collection of the Melbourne Tram Museum.



The Sir William Goodman Shield with badges for the years 1951 to 1963, at the former Tramway Museum at Malvern. Over this period, Victoria won the shield eight times, NSW three times and South Australia once. Photograph by Mal Rowe.

A tramway employees' team participated in the Wednesday Football League (also known as "Trades Football") in the first decade of the 1900s. Then in 1911 the Victorian Tramway Football Association (VFTA) was created – supported by the Victorian branch of the Australian Tramway Employees' Association – to organise and administer a competition between depots.

Initially there were eight teams in the VTFA:

- North Carlton and Nicholson Street
- Port and South Melbourne
- Brunswick, Fitzroy and Clifton Hill
- Essendon and North Melbourne
- Prahran and Malvern
- Brighton and Esplanade
- Carlton and Victoria Street
- Richmond.

Matches were keenly fought and were often reported in the mainstream press.

Several of the VFTA teams fielded some serious football talent, with current and past players from the Victorian Football League (VFL) as well as various metropolitan and country football associations. VTFA matches were held mid-week so did not interfere with the Saturday matches of the other competitions.

Melbourne was not the only city with Australian rules tramway football teams. At various times, tramway football teams could be found in Ballarat, Geelong, Hobart, Kalgoorlie, Launceston and Perth.

In Adelaide the Municipal Tramways Trust (MTT) had fielded a team in that city's mid-week competition since at least 1910. In Sydney the Tramway Australian Football Association launched in 1927 with four teams – Dowling Street, Fort Macquarie-Rushcutters Bay, Newtown and Waverley.

Obviously the next step was to organise interstate tramway football matches. In 1927 a visiting South Australian team defeated a NSW tramway side. The following year a NSW team travelled to Melbourne for two matches against a Victorian side selected from the VFTA teams, and then in 1929 a Victorian team visited Sydney. The Victorian teams were undefeated in both years.

South Australia proved to be a greater challenge for the Victorians. In 1930 a team travelled to Adelaide, where it lost both games to the locals. The situation was reversed in 1931, when a South Australian team visited Melbourne, losing to the Victorians.

Preparations were then made for a three-way competition between Victoria, NSW and South Australia, with the first interstate carnival held in Adelaide in September 1932 at Norwood Oval. South Australia, as inaugural winner of



Stan Wickham and the famous bicycle incident when, playing for Glenelg, he rode a bicycle onto the ground at Norwood, in 1954. He was reported by the umpires and suspended for one game. Photograph courtesy Snouts Louts.

the contest, was awarded the Sir William Goodman Shield, named after the Chief Engineer and General Manager of the MTT.

At the next carnival two years later in Sydney, Victoria were victorious, retaining the Shield in 1936 and 1938, in Melbourne and Adelaide respectively. Due to World War II, the carnival was not held again until 1946 in Melbourne, when only Victoria and South Australia participated. All three States fielded teams in the 1947 carnival in Adelaide.

The 1948 carnival took place in Sydney, at Henson Park, Marrickville, with three matches over the six days from 23 to 28 August. The Melbourne & Metropolitan Tramway Board (M&MTB) had pledged a contribution of £100 towards the Victorian team's expenses for the trip.

Having held the Shield since 1934, the Victorians must have been considered favourites, however the South Australians, with a clutch of current and past South Australian Football League (SAFL) and grade level players, would have been a formidable opposition.

Probably the most well-known member of the 1948 South Australian side was MTT conductor Stan Wickham, who also played for the SAFL team Sturt between 1946 and 1949 before transferring to Glenelg where he played 101 games over the period 1950 to 1956. Wickham was a colourful character, probably most notorious for an incident in which he rode a bicycle onto the ground in a match between Glenelg and Norwood, in response to journalist Allan Reval's comment that Wickham "needed a bicycle to keep up with the play".

Unfortunately for the South Australian team, Wickham missed the final match against Victoria as he was flown back to Adelaide early in order to play in the Saturday match between Sturt and Norwood.

Captain of the NSW side was 57-year old tram driver Ernie Beller. He was originally from Melbourne, where he played for VFA team Brighton over the 1910-12 seasons. After moving to Sydney, in 1914 he played Australian Rules football for Paddington. He then played 14 seasons with East Sydney, before joining South Sydney for another five seasons. Beller had a very long association with tramway football – he was also captain of the NSW tramway side that had visited Melbourne in 1928.

The Victorian side was selected from the eight teams competing in the VFTA 1948 season: Brunswick, Central Bus, Essendon, Footscray, Glen Huntly, Kew, Port Melbourne and South Melbourne. The captain, W. Luff (Glen Huntly), was one of the VFTA's star players, being awarded the competition's Best & Fairest award in 1940, and then for three years running from 1946 to 1948. A few of the Victorians also played in other football competitions. Tram driver Keith Horder (South Melbourne) was playing with South Melbourne City in the Victorian Junior Football League, after two seasons with Fitzroy seconds before the war. Tom Westhead (Brunswick) was also playing for Coburg in the Victorian Football Association (VFA).

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Victoria proved to be too strong for the other two teams, being undefeated throughout the carnival and retaining the Sir William Goodman Shield.

Final results for the 1948 carnival:

- Victoria 10.9.69 d South Australia 8.13.61
- South Australia 12.16.88 d NSW 7.1.43
- Victoria 20.22.142 d NSW 11.9.75

Victoria's winning streak came to an end at the next interstate carnival in 1950, when South Australia – in front of a home crowd at Norwood Oval – won the shield. Despite the efforts of the Victorians, led by ex-Fitzroy player Tommy Williams, the team lost both of its matches.

Final results for the 1950 carnival:

- South Australia 20.7.127 d NSW 10.12.72
- NSW 10.9.69 d Victoria 6.9.45
- South Australia 9.16.70 d Victoria 9.8.62

Noelle Jones



The South Australian team and officials at the Interstate Football Carnival, Sydney, August 1948. Back row: B Harrison, G Fitzgibbons, L Davey, T Molan, R Cattermole, A Edwards, K Dobbin. Fourth row: E Harvey, L Hooper, H Blizard, R Ashby, L Eime, R Dennis, J Sellars, H Salter, L Myers, C Egar. Third row: M Newton, J Huxtable, H Nicholls, R Dobbin, R Graney, F Glastonbury, D Davoren, R Longman, J Sinclair, L Alagich, M Buckley. Second row: C Shepherdson, L Phillips, D Burgess, H Doig, J Robertson, A Sheridan, G Cave, L A Phillips, R Lugg. Front row: W Owens, W Harrison, K Evans, C Wickham, F Spencer and L Hocking.

Photograph from the MTT in-house magazine, Among Ourselves, courtesy of Colin Seymour.