MELBOURNE TRAM MUSEUM

The Bellcord

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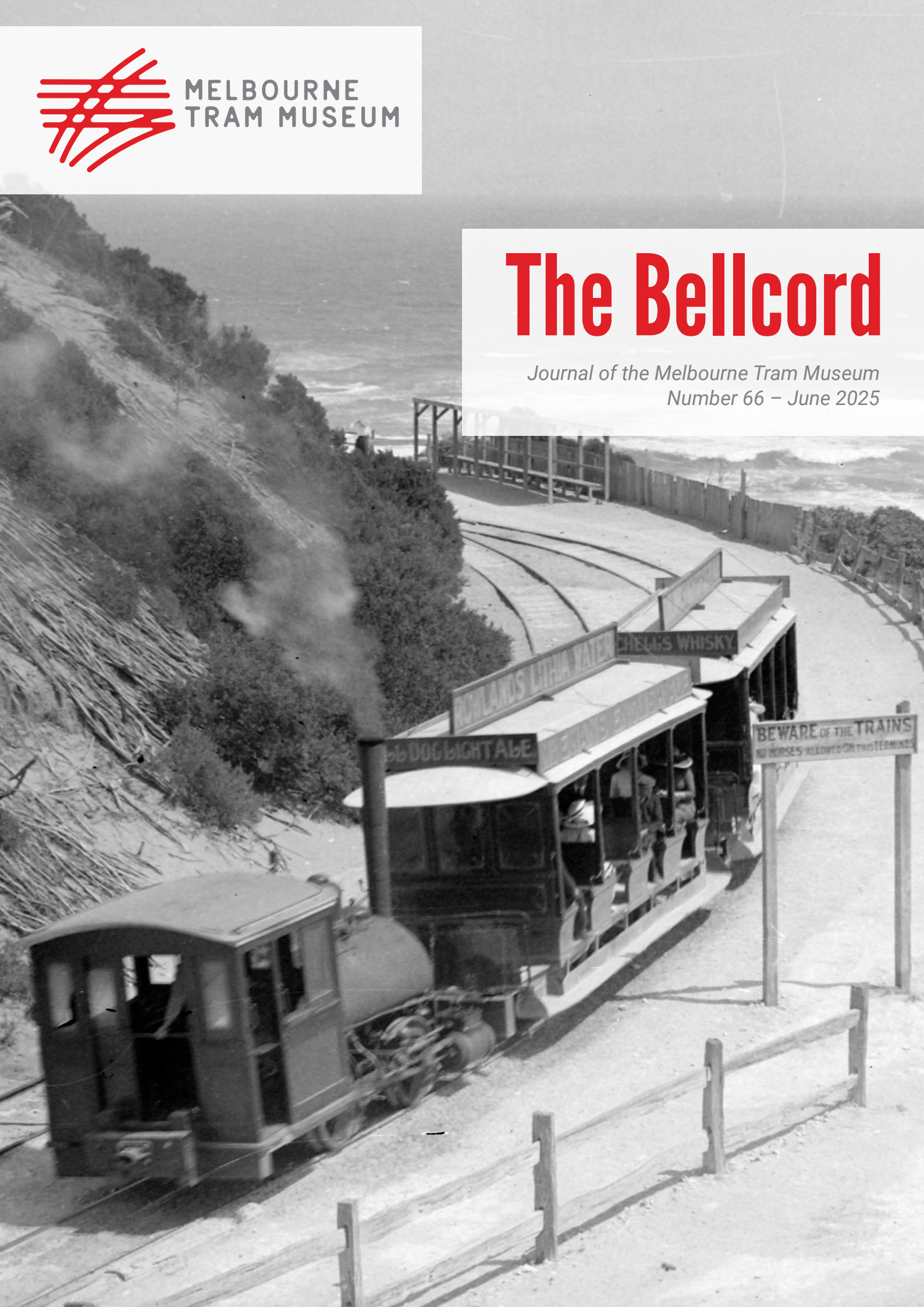

Front cover

Sorrento steam tram, Back Beach, Sorrento, c1914. Note that the passenger shelter remained in a truncated form until the late 1960s.

Photograph by the Rose Stereograph Company, courtesy of State Library Victoria.

Melbourne Tram Museum
8 Wallen Road
Hawthorn Vic 3122

Postal address:
PO Box 6172
Hawthorn West Vic 3122

E-mail:
editor@trammuseum.org.au

Website:
www.trammuseum.org.au

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Editor: Noelle Jones

In this issue

This extra long June issue of *The Bellcord* is a huge treat for our readers, offering loads of fascinating material on tramway history.

In the second part of his story of the Melbourne & Metropolitan Tramway Board's efforts to use coal gas as an alternative fuel for its buses during wartime, Russell Jones examines the many and varied non-engineering challenges that contributed to the project's eventual outcome.

Thomas Charles Jewell was a significant figure in the early history of tramway unions in Victoria. Born in Creswick, Jewell joined the tramways in 1888 and rose to the senior ranks of the union. His career is described by his great-grandson, Peter Jewell.

Andrew Howlett continues the saga of the Sorrento Tramway Company, after its sale in 1903 until its eventual demise in 1920. This article incorporates new material identified through Andrew's research.

Finally, Mal Rowe provides a short note on the electrification of the North Melbourne cable tramway – an addendum to the article by Warren Doubleday that appeared in the previous issue of *The Bellcord*.

Enjoy reading!

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Museum news

Museum volunteers needed

We are still seeing good numbers of visitors to the Museum on our open days. However we need more guides, entry desk staff and shop staff to bolster our volunteer team.

If you love talking trams with people, we want to hear from you! On-the-job training will be provided.

Interested? Contact Rod Atkins, email rod.atkins@trammuseum.org.au for more information.

Melbourne Open House – save the date!

The Museum will be again taking part in the Melbourne Open House weekend: Saturday 26 July and Sunday 27 July.

This is our busiest weekend of the year. The Museum will be open to the public for two consecutive days from 10am to 4pm. As in past years we will need as many volunteers as possible to assist and spread the word. More details will be sent by email to museum members.

Contact Rod Atkins, email rod.atkins@trammusuem.org.au for more information.

The driver training room at Hawthorn Depot, with instructor Bruce Davey at the controls, c1980.

Photograph by Doug Prosser from the collection of the Melbourne Tram Museum.

Around the tracks

Maidstone Depot – Work on the construction of the new tram depot to house the G class tram at Maidstone is nearing completion with testing of the tracks using an E class being undertaken during April.

G class is coming – The first G Class tram has been spotted on the test track at Alstom Dandenong.

Brunswick Engine House – An application to redevelop the former Brunswick Engine House in Brunswick Road, next to the Sarah Sands hotel has been advertised by Heritage Victoria. A report will appear in the next issue of Bellcord.

Victoria Street and Elizabeth Street Junction – The proposal to connect the Victoria Street line across Elizabeth Street at the Queen Victoria Market is appearing to be an on again / off again project. It was advertised in the Yarra Trams / PTV disruptions calendar for early July but by the end of May had disappeared. It was expected to take 16 days to complete.

Anzac Station – Domain Road – Overhead works were scheduled for Friday 13 June to Sunday 16 June to reconfigure and reinstate overhead and associated infrastructure at the intersection of Domain and St Kilda Roads. No announcement has been made as yet as to the future use of Domain Road itself.

Brunswick Depot upgrade – Work on the interior refurbishment of the depot buildings and the future depot track extensions is ongoing.

Looking west at the intersection at Victoria Street and Elizabeth Street, 20 June 2024. The proposed new tramway will cross this intersection from east to west.

Photograph by Mal Rowe.

Alternative fuels for WWII tramway buses: more than an engineering challenge

Introducing technical innovations into the field of public transport frequently faces multiple challenges rather than just solving engineering problems. These challenges can include regulatory, political, safety, economic and logistical issues.

In this second part of the story of the Melbourne & Metropolitan Tramways Board's attempt during the Second World War to use coal gas as an alternative fuel for its tramway buses, we look at these other factors and how they influenced the outcome of the coal gas bus program.

M&MTB Leyland Titan TD5c double deck bus at the Central Bus Garage, North Fitzroy, 1940. These buses replaced the Bourke Street cable tram routes from October 1940.

M&MTB official photograph, in the collection of the Melbourne Tram Museum.

Choosing a route

The original scope of the M&MTB coal gas bus program was premised on conversion of the Bourke Street buses from diesel to coal gas operation. However, the new double and single deck diesel buses operating these routes were becoming overwhelmed by the heavy passenger loadings they were experiencing. It was becoming clear that replacing diesel fuel on these buses with lower calorific value coal gas would only exacerbate the problems with maintaining services on these routes. In fact, in 1943 the M&MTB decided that the Bourke Street buses should be replaced by electric trams as soon as economically practicable, although this would not occur until 1955-56.

As the M&MTB had already committed substantial funds towards implementation of high-pressure coal gas powered buses, it decided to target a lower patronised service than the busy city Bourke Street routes for conversion to coal gas operation.

Furthermore, the unfavourable costs of running diesel buses on coal gas and the poor results from testing forced the M&MTB to change the focus of the program. Instead, it intended running a route with converted petrol buses, preferably using the 17 petrol-powered Leyland Cub buses in its fleet. The Leyland Cubs were significantly smaller than the diesel-powered Leyland Tigers, which was now a major factor in the final decision for route selection.

It selected the fifth-busiest bus route, from Collingwood to Point Ormond, as the targeted route for conversion to operation with coal gas. Passenger loadings could be handled by the smaller Leyland Cubs, while the projections for this route suggested that revenue would compensate for the higher expected fuel costs.

In July 1942, initial planning showed that eight buses would be required to maintain a ten-minute service, while fifteen were needed to run a five-minute peak hour service. This aligned with the intention to use all seventeen of the petrol-engined Leyland Cubs, simplifying maintenance, training and operational requirements by running a single type of bus with coal gas.

However, the restrictions on bus range would mean for every 19 km revenue round trip from Collingwood to Clifton Hill and return, the bus would have to run 3.2 km dead mileage to return to service – a distance overhead of 14% without income in order to refuel at the refuelling station at Clifton Hill Depot. This would have significantly increased operating costs over running buses on petrol or diesel.

The M&MTB therefore applied to the Transport Regulation Board for approval to change the route to run from Clifton Hill to Point Ormond via Barkly Street, Punt Road and Hoddle Street, with the addition of a fare section to cover the cost of the increase in distance.

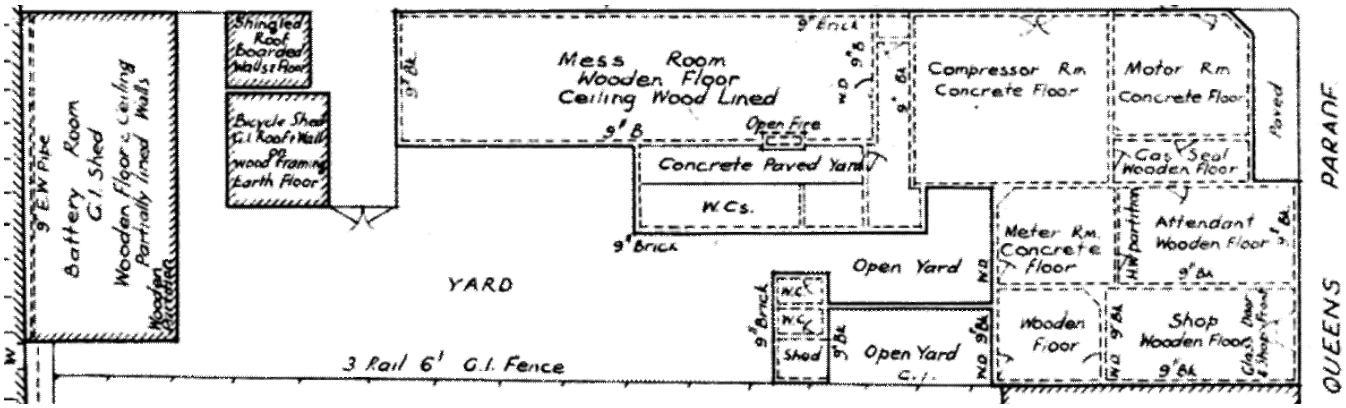
Refuelling station

Choosing a location for the bus refuelling station was critical for the success of the coal gas bus program. The location needed to meet all of the criteria for the program:

- It must be adjacent to a high-volume gas main, with sufficient capacity to account for the additional demand for coal gas.
- It should be close to or adjacent to the targeted bus route, to reduce the amount of dead running to refuel the buses, ideally with space for bus parking and storage, as well as crew facilities including provision for a meal room and toilets.
- It should be on a property that was already owned or leased by the M&MTB, to minimise the program cost.

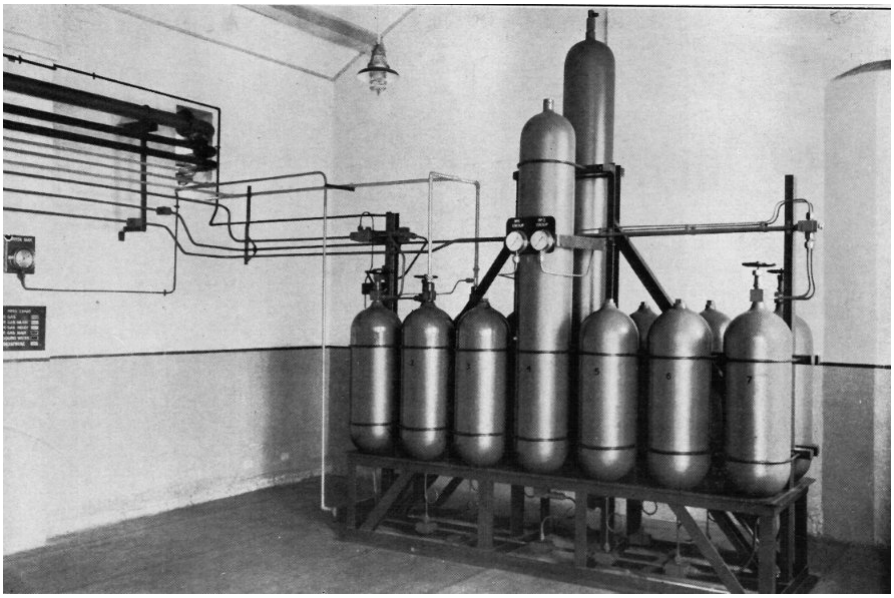
Floorplan of the Clifton Hill Depot administration building in 1941, after installation of the high-pressure town gas compressor and storage tanks.

Plan from the collection of the Melbourne Tram Museum



High pressure coal gas storage tanks inside the former administration building at Clifton Hill Depot, circa 1942. The coal gas tramway buses were to be fuelled from these tanks.

Image from the collection of the Melbourne Tram Museum.



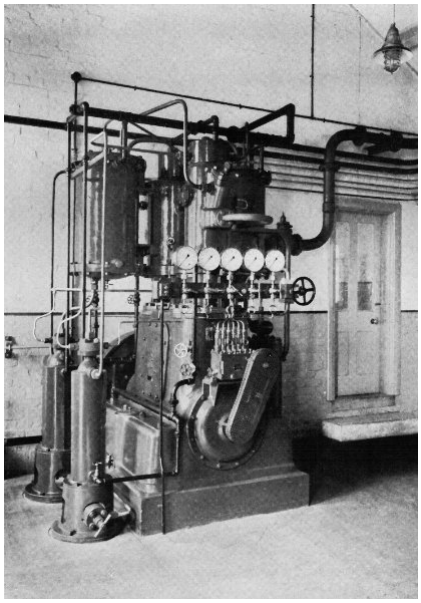
- There should already be a suitable building on site to house the refuelling station, both to minimise program cost and to avoid the need for building expenditure approvals imposed by building material rationing during wartime.
- The gas compressor and storage tanks needed to be kept cool at all times to reduce the risk of an accidental catastrophic explosion of the coal gas. This included being kept out of direct sunlight, especially on hot Melbourne summer days, which can exceed ambient temperatures of 40°C.

Several sites were considered until planning focused on the Clifton Hill cable tram depot. A large 24-inch diameter gas main ran down Queens Parade, directly outside the former cable tram depot, which had closed on 26 October 1940 coinciding with closure of the last remaining cable tram routes. Moreover, the replacement bus route from Bourke Street to Northcote passed directly by the former depot – which given that the initial intent of the program was to convert the new Bourke Street bus routes to coal gas operation was a major advantage of the site, as it would minimise dead mileage.

The Clifton Hill site could meet the other requirements with a low level of capital expenditure.

While there was no existing purpose-built structure on site to house the refuelling station, the administration building could be adapted for the purpose, although it was not ideal.

Coal gas was reticulated to domestic and industrial customers at relatively low pressure, while the design of the gas refuelling system required the gas to be compressed and stored at the extremely high pressure of 3,000 psi (207 bar). Compressing the coal gas to this level also generated a high level of heat, which was dissipated through cooling the equipment with mains water pumped under pressure.



Coal gas compression equipment in Clifton Hill Depot, circa 1942. This four-stage compressor took mains pressure coal gas and compressed it to 3000 psi.

Image from the collection of the Melbourne Tram Museum.

The rooms containing the refuelling equipment were hermetically sealed from the rest of the building, without any windows, and were separated from rooms usually occupied by tramways staff by an 'air lock' to prevent gas from seeping into those areas of the building, to reduce the risk of lethal gas leaks harming tramways staff.

These rooms were illuminated by flame proof electric lighting of the same type as used in underground coal mines, to reduce the risk of an explosion from arcing electrical equipment. A further anti-explosion measure was to interlock the 100 hp mains gas compressor with the compressor cooling pump, preventing gas compression when the mains water supply was interrupted or the cooling pump was inoperative.

The compressed coal gas was held in cylindrical steel tanks in an adjoining room. The pressure of the gas in the storage tanks, operation of the compressor and pressure of the coal gas in the mains were monitored by an attendant checking meters in an adjoining room.

The total cost of the refuelling station and building alterations was £12,450 (equivalent to $1.09 million in 2024 Australian dollars).

The State Electricity Commission of Victoria (SECV) installed a similar refuelling system at its Church Street, Richmond, depot for its coal gas vehicle program.

Getting route approval

Government regulation of bus routes in the Melbourne urban area was first established under the Motor Omnibus Act of 1925. This was followed by the establishment of the Transport Regulation Board (TRB) in 1933, which took over this responsibility.

Any new bus route – government or private – or changes to existing bus routes had to be approved by the TRB, including the extension of the Collingwood-Port Ormond route to Clifton Hill.

When the M&MTB submitted its route change request to the TRB in September 1942, the Victorian Railways (VR) vehemently opposed the change, claiming it was a blatant attempt to steal passengers from the suburban rail system by terminating the route adjacent to the Clifton Hill suburban railway station. VR disregarded the M&MTB's objectives of reducing dependence on imported oil, as well as the cost of operation on coal gas.

With support from the Minister of Transport, Herbert Hyland (1884-1970), VR persuaded the TRB to block the request. M&MTB Chairman Bell appealed to the Minister for Public Works, Sir George Goudie (1866-1949), to intervene, given the wartime importance of the coal gas bus initiative to reduce dependence on imported fuels.

Double deck Leyland Titan bus No 225 in Queens Parade, outside the former Clifton Hill cable tram depot, 26 February 1941. Cable trams can be seen stored in the depot yard, while the building on the left is the administration building, now a childcare centre.

Image by Frank Shennen, now held by the Melbourne Tram Museum.

There was considerable rivalry between VR and the M&MTB, not only because they reported to different ministers in the State Government – the M&MTB reported to the Minister for Public Works, while VR reported to the Minister for Transport. There was constant tension between the two statutory authorities over their share of passengers, and any new development from either was jealously examined for transgressing the existing balance between the two public transport bodies.

A compromise position was negotiated in January 1943, granting conditional approval to extend the route to Clifton Hill on the condition that the M&MTB committed to running the route wholly on coal gas at 85% of the fuel cost of standard petrol buses. An Order-in-Council was granted on that basis.

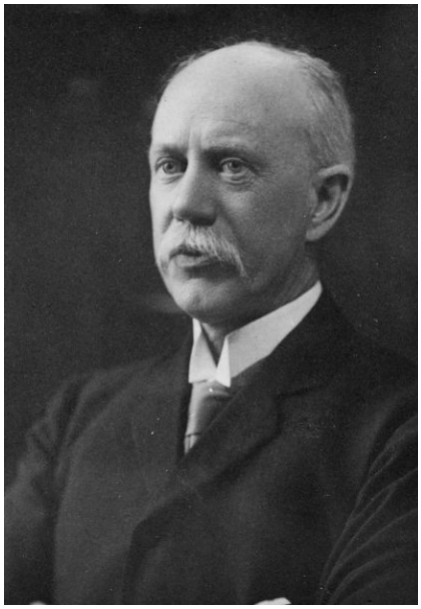
Bell was given no option but to agree to the conditional approval, despite the test results indicating that it would be almost impossible that this cost saving could be achieved. This placed Bell in a very difficult position, as he had staked considerable political capital since 1938 on making the coal gas bus project a financial and operational success.

Operating the coal gas buses between Collingwood and Point Ormond with the dead running for refuelling would have placed an unacceptable financial burden on the M&MTB, while failing to comply with the approval conditions of the route extension would politically damage Bell's reputation.

Coal gas supply woes

Test data indicated that given the gas flow rate from the mains, projected schedules and bus fuel economy, the compressor would need to run twenty-four hours a day when operating a full weekday service in order to maintain sufficient gas in the depot storage tanks.

This was a major problem, as in June 1941 the Metropolitan Gas Company (MGC) advised the M&MTB that to guarantee supply to its local customers in the Clifton Hill area, the M&MTB should ideally run the gas compressor only during the hours from 19:00 to 06:00.



Sir George Goudie (1866-1949), Member of the Victorian Legislative Council for North-Western Province 1919-49 and Minister for Public Works 1935-43. Goudie had the distinction of never having to contest an election.

Photograph courtesy of State Library Victoria.

If this was not possible, then at the request of MGC the M&MTB would need to restrict operation of the compressor to between 16:45 and 18:15 on weekdays, and between 11:00 and 13:15 on weekends.

The last straw

In January 1943, Bell had informal discussions with the General Manager of the MGC, Mr Evans, to see if the company could provide an updated supply commitment to the M&MTB.

It appears that Bell's intent in requesting a new commitment was to use lack of coal gas as a reason to avoid admitting that the M&MTB could not satisfy the conditional approval for the Clifton Hill route extension. If the company refused to supply coal gas, he could stop the program without wearing the political consequences to his own and the M&MTB's reputations.

Evans did not respond to Bell's informal request for an updated coal gas supply commitment. Only on receipt of a formal written request from Bell would he restate his previous advice from June 1941.

Subsequently, in April 1943 Evans withdrew the company's commitment to supply coal gas for operation of buses by the M&MTB. He stated that a combination of growth in industrial use and shortages of suitable coal rendered the company unable to supply any coal gas for the M&MTB coal gas bus program for the foreseeable future

This was the effective end of the coal gas bus program. All program work ceased, except for weekly test running of the compressor to keep it in working order. The remaining sixteen Leyland Cub buses would not be converted to run on coal gas.

As the Allies were winning the battle for the seaways against German and Japanese submarines, the pressure on Australian imported oil stocks was easing, removing the original need for the coal gas bus program.

However, there was no official statement that the coal gas bus program had ended. In December 1943, when Bell was pressed by Collingwood Council to extend the Collingwood to Point Ormond bus route to Cllifton Hill, he stated that this could not happen until gas supplies became available – but that the buses were ready to start running – something of an overstatement of the true position.

Four months after the end of the Second World War, in December 1945 the M&MTB was quietly granted the Order in Council to change the Collingwood to Point Ormond bus route to run from Clifton Hill – this time without any stipulations as to the type of fuel to be used by its buses.

That same month the M&MTB made the first of several attempts to sell the compressor, but it was unsuccessful. It was eventually sold in 1950 to Carbonic Ice Ltd of Christchurch, New Zealand for £2000 – having never been used to fuel a scheduled bus service.

The Clifton Hill to Point Ormond bus route still runs today as route 246 under the aegis of Public Transport Victoria, although its southern terminus has been extended from Point Ormond to Elsternwick Station.

Risks of coal gas

Running buses on coal gas was a highly dangerous proposition. It would not be considered in today's safety conscious society. Unlike natural gas, coal gas is incredibly toxic and lethal to humans, affecting the ability of blood to carry oxygen and bringing rapid yet painless death to those exposed. The chance of unnoticed fuel tank leaks killing passengers and crews was always a possibility, exacerbated by the potential for disaster from vehicle accidents – particularly given the high pressures that were proposed.

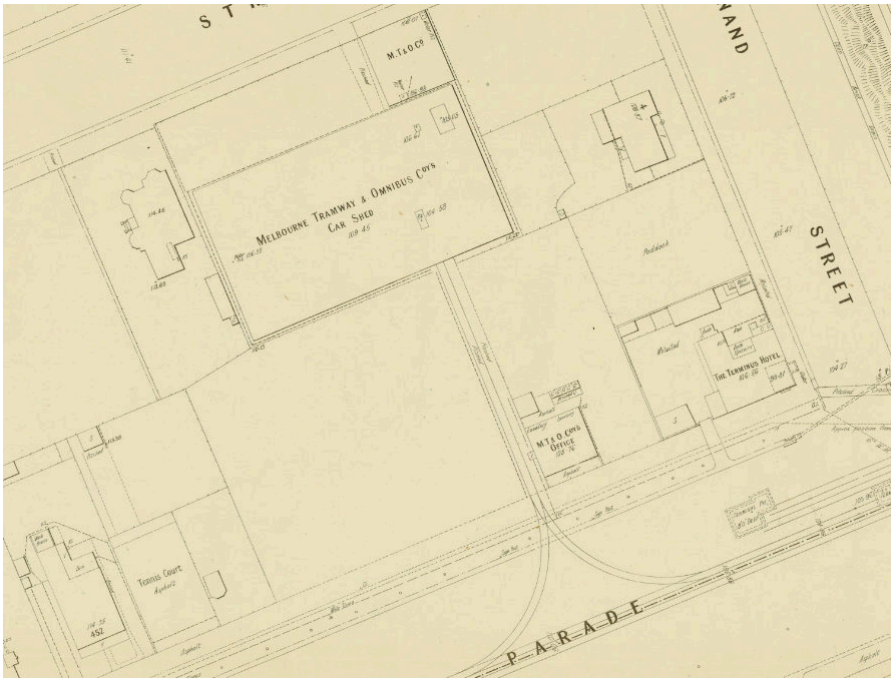
This danger was underlined by the explosion of the SECV coal gas refuelling station in October 1945, seriously injuring one of its employees in its Richmond depot.

That the coal gas bus program did not proceed was a stroke of unintended good fortune for the M&MTB.

Hindsight

The coal gas bus program of the M&MTB was ultimately a failure, due to a combination of technology, gas supply, economics and politics.

The ignition temperature for coal gas is far higher than for petrol or diesel, which means an internal combustion engine running on coal gas runs far, far hotter. The lubrication oils used in motor vehicle engines in the 1940s were not designed to function under such high temperature environments, thus engine wear was much greater for coal gas engines than for petrol or diesel engines.



Extract from 1904 Melbourne & Metropolitan Board of Works plan, showing the Clifton Hill car shed and yard.

Map courtesy of State Library Victoria.

Producer gas is a mix of carbon monoxide and hydrogen mixed with large amounts of nitrogen, and is made by passing air and steam over a coke or charcoal fire.

See the March 2025 issue of *The Bellcord* for details on the M&MTB's trial of producer gas in its vehicles.

These lubrication issues led to poor fuel economy, high oil consumption, power loss and much reduced mileage between expensive engine rebuilds. This eliminated any cost advantage of running engines on cheap town gas, particularly in high mileage applications such as city buses running on the Clifton Hill to Point Ormond route.

Engines running on producer gas suffer from the same issue, but the typical usage patterns of these vehicles due to their substantially reduced range meant that engine wear occurred at a lower rate.

Moreover, the absence of digital engine control units, electronic fuel injection and advanced fuel and exhaust sensors – all available today – meant that the inconsistent composition of coal gas could not be effectively managed by 1940s internal combustion engine technology.

By 1943, Australia had overcommitted its manpower to the armed forces, so the economy was seriously suffering from civilian workforce constraints. This included the supply of coal to industry and the resulting restrictions in the supply of coal gas. From 1944 the Commonwealth would start reducing the size of the armed forces to release men to industry, but this did not result in the resumption of the M&MTB's coal gas bus program.

Once the military situation eased through 1943 as a result of action by Allied naval, air and land forces against the German and Japanese militaries, oil petroleum product deliveries from the United States and the Middle East were assured. There was no longer a need for the coal gas bus program – despite the continuation of liquid fuel rationing.

In fact, the major reason for the continuation of fuel rationing in Australia was the drive to conserve Australia's foreign exchange holdings in US dollars. This required purchasing oil from the Middle East denominated in sterling rather than dollars. Oil from this source was in short supply given Britain's wartime demand for oil.

Finally, the opposition of VR to the extension of the planned route ensured the failure of the coal gas bus program.

Russell Jones

Acknowledgements

Thanks to Rod Atkins for unearthing the unpublished coal gas bus file from our archives and scouring sources for suitable images, Warren Doubleday for trawling through the M&MTB minutes at the Public Records Office, and finally Noelle Jones for editing.

Retired cable tram trailers stored in the yard of Clifton Hill Depot, c1940. These were retained until late 1943 as a contingency against the potential loss of fuel imports due to enemy action.

Photograph by Wal Jack, from the collection of the Melbourne Tram Museum.

Thomas Charles Jewell: from gripman to union champion

Thomas Charles Jewell (1864-1948), c1910-19.

Photograph courtesy of the Jewell family.

Thomas Charles Jewell (1864–1948), affectionately known as Tom, was not only a significant figure in the early history of Melbourne's tramway operations but also a respected leader who profoundly shaped the tramway union movement and community life in Albert Park.

Born in Creswick, Victoria, on 11 March 1864, Jewell began his working life as a deep-lead miner. At just eighteen, he was already demonstrating leadership qualities, serving as a steward for the Creswick Miners' Association during the period that included one of Australia's worst mining disasters – the New Australasian No. 2 Mine disaster of 1882 where 22 workers died. This early experience set the stage for his lifelong commitment to workers' rights and collective representation.

Tom left Creswick in the late 1880s looking for work in Melbourne. This was perhaps due to the decline of mining in Creswick, a fate shared at that time by many previously prosperous Victorian gold mining towns. His tramway employment record states:

> Came to Melbourne in search of work – had previously worked in the mines around Creswick – steady & intelligent man – appears to have been employed at Sandhurst before.

He entered the service of the Melbourne Tramway and Omnibus Company on 4 October 1888, initially as a gripman on the Victoria Street cable line. Two years later he transferred to the South Melbourne cable tram service, where he would work for over 22 years.

It was a difficult job. The gripman operated a grip lever that extended beneath the tram and grasped a continuously moving underground cable, propelling the tram forward. This task required significant strength and skill, especially in adverse weather conditions such as rain or fog, which could make gripping and releasing the cable challenging. A typical cable tram set consisted of a leading open car, called the 'dummy' or grip, where the gripman stood, and a trailing enclosed passenger car. A beautifully restored example of such a cable car set is preserved at the Melbourne Tram Museum.

1882 New Australasian gold mine disaster

The Creswick mine disaster of 1882 was one of Australia's worst mining tragedies, occurring at the New Australasian No. 2 gold mine in Victoria. On 12 December, a sudden flood of water trapped 27 miners underground; despite desperate rescue efforts, only five survived. The incident shocked the colony and led to calls for improved mine safety and drainage systems.

Jewell's role as a gripman carried significant responsibility, a fact highlighted by a rare commendation when he saved a small child from imminent danger – an event remarkable enough to be noted in the company's employment records.

In his personal life Tom's father, a Cornishman also called Tom, died in 1865 when Tom junior was just 10 months old. His mother, Margaret, married six years later to another Cornishman and they went on to have four children. Tom appeared in many newspaper articles in the 1880s reporting his athletic abilities, competing and winning professional sprint events, as well as his roles in the local volunteer Creswick fire brigade and football team (captain of the Creswick seconds).

In 1891 Tom married Helena Garton (born near Creswick) in South Yarra and they went on to have three children, including another Tom. The family moved to Danks Street, Albert Park in the 1890s. By 1915 the family had relocated to Dinsdale Street, Albert Park, where Tom lived for the rest of his life. Both houses were an easy walk to the South Melbourne cable car house in Victoria Avenue.

Management at the Melbourne Tramway and Omnibus Company during Jewell's time was notably hostile toward union activities, often resulting in tense industrial relations. A particularly stark illustration of this hostility occurred when the company permanently sacked workers merely for taking steps to unionise.

South Melbourne car house crew, c1910. Tom Jewell is seated in the second row, fourth from the left.

From the collection of the Melbourne Tram Museum.

Support for workers' groups in many industry sectors was increasing; the tramways was no exception, with the Australian Tramways Employees' Association (ATEA) being formed in 1910. Jewell became increasingly involved in union activities while still employed as a gripman, rising to the position of union vice-president. In 1912, while still working on the cable trams, he stepped in as acting secretary during a turbulent period marked by poor administration and internal distrust. According to family accounts and union sources, he was instrumental in restoring integrity and trust.

Upon resigning from the Melbourne Tramway and Omnibus Company in November 1912, Tom was appointed full-time secretary of the pivotal No. 1 Branch, representing tramway workers north of the Yarra River, and later became general secretary of the Victorian Branch. When re-elected as secretary in 1913, Tom received over two-thirds of the votes, with the *Tramway Journal* of 24 October 1913 noting, "He has proof of the members' firm confidence, and no doubt it will inspire him with vigor to know such strength is at his back."

His tenure as union leader from 1912 to his retirement in 1936 was marked by groundbreaking achievements in arbitration and worker representation.

Jewell, recognising the importance of dialogue, sought to improve strained relations through persistent negotiation and mediation. His pragmatic approach and reputation for fairness won him respect from both workers and management, gradually leading to improved working conditions and greater industrial harmony.

Jewell played a pivotal role in several notable arbitration cases, most prominently the landmark 1925 case known as *The Tramways Employees' Arbitration Case*, before Deputy President Webb of the Arbitration Court, which lasted over two years. This case set important precedents for workers' conditions, significantly improving pay rates, working hours and job security.

Photograph of the delegates at the Australian Tramway Employees Association annual conference, September 1921. Tom Jewell is seated, third from the right. Photograph courtesy of State Library Victoria.

Sketch of Tom Jewell by Richard (Dick) Ovenden (1897-1972) from Labor Call, *17 August 1922.*

Under Jewell's leadership, the two Melbourne branches of the ATEA – representing tramway employees north and south of the Yarra River – were merged into a single branch. The union was renamed Australian Tramway and Motor Omnibus Employees' Association (AT&MOEA) on expanding its scope to include bus drivers. Jewell's role was central to the formation of the Federal Council of Tramway Unions, reflecting his vision for cohesive national representation. His careful negotiations helped avoid numerous industrial disputes, fostering a cooperative environment that benefited both employees and management. These efforts led to the creation of an Appeals Board, significantly improving transparency and fairness in workplace disciplinary procedures.

Tom Jewell was also deeply embedded in local community service, notably with the Australian Natives' Association (ANA). Before moving to Melbourne he had joined the Creswick branch of the ANA, then later served as the secretary of the Albert Park ANA branch for 30 years. The ANA, founded in 1871, was a friendly society where members made contributions and funds could be sought by members in times of need. The Society was strongly nationalist and was a major political and social influence on the efforts to make Australia a Federation. The ANA later merged with the Manchester Unity Independent Order of Oddfellows – an even older friendly society, founded in 1840 – and is now known as Australian Unity. Tom was a foundation member of the Albert Park branch of the Australian Labor Party and a long time active member of the local community.

Described by contemporaries as "straight as a die", Tom Jewell was widely respected for his unwavering honesty and dedication to the collective good. His personal philosophy – that diligent union service left no room for political ambition – reflected his deep commitment to workers' welfare above personal gain.

Jewell passed away on 5 October 1948, at his home in Albert Park, leaving behind a legacy that resonated well beyond tramway circles. His funeral drew a large and representative gathering, underscoring the respect he had earned from all sectors of the community. His enduring legacy is commemorated by generations of tramway workers and the Albert Park community, whose rights and conditions he worked tirelessly to improve.

Tom Jewell's story exemplifies the spirit of Melbourne's tramway heritage – one of dedication, community service and unwavering commitment to the rights of working people.

Peter Jewell
Great-grandson of T.C. Jewell

Acknowledgements

Thanks to the Creswick Museum and the resources at the Melbourne Tram Museum, National Library of Australia, Public Record Office Victoria and State Library Victoria.

The author is currently working on a history of the *Tramway Journal* – the official organ of the ATEA, founded in 1910 – and would welcome any suggestions on this topic.

Contact: pjewell@iprimus.com.au.

The Sorrento tram revisited

Part 2: 1903 to closure – the Bensilum era

In the first part of the story of the Sorrento Tramway Company, published in *The Bellcord* no 65, Andrew Howlett examined the Coppin era of the tramway, from its beginnings in the late 1880s until 1902 when its financial status became more troubled. This second part explores the subsequent history of the tramway.

Up until the 1901-02 season, the Company generated sufficient income to cover its operating costs but not enough to set aside funds to repay the debenture liability that was due on 30 June 1902. It had paid some dividends to the shareholders and about half of the interest (7% per annum) on the 210 debentures that were held by the three major shareholders: George Coppin, Peter Nettleton and William Peacock.

George Coppin and his wife Lucy at their private theatre, at their Sorrento house, The Anchorage, c1900.

Photograph courtesy State Library Victoria.

Over the 1901-02 season, Engine #12007 was in South Melbourne being fitted with a new boiler and the tramway was operating with only one engine. This resulted in reduced fare revenue and with the cost of the reboilering and engine transport the tramway became unprofitable. This sets the scene for the financial crisis that arose in 1902.

The Managing Director, George Coppin, explored several options to refinance the Company. He encouraged Harry Watts to put together a syndicate to buy out the debenture holders, but this was eventually unsuccessful.

In September 1902, Coppin advertised the sale of the tramway assets with the possibility of taking over the operating lease. In the same advertisement, he offered the Sorrento Baths, the Waiting Room and a rustic cottage.

The liabilities of the Company consisted of:

- 210 Debentures of £25/0/0 each, totalling £5,250/0/0
- 1,058 Coupons of £1/15/0 each, totalling £1,851/10/0
- 5,390 Paid up Shares of £1/0/0 each, totalling £5,390/0/0

The total value was £12,491/10/0 which was secured against the rolling stock, plant, land and buildings. The Coupons represented the unpaid interest on the debentures.

Isaac Bensilum (1858-1930), in military uniform. Bensilum was commissioned as a Lieutenant in the Victorian Military Forces in 1890 and resigned his commission in 1893. Like Coppin, he played a significant role in the development of Sorrento, including the building of the Sorrento Athenaeum.

Photograph courtesy of the Nepean Historical Society.

Harry Watts, c1910. Photograph from the collection of the Nepean Historical Society.

Despite these financial issues, the tramway continued operations over the 1902-03 season.

The going concern was eventually purchased in September 1903 by a consortium led by Isaac Bensilum (1858-1930) of Sorrento's Continental Hotel. Isaac and his wife, Nellie, took up 3,440 shares, making the couple majority shareholders with Isaac becoming Managing Director. Peter Nettleton remained a major shareholder with 1,100 shares along with several of the smaller shareholders.

It was generally agreed that the new owners bought the company cheaply. An article in the Melbourne *Truth* of 5 September 1903 suggests that this figure was just £700.

There is some irony in Bensilum taking over the company as he was the largest critic of the early operation of the tramway under Coppin.

In the same year, Coppin resigned from the Ocean Park and Sorrento Park Trusts and sold the Sorrento Sea Baths.

The first decade under the new management was very successful for the Company. Bensilum took a very hands-on approach as Managing Director and was at the Front Beach terminus most days selling tickets and watching over the operations. This, and other initiatives, reduced the operating costs.

The Watts family

While George Coppin and Isaac Bensilum played key roles in managing the company and its finances, the person who kept the trams running was Henry (Harry) Watts (1865 – 1957). Harry had also assisted his father John Francis Watts (1837-1912), a local contractor, with the construction of the tramway. John, known to George Coppin as "old Harry", continued to maintain the line – adding limestone to the roadway as required – until he retired. Harry married Elizabeth Pike in 1890, and the couple went on to have 11 children.

Harry worked for the Company from the start and was appointed as Tramway Manager. In 1913, the Company built a house for him, not far from Front Beach terminus, at 17 The Esplanade. The house was later demolished.

Harry's brother Edward (Ned) began working on the tramway prior to 1903, while Harry's sons Clement (Clem) and George, plus son-in-law Billy Williams, drove the engines, while sons Cyril, Clive and Gil (Gilbert) worked as conductors and horse tram drivers.

After the tramway closed, Harry returned to general contracting, like his father. It was the Watts family that enabled the Sorrento tramway to operate efficiently for over thirty years.

A typical excursion steamer advertisement, c1912-17.

From the collection of Andrew Howlett.

Visitor numbers coming to Sorrento increased. *The Mornington Post* of 14 January 1905 reported that all accommodation was fully booked and that one day in the previous week was a record for the trams with £30 for the day's takings. This equates to 2,400 single trip passengers based on the 3d fare.

Numbers were further boosted on 19 December 1910 with the inaugural visit of the new 2,000 passenger excursion steamer PS Weeroona. Now three bay excursion steamers were visiting Sorrento daily in the season. The other two were the PS Ozone (from 18 December 1886) and the PS Hygeia (from 6 December 1890). As well there was the year-round service provided by the trading steamers, including the screw steamers Charlotte Fenwick, Awaroa and Reliance, that brought both passengers and cargo to bay communities.

Many groups organised day trips to Sorrento by steamer and made use of the tram to visit the Back Beach. To cope with this extra traffic, the Company had taken delivery of two additional passenger cars in 1908. These were basically the same as the original four cars.

After the close of the 1912-13 season, the Company negotiated with the Council of the Shire of Flinders and Kangerong (renamed the Shire of Flinders on 20 January 1914) to exercise its option to extend the delegation (lease) for another 30 years with the stipulation that the Company could not sell its operation before 1925. In negotiations, the Company proposed paying an annual fee for the lease. With this security of tenure, the Tramway Company would have been able to access additional funds. For the shareholders, it would have enhanced the value of their shares if they wished to sell them. Council was largely supportive but referred this proposal to the Minister of Public Works. After consulting with the Crown Solicitor the Minister advised that such an arrangement was a variation to the original Order-in-Council and therefore the Company would have to wait until the end of the existing lease to extend its tenure.

Built in Glasgow, PS Weeroona was launched in June 1910 and used for bay excursions from December 1910. In 1943 it was purchased by the US Army for convalescence and accommodation, being towed from Sydney to New Guinea and then the Philippines. After the war it was towed from Manilla to Sydney Harbour, where it remained until 1951 when it was finally broken up.

Undated photograph by Allan C. Green (1878-1954), courtesy of State Library Victoria.

View of a Back Beach bound tram rounding the corner of the Ocean Beach Road (main street) and Portsea Road, c1912. The veranda post and telegraph pole on the Stringer's Store corner can be seen. Beyond the tram is the Continental Hotel.

Postcard from the collection of the Melbourne Tram Museum.

Had the variation been allowed, it is likely that the tramway would have continued its operations until at least 1925. No further mention of an annual lease payment was made.

Despite being a street tramway, accidents were a rare occurrence. However, the corner of Portsea Road where the track turned into Sorrento's main street was a notorious danger spot as the front beach bound track ran close to a veranda post and a telegraph pole on the northwest corner. On one reported occasion, a horse drawn cab turning off Portsea Road and heading towards the back beach cut the corner and was crushed between a front beach bound tram and the veranda posts. During 1917, Cyril Watts (Harry's son) was driving the Horse Car on its return from the Back Beach and collided with an automobile. The oncoming car's wheels had become wedged in the tram tracks. The two horses "Peter" and "Ginger" were injured with "Peter" having to be euthanised. "Ginger" recovered and was able to return to work before the end of the season. Staff also recalled that sometime before November 1910, the engine #12007 was involved in an accident that resulted in a drooping cab but it is unknown as to the location or circumstances.

It was after the next season (1913-14) that profitability began to decline due to several external factors. The First World War (1914-18) was followed by the Influenza (Spanish Flu) Epidemic of 1918-19 and as the end of the decade approached, prolonged strikes by the Maritime Unions occurred. These events resulted in significantly reduced passenger numbers. Better roads and the increased use of motor vehicles also had some impact.

Werribee Farmers Picnic on the Sorrento tram to the Back Beach. The front car is an original and the rear car is one of the additional cars acquired in 1908.

From The Weekly Times, *17 December 1910.*

This reduced profitability resulted in the Company preparing a prospectus in 1919 to sell the Tramway. It was aware that without an extension of the delegation to operate, the only value was its assets. The Shire of Flinders Council was asked by the Company for a seven-year extension. This was refused. The Company then offered to sell its assets to the Council, which had the option of taking over the tramway. The price, based on an earlier offer, was reported to be £4,000.

A lengthy and vigorous debate took place both in the Council Chambers and the community, but Council decided against taking over the Tramway. It then offered the Company a renewal of the delegation for a further 30 years. Given the protracted nature of the negotiations, the Company decided to liquidate its assets to get a reasonable and immediate return on its investment. The 1919-20 season was the Tramway's last.

Last day of operation

Across previous writings about the Sorrento tramway, various dates are given for the final day of operation from the end of season in 1919 to the end of the 1921 season. These are incorrect.

The Company's delegation of the Order-in-Council to build and operate the tramway expired on 31 March 1920. So, while the normal season for 1919-20 would have ended the Sunday after Easter (11 April 1920), this could not occur. It is most likely that the service finished on Sunday, 28 March. The last day seems to have attracted little publicity and consequently, research has yet to reveal any mention of the last day of service. It is known that the last tram was driven by Harry Watts and his son George.

Coloured postcard of Ocean Beach Road with engine and one of the newer cars, c1914. A second tram is in the distance.

From the collection of Andrew Howlett.

Disposal of the assets

Rolling Stock: The two locomotives (#9086 and #12007) were soon sold to the Loch Valley Timber Company to operate a timber tramway out of Noojee. The locomotives left Sorrento and travelled all the way to Noojee hauled by horses. Loch Valley also purchased the carriage underframes and possibly the rails. The horse tram was sold intact and remained in a Sorrento backyard until demolished in 1964. The bodies of the six steam hauled carriages were also sold locally and became sleepouts or garden sheds. Unfortunately, both locomotives were destroyed in the February 1926 bushfires.

Other Assets: It appears that the 60lb rails were initially sold to the Loch Valley Tramway but were too heavy. A swap occurred giving Loch Valley 40lb rail with most, if not all, of the 60lb rail sold to Australian Portland Cement (APC) at Fyansford. The rails were loaded onto the Ketch Cicada at Sorrento and delivered to Geelong on 23 February 1921 bound for the APC, which had also purchased the sleepers. The manager's house was sold along with the stairs and the bridge leading from the Pier which ended up as a crossing over the Upper Yarra River. The Depot buildings and land were sold to Harry Watts who reused the materials to build his own home on the site. The road that serves this property follows the tramway easement and is called Watts Road.

Finale: The sale of the assets by Bensilum, as Liquidator, reportedly achieved £3,500 allowing the company to be wound up. It was removed from the Companies Register on 5 May 1922. While there may have been mixed feelings about the demise of the Tramway within the Shire, its loss was felt by those who visited Sorrento as it was seen not only as a transport service but an attraction in itself. The assets were all in good condition and could have continued with regular maintenance for several more years.

Rolling stock at Sorrento

In the British tradition, the locomotives used at Sorrento were referred to as steam tram engines or simply engines. Unlike the Bendigo and New South Wales steam tramways operating on streets, the engines were not enclosed but were a stock standard industrial locomotive manufactured by the Baldwin Locomotive Works in Philadelphia, USA.

A total of eight of these small 3ft 6ins (1067mm) gauge 0-4-0ST locomotives of the builder's class 4-10½ C, were imported into Australia by Newell & Co of Collins Street, Melbourne (Melbourne agents for Baldwin) between 1884 and 1891. At the same time Baldwin was manufacturing Steam Tram Motors for the NSW Tramways. One of the eight locomotives, known as 'Sandfly', operated on the North Australian Railway until 1950 and is now on display in Darwin.

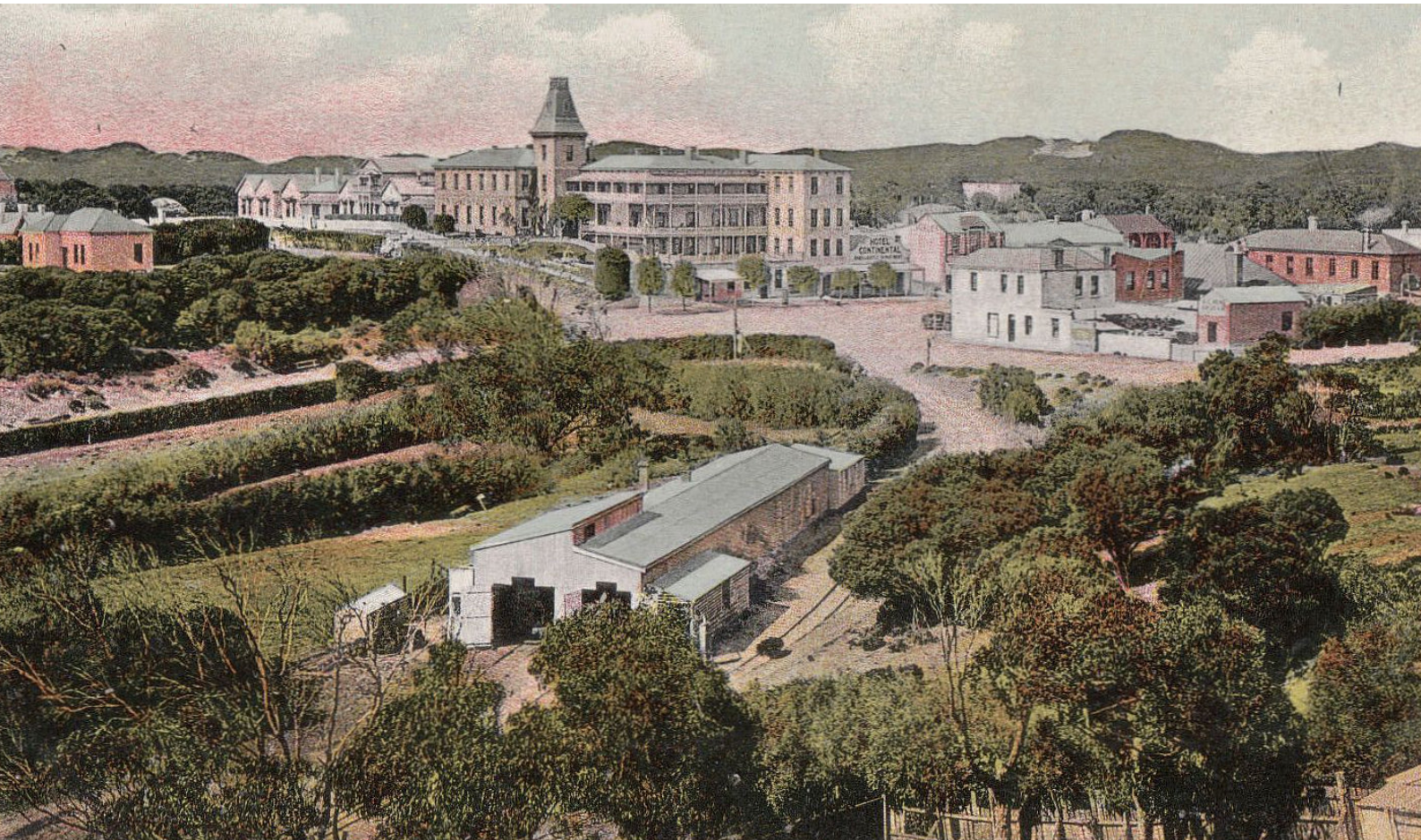
The basic technical details of these small saddle tank locomotives were:

Cylinders:	8" × 12"
Driving wheels:	26 inches in diameter
Boiler pressure:	135lbs psi
Tractive effort:	3,100lbs
Water tank:	200 gallons
Weight:	14 tons (approximately)

As the Sorrento engines were not numbered and virtually identical, their builder's numbers are used to distinguish them.

Coloured photograph of the depot and maintenance buildings, c1907. A larger tank stand to feed the stand pipe was later erected in front of the small shed to the left of the shed door.

From the collection of Hugh Ballment.



Sorrento engine, c1910. This was one of eight in the class supplied to Newell & Co of Melbourne.

Photograph by Raymond Sanders, courtesy of State Library of South Australia.

First Engine – B/N 9086 of 2/1888 (C44)

This engine, sometimes called the old or the second-hand engine, would have arrived in Melbourne around June 1888, and it is likely that it was hired by the Melbourne Harbour Trust for a short period in 1888-89. The Tramway Company purchased it second-hand through Newell & Co for a price of £872/18/-. It is thought to have been transported by rail from Melbourne to Mornington, arriving in Sorrento behind a team of eleven horses in the first week of November 1889. The arrival of #9086 enabled the Tramway to begin passenger operations.

Second Engine – B/N 12007 of 7/1891 (C63)

This engine, sometimes called the new engine, was ordered new from Baldwin through Newell & Co at a cost of £964. It was transferred from Melbourne in the same way as the first engine, arriving in Sorrento during the first week of December 1891. The first record of it being in service was on Sunday 20 December 1891. It was the last of this type of locomotive to be imported into Australia.

Third Engine – likely to be B/N 7556 of 2/1885 (C28)

The third engine was hired by the Company through James McEwan & Co from November 1895 until February 1897 on an hourly basis to replace #9086 while it was away being reboilered. This engine was only used over the 1895-96 and 1896-97 seasons. There is no evidence to suggest that there were three engines in use at any time. #7556 was first used by the Melbourne Harbour Trust and after its stint in Sorrento operated on Sanderson's Tramway at Forrest and finally on the Marrawah Tramway in Tasmania.

Melbourne Tramway & Omnibus Company Zoo horse tram. Note the similarity with the Sorrento cars.

Photograph from the collection of Hugh Ballment.

Engine and carriage maintenance

Engine #9086 was sent to Austral Otis in South Melbourne for reboilering around 1895. It was replaced by hiring another identical engine (as above). In 1901-02, Engine #12007 was also sent to Austral Otis for reboilering, but no replacement engine was hired for the season. These engine transfers were achieved in the same way as the original delivery. All other maintenance including retubing was carried out by Company staff during the off season. After 1903, a less expensive approach was used for reboilering. Tenders were called for a new boiler in 1907, likely for #9086 and with #12007 following in the next decade. These new boilers arrived by trading steamer and were fitted by the staff. The old boilers were carted away by horse and wagon.

Engines burnt both coke and coal, which was common for street tramways. The fuel was delivered to the Sorrento Pier by the trading steamers. Water came from an 18m well (bore) that filled ten 400 gallon tanks near the engine shed that initially required an engine to be in steam to operate the lift pump to fill the saddle tanks. In the late 1890s a large tank on a stand was erected in front of the southeast corner of the shed. It fed a standpipe situated on the mainline opposite the tank which made watering the engines much easier. With Sorrento having no reticulated water supply until 1941, the use of bore water was the likely cause for the frequent reboilering and tubing of the engines. The engines were kept in the road nearest to the mainline where most maintenance work was carried out. The passenger cars were housed in the other, longer shed road.

The passenger cars

As the Sorrento Tramway was purely a passenger carrying railway, there were no freight or even permanent way wagons. Only passenger carriages were needed. The Tramway placed an order for its initial five cars (four steam hauled and a smaller horse drawn tram) with the Australian Rolling Stock Company of Spottiswoode (now Spotswood). Much of that company's business came from the Victorian Railways.

The five cars cost £570/4/0 and were shipped from Williamstown to Sorrento in late October 1889. The steam hauled cars were clerestory roofed, single truck open cars with eight crossbench seats and a capacity of 50 passengers (40 seated and 10 on the end platforms). They closely followed the design and size of the two horse cars (Nos. 252 and 253) operated by the Melbourne Tramway and Omnibus Company (MTOC) on the Zoo horse tramway which entered traffic in September 1889. The cars were constructed out of blackwood, ash and cedar timbers and finished with gold lining. Other than Sorrento's narrower gauge, the running gear was also very similar to the Zoo cars with goose neck brake handles fitted to each end apron. The handbrakes were used when shunting, securing the cars and in an emergency. The only noticeable difference was that the Sorrento cars had solid end bulkheads where the Zoo cars had three glazed windows.

Acknowledgements

The author acknowledges the assistance of tramway history researcher, Brian Weedon, in discovering many of the missing details, and the Nepean Historical Society. Hopefully, this story will stimulate further research into what was Victoria's first tourist tramway/railway.

Given the close similarity to the Zoo horse cars, it is not surprising that the Manager of the MTOC car works, William Don, held 20 shares in the Sorrento Tramway Company.

After the 1903 change in ownership, the Company ordered two additional steam hauled cars of a similar design from a unknown builder around 1908. It is likely that this was done in anticipation of extra loading due to introduction of the 2,000 passenger PS Weeroona from the start of the 1910 season. These cars had some differences to the first four cars, the obvious one being an arch rather than a clerestory roof, and different arm rests/grab rails on the outside of the crossbench seats.

Company employees from the later years who were interviewed by Winzenried for his 1984 book, *Tram to Sorrento*, reported that the six cars were painted in individual colours – bright red, dark red, green, yellow, brown and black (which may have been dark green).

Andrew Howlett AFSM

Andrew Howlett's involvement with rail history and preservation spans over 60 years, starting with Puffing Billy Railway in 1964, Tramway Museum Society of Victoria and Bendigo Tramway Workshop. He is now active in carriage preservation at the Victorian Goldfields Railway.

Andrew has also been an active firefighter with the Country Fire Authority for over 50 years and is currently Treasurer of the Maiden Gully Brigade. In the 2013 Queen's Birthday Honours, Andrew received the prestigious Australian Fire Service Medal (AFSM) for his high level of leadership both operationally and in other facets of the fire service, especially CFA youth programs.

View of Sorrento, late 1890s, taken from the Sorrento Hotel above the Front Beach Station. The baths and the Esplanade along the Bay shore are clearly visible.

Part of a panorama by Frederick Arthur Osborn, courtesy State Library Victoria.

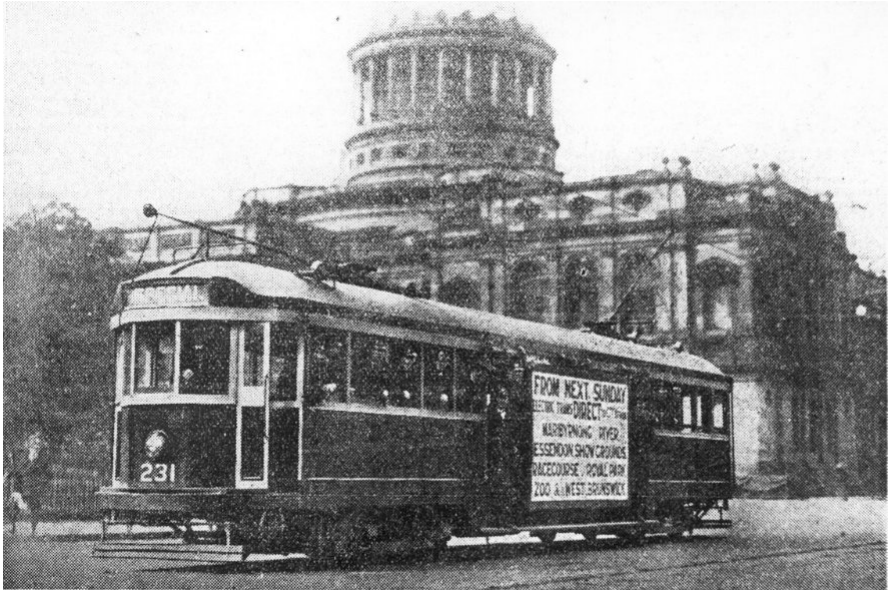
Taking the tram to town

An addendum to March 2025 article on truncating the North Melbourne cable tramway

In 1906 The North Melbourne Electric Tramway and Lighting Co Limited (NMETL) opened electric tram services from the North Melbourne cable tram terminus at Flemington Bridge to Keilor Road in North Essendon and Maribyrnong River in Ascot Vale. Those tramways are now the oldest operational electric tram routes in Melbourne.

When the Melbourne & Metropolitan Tramways Board (M&MTB) was formed in 1919, one of its top priorities was to bring the electric tram services into the central city. The Hawthorn Tramway Trust (HTT) and Melbourne, Brunswick & Coburg Tramway Trust (MBCTT) routes already came close. The MBCTT routes were extended down Swanston Street from their previous Queensberry Street terminus, with the first service running on 13 April 1924. This was Melbourne's first cable to electric conversion and the first entry of electric trams to Melbourne's 'Hoddle Grid' (the area bounded by Spencer, La Trobe, Spring and Flinders Streets).

In the March 2025 edition of *The Bellcord*, Warren Doubleday described the process of removal of the cable tramway in Flemington Road to enable the Essendon electric trams to run into the city along a route shared with the new tramway through Royal Park.



M&MTB W class no 231 operating driver and conductor training in William Street in the week before the tramway opened.

Photograph from The Argus, 15 July 1925..

This short article outlines the timing, construction and opening of that electric tramway.

The first step commenced in May 1925 with the building of a temporary single track electric tramway parallel and to the east of the cable tramway from Flemington Bridge to Abbotsford Street, where it connected to the new tramway from West Brunswick (later West Coburg).

As noted in the earlier article, the cable trams stopped running in Flemington Road on 18 July 1925, being replaced the next day by electric trams using the temporary electric track. Trams from West Brunswick, Keilor Road Essendon and Maribyrnong River routes all entered the city via Peel and William Streets.

The city terminus was in William Street on the northern side of the Collins Street intersection. There was never any connection to the Collins Street tramway – even after Collins Street was converted to electric trams in 1929.

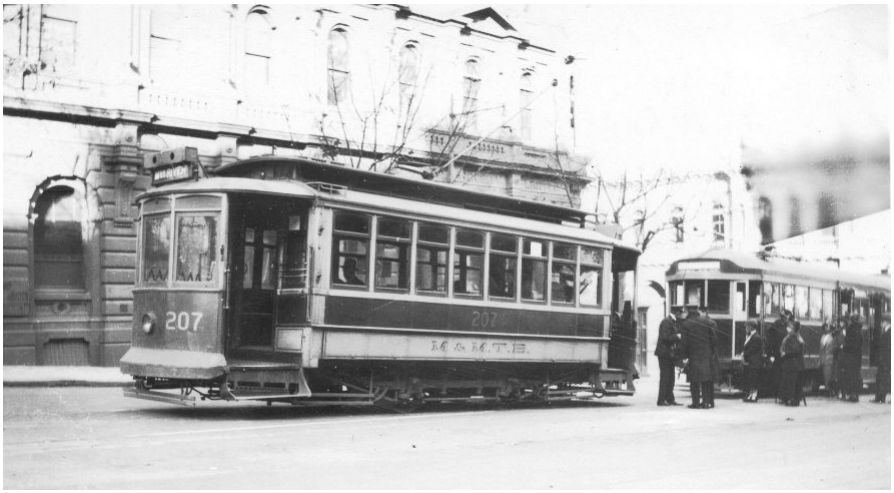
The cable tramway in Flemington Road was removed and replaced by a double track electric tramway. The electric trams moved onto the new electric tramway and the temporary track was removed by the end of September 1925.

M&MTB Civil Engineering notes state that the new William Street electric tramway initially narrowed to single track to cross the cable tramways in Victoria Street, Lonsdale Street and Bourke Street. Double track crossings were installed in February 1926.

This rapid and efficient conversion was most impressive and is echoed in current improvement projects in Melbourne. This year marks the centenary of this work.

The Keilor Road and Maribyrnong River routes were re-directed to Elizabeth Street as part of the Elizabeth Street cable tram conversion in 1935. West Coburg trams continue to travel via William Street.

Mal Rowe – who takes the tram to town regularly



M&MTB U class tram no 207 at the new electric tram terminus in William Street is ignored in favour of the latest W class tram behind it.

Photograph c1925 from the Melbourne Tram Museum collection, courtesy of David Webb.