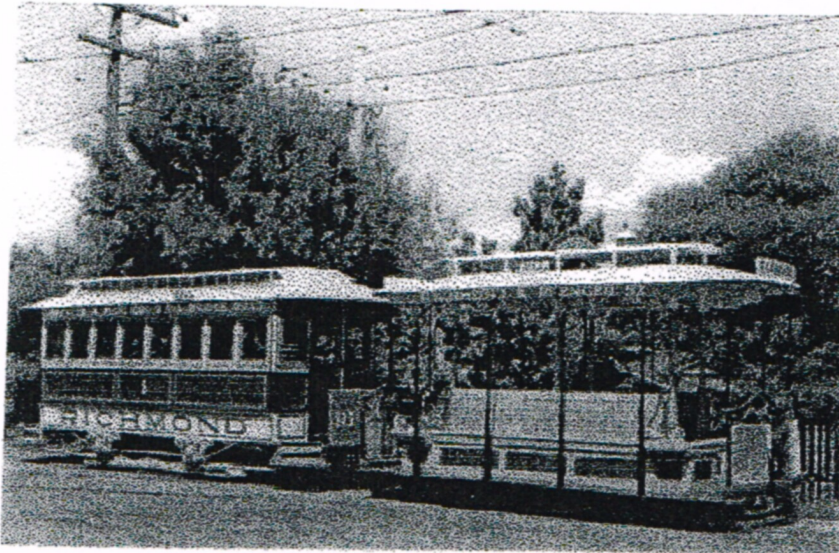


THE DEVELOPMENT OF MELBOURNE'S TRAMS

Part One



Melbourne's cable tram system was inaugurated when cable tram no.1 made its first passenger trip from Spencer Street Station to Richmond on 11th November, 1885. This system, which became one of the largest and complex in the world, closed on , **26th October 1940** when the last tram ran in Bourke Street.

At its peak, the system traversed 17 routes, covering 62 miles (100km). Because some of its routes partially shared the same streets, only 44 miles (71km) of streets were furnished with double tracks.

In 1922 there were **592 dummy cars** and **597 trailers** available for service-power was obtained from 12 engine houses which drove 26 cables.

In 1883, the Victorian Parliament enacted legislation to construct tramways and established, **The Melbourne Tramways Trust**. The Board consisted of representatives of the various municipalities in which the tramway operated. The Melbourne Tramways Trust built the cable lines and engine houses. The system was leased to the **Melbourne Tramway and Omnibus Company Ltd.** whose function it was to administer, operate and maintain the system which lasted for 30 years.

Two men stand out for their contribution in making the system a success. **George S. Duncan** was the engineer for the Trust. He designed and supervised the construction. **Francis B. Clapp** was the Chairman of the **MT&O** and supplied the business acumen.

In 1916, after the MT&O's lease expired, the **Melbourne Tramway Board** was formed, and acquired the assets of both the Trust and the MT&O as well as the operation and maintenance of the system.

In 1918, the **Melbourne & Metropolitan Tramway Board** was set up as the permanent authority responsible for tramways in the metropolitan area and it took over the functions of the Tramways Board.

The cable tram engine houses were operated by coal fired boilers feeding steam at 80 PSI (552 KPA) to pairs of horizontal engines with cylinders 24 inches (610 mm) in diameter and stroke of 48 in (1219mm).

The engine shafts were driven at 30 rev/min but this was reduced to 27 rev/min for the main shaft on which the drive wheels were mounted.

The driving wheels were 12ft. (3.7m) in diameter with rim grooves lined with hardwood.

The cable passed around a drive wheel and an idler wheel in a figure of eight fashion and then around a tensioning wheel.

This combination produced sufficient friction to haul the cable and its attached trams.

The cable tram system had fewer fluctuations in power requirements than electric and other systems of traction, even in peak loadings. This is because roughly half the trams on the route, would be going down hill, feeding power back to the cable to assist the trams which were going up hill.

Cable tram No.1 is one of the original 20 built in New York by John Stephenson & Company for the inauguration of the Richmond line. This tram is now preserved.

The dummy is 15ft 10in (4.8m) long, and weighs 2.9 tonnes. The car is 22ft (6.7m) long and weighs 2.5 tonnes. The tram features the colour system that was used on the Richmond line until 1924.

Prior to that year, the trams on each route were sign written and coloured for one route only and were not used on any other route.

The adoption in 1920-24 of the uniform brown and cream; with adjustable destination signs, allowed trams to be interchanged for any route.

Lighting of the trams was originally by four oil lamps-one in front of the dummy, one in the clerestory roof above the gripman's head, and one at each end of the interior of the car. By means of special glass, these lamps showed the route colours at night. Oil lighting was replaced by battery powered electric lighting in 1918.

The Cable

The average cable used in the Melbourne system was slightly more than 1 inch (25mm) in diameter. It consisted of six steel strands, each strand having seven wires wrapped around a hemp core. Its tensile strength was 90 tons per square inch (1390 MPA).

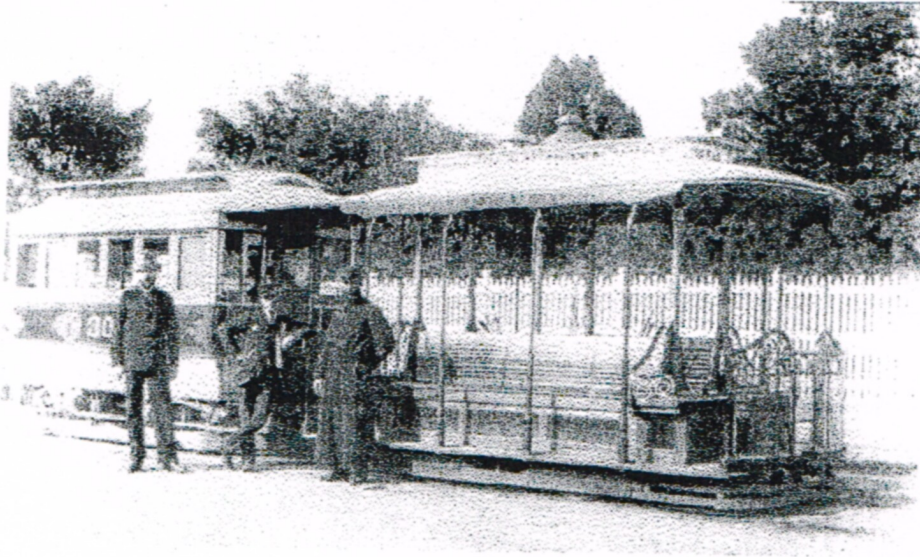
Each cable was installed as a single length. The longest in use being 31,620ft (9625m). Splicing was confined to joining the two ends, and the splice covered 80ft (24m).

The cable ran over 9in (229mm) diameter vertical pulleys located in special yokes that were spaced every 33ft (10 m) along the route. The speed of the cable was originally 8mph (13 kph) but this was increased several times and in 1910 was finally set at 13 mph (21 kph).

The cable ran for 20 out of 24 hours and was constantly inspected for damage, such as frayed wires. These were repaired in the engine house in the non-operational period.

Opening Dates of Cable Lines

Richmond	11th November, 1885
Fitzroy	2nd October, 1886
Victoria Street	22nd November 1886
Clifton Hill	9th August, 1887
Nicholson Street	30th July, 1887
Brunswick Street	1st October, 1887
Carlton	21st December, 1887
St. Kilda	11th October, 1888
Prahran	26th October, 1888
North Carlton	9th February, 1889
Toorak	15th February, 1889
Northcote	18th February, 1890
North Melbourne	3rd March, 1890
Royal Park	10th March, 1890
West Melbourne	18th April, 1890
South Melbourne	17th June, 1890
Port Melbourne	20th June, 1890



Closure

Although the cable trams rode out the depression years with reduced profits, it did so with dignity, and with reduced standards of maintenance, efficiency or appearance.

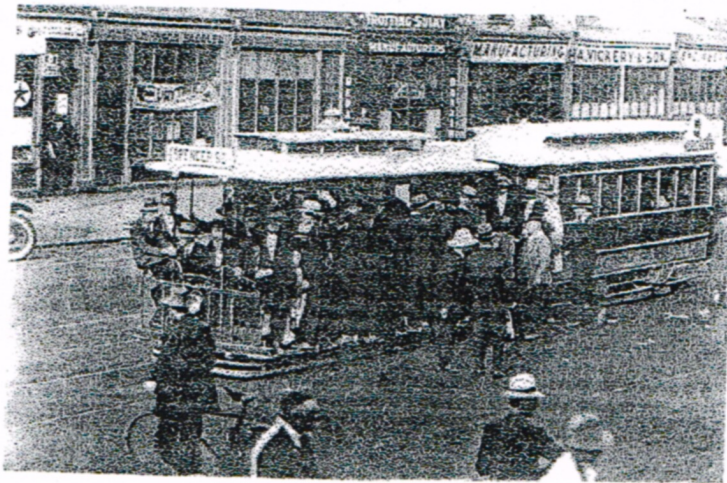
Apart from the rather freakish electric tramway which ran between Box Hill and Doncaster from 1889 until 1896, Melbourne had no regular electric tram service until 1906, when the Victorian Railway opened a (5 ft 3 in) line between it's St. Kilda and Middle Brighton Stations. This was later extended to Brighton Beach Station. A second line (4 ft 8 1/2 in) was opened from Sandringham Station to Beaumaris. In the same year, a private company, the North Melbourne Electric Tramway & Lighting Co., opened a line from the cable terminus at Flemington Bridge to Essendon, and a line to the Marybyrnong River.

The metropolitan population by this time had reached 588,000 and the cable trams were carrying more than 68 million passengers per year.

The Royal Commission's Report of 1911, recommended electrification of the suburban railway network and also pointed the finger of death at the cable trams.

Its recommendation was that the Metropolitan Cable Tramways and municipal and private electric tramways, be vested in a municipal tramways trust, and specifically, that all cable tramways should be converted to electricity and were appropriate, extended from their present cable termini where over-crowding of the route necessitated.

By 1918, cable trams were now carrying 113 million passengers annually, 176 trams shunted at the end of Elizabeth Street between 5:00pm and 6:00pm daily and during the same busy hour, more than 430 trams were passing the Town Hall at Collins and Swanston Streets.



The cable system was now under extreme pressure and could not be expected to function efficiently for very much longer. The Melbourne and Metropolitan Tramways Board assumed control of the cable trams on 1st November, 1919 and all electric operated by the municipal trusts.

The Windsor to Esplanade line was the last completed cable line to be constructed. On the **29th of August 1925**, it became the first cable line to close.

The last cable tram ran on Saturday night, **26th of October, 1940** and the time chosen was 9:00pm.

At that hour, there were relatively few people in the city streets - the theatres and cinemas were packed. When the patrons emerged, they rubbed their eyes and saw London-styled double decker buses plying the Bourke Street route.

And so, the cable trams had gone.

It was exactly 55 years since the first tram had made its run on the Richmond line.



The final journey, 26 October 1940

The final journey, 26 October 1940

Toorak Cable line opened 15 / 2 / 1889.

Toorak was 4.95 miles long

The original plan would have carried the Prahran & Toorak lines through South Yarra eastwards from St Kilda Rd via Domain Rd & Park St, but the amending Bill provided instead for a simplified direct turn eastward at Toorak Rd. Later, however, the original route was reverted to as "better for traffic" - even though it involved two additional rectangular curves. Without doubt it was better suited to tap the patronage of the South Yarra hill area - where, it may be pardonable to recall, many prominent people, including E.G.Fitzgibbon, Alfred Deakin & F.B.Clapp himself, had their homes.

The cable trams had ridden out the depression years, with reduced profits, to be sure, but with dignity & without reduced standards of maintenance, efficiency or appearance.

The engine house was located in Toorak Rd, N.W. at Chapel St.
Length of cable 22,110 ft.

Location of Depot Toorak Rd, N.W. at Chapel St.

About 1910 the cable trams were carrying more than 76 million passengers yearly.
Prahran & Toorak lines carried 15,448 passengers

The new electrics arrived to Orrong Rd 17 / 4 / 1927
to Glenferrie Rd 8 / 6 / 1927