

Notes on the Tramways of  
Ballarat & Bendigo  
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Mayor's report on the  
Prahran and Malvern  
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NOTES ON THE GENESIS AND DEVELOPMENT OF THE ELECTRIC  
LIGHT AND TRAMWAYS OF THE CITIES OF BALLARAT AND BENDIGO.

A paper read and prepared by Mr. W. J. K. Dunstan, 1126 Eyre Street, Ballarat, before the Ballarat Historical Society, at their request.

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BALLARAT TRAMWAYS. (Horse Driven). In 1885 the City Council obtained leave from the Government to construct Tramways, and leased to Mr. Edward Thompson of Adelaide, for a period of 30 years the right to construct and operate Tramways. In 1887 Mr. Thompson transferred his contract to a Company floated in Melbourne, and steps were then taken to construct the Tramways which began operating in 1888. They were horse drawn and lines were laid:- From Grenville Street, via Sturt Street West, thence via Morison Street to the Gardens Pavilion. From the Sturt-Lydiard Street intersection up Lydiard Street to Macarthur Street, thence along Macarthur Street to Wendouree Parade, continuing around the north side of the lake to the Gardens Pavilion. From the intersection of Sturt and Ripon Streets thence along Ripon Street to Macarthur Street. From the intersection of Sturt and Armstrong Streets, along Armstrong Street South and Skipton Streets, to the City boundary at Rubicon Street, and continuing on through Albert Street, Sebastopol, to a terminus at Queen Street. A line was also laid in Drummond Street South from Sturt to Darling Streets. The horse trams (two horses) continued operating until displaced by the Overhead Electric Trolley System in 1905. The Overhead Trolley System of Electric Traction did not extend to Sebastopol until 1913. The horse trams operated until then from the depot in Sebastopol. These stables were destroyed by fire in 1909 when several horses were burnt to death.

A property was acquired in Wendouree Parade and bounded by Forest and Gregory Streets, upon which was erected stables and cars shed, and on the Gregory Street frontage cottages for the drivers, and were let to them at a moderate rental.

Stables were also erected at Sebastopol on the south side at a point about midway between Holy Trinity and Carmel Churches (opposite). It is interesting to note that because of the steep climb from Grenville Street to Lydiard Street, an extra horse was used and was known as the "hill horse". The drivers of these trams were a hardy breed, some having been with the famous Cobbs Coaches.

The Manager was a former Cobbs official, Peter Hodgetts, who continued with the horse driven system until the overhead electric trolley trams came into operation. The trams were double decked. It is interesting to note that several of these horse trams were subsequently used in Bendigo as trailers to the electric trams, on such peak loading days as Easter Monday.

As far as I can find out the Electric Supply was commenced in Ballarat by a local company about the year 1890. The Power Station was erected in Dana Street between Armstrong and Lydiard Streets, in a bluestone building on the north side, more recently occupied by McRobertsons, and continued operating until the new Power Station on Wendouree Parade commenced operating in 1905. Tom Thursfield was its engineer until the new Power Station began operating in 1906, and he then commenced as an Electrical Contractor and successfully conducted that business until his death. B. H. Gummow was the Manager. This Company was somewhat limited in scope, nevertheless it was a pioneer in electricity supply, and was able to bring the advantages of this modern system of lighting and power to at least the city area, having in supply when it ceased operating a total of 240 consumers.

BENDIGO TRAMWAYS. George Mackay in his history of Bendigo states "In May 1888, a Tramway Conference was held between the Sandhurst and Eaglehawk Councils, and the Tender of Messrs. Booth Ellison and Co. for the construction of Electric Tramways was accepted. The Tramway Co. was floated on the 26th. May, and the line from Bendigo to Eaglehawk was completed. The Company's plant was erected and the cars arrived in time to make a start in June, 1890. The storage system of electricity proved a failure however, and after some delay the Company obtained permission from the municipal bodies interested, to apply the overhead system instead. In 1891 the Company was wound up, and at the time of writing (1891) the Municipal Councils were negotiating with a new Company which proposed to make a start with the steam traction by December". I might add here that, as a lad attending the Violet Street School, I saw this abortive first attempt to run Tramways from Sandhurst to Eaglehawk. As a matter of fact the road was too hilly (like a switch-back), the power generated by the accumulators not being strong enough to carry the small cars up and over the steep grades.



It would appear that the Steam Traction Company commenced operating about December, 1891. It was a local Company, some of the Directors I remember being G. D. Guthrie, owner of the pottery at Epsom (now owned by the Martin Stoneware Pipe Co. of Ballarat), J. H. Goudge, a local Butcher, and G. Bucknall, Proprietor of a Bendigo Carrying Co. It was this Company that I joined as a Junior Clerk on 1/7/1897. It is interesting to remember that this was one of three Steam Tramway Systems in Australia: Bendigo, Paramatta and Broken Hill. The locomotives were imported from Baldwins of the U. S. A. and about half of the ultimate "fleet" were made under licence by the famous Phoenix Foundry of Ballarat. The line ran from the Railway Station, Bendigo, to the Town Hall, Eaglehawk, a distance of  $4\frac{1}{2}$  miles. The rails laid for the original system were 45 lb. per yard, but these proved altogether too light for the steam loco., which because of their weight had the effect of spreading the rails and going off the line and which uncannily often happened at the Eaglehawk terminal. As a consequence I frequently found myself waiting for the last tram to arrive home with the Conductors takings, until the small hours of the morning.

BENDIGO ELECTRICITY SUPPLY. As no mention is made in Mackays history of Bendigo up to 1891 of the commencement of the Electric Supply, it can be assumed that it came into being and began operating sometime after 1891 in a Power Station erected at the corner of William and Mollison Streets, and adjoined the Tramways Shed in Mollison Street. The plant was somewhat of a size with the Ballarat one and like at Ballarat, was able to bring early to the Service of the Sister City this new development in Lighting and Power, and give at least to the City area this new and growing amenity. The Engineer was a German trained Dutchman, Ben ~~Sluyt~~ Sluyterman, who continued in charge until the new Power Station took over the supply in 1903, when he entered into business as an Electrical Contractor. I think it can be stated without question that the most important advance in Electricity and Tramway operations in Ballarat and Bendigo occurred with the coming to Victoria of "The Electric Supply Company of Victoria Ltd."

At the latter end of the 19th. Century there was a Company in Prescott, Lancashire, engaged in the manufacture of Electric Cables, who were fortunate in being first in the field with paper insulated cables, and they evidently made considerable profits from this invention. The Company was called ~~the~~ "The British Insulated Wire Company Ltd.". Seeking an investment for their surplus funds they founded a Company named as above, and sent out with authority, under power of attorney, an Engineer, named Benjamin Walter Deakin, who in 1899, on their behalf, purchased the assets of the Tramways and Electricity Companies in Bendigo and Ballarat.

Here it might be mentioned that the British Insulated Co., amalgamated with Callenders Cables Ltd., forming the Company known today as British Insulated Callender Cables Ltd. The Chairman, Sir ~~Wm.~~ Wm. McFadygen is in Australia now (1962) and is reported as stating that his Company is the largest Cable making group in the world. This Company was early building up its business in a world aspect well knowing that situated in a small country with a growing population it must export to live. They began to establish agencies in countries all over the world and had its own staff organisation to carry out contracts wherever they were obtained. They sent out a Cable laying staff to Victoria, and whilst it was local labor that dug the trenches and pulled the cables in, it was this staff that superintended it, and the delicate work of jointing, etc., was done by them - I saw them in action. The City areas of Bendigo and Ballarat contain many miles of underground cables laid in wooden troughs and sealed with bitumen. It is unlikely that these D. C. Cables will ever be lifted.

As soon as the purchases were completed no time was lost in organising the new venture. In Bendigo, the site of an old diggings on the Back Creek at the east end of Hargreaves Street was purchased upon which was erected the Power Station, Car Depot and Administrative Offices. The Car Depot was the site for constructing the Tram Cars, the contracting firm being "Duncans" of Adelaide, who also built the Ballarat tram cars. The Bendigo trams were completely new, but the Ballarat trams were a reconstruct of saloon bodies purchased in Sydney to which were added the dummy ends, this work being carried out in the Exhibition Buildings (since destroyed by fire). In Ballarat the old "Fry" flour mill on Wendouree Parade, corner of Ripon Street, was purchased for erection of the Power Station and it is of interest to read that the Western Bluestone wall was a wall of the Flour Mill. A small building on the eastern side of the main entrance on Wendouree Parade and used as the Mains Foreman's Office was the original office of the Flour Mill. The stables of the Horse Tramways was reconstructed as Car Sheds in the new Overhead Trolley System.

The Power Stations of Bendigo and Ballarat were each equipped with similar plant and comprised three high speed reciprocating compound engines direct coupled to silver-town dynamos, with the necessary auxiliary plant. The steam was generated in Babcox and Wilcox boilers which were hand-fired, the stoker feeding into the furnace five foot logs which was hard on the legs of the fireman. After some years the first automatic stokers



were installed of the Bennis type and were also hand fed but with coal, later an automatic hoist was ~~installed~~ installed, feeding the fuel into overhead bunkers, then being gravity fed into the furnaces, no personal handling of the stokers being entailed, thus ending and beginning eras, the stokers principal duties now being watching and recording of instrument control.

The Generating Plant above referred to operated on direct current, until 1924, when two Lungstrom Brush Mixed Pressure Turbines generating alternating current were installed in each of the Bendigo and Ballarat Stations, replacing the original generating units, making possible a more efficient distribution of Electricity. Whereas it was not possible with direct current to transmit power for long distances without a serious drop in voltage at the point of supply, the new alternating current, sent out at 6600 volts and broken down by transformers to standard voltages at the points of supply brought about a greater efficiency with satisfaction to consumers. Thus in 1924 a new era began enabling efficient extension of supply to the outer fringes of the reticulation areas of the cities and suburbs of Ballarat and Bendigo. On the closing down of the Bendigo Power Station, the two Turbines were transferred to Ballarat, appreciably augmenting the Power Station potential at Ballarat, Bendigo going over to transmitted supply.

There is an interesting foundation stone near the main entrance to the buildings in Wendouree Parade. It was laid on 23/8/1904 and engraved thereon are:-

"R. Pearce, Mayor of the ~~Town~~ City.

W. D. McKee, Mayor of the Town.

E. K. Muspratt, Chairman of the Company.

J. Taylor, Vice-Chairman of the Company.

B. W. Deakin, Engineer and Manager.

Contractors - The British Insulated and Helsby Cables Ltd."

There will be a similar stone on the Administrative Block at Bendigo.

THE TRAMWAY SYSTEMS. There were no Horse Tramway lines in the Town of Ballarat East but on the coming of the Electric Tramways, the following lines were laid and operated.

From Grenville Street, via Sturt Street, Hamilton Avenue, around the Lake, returning via Ripon Street to Sturt Street, thence ~~to~~ to the City.

Drummond Street North, via Macarthur Street, to the Lake.

Drummond Street South, through Skipton Street to the Sebastopol terminus.

Lydiard Street North to Gregory Street and in 1938 extended to the New Cemetery.

Through Victoria Street to the Orphanage.

Through Main Road and Barkly Street to the Mt. Pleasant terminus at Cobden Street.

A line down Ripon Street to the Miners Race Course was an original listing but was not proceeded with.

In Bendigo the original line was from the railway station to the Eaglehawk Town Hall, a distance of  $4\frac{1}{2}$  miles. In the Electric Tramways the short section into the railway yard was discontinued, the main line being extended over the Railway Bridge in Mitchell Street, along Carpenter Street to the Cemetery, total length being 6 miles. A new line was made from Maple Street in Golden Square to Lake Weerona. During the Second World War a spur line was laid to the Ordnance Factory in North Bendigo.

On the whole I think it can be said that Ballarat was more completely served with tramways than Bendigo.

The Bendigo System was the first completed and began operating on April 10th., 1903, the Ballarat System began operating on August 18th., 1905. I was working in each undertaking on these occasions. These were great days as a special decorated tram was used with the respective Mayors in top hats at the controls, guided on each occasion by George Laurens, who supervised the erection of the overhead trollys and became Mains Foreman in Ballarat, serving until after the take-over by the S. E. C. It was often a matter of doubt whether these two cities were big enough to profitably maintain a fixed rail tramway system, and it would appear that the passing of the years has well demonstrated that such was the case.



The first general manager of the Electric Supply Co. of Victoria was B. W. Deakin, who by his skill in negotiating the agreements with the Councils gave signs that he might have done well in the legal profession. He was replaced in 1910 by P. J. Pringle who came from the management of the Burton on Trent Municipal Tramways and remained until the sale of the undertaking to the S. E. C. was finalised in 1929. He died in 1930 whilst on the way back to England to report the sale to the Board. In considering the Tramways operations in both cities it should be mentioned that it was an advantage to both the Electricity and Tramways that they had a common generating authority in the Power Stations.

Wages. In the early days of the Electric Supply Co. of Victoria there was no fixing authority for wages, the rate paid to motormen was 8d. per hour and a lesser amount to conductors. When the Arbitration Court was established and the Harvester Award made by Judge Higgins in 1907 it paved the way for union action and in 1912 the first award was made on a log served by the Tramway Employers and from then onwards the wages rates were controlled by the Court. Immediately the 1912 Award was made it had a serious effect on the operations of the Company and ways and means had to be sought to counteract these added costs.

It should be noted that the principal tram fares (maximum for 3 miles) of 3d. was fixed by the Council at the beginning of the Horse Trams and was not altered during the whole of the operations of the Electric Supply Co. of Victoria. It might be said that tram travelling was more of a luxury than a necessity and it was felt that an increase in the maximum fare would cause a reduction in patronage and therefore no advantage would be gained. Attention was therefore given to the encouragement of sectional travel and a system of concession fares was designed - 8 for 1/- and 6 for 1/- according to Section. These were issued in thin strip of card and later to replace them by something more expendable, celuloid tokens of the size of a 1/- were imported from England and as they were collected as fares were resold and so they were in continuous circulation. When costs of operation continued to rise, an ingenious way of increasing the price of the sectional fare tokens was devised by boring a hole in them (such as we have read being done with coin of the realm in ancient time). Weekly workmens tickets at concession rates were issued with success, and monthly cards at cheap rates were sold to children attending schools and colleges. Free travel was granted to limbless soldiers and District nurses, in each case books of tickets were issued monthly.

With costs continually rising it became necessary to find other economies and it was decided to turn the trams into one man operation. The Trams were altered so that either end could be closed and a metal box designed for the reception of fares under control of the motorman (one of these boxes may still be seen at the Mechanics Institute where it is used to receive the fees of members for extra books taken out). This met with much opposition but it was eventually agreed by Arbitration to add an extra rate to the wage for this operation. This was carried on for some years but was ~~eventually~~ eventually discontinued and the cash fare resumed, the one man operation being used for off-peak loading on certain routes.

About the 1920's just after the first World War, during which motor transport received a great acceleration, buses suddenly appeared and began to operate on the tram routes, taking passengers out of the mouths of the trams, so to speak, and the position became somewhat ugly, until Council regulations were framed fixing routes for buses, and for those running parallel to trams that they should not operate closer to trams than  $\frac{1}{4}$  mile and they should not pick up or set down passengers where the tram and bus routes crossed each other. It should be borne in mind that the populations of Ballarat and Bendigo had not appreciably increased from 1900 until after the Second World War. Another big factor and probably the largest and most permanent of all to hit tram travelling was the increase in private ownership of motor cars, until it would seem that nearly every second person drives one. "This was the unkindest cup of all" and the final blow to fixed rail systems of Tramways in cities of the limited and slow growing populations like Ballarat and Bendigo. Even in Melbourne with its tremendous growth in population the Tramways are having increasing difficulty in profitable operations.

In the days of the Horse Trams and some years of the Electric Trams the platform staff had to face all the inclemencies of the weather and especially in Ballarat with driving snow storms they had to be a tough breed indeed. The transition from open fronts to the present comfortable cabins fully enclosed, with windscreen wiper and seat, was not accomplished in a day but is the result of a gradual process of negotiations and adjustment. It should be remembered that the franchise of the Electric Supply Co. of Victoria was for 30 years and as the time of expiration drew near in 1929 much consideration was given as to who should control the future for Electricity and Tramway operations. Three propositions were put forward:-



1. Extend the franchise of the old Company.
2. The Council to assume ownership under the Agreements.
3. Sell to the State Electricity Commission.

Eventually after much examination and public meetings, it was decided to sell to the State Electricity Commission who were under their mandate from the State, the inspired leadership of the late General Sir John Monash, developing the power resources of the State in a remarkable manner and it was increasingly important that the two largest inland centres should be linked to the system which ~~was~~ has become so effective in the smooth spread of Electricity everywhere within the borders of the sovereign State of Victoria. We conclude our record here for from 1/4/1934 the operations belong to the State Electricity Commission of Victoria.

Personalities. There have been many who have made notable contributions to the founding and developing of the Electricity and Tramways for these two cities. When I first joined the service in 1897 the Tramways Manager at Bendigo was P. E. S. Cooper, who was succeeded by a Scotch Engineer named George Smith Morrison, who had inventive talent, one engine of his design with some unusual features being installed in one of Bob Taylors Steamboats on Lake Wendouree. He did not continue with the English Company who brought out their own principal officials. Mr. Deakin, the Engineer and Manager, brought with him Mr. E. J. Cochrane who operated in Bendigo and Ballarat eventually finishing his career with the City Electric Co. of Brisbane. Mr. E. C. Gurr of Geelong, the Company's Auditor from 1900 to 1934, Mr. W. J. Home of Melbourne, the Company's Solicitor from 1900 to 1934, who had a close association with Sir J. Monash in the Citizen Forces prior to the First World War, and it was this close contact that created a starting point in the early negotiations for the sale to the S. E. C. Mr. P. J. Pringle who succeeded Mr. Deakin in 1910 and continued till 1930 was a notable personality. It was his influence that caused Morleys to settle in Ballarat, and Hanros in Bendigo. His eldest son Tom has now the important post of Assistant Supt. of Generation with the S. E. C. Mr. A. E. Ford came from Sydney to be car depot foreman at Bendigo, becoming Local Manager transferring to Tramway Supt. with the Adelaide Tramways Trust, and finished his career as Manager of the Municipal Tramways ~~Company~~ In Auckland, N. Z.

In 1905 Mr. Deakin asked the Board to send out a Chief Accountant, and Mr. Wm. Knox was chosen and proved a fine officer and citizen, serving until 1933. Mr. W. J. K. Dunstan commenced as a Junior Clerk in the Steam Trams at Bendigo, in 1897, transferred to Accountant at Ballarat in 1905, succeeded Wm. Knox as Chief Accountant in 1933, and continued on as Office Manager with the S. E. C., retiring in 1946, with 49 years service. Mr. L. W. West commenced in the Engine shed with the Steam Trams, and was Depot Foreman at Bendigo for many years. Mr. J. H. Nesbit, Accountant at Bendigo and Office Manager, S. E. C., for many years. C. Coxgrove, Harry Foy and Chris. Hodgson, all Depot Foremen at Ballarat. H. C. Evans, Traffic Supt. Bendigo for long years. H. P. James and A. V. Mawby, came up through the ranks to be Tramways Supts. at Ballarat. Mr. Mawby rose to be Departmental Supt. with S. E. C. D. Maxwell, a Scotch Engineer, became resident engineer at Ballarat in 1910 and continued to the end of the Coy's life in 1934. C. F. Cole who became a Premium Pupil at Bendigo, later Local Manager, and on the death of P. J. Pringle, General Manager, until his death in 1933. R. F. Dixon loaned by the S. E. C. as General Manager 1933-34, the final year of operations of the old Coy., a fine personality. Geo. Laurens who assisted in the erection of the overhead Trolleys at Ballarat and Bendigo, becoming in 1905 Mains Foreman at Ballarat, and continued on into the service of the S. E. C. C. J. Callister, becoming our Electrical Apprentice in the Power Station, rising to P. S. Supt. The Electric Supply Coy. built into the undertaking a fine body of staff and employees, many of whom are still employed in the service of the S. E. C.

ADDENDUM. Whilst it is true that Ballarat East was not included in the Horse Tram layout, I now know ~~about~~ from a friend, who as a lad living in Barkly Street, saw them in action, that when the lines were laid for the electric trams in 1904, Horse Trams were used on them until the electric trams commenced operating in 1905. They ran as far as Gladstone Street. On page two the weight of rails laid in Bendigo for the original trams was given as 45 lbs. per yard, but when the electric trams system was laid down the rails laid were and are now 90 lbs. per yard.

Compiled by W. J. K. Dunstan, 1126 Eyre Street, Ballarat. 12th. March, 1963.