

"Every place," remarks Stevenson in his concluding sentences in "Picturesque Edinburgh," "is a centre of the earth from which highways radiate and ships set sail for foreign parts." Similarly, every city is the creation of its transport. However much the massing together of huge masses of people may be deplored, the fact remains that their congregation is possible only because of transport. If the growth cities in the old world is studied even cursorily, it will be found that those which grew most rapidly and enjoyed greater prosperity were just those which early saw the necessity of a street transport system. When people had to walk to work, cities were small; in point of fact there were no cities as we understand them to-day. Witness London at that stage. The Capital of England could have been contained comfortably in Royal Park. Then Coaches are introduced, and at once signs of growth are noticed. Scattered hamlets are connected one with the other, and soon the area in between is filled. Rails are thought of, and with the appearance of coaches pulled by horses on those rails another expansion takes place. A few more years, the horse goes, mechanical power comes in, and the growth of cities becomes phenomenal, populations doubling and quadrupling within a decade. Shortly, that has been the story of all the large cities of Britain, the Continent and the United States; shortly it has been the story of the development of Melbourne, and with the 50th anniversary of the opening of the first cable tramway falling on the 11th November the time seems opportune for a short review of that event in the history of the Metropolis.

Sixty odd years ago Melbourne was not so much a city as a number of scattered settlements not too closely linked together. Hotham (as

North Melbourne was then called), Brunswick, Jika Jika (what we now call Northcote), Richmond, Hawthorn, Prahran, St Kilda, Brighton--all had definite, separate identities, were little self-contained worlds of their own. In these happy, leisured, far-off days there were no huge city emporiums with their raucous spruikers functioning from 9 a.m. on Mondays to 1 p.m. on Saturdays luring shoppers from the local establishments of Errol Street, or Sydney Road, or Smith Street, or Chapel Street, or High Street, St Kilda. Hotham could look out over port Philip bay with no fear of a smoke pall intervening between it and the view and with no chance of its ears being tortured by some crooner moaning about the blue of the night ; Jika Jika shimmered in the heat in the ^{summer} ~~sun~~ and got a full share of the cold north wind in winter blowing from the Dividing Range ; Hawthorn was as calm as the river which would slowly and safely to the sea ; Brighton was the retreat of wealthy men, and the journey from the city consumed the best part of two hours and was altogether a splendid adventure for the younger members of the family. Into the most of those peaceful places, and connecting them with the city, came horse buses, and at once the pulse of life quickened. Like everything else, the appetite for speed grows by what it feeds on, and soon those who were enabled by the buses to reside two and three miles from the city were desirous of having homes still further afield. There were those who were quite anxious to minister to their wants and provide them with the necessary facility in the shape of mechanical transport. But the political mill grinds slowly. If a multitude of councillors spells safety, there is no doubt that long, and sometimes exasperating, delays are involved also. In this case, 13 years passed before the

proposal to construct tramways received the sanction of Parliament in the shape of the Melbourne Tramway and Omnibus Company's Act of 1883. With the passing of the Melbourne Tramways Trust Act of 1884 the way was finally cleared for another progressive move in the development of the Metropolis.

"Whereas the making of the tramways hereinafter particularly described with their appurtenances and other works connected therewith," runs the preamble of the 1883 Act, "would be of great public and local advantage : And whereas the Melbourne Tramway and Omnibus Company Limited is willing and it is expedient that it should be authorised to construct the said tramways appurtenances and other works," the Queen's Most Excellent Majesty, by and with the advice and consent of the Legislative Council and Legislative Assembly of Victoria, duly Authorised the construction of tramways in Melbourne, Fitzroy, Jika Jika, Collingwood, Richmond, Kew, Hawthorn, Brunswick, Hotham, South Melbourne, Sandridge (Port Melbourne), Prahran, and St. Kilda.

But while the Company was thus given power, always provided it got the consent of the authorities in the places mentioned, to construct and maintain tramways, the Act provided also that, if they so desired, the various municipalities could form a Tramways Trust and construct tramways themselves. As it happened, 12 municipalities did so chose, and to the Tramways Trust then formed they appointed 18 representatives, seven of whom came from Melbourne and the remaining 11 at the rate of one each from the other municipalities interested in the venture. As a matter of historical interest the names of the first representatives may be set down: City of Melbourne-- The Mayor (Cr. C. Smith), Aldermen T. O'Grady, C. J. Ham and T. Monbray; Councillors J. Dodshun, J. Garton, and J. Pigdon.

City of Prahran - T. Arkle.
 " " Richmond - R. Dickens.
 " " Fitzroy - R. Shavers.
 " " Collingwood - W. Smith.
 " " South Melbourne - J. Stead (Mayor).
 Town of Hotham - T. Fogarty.
 Borough of St Kilda - H. Jennings.
 " " Brunswick - D. Methvan.
 " " Port Melbourne - T. Williams.
 " " Hawthorn - D. G. Cullen.
 " " Kew - F. Barnard.

In the absence of any direction in the Act for its assembly. The first meeting of the Trust was convened by the Town Clerk of Melbourne, and was held in the Town Hall on the 7th. March, 1884, Alderman O'Grady being appointed Chairman. Having appointed Works, Legislative and Finance Committees, with Mr. H. T. Jordan as Clerk, the Trust sat down to consider what motive power should be adopted for the tramways. Steam locomotives had been ruled out by Parliament. The choice really lay between the electric or underground cable systems. Electric traction by means of overhead wires was then in its infancy, and so the Trust, perhaps not unnaturally then though looking backwards across the gap of 50 years, the decision seems strange now, resolved to proceed with the underground cable system, being influenced to do so by the known success of similar systems in the United States and New Zealand.

The next matter was the appointment of a designer. With the desire to get the best effect possible, the Trust unanimously resolved Port, West and North Melbourne routes, and determined that the tramways

to secure the services of the late Mr. George Duncan, who was so favourably known through his connection with the New Zealand and Sydney cable systems. The proof of the soundness of the design Mr. Duncan evolved is shown by the fact that the original tracks, engine houses, cars and depots are still in use on those portions of the cable system which remain unconverted. As his assistants, he had his brother, the late Mr. James Duncan, and the late Mr. James Turnbull, and they remained with the Company as Chief Engineer and Assistant Engineer respectively. In cable systems in other parts of the world, the general practice then was to run the rope directly below the centre line of the track. Mr. Duncan departed from that method by placing the rope to one side of the tunnel. Line coming into the city from the north had the rope on the right side, while those entering from the south had the rope on the left. As a rule, most of the engine houses operated three ropes, the length of which varied from 16,000 to 33,000 feet. Although the designed speed was 9 m.p.h., it was found possible in practice to run the ropes at a greater speed than that. Even during the last few years, although the equipment has been in continuous service, the average speed, including stops, has never fallen more than a fraction below 10 m.p.h. Each route had its own set of cars, distinguished by a coloured dome on the dummy and coloured lights on the trailer. On the Bourke Street line, for instance, the trams running to Northcote carried red, while those on the Nicholson Street run had blue domes.

Although Mr. Duncan had demonstrated on the Rosslyn and Mornington line, New Zealand, that it was possible to run a cable tramway round curves, the Trust considered that this would not be possible on the South, Port, West and North Melbourne routes, and determined that the tramways

on these and the Kew and Hawthorn lines should be worked by horses. At the outset, therefore, the mileage of both kinds of construction was set down as :-

	M.	F.	C.
cable	33	2	7.67
Horse	15	7	5.29
	49	2	2.96

Subsequently it was seen that Mr. Duncan's design was admirable for curves, and in due course South, Port, West and North Melbourne saw their cable lines constructed.

While conversion operations during the last 10 years have familiarised the public which has grown up since 1885 with the nature of cable tramway construction, it may not be out of place to give a brief description here. A cable line, therefore, consists of a double tunnel of concrete in which, at intervals of about $3\frac{1}{2}$ ft., are placed "yokes" made of 50-lbs. steel railway rails. On these yokes, which are open at the top, are bolted on each side slot beams, which are really light girders, with a distance between the flanges of 7-8ths. of an inch, this distance from the slot in which the cable gripper works. At intervals of about 30 ft. apart brackets are bolted to the yokes, in which run the pulleys which support the cables. The rails themselves are flat-footed, and vary from 87 lbs. per yard, $6\frac{1}{2}$ ins. in depth on the main lines, to 67 lbs. and $5\frac{1}{2}$ ins. in depth on the minor routes. They have a bearing of $6\frac{1}{2}$ ins. and rest on a bed of 6 in. concrete. The gauge is 4 ft. $8\frac{1}{2}$ ins. As the street between the rails and for 18 ins. beyond the outer rails had to be constructed and maintained by the Company, it follows that the 12 municipalities concerned in the Trust were relieved of street maintenance liabilities so far as 17 ft. of the roadway was concerned. This obligation, copied from the British Act, passed in an age which knew nothing of mechanical transport for streets, together with the

more expensive forms of paving now being specified by local authorities, so as to satisfy the demands of motorists, is the explanation why many of the smaller tramway undertakings in Great Britain and the United States have abandoned their trams for either trolley or oil buses. It is an extraordinary anomaly that while trams, which do no damage to roads, are compelled to construct and maintain that portion of the street over which they run, heavy motor vehicles, which are capable of ruining even a good road in very quick time, escape this charge.

Before the actual work of construction commenced it was necessary naturally to make complete arrangements for the financing of the undertaking. Under the Act, the Trust had power to raise all money for the construction of the tramways and for the expenses of the Trust by borrowing on debentures secured on the lines themselves and on the revenues of the various municipalities interested, the liability of each Council being in proportion to the length and cost of the lines within their respective boundaries. It was provided, also, that the Trust should give a 32 years lease of the lines to the Company, beginning from the date when the liability for the interest on the loan commenced (1st July, 1884), and that the Company should pay to the Trust the interest on the debentures and a yearly percentage to be set aside as a Sinking Fund, the latter provision being designed to extinguish the loan by the end of the lease. In return, the Company agreed to find the capital for the rolling stock and for the equipment of the lines and engine-houses, and undertook, on the expiry of the lease in 1916, to hand over the tramways in good working order to the Trust.

Quite early in the negotiations with the financial agents it was found that the London Stock Exchange would not view favourably the

flotation of a loan on the terms indicated. To overcome the objections, an Act was passed in July, 1884, making £1,200,000 as the limit of the borrowing powers of the Trust, and making the municipalities concerned jointly and severally liable for the amount borrowed. In order to cover the interval before the flotation of the loan, the local banks supplied the funds necessary for the current expenses of the Trust, while the ~~Ed~~ Company agreed to construct the first line, that to Hawthorn Bridge, Richmond, from Spencer Street Station, a distance of $3\frac{1}{2}$ miles, on behalf of the Trust, to charge the Trust the actual cost only, and to carry out all the under the superintendence of the Trust's engineer.

With tramway services out of favour in Britain, it was scarcely surprising to find that the net proceeds of the sale of debentures yielded but £97. 6. 6 per cent to the Trust. Debentures to the value of £500,000 were placed on the market in October, 1884 and in a few months investors began to realise that the security offered was much superior to that of any other Colonial stock on the market. The result was that the price appreciated rapidly, and in April, 1888, the debentures were quoted at £111. 15. 0. per dividend.

A very different reception was given the second debenture issue of £500,000, bearing $4\frac{1}{2}$ per cent interest. The loan was purchased in Melbourne jointly by the Commercial Bank of Australia and the City of Melbourne Bank at a net premium of £1. 15. 0. per cent. The Trust's third loan was floated in London, It amounted to £200,000, with interest again at $4\frac{1}{2}$ per cent, and realised a net premium after deducting expenses and accrued interest of £4. 13. 0. per cent. Having been given an extension of its borrowing powers to £1,500,000, the Trust floated

its fourth loan in London in July 1888. For £250,000, and once more offering $4\frac{1}{2}$ per cent, the loan was so popular that it gave a net premium after deducting expenses and accrued interest of £8. 1. 2.

Public interest quickened when the first tenders were called for. Messrs. Briscoe & Co. got the first contract on 27th. January 1885, for 9,000 tons of permanent way at £63,509 . 12. 4, while nine others were let within the next three months. One of those was for no fewer than 7,000,000 red gum paving blocks. The construction of the line was proceeded with in sections, as follows:-

- No. 1. Russell Street to Hoddle Street - R. Thornton, £10,550
- No. 2. Russell Street to Spencer Street - J. Kenny, £11,997
- No. 3. Hoddle Street to Hawthorn Bridge - Mark Gardner, £12,308.

From the onset great difficulty was experienced in the alterations to the gas and water pipes and the drains. Very early it was seen that owing to the absence of anything like accurate information the estimated cost of these alterations would be largely exceeded. Actually the work involved practically the reconstruction of the whole width of the street due to the fact that where a main drain or water pipe was in the centre it had to be removed to one side, while where a main was on one side with service pipes running across the road, another main had to be laid on the opposite side so as to obviate the necessity of service pipes dug to cross the tramway. Many of the alterations found necessary would have had to be made in any case by the Gas Company and Water Supply Department owing to the rapid increase in the population, coming as they did at that particular time, however the expense fell wholly on the Tramway Trust.

At the end of 1891 there were 41 miles of cable line in operation. A similar state of affairs prevailed over the main drains, and in more than one instance the Trust was compelled to perform work or part of the cost of work which should have been borne by the municipalities. The injustice of the dog-in-the-manger attitude adopted by the municipalities was so obvious that in Act No. 952 a clause was inserted providing that in the case of a municipality objecting to the drainage scheme proposed by the Trust, the dispute could go to arbitration and that the municipality concerned would be made liable for portion of the cost of alteration. While extraordinary interest was taken in ~~the~~ the construction of that first line, it was nothing compared with the desire to experience the new mode of travel when car No. 1 set out on its initial journey on the 11th. November, 1885. All day long the cars carried full loads, and it is told how parents from the outer suburbs brought their children to the city for the special treat of a ride on the trams! Here it may be pointed out that the builders of these early trams never had any intention of turning out a new model every year. They believed in sound construction with sound materials, proof of which is found in the fact that No. 1 with something like 1,250,000 miles to its credit, is still in service. While the Richmond line was being completed, work was in progress also on the Fitzroy and Victoria Street routes, and with Richmond a pronounced success ^{such} there was every inducement to complete the whole programme of construction at the earliest possible moment. As a matter of fact, nothing was lost, in the result left the last line. Windsor was opened for traffic on the 27th. October 1891, some 26 months in advance of the time stipulated.

At the end of 1891 there were 41 miles of cable line in operation, the total length of the ropes in motion under the various roads being about 95 miles. The various lines were opened to traffic in the following order:-

Richmond.....11th. November 1885

Fitzroy (Collins Street).....2nd. October 1886

Victoria Street,.....22nd. November 1886

Collingwood and Clifton Hill.....10th. August 1887

Bourke and Nicholson Streets.....26th. August 1887

Brunswick.....1st. October 1887

Carlton.....21st. December 1887

St Kilda and Brighton Road.....11th. October 1888

Prahran.....26th. October 1888

North Melbourne.....3rd. March 1890

West Melbourne.....11th. April 1890

South Melbourne.....17th. June 1890

Port Melbourne.....17th. June 1890

Windsor.....27th. October 1891.

By the end of 1891 there were ~~more~~ 45.9 miles of double cable track in operation. When the ~~lines~~

In addition, the Kew horse line was opened as far as the Victoria Street bridge in December, 1887, and the Hawthorn horse line on the 27th. January, 1890. On the completion of the Victoria Bridge in February, 1890, the horse line to Kew was completed and opened for traffic in August, 1890,

When the Richmond line was under construction, the Trust proposed to place a siding on the south side of Wellington Parade to accommodate

the traffic going to and from the Melbourne Cricket Ground. In view of the congestion that was caused by long lines of trams standing in the centre of the street it is amazing that the Melbourne City Council refused permission for the siding. Forty years later their successors were more far-seeing, for when the Richmond line was electrified the City Council agreed readily to the proposal of the Melbourne and Metropolitan Tramways Board for a siding on the north side of Wellington Parade.

One other matter may be referred to before concluding the reference to this line. As built originally, the chimney stack on the powerhouse at the corner of Hoddle Street and Bridge Road was 85 feet high. So many complaints were made by adjoining householders of the nuisance caused by the smoke, however, that shortly after the line was opened a new stack, 175 feet, in height, was built, and was up to that time the highest constructed in Victoria.

Immediately after the first loan had been floated, work was commenced on the second line, Fitzroy, which ran from Collins Street at Spencer Street to near the Merri Creek by way of Gisborne Street, Brunswick Street and St Georges Road (now Victoria Street) to the Kew Bridge. Built in three sections -- Spencer Street to Brunswick Street, and ~~Simpson's Road~~ Brunswick, and Simpson's Road -- the big cost £62,486.

Among the subsidiary works connected with the construction work in Collins Street was the removal of the Burke and Wills Monument, which stood in the centre of the Russell Street and Collins

Street intersection. At first it was intended to skirt the monument on each side, but this would have involved curves dangerous to traffic, not to mention excessive wear on the ropes, the Trust was glad to get the permission of the City Council to remove it to the corner of Nicholson and Spring Streets.

Another episode was more expensive, costing the Trust £1,200. It looks to be straight; actually it deviates in places considerably from a straight line. With the idea of avoiding curves, therefore, the Trust proposed to divert the lines about 2 feet out of the centre. Owners in the vicinity alleged that this deviation - in a street 99 feet wide - would damage their properties, and eventually the Trust had to correct the alignment. In Simpson's Road, the drainage work cost £7,550. The Trust had to construct a brick sewer 3 feet x 2 feet, and 2,156 yards long. The municipalities interested refused to contribute, and the whole cost had consequently to be defrayed by the Trust.

During 1887 no fewer than four lines, those to Collingwood, Clifton Hill and Nicholson Street from Bourke Street, and from Elizabeth Street to Brunswick, were constructed and were opened for traffic between the 10th. August and 21st. December. Situated at one corner of Gertrude Street and Nicholson Street, the engine house for the first three mentioned lines was then, and still is, one of the show places for those interested in the cable system. Owing to the nature of the grade at the corners, special designs had to be made to enable the dummies to pick up and release the cables at this point. The result was that the subterranean portion of the engine house is large, deep and intricate. Many thousands of visitors have since inspected the tunnels and watched

the trams coming round the curves, releasing and then picking up the cables, and on one occasion the whole series of operations were graphically broadcast to the children of Victoria by 3LO. At Smith Street, where a curve on a radius of 45 feet, had to be dealt with, the whole length was constructed of iron and erected complete in the workshops of Forman & Co., where it was tested before being placed in position. This line finished the first example of cable tramways crossing each other at right angles at the Gertrude and Drummond Street intersection. In order to prevent the cable being out, one was depressed permanently, while the other worked in the usual manner, the trams passing over the crossing by momentum.

As the line from Elizabeth Street to that Sydney - Moreland Road intersection provided almost a straight run of nearly four and a half miles, few difficulties were met with during its construction. The contract from Moreland Road to the Post Office was let at £40,858, and the remainder at schedule rates as an extension on the contract. The line proved expensive to drain, costing £7,400 and here again, although the municipality concerned greatly benefitted from the work, the Trust had to pay the whole amount.

Fitzroy Council met the Trust in a spirit of fairplay when the drainage for the Carlton line had to be faced. Acknowledging the great benefit the drainage scheme would confer on Fitzroy, The Council joined in with the Trust in making the system perfect. By mutual agreement, it was decided that the main sewer in Fitzroy, Young and Smith Streets should be constructed by the Trust, while the Council

made itself responsible for the sewers between Johnston Street and Victoria Parade. The Trust's Share of the work amounted to £7,020. For the drainage works within Melbourne, however the Trust had to pay in full, the City Council declining to contribute anything to their cost.

As built, the St Kilda line was the longest in the System. Beginning at the corner of Queensbury and Madeline Streets, it ran down Swanston Street over Princess Bridge, and then by way of High Street and Brighton Road to the terminus at the junction of the latter road and Chapel Street, a distance of over five miles. At the same time, the Domain Road - Park Street section was proceeded with, and subsequently was joined to the Parhran line, whose terminus was fixed in Chapel Street at Carlisle Street. The Toorak line began in Toorak Road at Chapel Street and ended at Irving Road. The engine house for the St Kilda line was erected at the corner of St Kilda Road and Bromby Street. Nearly 40 years afterwards, the cable system was electrified the site was sold, but the material took on a new form -- it became the handsome Chalet at which stands at the summit of Wattle Park.

With the completion of the short North Carlton line in Rathdown Street, four years of construction work ended in August 1888, and there was a brief lull before it was resumed and concluded finally the North and West Melbourne and South and Port Melbourne, and the St Kilda Esplanade lined. As stated previously, the intention originally had been to make North and West Melbourne horse lines. When it was found possible to carry the cables round curves, it was suggested that the West Melbourne line should join the Richmond line in

Spencer Street. Considerable opposition was shown that proposal ; so much so that it was abandoned, and while the line was brought into Spencer Street, it was then turned down Lonsdale Street and into Elizabeth Street.

So far as the Port and South Melbourne lines are concerned, a change from the original intention was made here also. On the completion of the Falls (now known as the Queen's) Bridge, it was found that it would be dangerous as well as difficult owing to the acute angle to bring the trams down Queen Street. An Act was passed in 1889, therefore, allowing the tramway to use Market Street. By putting in an auxiliary cable, the trams were enabled to swing into Collins Street, and the South Melbourne cars continued on to North Fitzroy, while the Port Melbourne trams terminated at Gisborne Street.

When the question of drainage at Port Melbourne came up for consideration, the Government proposed that the Trust should contribute £5,000 towards the cost of the Port Melbourne Lagoon Scheme. The Trust objected strenuously to the proposal. It was pointed out in a petition to Parliament that the scheme would not drain the cable tunnels satisfactorily, and that to charge the Trust £5,000 for a work which would be of no benefit to it would be unjust. Parliament saw the logic of the objection, and the proposal was withdrawn. The Trust dealt with the tunnel drainage by allowing it to flow back into a pit at the engine-house, and from there at small cost pumping it into the ordinary drainage channels.

When the last line, that to the St Kilda Esplanade, was constructed in 1891, the construction programme of the Trust was completed. Up to the 31st July, 1892, the total expenditure of the Trust had been £1,671,966.

"I may congratulate the Trust," wrote the Chairman (Mr. H. Jennings) in a report dated the 19th August, 1892, "and the Municipalities on the completion of this noble system of street locomotion. The whole of the works have been carried out without any serious accident, with but a trifling outlay on account of litigation, and with a minimum of inconvenience to the public ; and at the termination of the leases on 1st July, 1916, the Municipalities will enter into possession of a splendid remunerative property entirely unencumbered by debt." It is as well that the events of the future are hidden from us ; had Mr. Jennings possessed any inkling of what was to take place it is highly unlikely that the innocent jubilation of the quotation would have found its way into print.

Length of the Cables.

Throughout the years it is probable that more queries about the length of the various cables used have been answered than those about any other part of the system. The following table sets out the length and weight of the various cables as they were in 1891 :--

Line	Length in feet	Weight	
Richmond-Spencer to Riddle Street	24,870	18	8
To Hawthorn B'idge	14,754	10	17
Flitroy-Spencer to Brunswick St.	16,920	16	11
Brunswick Street	22,650	22	9
Victoria Street	22,380	21	18
Bourke to Gertrude Street	12,780	17	19
Nicholson Street	19,080	20	2
Collingwood	23,880	25	7
Elizabeth Street	31,620	35	8
Sydney Road	16,698	17	15
Marion (from Flinders Street)	25,400	22	15
Johnston Street	15,000	14	5
Flinders Street to Domain Road	14,500	12	14
Domain Road to Brighton Road	30,240	25	8
St Kilda Road to Chapel Street	17,640	14	15
Chapel Street	27,210	18	9
Tonrak Road (from Chapel Street)	15,870	12	15
North Melbourne (City)	10,889	9	5
" (Flemington Road)	12,919	11	3
West Melbourne branch	17,422	14	17
Port Melbourne (City)	10,815	9	5
" (Beach)	16,794	14	8
South Melbourne	22,626	19	2
St Kilda Esplanade	20,940	23	17

Line	Length in feet	Weight	
		Tons	cwts.
Richmond-Spencer to Hoddle Street	24,870	18	6
" To Hawthorn Bridge	14,754	10	17
Fitzroy-Spencer to Brunswick St.	16,920	16	11
" Brunswick Street	22,680	22	9
Victoria Street	22,380	21	18
Bourke to Gertrude Street	12,780	17	19
Nicholson Street	19,080	20	2
Collingwood	23,880	25	7
Elizabeth Street	31,620	33	6
Sydney Road	16,698	17	13
Carlton (from Flinders Street)	23,400	22	15
Johnston Street	15,000	14	5
Flinders Street to Domain Road	14,580	12	14
Domain Road to Brighton Road	30,240	25	6
St Kilda Road to Chapel Street	17,640	14	15
Chapel Street	22,110	18	9
Toorak Road (from Chapel Street)	15,270	12	15
North Melbourne (City)	10,889	9	5
" (Flemington Road)	12,919	11	3
West Melbourne branch	17,422	14	17
Port Melbourne (City)	10,815	9	5
" (Beach)	16,794	14	8
South Melbourne	22,626	19	2
St Kilda Esplanade	20,940	23	17

Receipts-passengers-mileage.

It has been indicated that the cable trams were popular from the start. In the tables which follow, it will be reserved that the revenue trebled in six years, from £188,530 in 1886 to £562,540 in 1891. The following year saw the first rumblings of that financial blizzard, popularly known as the bursting of the land boom, which before it ended ruined banks and thousands of investors and property owners and led to wide-spread and prolonged unemployment. The repercussions of the catastrophe were so immense, the effects on the commercial, industrial, professional and social life of the time were so pronounced, that development languished for many a year. Wages fell to such a low level that it is not surprising that the cable undertaking suffered severely. Indeed, 18 years passed before the revenue of the Tramway Company exceeded the income for 1891. During the first 37 years, the figures given included the returns from the horse-drawn trams and buses ; from the 4th November, 1923, horse-drawn trams ceased to exist, the Royal Park line being the last to go, and therefore the details from that date relate exclusively to cable trams. Owing to the fact that the books of the Company were destroyed after the undertaking passed to the Temporary Tramways Board in 1916, it is not possible to show the cable tram revenue separately from 1885. The £1,000,000 mark was reached for the first time in 1920, and the peak of cable revenue (£1,254,282) in 1923. Conversion operations began to play their part in the following year, and since then, as the number of cable routes decreased the cable revenue has declined correspondingly. The statistics are as follow :--

Year	Revenue	Passengers	Miles
1886	188,530	10,223,850	1,254,282
1887	207,329	22,026,512	1,254,282
1888	362,540	31,132,444	1,254,282
1889	526,540	35,000,364	1,254,282
1890	527,342	35,473,578	1,254,282
1891	562,540	48,044,826	1,254,282
1892	511,914	35,323,439	1,254,282
1893	407,929	38,404,526	1,254,282
1894	359,546	34,707,822	1,254,282
1895	348,293	33,591,493	1,254,282
1896	346,588	33,482,033	1,254,282
1897	353,915	35,376,835	1,254,282
1898	370,477	36,842,185	1,254,282
1899	389,427	38,075,210	1,254,282
1900	415,043	41,661,530	1,254,282
1901	467,489	47,195,647	1,254,282
1902	456,327	47,261,512	1,254,282
1903	442,221	48,004,368	1,254,282
1904	454,722	50,882,416	1,254,282
1905	459,484	52,205,612	1,254,282
1906	479,034	53,006,721	1,254,282
1907	518,348	60,558,099	1,254,282
1908	557,438	65,507,120	1,254,282
1909	578,831	68,194,052	1,254,282
1910	593,424	70,303,906	1,254,282
1911	649,847	77,211,842	1,254,282

Year	Revenue	Passengers	Miles
1886	188,530	16,353,850	4,136,141
1887	207,329	22,026,612	5,176,024
1888	362,580	31,133,444	6,603,564
1889	526,588	45,000,364	7,901,410
1890	527,342	45,273,578	8,430,483
1891	562,540	48,044,826	9,519,292
1892	511,914	43,825,439	8,892,077
1893	407,929	36,404,556	8,594,174
1894	359,546	34,787,652	8,260,016
1895	348,293	33,591,485	8,046,380
1896	346,582	33,482,003	8,005,987
1897	358,915	35,376,835	8,117,109
1898	370,477	36,842,166	8,261,813
1899	389,427	38,875,210	8,364,707
1900	415,023	41,661,580	8,411,159
1901	467,489	47,195,647	8,964,733
1902	456,327	47,261,572	9,226,883
1903	442,221	48,004,366	9,494,391
1904	454,722	50,002,416	9,296,737
1905	459,484	51,105,612	9,264,376
1906	479,034	53,806,721	9,364,154
1907	518,548	60,558,098	9,961,804
1908	557,438	65,567,120	10,252,870
1909	578,831	68,194,052	10,300,888
1910	593,424	70,305,906	10,433,491
1911	649,847	77,211,842	10,872,103

1912	718,868	85,567,954	11,418,841
1913	753,153	89,852,766	11,925,258
1914	768,219	91,868,785	12,152,038
1915 ^a	735,645	88,060,123	11,977,920
1916	809,078	96,702,942	12,066,485
1917	862,721 ⁴¹¹ 923,744	107,700,441	12,746,830
1918	903,776	118,538,565	13,136,468
1919	968,330	124,299,932	13,466,728
1920	1,088,573	140,400,898	13,767,541
1921	1,145,335	149,048,681	14,068,981
1922 ^b	1,230,690	151,201,763	14,634,818
1923	1,254,282	155,820,153	14,842,224
1924	1,184,009	147,800,506	14,716,919
1925	1,185,051	148,316,398	15,285,913
1926	1,041,453	127,882,115	12,393,911
1927	1,004,794	99,978,416	9,817,468
1928	836,557	83,004,759	8,410,528
1929	786,101	77,930,235	8,151,392
1930	598,041	58,692,072	6,545,033
1931	450,848	43,985,782	5,613,839
1932	403,846	39,471,661	5,414,348
1933	402,323	39,770,484	5,410,210
1934	406,439	40,399,762	5,410,098
1935 ^c			

a from 3/5/16 cable and Horse trams only.

b from 4/11/23 Cable trams only.

c St Kilda Cable line stopped 29th May, 1925.

d Chapel Street cable Line stopped 28th August, and Toorak Line 1st October, 1926.

Why a Prophecy was Unfulfilled.

On a previous page the prophecy of the Chairman of the Trust in 1892 that the Municipalities would on the termination of the lease in 1916 inter into the possession and enjoyment of the splendid, remunerative property represented by the cable tramways was quoted. It may be set down here why the prophecy was unfulfilled, and how the Municipalities which had pledged their rates as security for the capital expenditure involved in the construction of the tramways lost their property, receiving only in return the cancellation of the debentures each Municipality was responsible for to the Melbourne and Metropolitan Municipal Loans redemption fund, and which were due for repayment 18 years later. The story explains also how the present Tramways Board came to be saddled with the moneys paid previously by the Government of the day for the Fire Brigades Board, the Infectious Diseases Hospital and the Licensing Fund.

When the future of the tramways came to be discussed there were, in addition to the Trust, five other Tramway Trusts in existence in the suburbs, as well as the North Melbourne Tramways and Lighting Company, which had a 30 years franchise under a delegation order from the Councils of Essendon, Flemington and Kensington. The two latter Councils were subsequently absorbed by Melbourne. Various conferences took place between the representatives of the Metropolitan Municipalities with the view of establishing a Municipal Tramways Trust or Board. The first proposal was that the Municipalities should be divided into groups, and that these groups should elect eleven members to form the Trust. It was found that no agreement could be reached along these lines. The Government then put forward the proposal for a Trust of 14 members, 12 to be elected by the Municipalities and two to be nominated by the Government. For the purpose

the Metropolitan area was to be divided into certain electoral divisions. That, it was found, would be both cumbersome and costly, as the constituencies to be established would be much larger than the Parliamentary Divisions. Eventually the Government abandoned that proposal in favour of a nominee Board, which would take over the various Municipal Tramway Trusts and would acquire also the tramway interests of the North Melbourne Tramways and Lighting Company, the State Electricity Commission taking over the lighting portion of that undertaking.

With the ground so far cleared, Sir Alexander Peacock introduced the Melbourne and Metropolitan Tramways Authority Bill on the 28th August, 1917. That measure had so few friends that it was not persevered with. The following year the Lawson Ministry introduced the Melbourne and Metropolitan Tramways Bill. In that Bill, which was passed in due course, it was provided that provision should be made for the determination of the total amount of each Municipality's contribution to the Melbourne and Metropolitan Municipal Loans Redemption Fund, and provided further that for the purposes of the determination the cable surplus should be deemed to be responsible for the cable tramways £827,000. The group of Municipalities had naturally been looking forward to receiving that surplus. The reason for the act of confiscation proposed by the Government lay in the fact that the Government had a loan of £4,000,000 falling due in London. In order to give a good impression in London and so facilitating the conversion of the loan, it was resolved that the new loan should be limited to £3,000,000, and that the remaining £1,000,000 should be paid off by taking the cable profits, estimated at £827,000, and raising the balance from other sources. The Municipalities protested against that proposal strongly but vainly. While the Government would not budge from the position it had taken up, it lessened the

opposition somewhat by agreeing to write off a corresponding amount of the debentures which were due for payment by the Municipalities in 1935. When the final accounts of the cable tramways were adjusted, it was found that the surplus upon which the Government had counted would be short of the estimated amount by £60,000. That error was remedied easily. Promptly the Government passed another Act (No. 3023) making that sum a charge upon the revenue of the shortly-to-be-constituted Melbourne and Metropolitan Tramways Board !

Another lever employed by the Government to stifle opposition to its proposals lay in the clause which made the Tramways Board responsible for recouping the moneys paid hitherto by the Government to the Fire Brigades Board, the Infectious Diseases Hospital and the Licensing Fund. Although the Municipalities objected to the tramway revenue being saddled with payments for matters which had no concern with street transport, they soon found that they would either have to consent or pay the moneys themselves. The Hon. A. Robinson (now Sir Arthur Robinson), speaking in the Legislative Council on the 14th August, 1918, described how he had gained the consent of the Municipalities to the proposal of the Government. Here is what he said :--

"I am prepared to place the responsibility for these payments on the Municipalities, and not on the tramway receipts, if you prefer it that way. You say that the amount should not be taken from the tramway receipts. Will you pay them from the Municipal receipts? The Government is not going to pay them in future.' When they saw the position I took up, they consented to the proposal of the Government."

Prior to the expiry of the cable tramway lease in 1916, legislation was passed providing for the appointment of a Temporary Tramways Board to run the cable tramways pending the passage of legislation for the control

the Esplanade rope being stopped on the 29th August, 1925., work being of the whole of the tramways within the Metropolitan area. From that Act of 1915 the Northcote cable tramways were excluded. Under the Chairmanship of Mr. Colin Templeton, the Temporary Tramways Board managed the cable lines until they passed to the present Melbourne and Metropolitan Tramways Board, under the Chairmanship of Mr. Alex. Cameron, on the 1st November, 1919.

Conversion Operations.

One of the first acts of the Melbourne and Metropolitan Tramways Board when it took office in 1919 was to set about the planning of a comprehensive general tramway scheme for the metropolis as a whole. The through-routing of the electric cars from Coburg, North and Preston to very obvious defects and inconveniences of a cable system surrounded on three sides by electrical systems, most of which were unconnected one with the other, could not, it was recognised, be endured much longer. The need for a complete and unified system being admitted, the sole question for consideration seemed to be what form of traction should be adopted. In order to secure first-hand information and guidance in the decision which it would be called upon to make, the Board requested the Chairman to undertake an extensive tour abroad. Leaving early in 1923, the Chairman visited and investigated fully many of the tramway systems of Great Britain, the Continent and the United States and Canada. Following upon his report, the Board came to the conclusion that ^{electric} tramways for mass transportation would remain the chief means of street transit for many years to come, and decided to embark upon a programme for the gradual conversion of the cable system to electric traction. The Parliamentary Standing Committee on Railways inquired into and approved of the Board's plans, and a start was made with the Swanston Street-St Kilda Road line,

the Esplanade rope being stopped on the 29th August, 1925., work being begun two days later. By the 27th December the Esplanade, Fitzroy Street and Wellington Street section had been completed. During that period, temporary electric tracks had been laid in St Kilda Road between Fitzroy Street and Domain Road, so that when the Swanston Street and Brighton Road cable ropes were stopped on the 26th December, the Board was enabled to put an electric service to St Kilda via South Melbourne and St Kilda Road into operation. By working continuous shifts, the contractors were able to complete the conversion of Swanston Street in less than four weeks. The completion of the Swanston Street section allowed of the through-routing of the electric cars from Coburg/ North and Preston to the southern suburbs on the 24th January, 1926. On the 28th March, the section of St Kilda Road from City Road to Park Street was completed, thereby obviating the detour via South Melbourne. On the 9th May, the permanent tracks in St Kilda Road were ready for traffic, and a week later the tracks in High Street, Prahran, and Commercial Road were connected to St Kilda Road, thus enabling the people of East Malvern, Glen Iris, Deepdene and Gardiner to travel direct to the city without change of tram. The conversion of the High Street, St Kilda, and Brighton Road section, together with the extension to Elsternwick, were completed and opened for traffic on the 29th August, 1926. Thanks to the completeness of the plans prepared by the Chief Engineer of the Board and his staff, and to the skill of the contractors, all these works were completed well in advance of the completion date specified in the contract. In all, the contract involved the conversion of 14.15 miles of cable tracks.

While these works were in progress, plans and specifications were being prepared for the conversion of the Chapel Street and Toorak lines.

The contract comprised the conversion of the Toorak route, the construction of a double tramway track extension along Toorak Road from Irving Road to Glenferrie Road, the conversion of the Chapel Street line, and the construction of a double track extension along Chapel Street from Carlisle Street to Brighton Road. The Chapel Street line was the first to be dealt with, the rope being stopped on the 28th August, 1926. Within two months the electric trams were running from Windsor Station over the Church Street Bridge to Victoria Street and Princes Bridge. On the 19th December, the converted section between Windsor Station and Carlisle Street and the extension to Brighton Road were opened for traffic. The Toorak rope was taken out on the 1st October, and the electrified line to Orrong Road was opened for traffic on the 17th April, ^{1927,} the extension to Glenferrie Road being put into operation on the 8th May.

The electrification of all the lines south of the Yarra having thus been completed, the way was clear for the conversion of the cable routes to the east and the north. The natural first choice was Richmond, as the conversion of that line would enable connection to be made with the Hawthorn electric system. The first section, Spencer Street Station to Swanston Street, was closed on the 15th May, 1927, and by working three shifts the electric lines were completed and in operation by the 14th July. The remaining section, Flinders Street at Swanston Street, Wellington Parade and Bridge Road, was opened on the 4th December. This brought up the total conversions to 32.172 miles.

Early in 1929, ~~during 1928~~ plans and specifications for the conversion of the Victoria-Collins Street line were completed. The contract called for the conversion of the cable line in Collins Street, Gisborne Street, Victoria Parade, and Victoria Street, and the construction of permanent

way located in the centre of the tree reserves in Victoria Parade. The latter work resulted in the permanent beautification of that thoroughfare. The old, unsightly plantations disappeared, their place being taken by well-grassed lawns and trim hedges, with the tramway running through the centre and so leaving the roads on each side free for all other traffic. Work was commenced on the 17th June, 1929, and completed on the 8th December. The total mileage of cable track was by this conversion reduced to 26.44 miles as compared with the original mileage of 45.9 miles when the programme was started in 1925.

In order to obtain the full value from this conversion, it was necessary to complete as soon as possible the conversion of the Brunswick Street line. Work on this section began on the 14th July, 1930, and finished on the 25th October. This conversion enabled the East and West Preston services to be routed direct to the city via Brunswick and Collins Streets instead of via Swanston Street, thereby effecting a large saving in car mileage and consequent operating expenses.

By this time the revenue of the Board had begun to suffer severely as the result of the prevailing financial and industrial depression, and in consequence the conversion of the Brunswick and North Melbourne lines had to be postponed. When the outlook became more encouraging in 1934, the Board decided in June that conversion operations might be resumed. The long and detailed surveys necessary because of the multiplicity of drains, and gas, water, and electricit mains below the surface level of Elizabeth Street were at once begun, and when these were completed plans were soon in course of preparation. It was decided that the West Melbourne line should be abandoned and given over to bus operation, and that the conversion of the North Melbourne and Brunswick routes should be treated

an one contract. The North and West Melbourne ropes were stopped on the 20th July, 1935, and the first section of the conversion, that to the conjunction of Victoria Street with Elizabeth Street was completed on the 29th September. It is expected that the whole work will be completed by the end of April, 1936, after which the remaining cable routes will be those of Port and South Melbourne, Nicholson Street, Clifton Hill, Northcote, Collingwood and Rathdown Street.

Thus it will be seen that the day of the cable tram is drawing rapidly to a close, and that soon they will be but a memory to be wakened into temporary life by the sight of a dummy forming the nucleus of a mountain shack or a shelter at some bayside resort. Kindly laughter will centre round these old relics, mute reminders of a system of transport which for many a year served Melbourne well.