

THE CONFERENCE ASSEMBLED IN THE BOARD ROOM OF
THE MELBOURNE AND METROPOLITAN TRAMWAYS BOARD, 616 LITTLE
COLLINS STREET, MELBOURNE, AT 9.00 A.M., 13TH OCTOBER,
1953.

THERE WERE PRESENT:

- | | | |
|-------------------------|---|-------------------|
| ✓ MR. A. A. SHOEBRIDGE, | Commissioner for Government
Transport, New South Wales. | |
| MR. R. J. H. RISSON, | Chairman, Melbourne and Metro-
politan Tramways Board. | |
| ✓ MR. S. L. QUINN, | General Manager, Brisbane City
Council Transport Department. | |
| ✓ MR. J. N. KEYNES, | General Manager, The Municipal
Tramways Trust, Adelaide. | |
| ✓ MR. J. H. NAPIER, | General Manager, Western Australian
Government Tramways and Ferries. | |
| ✓ MR. C. R. GRIBBLE, | Manager, Auckland Transport Board. | |
| ✓ MR. H. B. MURN, | Engineer and Manager, Hobart
Municipal Tramways. | |
| MR. H. A. WARNER, | Secretary) | |
| MR. D. H. EAKINS | Chief Engineer) Melbourne and | |
| MR. G. F. WRAITH | Manager) Metropolitan | |
| | |) Tramways Board. |
| ✓ MR. G. WAKELEY, | Assistant Secretary, Department
of Government Transport,
New South Wales. | |

The Chairman of the Melbourne and Metropolitan
Tramways Board (Mr. R. J. H. Risson) welcomed the visitors
to Melbourne.

Mr. Risson was elected Chairman of the
Conference.

ITEM 3. - TRAMS VERSUS TROLLEY BUSES VERSUS MOTOR BUSES.

(See also Appendices 3 & 4)

MR. SHOEBRIDGE: I would say that this problem has been examined at considerable length as far as Sydney's conditions are concerned. We have reached the conclusion overall that on economic grounds the diesel bus with driver only is the vehicle for the future for Sydney's surface transport. We have operated 25 trolley buses since 1936 and we do not like them well enough to consider seriously encouraging any extension of their use. We will wear out what we have got and replace them with diesel buses. One element in the picture is their great and growing street congestion.

CHAIRMAN: What size bus do you think you will be using?

MR. SHOEBRIDGE: Present one-man buses carry 31 seated and 20 standees. We do not contemplate extending that for complete one-man operation in the next few months because we have enough of this type of bus to cope. We have 172 of that type of bus and we only use 72 one-man buses.

MR. KEYNES: We have made, over the last 12 months, an economic study of this subject. Quite shortly, our policy is to go in largely for the diesel bus. If we can increase the capacity of our vehicle that may tend to reduce the capital cost and operating costs because there are fewer units to buy and to run, and fewer units to maintain. For that reason, we, like Sydney, plump for diesel buses. We have a number of trolley buses, some of them are quite new, and it looks as if they will not be replaced.

CHAIRMAN: The size of the one-man buses?

MR. KEYNES: I personally doubt whether we would get Parliament to agree to a 9-foot width. It may increase to 8 feet 6 inches. We contemplate 35 feet long, but we may be a little vulnerable because if we get an Australian standard it is tentatively set at 33 feet.

MR. SHOEBRIDGE: That is suggested as the maximum, not as a standard.

MR. QUINN: Some few months ago we had a change of Council and it was necessary for the Council to decide what type of transport it had to be, having regard to transportation costs. All through the War we were modernising and increasing our cars and after 15 years all of our tram tracks have been put into solid concrete, with the result that they have a very long life except for about 10% which is worn out and old macadam. In addition, bus transportation in Brisbane is having a pretty rough spin. Firstly, we have to pay the registration on our vehicles just the same as a private operator would, or a carrier. We have to pay the Government 4% of our revenue as a tax to the Commissioner of Main Roads. That means that we start off a bit behind scratch from an economic basis. If we were to convert our tram system to buses over a period of years this tax alone, apart from the interest and depreciation, would be equal to 10% on a capital expenditure every year of about £2,000,000 for road improvement. The Council agrees with me that with a reasonably

MR. QUINN (Contd.)

modern track and also a high percentage of modern vehicles it would be unwise to start scrapping them and replace them with something which is going to be considerably more expensive. We are actually scrapping more cars than we are building but we are increasing the capacity of each vehicle we convert. I do not think we will build more tramcars. Our experience with trolley buses, so far, has not been encouraging. That is due to the value of novelty, and also to the fact that it ties in very considerably with an apartment scheme which is out of the heart of the City. I have since installed another, and propose to extend that to use up a fleet of thirty trolley buses purchased some years ago. We find trolley buses very popular. It is too early yet to make any comparative costs with Diesel buses although we anticipate they will be considerably less.

CHAIRMAN: You have already indicated that it is intended to replace trams by one-man buses and trolley buses?

MR. QUINN: Yes.

MR. GRIBBLE: There is no alternative but to modernise, and in Auckland with its hills and its power produced at .7d or .8d. per unit the trolley bus is the vehicle. It is not so flexible as Diesel, so with peak periods we are supplementing trolley buses which run express.

MR. NAPIER: This may be of some interest - the cost to us in Perth of the three classes of vehicle ... (Appendix 3)

MR. GRIBBLE: Before Mr. Napier starts, I do not believe in looking at costs all the time. From our own experience people prefer to ride in trolley buses to Diesel buses.

CHAIRMAN: Quietness and smoothness?

MR. GRIBBLE: Stability, quietness. It does not wander round a road like the Diesel bus but is more or less tied.

MR. NAPIER: These costs are purely by way of interest. So far as Perth is concerned, trams are on their way out. The one reason is that our tracks and foundations are done. It runs us into £24,000 a mile single track to rebuild, and then we have trams varying in age from 25 to 40 years, so that we would have to modernise our trams. We have had experience of both vehicles, and from the point of revenue-earning in Perth there is nothing to choose between trolley and omnibuses. From the point of view of riding comfort the trolley bus wins, but against that the trolley bus is definitely nowhere in the same picture from the point of flexibility. Where you have an area developed only over a few years, the omnibus offers the very best class of vehicle to the operator. Working expenses are, for omnibuses 29.73d. and for trolleys 44.76d. Overall there is a very distinctive advantage so far as the one-man omnibus is concerned.

If we converted to one-man (see sub-para. (b) of Appendix 3) and brought trolley buses to one-man operation, then traffic wages would be reduced to 10.03d. per mile. Working expenses would still favour omnibuses.

- MR. GRIBBLE: Are the trolley buses and omnibuses operating equally?
- MR. NAPIER: Omnibuses are working on outer lines. Schedule speed is 12. We base our journey times on 12, both trolleys and omnibuses, both for one-man and two-man operation.
- MR. QUINN: You show wages per mile on trams nearly 40% above wages per mile on two-man trolley buses. Can you explain why there is such a big difference?
- MR. NAPIER: With the trams we are obliged to carry a greater staff. We do not get the same man hours with our tram crews as we do with trolley bus crews. There is more waste time on trams.
- CHAIRMAN: Mr. Napier, passengers per mile in each case, or alternatively, revenue per mile?
- MR. NAPIER: Passengers per mile: for trams 10.90, trolleys 5.71, omnibuses 4.41.
- CHAIRMAN: Then trams are cheapest. Your overall cost per passenger-mile on trams is 7d., trolleys 9½d., omnibuses nearly 8d.
- MR. NAPIER: The earnings per passenger: 6.46d. on trams, 7.54d. on trolleys, 7.71d. on omnibuses.
- CHAIRMAN: That is because of different routes. If you put them on the same route the earnings would be the same.
- MR. KEYNES: What percentage more of trolley buses would you have to put on tram routes to carry the same passengers?
- MR. NAPIER: We consider you need 100 trolleys to 60 trams.
- CHAIRMAN: We say 2 trams, 3 buses. That is really flattering the buses a bit, I think the Chief Engineer would say?
- MR. EAKINS: About right, with big buses.
- MR. MURN: Our policy in Hobart is to change eventually to trolley buses, or at any rate get away from trams. We will not be doing any more converting immediately. The relative figures are difficult to arrive at because our trams are old, bought at a cheap rate, and our trolley buses new. These are the costs of our present fleet... (Appendix 4)
- THE CHAIRMAN: It appears that Melbourne is still the heretic. We are still building tramways under very special conditions at present, and I think in the future possibly to a limited extent. Our actual costs may be of interest. They are on pages 10, 11 and 12 of the Annual Report, which you have, and show the record of the last two years' operations. At the top of page 12 you will see that tram operation overall cost 54d., bus operation 57.8d. Against that, trams gave a revenue of 55.85, buses 44.26. That is part of the answer. I must say that a great deal of that answer lies on present day costs versus actual cost of existing capital assets.

MR. KEYNES:

You paid off most of your capital?

CHAIRMAN:

No, we are still debiting capital charges, but the bulk of our tramways were constructed in the twenties and thirties, when costs were 30% of today's figure. That is a very big item, and were we to construct those same tramways, permanent way and rolling stock today, our capital charges would be a great deal more. Nevertheless, that is not the whole of the story. Another very great portion of it is the greater revenue we get from trams, and the fact that they are subject to heavy overcrowding. We carry at peak hours 50% more passengers on a loaded tram than bus. At times even higher. We are about to put trams back into Bourke Street and thence to Northcote and East Brunswick. We think that we should never have put buses there in place of trams. We had cable trams there until 1940. It was certainly an economical proposition to put in electric tramway and very definitely has been up to the recent past, anyway, on account of the density of loading, sufficient to justify trams. I said, until the recent past. There are other factors and I mention these because they influenced Melbourne's decision in the matter. Some years ago the Board decided to put trams back. It promised the municipalities that they would be put back. We had still on those routes the old cable tramway which is now in a very poor condition of maintenance. We are obliged to continue to maintain it. We will be obliged to replace it with a first-class pavement. It is one of the main streets of this City; it is one of the main shopping areas of the inner suburbs. An economic appreciation of the economy of replacing the present system by trams, taken out just recently on present day costs, in perpetuity, showed practically nothing between them except for one factor - replacement of the cable tracks by a new first-class roadway. That, on economic conditions, is the deciding factor. If it were not for our commitment to that cable tramway, it would be an even break, but the first-class pavement we would have to substitute will cost £45,000 a mile.

Suppose we look for a moment at the community's point of view. If we put buses there we are relieved of all road charges except certain road taxes, whereas at present, if we put in a tramway we are going to provide some 20 feet of the pavement. If you look at it from a community point of view there is a distinct balance in favour of the trams, because in our approach we are taking account of that 20 feet of pavement and providing for it. So that if we were municipally owned, from the point of view of the municipality, I think there would have been distinctly a case on balance in favour of trams.

There is a larger feeling in favour of trams in Melbourne than in any of your cities. Melbourne, I have been told and my impression is, is tram minded. There is a greater inclination on the part of the travelling public for trams here than in most other cities in this country. In addition, and this may be somewhat at the back of this inclination, we have almost everywhere that we operate tramways wide streets. Adelaide is the only city you can compare with. Having said that I think I should say that it is problematical if there will be a great deal of tramway extension in Melbourne. Certain suburban routes will probably be extended a bit. Beyond that we are getting to the stage where the length of journey is becoming too great. We have 7 or 8-mile routes. With one exception our longest trip to the City is 45 to 48 minutes and that

is about far enough. The most southerly one is $9\frac{1}{2}$ miles; it is too long for passengers to travel into the City except in limited numbers. We have not yet used trolley buses in Melbourne. We probably will in the future but we will be hastening slowly. We did feel there were difficulties in the last three years and did not wish to add to them. We will be primarily tram for a long time to come; we will remain open minded.

ITEM 3 (b) - SINGLE DECK VERSUS DOUBLE DECK BUSES.
(See also Appendices 5 & 6)

It was agreed that, except in England, double deckers are outmoded. Single deckers cost less, are cheaper to maintain, load better, can be better controlled by conductors and can be one-man operated.

APPENDIX 3.

ITEM 3 (a). - TRAMS VERSUS TROLLEYBUSES VERSUS OMNIBUSES.

Perth's overall costs per vehicle mile are:-

1952 - 53

Cost in pence per vehicle mile.

	Trams 2 men	Trolley- buses 2 men	Omnibuses 1 man
Administration and Insurance	11.54	8.00	8.00
Wages - Drivers and Conductors	26.28	19.10	11.35
Cleaning, Lubricating, Tickets, etc.	3.63	3.92	2.38
Liquid Fuel or Electric Power	7.57	5.40	2.82
Repairs and Renewals	7.18	5.47	4.86
Overhead Lines Maintenance	3.15	2.44	-
Permanent Way Maintenance	10.26	-	-
Sundry Expenses	0.27	0.43	0.32
Working Expenses (all above)	69.88	44.76	29.73
Interest	2.66	2.54	1.31
Depreciation	4.56	3.43	3.52
Overall Cost	77.10	50.73	34.56

(a) Liquid Fuel cost - 1/11½ p.c.

Traction Power Cost:

1st 200 units	3.64d.	per unit
Next 4800 "	3.14d.	" "
Next 50000 "	2.64d.	" "
All Over 50000"	2.04d.	" "

(b) If trolleybuses were operated without Conductors traffic wages would be 10.03 pence per mile, Working Expenses 34.73 pence and Overall Cost 40.70 pence.

(c) Comparative Capital cost of trolleybuses and omnibuses based on recent purchases:

<u>50 Guy Omni- Buses</u>	<u>Date Order Placed</u>	<u>Date Com- pleted.</u>	<u>Cost</u>	<u>Each</u>
Chassis	July 1949	June 1951	£137,236:19: 6	£2,758:14: 9
Bodies	Aug. 1950	Nov. 1952	160,842:18: 3	3,216:17: 3
			<u>£298,779:17: 9</u>	<u>£5,975:12: 0</u>
<u>50 Trolley Buses</u>				
Chassis	Dec. 1946	Oct. 1949	£171,965:17: 4	£3,439: 6: 5
Bodies	May 1948	June 1953	191,294: 2: 8	3,825:17: 7
			<u>£363,260: 0: 0</u>	<u>£7,265: 4: 0</u>

(d) Age of trams 20/40 years.

(e) If 2 men were to be employed operating each omnibus:

Traffic Staff would be increased by 69%.

Vehicles required would be reduced by 20%.

APPENDIX 4.

HOBART MUNICIPAL TRAMWAYS

ITEM NO.3 - MODERN SUBURBAN TRANSPORT.

Urban transport is undoubtedly a public utility but it must also be regarded as a business undertaking, the efficiency of which depends not merely upon the type of transport vehicle which is employed but upon the ability of the administration to satisfy the requirements of the general public for comfort and convenience of service, including adequacy, frequency, speed, and the cheapness of fares.

To a still greater extent the efficiency of a system depends upon the ability of the administration to sell their transport in such a way as to provide for all capital charges, renewals and improvement and adjustment of services to follow the movements of the population. The policy of the administration must be such as to satisfy all these requirements and the question for examination is what methods of management and control are likely to produce the best results and attain these various objectives.

It is the express duty of the transport authority to give the best transportation available at the lowest possible cost without profit and it is enjoined to fix such fares and charges as will make the revenue sufficient to make all facilities self-supporting.

It is now generally agreed that different types of vehicles have definite fields of usefulness and it is equally agreed that, to ensure the most efficient and cheap transport for the public generally, all forms of transport should be operated in their respective economic fields of service.

Of course, there are plenty of people interested in running down tramways. There are people — some very big and powerful interests in the transport world — who are always talking something else besides tramcars. Papers frequently carry propaganda attacking the tramway system and of course that propaganda has to a large extent been propagated by people who have personal and private interests.

Nowadays everybody wants to be taken to their work as quickly as possible. If the trams do it well then the trams are all right, and if they do not, then the trams are no good at all.

However it is quite true that we cannot scrap our old systems as long as they have a usable life but it is also true that from the administration side we must not shut our eyes and say that in the present tramway system we have the only perfect system and that other methods which may be introduced should not be allowed to have preference over them. It is essential that the authority keep a live interest in the various localities and endeavour to serve them at a reasonable cost with the quickest and best means of transport.

Modern electric trams are without peer at present for peak period transportation, but, in many cities are a very serious cause of congestion owing mainly to their inflexibility in traffic.

Appendix 4.
(Contd.)

The motor car is a relatively inefficient means of moving people, but trams, which have a greater individual capacity than most other vehicles, cause delays, which has a marked effect on decreasing the overall capacity of streets. It follows that traffic congestion can probably best be minimised by the efficiency of the manner of development of mass transportation. Obviously people cannot be forced to use public transport, but by improving the service given, its use will be greatly extended. The greater use of public transport would materially assist in increasing road capacity measured in terms of passengers carried.

I am convinced that the principle of the ultimate conversion of Hobart's trams to trolley buses must be accepted as inevitable, but that it will be many years before the modern electric tram is completely abandoned here. However, as and when opportunity arises such as the heavy replacement of permanent way, reconstruction of roads or the planning of extensions, proper consideration must be given to all the conditions of the particular route before finality is reached as to the type of transport which can most satisfactorily and economically be used.

Comparative costs taken out for five months ending 31st May 1953 for the Hobart system are as follows:

<u>I T E M</u>	<u>TRAMS</u>	<u>TROLLEY BUSES</u>	<u>BUSES</u>
Platform staff	29.6	16.5	15.2
Maintenance (Vehicles) ..	8.5	7.6	11.7
(Perm. Way) ..	8.5		
Power	2.2	1.2	3.5
Other (incl. capital) ..	13.5	20.9	21.2
<u>TOTAL</u>	<u>62.3</u>	<u>46.2</u>	<u>51.6</u>
Capacity - seated ..	48	39	32
peak loading	80	60	50
Approx. pass. journeys p.a.	10 mill- ions	7 mill- ions	2 mill- ions
Approx. miles ..	900,000	883,000	340,000
Approx. passgrs. per mile ..	11	8	6

As a basic consideration it must be recognised that all trams have a conductor and a driver whereas all buses and trolley buses are one-man operated.

Power for use of trams and trolley buses is purchased under contract with the Hydro-Electric Commission under a 10-year agreement made in 1944. The present cost is 0.35 pence per K.W.H., but a substantial rise is anticipated in June next.