

# PUBLIC TRANSPORT IN BIG CITIES

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Nothing in the world stands still. And if it did it would wither. It goes either forward or backwards.

This is true of transport, including public transport, as of all else.

On page 7 is a photograph of a Melbourne cable tram (dummy plus trailer) 80 years ago. In its day it was a most modern and efficient vehicle. For 40 years, from the mid-1880's to the mid-1920's, it and others like it were the principal means of personal transport in Melbourne streets. Virtually everyone travelled by cable tram. Some of them continued in use until 1940, still efficient, if perhaps a little slow by then.

The cable trams made central Melbourne what it largely still is today — certainly for the radius of three miles or thereabouts over which they operated, and to a less degree beyond that, whence feeder services ran to the cable termini. It would not have been the city it is without them. The same can be said (though with less authority by an Australian) of Chicago, which had the largest cable system in the world, and of Glasgow, which ranked second, Melbourne being probably third.

And, despite the automobile revolution, it is still public transport (not cable trams but their ever more modern successors) that must make and maintain what the Americans call the CBD (Central Business District) of big cities. Otherwise city centres will become what Professor Buchanan (author, after lengthy and detailed research, of the striking report "Traffic in Towns" for the British Ministry of Transport some three years ago) has dubbed "motor slums". For, in his words:

"There is no difference in principle from saying that a school can accommodate so many children, or a dwelling so many people, if acceptable standards are to be maintained. There is some elasticity but not much. If you put too many people into a dwelling it soon becomes a slum, and that is what many urban areas all over the world are in danger of becoming from the presence of motor vehicles — motor slums."

Some commentators have called them, not motor slums, but "parking deserts", because if one attempts to provide parking space for all the vehicles that want to get into the CBD it will soon become one vast parking lot, with no city left worth coming to or to do business in.

## PUBLIC TRANSPORT VITAL

One sober estimate, American this time, is that if every office worker came to work by private

automobile, three floors out of each five would have to be given over to parking, leaving only two out of five (40 per cent) for the purpose for which the building was built.

Buchanan went on: "Of course, if you are prepared to spend money on making the physical alterations to the area, then you can maintain the environmental standards, perhaps even have better ones, and have a lot more traffic into the bargain. But when the density of development exceeds a certain figure it seems as though there is an absolute limit to the amount of traffic that can be accommodated, irrespective of how much is spent on alterations."

Therein lies a great deal of the case for public transport, even in the automobile age — by no means the whole of the case, but an important part of it, especially for travel to and from and within the Central Business Districts, the centre of the city, or indeed any substantially built-up industrial, commercial and retail or other business part of it.

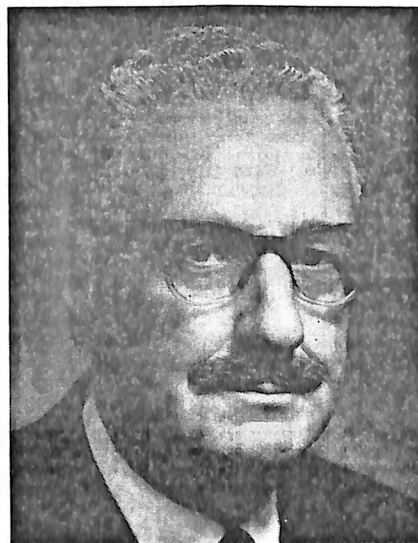
It follows that it is a shortsighted community indeed, with any confidence in its own future growth, that fails to ensure the maintenance of an adequate and efficient public transport system in its streets. Absolute need apart, it is also far cheaper than trying to fend off traffic coronary occlusions by spending vast sums on new traffic arteries that will never suffice in the long run anyway.

## TRAMS WILL STAY

We have advanced a long way since the cable trams, including (or may I say, particularly?) in Melbourne, which still has trams, and intends to keep them!

Have we advanced sufficiently? Has street public transport in this country kept pace with — or preferably kept a little ahead of — advancing technology, especially technology's spectacular development in the last two decades? No, it has not. And I fear that it has lagged behind some other parts of the world — still, not all of them; there are others behind us.

We have not kept pace largely because trams and buses and trolley-



buses (and railway trains also) are no longer thought glamorous, and there is a reluctance, therefore, to invest the resources in them, spend the money on them, that they merit in the public interest and which long-term prudence dictates as essential.

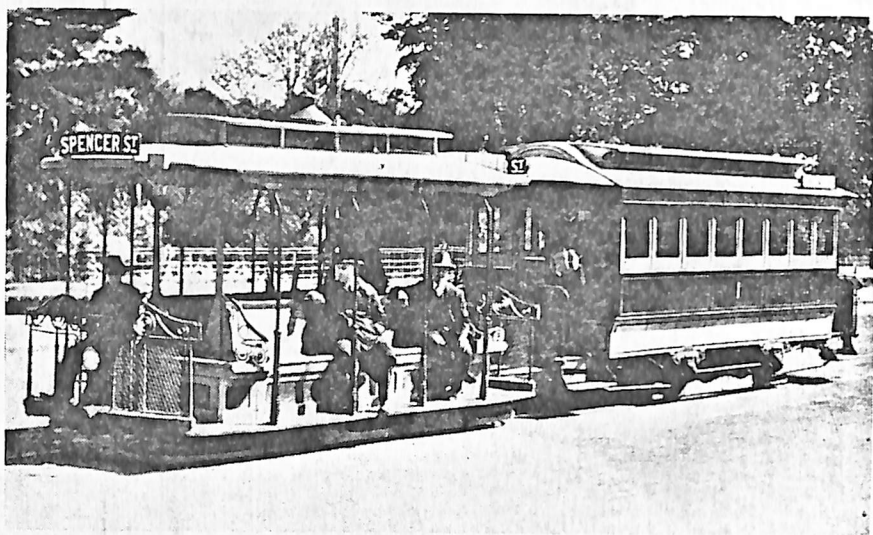
To look overseas again, to countries already at grips with the problems that are going to confront Australia's biggest cities within the next decade, or perhaps much earlier, this is the text of the first paragraph of a paperback, "The Exploded Metropolis", published by the editors of the influential American magazine *Fortune* a few years ago:

"Of all the forces reshaping the American metropolis, the most powerful and insistent are those rooted in the changing modes of transportation. The changes are so big and obvious that it is easy to forget how remarkable they are. The streetcar has all but disappeared, the bus is proving an inept substitute, commuter rail service deteriorates, subways get dirtier, and new expressways pour more and more automobiles into the centre of the town. The motorist is not strangling the city — as a matter of fact he drives in and out a lot faster than he thinks. But he is changing the fundamental character of the metropolitan area — and, many planners fear, for the worse."

Let me say, parenthetically, that the statement that streetcars have almost disappeared is, of course, written of America by an American, for American reading. Even so, there are still several thousand trams in North America. Disregarding Britain (with its narrow and often twisting streets hardly a model for Australian cities) trams are still the predominant means of street surface transport on the continent of Europe. They are likely to continue there (as in Melbourne) except as they are replaced by underground trains — or underground trams, which are becoming so plentiful that a new term has grown up to describe them: U-Tramways.

#### MUST DO EVEN BETTER

The chapter just quoted adds that, if any single invention can be



Now in Melbourne Museum, cable car No. 1 ran for 1.6m. miles between 1887 and 1940, Cable cars played a vital role in Melbourne's development.

credited with shaping the growth of the metropolitan area, it is the tram, which was unchallenged as the premier vehicle of mass public transport until the late 1920s. Without conceding that trams are finished, let alone their successors, every operator must recognize the urgent challenge to do better than we are doing — challenge and incentive.

Public transport generally is still much more important than is commonly realized by observers who see only the vast numbers of motor cars on the streets and quite overlook how few people these cars are carrying in proportion to the much greater numbers in public transport. This is particularly true of travel to and from the central city area in the morning and afternoon peak periods. Count them, averaging about one and a quarter people per car. All the people in many a traffic jam could be carried in two trams, or, if it is a really big jam, perhaps three trams.

In New York approximately 90 per cent of those who enter downtown Manhattan in the morning peak and leave it in the evening peak do so by public transport. It may be said that they must; that, otherwise, they would get neither in nor out. This is the extreme American example. But it is clearly only a matter of time before something the same will be true of other great cities, American and non-American.

In Chicago the corresponding figure is about 85 per cent; in Philadelphia and Boston, between 70 and 75 per cent: the bigger the city, the higher the percentage.

In London the figure is about 90 per cent, made up of some 39 per cent by the Underground, 36 per cent by mainline British Railways, 15 per cent by bus, and about 10 per cent by private car.

In Melbourne it is 75 per cent.

#### WHY CITIES WILL GROW

People today, the great bulk of them, want to live in cities, want the comfort or excitement of rubbing shoulders figuratively with their fellowmen; must have the attractions, the luxuries and the near luxuries of city dwelling, the ready availability of first-class entertainment and (let us be fair) of education and learning. Moreover, industry finds it more economical on many grounds to be located in areas of high population.

Right or wrong, therefore, big cities will continue to get bigger still, and this with increasing rapidity. The more they grow, the greater their traffic problems and, in due course, the greater their need of and demand for public transport — shared transport, because (other considerations apart; some of these weighty themselves) there will not be room for individual vehicles for all.

Men, and now more than ever before, women, want to travel. It



seems innate in them. Some travel further than others, many of them long distances. But even those who rarely leave their own city (except, maybe, on their annual holiday) travel extensively within it. And it is well that they should. The eighteenth century poet John Donne aptly put it "no man is an island, entire of itself; everyone is a piece of the continent, a part of the main." Men would be islands, metaphorically, but for the transport that enables them to move rapidly from place to place.

Most men work for their livelihoods, and so do more and more women. Irrational as it may be, they no longer live close to their workplaces, as perhaps they once had to. Because they now can, they choose to live in the more attractive residential suburbs, spending only their working hours in the industrial and commercial areas. A surprisingly large proportion, in fact, travel right across the city from one side to the other between home and work.

## TRANSPORT ESSENTIALS

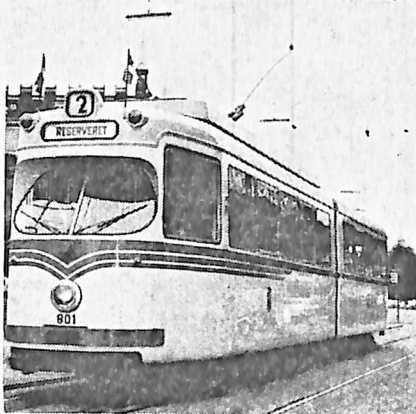
It is their travel to and from work that imposes the maximum demand on transport and on the roads the transport uses, whether they travel by public or private transport. The critical periods of going to work in the morning and returning home in the evening determine the magnitude of the transport services necessary and the necessary capacity of the roads they use. And the people, the workers, who travel in these periods provide the highest proportion of public transport passengers. Hence those figures of nearly 90 per cent in New York, 85 per cent in Chicago, 90 per cent in London, and 75 per cent in Melbourne.

What to do about it? It is obviously in the public interest that people, or the overwhelming majority of them, use public transport. They cannot be forced to do so, not in this democracy. They must be persuaded — those now using it persuaded to continue using it, and those who have never used it, or have used it and left it, attracted to or back to it. How?

There are certain things passengers require of their transport. None of them mutually exclusive,

but probably in order of importance, they include:

- 1 • Speed.
- Convenience.
- Regularity and Reliability (I



*Articulated tram, Copenhagen.*



*Modern single tram, Rome, in ancient setting.*

bracket these two).  
 1 • Attractiveness (I almost wrote Comfort, but Attractiveness is the correct word).  
 • Economy.  
 Economy—FARES! — last? Yes, advisedly. That does not mean that a prospective passenger weighs up all the pros and cons of the other factors before taking fares into consideration. Nothing so simple as that. There is no hard and fast line of demarcation. It is a safe assumption that most are influenced by all these considerations simultaneously, and often unconsciously, as

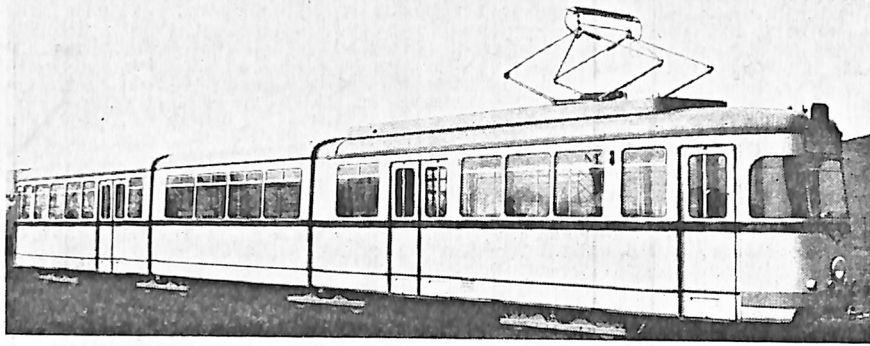
well as by other factors not mentioned in this simplified list. Certainly fares rank low in this affluent society. They must: otherwise everyone would travel by public transport, for it is by far the cheapest.

Speed at the top of the list? Yes, again with the qualification that no factor stands alone, determines the issue on its own. A word of explanation, however: speed here does not mean absolute speed in terms of vehicle miles per hour. Rather it means speed in the sense of travelling time from home to destination and vice versa.

Recent research by a German authority on the sizes attained by the largest German cities from the Middle Ages on discovered this common pattern among them: their radius at any stage of their growth roughly equalled the distance a man

could travel in 30 minutes by the common transport of the time.

The coming of the motor car and, let it never be forgotten, the fast electric railway, has greatly extended the distance that can be accomplished in half an hour, and, in so doing, has made practicable, has encouraged, the wider expansion of cities. There has also been a "feed back" effect from this. The very growth, or sprawl, of cities has made some people prepared, or has obliged them to accept a longer trip. Even so, the maximum readily accepted in the largest Australian



*Double articulated tram, Bremen (note bogies, one at each end and under each articulation).*

That brings me to the next need on my list: Attractiveness. It is far more important than many have yet recognized — even those, or perhaps particularly those, who have spent their working lifetime in the industry and are inclined to think that what was good enough when they were young in it is good enough still. It is not; it is far from it, and it will never be good enough again. So?

### THE NEW BUSES

Well, so the Melbourne and Metropolitan Tramways Board is just finishing taking delivery of 100 new buses, the most modern in Australia. (Oh, yes, it is a big bus user as well as tram user, and just as much "bus-minded" in the right places as it is "tram-minded" in trams' right places — the right places for buses being generally where loading is lighter and trams therefore not warranted.)

These buses have, inter alia, automatic transmission, power steering, fluorescent lighting, air springing: that is to say, air "bags" or bellows instead of steel springs, the air pressure in which automatically adjusts itself, thereby providing almost ideal riding conditions even over poor roads and, something that is important in bus operation, maintaining the same floor height irrespective of load. They provide as good a ride as most motor cars, better than many.

Let no one imagine that the Board is complacent with these new buses. It is not. There are some aspects still to be improved on. Great advance that they undoubtedly are on the older buses they are replacing, they are essential to compete, if the Board is to hold its own,

if not indeed fall back for want of keeping up to date.

### NEW TRAMS

The Board's next step is to buy 100 new trams to replace the oldest of its present fleet of 700 odd. The specification for them is complete, and it was expected that tenders would be called for them ere now. They have been delayed pending allocation of the loan funds necessary to pay for them.

These again, like the new buses, are essential if the Board's business is not to suffer decay from continued use of obsolete and obsolescent equipment.

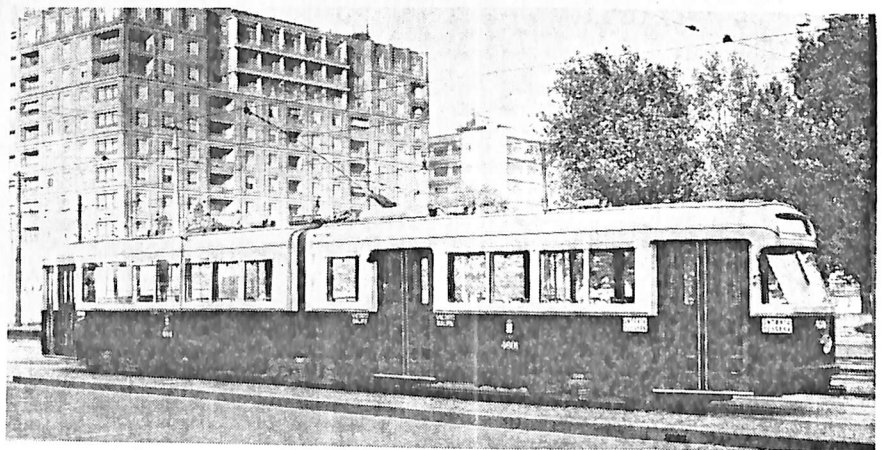
They will almost certainly be of European or Japanese design, Europe (still a large tram user through-

engaged in such production, in Germany, Italy, Sweden and Belgium principally. Though of overseas design, it is likely, however, that a great deal of the actual manufacture of the Melbourne trams will be done in Australia.

The accompanying illustrations are photographs of typical modern European trams. Outwardly they differ, but their essential features are all very much the same.

They all have, and Melbourne's will have, automatic acceleration, so that they take off and speed up smoothly, beyond the power of the driver to influence other than to choose different rates of acceleration, thereby freeing passengers from the jolts they sometimes now experience at the hands of less than perfect drivers.

The service braking will be electro-dynamic, also virtually automatic and therefore smooth and, what is important as well, avoiding the final minor skids on stopping to which the present trams are subject and which cause the wheel flats responsible for their objectionable noisiness at times. The final stop from about two miles per hour will be by a mechanical brake. In

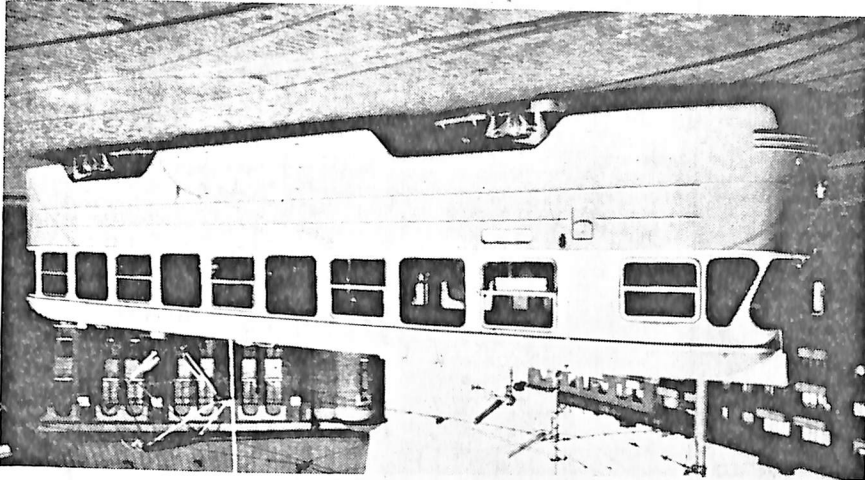


*Double articulated tram, Milan. Bogies are clearly visible at each end and in centre, under the articulation.*

out the continent) having far outstripped America in both design and production post-war: one manufacturer alone in West Germany completes one new tram per working day, and is but one of a number

— in addition, there will be an emergency electro-magnetic brake, flat rectangular shoes clamping magnetically to the rail and stopping the tram by the blocks skidding on the rail — a modernized and much more

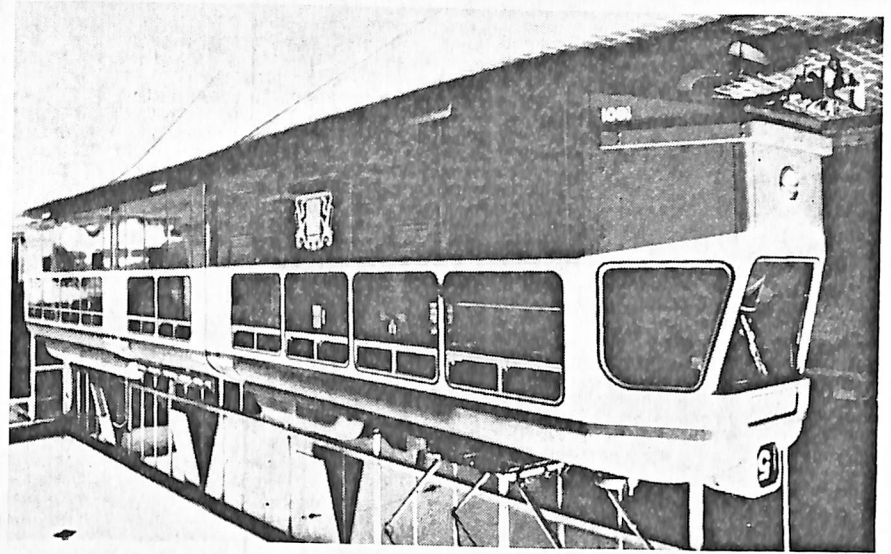




Double articulated tram, Zurich (left) and a new "single-ended operation" tram in Gothenburg, Sweden (below).

underground trams in central Melbourne, along its two principal business streets, Swanston and Bourke, which intersect at right angles almost at the centre of the city. Why does it not get on with it? One reason only: lack of money. But it is undoubtedly a necessity of the future if Melbourne is to continue to flourish, as everyone who loves a great and gracious city agrees it must.

This, lest there be any misunderstanding, is quite apart from the proposed Melbourne underground railway, also necessary, the building of which the Tramways Board has consistently supported, and which will have little effect on the Tramways business.



A streamlined version of German's articulated tram.



merely underground railways, which serve a slightly different purpose.

**PLANS FOR MELBOURNE**

The Melbourne Tramways Board has already announced its plan to

**SOME SOLUTIONS**

I realize that I am asking it to do this at a time when speed is going not up, but down. Several times in the last 16 years Melbourne has found it necessary to extend the schedule running times of trams and buses, simply because they could no longer get through in the times formerly adequate.

Why not? Not because of more people, or many more relatively, but simply more vehicles: motor cars and a quarter people each, any two of which, as already stated, one and a

cities is still of the order of 40 to 45 minutes. True, some travel much further, but they are a small percentage of the total.

So, if public transport is to hold its passengers, and attract more, it must get them where they are going as smartly as possible.

them taking up more road space than a tram carrying 60, quite often more than 60, passengers.

The solution? For solved the problem must be.

One means, or partial solution, is reserved rights of way in appropriate streets for public transport. This is a remedy being practised in some big cities overseas, and there are already some examples in Australia. There will need to be more. Another solution (and this is a solution, not a palliative) is undergrounding. There is ample precedent for it — including, for trams, not

# U.S. RAIL IMPROVEMENT

Both gross revenues and net earnings of the U.S. railroads increased in 1965 for the fourth successive year, but neither gross nor net regained the levels from which they had declined so alarmingly after 1955/56.

Total operating revenues (all figures quoted in U.S. currency) were \$10.2 billion, up 4 per cent over 1964 to the highest annual gross since 1957's total of \$10.5 billion.

Net railway operating income (earnings from transportation operations, after taxes and before fixed charges) amounted to \$962m., up nearly one-fifth from the previous year, but equivalent to only 3.68 per cent on estimated net investment.

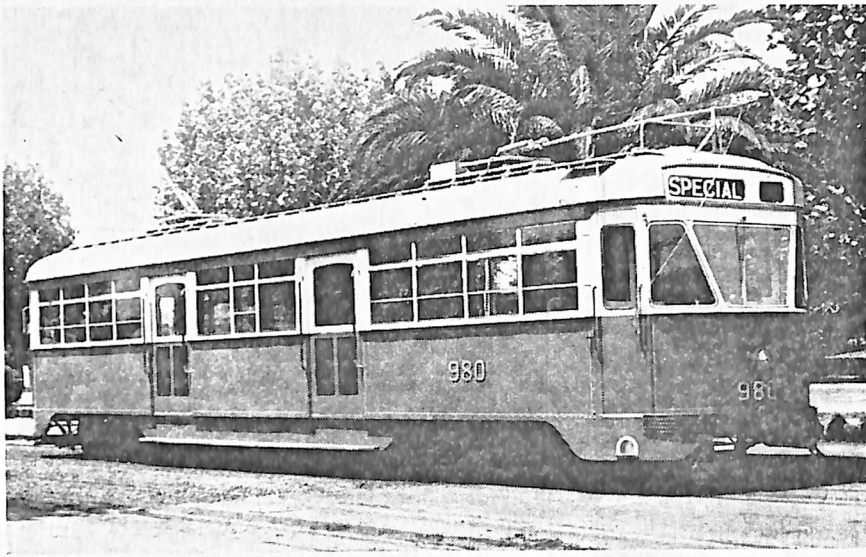
Net income (after taking in non-operating income and meeting fixed interest and rentals) came to \$815m., about one-sixth better than that of 1964, but equal to less than 5 per cent of the railroad shareholders' equity.

Thus "the roads" made further progress toward recovery, but the rate of financial improvement was far from spectacular.

While corporate profits generally in 1965 were two-thirds higher than a decade earlier, U.S. railroads have yet to regain the 1955 level. And the average railroad rate of return on net worth, while improved, is still less than one-half that of U.S. gas and electric utilities, and only about one-third the similar ratio for its manufacturing corporations.

Of the 76 railroads reporting as Class 1 in 1965, there were 14 which failed to earn enough to cover their fixed charges. Ten of these were in the Eastern District, two in the Southern Region, and two in the Western District.

Each of the three principal territories showed improvement in 1965. Rates of return on estimated net investment were 3.34 per cent for railroads in the East, 4.13 per cent in the South, and 3.84 per cent in the West.



Introduced to Melbourne in 1951, this P.C.C. tram's equipment and bogies were imported from the U.S.A. The body was locally built.

sophisticated version of the old cable trams' brake.

Rubber will be used freely, almost lavishly, throughout the tram, including notably in its suspension, for both sound damping and smooth riding. It will ride better than a motor car. That is no idle boast, but simple truth, largely made possible by the fact that the wheels (themselves with rubber inserts for further quietening) will be running on smooth steel rails instead of on roadways.

The driver will be seated, with foot controls as in a motor vehicle, instead of hand.

The bodywork will be most modern and attractive, with fluorescent lighting, upholstered seats, wrap-round windscreen like those on modern motor cars or, perhaps better, modern motor buses, and, externally, tail lights, stop lights and turning light indicators.

## A FINAL WORD

Am I now satisfied? Not yet.

But downhearted? No! Here is one reason, taken from the columns of the Melbourne "Herald", which I read assiduously, and in which I sometimes appear, not always willingly. It is not recent — 23rd December, 1957 — but its contents are still thoroughly up to date. It is an account of an interview in the form of questions and answers

with Mr. Arthur O'Connor, then recently retired American Manager of the Australian Travel Association:

*"Of course you've got it much better in the States!"*

"How many times have I heard that remark since returning to Melbourne after 27 years in America! It makes me mad. Don't get me wrong. I like America . . . but . . . nowhere in the United States, Canada or Mexico have I discovered a more beautiful city than Melbourne."

*"Of course you have better food in America!"*

"Since returning to Melbourne I have dined at several of the better restaurants and in private homes, and not in New York, London, Paris, Los Angeles, nor in the famous San Fernando Valley, have I enjoyed better food."

*"What do you think of our lousy transport system?"*

"I am convinced that Melbourne is extraordinarily fortunate in its elaborate gridiron of electric trains, trams and buses. These services run to and from all points of the compass, and the manner in which the peak-hour traffic is handled suggests high efficiency in management."

His comment, not mine: the opinion of an unbiassed citizen of wide experience. I do not know him, have never met him, but, with my colleagues in this sometimes trying industry, am immensely grateful for his encouragement.