ALTERNATIVE BUS SCHEMES

The 31 passenger diesel is the type of bus selected for comparison above, because it is a typical city type, and is probably the type which would be used in Geelong.

The crush capacity can be greatly increased by the use of longitudinal seating, but buses are not suited to such heavy loading. Operating expenses rise, breakdowns are more frequent, and the vehicle life is shortened. Danger from blowouts, broken springs and axles, locked steering, etc., is greater. Also the jolting motion, and swaying as the vehicle is steered in traffic, cause great discomfort to closely packed standees.

Longer buses, seating up to 41, are more awkward in traffic, particularly when turning back at terminal points. Also they are not economical units for off peak service.

As double deck buses can carry only seated passengers on the top deck, their increased capacity is hardly sufficient to offset their disadvantages.

Operating costs per bus are higher because they are unsuitable for one man operation in off peak periods, and their fuel and maintenance costs are higher.

Perhaps their greatest disadvantage is the lower schedule speeds obtained, mainly because of their slow loading and unloading. Intending passengers cannot board until those leaving the top deck have climbed in single file down the stairs, and loading is equally slow.

In an attempt to speed up loading, a second door, serving the lower deck only, was installed in recent Sydney double deckers. Only partially successful, they are regarded as unsafe when the conductor is on the top deck, and they are now closed. Their removal has been recommended.

Geelong's deep gutters would increase the frequency of damage to shop verandahs. (Even in Melbourne and Sydney, damaged verandahs may be seen at many corners.)

Double deck buses also cause greatly increased road wear, because of their higher axle loads causing sinking of the road foundation.

TROLLEY BUSES have been suggested for Geelong, and they would merit consideration if the city had no tramways, because of their lower installation costs compared with a new tramway, and their economic advantage over motor buses in large systems. However, while they are superior to motor buses under certain conditions, they are seldom in the long run found to be a satisfactory substitute for modern trams.

A hybrid combining certain features of motor buses and trams, the trolley bus adds several peculiar to itself. Its most publicised characteristic, that of silent running, has, combined with its lateral movement, produced a vehicle which is indisputably the most dangerous to pedestrians and cyclists.

More than a dozen British towns have scrapped complete trolley bus systems, apart from isolated routes elsewhere, while even cities possessing modern equipment have in some cases expressed dissatisfaction, and disapproval of proposed extensions.

Of the advantages of modern trams listed under Gen. Characteristics of Trams and Buses, those which also apply in comparison with trolley buses are numbers 1 to 18, and 23. Trolley buses also need double overhead wiring, and at junctions, the need for moving frogs and heavy insulated crossings results in a complicated and unsightly network of wires and fittings hanging overhead.

It should also be remembered that a trolley bus is only a large electrically propelled bus, and has the uneven motion which the travelling public has learned to associate with buses.

CLOSURE OF TRAMWAYS ELSEWHERE

In view of the foregoing statements, it may well be asked why do any cities operate buses on former tram routes.

The reasons for abandonment of tramway systems have differed greatly, and a surprisingly large number have no connection with the relative merits of different forms of transport.

1. Perhaps the commonest, particularly in U.S.A., has been insufficient passenger traffic to justify original outlay or renewal of equipment. Hundreds of small systems and sections of larger networks were laid where revenue could not hope to sustain them since the coming of the private automobile. When installed, at costs far below those of recent years, they were the only means of fast transport available for all classes, and hopeless over development resulted.

Others have closed through one or more of the following causes:

2. Unsuitable disposition of routes; mainly through some streets traversed being too narrow for their total vehicular traffic.

3. Obsolete by-laws and unfair legislation. Impractical local regulations have forced the use of uneconomical methods such as double overhead wires, bad track layout and impractical car designs. Unfair legislation breaks many U.S. tramway companies by charging full land rates on land occupied by tracks while allowing competing buses to wear out the highways without payment.

4. Municipal undertakings stunted by lack of a consistent policy, or unwillingness to face heavy replacement costs which should have been provided for from earlier profits.

5. Severe bus competition under unfavourable conditions. The outstanding example is the notorious National City Lines, U.S.A. group, recently convicted and retrained under the Sherman anti-trust laws. These companies were set up by certain motor, oil and rubber companies, to obtain control of city transport systems and instal buses, which then operated at greatly increased fares, all profits going to the parent companies. In Louisville the N.C.L. management declined to accept delivery of P.C.C. trams ordered by their predecessors, so that the public would not be able to compare their qualities with those of the new buses.

6. Hostile propaganda instigated by competing trade interests, particularly when afforded any justification through items 1 to 5. The widespread idea that trams are obsolete, regardless of age or type, has been deliberately spread by

those companies, publications and individuals whose interests lie in opposing them, and has gained wide acceptance, even among those who favour them, and realise their many advantages. Thus we find Melbourne's decision to retain and develop its tramways being explained - as though it is an unusual one - when in fact most of the world's large cities are doing so.

7. Uncertainty regarding future national or local prosperity, resulting in a preference for short term expenditure as exemplified by bus operation.

8. Lack of collective basic research, the cost of which is generally too great to be borne by any one undertaking. With the formation of the American Transit Research Corporation this handicap was removed.

9. Insufficient advertising, particularly through the medium of the national press. The motor industry is continually pushing its products before the public, while trams, usually constructed by their operators, are not advertised, and receive only unfavourable publicity from some sections of the press.

10. So many city transport systems have been ruined by the process summarized below that it merits special attention. (It is even now occurring in several Australian cities, e.g. Launceston).

    (a) Operating authority unwilling to spend on modernizing trams or relaying track. System deteriorates over long period.

    (b) Obsolete and neglected trams and track, poor service.

    (c) Trial of buses (or trolley buses) on one route. New buses on good roads give misleading first impression.

    (d) Other routes go, trams allowed to deteriorate, contrast worse.

    (e) All bus system, drawbacks soon become apparent. Ruined roads, heavy paving costs, rough riding, loose and rattling bodies, increasing body and engine maintenance, more vehicles out of service, more overloading, financial losses, raised fares. Disillusioned public and council regret loss of tramways.

    (f) Faced with complete replacement of bus fleet within twelve years, operating authority realises that lower initial costs of buses are deceptive.

As most tramway abandonments have been brought about by one or more of the above factors, there is obviously no justification for any council or government being influenced by them.

Even where the tramway replacement policy results from a deliberate choice of buses (or trolley buses) as more suitable vehicles, results are usually disappointing, and fares always rise. Also it should not be imagined that, where tramways have been closed, there has been general agreement. Indeed the final decision, in many cases, has been made, by divided and doubtful city councils, largely because of a lack of reliable information. There is usually strong opposition and widespread dissatisfaction remains. Many such decisions have been reversed before irretrievable harm was done.

On a recent visit to Melbourne, the Assistant Manager of the Pretoria (South Africa) Municipal Transport Division remarked that his undertaking, which replaced trams with trolley buses in 1939, would be glad to return to trams.

In most European cities, the idea of scrapping tramways is never considered, and many systems are being extended. New cars are being built in large numbers in Scotland, Norway, Sweden, Denmark, Germany, Belgium, Holland, Spain and Italy. Switzerland recently adopted four new designs as standard for all cities. In the U.S.S.R. existing systems are being developed, and all cities above a certain size are to have tramways installed.

FARES AND TRANSPORT POLICIES

The use of any form of bus transport, where loading is sufficient for tramways, results in higher costs per passenger mile, and these have been reflected in higher fares (or shorter sections) wherever trams have been replaced.

A fare rise has followed every replacement in America, even in towns supposed to be too small for economical tramway operation. Inflation has resulted in raised fares on most systems, but even before the recent war, replacement by buses or trolley buses raised (flat rate) fares from 5 cents to 7 or 10, and many concessions were withdrawn.

Elsewhere, similar effects can be seen.

The N.S.W. Department recently admitted that losses on its worn out trams were lower than those on its numerous modern double deck buses. (Nearly two thirds of the trams were built more than forty years ago, and all have been poorly maintained in recent years.)

In Melbourne, losses on bus operation are paid out of tramway profits.

During the year ended 31/3/48, the Auckland Transport Board reported that its trams made a profit of £30,325, its buses a loss of £23,991.

The London Passenger Transport Board lost £4,000,000 per year, after scrapping tramways which had paid their way under previous owners (only the formation of the L.P.T.B. prevented the London County Council from continuing to operate and extend its tramways).

These are not isolated phenomena. They, and many other examples here and overseas, serve to illustrate a fact of vital importance to any large community considering the future of its street transport services:

To operate profitably, under similar conditions, bus services must charge fares higher than those of trams.

BUS SERVICES

It is essential that the bus services of Geelong be placed under the control of the city's tramway operating authority, to facilitate better co-ordination with the trams. Some existing bus routes compete with the trams, and this is an important factor in tramway finances.

The ideal arrangement is that used in Brisbane, where all trams and city buses are owned and operated by one authority, the last privately owned services having been taken over last July. This was done to obtain co-ordination and

uniform efficiency, as advocated by Mr. Bell (under Functions of Street Transport Authority). It should not be interpreted as a political move to conform to a party's policy. In fact the majority party in the City Council of Greater Brisbane (Brisbane and all suburbs) is composed of men opposed to the policy of public ownership.

In addition to serving suburban areas not reached by the tramways, buses should be used for developmental routes and crosstown services.

Publicly owned buses can serve, and thus develop, outer suburbs where present traffic is insufficient for a paying service. (In Melbourne this is sometimes done even with trams, the local councils agreeing to reimburse the Tramways Board for early losses.)

Similarly, buses can be used to develop connecting routes, which, if successful, reduce city congestion, by enabling cross-town passengers to avoid the city area, and by facilitating inter suburban shopping.

However, the policy should be to electrify any route where current revenue and future prospects justify it. This will lower operating costs for the route, and increase the efficiency of the whole system, by spreading overhead expenses and in some cases providing alternative routes.

Operation of the bus fleet also enables the authority to provide specials for sporting fixtures, charter work, emergencies etc. (see Flexibility, point 3).

RECOMMENDATIONS FOR THE IMPROVEMENT OF THE TRAMWAY SERVICE

The closing of the Eastern Park tram route and the relocation or closing of the Newtown route should be considered, as they now serve areas which give insufficient loading to justify tram service, and thus contribute to present losses. We suggest the relocation of the Newtown route to continue along Aberdeen Street towards Fyansford, but this should not be regarded as an urgent job, comparable to the proposed North extension.

As the tramway system has not been developed in recent years, to serve the changing needs of an expanding city, at least two new branches and several short extensions will be needed later, but as these are not required for the solution of the present difficulties, they need not be considered here. The programme recommended in this report should enable the system to regain financial stability, and to any healthy tramway undertaking, extensions and re-routing to meet changing conditions are only routine works.

POWER SUPPLY: To facilitate improved services, the traction voltage of 550 should be raised to the now standard 600, for which most of the cars were designed. This will eliminate the sluggishness now noticeable, and give faster acceleration and higher running speeds.

Better feeder arrangements will ensure adequate power at outer termini, where dimming of lights as cars accelerate betrays weaknesses. An inexpensive method used by the M. & M.T.B. is to move worn trolley wires to one side and leave them up as parallel feeders to the present running wires. (This may be seen on the West Coburg route and at Wattle Park). e Section insulators should not be placed where cars are always accelerating as they pass, as this causes discomfort to standing passengers, wastage of power (particularly on grades) and increased controller and overhead maintenance.

ONE MAN OPERATION: The use of one man cars in off peak service, on all routes where loading permits, will give great savings and is strongly recommended. On the North-Belmont service (and others as needed), assistant conductors could operate in the central area.

The Tramway Union is believed to be opposed to extensive one man operation, but most of the men have no desire to become bus crews, and they must choose between "one manning" where necessary, and the loss of their present work. None need be paid off, because they will be needed for the new services. It should also be remembered that its simplicity of control and automatic steering makes the tram a safer one man vehicle than any type of bus.

BUMPERS: All rolling stock not already so fitted should have an "anti-climber" strip fitted to each bumper, to prevent the chassis of one from over-riding that of another, causing telescoping. As all Melbourne's day service trams have this feature, the bogie cars recently purchased from the Board are already fitted.

MULTIPLE UNIT OPERATION: New trams built for the system should be fitted for multiple unit operation. The cost of M.U. equipment is not much higher than that of the fairly similar remote control system used on all new Melbourne trams. Its use would enable the proposed North Shore express trams to be run in pairs, with one driver and two conductors to a set. Such coupled sets give great savings in peak hours, in Adelaide and Sydney.

THE OPERATING AUTHORITY

The future of Geelong's transport system is too important to be jeopardized by difficulties in finding an operating authority. There are several possible solutions to this problem, but whichever is adopted, it is probable that the State Government will have to assist in financing as suggested by Mr. Bell. This committee is also in complete agreement with Mr. Bell on "The Functions of a Street Transport Authority" (see Bus Services).

Private ownership, which has been suggested in certain quarters, is most undesirable and is on the way out in most countries. In recent years - even in individualistic America - there has been a growing conviction that public transport in cities must be a monopoly to ensure profitable operation at reasonable fares. A monopoly, when privately owned, tends inevitably to regard its own interests more highly than those it serves. There is, of course, nothing inherently criminal in this; it is a natural human failing. But in times of stress, or when confronted with large commitments, private ownership tends to abandon its less remunerative activities with scant regard for the common good. (A recent example was the handing over to public ownership of Kalgoorlie's worn out tramway system. The tramway company, unwilling to face reconstruction costs, had run the system almost to destruction, to extract the last pound of revenue). Only by public ownership can this dangerous tendency be eliminated.

We strongly recommend that the State Electricity Commission should remain as the operating authority, a function which it has shown itself able to perform efficiently and conscientiously in spite of the losses and the uncertain future of the undertaking. Renewed according to the recommendations contained herein, it could cease to be a burden upon the S.E.C. and become a profitable asset.

An alternative is municipal ownership, as in Brisbane, Adelaide etc. In spite of extensions, relaying and rapid construction of new cars, the Brisbane City Council tramway system has financed the city's debt reduction programme. £100,000 was paid off in 1947 out of tramway profits, and a similar amount was to be provided last year. (Tram Tracks, May 1948, page 5).

A Geelong Tramway Board, set up as a state or municipal instrumentality could operate the system, and such a board would be preferable to having the system controlled by a Government or municipal department, because it would ensure stable and consistent policy, free from interference by changing administrators. The advantage of this may be seen by comparing the situation in Melbourne with that in N.S.W., where current ministerial policy favours buses, resulting until recently in serious neglect of the tramways, and the closure of certain routes in defiance of desperate municipal opposition and well attended public protest meetings. (Newcastle and Burwood). A city trolley bus route, recently abandoned, was a relic of an earlier preference for these as a "cure all" for Sydney's transport problems. (See also Fares and Transport Policies). Long range planning by a stable, non-political body is preferable for the success of a city transport system.

Control by the M. & M.T.B. or by a Victorian Provincial Tramways Board (under the Minister for Public Works) would also give satisfactory results.

If any non-local body is to operate the system, it should beware of making hasty changes in the present methods and practices, without careful investigation. While there is, no doubt, room for improvement in certain directions, the methods which have been developed to suit the local operating conditions, should not be scrapped merely to conform to the customs of other systems, unless a definite gain can be shown. The Commission's awareness of this fact has enabled it to operate three widely separated tramways, differing considerably to fit local needs, with remarkably contented and co-operative staffs. Under the wise administration of the popular Superintendant, Mr. T.H. Thomas, now serving at the Commission's request until the future of the systems is decided, there have been no strikes, nor any serious industrial disputes since the Commission took over the systems.

SUMMARY OF GENERAL RECOMMENDATIONS

1. The tramway system to be retained and modernized, and to be developed to suit the changing needs of a progressive city.

2. Diesel buses to be operated on cross-town and developmental routes where traffic does not justify electrification. Smaller buses to be operated as feeders to tram routes where local services are necessary. City bus routes to be controlled, if not owned by the tramway operating authority.

3. The present North tram route to be extended on open ballast track to serve the North Shore industries, and connections to be made as described under Transport to N.S. Industries.

4. New trams to be built to replace all small single truck cars, and ultimately most of the present rolling stock. A sketch of a suitable type of tram is appended. As the purchase of trams of the same design for Ballarat and Bendigo would reduce their unit cost, the design provides for the "double sided" operation peculiar to the Ballarat system.

5. Open ballast track on private right of way to be used wherever possible for extensions, enabling safe high speed operation, and reducing construction and maintenance costs. Double track and passing loops to be constructed with track centre line spacing of 11 feet, and present double track to be similarly widened when relaying or other major track works are in progress. With double track curves suitably modified, this will, when ultimately completed, permit operation of cars as wide and as long as those of Melbourne.

6. An adequate portion of every year's revenue to be set aside as a financial reserve for future construction and extensions. If any other authority is to operate the system, it is suggested that an examination of the outstandingly successful financial methods of the M. & M.T.B. might be beneficial.

Prepared for the Council of the Australian Electric Traction Association by the undersigned Committee:-

(Sgd.) CHARLES L. CRAIG. (Chairman)

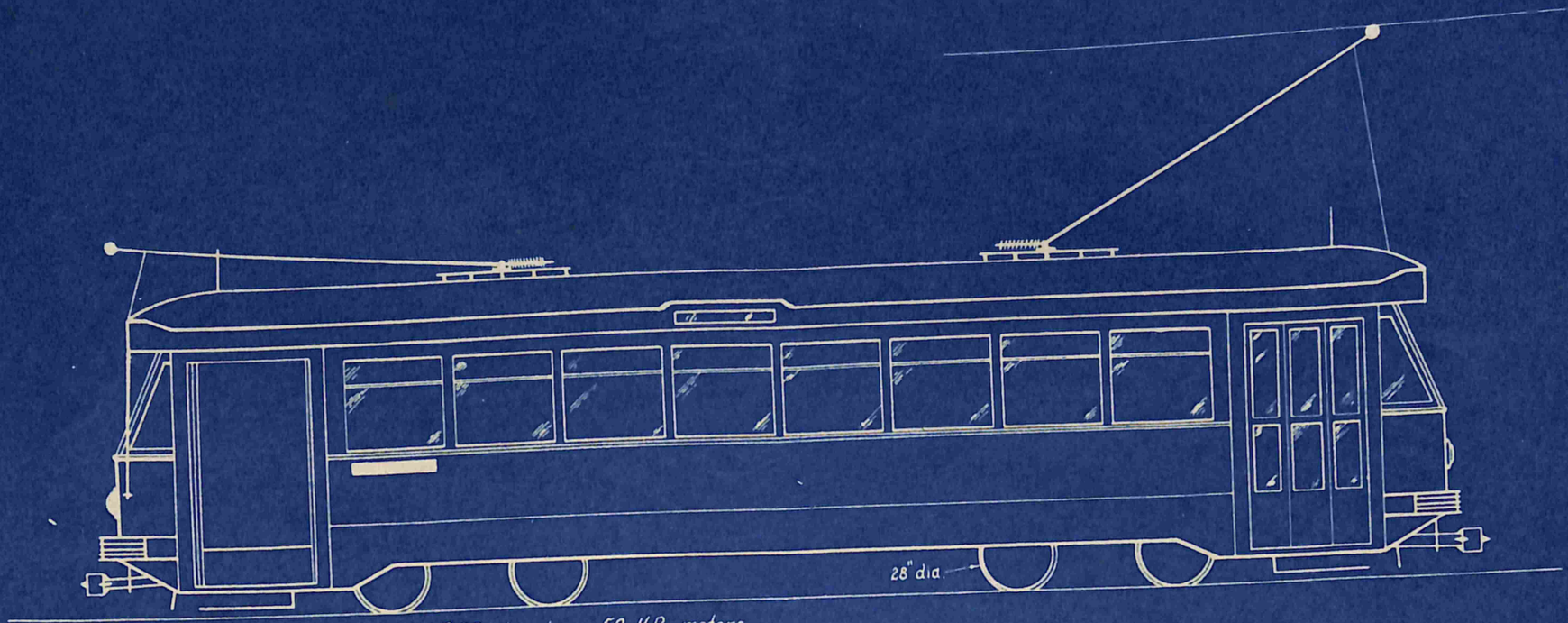
" LEON MARSHALL-WOOD.

" NOEL H. GIPPS.

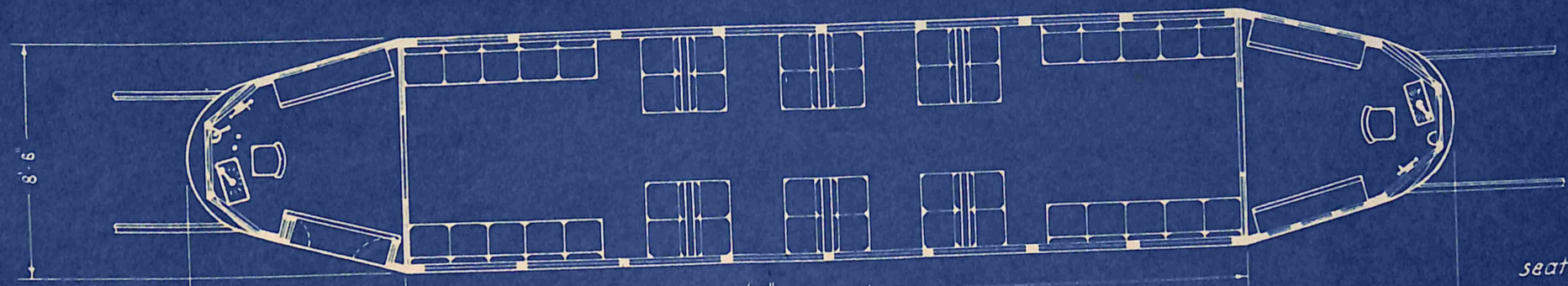
" DONALD C. WISHART.

" JOHN C. BECKETT.

" JOHN B. STRANGER. (Secretary)



P.C.C. trucks, 50 H.P. motors.



seated load 44

A. E. T. A.

ESTIMATE OF COST OF SINGLE TRACK TRAMWAY EXTENSION TO NORTH SHORE

	Labour	Materials
Earthwork, 4000 c.yd. @ 10/-	£2000	
Ash ballast, 1800 c.yd @ 5/-	450	
1800 c.yd @ 3/-		£270
Sleepers, 2520 @ 12/-		1512
Rails and fastenings, 1800 yd. @ 7/6		675
Track laying, 1800 yd. @ 10/-	900	
Timber trestle bridge, 150 ft. @ £20	3000	
150 ft. @ £10		1500
Overhead equipment	800	600
Special crossing over railway sidings	500	900
Strengthening of Bent Street bridge	600	300
Street paving	400	200
Passing loop, complete	400	600
Freight on materials	300	
	£9350	£6557
Provision at 20%	1870	1312
	£11220	£7869
Supervision, precautions, surveying and office charges at 30%	3366	
	£14586	
		£22,455

NOTE: It is assumed that the work would be carried out by the tramway operating authority or by some other public body.