

## A FURTHER LEASE OF LIFE      By Alan Bradley

The SEC commenced an extensive rehabilitation program for its Ballarat and Bendigo tramway systems in 1934. This was designed to provide another 15 years of service, which would expire in the late 1940s. Early in 1948 A V Mawby, the Ballarat Tramways Superintendent wrote the following memo explaining what would be required to allow an extended period of operation for the Ballarat tramways. The memo is an interesting guide to the logistics of continued operation of a small tramway system. It is worth noting that within the next decade all of the non-capital city tram systems in Australia (apart from Ballarat and Bendigo) would close.<sup>1</sup>

To     **MANAGER, BALLARAT BRANCH**  
From **BRANCH TRAMWAYS. SUPERINTENDENT, 7 MAY 1948**

### **PROVINCIAL TRAMWAYS - EXTENDED PERIOD OF OPERATION**

**Reference enquiry from Engineer & Manager dated 24th February, 1948.**

#### Rolling Stock:

- (a) Would the present rolling stock meet the requirements of this City?  
(b) If the answer to (a) is in the negative, please give details of estimated requirements, indicating improvements considered desirable.

The present rolling stock comprises 25 trams (21 single truck type of 6'6" - 7'6" - 9'0" wheelbase, and four maximum traction bogie trams. To meet present day requirements as to routes and services, this number is considered to be numerically sufficient. Although maintenance costs will inevitably tend to rise as the age of the vehicles increases, a further term of 15 years should be quite practicable. The principal requirements would be the re-machining of the motor case armature and suspension bearing housings, the provision of at least three more spare armatures for the W.H.225 motors, to meet requirements of re-winding and present inadequate spares, and the replacement of all tram. axles, which it is noted are now approaching half a million miles of service in this Branch alone. There are two odd type trams, which it is suggested should be replaced by the more suitable maximum traction bogie type. These comprise No. 23 (purchased ex Adelaide, a two-man open-end type, which would be a costly conversion to our combination type. Also, this is the only tram equipped with W.H.204 33 h.p. motors. Use of this tram is principally confined to summer only.), and No. 29, also a two-man open-end type, but a straight sill body with very high steps. This body could not be converted to combination type. It is equipped with G.E.201 65 h.p.

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<sup>1</sup> The tram system in Newcastle closed in 1950; the Kalgoorlie, Fremantle and Launceston systems closed in 1952; the Geelong system closed in 1956.

motors,<sup>2</sup> and if replaced, these motors could be transferred to the scrubber tram, thus eliminating the sole remaining G.E .67 motor equipment. The G.E.201 motors are standard equipment on the bogie type trams.

(c) Are there routes it is considered should be substituted by trackless trolleys or motor buses?

There are no tramway routes in this city in which the substitution of trolley buses or motor buses is considered desirable by the Commission. It is still considered desirable that the Mt. Pleasant route be deviated through Peel Street, and thus make practicable the extension from the terminus at Cobden Street to Morton Street. <sup>3</sup>

(d) What building alterations and/or additions would be required?

The renovations carried out on the tram depot building some years ago were satisfactory, and structurally this should be good for a further period of fifteen years. The additional rolling stock acquired of recent years is, however, beyond the capacity of the depot building, and an extension to provide storage space for at least two trams is recommended. At the present moment, a revision of the truck removal and overhaul section is under consideration, and under the terms of the present enquiry the required space would be available and maintenance conditions improved by the enlargement of the annexe at the northern end of the main building. The extension of this annexe to the north to provide sufficient length for a bogie tram (present 45 ft. to, say, 60 ft.) and the extension of same, both east and west, to the full width of the main building, would house both the carpenters' shop and the paint shop. The additional car storage space in the main building would thus be secured. Provision is also suggested for the replacement or complete overhaul of the wheel turning lathe, which is a very old machine, and in poor condition.

Permanent Way:

(e) What is the general condition of the permanent way?

The general condition of the tramways track would probably be described as very fair order, but in considering an extension for a further 15 years' use beyond the period for which they were originally reconstructed, a more detailed inspection is required. It is also necessary to apply the experience of other cities in estimating the years of service of such items as track sleepers. As regards the latter, it is suggested that, after a further period of from five to ten years, the complete removal of sleepers will be necessitated, and the requirements for such comprehensive renewal would probably aggregate some 34,150 sleepers. Measurements have been taken of rail groove depth, in

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<sup>2</sup> According to "Destination City" and "Destination Eaglehawk", Melbourne R class cars like No. 29 had G.E.203 50 h.p. motors, and not G.E.201 motors as stated here.

<sup>3</sup> This idea had been considered but rejected in the 1930s.

order to determine the estimated wear yet available. With the exception of short lengths of rail on curves, and odd locations, the rails generally should be good for a further period of use of 15 years, so long as the present practice of machining and grinding the tram wheels to a flat running surface is maintained. After the reconstruction work, old rails had a pronounced ball slope of probably 1 in 15. By keeping wheels reasonably flat, the area of wear on the rails for the past years has been confined to the outer surface only, and at the present stage, wear is principally confined to the outer half of the rail surface. During reconstruction, some of the points and special work from the old Company were reconditioned and retained for further use, and other special work was purchased from the M.M.T.B. Practically all of the latter are still in good order, but most of the old original castings from the Company have deteriorated badly, and replacement must be contemplated. Some of the old castings, especially the track crossings at Lydiard Street and Drummond Street, have already been replaced by fabricated layouts, due to rapid deterioration of the original.

(f) What quantity of rail replacements would be necessary?

With regard to rail requirements, it is now considered desirable that 4,600 ft. of B.H.P. 80 lb. T Rail, together with the 30 lb. detachable check rail, would be required. This would be installed on the Mt. Pleasant route from Bridge St. to Barkly St. and incorporates three curves. The B.S.S. rail on the straight sections of this area are in excellent order and would be available for replacement of short sections where required to be used, and would be readily coupled to and would match the existing B.S.S. rail. Considerable sections of B.H.P. 80 lb. T. Rail were installed at reconstruction, and are in good order for many years to come.

Details of the examination of rails and rail groove depths are as follows:

[A detailed table listed every section of track in Ballarat. For the sake of brevity I have listed here only the sections in the Museum's track in the Gardens Reserve.]

Location	Rail groove depth	Rail type	Remarks
Gardens south	East rail 7/8", west rail 13/16"	BSS	Old rail
Gardens South Loop* to Nth. loop	East 7/8", west 13/16"	BHP	New rail
Gardens North Loop to Colpin Ave.	East 7/8", west 13/16"	BHP	New rail

(h) Details of specials work required, including points and crossings:

[A detailed table listed every section of special work in Ballarat. For the sake of brevity I have listed here only the sections in the Museum's track in the Gardens Reserve.]

Location	Type	Supply	Remarks
Gardens South Loop <sup>4</sup>	8'6" L-RH	MMTB	Good order. Cast cross good.
Gardens North Loop	8'6" L-RH	MMTB	Good order. Cast cross good.

This report recommends the replacement of the old 4'0" points and the provision of case crosses in replacement of fabrications.

#### Overhead Equipment:

##### (h) Quantity of Trolley Wire required:

An inspection of the trolley wire has been made, and it is estimated that renewals of wire will be encountered within fifteen years on the following sections. The estimated years of wear before renewal are also shown.

Location	Distance in feet	Wire required in feet	Estimated remaining life in years
Sturt St-Dawson to Drummond St (south side)	1,500	1,500	1
Sturt St-Dawson to Armstrong St (north side)	800	800	1
Lydiard St-Market to Sturt Sts	1,250	2,500	5
Victoria St-Humffray to Grenville Sts	1,500	3,000	5
Sebastopol-Rubicon to Sturt Sts	8,050	16,100	5
Mt Pleasant-Bridge to Barkly Sts	1,300	2,600	5
Sturt St-Drummond to Pleasant Sts (south side)	2,710	2,710	5
Gardens-Hamilton Ave-Lake-Ripon St	16,670	33,340	5 to 10
Drummond St North-Hospital to Parade	5,000	10,000	10
Sturt St West-north wire only Hamilton Ave to Pleasant St	4,000	4,000	10
Sturt St-Drummond to Pleasant Sts (north side)	2,710	2,710	10
Lydiard St-Market St to Cemetery	7,850	15,700	10
Sebastopol-Rubicon St to terminus	9,200	18,400	10

<sup>4</sup> Gardens South Loop was the old parking loop, now removed, opposite the floral clock.

Mt Pleasant-Main St to terminus	5,240	10,480	12
Victoria St-Humffray St to terminus	5,540	11,080	12

Pole Replacements:

(i) Number of Pole Replacements necessary:

Inspection of poles has also been made, and an estimate made of the number of poles on each route which would in all probability have to be replaced. These are listed on each route under the dual classifications of Tramways for those poles only carrying tramway equipment, and Joint Poles where such are also used by the Distribution Division.

Route	Tramways	Joint
Sebastopol	16	38
Wendouree Parade	16	36
Sturt St West	3	5
Lydiard St North	1	23
Ripon St	1	5
Sturt St	7	14
Mr Pleasant	2	25
Drummond St North	6	22

Alterations & Additions:

(j) Are there any alterations or additions considered necessary

No major alterations as to overhead layout and construction are considered necessary. It is, however, recommended that an extension of the Automatic Signal System by four sets would be justified for the extended term, the section concerned being -

- Pleasant St. to Parker St. loop
- Parker St. loop to Victoria Park loop
- Sturt St. to Victoria Avenue loop (View Point)
- Victoria Avenue loop to Macarthur St. (View Point)

Tramway Passengers:

(k) Approximate number of passengers carried annually on each tram route, and trips per week:

These have been estimated for each tram route as follows. An analysis was made during week ending 21st March, 1948, as to checks issued, weekly tickets sold, and scholars' tickets current in the period.

Percentages Reached (Checks)

• Victoria St. route	11.73%
• Mt. Pleasant route	9.065%
• Drummond St. North route	18.41%
• Sturt St. West route	21.8%
• View Point route	2.225%
• Sebastopol route	20.207%
• Lydiard St. North route	<u>16.56%</u>
	<u>100.000%</u>

Weekly Tickets -

• Victoria St. route	16.958%
• Mt. Pleasant route	9.324%
• Drummond St. route	15.093%
• Sturt St. West route	17.424%
• View Point route	1.807%
• Sebastopol route	23.194%
• Lydiard St. route	<u>16.2%</u>
	<u>100.00%</u>

Scholars' Tickets -

• Victoria St. route	13.58%
• Mt. Pleasant route	8.42%
• Drummond St. route	8.80%
• Sturt St. West route	35.02%
• View Point route	1.807%
• Sebastopol route	23.194%
• Lydiard St. route	<u>10.30%</u>
	<u>100.00%</u>

Tourist Tickets -

Allocation on basis of one trip each of the Gardens routes and two trips on the other routes, with the exception of View Point.

Application of these percentages to the recorded passengers carried for the twelve months ending 31st December, 1947, shows as follows :-

Route	Checks	Weeklies	Scholars	Tourists	Total
Victoria St	430,600	170,520	50,176	22,368	673,664
Mt Pleasant	332,770	93,678	31,232	22,368	480,138
Drummond St North	675,928	151,788	32,768	11,184	871,668
Sturt St West	800,263	175,236	129,024	11,184	1,115,707
View Point	81,678	18,180	2,560	0	102,418

Sebastopol	843,938	318,588	85,506	22,368	1,270,400
Lydiard St North	607,906	162,924	37,888	22,368	831,086
TOTAL	3,773,083	1,091,004	369,154	111,840	5,345,081

Trips per week :

- Victoria St. route 326
- Mt. Pleasant route 320
- Drummond St. route 463
- Sturt St. West route 328
- Sebastopol route 398
- Lydiard St. route 480
- View Point route 87

Motor Bus Passengers:

(1) Number of Passengers, carried on each bus route annually and the trips per week.

Estimates supplied to the Town Clerk by the bus operators are as follows:

- Brown Hill route (3 buses) 3,800 per week
- Mt Pleasant route 1,250 per week
- Black Hill route 1,280 per week
- Arch of Victory route 1,600 per week
- South Street route (2 buses) 2,560 per week
- Eureka Street route 1,600 per week
- Canadian route (2 buses) 2,800 per week
- Monastery route (2 buses) 3,200 per week

The number of bus trips weekly on each route, according to information from the same source, are:

- Brown Hill route 200
- Mt Pleasant route 95
- Black Hill route 95
- Arch of Victory route 85
- South Street route 125
- Eureka Street route 105
- Canadian route 145
- Monastery route 105

(SIGNED) A. V.Mawby  
Ballarat Tramway Superintendent



## **SUGGESTED PHOTOS FOR ARTICLE FROM DISC**

1906i: Ex-Adelaide car No. 23 at the depot, 14 March 1949. This car was scrapped in 1951. Photo: Keith Kings

1907i: No. 29, a former Melbourne "R" class at the depot, 14 March 1949. This car was scrapped in 1950. Photo: Keith Kings

1910i: In a typical scene of the Ballarat tramways during the late 1940s, bogie car No. 15 (later re-numbered 36) and single truck car No. 31 are pictured in Sturt Street near the Town Hall, 14 March 1949. Photo: Keith Kings