

SOME NOTES PERTAINING TO TRAMWAY CONFERENCE, BALLARAT.

26th APRIL, 1954.

1952 SUMMARY A.

1A3. Minimum tyre thickness with worn flange is 1". Provided flange is in good condition tyre thickness is allowed to wear to  $\frac{7}{8}$ ".

"Coning" is ground off every 15,000 miles. Time taken to do job is 8 man hours.

No gauges exist, but during weekly inspection, the profile of any doubtful wheel is taken by lead set and compared with drawing of correct profile.

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1C1 Special works survey. No progress to report due to pressure of work on jobs of higher priority such as nail profiles.

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1.F. Submission of spares lists. A start has been made to compile same.

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7B

(11) Plastic Blind. Results continue to prove POLY-VINYL CHLORIDE most suitable for Ballarat conditions. Further experiments using a chlorinated rubber solution have been carried out on canvas blinds and from results to date, this paint certainly reproofs the canvas, but is inclined to make the canvas stiff and the blind difficult to operate.

Blinds treated may be inspected at the Depot.

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B  
ACTION RESULTING FROM  
1953 CONFERENCE

1.(b) Stocks of rail at Ballarat, (96 lb) at present are low. By the end of June, 1954 it is estimated stock will be nil

1. (d) Booklet "Rules governing Tramway Employees" is urgently required for instruction of new personnel. At present the Branch, so far as the Depot is concerned, is working to the Rules as drawn up in 1952.

1. (f) Windscreen Wiper drive units: Transferred to Geelong 6 only May, 1953.

2. (a) Maximum traction controllers: Nothing to report

3. Brakes: Nothing further to add to comments made at Conference.

6. All Branches to make recommendation to Engineer & Manager that smoking in rear saloons be permitted

In doubt if this has been done.

8 (b) Mats: Difficulty overcome by fitting worn mats in "low" cars, new mats in "high".

10 (a) Tines: No further difficulties during year from fractured Tines. The ones in use at present are old second hand stock of doubtful specification.



Tool for upturned edges of pavement: No progress to report.

10.(d) Tool for drilling under tracks:

13. Man hours by Workshops on Tram Maintenance See Item 11, 1954.

15. Drawing of Bumper Clearance No progress

C  
TRAMWAY CONFERENCE, 1954.

AGENDA AT BALLARAT

2.(a) Profile Survey: The wheel profile indicator has now been discarded due to the time required to operate and a new indicator of simple construction has been designed and manufactured in the Workshops.

Survey is 32% complete.

Results to date show flange running is taking place on 60% of line surveyed. 7/16" wear has occurred on the tread of rail, which in the case of 90lbs. RRS rail means that 41% of the total thickness of the ball has gone.

Due to increased flange running, it has now become necessary to re-flange after 41,000 instead of as formerly 60,000 mi.

In time, this means re-flanging has to be carried out every 2 years instead of as formerly every 3 years.

2.(b) Specification of Cut-Back: Bitumen is used mixed with a certain amount of deiseline, the proportion varying according to weather conditions and the purpose for which it is required.

2 types of premix are made up.

- (i) 3" crushed granite.
- (ii) 1" quartz aggregate.

Owing to lack of sharps in the quartz, a higher proportion of bitumen is necessary. (C.R.B. doubted if premix could be successfully made with 1" quartz, but by above method, it has been proved highly successful.

2.(c) Bitumen Pre mix.

Manufactured using tar boiler and concrete mixer.

Bitumen and dieselene are heated in the boiler to 300° F. and added 4 galls. per yard to metal in mixer.

5 1/4 galls - 7 yds 3/4  
52 " - 5 yds 1/4

(i)	12 galls. dieselene	42 galls. bitumen	- 3/4" granite)
(ii)	10 " "	42 " "	- 1/2" crushed)
	8 gail flux to 1 cub. yd. 3/4		42 " " - 1/2" Quartz.

and 10 galls. flux 1 cub. yd. 1/4

4. Field Inspection

(a) No. 31 Car. - Painted 16.12.46 with Taubman's Pearline.

In operation six years.

On 12.12.52 refresher coat applied as follows:-

Panels - 1 coat Dulux Clear Varnish  
Cream work - 1 coat Dulux colour.

No. 20. Car - Painted 17.3.45 with Taubman's Pearline  
In operation 8 years.

On 4.2.54 refresher coat applied as follows -

Panels - coat Dulux clear varnish  
Cream work - 1 coat Dulux colour.

Refresher Costs: 1/2 gal clear }  
2 pints cream) £2

Total: £50.

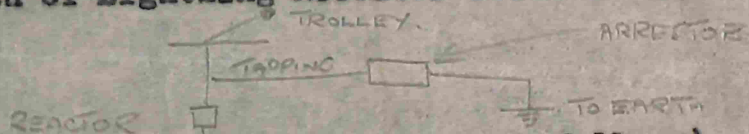


- (b) Indicator in operation near depot
- (c) Comparison of pinus radiata and uellow stringy bark sleepers in Gardens. Laid June, 1936 - 18 years ago.
- (d) Comparison of paintwork on Tram No. 35 painted 28.11.52 Dulux and Tram No. 17 painted 30.5.50 Pearline.
5. Disinfection is carried on once per week during inspections.  
Applied by "Rega" atomizer.  
Disinfectant is Euco Pine at 12/6 per gall.
6. (a) Blinds. Some finality regarding procurement of material in bulk is most desirable.
6. (b) Sun Blinds. All our blinds are in very poor condition. It is suggested if conference decides against renewal to have blinds removed from all cars.
7. No publications regarding ex ams received at present.

D  
TRAMWAY CONFERENCE, 1954.  
AGENDA AT MELBOURNE.

*3 months ago.  
1 per annum complete  
after 5 years.*

- (a) Sketch of Lightning Arrestor leads as follows:-



- (b) Ballarat lamps at present are as follows:-

<u>Maximum traction</u>	<u>Single Bogie</u>
100v. 60 W.E.S. Gas filled frosted	2 circuits 11 lamps
2 off 2-2 circuits - 12 lamps	
3 off -3 " - 18 "	

Head lamps clear. All traction lamps. *Send sample of lead lamps to Richmond*

- (c) Contacts for air governor switches. No trouble experienced to date, but prepared to give Morgan Crucible Carbon contacts a trial. *OK.*

Type at present fitted are manufactured in Workshops from copper.

9. (a) Degreaser: Some type of degreaser is considered desirable. *6-1 Magnad. Kero. Knaprock Richmond to Here.*

9. (b) Brake Blocks: Castings are in good condition when received from Hardings Hardness test is taken before acceptance.

Drivers 200-250 Brinell  
Pony 235-285

*Brake Block  
Mileage*

Castings are worn down as low as practicable before being discarded (1" on the top of block lasts a week)

Air pressure on system is 60- 70 lbs.

9. (c) Side bearing plate clearance. Clearance between mild steel angle wear plate on body and gunmetal wear plate casting is maximum. -  $\frac{3}{8}$ "

Minimum -  $\frac{3}{32}$ "



*Comments required.*

9. (d) Tyre gauges. Consider some form of gauge desirable.
10. (a) Economics of patching castings: Very little patching done in the Branch
10. (b) The quantity of scrap, non-ferrous, per year from depot would amount to 20 lbs. *N.B.G.*  
e.g. Controller tips and trolley wheels.

11. Maintenance Costs - Track and Depot

July, 1952 - 53

By Workshops	20,587 m.h.	=	10.9 men
" Tracks	22,040 "	=	12.0 "
" Depot	12,480 "	=	6.5 "
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TOTAL:	55,107	TOTAL:	29.4 "
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Man Hours per man per year calculated as follows:-

	Total m.h. - (Annual Leave & Public Holidays)
= 2080	- ( 80 + 80 )
= 2080	- 160
= 1920 man hours	

*Jan - March.*

Maintenance costs for 1st quarter of this year in man hours as follows:-

Workshops	5.25 men	=	2,559
Tracks	12 men	=	5,740
Depot	10.5 men	=	5,040

13,339  
4  
52,356

TOTAL: 27.75 men 13,339 man hours

Regarding the approved operation and maintenance Budget 1953-54 the present position is that to keep within the prescribed figures for Maintenance it has been necessary to curtail workshop man hours on reconditioning of 225 motors and brake gear sets.

In event of the position continuing indefinitely, it is inevitable that breakdowns of trams in service must increase.

Furthermore, if more finance is not made available for routine preventive maintenance during 1954-55, standards of reliability must be lowered, the present 20 minutes service totally abandoned, and such type of service which may be possible to operate must naturally result in a loss of prestige to the Commission.

12. Balanced trolley wheels

*7 15,775 & 20,857.*

Wheels are fitted to car Nos. 14 & 28 and have covered miles. Condition to date is 5000. EXPECT + 10,000 + 5,000. R. 15 invest. balancing all wheels.

12. The following list shows oils and greases in use at depot and annual usage:-

Type	Purpose	Annual Usage
KALIF EE	Armature, Suspension & axle bearings	260 galls
D.T.E. HEAVY MEDIUM	Compressors	12 "
UNEDO 3 SHELL	Trolley wheels, brake valves	12 lbs
PETROLEUM JELLY	Contacts	6 "

*lonale compound 1/25'*

*4 cars.*

*By contract*



14.

Alterations to Maximum Traction Cars. OK. 2 more.

15.

Spare: Re procurement of an old maximum traction car from M. & M. T. B. consider the spare gear position in Ballarat does not warrant the expenditure.

16.

General Discussion

(a) Fatigue failure of Axles: During March, 1954, a 1926 pony axle which had completed 750,000 in Ballarat, fractured under the wheel seat  $1\frac{1}{2}$ " from the outside face of wheel boss.

(Total No. pony axles in service is 16 3/4 of which are as follows:-

8	-	$5\frac{1}{2}$ "	dia.
1	-	$3\frac{1}{2}$ "	
7	-	$3\frac{3}{4}$ "	)

It is on record that in 1944, M. & M. T. B. experienced a similar type of failure on an axle dated 1925 and which had completed 770,000 miles of service.

Some time later 11 axles failed.

Investigation showed that in every case the mileage was in the vicinity of 770,000.

32 axles were then withdrawn from service for inspection; 29 were fractured and only 3 were intact.

It is understood that the M. & M. T. B. now periodically test all axles in situ with special equipment imported from the U.K., and it is suggested that in event of further failures of axles in Ballarat, that Works Division be requested to enquire into the possibilities of obtaining the services of M. & M. T. B. to test all axles in the Ballarat Fleet.