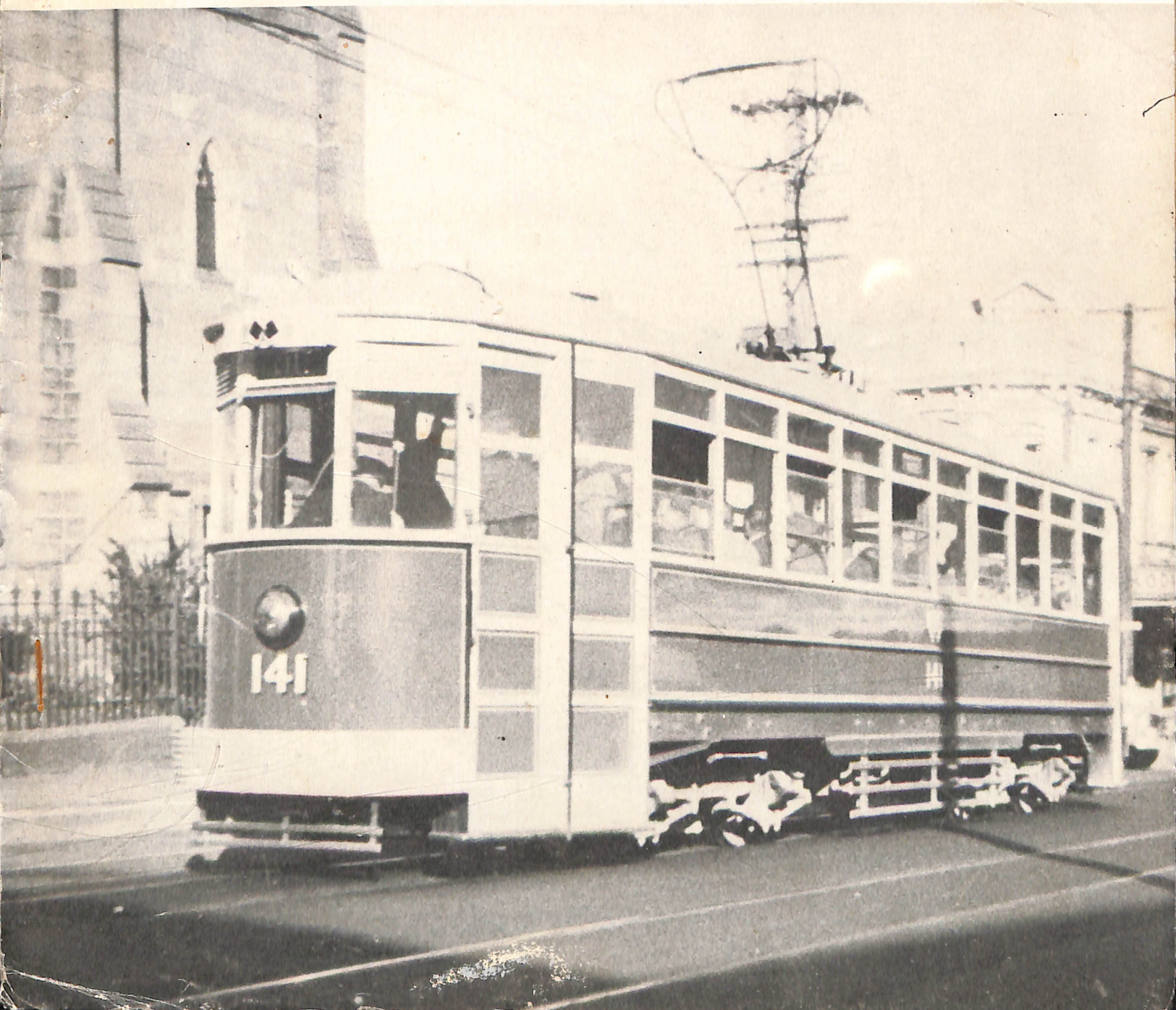
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The Tramway Museum Society of Victoria Ltd.

The Tramway Museum Society of Victoria Ltd. founded in 1963 as a non-profit organization.

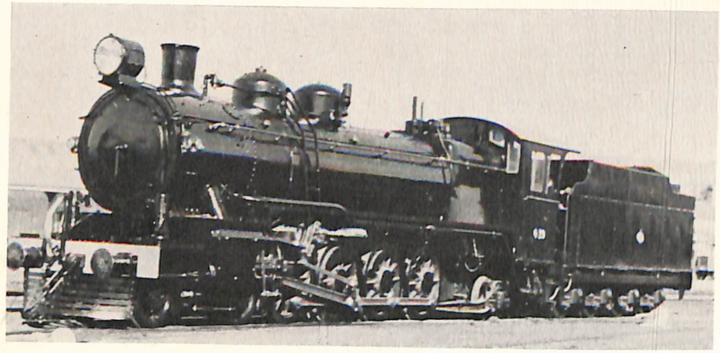
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2

FRONT: Tramcar No. 141, a standard bogie car built in 1952, in Elizabeth Street, Hobart. The narrow body is due to the track gauge of 3ft. 6in.
(I. Cooper.)

2: T.G.R. loco Q5 built by the Perry Engineering Co. in 1923 now preserved by the T.T.M.S.
(Tas.Govt.R'wys.)



3

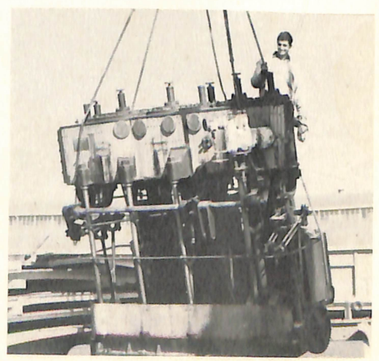
3: 'Canton' trolleybus 74, part of a Chinese order for chassis diverted due to World War Two.
(I. Cooper.)

4: Glenorchy. The T.T.M.S. land is to the right of the main railway line.
(D. Jones.)

5: Removing the triple expansion Steam Engine from Derwent River steamer 'Sorrento'.
(D. Jones.)



4



5

THE TASMANIAN TRANSPORT MUSEUM SOCIETY. . . . . .

By G.R. Clements (Vice President T.T.M.S.)

Most people who are transport enthusiasts have a nostalgic streak, and wistfully remember bygone days when transport systems were more colourful and interesting, when a greater variety of means of propulsion, for example, was in use, or when quaint and delightfully inefficient practices operated. Such people endeavour, by dint of memory, reading, film, recording, photograph and preservation, to recapture those times when the character of transport varied from city to city, or state to state.

Tasmanian transport enthusiasts are proud yet sad to recall that the island state harboured a variety of land and water transport forms that held particular fascination. Some remnants remain to this day, but the days of the Derwent river steamers, the narrow gauge West Coast railways and the steam road lorries carting fruit from the Huon Valley are gone.

Perhaps the best loved and most famous transport oddity in Tasmania was the electric tramway system in Hobart. When it closed in 1960, a group of young men pooled their resources and managed to save a complete tram for preservation. Thus began the Tasmanian Transport Museum Society which today has a membership of seventy, an impressive array of museum items and promise of an ideal site for a transport museum in Hobart.

Mainly by purchase, the Society has acquired the following major items:

Hobart tramcar (bogie, single-deck) No. 141

Two Hobart trolley buses - one No. 74 is a "Canton" bus believed to be the oldest in Australia. It has a Leyland chassis. The other No. 235, is from British United Traction and has a steel body. Both vehicles were built in Hobart, No. 74 by the Tramways, and No. 235 by City Bodyworks Ltd.

Four Steam Locomotives: 'Q' class 4-8-2 - ex Tasmanian Government Railways - vintage 1936

'C' class 2-6-0 - ex T.G.R. vintage 1890

Abt System Rack and Pinion - locomotive

Mt. Lyell No. 2 from the Mt. Lyell railway in 'Western Tasmania'.

Climax geared logging locomotive.

Marine Steam engine from Hobart river steamer "Sorrento.

Steam traction engine: Two six-wheel end platform carriages.

At present these and our smaller treasures are stored at various places in Hobart. Finding secure storage sites pending the development of the museum site has been a serious problem.

The Society's tramcar, No. 141 is typical of the most numerous bogie cars on the Hobart system. It was, in fact, the second last car to be constructed. Like all but one of the trams used in Hobart, it was built

locally, using imported mechanical and electrical components. Most trams were built by the Hobart Municipal tramways themselves, while some bodies were constructed by contractors, such as J.D. Hurburgh, Moonah (a Hobart suburb) who built several double deckers. No. 141 is a totally enclosed saloon, with upholstered seating in two compartments. There are longitudinal seats on one side, and "turn over" transverse seats on the other, in each compartment.

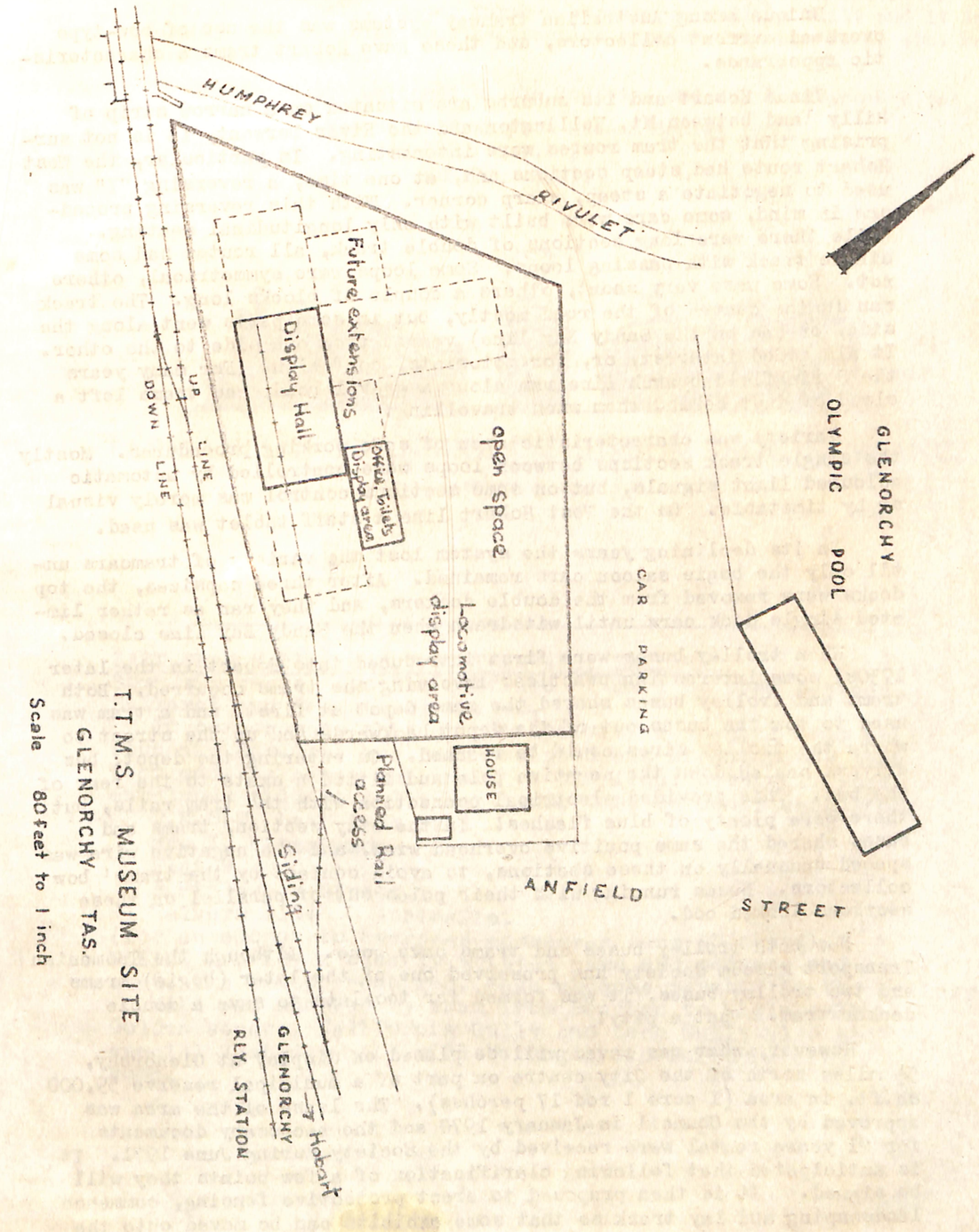
The Q class steam locomotive was one of 19 Australian built engines of the type used in Tasmania. They bore the brunt of extra duties during the war years and, although designed as goods engines, often hauled passenger trains. Locomotive C22 is the sole survivor of 25 similar engines bought over a period of years from Beyer Peacock and Co. Some were later modified by having larger boilers installed, and were classed as "CC". A few of these were further improved in the 1920s by altering valve gear and adding superheating. They became "CCS" and "CCS 23" is the locomotive restored for the Tasmanian Government Railways' Centenary in February 1971. However, the Society's C22 is in original condition.

Our open-end platform carriages are part of the rolling stock used by the Tasmanian Main Line Railway Co. when it opened the line from Launceston to Hobart in 1876. The rigid wheelbase meant a rough ride!

While many readers of "Running Journal" are tramway enthusiasts, the membership of the T.T.M.S. consists of people whose interests cover the whole field of land and water transport. The smaller population accounts for the more general nature of the Society. The monthly meetings are lively affairs with a current events discussion session, business session and formal entertainment in the form of slides, films, demonstrations and the like. Excursions are organised from time to time, and a good variety has been maintained. Steam trains, a rail car trip over a logging railway, and comprehensive tours of Hobart and Launceston trolleybus systems at the time of their closure, exploration of abandoned railways and visits to steamships are examples.

We return to the Hobart tramways, whose closure was the occasion for the founding of this Society.....There were characteristic features of the system which more than usually gave it individual attractiveness. The first of these was variety. The trams of other cities had a sameness to Hobartians, who were used to vehicles differing completely from each other, in service concurrently.

The double deckers were famous, and there were four distinct types of single-truck double deckers in addition at one time to a solitary double-bogie two-deck vehicle. Some were designed for two-man operation, others for one. Four trams had the ends of the top deck glassed in and three of these, Nos. 62, 63 and 64, were faster trams than other double deckers. On the 3ft. 6 ins. gauge and in the hilly suburbs a ride on a Hobart double decker was often an exciting experience. The swaying, bouncing action of single-truck cars seemed exaggerated if one was on the ends upstairs, or endeavouring to climb the stairs. The route to West Hobart was so tortuous that double deckers did not use it, and special single deck cars were built for it when it opened. The single deck cars appeared in both single truck and bogie form. Each of these main types included cars with widely differing body designs. There was only one drop centre car, No. 42, and it was the only car fitted with maximum traction trucks. All other bogie cars were tot-



ally enclosed saloons. Single-deck single truck cars appeared in clerestory roofed and semi-elliptical roofed versions.

Unique among Australian tramway systems was the use of bow-type overhead current collectors, and these gave Hobart trams a characteristic appearance.

Since Hobart and its suburbs are situated on a narrow strip of hilly land between Mt. Wellington and the River Derwent, it is not surprising that the tram routes were interesting. In particular, the West Hobart route had steep sections and, at one time, a reversing "Y" was used to negotiate a steep, sharp corner. With this reversing procedure in mind, some cars were built with only longitudinal seating. While there were long sections of double track, all routes had some single track with passing loops. Some loops were symmetrical, others not. Some were very short, others a couple of blocks long. The track ran in the centre of the road mostly, but in some parts went along the side, or (as on the Sandy Bay line) veered from one side to the other. It all added interest, or, for motorists, confusion. For many years the Springfield branch line ran along a gravel road, and trams left a cloud of dust behind them when travelling.

Variety was characteristic even of safe working procedures. Mostly the single track sections between loops were controlled by automatic coloured light signals, but on some sections control was merely visual or by timetable. On the West Hobart line a staff tablet was used.

In its declining years the system lost the variety of tramcars until only the bogie saloon cars remained. After three capsizes, the top decks were removed from the double deckers, and they ran as rather limeted single deck cars until withdrawn when the Sandy Bay line closed.

When trolley buses were first introduced into Hobart in the later 1930s, some interesting practices involving the trams occurred. Both trams and trolley buses shared the same depot at first, and a tram was used to tow the buses out of the depot backwards and up the street to where the trolley wires could be reached. On entering the depot, bus drivers hauled down the negative pole and fitted a skate to the rear of the bus. This provided electrical connection with the tram rails, but there were plenty of blue flashes! In the city section, trams and buses shared the same positive overhead wire, and the negative wire was spaced unusually on these sections, to avoid contact by the trams' bow collectors. Buses running with their poles out of parallel on these sections looked odd.

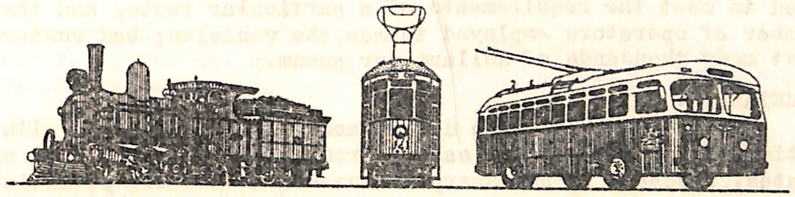
Now both trolley buses and trams have gone. Although the Tasmanian Transport Museum Society has preserved one of the later (bogie) trams and two trolley buses, it was formed far too late to save a double decker tram. What a pity!

However, what was saved will be placed on display at Glenorchy, 5½ miles north of the City centre on part of a municipal reserve 59,000 sq.ft. in area (1 acre 1 rod 17 perches). The lease of the area was approved by the Council in January 1970 and the necessary documents for 21 years rental were received by the Society during June 1971. It is anticipated that following clarification of a few points they will be signed. It is then proposed to erect protective fencing, commence landscaping and lay track so that some exhibits can be moved onto the

site. Other exhibits, notably the tram and trolley buses, will remain in protective storage pending financing and building of a 100 ft. x 50 ft. display hall. Later further structures will be built and it is probably that vehicles such as traction engines, vintage cars, etc. may operate on the site.

Enquiries are welcomed by the Society, and may be addressed to:

Tasmanian Transport Museum Society Inc.,
Box 867J, G.P.O.,
HOBART. 7001.



TASMANIAN TRANSPORT MUSEUM SOCIETY INC.

FOUNDED 1962

LAST TRAM MAIL : - S.E.C. TRAMWAYS, BALLARAT.

Some six years ago the carriage of mail by tram between Ballarat and Sebastapol ceased.

To commemorate this unique activity a special tram mail souvenir Envelope has been designed and arrangements have been made to carry this mail on the final services. These envelopes will be fully serviced. Cost 25 cents each from;

T.M.S.V. Last Tram Mail
Mr. J. Fitzsimmons
Flat 9
8 Finlayson Street.
Malvern 3144 Australia.

(for envelopes to overseas addresses send 50 cents)
PLEASE provide a clearly written name and address and state the number required. Make cheques payable to the society.

Mail was carried by tram from Bendigo to Eaglehawk, Golden square, California Gully and Long Gully also and special last day mail will be organised for this city soon.

- - - - - - - -

THE ART OF ROSTERING IN THE TRAM AND BUS INDUSTRY. . . .

....by R. C. Drummond. Traffic Manager, M & M T B

To many people, "rostering" crews for duty in an industry like the Tramways is simply a matter of listing names and assigning duties by rotation. There is, of course, a good deal more to it than that.

It is essential in rostering that the least number of vehicles be used to meet the requirements of a particular route, and the least number of operators employed to man the vehicles; bad rostering can cost many thousands of dollars per annum.

TIMETABLES.

The timetable must be determined before proceeding with the allocation of duties commonly called "rostering." In the case of new routes, research is necessary to assess the loading potential of the area generated by shopping centres, industrial establishments, schools, sports grounds and other places of amusement or community interest.

Newly-inaugurated services are kept under close observation and alterations are made to meet the public demand as it emerges more clearly. Really the only known method of determining what should be a satisfactory service on new routes is trial and error.

Once a suitable frequency of service is determined (commonly called "headways"), the next step is to ascertain the number of vehicles needed to operate the new service.

The first thing to be considered is the speed at which the vehicles may be expected to travel, having regard to traffic density, etc. In Melbourne it has been established that our buses travel at an overall speed of 13.28 m.p.h. "off peak," and 12.27 m.p.h. at "peak" periods. This is after allowances have been made for delays at railway crossings, the negotiation of steep grades, street bottlenecks, heavy traffic and so on.

Let us suppose that an overall speed of 12 m.p.h. has been calculated and the route distance is six miles. We arrive at a running time of 30 minutes, or a round trip time of 60 minutes.

Therefore the formula for running time is:

$$\frac{\text{Route distance (6)}}{\text{speed (12)}} \times 60 = 30 \text{ minutes}$$

To ascertain the number of vehicles required to operate the service, the round trip time is divided by the frequency required. For example: round trip 60 minutes, divided by five minutes frequency = 12 vehicles.

To meet passenger movement within a route it may be necessary to provide a more frequent service to intermediate points. When this is necessary the "short run" cars should be placed ahead of "through" cars to carry the short haul loading.

To cope with exceptionally heavy traffic over a short period the headway (frequency) is closed up and lengthened at other times as the loading decreases.

RULES.

To operate a timetable or service successfully the following should be strictly observed:-

1. Vehicles should depart from the terminus and endeavour to keep to schedule for the entire trip (arrive at Bundy clock and time points on time).

2. Headways should be arranged to give an even flow of vehicles at regular intervals.

3. Timetables should be arranged on the basis of a "memory" schedule," e.g., "on the hour and every 12 minutes," or "on the hour and every 10 minutes," etc.

4. If possible, connections should be made with intersecting services and trains, etc.

After the service frequency and round trip time have been fixed, the times are arranged in runs. If the first car is 6.00 a.m., and the round trip time is 60 minutes, the following trip on this run would be 7.00 a.m., and so on. When all the trips are placed into runs and numbered, the timetable is at the stage of permitting the construction of the staff roster.

THE ROSTERING OF STAFF.

Before dealing with this subject, mention must be made of the fact that passenger movement at night has fallen off to a marked degree over the past few years, undoubtedly due to the introduction of television and the growth of the private motor car. Consequently after-dark services have been greatly reduced. This has the effect of limiting the number of night-shift crews available to work on the p.m. peak periods.

When constructing a roster, the working conditions as laid down by the Arbitration Court must be observed. The main points in the Tramway Industry are:-

(a) Meal relief minimum, 40 minutes.

(b) All meal breaks in excess of one hour and up to two hours rank as time worked, therefore meal breaks between one and two hours should be avoided.

(c) Period of work must not exceed 4 hours 45 minutes without meal relief.

(d) All employees to have at least 10 hours off duty between shifts.

Before actually rostering staff a survey of the timetable is made to estimate the number of shifts required to man the vehicles. Supposing there are 10 vehicles in service in the a.m. peak, 5 in the "day off" peak, and 10 in the p.m. peak, and 4 after the p.m. peak to the last vehicle time.

A.M. Peak	Day Off Peak	P.M. Peak	Last Round
10	5	10	4

The roster therefore requires four late p.m. shifts, which will work from approximately 3.30 p.m. to 12 midnight. Meal reliefs for each of these "last round" four crews are staggered for economical reasons. In practice, the 4.45 minutes clause in the Arbitration Court award limiting the period of duty without meal relief determines when the first p.m. meal relief can be allotted, and the number of meals that can be provided by a middle shift.

MIDDLE SHIFTS.

Middle shifts are those which have to be provided to allow other shifts to be broken for meals. Unlike factories which can shut down for an hour or part thereof for meals, the Transport Industry must keep the wheels turning and therefore meals are staggered so that one middle shift crew can provide as many meal reliefs as possible.

Let us assume that, of the four vehicles in service on the late p.m., the first car runs into depot at 11.39 p.m; the crew signs off at 11.54 p.m., therefore it can return from meal as early as 7.9 p.m., a spread of 4 hours 45 minutes. The crew is then given a suitable portion of shift covering the peak period, say, 3.4. p.m. to 6.19 p.m. So the meal period is from 6.19 p.m. to 7.9 p.m., and the day's work is 8 hours - this table can be known as "A".

When table "A" is available after meal, table "B" is relieved from 7.9 p.m. to 7.49 p.m., "C" from 7.49 p.m. to 8.29 p.m., and "D" 8.29 p.m. to 9.9 p.m.

It can be seen, then, that the meal relief period has been from 6.19 p.m. until 9.9 p.m., when four runs have been broken to allow their crews to have meals.

While this is going on, an extra table "E" has to be used, and this table is designated a middle shift, finishing at 9.24 p.m. As the middle shift is only required for meal relief from 6.19 p.m. until 9.24 p.m., it is used on a p.m. peak run from, say, car out at 4.44 p.m.; therefore its second portion of shift is from 4.39 p.m. until 9.24 p.m.- a first portion shift is provided at a later stage.

Having established that only one middle shift is required, it and the 4 p.m. shifts cover 5 of the p.m. peak runs, leaving 5 others to be covered.

At this point the a.m. peak portion of the timetable is examined. In normal circumstances an a.m. peak service is made up of cars running into service progressively from the first car out to a peak about 7.30 a.m. Cars begin to return to the depot at about 9.00 a.m., leaving only enough out to provide the day "off peak" service.

When preparing a timetable for rostering, a roster clerk attempts to have the early run out cars into depot after the a.m. peak, thus leaving the late run outs in service. In this way the early shifts have a meal of between 40 and 60 minutes, return to the road and relieve the broken shift crews between 10.00 a.m. and 11.00 a.m. These in turn break until about 2.00 p.m., when they return and relieve the early crews, who have then completed their day's work.

The broken shift crews then remain in service until after the p.m. peak.

It will have been noted that 10 vehicles are needed for service in the a.m. peak, and there are still five cars to be manned in the p.m. peak, whilst during the day "off peak" five vehicles remain in service. Therefore, of the ten crews required in the a.m. peak, five will be straight shifts and cover the day "off peak," and five will be broken shifts covering both peaks.

Mention was made earlier of the middle night shift, requiring a first portion of work and its second portion was from 4.39 p.m. until 9.24 p.m. At this point the middle night shift table is not required to work on the roster, as all sections of the timetable are manned. Subject to the local needs of the depot, it can be made into a late night shift table with a second portion of standby from, say, 9.49 p.m. until 1.4 a.m. (meal 9.9 to 9.49 p.m.), or it can remain as a middle night shift with a first portion of standby - say, 12.24 p.m. to 3.39 p.m.

Normally, however, a roster clerk attempts to cover a day "off peak" run by extending the first portion of a broken shift table to, say, 12.24 p.m.

A middle night shift table (signing on at 12.24 p.m.) is used to cover the run from 12.24 to, say, 3.39 p.m. Thus the second portion of one of the five straight shifts is available from approximately 10.00 a.m. until 2.30 p.m., when it is of greater value for charter or special work or for standby.

ALLOTTING STAFF.

The roster has now been completed. The next step is to assess the full complement of staff needed to cater for days off, holiday reliefs, etc.

It must be noted here that the number of night shift crews required is always less than the a.m. required, and all Sunday work is done by tables which are on p.m. the rest of the week.

To find the full complement of staff required we apply the following formula:-

Sunday,		8 shifts	=	8
Week-days	5	x 15 shifts	=	75
Saturday,		12 shifts	=	12
				95

As each crew works five days a week the number of shifts (95) is divided by 5, giving a total of 19 tables, 4 being day off relief tables on week-days. In addition, 12½ per cent. is added as relief tables for annual holidays, etc., thus giving a total of 22 tables in the roster. By the above formula it will be seen that, of the 19 working tables, 11 tables will be off duty on Sunday, 20 tables off on week-days (4 each day), and 7 off on Saturday.

Where possible, days off at the end of one week are combined with days off at the beginning of the next to provide long week-ends off duty.

On completion of arranging day off relief tables all working tables are then balanced to 40 hours. This balance is a vital aspect

in rostering, as it can avoid unnecessary expenditure by some tables being paid overtime, whilst others do not work the required number of hours.

Each table is set out showing daily work, then added to a weekly total. Shifts with more than 40 hours are changed with smaller shifts on Sunday, week-days and Saturday to arrive at a balance. Then follows the "times or duty sheet", setting out each table's times for the day, with days off as provided.

Timetable cards with full instructions for each crew are then compiled and the new roster is ready for use.

The example roster used in the foregoing is an over-simplification in order to "get over" to the reader the basic principles of rostering. It does not always follow that times of relief will fall in the right place; meal periods are often difficult to provide at the right time, and spread times can be either too small or too large.

Many of the large transport operators here and overseas have investigated the possibility of having rosters and timetables compiled by computer. To date no worthwhile advances have been made.

After one investigation was carried out for the Tilling Association, Andrew Young, B.Sc., Ph.D., F.R.A.S., F.I.M.A., said:

> "The investigation was disappointing, but there is the consoling thought that the actual schedules used are as good as can be produced. This reflects great credit on the skill and efficiency of the roster clerks, whose experience has clearly taught them as much as it can."

SMYTHES MENS WEAR!
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Agents for airport travel goods
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Elsternwick 53 3261

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To members of the society.
SLIPPERS
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TALE OF TWO SUNDAYS . . . . . by D. McCartney

The Sundays of 20th and 27th June saw some of the most interesting workings seen in Melbourne for some time. The construction of the City Road underpass and the associated changes in levels in St. Kilda Road led to the temporary deviation at City Road, which was opened in July 1970 and was closed after car 823 had clumped over it in the early hours of 20th June last.

During the intervening year, the formation of St. Kilda Road had disappeared and finally returned some two or three feet higher than previously. In places, the new tramway track rests on top of the old, which should lead to amazement all round when it is ultimately unearthed.

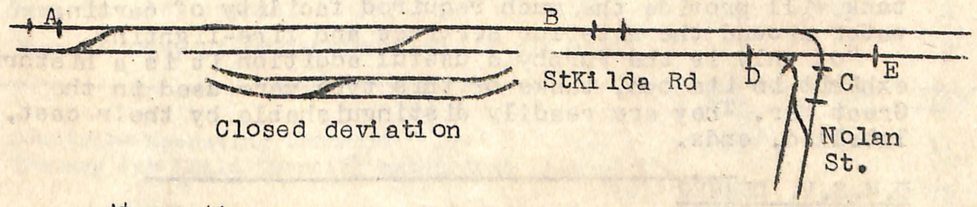
The new down line was cut in on the night of the 17th/18th and the up line on the night of 19th/20th. To allow concreting to take place, the up line was closed during the 20th, and single line working instituted between Nolan Street and Flinders Street.

Up cars on arrival at Nolan Street changed ends, then ran back into Nolan Street, over the crossover, and returned to St. Kilda Road on the down track. All the necessary points were sprung for the occasion. At Flinders Street the cars rumbled through the Batman Avenue zone and over the crossover back to the up line.

The movements were controlled by inspectors at either end of the section in radio contact. Care had to be taken to ensure that no cars were waiting on the down track in Nolan Street when a down South Melbourne Beach arrived, but this pitfall was avoided carefully all day. It was possible, however, to see cars heading towards the city on the down track crossing cars temporarily going away from the city on the up track. There was also, at least on one occasion, a parallel movement from St. Kilda Road into Nolan Street between a down South Melbourne beach and a shunting city bound car.

During the morning and evening delays were slight, but during the twenty-minute service throughout the afternoon, it was barely possible to get through a complete convoy of cars in each direction before the next lot would arrive. By 5 p.m. many cars were shunting at Lonsdale Street in order to pick up their outbound journey on time.

Cars were generally worked through in convoys of four to six in alternate directions; only rarely did a single car turn up and have time enough to work through.



At any time a situation similar to that illustrated could be seen. A represents down cars waiting for the up cars to clear. B shows two up cars proceeding towards the city followed by two more (C). Meanwhile, another two (D) turn down into Nolan Street to reverse and wait for the down cars, while another (E) will shortly join them.

The up track was re-opened on Monday 21st, and services ran normally until the night of 26th/27th June, when the down track was closed for concreting and single line working once more introduced, this time on the up track.

Down cars, on arrival at Flinders Street crossover changed ends, and shunted to the up track when a clear run could be obtained to Nolan Street. Here, instead of two more reversals back into St. Kilda Road, cars continued through the crossover back to the down line, then via Sturt Street, Kingsway and Park Street back to St. Kilda Road. Up cars ran via St. Kilda Road as normally. To maintain the down service up to three half-cabs were pressed into use between Nolan Street and Park Street. Delays were notably fewer than on the previous weekend.

By Monday 28th it was business as usual once more.

CABLE TRAILER 439 . . . . . by K. Stodden.

The society was offered a limited opportunity to claim this tram which had been used as a bungalow in a Northcote backyard. The roof had been protected by tin cover-sheets.

After close inspection the society regretfully decided that the car, although complete with wheels, brake rigging, etc could not be preserved. It would be impossible to remove it as other buildings had been built around it, blocking the way out, and a mobile crane to hoist it aloft would be far too dear (and remember Ballarat and Bendigo!). In any case, the platforms and canopies were badly weathered and one side also.

So friday 13th August was spent by Andrew Howlett, Graeme Breydon, and Keith Stodden removing aprons, windows shutters, doors, seats, fittings, infact everything that could be unscrewed and storing them at Mr Alf Twentyman's home. The parts will be useful for future maintenance of his cable cars, and possibly for restoring our horse car and cable trailer 35 (bogie car)

The costs of this project are being kindly met by Alf Twentyman.

ACQUISITION

Through the generosity of member Bern Hurren we now have obtained a Furphy water cart. The cart with its 200 gallon tank will provide the much required facility of carting water around the site for services and fire-fighting.

Not only is the Furphy a useful addition it is a historic exhibit in its own, tanks of this type were used in the Great War. They are readily distinguishable by their cast, labelled, ends.

T.M.S.V. DINNER

When sending your S.A.E. with your booking for this event don't forget to use a 7 cent stamp on it. The envelope will not be used until AFTER the postal increase comes into force.

Also please book AT LEASE FOUR WEEKS BEFORE the dinner.

TRAMWAYS OF THE 1970-s . . . . . by B. Silcove.

RUNNING JOURNAL (Oct.-Nov. 1969) published a list of the World's Tramways submitted by Mr. Basil A. Silcove, a frequent traveller overseas.

This month we publish another comprehensive list from Mr. Silcove's research.

Information has been extracted from Ministry of Transport statistics in foreign countries, overseas journals, city transport house magazines and annual reports, as well as on-the-spot observations and personal contacts.

	CITIES	WEST	EAST ø
1 - 50 (or more) route miles	38	21	17
2 - 15 (or more) base routes	36	16	20
3 -500 (or more) trams	23	9	14
4 - 10 miles (or more) postwar extensions ...	25	8	17
5 - 50% (or more) reserved tram tracks ...	22	17	5
6 - 200 million (or more) passengers yearly ...	23	5	18
7 - 300 (or more) postwar trams	26	13	13
8 - Cars reaching 40 to 50 m.p.h. on level track	116	65	51
9 - 50% of stops at safety islands	94	65	29
10 - 1 man operation (with self-service machines, flat fares)	106	52	54
11 - cars at least 2'50 metres wide	53	17	36
12 - Pantographs installed since 1950 ...	39	6*	33
13 - average speed at least 10 m.p.h. ...	37	24	13
14 - articulated trams	120‡	80‡	40
15 - P.C.C. trams	24	22	2
16 - Tatra	43	1	42
17 - Tram tunnels, opened	23	23	0
18 - Tram tunnels, under construction (or planned)	31	21	10

	NO.	WEST	EAST
19 - Countries operating tramways	37	26	11
20 - Tramway (or Rapid Transit) extensions planned for 1970's	213	141	72

ø China, North Korea and North Vietnam not included.
* In West Europe, most cities had changed over to pantographs by 1940.
‡ Excludes United States orders awaiting confirmation; San Francisco 78 cars, Boston 90 cars, Philadelphia 140 cars and Shaker Heights 40 cars.

MUSEUM MUSES

Works Report

By now most members who have signed the Indemnity form should have received their yellow "Volunteer Worker" card. This card may be asked for at any time by an OIC who has the instructions - No Card - No Work. It is embarrassing to refuse volunteer labour so please hurry in with your forms or sign one at the next work party, provided you are not under 21 years of age. One other point regarding safety and the requirements of the Indemnity forms, if you bring the wife and kids to work parties keep them away from the work area and off trolleys. As far as insurance goes they are well protected under our Public Risk Insurance but as soon as they are engaged in work or step onto a rail vehicle the cover ceases. So unfortunately, no more trolley rides for the kids unless all have signed the Indemnity. It may sound tough but besides being common practice in other similar organisations, it is for their own safety.

About the Museum

Work carried out since the last report has been very diverse in nature. Probably the most noticeable change, even on approaching the site down Union Lane, is the newly erected sign explaining what is being developed in this area. The sign was painted by Tom Clark, who although involved with work at the A.R.H.S. Railway Museum at North Williamstown, found time to do this for us. Also noticeable from Union Lane is our partially completed chain mesh fence awaiting new gates for completion. The rebuilding of this fence and the rehabilitation of its equivalent at our Northern Terminus has allowed the whole length of the line to be grazed. Mr. Henry Stute, one of our neighbours at Bylands, is grazing cattle over one mile of leasehold which in return not only keeps the undergrowth in check but Mr. Stute keeps the area under surveillance. It is quite unusual to be able to watch a steer scratch its nose on a cable truck.

Many unforeseen delays have caused Depot construction to be postponed, although 43 S.E.C. poles were received on July 1, to be used as uprights. As it will be impossible to have a lockable depot shed built by the first S.E.C. tramway closures, it has been decided to construct a storage shed at the northern end of the station grounds which will eventually become an annex to the workshop. This shed will have spare parts from Ballarat and Bendigo as well as other spares already in stock that are cluttering our other cars and members yards. At the time of writing building materials have been obtained from the wrecking of houses in Malvern and South Melbourne. This material was obtained by exchanging our labour for timber and galvanised iron - the wrecker was behind schedule and required assistance. Shed construction should begin early this month (August).

Although we cannot immediately provide covered space for the trams as well, 250 feet of the old loop has been regauged to store these cars while the depot is being built. Our first vehicle on the

Also please look in [illegible]

site, the cable tram floor and truck, had the honour of also being the first 4 ft. 8½ in. vehicle to move any distance on rail.

While visible progress has been made around the main museum area over the past months, work around the house has not ceased. The laundry has been renovated and converted into a heavy tool store and the storeroom off the kitchen has had shelving and lockers installed. Further sections of the outside have beenpainted, roof ridging replaced, further furnishings added and installed, and most recently a bath heater has been connected. A portion of work in and about the house was performed by members of the Colonel Fred Forrest Rover Crew (2nd Caulfield) who in return for the use of the house for a weekend of activities, worked on the roof, provided an incinerator and generally cleaned out the home. It is hoped that we will receive further assistance not only from the Rovers but the Senior Scouts in the future.

Another long term task has begun recently and that is the planting of trees and shrubs along the lineside. This task is being carried out by Mr. Charlie Huggard, a driver from Brunswick, using all Australian native trees which are not only hardy but are evergreen and will not provide a seasonal leaf problem. Protecting the young trees from the cattle looked like being troublesome, but for an offer from Henry Stute to provide tree guards. A most helpful and friendly offer.

Rolling Stock

As announced last issue the M. & M.T.B. have donated to our fleet Austral-Otis grinder No. 1. This is being stored at Old Thornbury depot for 3 months by courtesy of the Tramways Board when we will have to take delivery of it at Bylands.

A more recent acquisition to be added to our collection was the purchase of a Sheffield track motor and another trolley towed by it. This motor trolley was used by the Victorian Railways as a "locomotive" for the weed killing train. It is driven by a 2 cylinder-four stroke engine through a variable friction drive onto both axles. The other trolley which came with the Sheffield was the pump unit of the 'train. It has been delivered to Bylands and the pump unit removed and converted to a general all purpose trolley. The Sheffield is at present at Peter Stoneham's being overhauled, and will not be moved to Bylands until a shed is erected.

Work Parties

In general work parties leave Malvern for Bylands at 9.00 a.m. every Sunday except when a museum tour is planned for that day. The only planned work party, away from Bylands, at the time of writing, will be at Malvern on September 12, no Bylands work party this Sunday.

Personal Pars

Congratulations to Director John Rawnsley and his wife on the birth of their first child - Sarah Grace.

Meetings

At Malvern Town Hall (upstairs lecture room) at 8 p.m. on Oct. 4 and December 6.

Movies by Keith Kings provided the entertainment at the June meeting. Members were treated to views of Hobart, Footscray, the two VR tramways and Melbourne all-nighters. For August there was an auction night while in October it will he films once again.

New Members

Welcome to 210 Mr. I.R. Sanders, 211 Mr. G.W.W. Dunn, 212 Mr. D.I.A. Sutherland, 213 Mr. J. Christiansen.

Publicity

One June 3rd the "Kilmore Free Press" gave front page coverage to the news that work was starting on the construction of the Tramways Museum. As a result our 'image' about the district has received quite a boost judging from conversations with neighbours and local officials.

The Board

Tony Cooke, who was elected at the Extraordinary General Meeting, will retire at the 1971 A.G.M. while John Rawnsley will serve a two year term and Rod Hudson a period of three years.

Treasurer Noel Johnstone regretfully tended his resignation due to assuming the ARHS post of Mailing Officer but has indicated his willingness to continue for a little while to enable a smooth transition.

Notes on the April issue

The following corrections and additions to the Perth article have been supplied by the Western Australian Electric Transport Association (Inc.).

Page 12 - Preservation of 66 at the Zoo was by the W.A.G.T.

Page 13 A.R.H.S. do not propose to operate the car.

Page 14 - The A.R.H.S. collection includes Sunbeam Trolley bus complete but for a compressor, Canton Trolley bus body on wheels only and tram 66 complete.

The W.A.E.T.A. collection consists of Sunbeam 846 Canton 38 (both complete), tram bodies W.A.G.T. 121, 89, 63, F.M.T. 36, K.E.T. 15, Chev. 1938 Tower wagon and flat top pole truck along with substation equipment and overhead for eventual operation of the vehicles. Application has been made to the S.E.C. for tramcar bogies, etc.

Shut the B----Gate!

Not only is it necessary to keep the gates onto Union Lane shut at Bylands but the grazing of cattle in the Museum Area also means that the gateways in front of the house must also be sealed - please remember this if you are last to leave after work parties.

Museum Dinner

Our 1971 dinner will be held in the Wattle Park Chalet on Monday 25th October, commencing at 7.15 p.m. After a three course meal our speaker, Mr. Ken Hall, will deliver an illustrated address on -

"An Engineer's Impressions of Continental Tramways"

The cost is $4.50 a head. R.S.V.P.-T.M.S.V. Dinner, P.O. Box 115, St. Kilda West, 3182, by Sept. 25th. A B.Y.O. licence will be obtained if there is sufficient interest.

Tramway Museum Canteen

A much greater variety of soft drinks is now available through our canteen at Bylands and on tours. If you require a quantity of soft drinks for parties etc., buy your needs from the Society. Contact Mr. G. Farrar, 1 Arnold St., Brunswick.



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6: Good Friday 9th April and X2 676 poses for photographers in Peel St. during a society tour. (G. Breydon.)

7: Dinner time at Bylands on May 2 when an Open Day for members was conducted at the Museum. (R. Green.)

8: W2 577, fresh from the 'shops, swings onto the Holden St. single track. This society event on June 20 was sponsored by member Ron Scholten.



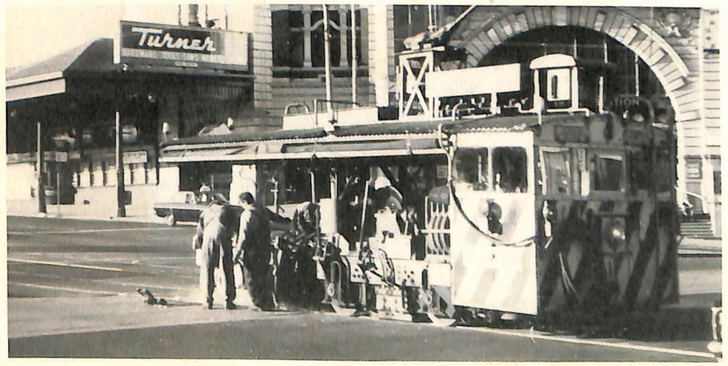
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9: Doug Prosser, Craig Coop, Graeme Farrar and David Caddy mix cement during construction of the new front fence at the Museum. (G. Breydon.)



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10: M & M T B reciprocating grinder number one, now part of the Museum fleet. (J Rush)



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11: Bylands – The line on the left is the Hume Highway, with the township clustered near the bottom. The Museum area on the right extends from the level crossing at the top of the picture to the station and cottage at Union Lane, near the clump of trees. Total length is about one mile, with cattle crossings 3/8th and 5/8th miles from the southern end.

(Lands Dept.)

12-15: 'Bang road' operations between Nolan St. and Flinders St. crossovers during construction of new tracks in St.Kilda Rd. as part of the Alexander Avenue Underpass scheme.

(D. MaCartney.)

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