
RUNNING 20c.

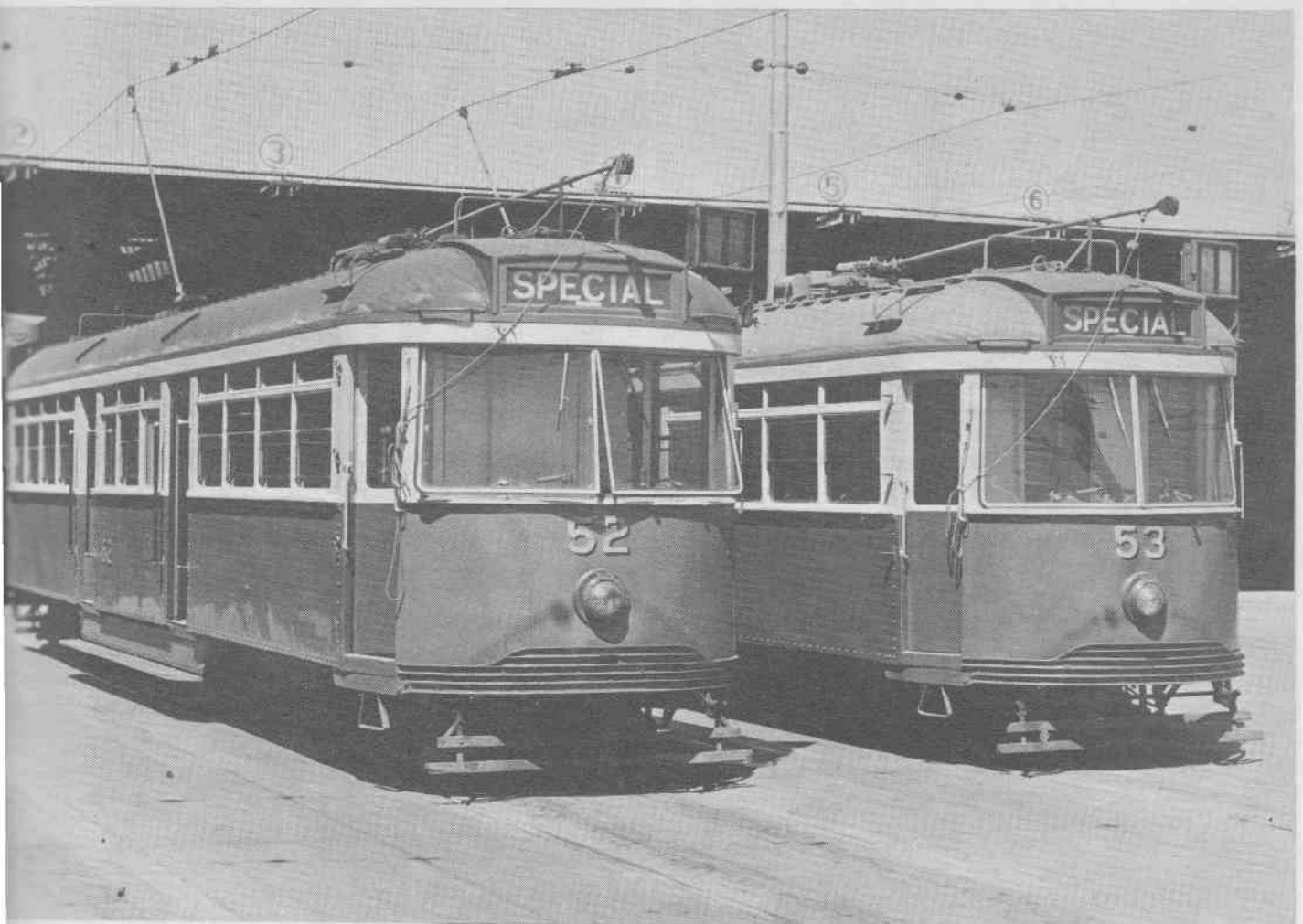
JOURNAL

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No. 4

THE TRAMWAY MUSEUM SOCIETY OF VICTORIA LTD.



THE TRAMWAY MUSEUM SOCIETY OF VIC. LTD.

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FRONT COVER:

"V.R." class trams Nos 52 & 53 pose outside South Melbourne Depot shed, just prior to the departure of our third "Golden Sunset Tour", held on Tuesday, 26th December 1967. The report about this excursion is printed on Page 15 of this issue.

R.w.Green Photograph

Here are some details of the car illustrated in the photograph on Page 3. (opposite).

San Francisco (U.S.A.) P.C.C. car No. 1038 was built in 1951 by the St. Louis Car Co. Nos 1016 -- 1040.

They are all electric cars, single-ended with back-up controls salvaged from Chicago P.C.C. cars. These controls are used for Depot shunting and reversing at some termini.

The trucks have 25 in. wheels set to Standard Gauge - 4 ft. 8½ in.

The cars are one-man operated. Colour scheme is white body with dark green roof and flutings along the sides of some cars.

The body dimensions are :-

9 ft. wide.

46 ft. 6 in. long

10 ft. 3 in. high

Photo by courtesy "TROLLEY GREG".



TRAMWAYS OF LONDON

By W. FULLER.

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Part 1:

THE LONDON COUNTY COUNCIL,

The tramway services in London, prior to the formation of the London Passenger Transport Board in 1933, were provided by some eleven different concerns. By far the largest of these was the London County Council, the subject of this article.

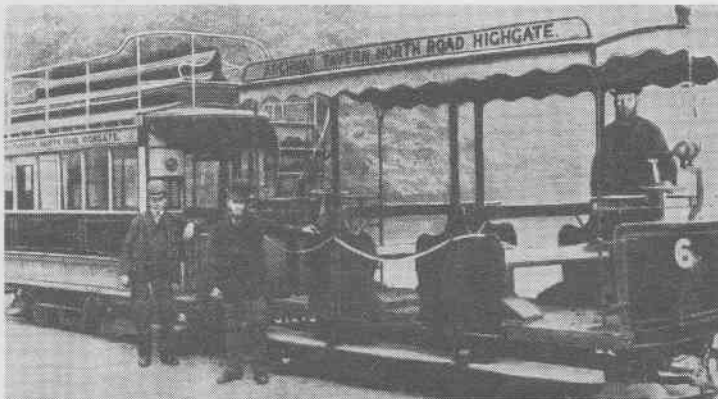
The L. C. C. (as they were best known) began to take an interest in tramways with the purchase in 1895, of the London Tramways Company. By Law, the L. C. C. themselves were unable to operate a tramway at this time, so the system continued to be run by the Tramways Coy. Eventually, on the 1st. of January, 1899, the L. C. C. obtained legal possession, on account of a Bill that was laid down in Parliament in 1896, entitled the L. C. C. Tramways Act, becoming at long last — Law!

The Council acquired with the various horse and electric systems, two cable lines--one being the Highgate Hill route. Services began on this line on May 29th. 1884, and had rather a chequered career. The line was the first cable tramway in Europe, and it is interesting to note that the construction company (Patent Cable Tramways Corporation) operated the line until it was handed over to the authorised company on October 25th. 1884. The track gauge was 3 ft. 6 in.; the conduit in which the cable ran was 8½ in. deep

and 7 in. wide. The system was closed after an accident that occurred in December, 1892, due to a cable breaking.

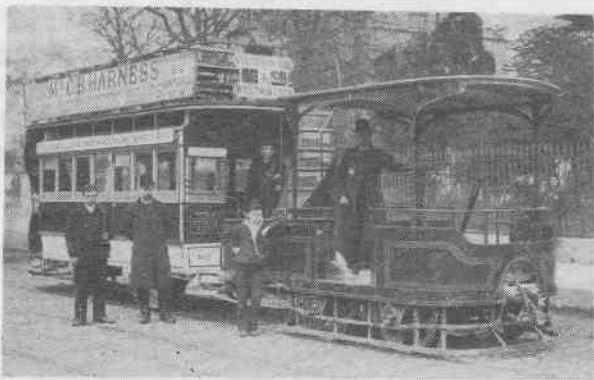
In May, 1893, the Highgate Tramways Co. Ltd., was formed to purchase the undertaking from the

LEFT. A dummy with transverse seating is coupled to a Highgate Hill car. Photo: W. Gratwicke.



liquidator. In June, 1893, a Board of Trade representative inspected the line and approved the improved conditions of plant and machinery. The local authorities opposed the re-opening of the line, and it was not until April, 1897 that opposition ceased and the line commenced business again.

The cable was driven by two horizontal engines of 50 h.p. At this time, the rolling stock consisted of 7 trams, and were called "gripper" cars-- which is a self explanatory expression. The Council finally obtained ownership of the line on August 24th. 1909.



ABOVE. Cable car and dummy at Streatham. W. GRATWICKE.

The other cable line, which ran from Kennington Park to Streatham Hill was of standard gauge - $5\frac{1}{2}$ miles long. The cable was 6 miles long - unbroken, and ran at a steady 8 m.p.h. The 9 in. tube was laid 19 ins. below the surface. The cars were worked to Kennington by horse, where a "dummy" containing the "gripper" mechanism was coupled onto the car and hauled it to Streatham Hill, after which the horses took over once more to run to Norbury Station where connection was made with the Croydon Council Tramways. Later, some passenger cars which had "grippers" in them entered service.

The Streatham line was eventually converted to Electric conduit in 1909.

After the take-overs, things moved very quickly, with the L. C. C. introducing various measures that were to earn for them the reputation of being good employers. The working week was reduced to 60 hours (!) with one day off in seven being given to the platform staff. From the passengers point of view, the improvements were headed by the introduction of a uniform scale of fares, commencing at one half-penny. This brought about a general reduction in fares. An all-night service was also inaugurated. The L. C. C. progressively enlarged their tramway holdings by the purchase of other systems, and the building and opening of new lines.

A noteworthy point at this stage, is the fact that the L. C. C. became the only operator in the United Kingdom to construct an underground tramway. This, of course, was the famous Kingsway Subway. Although originally opened in 1906 as a spur line, it soon became apparent to the L. C. C. that by extending the subway southwards, a valuable connection would be made between the Northern and Southern systems; this work was completed by 1908. It was also decided to enlarge the subway to take double-deck cars, as previously its services were run by specially constructed single-deck cars - incidently, the only ones to be owned by the Council. The big day arrived in 1931, when His Majesty King George the Fifth drove the first tram through the entrance at the Victoria Embankment end. The car was especially painted white for the occasion



ABOVE. Decorated car No. 1931 at the South portal of Kingsway Subway in 1931. L.C.C. Photo.

and carried the service No. 1931.

Passengers, of course, being the mainstay of efficient operation, had to be attracted to the trams during the off-peak periods, so the L. C. C. exploited this to the fullest extent. From 10 a.m. to 4 p.m., a "cheap Midday" ticket was introduced whereby a passenger could ride from one end of a route to the other for the modest sum of two-pence. It was also possible to travel 3 sections for one-penny. Another ticket available was the 1/- all-day one. It was possible by paying this one fare to travel over the whole of the undertaking—some 166 miles! It's availability extended from the first car in the morning to the last car at night. What a boon to tramway enthusiasts! These concessions were not the limit to the L.C.C.'s ingenuity, for the same facilities were available to the purchaser of a six-penny ticket, for which he could travel from 6 p.m. onwards till the last car. How's that for bargain travelling! What is more, these cut-rate fares were successful, attracting many thousands of passengers in spite of competition from the Underground Railways and the Private Omnibus Companies.

To give some idea of the extent of the system, some 1932 figures are listed hereunder:-
 Mileage operated - including through running agreements with other systems, amounted to 265 route miles. The number of trams required to run this mileage was 1,712 cars; 17 depots sheltered and maintained them. 700 million passengers

were carried for the year and 70,000,000 miles were covered. Each car on an average, travelled 132 miles per day! Service over the system was a $1\frac{1}{4}$ minute headway during the peak-hour, with a 2 minute service at other times. As an example of the headways on the Embankment - which is approximately 1 mile long - 175 cars an hour ran in each direction with about 30,000 passengers per hour being carried. Another example was of course, the Elephant and Castle, it being the largest tramway junction in England, with 450 cars per hour passing through it. To operate and regulate such a system required a total of 8,140 staff, 7,028 being motormen and conductors.

Whilst on the subject of figures, it is interesting to note that the Power Station, built by the L.C.C. at Greenwich to supply the tramway system with electricity, had a capacity of 87,000 K.W's and an output of 250 million units per annum. 4,000 tons of coal per week was needed to generate the power. Distribution of the current throughout the system required 24 sub-stations, 790 miles of cable, 494 miles of conduit tee rail, 155 miles of duct line and 3,480 overhead poles - quite an

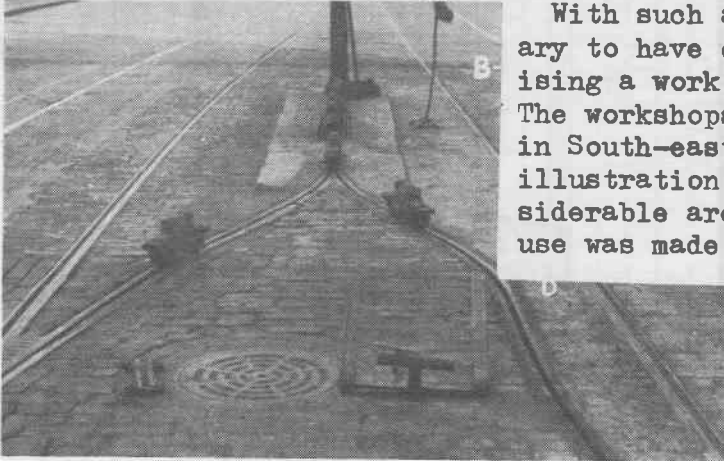


ABOVE:

E1 class cars on the approach to the Telford Avenue Depot, Streatham.

impressive list! The power station is still in use today, generating power for the London Transport Underground Railways.

Mention at this stage should be made of the conduit system of current collection (see fig. 2, next page for skeleton diagram). Owing to objections to overhead wiring by some London Boroughs, it was decided to place the electricity supply underground. It proved very costly - both for construction and maintenance work but however, this type of current collection still accounted for 123 miles of double track. The electricity was collected for the car by means of a plough (see fig. 1, next page) which was suspended from underneath the tram. I used to spend a considerable amount of time watching the operation at a change-over pit, where the conduit system gave way to the overhead. The activities at the change-over pit are described below the picture. (LEFT).



Change-pit on L.C.C. conduit system. Plough of car proceeding to overhead section followed the slot and, on leaving, the plough carrier was caught on the 'roller-skate' on which it was manhandled into position ready to be put in a car going in the opposite direction. The car stopped with its plough carrier alongside the parallel position of the slot. The plough was lifted to plough carrier height, the car moved slowly forward taking current from the overhead lines, the attendant walking along holding the fork. The plough slid on the prongs of the fork until it was within the carrier, after which the fork was removed.

The trolley pole was stowed and the change-over switch operated, the whole cycle taking a fraction of a minute. The red flag kept unwary motorists at a safe distance.

Surplus or defective ploughs could be removed at a hatch beyond the junction of the two slots where jets of water were available to spray dirt off the lower parts of the plough.

With such a large fleet of trams it was necessary to have quite an extensive repair depot utilising a work staff of over one thousand personnel. The workshops were situated in Charlton, a suburb in South-east London. As can be seen from the illustration on page 9, the works covered a considerable area and it was interesting to note how use was made of the ropeways. The cars would be brought in and lifted so that the trucks could be replaced. After this, the car would be attached to one of the body shop ropeways. These, as did the other ropeways, travelled at a speed of 3 inches per minute and by the time the car had reached the end - a distance of some 650 feet - all the fittings had been checked and repairs or replacements, if required, had been made. Also on this section, the controllers would be adjusted and a test made of the car wiring. On

removal from the body shop, the car went through the paint shop and after about 15 hours, it would emerge ready for licensing, having received 1 coat of colour and 1 coat of varnish. Other sections of the Central Repair Depot dealt with the motors and truck overhauls. The underground ploughs were also renovated at the rate of 1,000 per week!

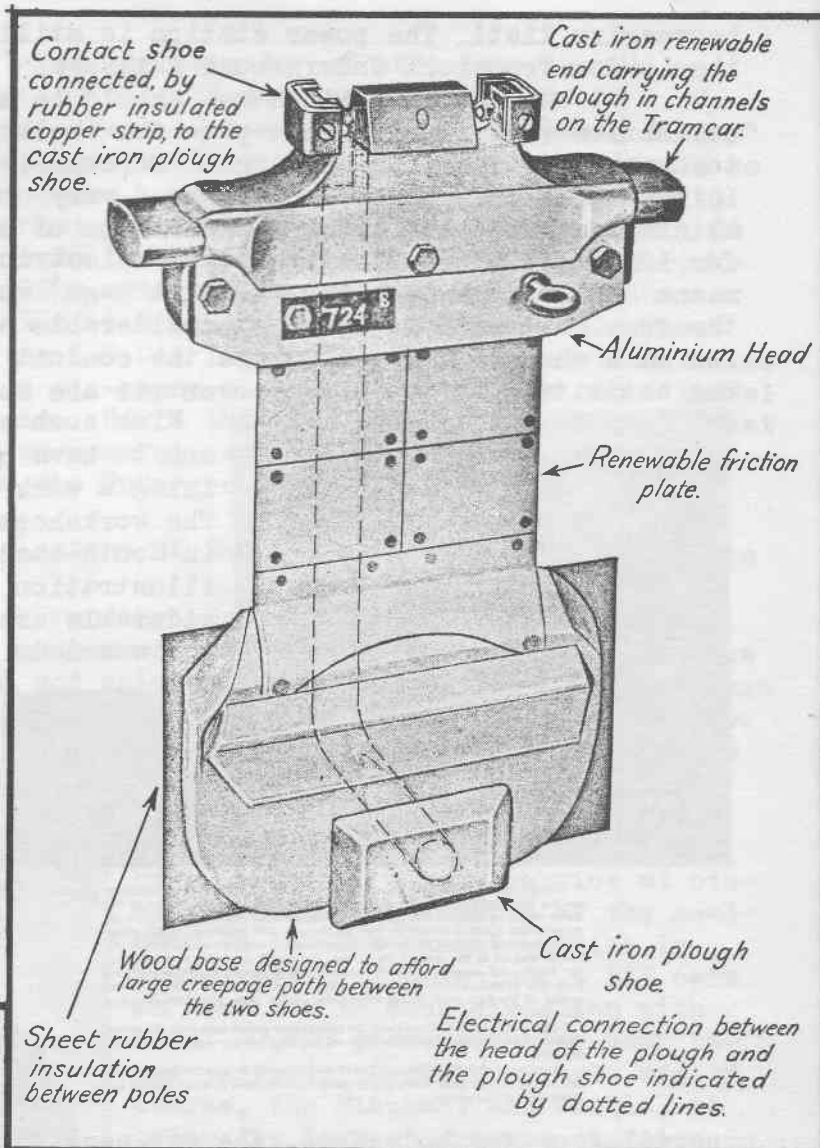
As the trams were licensed by the Police, it was necessary for each car to be repainted annually and to have a complete overhaul every other year. In order to comply with the Police Regulations, it meant that 36 trams had to pass through the workshops every week! In addition, cars requiring collision and other repairs were also "put through" the relevant sections of the shops.

ROLLING STOCK.

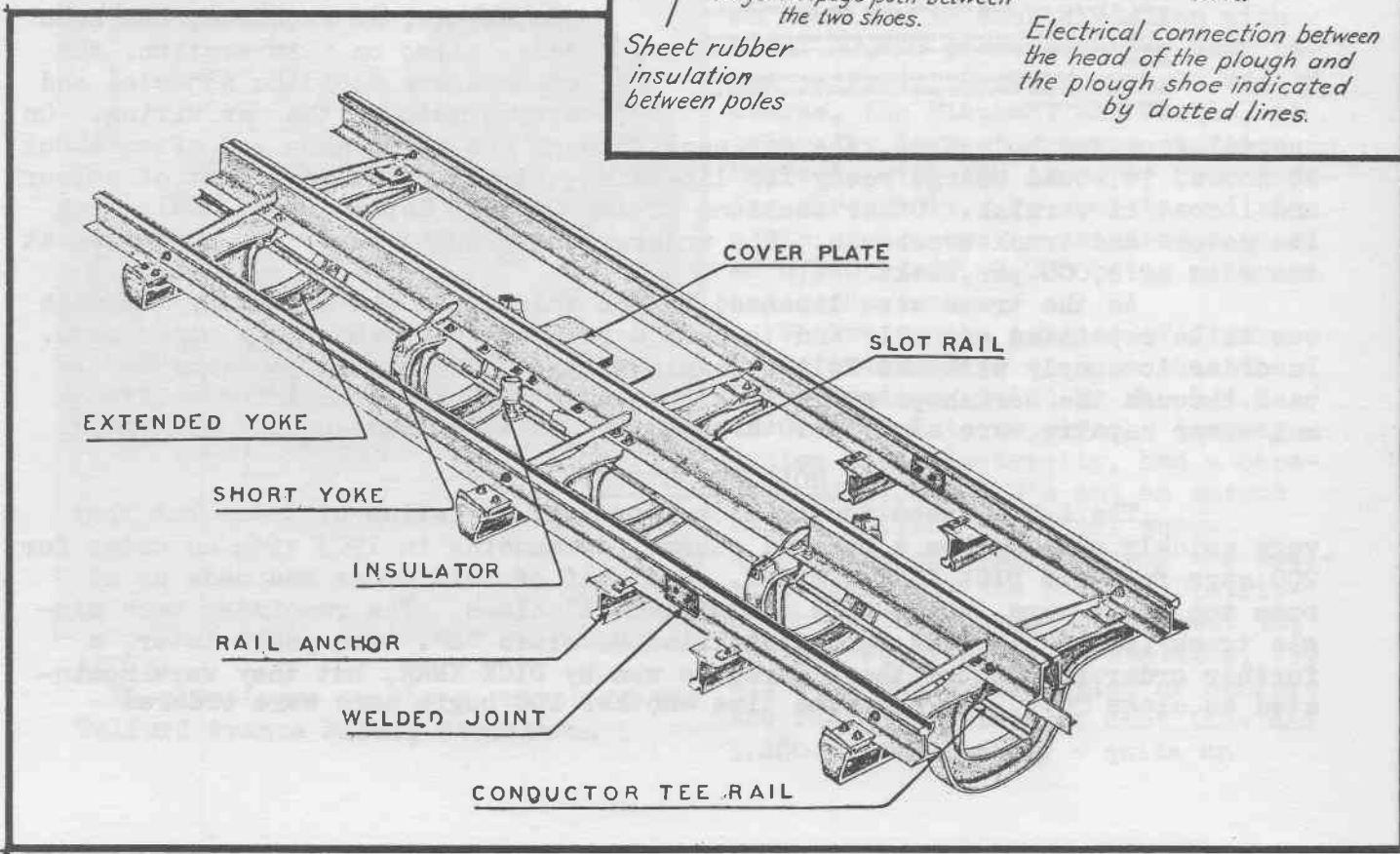
The L.C.C. when formed took over many varieties of trams but they very quickly embarked on a renewal scheme, commencing in 1903 with an order for 200 cars from the DICK KERR COMPANY. One half of this order was made up of open top bogie cars, which were classified "A" class. The remainder were single truck (BRILL 21E) and were classified as class "B". Two years later, a further order for 100 of these cars was won by DICK KERR, but they were nominated as class "C". At the same time another 100 bogie cars were ordered -

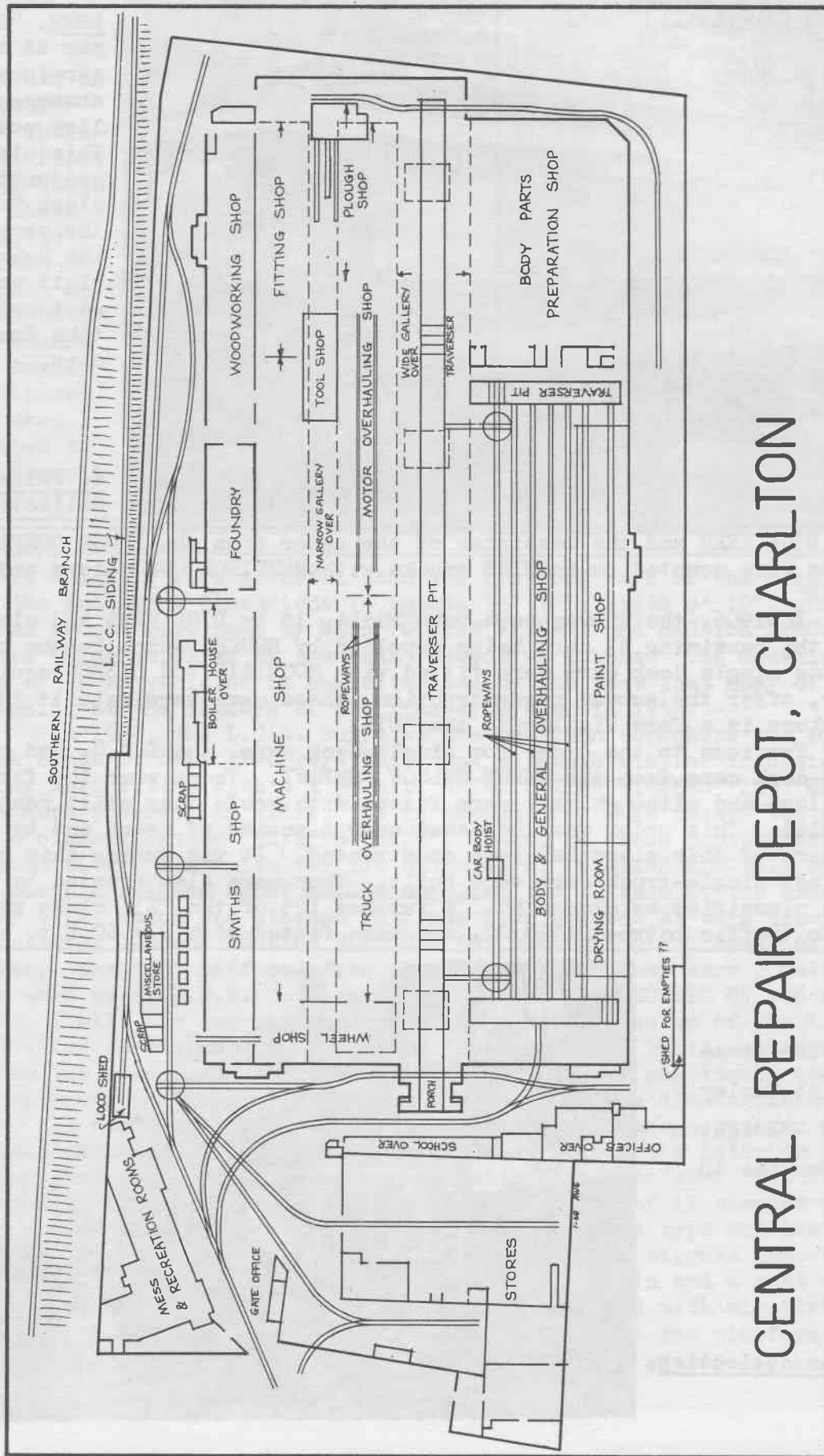
conduit plough

Fig. 1.

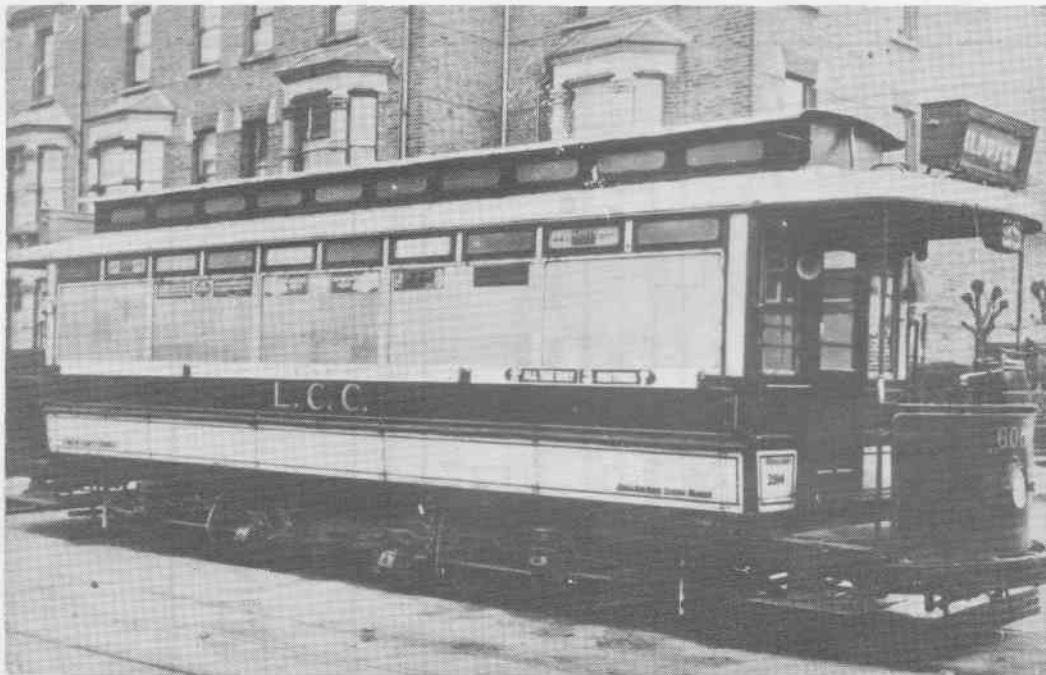


conduit track in skeleton. Fig. 2.





CENTRAL REPAIR DEPOT, CHARLTON



LEFT. "G" class car at Aldwich terminus. (Note absence of trolley poles). This class - in conjunction with class "D" - ran the services to the Subway - until it was widened & enlarged to take double-deck cars.

W. Fuller collection.

some from DICK KERR and the remainder of the order from the BRUSH COMPANY. These trams were mounted on McGUIRE trucks with WESTINGHOUSE motors and made up class "D".

In 1906, the Subway cars were built, 15 by DICK KERR and classified "F", with the remaining 33 cars being supplied by BRUSH, which became class "G". All of these single deck cars were fitted with MOUNTAIN and GIBSON equipment. Incidentally, after the subway reconstruction, these cars were rebuilt into double-deckers in a form similar to the "E1".

Previous to the order for single-deck cars, the L.C.C. had ordered 300 double-deck cars from the HURST NELSON COMPANY. These were the first of the "E1" class and although they were fitted with roofs they still remained un-vestibuled. This order was increased over a period of years and by 1913 over 900 cars of this class had been constructed. It was during this period that the last single-truck cars were built. They were also erected by HURST NELSON and classified as class "M". A further 125 of the "E1" class were supplied to traffic between 1920/22, and were fitted with 2 x 60 h.p. motors,

"HR/2" class tram
No. 398 at Purley
terminus - Brighton
Road - Service 18.

W. Fuller collection.



E3 class car as a peak hour extra at Thornton Heath Depot. The photo quite clearly shows the magnetic track brake shoes which are suspended between the wheels of each bogie. These slipper track brakes were fitted to all the Council cars, except No. 1.

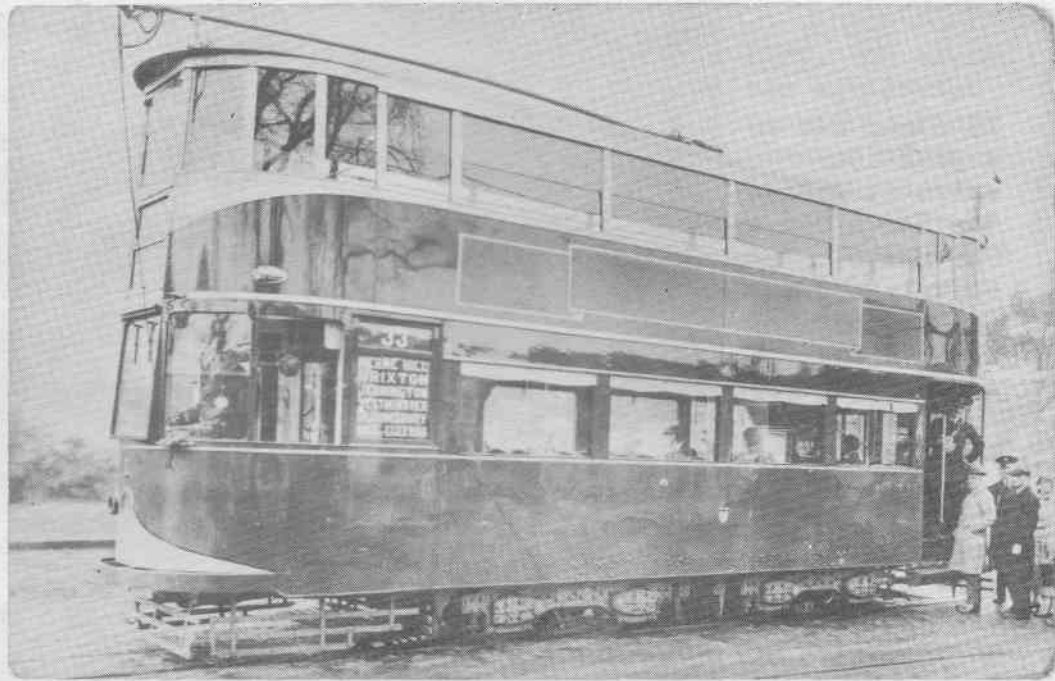


which were slightly more powerful than the previous cars of the class. The E1's were of the following dimensions :- Length 33' 10"; Width 6' 10", and 15' 7 $\frac{1}{4}$ " high. The trucks were made by METROPOLITAN VICKERS and ENGLISH ELECTRIC Co; the motors being supplied by the same respective makers. The excellent carriage building of these vehicles is characterised by the fact that many of them were still running at the closure of the tramway system in 1952.

In 1930, the L.C.C. built at the Charlton Workshops the prototypes for a new class of car. Two were built and although similar in design to the "E1", they were fitted with 4 x 35 h.p. METROPOLITAN VICKERS '109' motors, making them more powerful on hills. It is thought for this reason the cars were given the classification "HR/1" & "HR/2". Based on these prototypes, orders were placed with 2 companies for 110 extra cars. ENGLISH ELECTRIC supplied 50 trams & our old friends HURST NELSON supplied the balance of the order - 60 cars. A similar type, which was classed "E3" was also ordered at this time, HURST NELSON building 100 and ENGLISH ELECTRIC 50, making a grand total of 260 cars altogether. The "E3" differed from the HR/2 in that they were 2 motor maximum traction cars using E.M.B. Co's trucks with ENGLISH ELECTRIC DK 126 motors.

I will now describe what was the ultimate design of the L.C.C. tramways and which unfortunately became the last car to be built - although it was mounted on the same type of trucks as the "HR/2". The car itself had innovations unknown on previous Council tramcars. The exterior was distinguished by the fact that all parts that projected on other types of cars - such as destination boxes, headlamps, etc. - were recessed into its body. The interior had a sound-proof lining whilst the floor was covered with blue linoleum. The seats were upholstered in blue Rexine and moquette and the whole of it blended with the white of the ceiling. The lighting was of the diffused type and heaters, which operated at line voltage, were installed. Perhaps the biggest innovation was that, for the first time, the motorman had his own cabin and a seat to sit on. The car was also the only one in the fleet to be fitted with air-braking. In spite of all these features, the car was unpopular with the platform staff. It was used on the subway routes for a time but was later placed on the all-night

Official photograph of No. 1 in service on one of the Subway routes. (Note Trucks).



L.C.C. Photo.

services! When these were converted to bus operation, the car only appeared as a peak hour extra from the Telford Avenue Depot. When this depot was closed to trams, the car was transferred to Leeds and when this latter system closed, the car once more returned to London, where it was placed in the Museum of Transport at Clapham.

So in 1933 - on July the first - the L.C.C.'s role of tramway operator came to an end - ironically by another Act of Parliament. Control was then passed to a Board set up by the Government. In the period that the L.C.C. had operated the tramways, it had built up a system that was the envy of many other undertakings. Possibly, had the London County Council been allowed to retain ownership, London may still have had a modern tramway system, but this was not to be, for it was only a few years after that the whole of the Northern area - with the exception of the Subway routes - had vanished. Only the 1939/43 war prevented the remaining lines' early demise. At least it was fitting that the last tram of all to run in service, N^o 1952, should have been one of the "E3" class - the type the L.C.C. were so proud of!

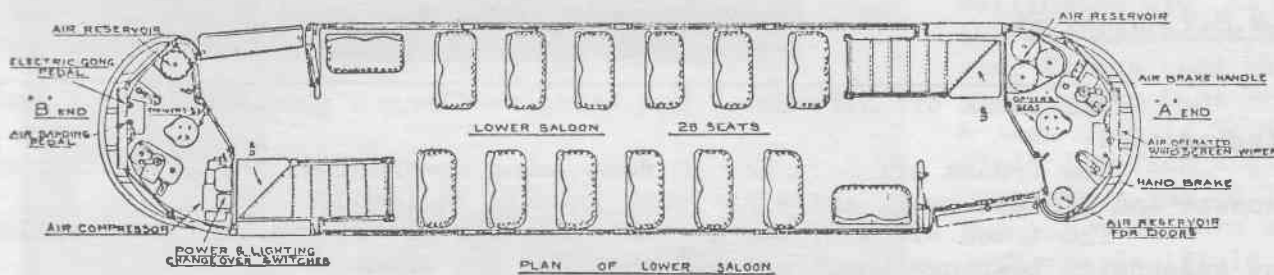
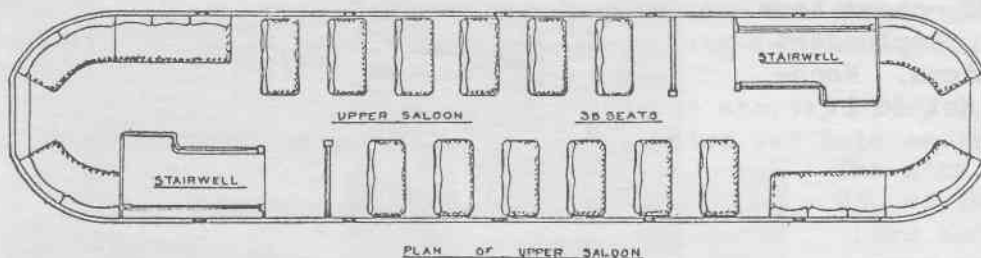
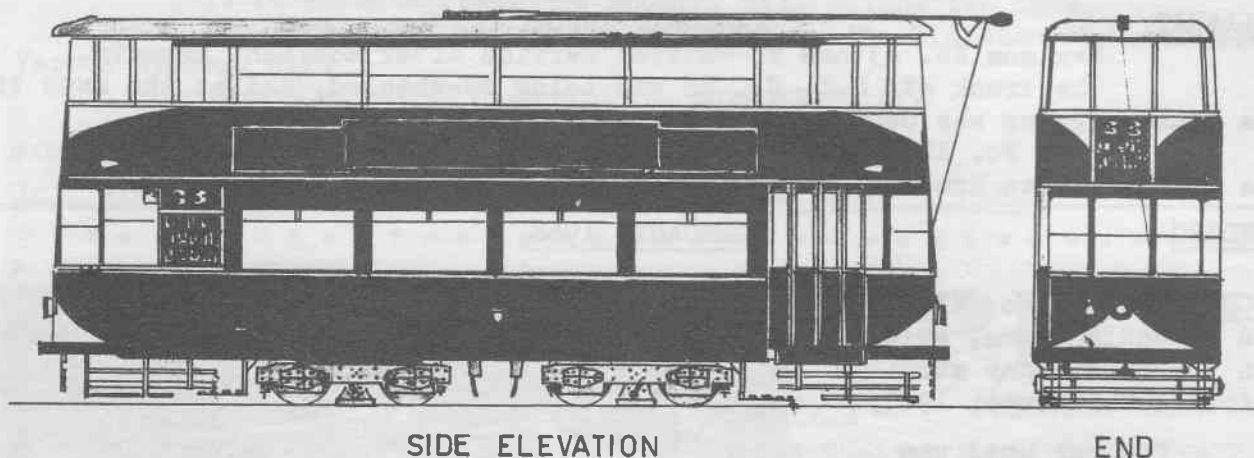


The Embankment -
London.

A single-deck Subway car is shown in the right foreground.

T.M.S.V. archives.

Drawings of the side and end elevations plus the plans of the upper and lower decks of the "Blue Car" - No 1 - are printed below :-



THE TRAMCAR OF 1932: INTERIOR

In conclusion, I desire to place on record my sincere thanks to The Successors of the L.C.C.; Robert w. Green; Christopher Andrews and the T. M. S. V.

In order to confirm certain data, references were made to the following books :-

"THE BRITISH TRAM" by Frank E. Wilson.

Ian Allan's book No. 2 of the "A.B.C. OF LONDON'S TRANSPORT"; and

"TRAMS OF A BYGONE LONDON" - A Michael Dryhurst Publication. (No. 2).

W. FULLER.

January

1968.

PROVINCIAL PARAGRAPHS

BALLARAT

JANUARY, 1968.

Maximum No. 43 has re-entered service after accident repairs.

The truck off S.T. No. 26 was being re-wheeled, and at the same time the brake rigging was overhauled.

S.T. No. 17 was being repainted in S.E.C. Colours after it's term as the Bridge Street Traders "Santa Claus" tram.

BENDIGO

FEBRUARY, 1968.

RIGHT. In Bendigo, MYER'S had a "SANTA" tram, which ran for 4 Saturday mornings prior to Christmas, 1967.

The car used was Birney No. 28, shown here looking very resplendent in it's decorations. Mono-chrome does not do it justice!



T.M.S.V. archives.

The truck off S.T. No. 7 was being re-flanged plus overhaul of brake rigging etc.

The trucks off M.T. No. 25 were being re-wheeled, the motor bearings renewed and checked over, and side frame inserts replaced.

The truck off S.T. No. 21 has had a new set of wheels fitted whilst new suspension bearings have replaced the worn out ones.

BALLARAT.

MARCH, 1968.

S.T. No. 32 (Myer's "SANTA CLAUS" tram) is being completely repainted - exterior and interior. Inside the car the ceiling is being revarnished. At the same time as the repaint, the body has been examined, and if any part is sub-standard, then it is being replaced.

FLASH:-

The Transport Regulations Board will conduct an inquiry into Public Passenger Transport facilities in the Ballarat Urban district on Tuesday, 2nd. April. The proceedings will take place in the Supreme Court Room, Ballarat. The Enquiry is concerned with the present system of tram and bus services and, in particular, whether the existing tram services can be adequately replaced by buses.

Organisations and persons who will be attending to submit evidence are:- State Electricity Commission; City of Ballarat; Borough of Sebastopol; Shire of Ballarat; Shire of Buninyong; Ballarat East Ratepayers Advancement Association; Ballarat Division of Australian Tramways Omnibus Employees Association; Trades

and Labor Council of Ballarat; The Hon. Murray Byrne, LL.B., M.L.C.; The Victorian Chamber of Manufactures - Ballarat Group; Bridge Street Traders Association; H.A. Davis Motor Service Pty. Ltd.; Wilkins Eastern Busways.

It is expected that the Enquiry will occupy two days.

The Board will report its findings to the Minister of Transport, Mr. Vernon Wilcox, M.P.

AUTHORISED BY:

B.P. KAY.

SECRETARY

1st. APRIL, 1968.

TRANSPORT

REGULATION

BOARD.

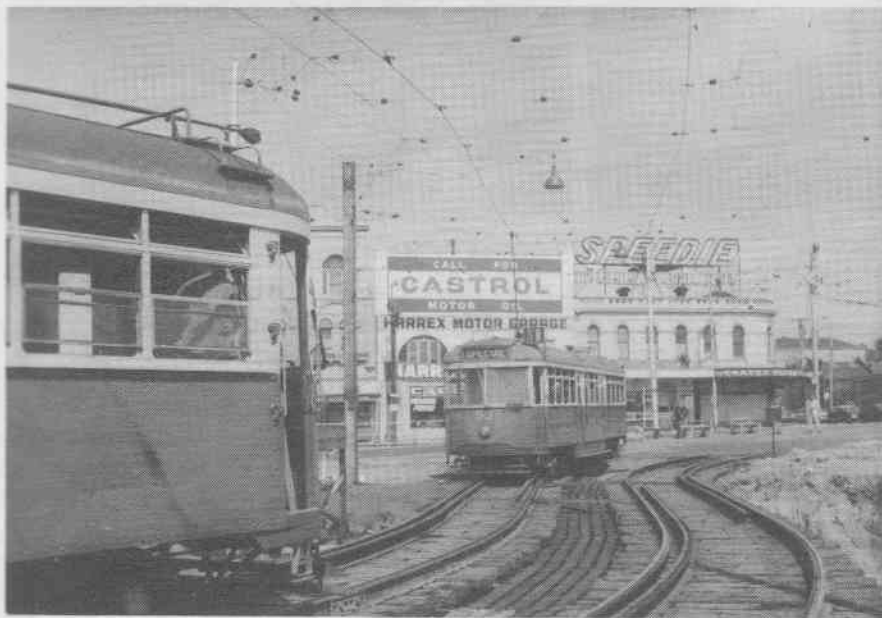
P.N.

TOUR TOPICS

"GOLDEN SUNSET TOUR NO. 3". December 26th. 1967.

1967 closed tour-wise with the third "Golden Sunset" tour in V.R. cars 52 & 53. It seems to have become a tradition for summertime TMSV trips & meetings to be held on very warm days or nights and Boxing Day 1967 was no exception.

The party left South Melbourne Depot shortly after 3.00 p.m., shunted, then ran to St. Kilda Junction where a photo-stop was held on the new track-work.



The cars ran into Fitzroy St. so that the crossover there and the connecting curves could be used into Wellington St. At Malvern, the new crossover in Dandenong Rd was used before travelling to East Brighton & then back to South Caulfield Junction and onto Carnegie. Due to late running, the cars shunted at South Caulfield Junction instead of at North Rd., and headed for Chapel St. After an inspection of the new track over the railway bridge, the normal route was followed to Malvern - Burke Rd. terminus, after using the crossover at Chapel St. A tea break was held at Malvern Depot

ABOVE. "VR" class tram No. 52 follows sister car No. 53 over the special track work at St. Kilda Junction. L.N. MILLAR Photo.

and the cars moved off for Kew - Cotham Rd. terminus about one hour late. The Kew Post Office crossover was used before travelling to Mont Albert and the cars returned to Kew Depot crossover before travelling over the North Balwyn route.

After covering some of the eastern and south-eastern routes, the north-eastern part of the city was "attacked" when we travelled to East Preston. The next move was to South Melbourne Football Ground loop by way of Mount B*?@%+y, and Collins St. City. Finally, the cars arrived back at South Melbourne Depot shortly before 11.00 p.m.

The trip was thoroughly enjoyed by all aboard, including two inter-state visitors, and thanks are due to all concerned with the running of the tour.

PAUL NICHOLSON.

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ALL NIGHT OUTING.

Friday 9th. and Saturday 10th. February, 1968.

At 10.55 the passengers mounted "L" class No. 102 for a 11.00 p.m. departure from Glenhuntly Depot for an all-night outing. On the 1st. half, the following route was followed:- North Richmond via Chapel St., with some excitement at the corner of Brighton Rd. & Chapel St. Thence to North Balwyn, Kew Depot, Cotham Rd., new crossover in Dandenong Rd. near Glenferrie Rd., High St. Prahran, St. Kilda Rd., Lygon St., to Moreland. When shunting here, we interrupted some "goings on" in a motor car that was straddled across the tracks. On reaching Elizabeth & Flinders Sts. shunt via Royal Pde., we travelled back to the corner of Victoria St., where the travellers invaded an all-night cafe.



ABOVE. At the corner of Flinders and Elizabeth Sts., "L" 102 shunts over an "All-night Service" bus.

ABOVE. "L" 102 at the corner of Elizabeth and Victoria Sts. where the meal break was taken at about 3. 30 a.m., 10th. Feb., 1968.

Both Photographs by L.N. MILLAR.

After everybody had consumed an underdone meal, the party commenced the 2nd. half of the outing. Footscray, Essendon Drome, Daley St., City shunt, Toorak, Balaclava Junction, East Malvern all saw the special before it returned to Glenhuntly Depot at about 7.30 a.m. on the Saturday. Special thanks to Allan Maggs for bringing along quite a few passengers from the Veteran Car Club.

JOHN FITZSIMONS

MALCOLM LIND'S photo of the Museum's car ex V.R. No. 34, shows members doing some maintenance work to the body.

You too, can help with this work. Write or call on Barry George for particulars. His address is listed on Page 2 of this Journal.

