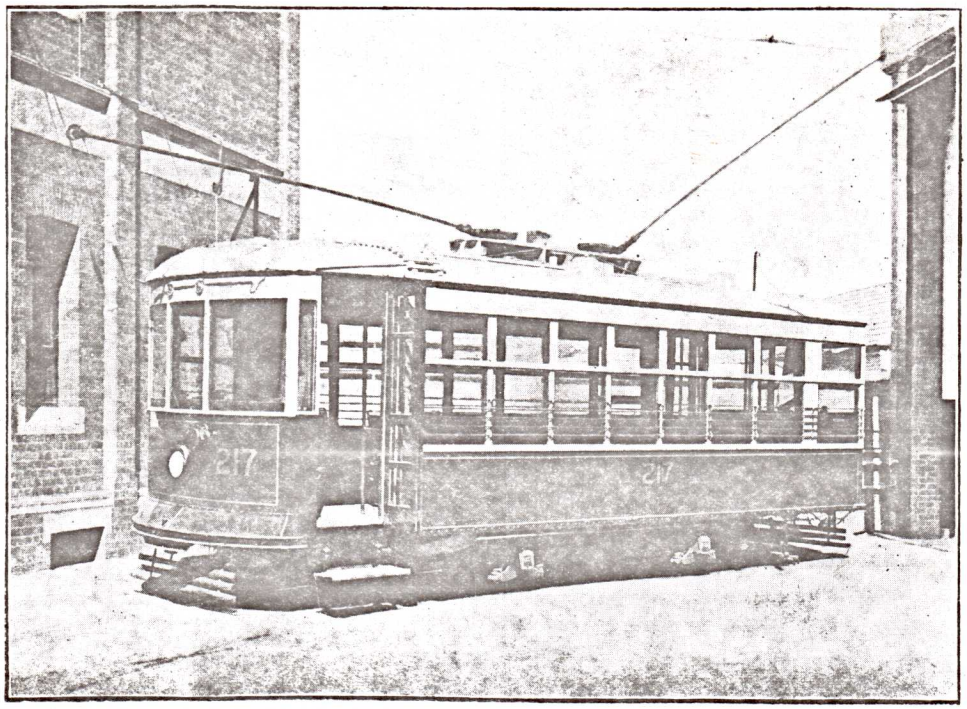
One-Man Cars for Melbourne and Geelong, Vic.

The Brill Birney Safety Car

Probably the outstanding development of street car practice during the past 10 years lies in the direction of the safety car, and the J. G. Brill Co. of Philadelphia, U.S.A., have produced many thousands of such cars which have been distributed throughout the world. Melbourne is only just about to experience this class of car in operation, and the city of Geelong will shortly follow suit with new cars now assembling and supplied by the agents, Messrs. Noyes Bros. (Melbourne) Pty. Ltd.

Judging from the results met with in other cities, it is to be expected that the travelling public will appreciate the many advantages possessed by the safety car, and with the increased operating efficiency and the consequent reduced operating expenses, it is confidently expected that a greater number of these must shortly be commissioned.



One Man Safety Car.

The Brill Birney single truck safety car, as introduced by the Melbourne and metropolitan tramway board and the Melbourne Electric Supply Co. Ltd., Geelong, possesses features which will appeal to all who desire a service that is economical, effective and, withal, safe. This type of car, which has a seating capacity for 32 passengers, is both compact and light, measuring overall little more than 28 ft., and is of approximately 15,500 lb. weight ready for the road. Its designation of "safety car" is consequent upon its possession of many special safety devices, which are interlocked with the operation of the controller and air brake handles. Should the operator become incapable of fulfilling his duties, or his attention be distracted, the releasing of the controller handle will automatically and almost simultaneously throw off the power, apply the brakes, sand the track, and relieve pressure on the doors to permit them being opened by hand. The doors and step are controlled by the air brake handle, and another feature which reduces the possibility of accident is that the brakes must be applied before the doors can be opened, and, conversely, the doors must be closed before the brakes can be released.

For relief purposes a foot valve located on the platform, when depressed, enables the operator to release his hold on the controller handle without affecting the car's operation, but should he remove his foot from this valve, the same action heretofore mentioned will occur.

Only one operator is required, who is seated

to one side of the centre of the car with the fare box at his left, and with foot pedals conveniently located for operating the fare register.

In order to attract the attention of the operator, the car is equipped with a bell system, which can be either of the Faraday or Consolidated system of electric bells, or, on the other hand, Retriever signal bells arranged with pull cords. In the case of the former system, push buttons are located on each side post at such a height that a seated passenger would have to rise to operate them. A button is also located on each platform.

The cars can be built for single or double end operation, and it will be observed from the illustration that they possess straight sides, round ends, arch or canopy top. The top sashes of the windows are stationary, but the lower sashes may be raised. The platform floor is on the same plane as the body floor, and the doors and steps fold in operation.

The following is a brief summary of the principal dimensions, which, of course, can be varied within certain limits according to the requirements of the particular service:—

	Ft.	In.
Length over all	28	0½
Length over dashers	26	9½
Length of platforms over the dashers	4	6
Length over body corner posts	17	9½
Width of sheathing	7	8
Width overall	7	10⅝
From the rail to the top of the roof board	9	9⅝
From the floor to the top of window rest	2	0¾
From the floor to the bottom of the top sash	4	2¼
From the floor to the underside in bulk head	6	9⅜
Width of exit and entrance doors in the clear	2	5½
Track gauge	4	8½

The illustration shows the class of car built by the J. G. Brill Co. for Melbourne. These are mounted on Brill 79E type of truck. These trucks are claimed to give the easiest riding qualities ever obtained in single truck car operation, even when it is operating up to its maximum speed or over the most uneven road bed. The combination of quarter elliptic plate and coil springs joined together by a swing link arrangement at the four corners of the truck provides a most satisfactory method of car body support for several reasons. A longer spring base is permitted by the use of the quarter elliptic springs, and as most of the load is supported on this four corner spring arrangement, excessive oscillation of the car body is eliminated. It also permits the cushioning of the car body on quick acting coil springs, which absorb the minor shocks and vibrations caused by irregularities of the track surface, which would be otherwise transmitted to the car body through the slower acting type friction plate springs. Quarter elliptic springs are not influenced by minor shocks and jolts, but they dampen the action of the coil springs when there is the tendency on the part of the car body to assume an oscillating motion. Irregularities of track surface first set in motion the coil springs seated in journal boxes, and which support the solid forged side frames. Thus the resulting shocks and vibrations are considerably checked before the later action body springs eliminate from them any injurious effect on the car body and comfort of passengers.

The Brill Birney safety cars now being assembled at Geelong for the Melbourne Electric Supply Co. Ltd. under the supervision of Messrs. Noyes Bros. (Melbourne) Pty. Ltd. are identical with that illustrated, with the exception that the seating accommodation, in the case of the latter, is arranged longitudinally.

AUCKLAND POWER BOARD, N.Z.

The report of the Auckland power board (Mr. A. Wyllie, engineer) for the year ended March 31 last shows that there was a large increase of business, 4,733 new customers being connected, making a total of 16,342. After allowing for the previous year's loss, there was a net profit of £3,368, after writing off £22,149 for depreciation. The net income for the year was £215,581, or £18,581 above the estimate. The working expenses showed a slight increase over the estimates, being actually £100,580. Interest and sinking fund totalled £38,684, against an estimate of £93,000.

The authorised capital of the board is £1,722,500, of which the whole amount has been raised, although the sum of £289,015 remains unexpended.

The total number of units generated for the year was 26,337,490, and the units sold 21,230,903.

Addressing a recent meeting of the board Mr. W. J. Holdsworth, the chairman, said that the demand had upset all calculations. A memorandum of 1922 leading up to negotiations for the formation of the board said on the most optimistic forecast of development within the next six years, "that it was estimated that the maximum would be 18,000 kw." The board had completed the scheme as laid down by the city council, and the King's Wharf station had now a capacity of 19,900 kw., another 5,000 kw. set was being erected, 3,000 kw. was in reserve, and 2,000 kw. was expected in 12 months from Horahora, a total of 29,900 kw. In the course of four or five years the board will receive a bulk supply from Arapuni, and preparations for this will entail a considerable outlay of capital.