

appears to have done, that this is a review of the report of the previous Commission, and that a different report to theirs might involve a reflection on them. That is all I wish to say on that point.

It is desirable, however, to say a few words with regard to the position taken up by the Engineer of the Public Works Department here in connection with the tests of the air brake. I have already said that two sets of air brakes were installed, and have been in use for a considerable time. It is not suggested, and it has never been contended by the company, that the air brake alone, good, efficient, and powerful as it may be, is sufficient by itself as a braking appliance on which cars would have to negotiate the hills that exist in Auckland. It is common knowledge that a form of track brake is necessary as well as the air brake, and the company contends—and we shall call a considerable body of evidence on the point—that the present track brake is a perfectly efficient track brake; but what happened when the tests were made of the air brake was that only one brake was applied at a time. I should have thought that if a proper test was to have been made of the braking appliances of a car coming down a hill, all the brakes should be applied; but, as a matter of fact, when the air brake was being tested on those two cars, the cars were sent down the hill at something like twenty to thirty miles an hour, and the track brake was not allowed to be used at all; only the air brake was allowed to be used. And I am instructed that the tests that were made were exceedingly good tests, but that is no test of the braking appliances on those cars, because, as the Commissioners will know, the track brake is put down, under service conditions, before the car commences to descend a hill, and the consequence is that the motorman has available the air brake and the track brake as well; and if a test is to be made, I suggest that the test should be made on the whole of the braking appliances which are installed on the car, and not merely a test of one particular brake.

Without criticizing the report of the previous Commission, there are just two portions of that report to which I think it desirable to make a brief reference. I am referring to the bottom of page 4 and page 5 of the printed report: "The hand-brake will skid the wheels on a bad rail. The opinion was expressed by witnesses that the Christensen air brake was suitable for use on the Auckland tramways; but, as this only acts on the wheel-shoes, and as the present hand-brake is powerful enough to skid the wheels, no material advantage can be gained by the use of the air wheel-brake, which can only be considered as a means to lighten the labour of application and provide for quicker action. The wheel-brake alone, no matter how applied, would not be sufficient to properly control the car. It is therefore necessary to use a track brake on the Auckland tramways, and we consider that if an air brake were installed it should be in the direction of applying it to the track brake, so as to make it an effective emergency brake." It would appear that the fact was ignored that there was a track brake in existence at that time. Then, at the bottom of page 2 and top of page 3 of the report it is stated as follows: "The Commission, having had extended personal experience in the use of the Newell magnetic combined track and wheel brake, whilst not wishing to unduly advance its claims against competitors, consider it a suitable brake for use on steep grades such as occur on the Auckland tramways. We are led to this conclusion by the very satisfactory results obtained in practice, by its reliability, and by its low cost of maintenance, and because this brake may be used as a service brake, only requiring, to convert it into an emergency brake, a quicker application, which would be the instinctive action of a motorman in the event of a sudden emergency arising; and also because the brake is applied by the use of the same handle on the controller as is used to apply power to the motors. The motorman's hand is always on this handle, so that he has nothing to do in applying his emergency brake but to turn it quickly. The use of the brake in service keeps the motorman practised in its use."

One more observation may be made with regard to that part of the report where it says the magnetic brakes are used for a number of different systems of tramways in different parts of the world. I understand that in most cases the motormen are not permitted to use the magnetic brake as a service brake at all, but they have to use the hand-brake operating on the wheels. Now, if that is so, and it is a matter which depends upon the decision of the owner of the tramway in each particular case, one of the main reasons urged for the installation of the magnetic brake falls to the ground.

We propose to call a number of witnesses who have had experience of both the magnetic brake and the air brake such as we propose to install here in Auckland, and the evidence of those witnesses will be strong in the direction of an expression of preference for the brakes we propose to install. It is not my intention, nor is it the desire of this company, or anybody connected with or appearing before the present Commissioners, to say an unnecessary word in condemnation of any particular form of brake. All we are concerned with is the question as to what is the best brake to suit the Auckland conditions, and I propose to call a mass of evidence in the direction of showing that the most suitable and most efficient brake for the Auckland conditions is that class of brake which we propose to install.

There is one other matter to which I desire to refer at this stage. If we are permitted to install the air brake, I may say that we have made arrangements which will enable us, barring unforeseen accidents, to install the whole of the Auckland cars with the air brake by February of next year. If the cars had to be fitted with the magnetic brake, it would be something like three years before that could be done, because it would involve complete alterations, or rather, a complete reconstruction of the whole of the cars that are running in Auckland. We are prepared to spend on air brakes something like ten or twelve thousand pounds. To install the magnetic brake would cost I do not know what, but it would be something enormous, but the delay would be very great indeed, and the question I put to the Commission is this: If we are able to show that the brakes that we propose to install are as serviceable, having regard to the Auckland conditions, as the magnetic brake, the question of expense ought then to be taken into consideration. I propose to go further, and to show that the brakes that we propose to install are as safe and as efficient as the magnetic brakes in regard to the Auckland conditions, and I propose to show, as