

"The magnetic brake is, when properly handled, very effective; but considerable care is necessary in training men, as otherwise there is a great liability of them giving too strong an application of current, and thereby occasioning very severe stops, causing inconvenience to passengers.

"In connection with the use of the magnetic brake it must be explained that when the brake is being operated for retardation purposes the motors by which the car is operated are in service for braking purposes; hence it arises that these motors are no sooner out of use for propelling the car than they are called upon for use in connection with controlling or stopping the car, consequently the motors are in almost constant use. This necessitates more powerful motors being installed on cars operated by the magnetic brake than would otherwise be required for propelling the car.

"One of the objects in installing magnetic brakes in Sydney was with a view of obtaining a more economical brake for maintenance purposes than the air brake; but subsequent experience showed that, owing to the difficulty indicated in connection with the motors, no such saving was apparent. This is, of course, a difficulty that might be overcome by installing larger motors in the first instance; but the cost of the additional motors would be a fair charge against the cost of the brake, and it is doubtful, therefore, if it would show as good results as the air brake in the first cost and subsequent maintenance.

"One great advantage in connection with compressors operated by independent motors is that brakes on trail cars can be operated from the controller used by the driver in front of the tram; and up to the present I am not aware of any satisfactory method of operating the magnetic brake on trail cars.

"From my knowledge of the Auckland tramways I am of opinion that an air brake operated by an independent motor-driven compressor would satisfactorily meet all requirements on the rolling-stock now in operation, and I am further of opinion that such a type of brake would command the confidence of the drivers operating the cars, and I should have no hesitation in recommending a recognised type of air brake of the description indicated in preference to the magnetic brake.

"At the present time 900 electric motor-cars are being operated in connection with the Sydney electric tramways. Of this number, some eighty are still fitted with the magnetic brake. The remainder of these cars are operated by air brakes, the majority of the cars being fitted with independent motor-driven air-compressors. As previously stated, the balance of the magnetic brakes will shortly be replaced by air brakes.

"And I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the Oaths Act, 1900.

"Declared at Sydney, this 13th day of April, 1910, before me—A. Wigram Allen, Notary Public, Sydney, N.S.W."

JOHN KNEESHAW.

Some suggestion has been made that there may be skidding of the cars on these hills if the air brake were used; but the evidence which will be called from those men who have been working these two cars in Auckland on which the air brake has been installed for the last twelve or fourteen months, will go to negative that. They say there has been practically no skidding and no flat wheels. They say that in every respect this air brake has been thoroughly satisfactory. They also say that, even if there should be a little skidding, the brake can be applied so rapidly, and they have such confidence in the brake, that they are able instantaneously to release the brake in case of skidding, and to apply it again before it is reasonably possible for the car to have skidded any distance.

*The Chairman.*—I think it would be convenient at this stage, since the question of equipment is before us, that Mr. Walklate would give us a few particulars as to the brakes at present in use. I am simply asking for a statement as to the methods in use. I should like to ask him one or two questions in elucidation of one or two points that cropped up in counsel's address.

*Mr. Walklate* (duly sworn and examined by the Chairman).—The systems we have in use are the hand-brake operating on the wheels, also the slipper or track brake operated by hand—that is known as the Spencer brake. In addition to that we have a method of reversing the current of the motors, or what is known as the emergency brake. The emergency brake is by connecting the motors up so that one motor is working as a generator intended to drive the other motor. That is put in action by a movement of the reversing-lever on the controller. It is put into operation by moving the same levers as the ordinary reversing-brake, but by different movements, of course. I cannot tell you what percentage of the weight of the cars is carried on the slipper blocks, as I have not got the calculations. We will give you full particulars later on.

*Mr. Rosser.*—I do not propose to take up very much time in opening, but I may have something to say afterwards before the inquiry closes. My friend Mr. Myers has outlined the position from the company's standpoint, and I think it is just as well to state definitely the position of the union in this second inquiry. Mr. Myers stated that the company had taken up the position that the brakes are efficient and safe. I may say that the union does not propose to recede one iota from the position taken up by them on the previous Commission, that they considered that it was not an effective brake system. Our position is the same to-day as it was then, but the company has altered its position, and, whether from conviction or otherwise, they are prepared to admit the decision of the previous Commission that a more effective brake was needed on the Auckland system, and that being the position taken up by the company also modified our position. A mass of evidence was taken before the other Commission, and the bulk of it is union evidence, and when the commission was issued empowering you gentlemen to go over the whole system again, we were afraid that we should have to go over the same ground once more. I have to say this: Although I do not suppose there is any set of employees which has been more in antagonism with its employers than the Auckland Tramway Employees' Union, I am very pleased to say that at the present time the position is very much altered indeed, and the relationship existing between the employers and employees at present is the best condition, I think, since the establishment of