

WILLIAM DIXON duly sworn.

Examined by Mr. Rosser: My name is William Dixon. I am a motorman employed by the Auckland Electric Tramways Company, and have been in their employ for two years. I was previously in the Glasgow Corporation Tramways for about six years and nine months. I have had experience in driving cars with a magnetic brake for about six years. I drove the first car fitted with the brake, the test car. I know of several failures of the magnetic brake, and accidents as the result. I do not consider the brake is a reliable one on heavy grades and greasy rails, as it needs plenty of time to act. It would have a severe effect on the passengers if it were pulled up quickly. There was a woman in one of the suburbs got knocked out through the window. She got compensation of £400. The orders issued after that accident were only to use the magnetic brake on emergency stops and heavy grades. Practically they prohibited the magnetic brake from being used as a service brake. I can place more reliance on the hand-brake than on the magnetic brake on a big grade. I think the Auckland service faster than the Glasgow, and therefore the more need for a more reliable brake. I have known the magnetic brake to fail without giving any warning on several occasions. It skidded the wheels a long distance. I would call it a partial failure. I have not driven a car with the air brake.

By the Chairman: The magnetic brake locks the wheels on heavy grades. If the wheels skid, the current does not cease: the magnetic brake generates its own current. I still believe, if the wheels skidded the magnetic brake would hold—that is, if the wheels did not revolve.

JOHN MCCORMICK duly sworn.

Examined by Mr. Rosser: My name is John McCormick. I am a conductor in the employ of the Auckland Electric Tramways Company. I worked in Glasgow as a motorman, and used the magnetic brake for four years. I consider if the brake skids it is ineffective, but that does not say it is no good. I had a case of wheels skidding in Glasgow on a greasy rail. I had not sufficient distance to stop. There was no Board of Trade inquiry. I know of a fatal accident that happened on a steep grade, where the motorman was killed, and the brake was found to be full on to the full braking notch. The reversing-handle was in the opposite direction to that in which the car was going, at the other end, and the controller was locked, and you could not get the reversing-handle in the proper position. The effect of the brake is to put metal blocks down on the rail. I know these blocks are liable to catch. They had bogie cars there. I have heard of the magnetic brakes failing when tested, and afterwards they would be all right; but not of my own knowledge.

By Mr. Myers: I am a conductor here. No matter how long a man may have been motorman on any other service, he has to serve as a conductor before being taken on as a motorman here.

By the Chairman: I was a motorman in Glasgow, and had experience of the magnetic brake there. It did not actually fail with me, but it failed to stop the car; it skidded the wheels for about 10 yards or more. There was no hand-brake. We were not allowed to use the hand-brake at the same time. The wheels skidded pretty often. In one case I had an accident by collision with a cart. It was not my fault; I had not sufficient distance to stop the car in. The grades are not so many, but there are some grades just as bad as here. They are not so long as Parnell, but almost as steep. They are some distance out of town. We worked nine hours a day. The work is easier here, and the traffic is busier there. I do not think we had to travel so fast there.

By Mr. Fitt: I have had experience of pulling up a car on a steep grade. With the magnetic brake I could pull it up in about 20 yards, but it would depend upon the speed we were travelling. The regulation speed was about nine miles an hour. I could stop in about 12 to 14 yards; but it depended on the state of the rails. If wet rails, about 8 yards; if greasy rails, about 14 yards. It was a wet rail at the time the accident happened. It is very severe on the passengers. One passenger broke the window in the front door. I do not think it would have any effect on the motorman; he is ready for it, and knows what is coming.

WILLIAM CAMPBELL duly sworn.

Examined by Mr. Rosser: My name is William Campbell. I am a motorman in the employ of the Auckland Electric Tramways Company, and have been there for over two years. I have driven trams in Glasgow for ten years. The magnetic brake was not installed to begin with, but I drove from the start of the magnetic installation. The effect on the passengers is pretty severe sometimes. It has no effect on the motorman whatever: he knows what is coming, but the passenger does not. I have known of passengers being thrown through the window on a quick stop. There is a difference in the application of the magnetic brake in the speed the car is going. If you are going at a high speed the magnetic brake has a tendency to skid a certain distance. If down-hill it would go all the farther. If going twenty miles an hour down-hill and a greasy rail, my own experience would be to check the speed with the hand-brake, and then apply the magnetic. If going at only three miles an hour, the magnetic brake would make a good stop then. I believe the half-way speed is the best for the application of the magnetic brake. In Glasgow the motorman shifts the points himself, and it was a source of annoyance. We only had about ten cars at first, when taken over from the horse-cars. I did not find the brake-blocks interfered with the special points when going down-hill. The grade in High Street in Glasgow is pretty bad; there is one part as bad as College Hill, but not so long. Generally speaking it is a fairly level system, but from start to the finish from Glasgow Cross I think it is a worse grade than here. On one occasion I had a magnetic-brake failure. I was coasting down an incline on Creaston Hill. I found it was ineffective, absolutely useless, and I had to use the hand-brake. Although I applied the magnetic brake down to the second notch or so, the car had gained considerable speed, so I reversed the motors; but the wheels locked and started skidding; then there came a collision with