

I do not think so. The Department would not give them the option of using the air brake acting on the wheels only, instead of such a brake as the magnetic brake.

17. Do you know if they have applied to the Department to institute a system of brakes?—The only application we have had was to apply two sets of the Christenson brake as an experiment.

18. But not to apply other sets of brakes to their cars?—No.

19. Do you know if the motormen in New Zealand prefer the air brake to the magnetic brake?—They are two totally different brakes—they are not comparable with one another.

20. But in Auckland there are a large number of motormen who have been working on the air brake in Sydney and Melbourne, and have you ever had anything to do with the union or with the men themselves on the subject?—No, I have not.

21. Supposing I were to appoint an engineer to examine those brakes—say, an engineer in Auckland—do you think any of our engineers would be likely to refuse to recommend it if the Department wanted to give the company the option of putting proper air brakes in?—I do not know the views of my subordinates, but of course they would report to me, and I should be the final judge, and I should most decidedly object.

22. And supposing I came in and appointed an engineer to decide altogether, he would have the power to approve, would he not?—I presume so.

23. You are only nominated by the Minister to carry out what the Minister thinks proper?—Yes, if within the provisions of the Tramways and Public Works Acts.

24. And if the Minister thinks the air brake is as good a system as any other brake, he could ask another engineer to decide?—Yes, he has that power.

25. You had no power to give the management of the Auckland Tramway Company to understand in any shape or form that the Department objected to the air brake being installed?—Not from that point of view.

26. Mr. Walklate told the Committee that that occurred in conversation in Auckland. The business of the Department is not conducted by way of conversation, is it?—No, but points are often discussed before being put into writing.

27. *Mr. Luke.*] You are an engineer of long standing, and are you of opinion that the air brake is equally as efficient as the magnetic brake?—Well, I consider that you cannot compare one with the other.

28. You think the magnetic brake is better than the air brake?—It is different—it is more powerful.

29. Is it preferable to the air brake for pulling up cars?—Most decidedly.

30. Would you consider that, with the other brakes they have in the city—the magnetic brake, the hand-brake, and the provision for reversing the motors—the Wellington trams are sufficiently provided with brakes to make the service as secure as we can possibly make it?—I am of opinion that the Wellington brakes are sufficient for the service. I would not go so far as to say that it was as secure as you could make it.

31. If the Wellington City Council or any other authority that is running a tramway service have brakes similar to what they have in Wellington at the present time, and they put on the air brake in addition, do you think that would tend to greater efficiency?—I would prefer the Wellington system as it is.

32. In regard to the curves, I cannot think of any curve that has a siding that would throw the traffic on to the kerbing?—Yes, there is one in front of my residence.

33. But the speed is reduced considerably at that portion of the line?—The speed must be reduced—it is imperative; otherwise you could not get the cars round the curves.

34. As far as examining motormen is concerned, do you not think it is absolutely necessary that, quite apart from the technical examination that might take place in the engineer's office that the Minister may set up, it is imperative there should be a practical demonstration on the car?—If I were examining motormen I should place more stress on the practical examination on the road than anything else. The office examination would be quite secondary.

35. With the system that they have in this city—and I believe it is similar in some of the other cities—the management having provided a system of examination, and the men having to pass a certain time on the cars qualifying for the position of motorman, do you not think the public are safeguarded in that respect as much as you could possibly safeguard them?—I am of opinion, in connection with the electric tramways in the four cities, that the authorities are taking sufficient precaution to insure that their employees are properly trained.

36. Quite apart from the brakes, no matter what kind, assume a car on top of a declivity of 1 in 10, and assuming that the car got away at the commencement of the declivity, do you not think it would be impossible to pull that car up with any brake without leaving the line?—Oh, yes!

37. You would assume that, once it got charge, any brake would have the tendency to pull the car off the line?—You could pull it up, but of course there would be a limit. I might explain what my practice is in testing cars. Take, for instance, the Kelburne trams. My practice is to take the whole of the brakes off the car, let go the ropes, let the car run down the line, and then pull it up. I have done that at Kelburne, and also at Roslyn, in Dunedin, which is 1 in 4.

38. If you started a Kelburne car suddenly, disengaged the rope, and let it go down, you can pull it up with the lever brake?—You can pull it up with the Fell brake.

39. You are cognisant of the test that took place on the Brooklyn incline, of one of the large trams loaded with pig iron and wheels up to a total gross weight of 20 tons?—Yes, I was present.

40. After the car was started it was pulled up, I believe, when the brakes were applied, in a distance of 50 ft.?—In one test I think it was under 40 ft.

41. That is to say, a moving load of about 20 tons was pulled up in a distance of 40 ft.?—Yes.