

To facilitate comparison the following extracts are given :—

The average length of stop made would be : Down—

The Parnell Rise (1 in 8·77),—

At ten miles per hour,—		Ft.
Pneumatic wheel-brake with track-brake	..	45
Newell magnetic brake	..	40
At fifteen miles per hour,—		
Pneumatic wheel-brake with track-brake	..	104
Newell magnetic brake	..	90½

The Wellesley Street Grade (1 in 14),—

At ten miles per hour,—		
Pneumatic wheel-brake with track-brake	..	31
Newell magnetic brake	..	26
At fifteen miles per hour,—		
Pneumatic wheel-brake with track-brake	..	77
Newell magnetic brake	..	60

On the level,—

At ten miles per hour,—		
Pneumatic wheel-brake alone	..	28
Newell magnetic brake	..	23
At fifteen miles per hour,—		
Pneumatic wheel-brake alone	..	61
Newell magnetic brake	..	51

Limits of magnetic brake.

During the tests it was found that the limits of effective operation for the magnetic brake lay between three and twenty miles per hour, but that there were no limits to the speed at which the pneumatic wheel-brake might be applied.

GENERAL CONCLUSIONS.

From the results of their tests, a consideration of the evidence, an inspection of the lines, cars, and equipment of the tramways of the Dominion, and a general investigation of the subject of tramway-braking, the Commissioners have come to certain conclusions, and are of opinion,—

Hand wheel-brake.

(1.) That the hand wheel-brake is not a suitable appliance for the everyday control of cars exceeding 15 tons gross weight, for the action of this brake is dependent on the muscular effort of the motorman, who should not be called upon to repeatedly exert a greater force than 100 lb. on the handle.

If used on cars heavier than the weight stated, either excessive force has to be applied by the motorman or the leverage has to be made so great that promptness of action is seriously interfered with.

Pneumatic wheel-brake.

(2.) That the pneumatic wheel-brake is a reliable and efficient brake for cars of any weight, run at any practicable speed, on the level or on moderate gradients.

It gives rapid retardation, its action is independent of the condition of the electrical equipment, the pressure-gauge indicates the braking-power available, and stops can be graduated from "easy" to "emergency" by the movement of a single handle. The complete control of the brake-pressure which exists renders it possible for quick stops to be made with the minimum of inconvenience to the passengers. It is simple in construction, easily understood, and not liable to get out of order.

Track-brake required on steep grades.

(3.) That where gradients exceed 1 in 20 it is desirable, and where gradients exceed 1 in 15 it is imperative, that some form of track-brake should be used.

Where the track-brake is an auxiliary to an efficient wheel-brake, its function being to compensate for the effect of gravity, slowness of application is not a serious