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.

(*k.*) (Page 22.) It is stated that sand-gear is often hard to work. We consider that this is solely due to defective maintenance.

(*l.*) (Page 22.) What is known as the second emergency brake is relied upon more by the motormen than the first emergency, which is specially provided.

The first emergency brake is formed by reversing the polarity of the fields of the motors, thus converting them into generators and short-circuiting them, the effect being to skid the wheels of the car through the mechanical resistance thus set up. This brake is used independently of any power obtained from the trolly-wire.

The second emergency is formed by reversing the motors and applying power to a small extent, which tends to revolve them in a reverse direction. The action depends upon the trolly-wheel remaining in contact with the trolly-wire, and also upon the automatic cut-out not coming into action. Should this brake fail, the controller-handle would be moved to its fullest extent, and what is known as the third emergency brake would then be brought into action. In this case the stronger motor becomes a generator, overcomes the weaker one, and drives it as a motor in the reverse direction to that in which the car is travelling.

The braking effect of the first emergency is considerably neutralised through the skidding of the car-wheels, so that it is often abandoned in favour of the second emergency. This brake, however, is barred from use by the company, as its action is very severe on the motors; and, as the third emergency is not reliable, often failing to act, the whole of these three electrical brakes cannot be considered satisfactory, particularly as all three tend to damage the wheels and motors of the rolling-stock, and only act on the four driving-wheels on the eight-wheeled cars.

Some motormen, feeling that the first emergency is not generally effective, use the second emergency, although contrary to rules; other motormen stated that they used the first emergency to comply with the rules, although knowing the second emergency was a better brake, in order to clear themselves in the event of a fatal accident. It appears to the Commission that the use of any brake which is liable to damage the equipment cannot be considered satisfactory, and that such an anomalous state of affairs, produced by the provision of several inferior emergency brakes, should be terminated.

(*m.*) (Pages 27 and 28.) Motormen complained that not sufficient time was allowed for working the Herne Bay and Kingsland routes according to the schedule time. The rate of speed, without allowing any time for stops, is 9·42 miles per hour for the former and 8·32 miles per hour for the latter route.

On the Herne Bay route, allowing for nineteen intermediate stops—four of which are compulsory—and for the slow speed possible up Hobson Street, Victoria Street, and College Hill, the actual speed would have to attain over fifteen miles per hour on favourable parts of the route to enable the motorman to keep to schedule time. The Commission consider that such a high rate of speed is attended by grave risks, with the brakes in use.

(*n.*) (Page 39.) Complaint was made by some motormen that a book formerly in use for entering car-defects had been substituted by single sheets. As this matter does not come within the scope of the inquiry, the Commission has no remarks to make.

(*o.*) (Page 40.) Wheel-brake chain jams on staff. The Commission considers that the brake-rigging should be modified so as to eliminate the chain double purchase, and thereby shorten the quantity of chain to be wound up, and so prevent its jamming.

(*p.*) (Page 51.) Track-brake blocks drop out, which shows defective design of holder. This matter is being remedied by the company improving the design of the holder.