

carried out at Petone and Newmarket. In the South Island, Greymouth and Invercargill should be closed for locomotive work, repairs being undertaken at Addington and Hillside.

While the present methods of carrying out repair work in the shops are very antiquated, they could not be dealt with here in any detail. As regards the four shops which it is recommended should be retained for dealing with such work, the only course to take would be to get some one thoroughly conversant with up-to-date practice to advise generally, after having carefully considered the present lay-out and methods adopted in the shops. Unless this is done, there is little hope of being able to deal with the work as suggested.

At present it would be well to concentrate on repairs and to purchase locomotives rather than build in the existing shops, which are not laid out for doing this economically; and we should judge there is no saving or advantage in building if they can be bought outside at an equal or lower cost.

The methods of bringing in the engines for repairs should be revised, and they ought not to be put through a heavy repair or thorough overhaul unless the work they have done warrants this. Better methods for getting them through the shops should be arranged, as the average time for heavy and thorough overhaul in 1924 was about twelve weeks. This, considering the long life of boiler and firebox and the comparatively short mileage between repair, is far too long.

Organization.

It is essential that there should be a Chief Mechanical Engineer fully qualified and thoroughly conversant with up-to-date methods of railway working, who should have one Divisional Engineer in each Island to assist him. It is a question whether the Divisional Engineer in the North Island could not act as assistant to the Chief Mechanical Engineer, thus saving three officers. This would enable better salaries to be given, with no increased cost, and would also put the Works Managers on a more substantial footing.

Running-sheds.

There is a good deal of money which it is suggested should be spent on the running-sheds. We think that the proportion of engines under cover is such that a large expenditure in this connection is not warranted. At any rate, it is not one of the most important needs of the Mechanical Engineering Department.

Statistics.

There seems a great want of suitable returns comparing costs, &c., with other railways. It is impossible to be satisfied that the best is being done without a comparison of some kind.

Technical Training.

It would not appear that the young engineers are encouraged to qualify for any technical degree. In fact, the Chief Mechanical Engineer deprecated any introduction of a method by which this might be carried out, having a poor opinion of the technical training in Wellington, as will be seen by his evidence. Should this be continued, it will be impossible for engineers trained in the Railway service to rise to important positions in the future. We consider this matter worthy of careful consideration.

Rail Motor-cars.

There are many difficulties to be overcome with regard to rail motor-cars using internal-combustion engines on railways with heavy gradients, frequent stops, and requiring high acceleration. We are, therefore, unable to recommend any particular design which might be expected to fulfil the requirements on the New Zealand railways. It is noted that it has been decided to make trials of certain petrol-driven vehicles. The information gained by these should be of value.

For a light train service a suitable steam-locomotive would seem to be preferable, and as a Sentinel-Cammell steam rail coach is on order, and this appears to