

Based on the capital values as at 31st March, 1924, the sum of £251,073 should be spent annually on renewals or set aside in a Renewals Fund, made up as follows: Coaching stock, £50,614; brake-vans, £7,706; and goods-wagons, £192,753.

### *Proposed Standard Types of Locomotives, Carriages, and Wagons.*

The varying types of locomotives, carriages, and wagons—many of which are of great age and obsolete—should be reduced to the lowest number of standards, consistent with working the traffic satisfactorily.

Dealing first with locomotives: there are at present forty-eight different types, as shown in the table referring to locomotive stock. It will, of course, take a considerable time to reduce these to a definite number of standards.

The first types, however, that are proposed to be eliminated are the following: D, F, FA, K, L, LA, M, N, NA, NC, OA, OB, OC, P, R, S, T, UD, V, WH, WJ, of which there are 173. Others will follow, but it is proposed to perpetuate the A, AA, AB, WAB, and WS classes, which seem to be satisfactory. It would be an advantage to design a powerful type of shunting-engine with three cylinders, also a main-line-express engine, having 5 ft. 6 in. driving-wheels and three cylinders.

The great advantage of three cylinders is that a quicker and a more even start is secured, as with the cranks set at 120 degrees there is less chance of being on a dead centre in starting; also to get the same power the cylinders are much smaller, and consequently all the moving parts of the motion proportionately lighter and more easily handled.

For taking goods-trains of heavier weight over steep gradients, such as the spiral on the Main Trunk line and where the load per axle is restricted, a suitable Garratt engine might be designed and used with great saving. After having specified the work required it would be advisable to ask the makers of this type of locomotive to submit a design together with estimate of cost.

So far as carriages are concerned they are of very varying types, numbering sixty-six classes of passenger-coaches and five classes of postal vans. These should be reduced so far as the working arrangements will allow. The method adopted should be to standardize the length of carriages over headstock, and these ought not to exceed, say, three, or at the outside four, different types. All carriages should be of the bogie type, and these bogies should be standardized. The underframes should likewise be standardized. So far as the bodies are concerned, these and the various lengths should be fixed by the Mechanical and Operating Departments in consultation, and submitted to the General Manager for agreement.

With regard to wagon stock, there are seventy-four different types now in service, and we are of the opinion that steps should be taken to reduce the number of classes. As is pointed out in this section of the report, our view is that with the existing stock there should be no shortage of wagons, and concentration should be given to the renewal of the stock, at the same time reducing the number of types, rather than in the direction of increasing the capital stock of wagons. All new types of stock should be designed to suit the traders, and they should have an opportunity of making suggestions during the time these are in hand.

### GENERAL REMARKS.

#### *Repairs and Renewals.*

The most suitable and economical method of dealing with the repairs and renewals of rolling-stock would be to have two works built—one for the North and one for the South Island—in a convenient position, with ample yard accommodation, and laid out so as to pass the stock through when being repaired or built without twice handling it. These shops should also be arranged on a site and in such a way as to be able to be enlarged without undue expense when necessity arises.

As this, however, would mean a large expenditure in money and take a considerable time in selecting suitable positions and designing the best lay-out, it does not appear a reasonable proposal without a recommendation as to how the repairs and renewals should be at once dealt with so as to bring the costs down to a more reasonable basis.

In the North Island the shops at Napier, Whangarei, and East Town, so far as locomotive work is concerned, might be closed down, the necessary repairs being