This could not be done with the limited facilities available in the old shops, and as a result a great number of uneconomical partial repairs had to be carried out. The survey disclosed that during the next five years an annual building programme of twenty engines, eighty-four cars and vans, and seven hundred wagons would be required to bring the rolling-stock up to the standard necessary for efficient traffic operation.

The foregoing outlines the position so far as replacements are concerned, but does not make any allowance for the necessary additional stock.

The new workshops, in addition to being able to cope with the rolling-stock requirements, have been equipped with reclaim depots to enable apparatus and material, which in the past has been practically valueless, to be salvaged and reconditioned for further use.

The electric steel furnaces in particular will enable scrap materials such as axles, tyres, and rails to be utilized in making steel castings at low cost.

As indicated above, the programme of work which we have in view will, if it can be maintained, keep the shops fairly fully employed for some years to come. It has been our experience, however, that the amount of our programme which is actually carried out year by year is determined not by the extent of the proposals contained in the programme, but by the amount of money that can be made available. I have already stressed the great desirability of improving the quantity and standard of our rolling-stock, and the necessity for adequate financial provision in this connection will, as the foregoing particulars show, find a second reason in the economics of the workshops reorganization. Inasmuch also as one of the essential features of the reorganization has been the provision of a large amount of new and costly machinery of modern type, which will reduce labour to a minimum, it will be very necessary for the best results that the maximum outpnt should be obtained from these machines.

I think that the introduction of some schemes which will give the staff an incentive to get the greatest possible output from the machines might be adopted with advantage both to the staff and to the Department. This is a matter to which we propose to give attention during the coming year.

A method which is already in course of adoption for concentrating the greatest measure of work available into the new shops is the amalgamation of the Locomotive and Maintenance workshops. Hitherto the work requiring to be done for these two branches has been carried out in separate workshops under the control of each branch. This led to duplication of machinery and organization. To overcome this, and to direct the greatest volume of work available in the Department into the reorganized Locomotive shops, the Maintenance workshops are being merged into the Locomotive shops, and the former, as a separate organization, will cease to exist.

LYTTELTON TUNNEL ELECTRIFICATION.

The electrification of the section of the line between Christchurch and Lyttelton has been completed, and all trains on that section are now being run with the electric locomotives. The work was well carried out by the Departmental staff and the equipment was supplied by the English Electric Co. to the Department's specifications, and there has been no serious difficulty since the working commenced. The new conditions, so far as the tunnel is concerned, constitute a substantial advance on those previously existing. Some unpleasantness arose during the early stages through the existence in the tunnel of the soot deposits that had accumulated over many years of steam working. Steps were taken, however, to remove these deposits, and with the completion of the work the trouble that was experienced in this connection has been eliminated.

The time-table schedules were completely revised to suit electric working, and the benefits that have accrued from the altered conditions have been appreciated both by the staff and the public.

DIESEL ELECTRIC LOCOMOTIVES.

Mention of the electrification of the Christchurch–Lyttelton Section prompts me to remark that we have been interesting ourselves in the matter of Diesel electric locomotives for the purpose of determining whether they can be used to advantage on our system. Locomotives of this type are being operated in Canada, England, and elsewhere, and we are placing ourselves in touch with the Railway authorities in both countries with a view to obtaining such information as they can afford us regarding the performance and characteristics of this form of traction. We are also in touch with the local representatives of one of the large engineering concerns in Great Britain which has given particular attention to locomotives of this type, so that we may obtain all the information that might assist us towards determining the question of the suitability of these locomotives to our conditions. We are at present awaiting this information before proceeding to determination of this question.

BRIDGES.

The matter of strengthening or renewing our bridges is one that has been pressing on the attention of the Department, and the matter has been made the subject of a comprehensive review. This was necessitated both by reason of the age of many of our bridges as well as by considerations of their strength and consequent ability to stand the increased axle-load weight of the modern type of engines passing over the bridges.

The position resolves itself into one of adequate financial arrangement for the work of renewal and strengthening to be undertaken, and an investigation has been made with the object of ascertaining what financial provision would require to be made.

The original cost and probable remaining life has been estimated for each of the larger bridges, and from this has been determined the annual amount that should be contributed to a bridge renewals fund which will make provision for writing off the original capital cost of the bridge when its