

(Wellington, Lyttelton, &c.) is £1 12s. per ton, a difference of £1 2s. 3d. per ton. This difference represents, on the normal yearly consumption on the New Zealand railways of 270,000 tons of hard coal, an increased annual expenditure on coal of about £300,000.

NEW CLASS AB LOCOMOTIVE.

Credit is due to the Chief Mechanical Engineer and his staff for the success of the new locomotive, Class AB, built and brought into traffic operation since the last report. The engines are simple superheated tender engines of the *Pacific* type. It is anticipated now they have been adopted as a standard type that the AB engines will cost at least £1,000 less to build per engine than the Class A four-cylinder compound passenger-engine which the AB is designed to take the place of.

The AB engine has in addition proved itself at least 20 per cent. more economical than the Class A type in the consumption of coal and water whilst hauling considerably increased loads on express trains in the South Island. The new engine is more convenient for repair on the road, and it is anticipated that it will be considerably more economical to maintain. Photographs of this engine and the new tank engine are attached to the report.

GRADE-EASEMENTS.

The principal ruling gradients between Auckland and Mercer have now been eased, and marked economy in working has resulted. The Kakariki deviation was completed, and a considerable saving in train-mileage effected. The expenditure incurred on these works was £28,175.

RECLAMATION AT AUCKLAND.

The reclamation of St. George's Bay has been completed. The new engine-shed has been finished and a portion of the new station-sidings laid.

The amount expended on the work during the year was £148,915, bringing the total amount spent already up to £301,677.

The negotiations for settlement of the claims of owners of land who will be disturbed by the Department's scheme have progressed considerably. A number of settlements were made during the year.

Although the congestion at Auckland has been somewhat relieved by the completion of the reclamation, no really material benefit will be obtained until the new line Auckland to Westfield has been completed.

RAILWAY IMPROVEMENTS.

The amount expended in connection with works authorized by the Railways Improvements Authorization Act, 1914, and charged to capital account was £225,597.

In my special report of 1914 reference was made to the difficulties then being experienced as a result of the lack of facilities and accommodation at various important centres, and a scheme of works was submitted having for its object the removal of the disabilities under which the Department and the users of the railways were alike labouring. It was estimated that five years would be required to complete the scheme, and emphasis was laid on the desirability of making an early and comprehensive start on the programme.

Further reference was made to the subject in my reports of 1915 and 1916, but up to the present sufficient funds have not been available to enable a satisfactory commencement to be made.

Notwithstanding the unprecedented conditions resulting from the war the railway business has expanded by 20 per cent. in the four years that have elapsed since the original report was written, and I am strongly of opinion that at least the pre-war rate of progression will continue. It is indeed, to my mind, practically a certainty that as soon as the difficulties now obtaining in respect to shipping are removed and peace conditions again prevail a considerable impetus will be given to New Zealand staple products and industries. This will undoubtedly result in greatly increased demand for railway transport, and very grave difficulties must arise through lack of facilities for the efficient handling and carrying-on of the traffic. It is apparent that facilities that were insufficient to deal with the traffic in 1914 will be hopelessly inadequate in another five years' time when the traffic will be at least 50 per cent. greater than it was in 1914.

It is impossible to now make up for the time lost, but if a sufficiency of funds is provided without further delay the Department will be enabled to make all the preliminary arrangements required, and to vigorously prosecute the works without intermission immediately materials and men are obtainable. The postponement of the financial arrangements until the last moment will accentuate the difficulty arising from time already lost.

The serious prosecution of the new works referred to immediately peace is declared will afford an opportunity for the profitable and prompt employment of a large number of returned soldiers.

RAILWAYMEN AT THE FRONT.

From the 1st April until November, 1916, the date the Military Service Act came into operation, 1,066 railwaymen, members of the permanent staff, volunteered for service with the colours. This brought the total number of members of the permanent staff enlisted up to 3,000. Taking cognizance of the enlistment of the casual hands who regularly work for the Department, the railwaymen already released for military service total 5,500, representing 30 per cent. of the normal staff. Prior to November, 1916, the Department had not found it necessary to restrict volunteering except in the case of a few specially trained experts engaged on important duties. The near approach