

and signals; Puhinui station; Orari station and yard, and signals; Ellerslie station and yard; Mangere station; Roxburgh station and yard; Otautau station and yard, and signals; Wairio station and yard, and locomotive-shed; Tuakau station and yard; Thornbury station and yard, and signals; Manurewa station and yard; Rangataua station and yard, and signals; Drury station and yard; Lincoln station and yard, and signals; Gisborne station and yard, signals, locomotive-shed, and shops; Timaru station and yard, and signals; Petone station and yard; and Stillwater station and yard.

During the year 312 railway houses have been equipped with electric light.

The total of stations lit with electricity is now 182.

The total of station-yards equipped with flood-lighting is 9.

The total of railway houses electrically lit is now 1,716.

The installation of flood-lighting in a number of the railway-yards has proved satisfactory, and is an economical success.

Electric-power Installations.—Through the year the electrification of the existing workshops has been completed at: Newmarket, East Town, Petone, Picton, Addington, Hillside, and Invercargill. The work at Nelson is well in hand, and will be completed shortly.

The designs for the electrification of the new workshops at Otahuhu, Hutt Valley, Addington, and Hillside have been completed, and the whole of the specifications necessary for this work have been prepared. The materials have been ordered and are now arriving on the site. In addition to this, specifications have been prepared for the electrical machinery for these workshops.

The work in connection with the underground cabling has been commenced in preparation for the arrival of switchgear, &c.

Railway Electrification.—The Lyttelton-Christchurch electrification is well in hand, a considerable quantity of materials having arrived during the year, and construction having been commenced both in the tunnel and on the outside work. It is anticipated that this work will be completed during the coming year.

In addition to this, complete schemes and detailed estimates have been prepared for the electrification of various sections of existing lines, including: Auckland—Papakura (via Westfield deviation), Auckland—Swanson, Wellington—Upper Hutt, Wellington—Waterloo, and Wellington—Johnsonville.

A complete detailed scheme is now in preparation and will be completed shortly in connection with the Tawa Flat deviation and including the Hutt Valley area.

Level-crossing Warning-devices.—Warning signals have been installed at the following level-crossings: Te Kuiti—King St. (bells only), Ashhurst—Feilding Rd. (Pearson's wig-wag), Terrace End—Napier St. (Pearson's wig-wag), Feilding—Kimbolton Rd. (Pearson's wig-wag), Glen Eden—Croydon Rd. (Pearson's wig-wag), Waikanae—Main Rd. (flashlight signals), Levin—Tyne St. (flashlight signals), Mangere—Massey Rd. (flashlight signals), Whangarei—Manse St. (bells only), and Whangarei—Wrack St. (bells only).

The total number of level-crossings fitted with warning devices is ninety-six.

Expenditure on Signals, &c.—Capital expenditure for the year for signals, &c., amounted to £122,879, of which £41,150 was on signals and interlocking, £35,011 on telephones, &c., £13,740 on electric lighting, £20,304 on electrification of workshops, and £9,279 on electrification of Lyttelton Tunnel. The maintenance expenditure chargeable against revenue was £106,917.

LOCOMOTIVE.

Mr. G. S. Lynde, A.M.I.Mech.E., M.I.Loco.E., Chief Mechanical Engineer, reports as follows:—

The rolling-stock, machinery, and tools have been maintained in good working-order during the year.

Locomotives.—On the 31st March, 1928, there were 678 engines in service. During the year two Class WAB were built in the Government railway workshops; two Ws Class were built by Messrs. A. and G. Price, Ltd., Thames. Twenty-four old engines were written off during the year.

There was a decrease of 166,852 lb. (equal to 1·48 per cent.) in the tractive force available.

There were on order at the close of the year three Class Wf engines being built by Messrs. A. and G. Price, Ltd., Thames, and three "Garratt" articulated locomotives being built by Messrs. Beyer, Peacock, Gorton, England, for use on the heavy grades on the North Island Main Trunk Section. These locomotives will be delivered during the ensuing year.

During the year 684 engines were passed through the workshops, of which 189 received a thorough overhaul. Three engines were converted for shunting purposes.

Boilers.—Eleven locomotive-boilers were built during the year, and ten boilers were in hand at the close of the year.

Carriages.—On the 31st March, 1928, there were 1,607 cars. Four cars built in the Government railway workshops were added to the stock, and two old cars were written off. Sixteen cars were on order at the end of the year.

During the year 2,201 cars were passed through the workshops, of which number 1,417 received heavy repairs.

It is proposed to place dining-cars on the night "Limited" trains between Auckland and Wellington for the purpose of serving breakfast on these trains, and a suitable design is being prepared for cars, which will embody the latest practice.

A new design is being prepared for main-line cars for both Islands, embodying many improvements which will provide more comfort for the travelling public.

The four cars referred to as having been built in the railway workshops were sleeping-cars of an improved design, similar to that which was built by the Department and exhibited in the Dunedin Exhibition. The latest cars, however, are of semi-steel construction, a method of construction which it is intended to adopt for all car stock in future.