

siding; Otago Harbour Board's private siding; Black Jack's Point, near Dunedin. Special switch-locks have been installed at Opuā, Onehunga Wharf, and Ashburton. The electric pneumatic system at Dunedin has worked satisfactorily during the year. The north signal-cabin at Upper Hutt has been enlarged to accommodate the tablet instruments. The automatic power signalling on the single line between Lower Hutt and Upper Hutt has been completed and brought into operation. It is now working satisfactorily in conjunction with the automatic signalling on the double line between Lambton and Lower Hutt. The installation of automatic power signalling on the Midland Railway between Rolleston and Stillwater is now in hand, and satisfactory progress has been made. The installation of electrical and mechanical detection on a number of stations on the Thames and Rotorua Branch has been completed. Total stations now interlocked, 101; tramway crossings, 7; siding and flag stations interlocked with tablet, 213; stations where Wood's locks are installed, 302.

*Block Working and Electric Tablet.*—The installation of tablet system between Arthur's Pass and Otira has been put in hand. The total mileage equipped is 1,645 miles out of a total of 3,006 miles of single line open for traffic. This is a reduction of 12 miles, due to the installation of automatic single-line signalling between Lower Hutt and Upper Hutt. The tablet instruments at Upper Hutt were shifted from the station to the north signal-cabin. The number of tablet instruments now in use is 882, at 369 stations. The total number of automatic tablet-exchangers in use is 340.

*Lock and Block.*—The electric lock-and-block system has worked satisfactorily during the year. The total mileage now equipped is 35 miles of double line. The number of lock-and-block instruments now in use is 68, at 30 stations.

*Telegraph and Telephone Facilities.*—Forty-four miles of poles and 344 miles of wire have been erected during the year. Twenty-six new connections to railway telephone circuits have been provided. Six new connections and six extensions with public exchanges have been made. Thirteen electric bells and pushes have been installed. The new Morse wire from Christchurch to Dunedin has been completed and is now in good working-order. The Waipara-Parnassus telephone-line has been completed on railway poles throughout and converted to metallic circuit. The Hornby-Little River telephone-line has been converted to metallic circuit. The aerial cabling of all railway wires from Dunedin Station to Anderson's Bay crossing is completed. Totals now in use: Morse sets, 285; telephones, 1,737; electric bells, 333; miles of wire, 7,630; miles of poles, 2,679.

*Electric Light and Power.*—Electric-light installations have been made as follows: Morrinsville, station-yard, goods-shed, engine-shed, and signals; Mamaku, railway sawmill; Te Awamutu, station building and yard; Wallaceville, station building; Heretaunga, station building; Silverstream, station building; Haywards, station building; Pitcaithly's, station building; Mellings, station building; Belmont, station building; Wellington, new offices for Advertising Branch and refreshment-room services; Kaiwarra, lighting of streets in Railway Settlement; Fairlie, station building and yard; Belfast, station-yard; Arthur's Pass, refreshment-rooms; Frankton (Lake Wakatipu), wharf and goods-shed. Additions and alterations have been made as follows: Auckland, two additional yard-lights; Newmarket, nine additional lights in Railway Workshops; Raetihi, two lights added; Taihape, one light in yard and two on roads; Ngaio, one light added in yard; Christchurch, additional lights in refreshment-rooms; Lyttelton, additional lights in yard and stables; Wingatui, three lights added; Invercargill, additional lights in locomotive depot; Winton, light erected at stock-yards. The installation of the electrical equipment in the house factory and sawmill at Frankton Junction is now complete and ready for working. The following work has been done in connection with the electrification of machinery in locomotive workshops: Newmarket, one 27 h.p. motor installed for pump; Petone, one  $\frac{1}{2}$  h.p. motor for sewing-machine; Addington, one 10 h.p. motor for pump.

*Level Crossing Automatic Alarm-bells.*—Additional material has now been received for installing auto-flag visual warning-signals (Wig-Wag), and the work at a number of crossings is in hand. The present number of crossings fitted with warning-bells is 58.

*Expenditure.*—Particulars of expenditure for the Signal Branch for the year ended 31st March, 1923, are as follows:—

New works—		£	s.	d.
Signalling and interlocking	.. .. .	21,744	6	10
Electric tablet working	.. .. .	93	12	2
Telegraph and telephone facilities	.. .. .	6,430	17	6
Electric light	.. .. .	2,121	1	1
Electric motors, &c.	.. .. .	5,993	0	5
Level-crossing alarms	.. .. .	261	16	0
Automatic signalling	.. .. .	86,251	0	4
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		£122,895	14	4
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Maintenance—		£	s.	d.
Signalling and interlocking	.. .. .	28,728	15	2
Signals at level crossings	.. .. .	1,884	16	3
Telegraph and telephones	.. .. .	9,896	1	7
Lines, &c., maintained by Post and Telegraph Department	.. .. .	1,596	19	3
Electric block and tablet working	.. .. .	13,889	13	11
Electric light	.. .. .	7,280	14	4
Electric power	.. .. .	4,920	5	6
Electric motors, cranes, fire-alarms, &c.	.. .. .	2,286	12	5
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		£70,483	18	5
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