

chains. The Department's Safe Working Loads Regulations require wrought-iron chains to be periodically annealed to remove surface hardening and brittleness. On the other hand, similar annealing of mild-steel chain is definitely harmful to the metallurgical structure of mild steel and is therefore prohibited by the Department. Where both wrought-iron and mild-steel chains are used together, an efficient record of all chains must be maintained to avoid mistakes in heat-treatment.

### NEW ZEALAND STANDARDS INSTITUTE

The Marine Department has been actively represented during the year under review on the Mechanical Engineering Divisional Committee and the Executive Committee of the New Zealand Standards Institute, and, in addition, much work has been contributed on sub-committees to the formulation and approval of new Standard Specifications covering a wide range of engineering and ancillary items. Work of particular value in the interest of safety in transportation was initiated by the Dangerous Goods Marking Committee, on which the Marine Department was represented. The problems of establishing a New Zealand Code of Marking of Dangerous Goods is no easy one.

### EXAMINATION OF LAND ENGINEERS, ENGINE-DRIVERS, CABLE-TRAM DRIVERS, AND ELECTRIC-TRAM DRIVERS

Examinations for certificates issued under the Inspection of Machinery Act, 1928, were conducted at intervals during the year by Inspectors of Machinery throughout the country.

For the year ended 31st March, 1948, the candidates who presented themselves for examination totalled 621; of these, 509 passed and 112 failed, as compared with 611 successful candidates and 94 failures of the previous year. The total number of the candidates who presented themselves for examination during 1947-48 is approximately 12 per cent. less than that of the preceding year. Many ex-servicemen were examined during the year.

In addition to the 509 certificates issued in 1947-48 to successful candidates, 149 certificates were issued as replacements, &c., under the provision of sections 53, 59, and 62 of the Inspection of Machinery Act, 1928.

An analysis of the certificates issued during the year, with the corresponding figures for 1946-47, is given hereunder:—

Service—	Class.	1947-48.	1946-47.
First-class Engine-driver	.. ..	2	3
Cable-tram driver	.. ..	34	..
Competency—			
Extra First-class Stationary Engineer	.. ..	..	..
First-class Engine-driver	.. ..	45	43
Second-class Engine-driver	.. ..	256	259
Locomotive and Traction	.. ..	84	89
Locomotive-engine Driver	.. ..	6	7
Traction-engine Driver	.. ..	11	7
Electric-tram Driver	.. ..	185	313
Electric-tram Driver (One-man Car)	.. ..	8	10
Cable-tram Driver	.. ..	26	3
Steam-winding-engine Driver	.. ..	..	1
Electric-winding-engine Driver	.. ..	1	1
		658	736