

A considerable correspondence has taken place with the New Zealand agents of American manufacturers over the construction of locomotives, with manufacturers of British boilers, particularly of those used for motor-wagons, and also with the agents of one firm which manufactures water-tube boilers. All the correspondence has been of a very pleasant nature, and all points, so far as they have gone, have been amicably settled. Quite a number of locomotives have recently been imported into New Zealand for employment on tramways connected with sawmills. A southern engineering firm has made several in recent years, and I see nothing to prevent all of these locomotives being made in the Dominion.

The pressures used for new traction-engines on roads and for engines of the portable type are going up steadily every year, each maker submitting new and revised plans to the Department for its ruling. As a rule, the pressure asked for is for another 10 lb. on the pressure granted on the former design. I can see no great use for such an increase, unless it be the desire to catch the market with an engine carrying the highest pressure. The workmanship in this type of machinery is of the highest class, and all parts are made of the best material.

The oil-engine, the gas-engine, and the gas-producer plants are still being largely used for power purposes. Some firms in New Zealand are making very good oil-engines that do all they are built for, and compare favourably with the imported article for finish, usefulness, and price.

I visited a great many shipowners throughout the Dominion during the year, and discussed with them the surveying of ships generally, the Board of Trade methods as set out in their books of instructions, and the methods adopted in the past by the Surveyors of Ships throughout the Dominion. As a result of these interviews the mode of procedure in dealing with the survey of steamships was somewhat modified, in order to lessen the expense to the shipowner and to fall in with times most suitable to him for the survey of his vessels. Many other minor points have been altered without at all impairing the efficiency and value of the surveys. I was met very courteously wherever I went, and it was pleasant for me to know that the Department's efforts to make ships safe for those who have to travel in them were appreciated whole-heartedly by the owners. Modern steamships are now simply filled with machinery and labour-saving devices for all purposes. The application of steam for so many purposes on ships, and the use of electric and hydraulic power, has added to the cost and to the time and expense required for the survey, to say nothing about the size of ships as compared with those of even ten years ago. On the completion of my investigations with the shipowners, special circular instructions were issued to each Surveyor of Ships on the methods to be adopted in future surveys.

During the year I was able to visit most of the district offices throughout the Dominion, and to discuss with the local Surveyors and Inspectors various points connected with their respective districts.

BOILERS INSPECTED.

The number of boilers inspected this year total 6,208. At the end of the financial year there were still a number of boilers uninspected, but I hope to overtake the arrears next year. The districts in arrears are mostly in the North Island, some parts of which are most inaccessible unless in very fine weather. Very little friction has arisen with steam users and owners and the Department. The practice of submitting plans and specifications of a new boiler before a pressure can be granted, which has been in vogue for some years now, has tended to uniformity in the granting of pressures throughout the Dominion. It is better for the firms to submit plans before the actual building or ordering of a new boiler, as points in dispute can be discussed and modifications made to insure the pressure guaranteed, provided the workmanship is satisfactory. As pressures increase, the Department has to exercise the greatest care for the safety of employees and those living near steam-boilers carrying high pressures, for in the event of an explosion the results might be very disastrous both to life and property. Altogether 500 plans of new boilers have been submitted to the Department and dealt with during the past year. All the running machinery attached to steam-boilers was also inspected.

GOVERNMENT BOILERS AND MACHINERY.

A grand total of 146 have been examined and thoroughly inspected this year—viz., 99 boilers, 12 lifts, 16 oil-engines, 5 gas-engines, and 14 electric motors.

Repairs were effected where required, and fencing to machinery in motion attended to.

DEFECTS OF BOILERS AND FITTINGS.

Defects of boilers and fittings number 1,375 this year. A number of written notices to effect repairs, and numerous oral instructions to repair boilers and renew and overhaul fittings, were given by the Inspectors on their annual visits. This year the fitting of gauge-glass protectors over the water-gauge-glass mountings has been nearly completed. Most of the boilers in use now have this fitting, which should tend to lessen the risk of injury when a water-gauge glass bursts. With the high pressures in use there is always a danger of the gauge-glass bursting at any moment.

The defects found in boilers were not confined to any one particular class of boilers, but were common to all classes in use. The defective fittings cover a wide range also. The owners are very willing, in almost all cases, to meet the wishes of the Department and to keep their steam plants in good and safe working-order.

Return No. 2 gives a complete list of the defects discovered.

NEW BOILERS.

The total number of new boilers added to our registers during the year is 490, and their combined horse-power amounts to 4,524½. Of this number, 303 were made in the Dominion, and their total horse-power is 3,190. 187 were imported, with a total horse-power of 1,334½.