

*Government Boilers and Machinery.*

All the boilers at Government institutions throughout the colony have been examined, and the new boiler installation designed by this Department for the Seacliff Asylum has now been in use for some time, and has been giving satisfactory results.

*Defects in Boilers and Fittings.*

These defects amounted to 388, and include defects in steam-gauges, water-gauges, blow-off connections, cracked and bulged plates, defective joints, leaky seams, &c. Some were serious, and if neglected would no doubt have caused trouble and accident. Owners, more especially in remote districts, are glad to have advice on these matters when the Inspector comes round, and all information is willingly given, and advice as to the best and least expensive way to remedy the defect.

*New Boilers.*

The total number added to our list is 483, and totals 6,746-horse power. Of this number, 217 were made in the colony, and 266 were imported. A very large installation has been put in the power-house of the Auckland Tramway Company, Auckland, the whole of the machinery and boilers being imported. The boilers are of the Babcock and Wilcox pattern, water-tube, and are fitted with all up-to-date appliances.

The boiler-work done in the colony is now of a very high order, and most of the engineering firms have adopted the latest appliances to minimise labour and to insure a well-finished article. All the makers of imported boilers have now, with very few exceptions, adopted our standard of strength required for a given pressure, and very little friction has arisen through pressures given. The only safe rule is to adopt the very best, and make it compulsory and uniform both to local manufacturers and to manufacturers from abroad. This system, I consider, has tended to our immunity from accident in the past, and should not be departed from in the future.

*Lifts, Gas- and Water-driven Machinery.*

Under this heading 209 hydraulic lifts, sixty-three lifts driven by gas, steam, and electricity, eighty-eight gas and hydraulic hoists and electric motors, 341 water-driven machinery, 584 gas-engines, and 133 oil-engines were inspected during the year, making a total of 1,418.

A considerable amount of fencing was required to make the motors and machinery driven by them safe for those in attendance, and also a number of new ropes and chains were fitted and repairs effected generally.

*Fencing of Machinery.*

A large number of written and verbal notices were issued to machinery owners to fence unguarded machinery, and little difficulty has been found in making all comply with the wishes of the Inspectors.

*EXAMINATION OF ENGINE-DRIVERS.*

The examination for this class of certificate has now become a very important and ever-increasing branch of the Department. No service certificates are now issued (except under section 45 of the Act of 1902), so that all applicants must come up for examination; and, New Zealand being such a scattered colony, it has been necessary to hold examinations at numerous places. It is gratifying to know, however, that up to the present there are no arrears in this branch of the service, and that all demands have been met.

Candidates generally show up much better in the oral examination, and this examination brings out the fact very clearly that the standard of knowledge connected with the engine and boiler work of the engine-driver is increasing, and that he has been reading up from standard works on the subject. This knowledge should be available to his employer and make the engine-driver something more than a mere machine: it should lend an interest to every branch of his work, and should help him to perform more efficiently his many duties with economy to his employer and with more satisfaction to himself.

There have been four examinations held at Auckland, Wellington, Christchurch, Dunedin, Invercargill, Timaru, and Nelson, extending over several days. Examinations have also been held at Gisborne, Hawera, New Plymouth, Stratford, Palmerston North, Napier, Dannevirke, Blenheim, Westport, Greymouth, Reefton, Hokitika, Kumara, Lawrence, Roxburgh, Alexandra South, Cromwell, and Clyde. Altogether 685 candidates passed these examinations successfully—seven extra first stationary, 148 first stationary, 357 second stationary, 147 traction and locomotive, and twenty-six winding-engine drivers.

*ACCIDENTS.*

Forty-nine accidents to life and limb connected with machinery have been reported to me. In Tables Nos. 5 and 6 are set out the names and ages of the persons injured, and cause of accident in each case. Table No. 5 shows the non-fatal accidents, and Table No. 6 shows the fatal accidents.

*DISTRICTS AND INSPECTORS.*

Two new district offices have been opened, one at Nelson and the other at Timaru, and both have been found to be most useful as centres, and have saved the expense of making long journeys from Wellington and Christchurch. Mr. McVicar, of the Canterbury District, was transferred to Nelson; and Mr. Williamson, who had been stationed for a short time in Canterbury, took charge of the Timaru office.

Mr. George Croll, who was the senior Inspector of Canterbury, retired on the 30th July, 1902, after twenty-six and a half years' service. He has borne an excellent character, both for ability and courteousness, combined with firmness, and during his long period of service no boiler explosion has occurred in his district. This speaks for the care and thoroughness of his work and method. His place has been filled by Mr. Carman, from Wellington.

Two new appointments have been made, Mr. W. R. Douglas and Mr. N. D. Hood. They are at the present time both assisting in the Wellington District.