

Captain Smith (the Marine Superintendent and Examiner for Wellington) on examination days, I have myself personally conducted all the examinations in Wellington since the middle of last July, only calling on Captain Smith for relief, and to examine in the *viva voce* part of the examination when necessary, to save a candidate being delayed. All the examination-papers used are of my own setting, and a large number of papers have been printed, so that problems could be constantly varied. All the problems are worked out afresh after the printing, either by myself or by one of my colleagues (whose work I then again check), to insure perfect accuracy and freedom from misprints. I am disappointed to find that the number of failures have again exceeded the number of those who have successfully passed their examinations, though, on the whole, the work of candidates has decidedly improved. In a few instances candidates have passed exceedingly well at first attempt. Messrs. F. A. Worsley and William McBride, who passed the foreign-going masters' examination, and Mr. E. H. Guy, who passed the voluntary examination for the compass syllabus deserve especial mention for the very creditable manner in which they passed their examinations.

I have, &c.,

H. S. BLACKBURNE,

Principal Examiner of Masters and Mates.

The Secretary, Marine Department.

The CHIEF INSPECTOR of MACHINERY to the SECRETARY of the MARINE DEPARTMENT.

Office of the Chief Inspector of Machinery, Queen's Chambers,
Wellington, 4th April, 1901.

SIR,—

I have the honour to submit my annual report on the working of the Inspection of Machinery Act of 1882 throughout New Zealand during the financial year ended the 31st March, 1901.

A large amount of additional work has been added to this department through the legislation passed last session making it compulsory for land-engine drivers to hold certificates. By this new law all land-engine drivers who are in charge of land engines with cylinders over 144 circular inches, and boilers over 15-horse power have to hold certificates. Certificates are of three grades—extra first, first, and second class. Extra first and first-class certificates entitle the holder to take charge of any engine or boiler; second-class certificates entitle the holder to take charge of any steam-boiler and of any steam-engine the cylinders of which do not exceed 200 circular inches. The extra first-class certificate is only for those who have served a proper apprenticeship as an engineer for five years, and the examination is a very rigid one, bringing out the education of the candidate in theory as well as practice, and has given great satisfaction to those who have never been to sea, as this certificate, outside the saline and propeller questions, is almost equal to a chief engineer's marine certificate. On the candidate's passing he is designated "engineer."

The regulations for the new class of engine-drivers embrace also all other classes—viz., winding, traction, and locomotive—compiled in book form, and can be had at the offices of the Inspectors of Machinery in Auckland, Christchurch, Dunedin, and at the office of the Chief Inspector of Machinery, Wellington.

Until the 31st December, 1901, service certificates are granted to those who have been in charge of an engine or boiler for twelve months prior to the 31st December, 1900, of the class which requires a certificate.

The work in connection with granting these certificates—such as correspondence, perusal of applications and verification of same by testimonials, preparations for the holding of examinations, arranging papers generally, and for the Board meetings, making out and recording the certificates and distributing the same, and other incidental matters in connection with personal inquiries and general answers to inquiries as to the working of the Act—took up the whole time of three clerks and two Inspectors for nearly the first three months after the Act came into operation, and even at the present time the applications and inquiries are very numerous.

Examinations for competency certificates have been held at numerous places all over the colony, and applicants have been met as far as possible with our limited staff. For the first four months nearly all the time of two Inspectors has been taken up on this work, and some of the regular inspection work has necessarily stood over. This examination work, comprising as it does no less than fourteen different classes of certificates (including marine) has now become a very big thing, and will now necessitate the constant employment of one Examiner under ordinary circumstances.

The following certificates have been granted during the year: Competency certificates granted to land-engine drivers—Extra first-class stationary, 5; first-class stationary, 37; second-class stationary, 201; winding, 28; traction and locomotive, 133. Service certificates granted to land-engine drivers—first-class stationary, 794; second-class stationary, 393; winding, 2; traction and locomotive, 11: making a total of certificates issued, 1,604.

Boiler Inspection.—This class of work is extending all round, and some boilers are in very remote parts of the colony, necessitating long journeys at great expense for very little return. This is especially the case in Auckland, Otago, and some of the Wellington districts. The total number of inspections made, including lifts, water, gas, and oil engines for which certificates were issued, amounts to 4,238.

Accidents in Connection with Boilers.—It is with pleasure that I have again to announce that no accident arising from a boiler explosion has occurred during the financial year, which should prove to the general public not only the care with which the inspection of boilers is carried out, but the safety to the public themselves who live in the neighbourhood of steam-driven work. As manufactures and population increase in any centre, so assuredly will works of all sorts; and were it not for the close inspection, not only of boilers but of the fencing and guarding of machinery in motion, many useful and valuable lives would be lost by accident.