arriving at the proper pressure to be assigned to conical-end construction-work used in boiler and digester crowns and end plates; with respect to Inspectors issuing written notices to owners for all repairs required to be effected in connection with boilers; special instructions as to the guarding of circular saws to insure greater protection from accident to workers; special instructions with respect to the fitting of some automatic starting-appliance to all gas and oil engines above a certain cylinder-diameter; and instructions as to the carriage of inflammable and other dangerous goods on board steamships.

Special instructions in the use of the autogenous welding and cutting-out process as applied to the repairs of boilers and hulls of steamships have also been issued. This process has been successfully used in New Zealand during the past year for the first time both on boilers and ship-repairs. The Board of Trade in Great Britain have sanctioned the use of this process in repairing boilers, for building up the wasted edges of plates and repairing cracks in the landings of furnaces and other parts of boilers which are not subject to tensile stresses, and have also advised that the parts, after repair, should be well tested by the surveyor with a hammer-test. If the boiler-repairs have been of an extensive nature, the boiler should be tested by hydraulic pressure, after the repairs are completed, to a suitable pressure, and at subsequent surveys special attention should be directed to the parts which have been treated by this process. With respect to the cutting-out of the damaged portions of boilers and hulls by this process, the Board of Trade leave it to the surveyor to satisfy himself that such work has been successfully carried out.

The ordinary surveys of steam-vessels and sailing-vessels and the surveys for seaworthiness have all been attended to, and this work was practically up to date at the close of the year. No boiler-explosion has occurred during the year, and no defects in steamships have occurred that can be traced to faulty or inefficient supervision on the part of any surveyor. Additional shipping-survey work is provided for by the Shipping and Seamen Amendment Act, 1909.

Inspection of Machinery Act.

The principal Act was amended last session. Some of the most important alterations are the following: When a certificated engine-driver has to be in charge of a winding-engine when raising men and, under certain conditions, when raising material is clearly defined in section 2. Provision is made in section 3 for the issue of electric-winding-engine drivers' service certificates. By section 4 the controlling of the generation or use in any building of carbon-monoxide gas or other dangerous gas for motive or lighting purposes is provided for. In section 5 the schedule of fees in the principal Act was altered so as to reduce the fees for the inspection of steam-vessels under steam, and also the fees for inspection of electric motors. A maximum fee in each case was introduced which has considerably lessened the fees to users of both steam-vessels and electric motors.

Electric-tram Drivers' Certificates.

An Act to amend the Tramways Act of 1908 was made last session. Section 2 of this amendment contains eleven clauses in which provision is made for the issue of electric-tram drivers' certificates. The examinations will be controlled by the Minister in charge of the Inspection of Machinery Department.

Boilers inspected.

The usual amount of boiler-inspection work has been accomplished this year, and compares favourably with the work done last year as to the number of inspections and the ground covered. Some very remote and scattered boilers have been inspected this year. There were 6,212 boilers inspected, and certificates have been issued for these. The machinery driven by these boilers was also well examined. This branch of the work was not all overtaken during the year, owing to the illness of some of the Inspectors; but I hope to be able to cover the arrears of boiler-inspections this year.

During the year 543 drawings of new boilers were submitted for the Department's ruling. These were very carefully examined before granting a working-pressure. A great many alterations were made to these plans before granting the boiler-pressures desired by the owners. There has been very little correspondence this year from abroad concerning the Dominion's rules for boiler-construction, as our rules are now fairly well known to most of the principal makers of machinery who export steam machinery to New Zealand.

Government Boilers and Machinery.

The boilers and machinery used by the Government at their various works and institutions in the Dominion that were examined during the year total 140, and include eighty-nine boilers, twelve lifts, eighteen oil-engines, nine gas-engines, nine electric motors, and three water-turbines. Certificates were issued in each case, and repairs and renewals effected where required.

Defects of Boilers and Fittings.

During the year 1,166 defects were discovered in boilers and their fittings. Of this number, twenty-four were very dangerous, and if the defects had not been ascertained by timely inspection they would no doubt have caused serious damage to life and property. Return No. 2 gives a complete list of the defects discovered.

New Boilers.

A total of 543 new boilers have been added to our books during the year. Their total horse-power amounts to 6,029¼. Of this number, 383 boilers, of 3,336½ total horse-power, were made in the Dominion.