

## SICK AND INJURED SEAMEN.

The total amount paid by shipowners to sick and injured seamen, under the provisions of the Shipping and Seamen Act, 1908, and its amendments, was £9,764 19s. 8d., as against £9,908 15s. 3d. for the previous year, a decrease of £143 15s. 7d.

## EXAMINATION OF MARINE ENGINEERS.

In the course of the year 192 candidates were examined for marine engineers' certificates of competency at various centres throughout the Dominion.

Of these, 79 were examined for third-class, second-class, and first-class ordinary and motor certificates of Imperial validity; of the 57 third-class candidates who presented themselves for examination 33 were successful and 24 unsuccessful; of the 8 second-class ordinary, motor, and endorsement candidates examined, 5 were successful and 3 unsuccessful; and of the 14 candidates examined for first-class ordinary and motor, 7 passed and 7 failed in the examinations.

In the case of second-class candidates, the above particulars are comprised of 4 candidates for ordinary certificates, 2 of whom were successful, 3 candidates for motor certificates, all of whom were successful, and 1 candidate for steam endorsement who was unsuccessful.

In the case of first-class candidates, the foregoing return comprised 9 candidates for ordinary certificates, 5 of whom were successful and 5 candidates for motor certificates of whom 2 were successful.

Of the 7 candidates who were successful for first-class ordinary and motor certificates, 4 passed at the first attempt, 1 at the second attempt, and 2 at the third attempt.

Of the 5 candidates who were successful for the second-class ordinary and motor certificates, 4 passed at the first attempt and 1 at the second attempt.

In the case of the 33 candidates who were successful for third-class marine certificates, 23 passed at the first attempt, 4 at the second attempt, 4 at the third attempt, 1 at the fourth attempt, and 1 at the fifth attempt.

The remaining 113 candidates were examined for certificates of competency which are valid in New Zealand only. Of these 68 (47 of whom were successful) were examined for service in sea-going vessels propelled by some motive-power other than steam; 37 (32 of whom were successful) for service in vessels propelled by some motive-power other than steam plying within restricted limits; 8 (6 of whom were successful) for service in steam-driven vessels plying within restricted limits.

The examinations for first-class, second-class, ordinary, and motor certificates, and those for third-class certificates are held at the four main centres only.

Examinations for certificates of competency which are valid in New Zealand only are held at the fifteen centres throughout the Dominion.

## INSPECTION OF BOILERS AND MACHINERY.

*Boilers and Pressure Vessels.*

The following is a statement of the number of inspections made during the year, the corresponding figures for the previous year being shown in parentheses:—

	Number.
Boilers and pressure vessels inspected for the first time ..	293 (167)
Air-receivers inspected for the first time .. ..	52 (75)
Total inspections of all boilers and air-receivers .. ..	7,922 (7,658)

The peak year for inspections of boilers and pressure vessels was 1931, when 8,144 inspections were made. The numbers dropped during 1932 and 1933 to 7,914 and 7,658 respectively. The inspections made during the year ended 31st March, 1934, show an increase over the two previous years and are only 222 below the peak of 1931. The number of power boilers manufactured in the Dominion during the year was 45, with a total horse-power of 1,297, and 22 boilers with a total horse-power of 524 were imported.

A minor boiler explosion occurred during the year from the mud-drum of a water-tube boiler. The drum consisted of a cast-iron cylindrical shell and ends. It was 4 ft. 11 in. long by 9 $\frac{3}{4}$  in. internal diameter, and the thicknesses of shell and ends were  $\frac{7}{8}$  in. and 1 $\frac{1}{4}$  in. respectively. A large portion of the bottom of the drum blew out under the steam pressure of 120 lb. per square inch, fortunately without injury to any person and without doing much material damage. Investigation into the cause of the explosion showed that the thickness of the portion which blew out had been reduced by external corrosion from  $\frac{7}{8}$  in. to  $\frac{3}{8}$  in., and that the material had been so weakened that it could not sustain the working pressure of the boiler. The drum had been bedded in concrete at the bottom and front sides with a covering course of bricks upon the outside of the concrete. The concrete had been in position since 1926 when the boiler, a second-hand one, was installed in its present situation. Dampness at the concrete where it came in contact with the mud-drum caused severe external wastage of the metal, with failure as the ultimate result. The Department requires that brickwork or concrete in contact with boiler plates shall be periodically removed for the examination of the plates. The importance of this