

- e. Take a bearing by compass, and find the distance from a point or light by the methods shown in the "New Zealand Nautical Almanac" of 1925, on pages 105 to 108, or on pages 135 to 138 of Tables for Azimuth, Great-circle Sailing, &c., published by the Marine Department.
- f. Explain orally the marking, signs, and abbreviations on Admiralty charts and plans.
- g. Read an aneroid barometer and a thermometer and understand their use.

**67. Seamanship.**—A candidate must understand and give satisfactory answers on the following subjects:—

- a. Bending, unbending, setting, reefing, taking in, and furling sail.
- b. Management of ship's boats in heavy weather.
- c. Dunnaging and stowing cargo, &c.
- d. Rule of the road as regards both steamers and sailing-vessels, their regulation lights, and fog and sound signals.
- e. Signals of distress, and the signals to be made by ships wanting a pilot, and the liabilities and penalties incurred by the misuse of these signals.
- f. Marking and use of the lead and log lines.
- g. Use and management of the rocket apparatus in the event of his vessel being stranded, and to have a knowledge of the ports in New Zealand where rocket apparatus for saving life is maintained.
- h. Standing and running rigging of steamships.
- i. Construction, use, and action of the sluices and of the water-ballast tanks.
- j. Engine-room telegraph, &c.
- k. Any questions appertaining to the duties of the second mate of a home-trade ship which the Examiner may think necessary to ask.

#### MATE.

In addition to the following requirements the candidate will be examined in the navigation and seamanship subjects prescribed for the grade of second mate.

#### 68. Navigation:—

- a. Find the latitude by meridian altitude of the sun.
- b. Find the true amplitude of the sun and the compass error and deviation therefrom, the variation being given.
- c. Understand the use of a Mercator's chart, and be able to find on a chart or plan the course or courses to steer and the distance or distances from one given position to another.
- d. Find the ship's position, together with the set and drift (if any), on a chart or plan from cross-bearings of two objects.
- e. Find the ship's position from two bearings of the same or different objects, the course and distance run between taking the bearings being given, making due allowance for a given tidal stream or current; also the distance of the ship from the object or any given position at the time of taking the second bearing.
- f. Find on a chart or plan the course to steer by compass in order to counteract the effect of a given tidal stream or current, and to find the distance the ship will make good towards a given point in a certain time.
- g. Work out practically the correction to apply to soundings taken at a given time and place to compare with the depths marked on the chart.
- h. Fix the ship's position by horizontal sextant angles, using a station-pointer for plotting it on the chart or plan, &c.
- i. Give a method of finding approximately the time of high water at any given place without the aid of the Admiralty or other Tide Tables.
- j. Explain orally the markings, signs, and abbreviations on Admiralty charts and plans.
- k. Use of the sextant; to be able to observe with it, to read off on the arc, and to find the index error by the horizon.

**69. Seamanship.**—A candidate will be required to show a knowledge of the following subjects:—

- a. Mooring and unmooring a vessel, keeping a clear anchor, and carrying out an anchor.