

- b. What action to take if a man falls overboard or if spars or sails carry away.
- c. Any questions of a like nature appertaining to the duties of the master of this class of vessel.

MASTER OF A FISHING-BOAT.

**74. Examination.**—The examination for a certificate as master of a fishing-boat is identical with that for master of a cargo-vessel under 25 tons register, excepting that in seamanship the candidate will be examined appertaining to the duties of the master of a fishing-boat.

MASTER OF A RIVER STEAMER.

**75. Examination.**—The candidate will be examined in the following subjects:—

- a. Reading; writing from dictation; the first five rules of arithmetic, both simple and compound.
  - b. Boxing the compass by quarter-points, and taking a bearing.
  - c. The use of two fixed objects in line, and how such objects indicate the effect of a stream on the course of a vessel.
  - d. Explain orally the marking, signs, and abbreviations on Admiralty charts and plans.
  - e. General Harbour Regulations; colonial bar and tidal signals; and the Dominion system of buoyage.
  - f. Rule of the road as regards both steamers and sailing-vessels, their regulation lights and fog and sound signals, and the International Code of Signals.
  - g. Sounding with the hand lead-line.
  - h. Methods of towing in slack water and in a tideway.
- Also, any questions appertaining to the duties of the master of a steamer employed within river limits and extended river limits.

EXTRA CERTIFICATES.

*Certificates as Extra Master.*

**76. Extra Master.**—An extra master's certificate will entitle the holder to go to sea as master of any vessel, sailing or steam.

The examination is voluntary, and intended for such persons as wish to prove their superior qualifications and are desirous of having certificates of the highest grade granted by the Marine Department.

The extra examination may take place when the applicant is qualified to go up for examination for an ordinary master's certificate, or at any time subsequent to his having passed the examination for that certificate.

**77. Navigation.**—In addition to the work for an ordinary master's certificate the candidate must be prepared to be examined in any of the following subjects, showing the construction of all the problems:—

- a. Find the latitude or position from double altitudes of the sun or of a star.
- b. Determine, from simultaneous observations of two different stars, the position of the ship and the true bearing of the stars. The candidate may either determine the four longitudes from two assumed latitudes, or solve the question in any other way he may choose.
- c. Find the error of a chronometer from an altitude of the sun or of a star, observed with an artificial or with the natural horizon.
- d. Explain clearly in writing the principles of (1) great-circle sailing; (2) windward great-circle sailing; (3) composite great-circle sailing; and their advantages and disadvantages.
- e. Show approximately on a terrestrial globe the great-circle track, and the distance from one given point to another; also the latitude and longitude of vertex, and the longitude from vertex; and explain how the track can then be transferred to a Mercator's chart. Occasionally the candidate will be required to lay the track down on a chart.
- f. Determine the initial great-circle course, and the distance from one given position to another, the latitude and longitude of vertex, the longitude from vertex, and the latitudes and longitudes through which the great circle will pass; laying the track, composite or otherwise, down on a Mercator's chart, and explaining briefly how the course and distance