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stowing cargo, &c. He must have a thorough knowledge of the rule of the road as regards both steamers and sailing vessels, their regulation lights, and fog and sound signals; and to be able to describe the 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. He must be able to mark and use the lead and log line. He must also understand the use and management of the rocket apparatus in the event of his vessel being stranded, and other questions of a like nature appertaining to the duties of the second mate of a ship.

In addition to the above qualifications, a more extensive knowledge of seaman-ship will be required as to shifting large spars, rigging shears, taking lower masts in and out, how to moor and unmoor a ship, and to keep a clear anchor, to carry out an anchor, how to manage a ship in stormy weather, how to cast a ship on a lee shore, how to secure masts in the event of an accident to the bowsprit, and how to rig purchases for getting heavy weights, anchors, machinery, &c., in and out. He must give satisfactory answers as to the ventilation of holds and the stowage of explosives. He must also know how to rig a sea anchor, and what means to apply to keep a vessel disabled or unmanageable out of the trough of the sea and lessen her lee drift; how to get the cast of deep sea lead in heavy weather; and answer any question appertaining to the duties of an only or first mate which the examiner may think necessary to put to him.

In addition to the above, he will be required to describe the effect of the screw race on the rudder, and the effect produced on the direction of the head of the ship by going (ahead) (astern) with a (right) (left) handed screw when the rudder is (ported) (starboarded). How to turn a steam ship short round. He must also understand the use and action of the sluices, and of the water ballast tanks, and the engine room telegraph, and questions of a like nature.

A master must be 21 years of age and have been 6 years at sea, of which one year must have been as first or only mate in a foreign going ship and one year as second or only mate. He must also prove that he has served at least one year in a square rigged sailing vessel in the capacity of either apprentice, seaman, mate or master.

IN NAVIGATION.—In addition to the qualifications required for a second, only and first mate, he must be able to compute the latitude from the meridian altitude of a star, to find the magnetic bearing from equi-distant compass bearings, of any fixed object when at sea, and compute the deviation therefrom. He must construct a deviation curve upon a "Napier's" diagram, which will be furnished by the examiner, and understand the practical application of the same, and give written answers to certain practical questions on the effects of the ship's iron upon the compasses, the method of determining the deviation, and compensating the same by magnets and soft iron. He will be required to find the course to steer by compass in order to counteract the effect of a given current, and find the distance the ship will make good towards a given point in a certain time, and to work out practically the correction to apply to soundings, taken at a given time and place to compare with the depth marked on the chart. He will also be required to answer certain questions relating to cyclones or revolving storms,