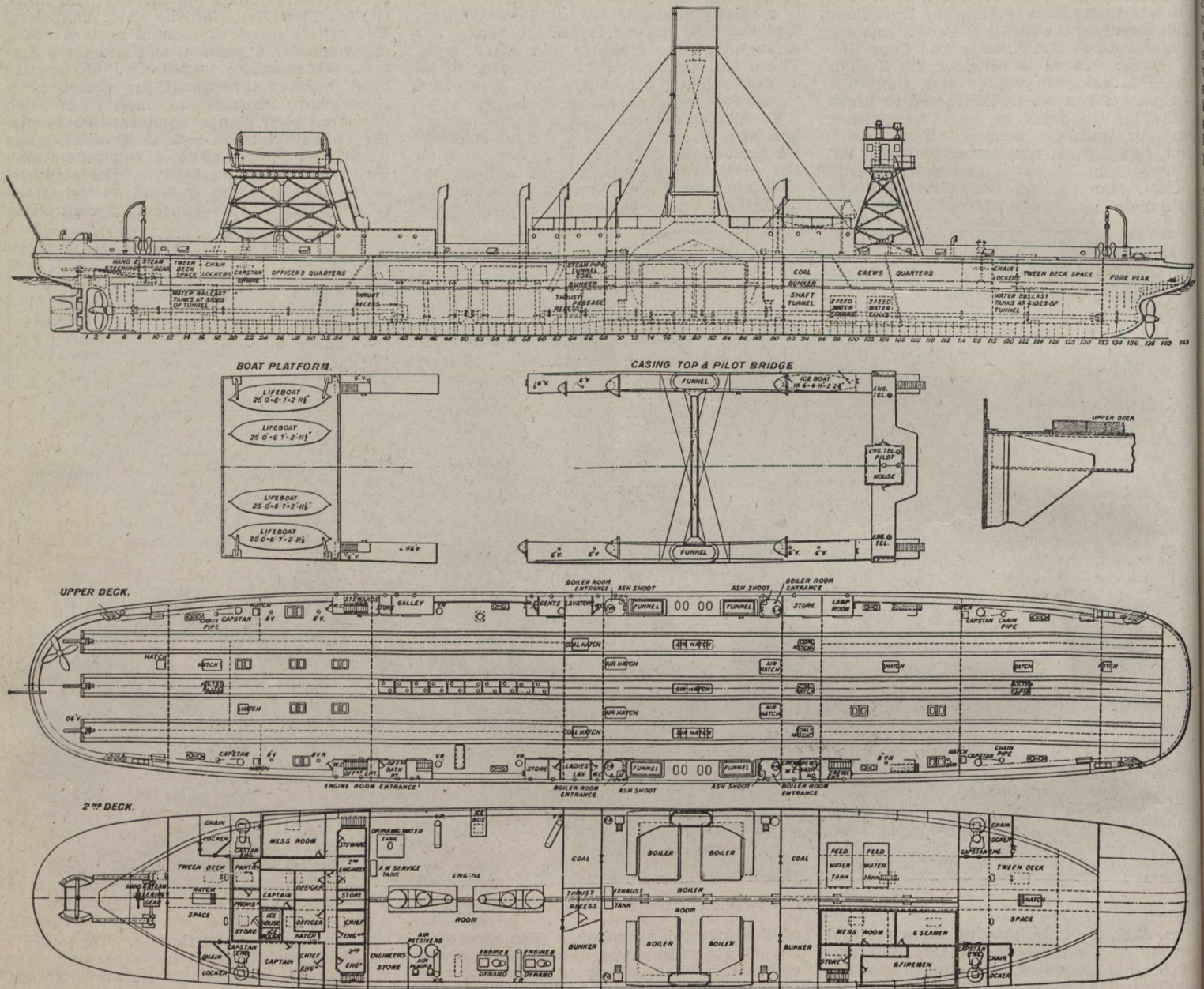


which are each 15¼ ft. in diameter by 10½ ft. long, constructed for a working pressure of 160 lbs. per sq. in. under natural draught. More than adequate tube surface is provided, as a considerable amount of heating is required for ship's purposes, and special connections are led from the boilers to various parts of the ship. Each boiler has an independent connection with the main steam pipe, so that any one boiler may be put out of action. The coal bunkers are ar-

ly 21, 34 and 54 ins. in diameter, with a stroke of 30 ins. The crank shafts are of the built up type, 10¼ ins. in diameter, each shaft being in 3 interchangeable pieces. The thrust shafts are of forged ingot steel, 10¼ ins. in diameter. The thrust blocks are of cast steel of special design, to withstand shock; the line shafting is also forged ingot steel, 10 ins. in diameter, and the propeller shafts are of forged ingot steel, 12 ins. in diameter. Each propeller has 4 blades, and

the general service pumps and other auxiliaries. The whole of the auxiliaries connected with the propelling machinery are placed on the port wing, the starboard wing being reserved for the electric generating set, air pumps, and air receivers, for ship service, and for engineer's stores. The machinery was designed to indicate 3,000 horse power, and on trial this was easily attained. The foregoing description is reproduced from Shipping Illustrated. The car ferry



Longitudinal Section and Deck Plans, Car Ferry Steamship, Scotia 2.

ranged at the forward and after ends of the boiler rooms, and these are filled from hatches from the upper, or train, deck. The main engines have been designed and constructed in accordance with experience for this type of vessel, and special consideration has been given to provide against the shocks due to sudden stoppages of the propellers when working against ice. The engines are of the single screw, triple expansion, inverted direct acting surface condensing type, each working on three cranks. Normally they will be coupled up to work together the bow and stern propellers, but there is a short portable length of shafting between the two engines, by the withdrawal of which they can be operate independently. The cylinders in each engine are respective-

ly made of nickel steel, extra thick, for working amongst ice. There is one condenser common to the two engines. It is placed on the port side centrally, being carried on the columns of the two high pressure cylinders. The method of support simplifies greatly the exhaust pipe arrangement from each of the low pressure cylinders. The air pumps are separate, and are 18 x 10 x 15 ins. Two sets of independently driven 12½ in. centrifugal pumps are fitted; one of them is sufficient for the maximum duty, the other serving as a standby. The feed pumps are located at the forward end of the main engine room on the port side. These are 7 x 9½ x 24 ins. stroke. Alongside are placed the fire and bilge pumps, which are 7½ x 7½ x 6 ins. stroke, while in the wings are

has been built by Sir W. G. Armstrong & Co., Walker Shipyard, Newcastle-upon-Tyne, Eng.

A view of the cross section of this vessel is given on the next page.

Canada Steamship Lines, Ltd., according to press dispatches, during the past season effected a saving in operating charges of approximately \$420,000, to the end of September, and it is stated that when the accounts for the complete season are made up, the saving will be over \$440,000. This saving, it is said, is more than sufficient to provide the full interest on the debenture stock and a portion of the preference dividend.