

H. M. SURVEYING SHIP " CHALLENGER "

As announced in *Hydrographic Bulletin* N^o VII, July 1931, page 196, the new surveying ship, H. M. S. *Challenger*, built by the British Admiralty for the Ministry of Agriculture and Fisheries, was floated out of dock in June last.

The following information about this vessel was kindly supplied by the British Hydrographer.

The *Challenger*, which has been specially constructed for exploratory work in northern waters and search for new fishing grounds, is an oil-burning vessel. Her principal dimensions are :—

Length between perpendiculars.....	200 ft.
Length overall.....	220 ft.
Beam.....	36 ft.
Moulded depth.....	23 ft. 6 ins.
Mean draught fully loaded	12 ft. 6 ins.
Displacement fully loaded.....	1,400 tons.

The ship is of steel and as she is to operate in waters where floating ice may be met, her bow is specially shaped and stiffened and the plating thickened at the waterline throughout her length.

The main propelling machinery consists of a triple expansion engine driving a single propeller, steam being supplied by two oil-fired cylindrical boilers. The engine will develop a maximum I. H. P. of 1,200, giving the vessel a speed of about 12 1/2 knots.

The fuel capacity is of 340 tons of oil, and the corresponding endurance is 9,500 nautical miles at a speed of 9 to 10 knots.

Two 25 kilowatt steam driven generators, fitted in the engine room, provide electric light and power.

Refrigerating machinery of CO² type, and capable of abstracting 20,000 B.T.U. per hour, is provided for cooling the cold and cool rooms.

The complement is 7 officers, 3 scientists and 67 petty officers and men. The officers' accommodation is forward, petty officers' amidships and the crew aft on the main deck. The Captain's quarters are on the upper deck under the bridge. A sick bay is provided. For service in cold climate the living spaces are insulated and heated by steam, and all exposed water pipes and tanks are lagged and the latter fitted with steam coils.

The two masts are of Oregon pine, each with a derrick capable of lifting 2 tons. On the foremast is a crow's nest and a small platform for a 10 inch searchlight projector. A second searchlight is carried on the bridge. Sails are provided on both masts for emergency use.

The boat complement includes two 28 ft. motor surveying boats, two 27 ft. whalers and two 16 ft. dinghies, each of the latter being fitted with an outboard engine.

The two bower anchors are each 26 cwt. and a total of 300 fathoms of 1 1/2" stud link chain cable is carried. For deep sea anchoring the vessel carries a 14 cwt. anchor and a reel of 2,000 fathoms of 2" F.S.W. rope.

The wireless room on the upper deck aft is equipped for long and short wave lengths and on the bridge a Marconi direction finding apparatus is provided.

The equipment for the special survey and research work consists of laboratories, chartroom, special winches, etc., details of which are as follows :—

(1) A large chartroom forward on the boat deck and large and small laboratories on the upper deck.

(2) A Kelvin sounding machine on the boat deck. A Lucas 5,000 fathom deep-sea steam driven sounding machine, two portable Lucas machines of 1,000 and 400 fathoms respectively, and a steam driven sounding winch on the forecastle.

Deep and shallow water echo sounding apparatus of the latest Admiralty type.

(3) For hydrological work two oceanographical winches on the forecastle, each driven by a small steam engine.

(4) Arrangements for trawling are fitted aft, including a 3-ton winch of the latest type specially designed for trawl work.

