

NEW SCIENTIFIC SHIP

Canada's new \$7-million oceanographic research vessel, the "Hudson", will be commissioned February 14 in Halifax, Nova Scotia. The new vessel will be attached to the fleet at the Bedford Institute of Oceanography, Dartmouth, N.S., which is operated by the Department of Mines and Technical Surveys.

A COMPLEX TASK

One of the most modern research ships afloat, the 294-foot vessel, of 4,800 tons displacement, has been under construction since early in 1961, and is already over a year overdue. Much of the delay has been caused by the problems involved in building a ship of such complexity.

The "Hudson" has a cruising range of 15,000 nautical miles and a speed of over 17 knots. A floating laboratory, she is capable of hydrographic and oceanographic work anywhere in the world but will serve mainly in the Arctic and Atlantic oceans. The "Hudson" is already fully booked for 1964, her main tour of duty being a full-scale geophysical investigation of Hudson Bay during July, August and September.

OUTSTANDING FEATURES

The "Hudson" has a number of outstanding features:

- (1) The most modern navigational devices and hydrographic aids, including precise radar, echo sounders, both long and short range positioning devices that will greatly extend the scope of the hydrographer, and two-range Lambda, an electronic positioning system;
- (2) special mechanisms to control and regulate ship movement during oceanographic observation and measurement;
- (3) modern chart rooms complete with the latest cartographic equipment and facilities for making provisional charts at sea;
- (4) adequate and flexible laboratories, equipped with modern facilities and instrumentation;
- (5) a ship's well of some 42 inches in diameter, permitting the lowering of instruments through the ship's bottom;
- (6) special gear for anchoring in very deep water;
- (7) a wide variety of special winches, ranging from oceanographic winches with some six miles of

wire rope to small bathythermograph winches with about 1,000 feet, for many scientific purposes such as drawing water samples from various depths, handling meters for measuring currents, lowering underwater cameras and lights, obtaining samples of the ocean floor, towing plankton nets and obtaining biological specimens;

- (8) two helicopters and helicopter hangar, three launches (two 37-footers and a 31-footer) and a 30-foot landing barge;
- (9) accommodation for 86 persons, including female oceanographers.

FIRST VOYAGE NORTH

The "Hudson" will leave for Hudson Bay early in July for a three-month geophysical investigation of this body of water, which is the largest inland sea in the world. The project is expected to throw light upon the age and present-day structure of the Bay.

Scientists aboard the ship will make a seismic study of the Bay to test the theory that its centre represents a large sedimentary basin two miles deep. They will take continuous gravimetric, magnetic and ocean-bottom topography observations to ascertain whether the known geological structures on shore extend out into the Bay. They will also take sediment samples and photographs of the sea bottom.

Before heading north in July, the "Hudson" will work off the "tail" of the Grand Banks southeast of Nova Scotia during March and April to obtain information for the production of charts for fishermen. During May and part of June, the vessel will work between Newfoundland and the Azores, where oceanographers from the Bedford Institute and from the Woods Hole Institution of Oceanography will study the deep circulation in the Newfoundland Basin.

When the "Hudson" returns from Hudson Bay, she will proceed to the Strait of Belle Isle where scientists will make certain studies in connection with the theory of continental drift. The Strait of Belle Isle will be a critical area in this study.

If time permits before the end of the year, the vessel will make a joint survey with the United States Navy Oceanographic Service of the waters between Nova Scotia and Bermuda.

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EXPO SHIELDED FROM RIVER ICE

Mr. Jean-Paul Deschatelets, Minister of Public Works, recently announced that tenders were being called for the first stage in the construction of an ice-control structure upstream from the St. Lawrence River site of the 1967 World's Fair at Montreal.

The structure, 8,500 feet long, with steel gates, has been designed to protect the existing and proposed installations for the World's Fair and to assist in controlling the ice jams that seriously affect water levels in this area. The hollow gates will be installed between concrete piers. Each will be 88 feet long

and will rise and fall with a change in water level. The gates will protrude above the water in order to retain ice; their submerged sections will offer a minimum of interference with the river's flow. The grooves in which they slide will be heated electrically to prevent the gates from freezing into position.

The structure will be built in four stages at an estimated cost of \$12,500,000, the City of Montreal contributing \$2.5 million and the Federal Government the rest. The first phase, for which tenders will close on March 11, will be the major one, costing, it is expected, between \$9 and \$10 million. This will include the construction of some 77 piers and a

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