"A. T. CAMERON"

. . . FISHERIES RESEARCH VESSEL BUILT BY MARINE INDUSTRIES LIMITED

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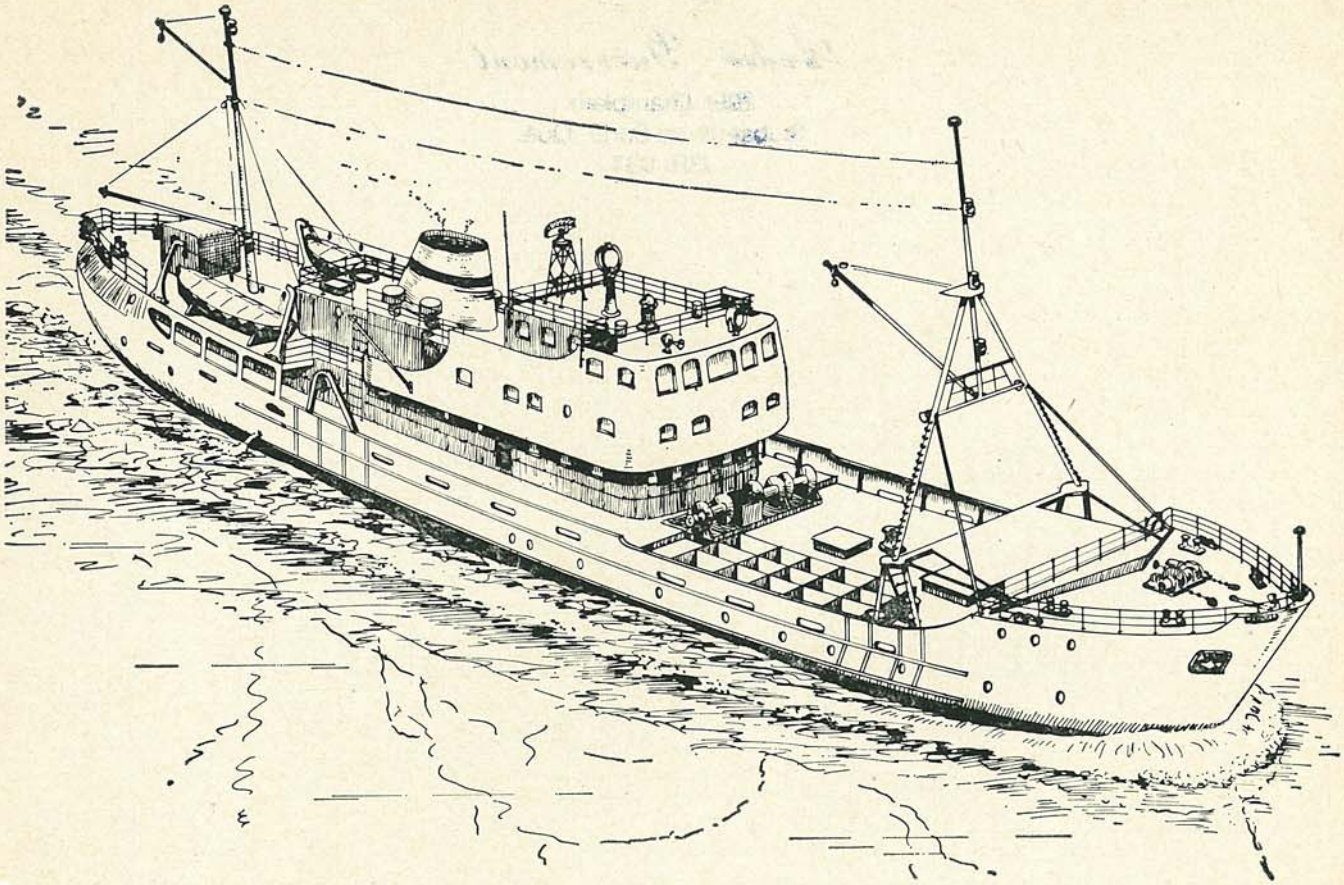


Artist's conception of the recently launched "A. T. Cameron", the Research Vessel built for the Fisheries Research Board by Marine Industries Limited.

Marine Industries Limited

MONTREAL • SOREL

MODERN RESEARCH VESSEL LAUNCHED FOR DEPARTMENT OF FISHERIES

"A. T. Cameron" designed to undertake oceanic and fisheries investigations extending over 7,000 miles without refuelling.

ONE of the most modern fisheries research vessels in the world, the *A. T. Cameron,* was christened on May 30th by Mrs J. L. Kask, wife of the chairman of the Fisheries Research Board of Canada. The new boat is now being outfitted and should be in commission by the end of July. After commissioning she will go into service in Atlantic and Arctic waters, based at St. John's, Newfoundland, for about two-thirds of the year and at Halifax, N.S., the remainder of the time.

The *A. T. Cameron* was built by Marine Industries Limited, Sorel, Que., to the order of the Minister of Fisheries. The formal christening ceremony on May 30th was attended by the Hon. J. Angus MacLean, Minister of Fisheries, Dr. J. L. Kask and Dr. Otto Young, of the Fisheries Research Board of Canada, and T. H. Turner, director of the Department of Fisheries' Information and Educational Service. Also present were Mr and Mrs Gordon O'Brien, manager of the Fisheries Council of Canada, and Dr. and Mrs P. E. Gagnon, of Laval University, a member of the executive committee of the Fisheries Research Board.

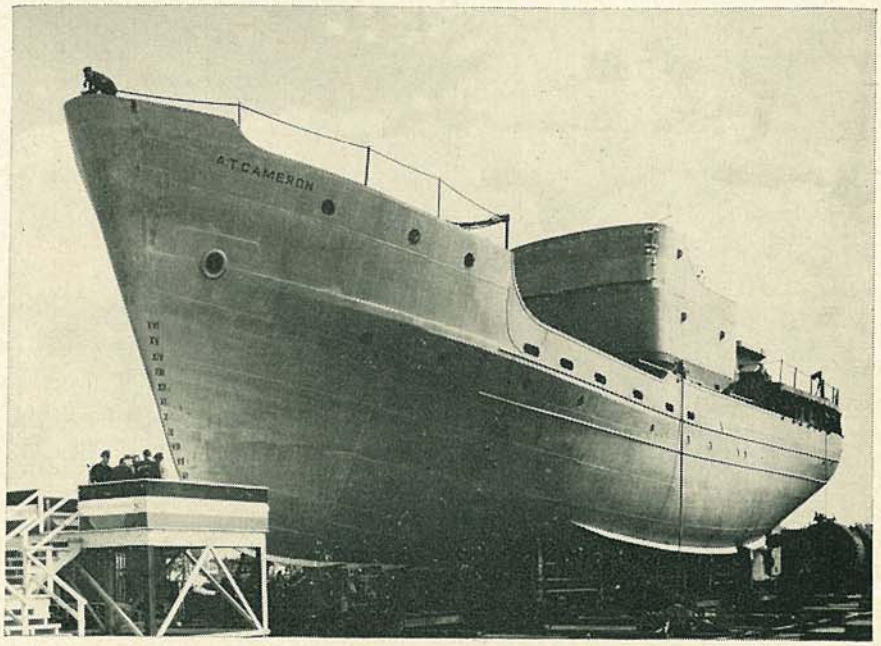
"Canada's position in the field of fisheries research," said Dr. J. Kask, "is being further established by putting into service the *A. T. Cameron,* which will contain the most modern scientific equipment available." Dr. Kask was interviewed in the studios of the radio branch of the Department of Fisheries in Ottawa. His comments were broadcast on the CBC dominion-wide network.

Little Miss Louise Breton presents Mrs J. L. Kask with a bouquet of flowers after Mrs Kask had christened the "A. T. Cameron." Shown on the left (foreground) is A. L. Simard, president of Marine Industries Ltd., builders of the vessel. At the right is Roger Gagnon. (Photo courtesy Dept. of Fisheries, Ottawa.)

"Although she is commissioned for use in the Northwest Atlantic and the Eastern Arctic, the findings of her scientific staff will be of benefit to all of Canada, particularly those concerned with the catching of fish, and to those charged with the conservation and development of Canada's fisheries resources.

"The *A. T. Cameron* will carry a crew of twenty-five, commanded by Capt. Baxter Blackwood. He, incidentally, is an excellent man for the job as he has both research and commercial fishing experience and has been a high-line skipper for many years out of Newfoundland. We consider ourselves very fortunate in having him as captain.

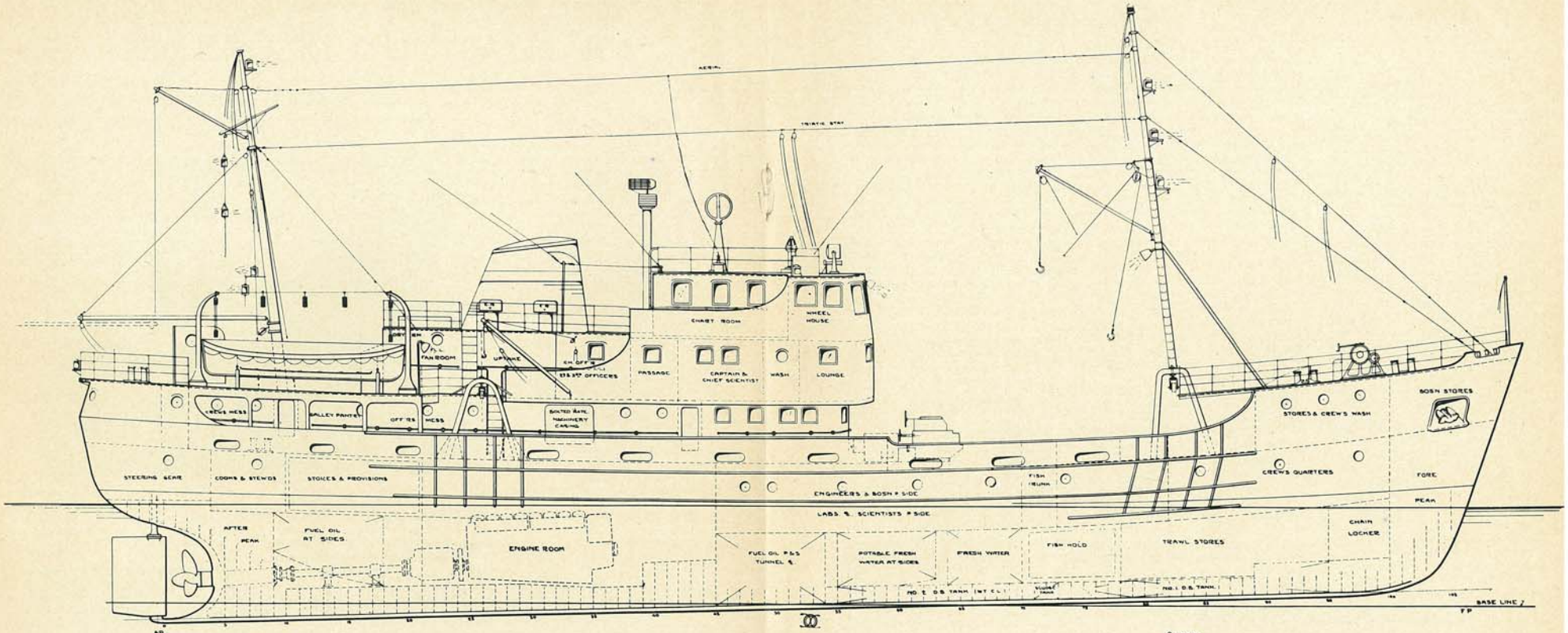
"In addition, the *A. T. Cameron* has accommodation for nine scientists and technicians. There are five laboratories, each fitted out with modern equipment and gear for various fishery research



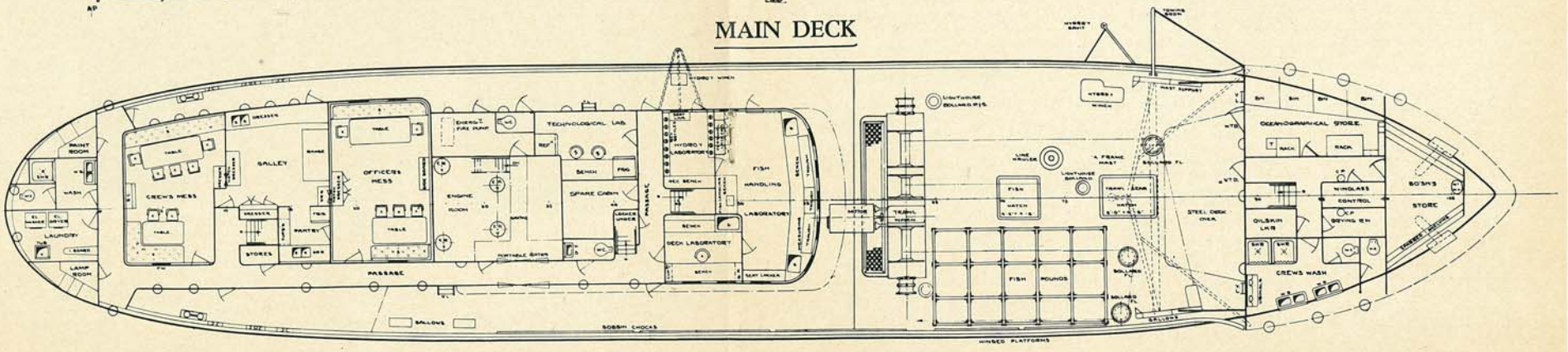
The Fisheries Research Board's new research vessel "A. T. Cameron" which was built by Marine Industries Limited at Sorel, Que., (Photo courtesy Public & Industrial Relations Ltd., Montreal.)

After the christening, Mrs Kask (white hat, foreground) is shown leaving the platform chatting to Mrs A. L. Simard, wife of the president of Marine Industries Limited. Immediately behind them is W. H. Milne, senior partner of the firm of Milne, Gilmore and German, Montreal naval architects who designed the "A. T. Cameron." (Photo courtesy Dept. of Fisheries, Ottawa.)

FISHERIES RESEARCH VESSEL — "A. T. CAMERON"



MAIN DECK



projects as well as oceanographic, hydrographic and survey work."

Courtesy Visits

In addition to her service in Canadian waters, the *A. T. Cameron* will also be capable of courtesy visits to such countries as Greenland, Iceland and the British Isles for demonstration purposes, the exchange of scientific knowledge and data. Vessels of this type are in increasing demand in order to keep abreast of research requirements in the fishing industry, both in actual fishing operations and in the plants of the fishing industry ashore, as well as in searching out new fishing grounds.

The new ship was initially designed by Graham and Woolnough of Liverpool, England, but finally built to design plans and specification prepared by Milne, Gilmore & German, Naval Architects of Montreal, to the requirements of the Minister of Fisheries and the Fisheries Research Board of Canada. She is of usual commercial fishing trawler form but instead of a large cargo fish hold there is a relatively small fish hold and the space thus made available has been utilized for the accommodation of laboratories, special fishing gear, accommodations for scientists and much electronic equipment to assist the scientists in their research work, as well as the most modern electronic navigational instruments.

The Class of the vessel will be of the highest and will be to Lloyd's Special Survey of Hull and Machinery "Class — 199 A.1. Trawler," "Strengthened for Navigation in Ice," "Hull All Electrically Welded." She will also be constructed to the requirements and approval of the Steamship Inspection Service for a ship for "Foreign Voyages, Class 1," with highest requirements regarding life saving appliances and fire extinguishing equipment.

Large Steaming Range

As the vessel will at times be required to make extended trips of from six to eight weeks steaming, ample arrangements have been incorporated for fuel, provisions, stores, the comfort of the crew, etc. for such an event, and provision has been made for a steaming range of 7500 miles without refuelling.

In view of the particular and exacting nature of the survey work for which the *A. T. Cameron* has been designed, the navigational and scientific survey equipment will comprise the latest in radar, depth sounding and other electronic devices. There will be three sets of recording echo sounding equipment of different types to ensure great accuracy at extreme, medium and shallow depths. This is important in recording the depths at which the various species of fish are located.

In designing the vessel special attention was given to the requirements of the Fisheries Research Board for modern and well outfitted laboratory space, also to the comfort of the crew and scientific staff who may be required to make extended trips into isolated regions. In short, everything possible has been done to contribute to a high standard of morale when the ship is away from her home port.

In addition to good and well arranged scientific quarters there will be five scientific laboratories, well outfitted with modern scientific equipment and gear suitable to each.

HYDROGRAPHIC LABORATORY: Will contain those instruments and facilities required for studying and mapping the forms and physical features of the contour of the sea bottom and of winds, tides, currents and the like in order to relate those to the presence of sea organism of importance to the fisheries.

DECK LABORATORY: In this laboratory devices and facilities for the taking of physical determination connected with specimens, some of which will be subjected to further study in other laboratories aboard ship or on shore.

FISH HANDLING LABORATORY: This laboratory will contain facilities for the sorting, dissecting and anatomical examination of the freshly caught fish. The required determinations include the measuring of the fish, the extraction of ear bones for age determination and gonads studied for sex, state of maturity and so on. Provision for microscopic examination of fish tissues is provided.

CHEMICAL LABORATORY: In this laboratory there will be instruments and facilities for carrying out chemical studies on water samples and bottom samples and possibly for doing simple chemical determinations on specimens taken from the sea. Such properties as the temperature, salinity, turbidity and hydrogen ion concentration, also dissolved oxygen and the chemical characteristics of sea water are of importance in the exploration for the different species of fish and other organisms.

PLANKTON LABORATORY: This space is for storing and sorting plankton or small free floating organisms which form basic food of fishes. Among these floating organisms are found fish eggs and the very young of important fishes.

Space is provided for microscopes and other laboratory equipment for the study and identification of these usually very small organisms.

Accommodation will be provided for a complement of 34 persons including 6 officers, 19 of a crew and 9 scientists, the crew being ample to enable the keeping of a three watch system.

The ship is named after Dr. A. T. Cameron, the well known author, teacher and researcher, who for 13 years prior to his death in 1947 was Chairman of the Fisheries Research Board.

The vessel has a trim "fisherman" appearance, the main hull being of steel and the superstructure of aluminum. Her form, although of trawler type, has been modified to fit her for research work and, as she will carry highly specialized scientists and technicians who are not necessarily seamen or used to the sea, every attention has been given to providing a seaworthy and seakindly vessel with the maximum of comfort in rough weather without sacrificing seakeeping qualities and ease in operation.

Dimensions

Her principal particulars are as follows:

Length	177'-0"
Breadth	32'-0"
Depth	16'-0"
Draft - Mean	12'-7"
Speed	12 Knots

There will be an insulated and refrigerated fish hold of 1800 cubic feet capacity especially constructed and arranged for the holding of fish in the unfrozen and in the frozen state. The temperature of the major portion will be controllable through a wide range down to the freezing point of fish, while a smaller portion will serve as a deep freeze for holding samples and specimens in good condition in the frozen state.

Details of Equipment

DECK EQUIPMENT will include a special and most up-to-date trawl winch, a Robertson Laurence Scott triple barrelled electric model, and two Mirrlees Mark JA 6-cylinder marine auxiliary winch engines. Also installed is a Barton Engineering hydraulic Hydrographic winch and a Barton Brattvag hydraulic long line and net hauler, the whole unit being a duplicate of those supplied to various Scandinavian fisheries research vessels.

The anchor windlass is a Thomas Reid electric model designed to handle the *Cameron's* three stockless anchors. The ship is also fitted with a kedge anchor.

NAVIGATION EQUIPMENT includes three echo sounders, radar, direction finder, gyro and magnetic compasses, automatic pilot, underwater log, together with full bridge control of steering, main propulsion machinery and the controllable pitch propeller.

The echo sounders comprise a Kelvin Hughes MS 26 E recorder with scale ranges of 0-40 fathoms with 8 additional ranges each of 25 fms to a maximum of 225 fms, and 0-400 fms, with 8 additional ranges each of 250 fms to a maximum of 2250 fms; an RCA Victor "Elac" synchro deepsea fischlupe and Arcturus echograph sounder; and a Simrad (Simonsen Radio a/s, Norway) echo sounder with four scale ranges, 0-125, 0-250, 0-500 and 0-1000 metres.

The radar is a Decca Radar True Motion type 46, synchronised with the gyro compass, which is a Sperry Gyro model Mark E.1., with repeater compasses.

The steering system aboard the *A. T. Cameron* is electro-hydraulic. It consists of a Barton Engineering hand and power two-ram electro-hydraulic steering unit arranged for Sperry two-unit auto-Gyro control and with hand hydraulic emergency steering gear.

Communications equipment comprises a Canadian Marconi Globespan W/T transmitter and Atalanta receiver, a Marconi CN86 10-channel Seaway radio-telephone set, and Marconi's Mimco loudhailer intercomm. system.

The direction finder is a Canadian Marconi Mullard Discovery unit.

The Loran set is a Sperry Gyro Mark 11, model 2.

An underwater log is fitted, a Kelvin Hughes Type Sal 24, designed to operate with the True Motion Decca Radar.

Weather instruments, clocks and chronometer, sextant, binoculars, and magnetic compasses are Kelvin Hughes models.

Special attention has been paid to heating, ventilation and insulation arrangements throughout the vessel to ensure the acme of comfort inside the vessel with a range of outside temperatures from zero degrees to 90 degrees Fahrenheit. Mechanical heating and ventilation is provided by a Norris Warming system of two centrifugal supply fans and three centrifugal pattern exhaust fans.

LIFE-SAVING equipment includes two 25-ft. aluminum life-boats designed for 41 persons each, and two 24-ft. aluminum life-boats designed for 38 persons each. Two of these boats are fitted with mechanical propulsion systems. There is also an 18-ft. motor boat designed to carry 14 persons and fitted with a Parsons Merganser 16.5 B.H.P. diesel which gives the boat a speed of 6 knots.

FIRE-FIGHTING equipment is CO_2 throughout the ship and was fitted by Walter Kidde Company of Canada Ltd.

MAIN ENGINE — The main propulsion machinery is a Burmeister & Wain 8-cylinder direct reversible diesel of the trunk-piston type, with airless injection, single-acting, with hydraulic coupling and hydraulic reversing arrangement for the variable pitch propeller, also of Burmeister & Wain manufacture. The engine and propeller are remotely controlled from the bridge, together with a set of controls in the engine room for emergency use without the wheelhouse controls being disconnected. The Burmeister & Wain main engine develops 1,000 B.H.P. at 310 r.p.m.

Other engine room equipment includes two 60-KW Clarke-Chapman McLaren diesel driven generating sets (ship service); one 15-KW Petter-McLaren 'B4' generator-compressor auxiliary general purpose set, supplied by Brush Aboe Canada Limited; one Sharples lube oil purifier, a Sharples fuel oil purifier, and Sharples tubular steam heat exchanger for lubricating oil; together with the usual fire, sanitary, bilge and general service pumps.

All in all this new survey vessel will fill a long-felt want in the research operations of the Fisheries Research Board of Canada.