



(Photo: M. J. Dunbar)

CALANUS

New Arctic Research Vessel

By M. J. Dunbar

Calanus, Fisheries Research Board of Canada oceanographic vessel used in the Eastern Arctic. This view shows the vessel on trials at Mahone Bay, N.S., before booms were mounted.

The Fisheries Research Board of Canada began marine investigations in Ungava Bay in 1947, at the request of the Department of Mines and Resources, in order, first, to discover any marine resources in the Eastern Arctic which could serve to raise the standard of living of the natives, and second, to make field researches of a fundamental nature to fill a long-standing gap in our knowledge of the Canadian north. The reconnaissance of 1947 showed that a research boat was needed, of considerably more robust design than was available in the region, and equipped with the proper tools for the job.

Between January and August 1948, the new ship was designed, drawn and built. The design was worked out between the naval architects who did the drawing (German and Milne, of Montreal), Captain Elmer Rigby of the Atlantic Biological Station at St. Andrews, N.B., and the present writer; and the ship was built by the Industrial Shipping Company, Mahone Bay, N.S. She is considerably broader and heavier than the ships normally built in Nova Scotia.

The *Calanus* is a ketch, 49.5 feet long, 15 feet beam, and with a draught of 6.5 feet. Her ribs are of white oak, 3 x 3 inches at the deck and 3 x 6 at the keelson, and 12 inches apart between centres. Planking is 2" yellow birch below the water line, and oak above; decks are white pine; combings, gunwale and wheelhouse are oak. Ice sheathing at present is of oak, probably to be replaced later by greenheart. The main

engine is a 77 hp. heavy duty caterpillar diesel, with 2-1 reduction, and her auxiliary is a 3-kilowatt Lister diesel. All compartments are lit electrically, and heated by hot-water radiators. Her total sail-area is 668 square feet. Cruising speed under power alone is 7 knots. Her gross tonnage is about 30; displacement 43 tons.

The vessel is equipped with an echosounder (with 75- and 300-fathom scales) and a radiophone transmitter. The laboratory is below deck, with both seawater and fresh-water inlets, and all the equipment necessary for chemical titrations, preservation and measurement of material, and so on. There is a two-drum trawl-winch on deck, driven by roller chain from the power take-off on the main engine. Each drum carries 275 fathoms of 5/16" wire, leading through a system of fairleads to the gallowframes. The *Calanus* at the moment carries two otter-trawls for shrimp and two for flounders and other ground-fish, all of them with a 40-foot head-rope, and two 18-foot beam-trawls to be used for exploring the sea-bottom. Two small dredges will be added to her equipment in the 1949 season. A full range of plankton nets and young fish trawls are standard equipment, which are used on the trawl-winch or the hydrographic winches according to size. One hydrographic winch is driven by a small 3/4 hp. electric motor, and carries up to 500 metres of 1/8" wire; the other is a special winch made at St. Andrews, which is

bolted to the deck forward of the main trawl winch, and which is driven off the forward drumhead by a simple cone friction clutch. This winch carries well over 1000 metres of wire.

The bulkhead arrangement is as shown in the accompanying drawings, with the exception that during the building of the boat, the after engine-room bulkhead was pushed back two feet, so that the galley and toilet are two feet

narrower than planned.

The *Calanus* behaved excellently on her maiden voyage to Ungava; it remains to be seen how she will handle while trawling. She has been designed to withstand rough treatment, and to be able to work at sea in all reasonable weather, while still being small enough to work along skerry coasts and in other places with little elbow-room. She has sleeping accommodation for eight.

