

DECK EQUIPMENT LAYOUT ON M/V "DELAWARE" FOR SURF CLAM SURVEY

By Lars A. Fahlen*

The surf clam (*Spisula solidissima*) has become an important national food source. New Jersey is the largest producer. In 1965, it produced 42,306,687 pounds of surf clam meats worth \$3,047,857; in 1966, 42,688,462 pounds worth \$3,666,995¹/₂. Between 1960 and 1965, the increase in production averaged more than 3,000,000 pounds of meats per year. About 65 vessels--48 to 136 feet long and 14 to 160 tons (fig. 1)--are now operating in this fishery off the New Jersey coast.

DELAWARE'S FISHING GEAR

The BCF exploratory fishing vessel Delaware was especially rigged for a surf clam survey off New Jersey, Maryland, and Virginia to evaluate the availability and abundance of surf clams. Her equipment differed from that of commercial boats because she is longer (148 feet) and because heavier fishing gear was needed for the survey. This paper describes the rigging to serve as reference for future research cruises and for possible application to large commercial vessels.

Deck Layout

As a basic support for handling the dredge gear, the Delaware is fitted with a 16-foot 7-inch long piece of 16-inch I-beam secured to welded brackets on the foremast (fig. 2). The I-beam extends horizontally and athwartship from the mast to about 2 feet beyond the rail. The outboard end of the beam has a 9-foot 7-inch long support of 6-inch steel pipe stepped on the deck. For additional support, a $\frac{5}{8}$ -inch steel cable secured under the crosstree of the mast is attached at the outboard end of the



Fig. 1 - Converted shrimp trawlers used in surf clamming.

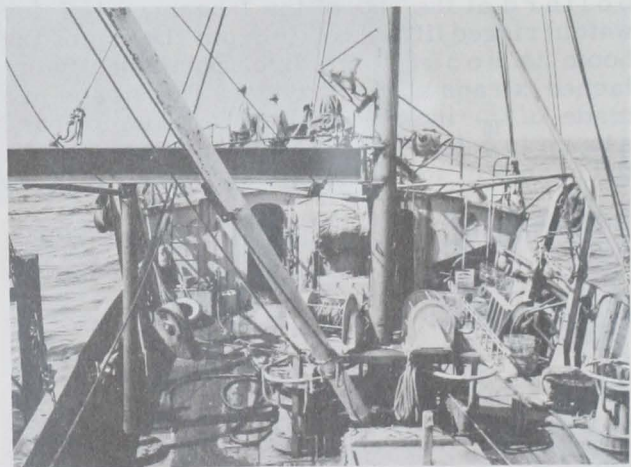


Fig. 2 - Deck layout on the Delaware when surf clamming.

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Statistics based on BCF figures, New Jersey Landings, C.F.S. No. 4335, December 1966.
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I-beam. At the beam's outer end, a swivel hanging bollard is installed for a 1-inch haul-back cable; this cable is shackled to the forward end of the dredge on the crossbar between the shoes (or runners). The cable extends through the hanging bollard and two deck bollards to the port drum of the main trawl winch.

A hoisting boom for taking the dredge aboard is 31 feet 9 inches long and made of extra heavy-duty 8-inch steel pipe; the boom is fitted with a swiveling gooseneck at the bottom end. The boom is stepped on a base laid horizontal to but about 6 inches above the deck, between the two forward deck fairlead bollards. The base, 5 feet long, is made from two 6-inch by 5-foot long pieces of $1\frac{5}{8}$ -inch flat steel; the two pieces are joined one above the other by two 6-inch square gussets of $1\frac{5}{8}$ -inch steel. In the center of the base, a $2\frac{1}{4}$ -inch hole is drilled through both pieces of steel; the gooseneck is inserted through both holes and pinned below the bottom piece. This method allows the boom to swivel in any direction. Each end of the base for the boom is welded to the steel base of the deck fairlead bollards.

When the dredge is hauled to the hanging bollard at the end of the I-beam, a luff (or watch) rigged lifting tackle from the top of the boom is hooked into three permanently attached straps on the dredge. The straps are made of $\frac{9}{16}$ -inch welded chain. The forward strap is 5 feet long and is shackled onto the towing bar of the dredge. The remaining two

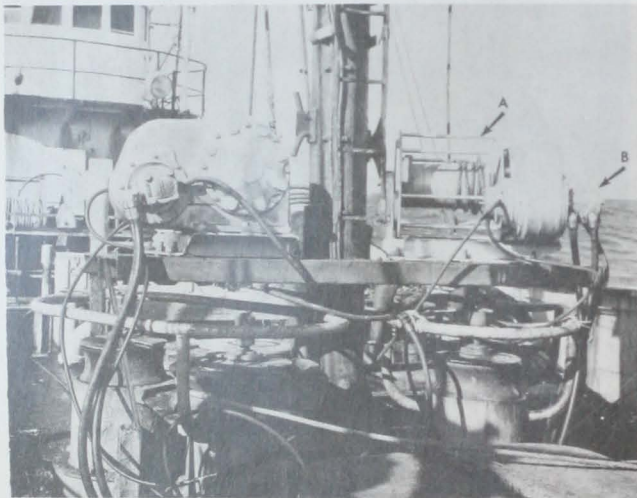


Fig. 3 - Winches (A) and hydraulic power units (B) used in handling surf clam gear.

straps are each 4 feet long and are secured to the forward part of the aftercage. All three straps are shackled into an 8-inch lifting ring made of $1\frac{1}{4}$ -inch round steel. The topping lift for the boom is a twofold purchase; it is used for bringing the entire dredge across the vessel's bulwark. The lifting and the topping tackles are fitted with 8-inch steel blocks and $\frac{5}{8}$ -inch galvanized wire rope. Two Marco W4050-S winches, each powered with Vickers^{2/} M2-330 hydraulic motors, supply adequate power for handling the 48-inch dredge. The dredge weight alone is about 3,000 pounds; a full load of clams and bottom sediment weighs an additional 6,000 pounds (fig. 3).

Towing Position

To tow the dredge with the shortest possible length of jet hose, a bow towing position is used. To implement towing from this position, a 48-foot long piece of 4-inch steel pipe was welded to the outside of the bow and the forward part of the keel. The adjustable towing cable is housed by this pipe (fig. 4). The towing cable is passed through it down to the dredge, and the dredge is towed beneath the vessel rather than behind it. So less hose

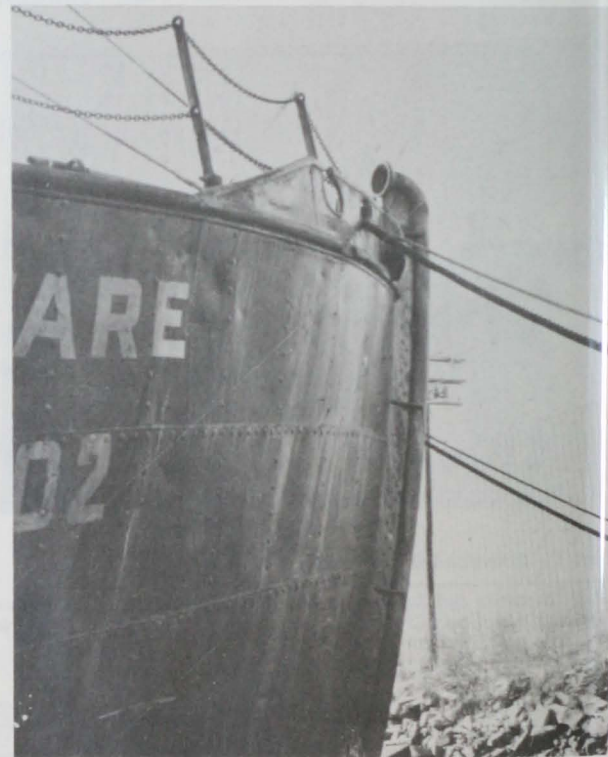


Fig. 4 - Delaware's hawser pipe for the clam dredge towing hawser or cable.

^{2/}The products and equipment used in this survey do not constitute endorsement.

is required and higher water pressure at the dredge results because of less friction in the shortened length of hose. Also, additional hose sections are not needed.

The dredge is brought aboard the vessel in the same manner whether towed conventionally or by using the bow hawser pipe.



LOBSTER BOATS



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| $\frac{1}{2}$ pound cooked lobster meat, fresh or frozen | 2 tablespoons mayonnaise or salad dressing |
| 24 fresh mushrooms, approximately $1\frac{1}{2}$ inches in diameter | $\frac{1}{4}$ teaspoon Worcestershire sauce |
| $\frac{1}{4}$ cup condensed cream of mushroom soup | $\frac{1}{8}$ teaspoon liquid hot pepper sauce |
| 2 tablespoons fine soft bread crumbs | Dash pepper |
| | Grated Parmesan cheese |

Thaw frozen lobster meat. Drain lobster meat. Remove any remaining shell or cartilage. Chop the lobster meat. Rinse mushrooms in cold water. Dry mushrooms and remove stems. Combine soup, crumbs, mayonnaise, seasonings, and lobster. Stuff each mushroom cap with a tablespoonful of the lobster mixture. Sprinkle with cheese. Place mushrooms on a well-greased baking pan, 15 by 10 by 1 inch. Bake in a hot oven, 400° F., for 10 to 15 minutes or until lightly browned. Makes 24 hors d'oeuvres.

This idea for entertaining is from a 22-page, full-color booklet, "Nautical Notions for Snibbling," released by the United States Department of the Interior's BCF. It is available for 45¢ from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. Ask for Market Development Series No. 10 (catalog no. I-49/49/2:10).