
Fishery Leaflet 373

Washington 25, D. C.

July 1950

ATLANTIC COAST MACKEREL PURSE SEINE

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Mackerel (*Scomber scombrus*) is one of the most important food fishes caught along the Eastern Coast of the United States, with the average annual production amounting to about 35,000,000 pounds. There are approximately 100 vessels and 1000 fishermen participating in the catching of this fish. In general, the mackerel season begins in late March, or early April, in the Chesapeake Bay area and as the season advances catches are made further north along the Atlantic Coast. June and July find the mackerel in the Gulf of Maine and as far north as Nova Scotia and Newfoundland. The mackerel schools begin to break up in September but occasionally some reappear off Cape Cod where a few may be taken as late as December. The fish then disappear until the following spring when they repeat the same cycle.

Reports on the earlier methods of catching mackerel are obscure. Prior to the year 1700 a law was passed by the Colony of Massachusetts which prohibited the seining of these fish. Records also show that between 1815 and 1860 the mackerel fishery was essentially a hook-and-line fishery, although gill nets were introduced in some localities during that period. About 1860 notable catches of mackerel by the use of purse seines are on record. At the present time about 75 percent of the mackerel catches are taken by purse seines, 7 percent in gill nets, and the remainder in traps.

The method and style of the purse seiners on the East Coast probably originated from the Mediterranean type followed by mechanization and other improvements, which differ somewhat among the vessels and different localities. Improvements in methods of catching are continuing to be made.

The New England mackerel purse seine net (Fig. 1) is operated by the use of three craft. These are the seiner (large vessel) (Fig. 2), ranging from 60 to 110 feet in length, the seine-boat (Fig. 3), ranging from 24 to 44 feet in length, and a 17 foot dory or equivalent row-boat (Fig. 4).

The large vessel or seiner is from 60 to 110 feet in length of no special design. It may be a type of small dragger or, like many, a converted world war I sub chaser. They are characterized by the towing boom mounted on the starboard side of the forerigging and the crow's-nest on the foremast.

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The "Gloucester" seine-boat is generally reputed to be the most effective type of boat made for this type of fishing and as an open boat it is considered to be one of the best sea-boats of its kind. It is flexible and light yet sturdy for its size and is able to withstand considerable bumping against the larger vessel. These boats were formerly hand made by skilled boat-builders who specialized in this particular type construction. The master seine-boat-builders of Gloucester (Massachusetts) are now extinct and the skill and art of seine boat building passed away with them. However, the seine-boats of Gloucester will always remain a symbol of the outstanding art of seine-boat building craftsmanship. Today seine boats can be obtained only from Nova Scotia.

Most seine boats are now equipped with a motor driven gypsy-head winch and some are equipped with motors with the propeller mounted on one side. Others have twin engines with propellers on each side. These motor driven seine boats can set the seine under their own power when fishing in areas which would be too dangerous for the large vessel.

The New England purse seine is operated as shown in Figure 5. When a mackerel seiner approaches the fishing grounds (1), one or more men go to the foremast-top from which they search for the school of mackerel. Today most seiners are equipped with a crow's-nest which protects the observer from winds and discomfort.

Meanwhile, the remainder of the crew are engaged in preparations preliminary to the actual fishing such as placing the seine boat onto the special boom which is mounted on the starboard side of the vessel at the foremast rigging. A check of the seine-net is made to insure the fact that everything is properly arranged and ready for immediate action. The dory is towed back of the seine boat by a painter which is also fastened to the end of the purse-seine.

When a suitable school of mackerel is sighted, the crew take their positions at pre-assigned stations. One or two men in the dory and about eight in the seine boat. The captain, cook, and engineer remain aboard the vessel.

The setting of the purse seine (2) is begun when the vessel reaches the edge of the school of mackerel. At this point the men in the seine boat release the end of the seine and dory. The dory supports one end of the net (3) while it is being payed out from the seine boat and towed around the school of mackerel. By the time the seine boat reaches the dory the seine is usually all payed out and both ends of the purse seine net are placed amidship of the seine boat. The large seiner is cast off (4), then the tom-weights are dropped and the pursing operation is performed, usually by the aid of a power winch (Fig. 6). While the seine is being pursed the men in the dory follow the cork-line to see that it does not "bunch up" and foul. The large seiner is within a short distance (5) standing by. When pursing of the net is completed, (6) the men then continue to haul in the wing of the seine net, driving the fish into the bunt end in order to bring them all together. When all the fish are accumulated in the bunt (7) the large seiner then comes alongside, picks up the cork-line of the seine in the opposite position of the seine-boat, secures this on the railing and the brailing of the mackerel is made by use of a brailer. Thence the fish are dumped on deck and other members of the crew stow the fish in the hold of the vessel.

A specially designed centrifugal pump has recently been developed which may replace the conventional brailing method. Its use is seriously being considered in the mackerel fishery.

The fish-hold of a mackerel seiner is usually divided into compartments which are known as "bins" or "pens". Each bin is about 4 feet long, 6 to 7 feet deep, and tapers from 5 feet in width at the top to about 2 feet in width at the bottom; conforming generally to the shape of the hull of the vessel. Each bin will hold about 3500 to 5000 pounds of mackerel.

In stowing mackerel, an initial layer of ice is first placed on the floor of the bin, a layer of fish is then permitted to drop down onto the ice through a manhole in the deck above until the fish covers the ice from sight, another layer of ice is added - enough to cover the fish, then more mackerel, etc. Bin boards are placed upon pre-arranged holding in the bin making a shelving or flooring in order to relieve the weight and pressure of fish in the lower layers of the bin. When the bin has been loaded a final heavy layer of ice is placed on top of the fish. On the average, it requires about 12 tons of ice to preserve 60,000 pounds of fish. If the vessel is within half a day's journey from the port of discharge, and the weather is cool, vessels often go out fishing without ice. Generally, however, the average mackerel-seiner trip covers a period of 3 days; one going out, one fishing, and one returning.

At the port of discharge the fish are unloaded in wire baskets and weighed, then dumped into barrels or boxes depending on the method used in the locality.

THE ATLANTIC MACKEREL PURSE SEINE

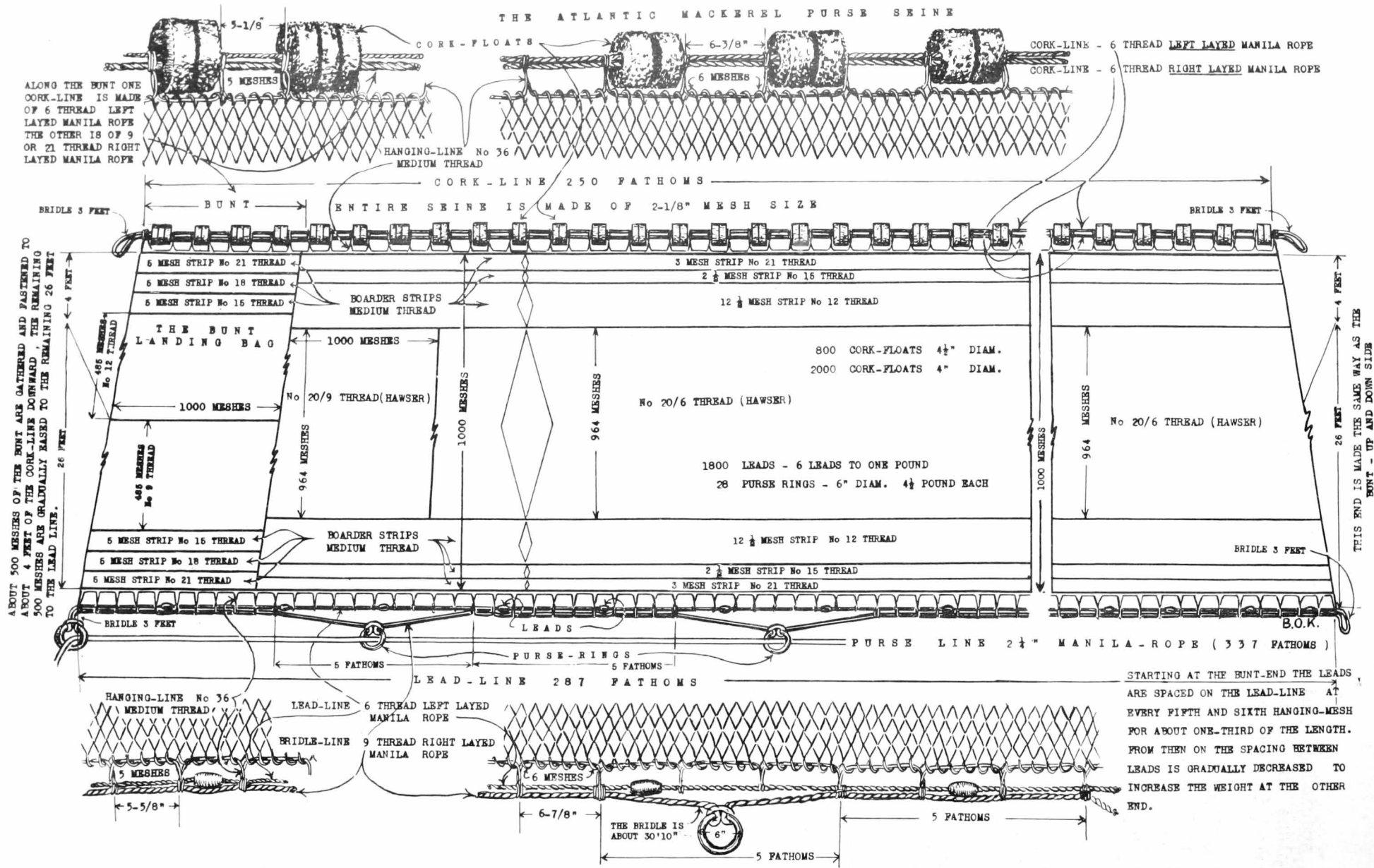


FIGURE 1

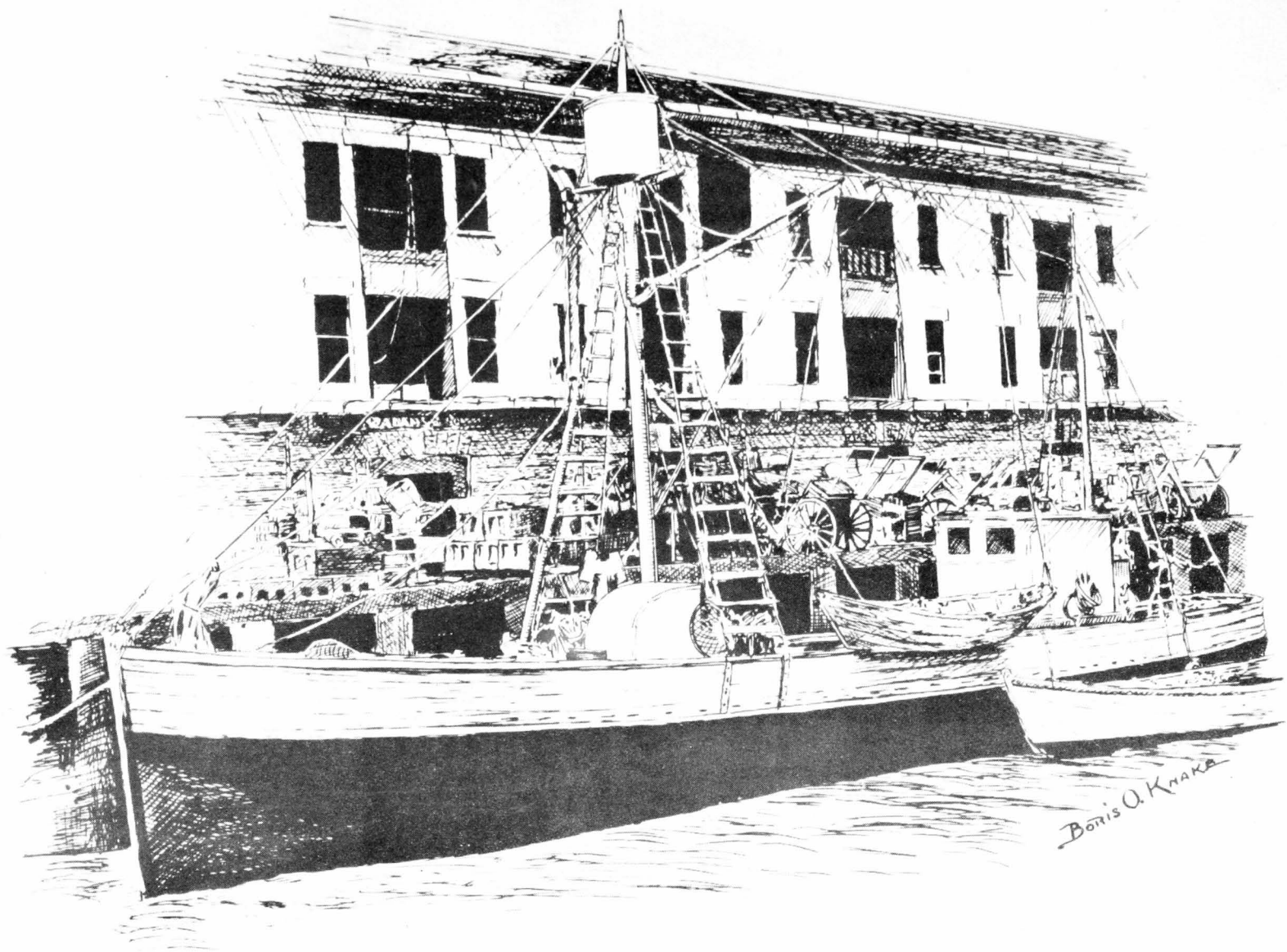


FIGURE 2, TYPICAL MACKEREL PURSE SEINER AT BOSTON FISH PIER

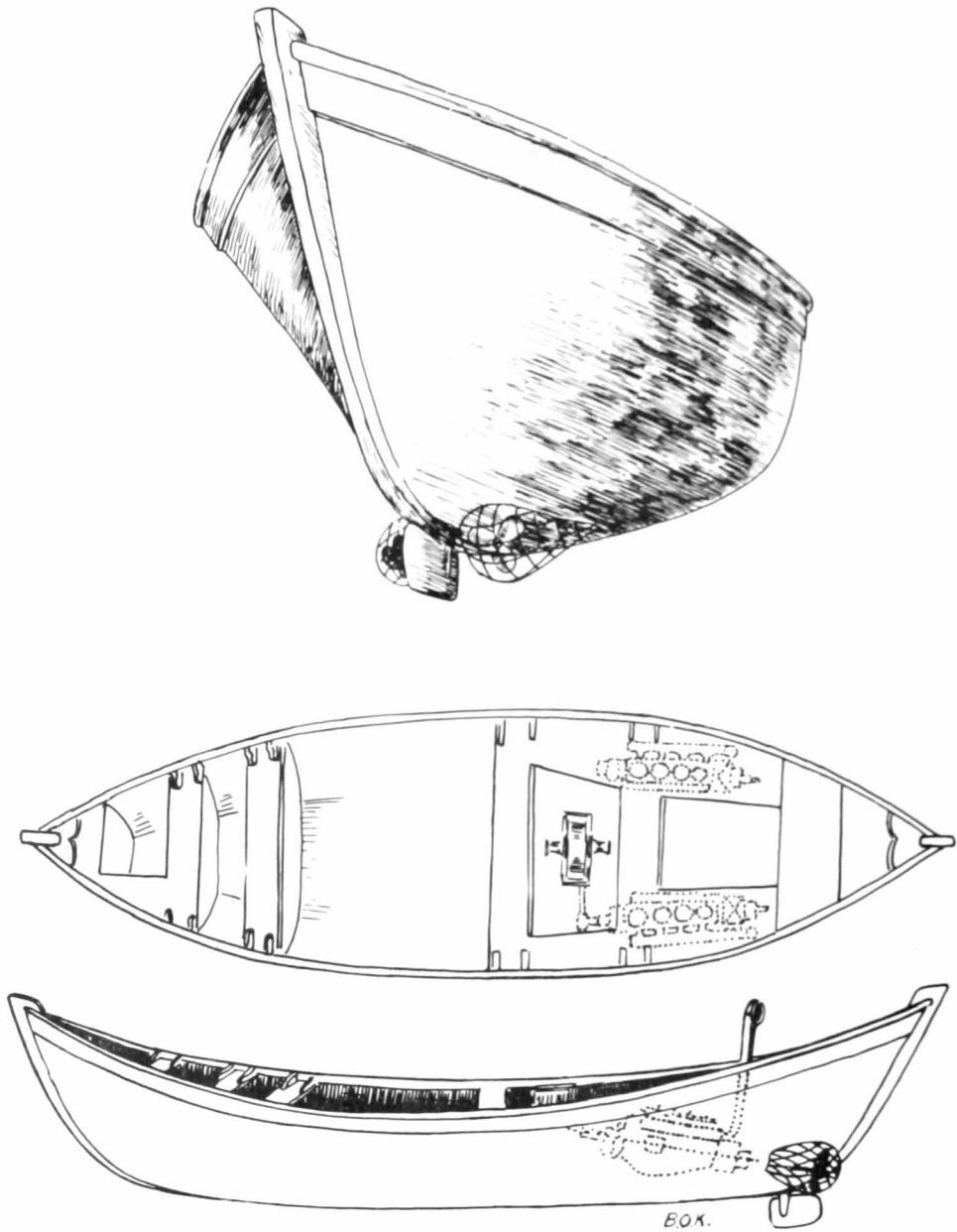


FIGURE 3, SEINE-BOAT
RANGING FROM 24 TO 44 FEET IN LENGTH

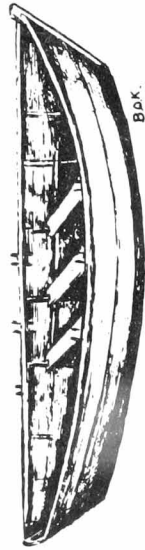
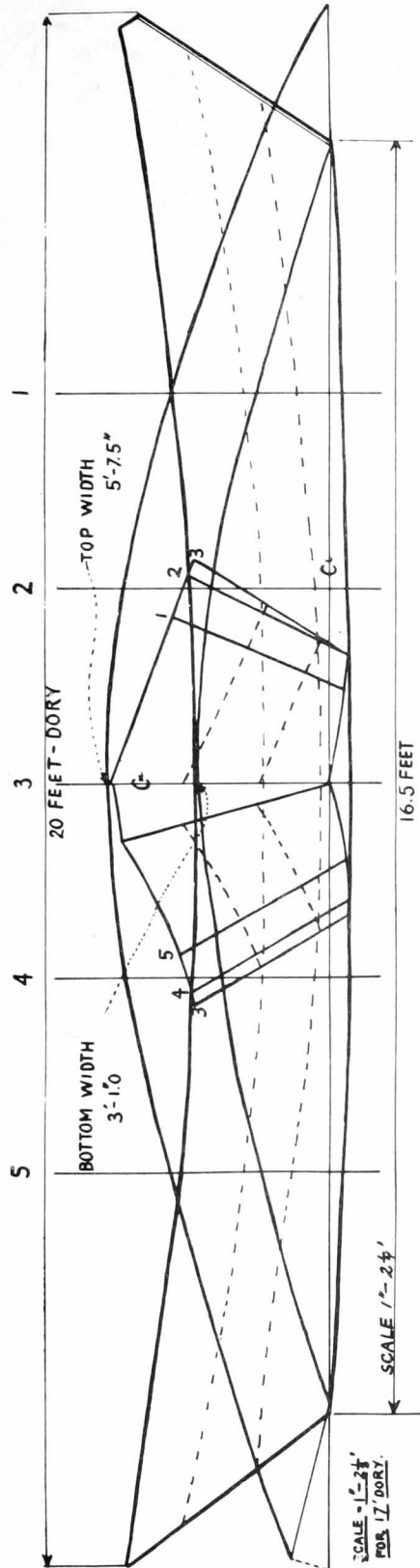


FIGURE 4, A TYPICAL FISHERMEN'S DORY

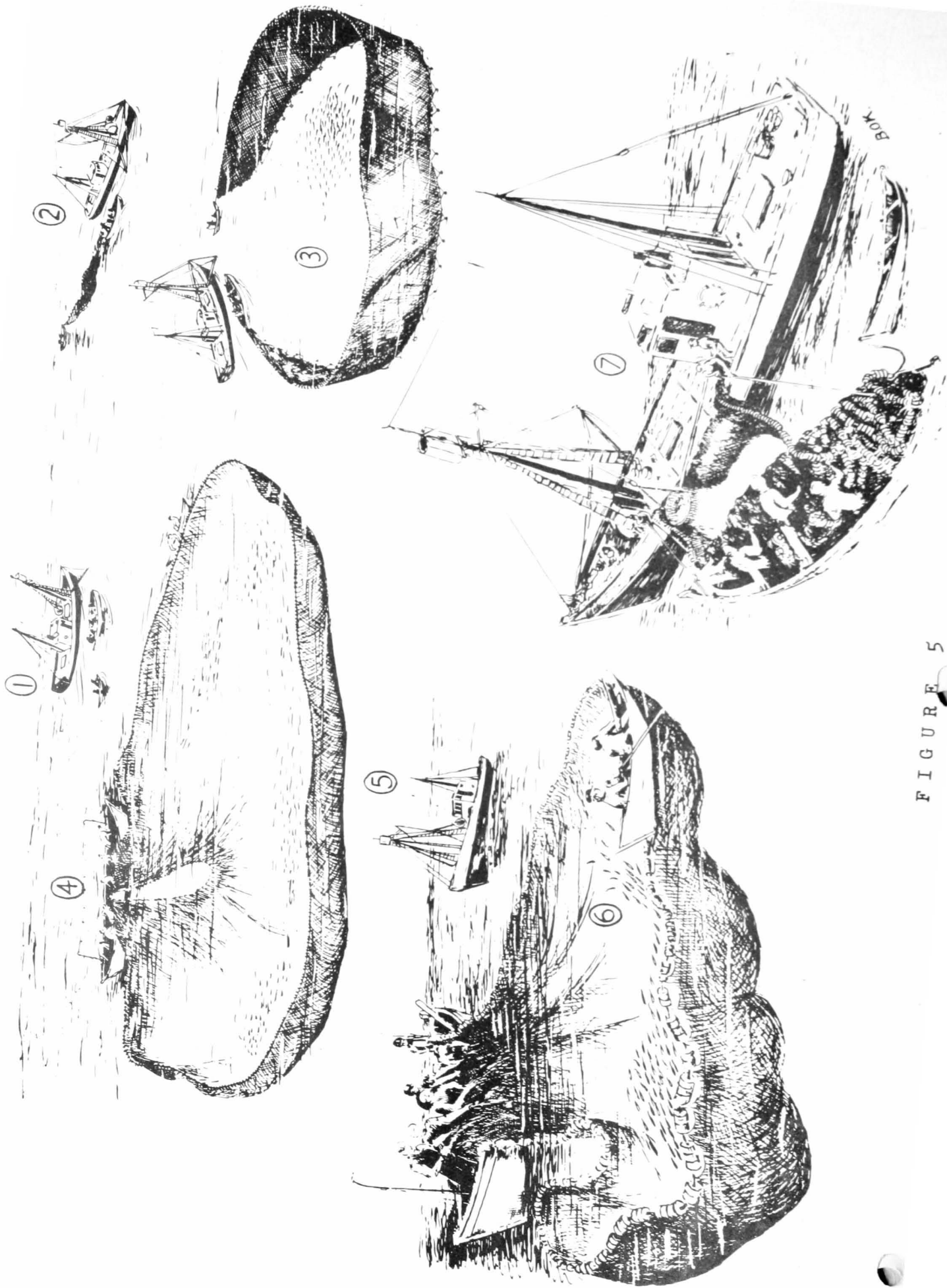


FIGURE 5

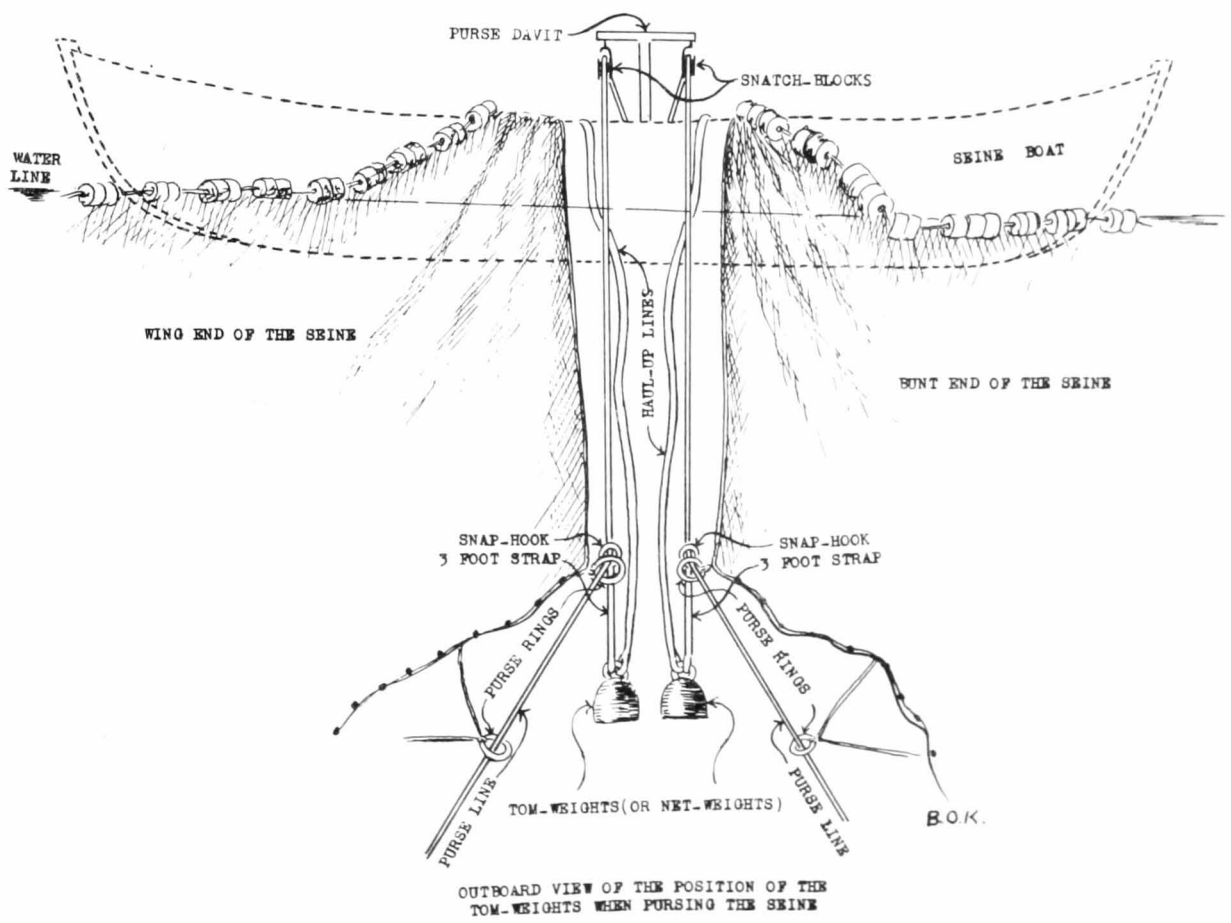
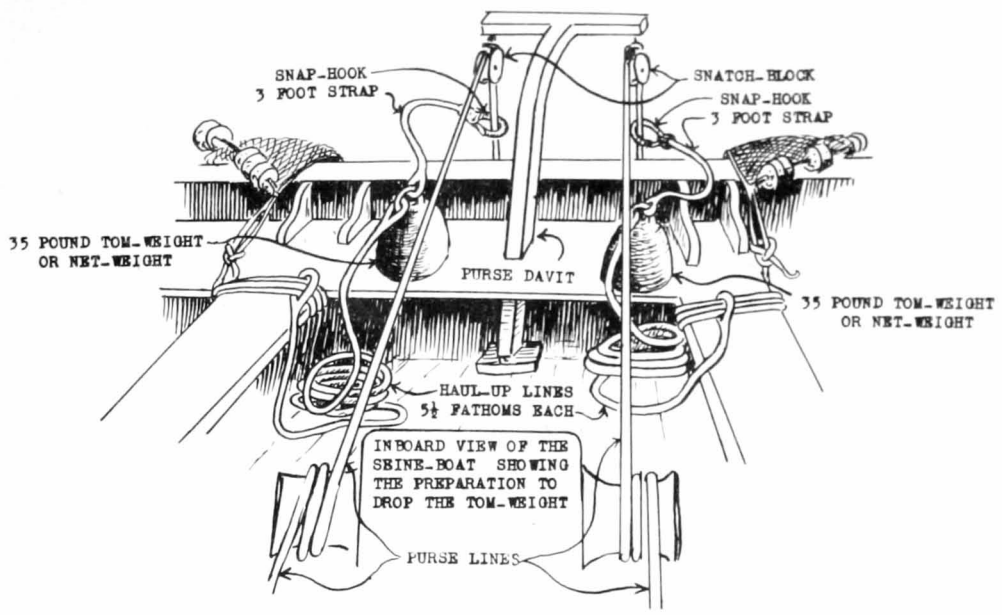


FIGURE 6, OPERATION OF TOM-WEIGHTS