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DESCRIPTION OF THE EXPLORATORY FISHING VESSEL JOHN N. COBB

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INTRODUCTION

In order to explore the untapped fishery resources in the waters off the Pacific Northwest and Alaska, the U. S. Fish and Wildlife Service added the John N. Cobb to its fleet. This latest and newest exploratory fishing vessel was commissioned

at the Department of Oceanography Dock of the University of Washington at Seattle, Washington, on February 18, 1950. Immediately following the commissioning ceremonies, an open house was held aboard the vessel and many interested scientific and industry people had an opportunity to examine the vessel.

The John N. Cobb, an entirely new vessel, was designed according to the Service's specifications by W. C. Nickum and Sons, Naval Architects, Seattle, Washington, Built at Tacoma, Washington, by the Western Boat Building Company, it was launched on January 14, 1950.

Operated by the Exploratory Fishing and Gear Development Section under the Ser-

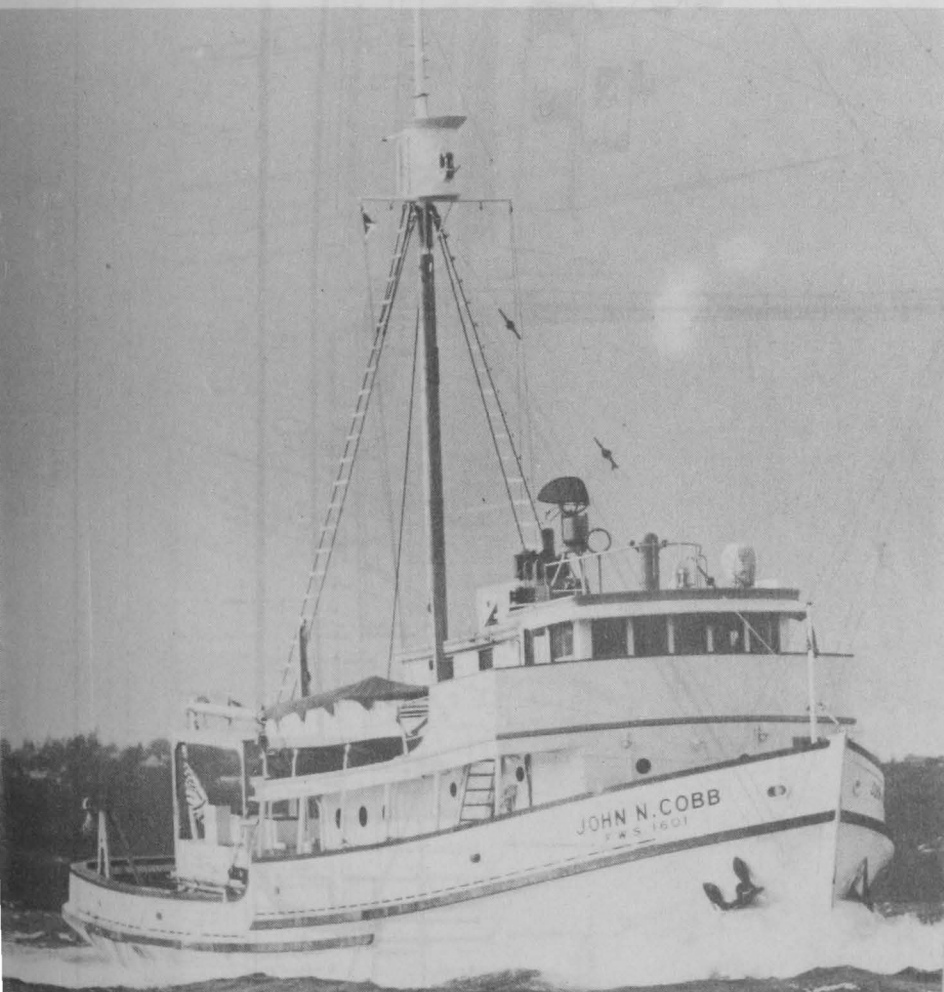


FIGURE 1 - THE JOHN N. COBB ON A TRIAL RUN ON PUGET SOUND.

vice's Branch of Commercial Fisheries, the vessel is, at first, placing emphasis on locating commercial concentrations of albacore tuna; determining their pattern of abun-

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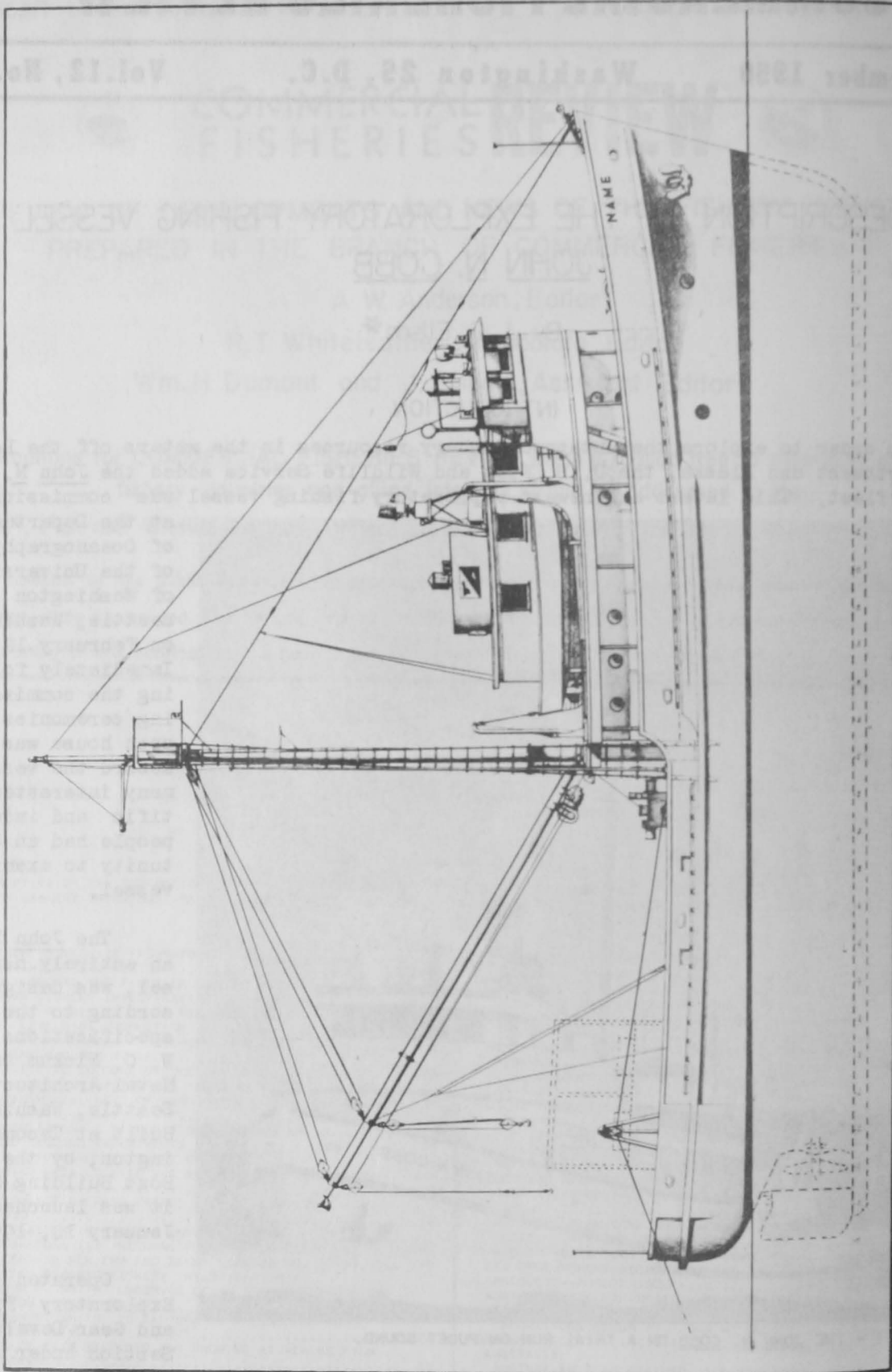
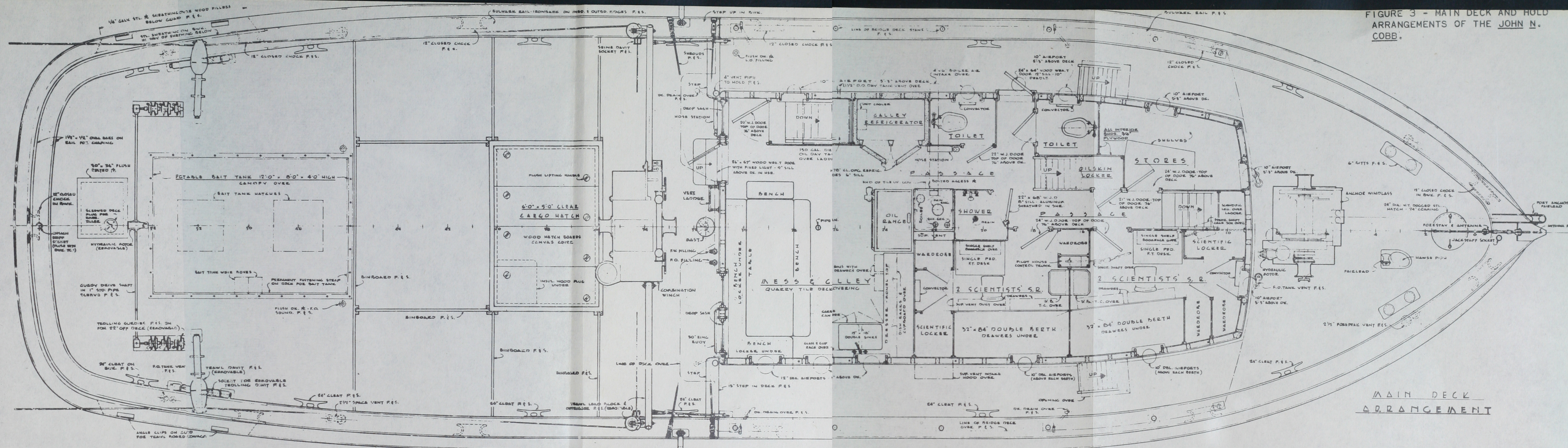
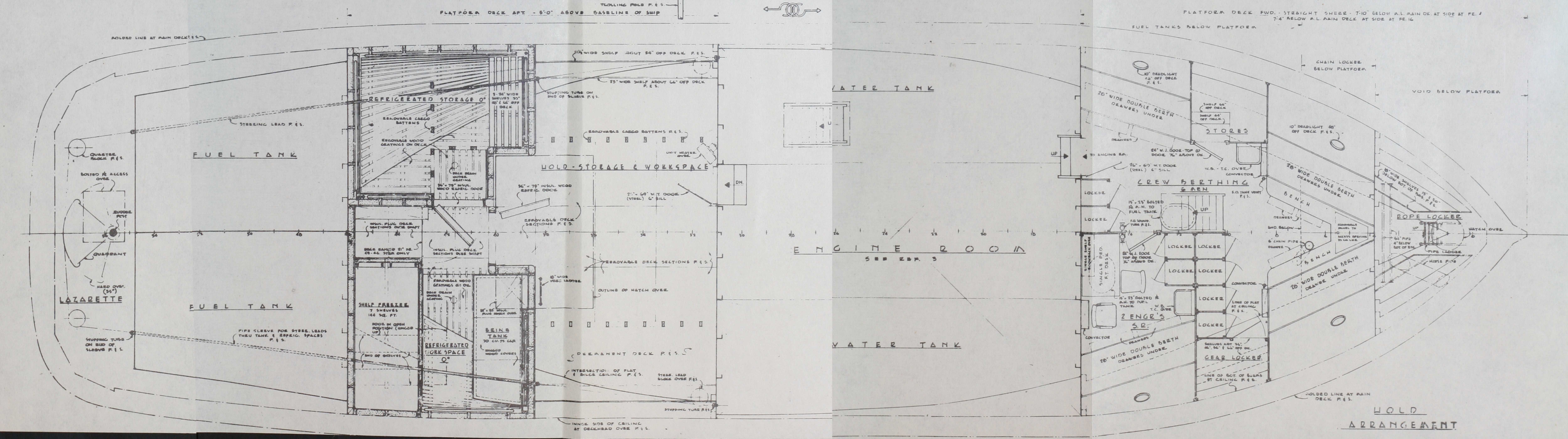


FIGURE 2 - OUTBOARD PROFILE OF THE JOHN N. COBB

FIGURE 3 - MAIN DECK AND HOLD ARRANGEMENTS OF THE JOHN N. COBB.



MAIN DECK ARRANGEMENT



HOLD ARRANGEMENT

dance; tracing their general migration in the waters off Oregon, Washington, and Southeastern Alaska; and determining the most effective means of capturing the tuna commercially. This phase of the work of the Exploratory Fishing and Gear Development Section will be known as the North Pacific Exploratory Fishery Program.

The vessel bears the name of a distinguished leader in the field of fisheries research and knowledge--John N. Cobb. He was the founder and first dean of the School of Fisheries at the University of Washington, as well as having had an outstanding record in the fisheries industry and with the Bureau of Fisheries.

The planning of the John N. Cobb was based largely on practical experience gained from previous exploratory cruises made with other vessels to various areas from the Washington coast to the remote northern areas of the Bering Sea. The vessel is planned as a multi-purpose fishing vessel, to fish experimentally in the various types of fishing found on the West Coast. These include seining, trawling, long-line fishing, live-bait fishing, and trolling. Range of operations for the vessel will extend from the Pacific coastal and offshore waters of the United States to the northern Bering Sea. For this reason, the John N. Cobb is strongly built; is designed to carry large amounts of fuel and water; is equipped with the most modern navigational devices; carries the latest type of life-saving equipment; and is amply powered.

DESCRIPTION OF VESSEL

The vessel's construction is of wood, with the exception of certain steel bulkheads, engine foundations, and tanks. The general design of the vessel is that of a West Coast purse-seiner with certain modifications to improve sea characteristics. For example, the house structure and machinery spaces are located somewhat further aft than in conventional seine boats; also the stern has been made elliptical with the stern lines below the deck shaped so as to avoid the flat, broad type of seine-boat stern. The hold is divided into compartments by steel watertight bulkheads forward and aft of the engine room, forward of the forecabin crew's quarters, and at the afterend of the hold.

The vessel is built to the following dimensions:

Length over-all	93' 5 $\frac{1}{2}$ "	Draft over keel (mean load)	9' 6"
Length, waterline	85' 0 "	Bunkers, Diesel fuel.....	12,000 gals.
Beam over guards	25' 6 $\frac{3}{4}$ "	Capacity, fresh water	6,000 gals.
Beam, molded	24' 6 "	Cruising speed	10 knots
Depth, molded	12' 7 "	Maximum speed.....	10.8 knots
Draft, molded (mean load).	8' 6 "		

The main propulsive power is supplied by an 8-cylinder, 2-cycle, Diesel engine furnishing 345 h.p. at 375 r.p.m. Since the engine is normally rated at 500 h.p. and 540 r.p.m., long life and a minimum of maintenance is expected. There are 2 auxiliary, 3-cylinder, 45 h.p., Diesel generators, each of which supplies 30 kw. for the electrical systems. One auxiliary has the dual function of running a generator or of driving the main trawl winch through a hydraulic torque converter. The other unit is the primary source of electrical power and also has the function of driving a hydraulic pump for operation of the anchor windlass and the trolling gurdies.

A unique feature of the vessel is an auxiliary drive to supply main propulsive power at slow speeds.^{1/} Such is made possible by a sailing clutch which allows the

^{1/} SEE COMMERCIAL FISHERIES REVIEW, JUNE 1950, PP. 1-3; ALSO ISSUED AS SEPARATE NO. 253.

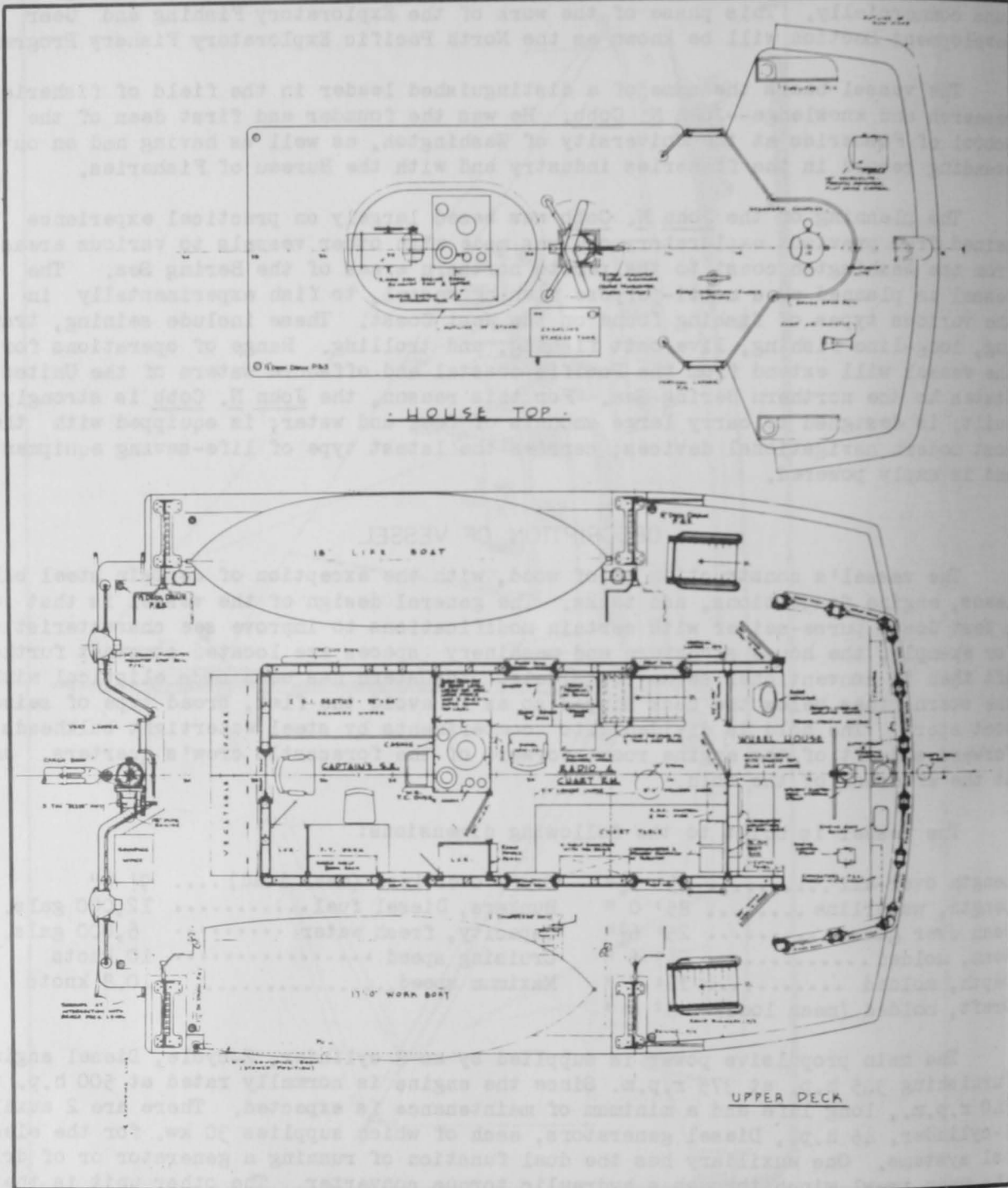


FIGURE 4 - HOUSE TOP AND UPPER DECK ARRANGEMENTS OF THE JOHN N. COBB.

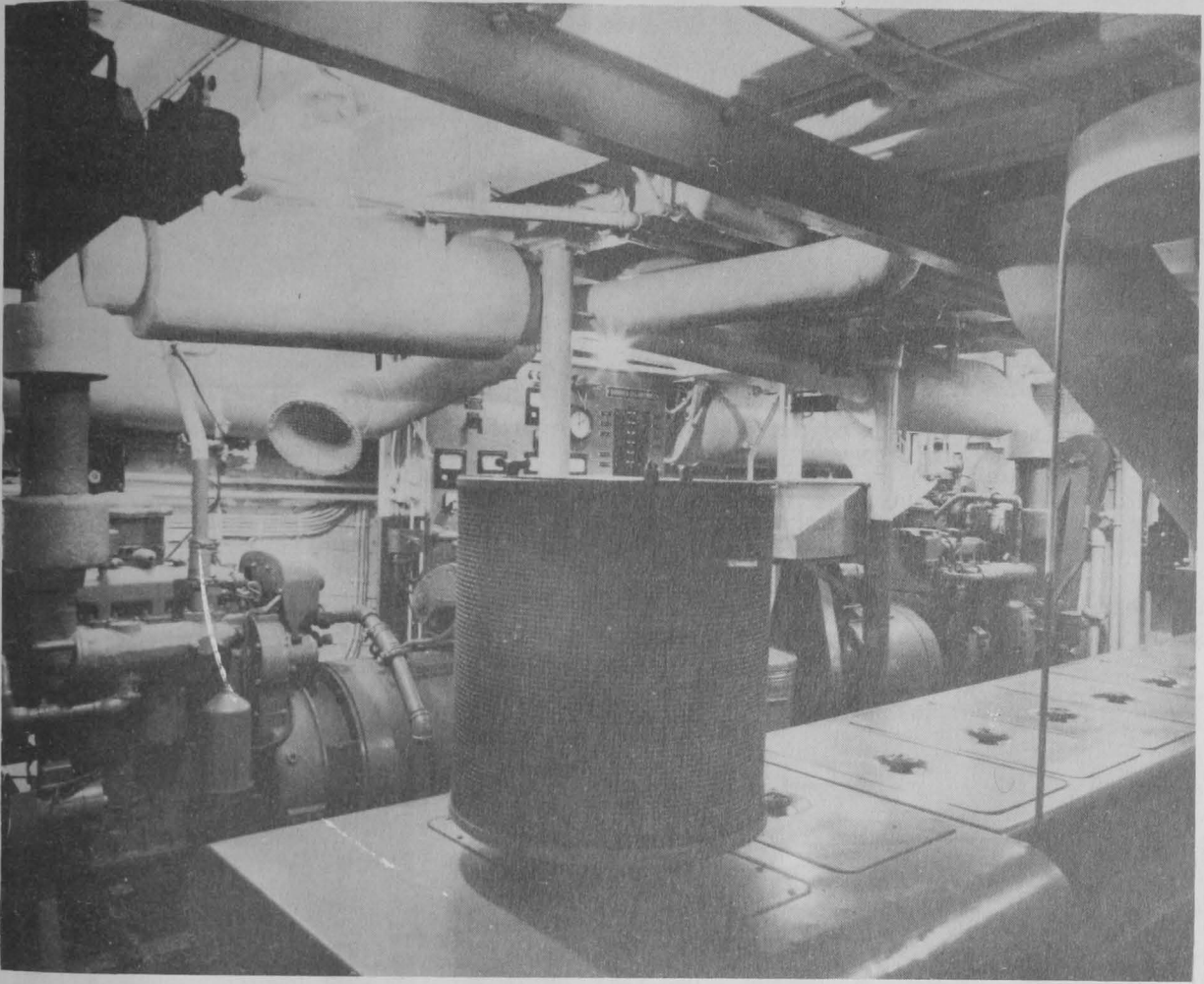


FIGURE 5 - VIEW OF THE JOHN N. COBB'S ENGINE ROOM. IN THE FOREGROUND CAN BE SEEN PART OF THE MAIN DIESEL ENGINE. TWO DIESEL AUXILIARIES ARE SEEN IN THE BACKGROUND.

main engine to be disengaged from the main drive shaft. Power is taken off the winch drive by means of a chain drive to a reduction gear which in turn is connected by a chain drive to a sprocket on the propulsion shafting. This produces variable low-vessel speeds ranging from 0 to about 3 knots, which is valuable for certain fishing operations requiring low speeds. Also, in case of main-engine breakdown, auxiliary means are available to make port for repairs. Equipped with -20° F. sharp-freezing facilities, 0° F. storage, and 1 refrigerated brine well, the vessel can stow in the hold under refrigeration approximately 50,000 pounds of frozen fish. A larger capacity was not deemed necessary for experimental work. Deck machinery, in addition to the main trawl winch which spools 500 fathoms of 5/8" wire, includes a hydraulic-powered anchor windlass, an electric-powered oceanographic winch on the topside (reeling 50 fathoms of 3/32" wire per minute), an electric boom winch, and hydraulic-powered trolling gurdies. The trawl winch is equipped also for seining and long-line fishing.

The John N. Cobb is rigged with various types of specialized fishing equipment which are readily portable. Among these are trolling poles, a bait tank,



FIGURE 6 - VIEW OF AFTERDECK DURING SHRIMP FISHING OPERATIONS (SEE COMMERCIAL FISHERIES REVIEW, MAY 1950, PP. 33-4). THE GALLOWS FRAMES AND TRAWL WARPS ARE SHOWN, AS IS THE CANOPY STRUCTURE OVER THE BAIT TANK. SHRIMP TRAPS HIDE THE BAIT TANK.



FIGURE 7 - MAIN FISHING WINCH. NOTE THE LARGE SHEAVE AT RIGHT FOR HAULING LONG-LINE GEAR.

and the gallows frames, as well as a 17-foot motor launch, complete with a stern roller, for work in shallow water, and an 18-foot conventional lifeboat.

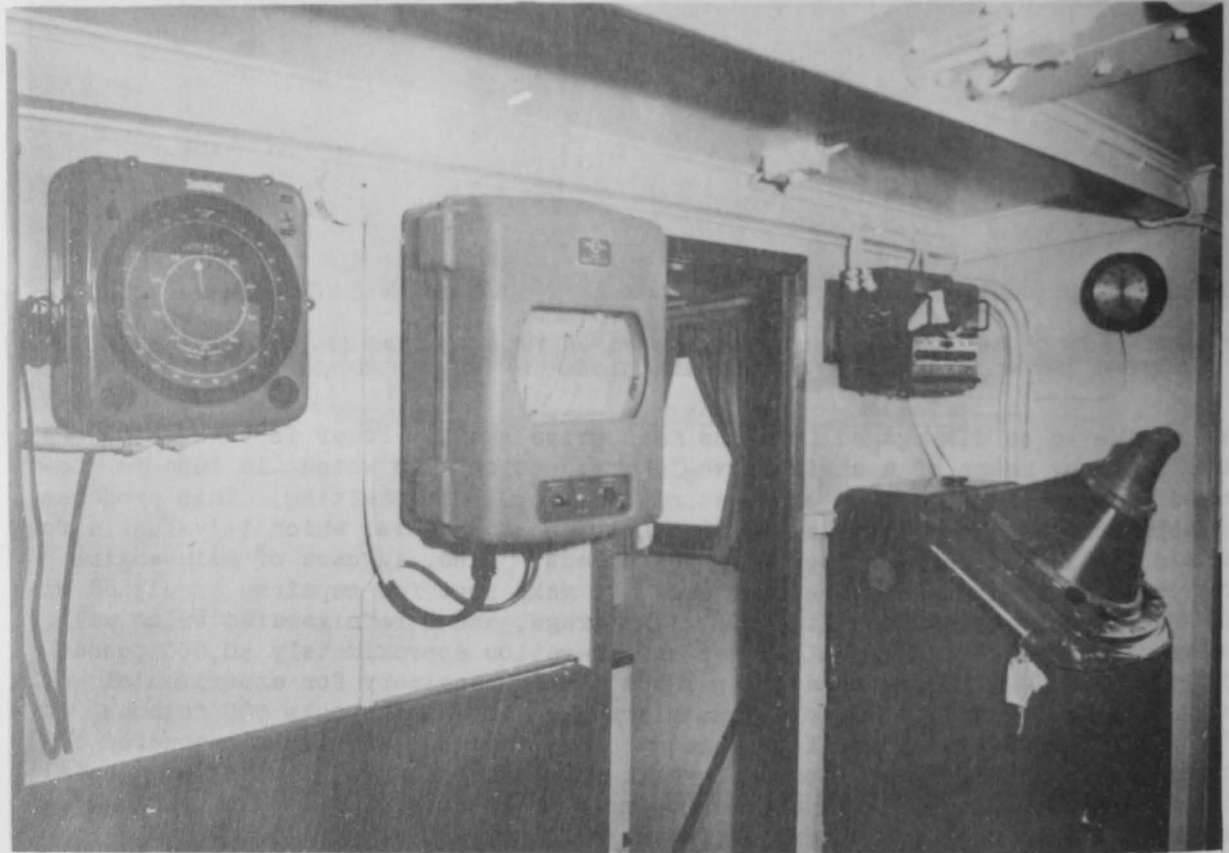


FIGURE 8 - PILOTHOUSE LOOKING AFT. NOTE THE TWO SONIC DEPTH INDICATORS, THE INTER-COMMUNICATING EQUIPMENT, SURFACE SEA TEMPERATURE RECORDER, AND THE RADAR INSTALLATION.

The vessel is also outfitted with instruments and equipment for oceanographic purposes, which include bathythermographs, bottom-sampling devices, reversing-type

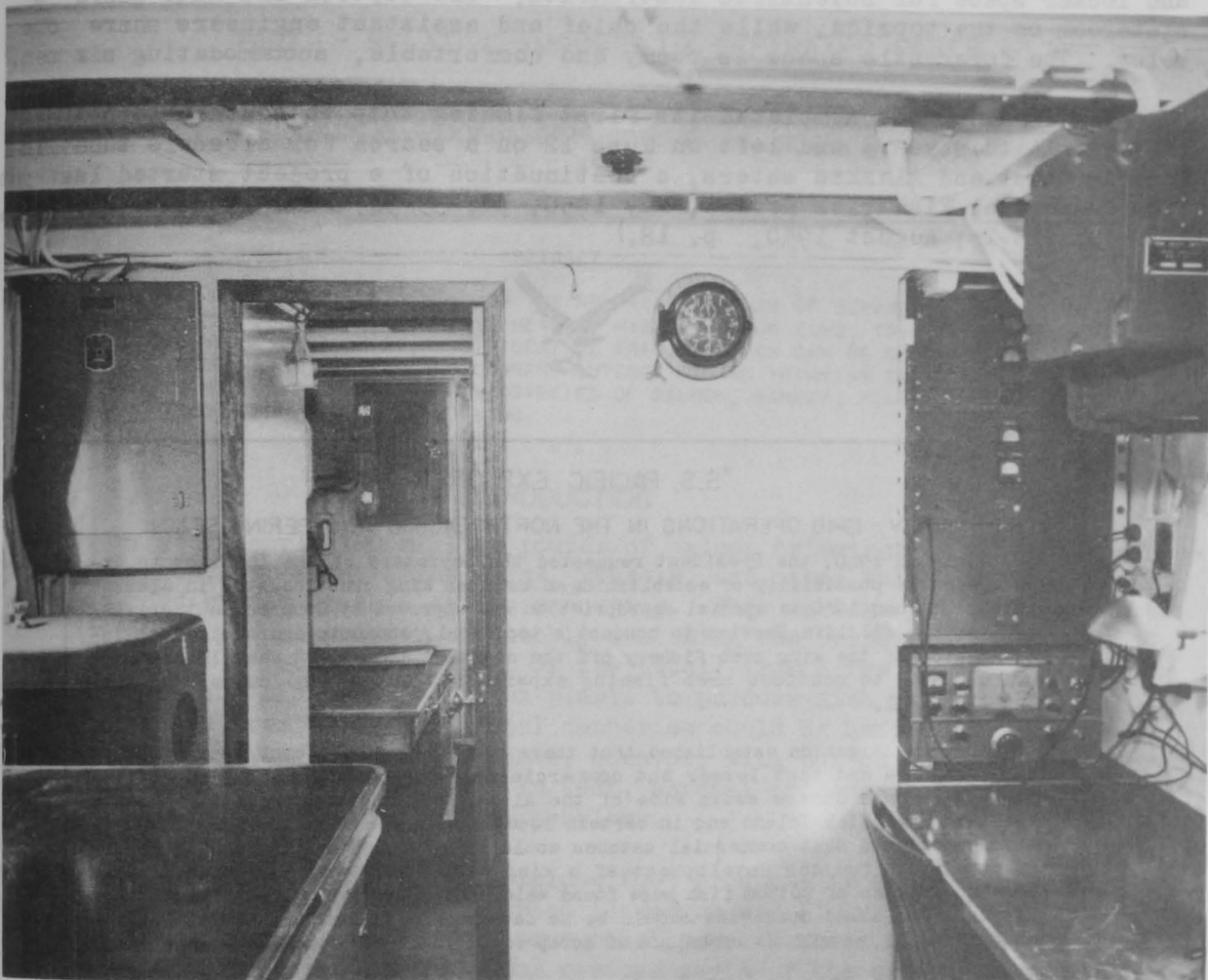


FIGURE 9 - VIEW OF CHART ROOM, SHOWING LORAN RECEIVER, 150 W. RADIO TRANSMITTER AND RECEIVER, RADAR TRANSCEIVER, AND PORTION OF LARGE CHART TABLE. THE SPACE OPENING AT THE REAR SHOWS PART OF THE ADJOINING STATEROOM.

deep-sea thermometers, and plankton nets. A small laboratory space, with a sink, is provided in the hold for work in connection with freezing and processing.

Electronic equipment found aboard includes the following:

Sonic depth recorder, audible signal	Sonic depth recorder, recording type
Radio telephone, 150 watt	Radio telephone, standby, 65 watt
Radio direction finder	Loran receiver
Radar	

Steering is by means of an electric-mechanical system complete with automatic steering. Trials have clearly shown the remarkable maneuverability of the vessel. An unusually large combination chart and instrument room has been provided because of the special need for these facilities aboard.

Facilities for scientific personnel have been furnished. Two staterooms for scientific personnel--each has two bunks, and is equipped with desk, shelf, and locker space for scientific instruments. The captain and mate share a stateroom on the topside, while the chief and assistant engineers share one below. The forecabin space is roomy and comfortable, accommodating six men.

The John N. Cobb completed its first fishing trip to southeastern Alaska on April 14 this year; and left on June 12 on a search for albacore tuna in Pacific Coast and Alaskan waters, a continuation of a project started last year (See Commercial Fisheries Review, May 1950, pp. 33-34; June 1950, p. 21; July, 1950, pp. 25-26; August 1950, p. 18.)



"S.S. PACIFIC EXPLORER"

PART V - 1948 OPERATIONS IN THE NORTH PACIFIC AND BERING SEA

Early in 1940, the President requested the Secretary of the Interior to investigate the possibility of establishing an American king crab industry in Alaskan waters. In June 1940, a special appropriation was approved by Congress authorizing the Fish and Wildlife Service to conduct a technical, economic and biological investigation of the king crab fishery off the coast of Alaska. A year later funds were provided to continue crab fishing experiments during the summer and fall months of 1941.

The investigation established that there was a large king crab population in the Bering Sea and that lesser but commercially exploitable quantities of crab were to be found on the south side of the Alaska peninsula in Pavlof and Cane Bays, around Kodiak Island and in certain locations in Cook Inlet. This investigation disclosed that commercial catches could be made and an outstanding opportunity existed for the development of a king crab industry in the Bering Sea. Large quantities of bottom fish were found which indicated that a floating factory ship or shore-based operation should be so designed as to provide for the utilization of these, as well as crabs, and of scrap resulting from processing operations.

The Pacific Explorer, an American factory ship, was a development resulting from the need for additional sources of protein foods during wartime. The 1940 and 1941 Bering Sea and North Pacific explorations of the Fish and Wildlife Service showed that possibilities of commercial exploitation of these fisheries could provide large supplies of fishery products to help meet these needs. In 1945, therefore, the War Food Administration recommended that the Defense Plants Corporation, a subsidiary of the Reconstruction Finance Corporation, obtain and convert a sea-going vessel to a factory ship in order to increase available food supplies for the war effort. When hostilities ceased, the conversion of the vessel had not yet been completed, due primarily to material and equipment shortages. It was decided, however, that it would be to the advantage of the country and its fishing industry to complete the vessel and proceed with its use as a factory ship to extend the scope of American fishing activities.

Facilities of the Pacific Explorer were primarily designed to prepare products from king crabs and bottom fish in the Bering Sea. It was also conceived that a secondary activity would be the freezing and transporting of tuna from southern waters during the winter months when the Bering Sea can not be fished.

--Fishery Leaflet 361