

THE U. S. COAST AND GEODETIC SURVEY

SURVEYING SHIPS

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During the period extending from just prior to World War II to the present, the U. S. Coast and Geodetic Survey has added eleven vessels to its fleet of survey ships. Immediately preceding the war two new survey ships were designed and constructed in accordance with the Survey's specifications; two special wire-drag vessels were built for the Survey during the war; and seven units acquired from the U.S. Navy since the war have been converted for use in conducting hydrographic surveys.

Vessels built by the U. S. Coast and Geodetic Survey :

The "Pathfinder", designed by and built for the Survey, is similar to the "Explorer", described in Volume XVI No. 1 of the "Hydrographic Review". The hull fittings, propelling machinery, communication systems, launch and small boat equipment are identical in the two ships, but the "Pathfinder" is 10 feet longer and has 1 foot more beam than the "Explorer".

The "Patton" is a wooden tender identical with the "Lester Jones" which is also described in Volume XVI of the "Hydrographic Review".

The "Hilgard" and the "Wainwright" are wooden vessels designed and constructed for use in offshore wire-drag surveys. The principal characteristics of these vessels are given in the accompanying table.

Vessels acquired from U. S. Navy :

The "Pioneer" (ex-"USS Mobjack") was acquired from the U.S. Navy in 1945. This vessel measures about 312 feet in length and is the largest in the U.S. Coast and Geodetic Survey fleet. It is propelled by four 500-horsepower diesel engines geared two to a shaft driving twin propellers. Construction and operating data are indicated in the table.

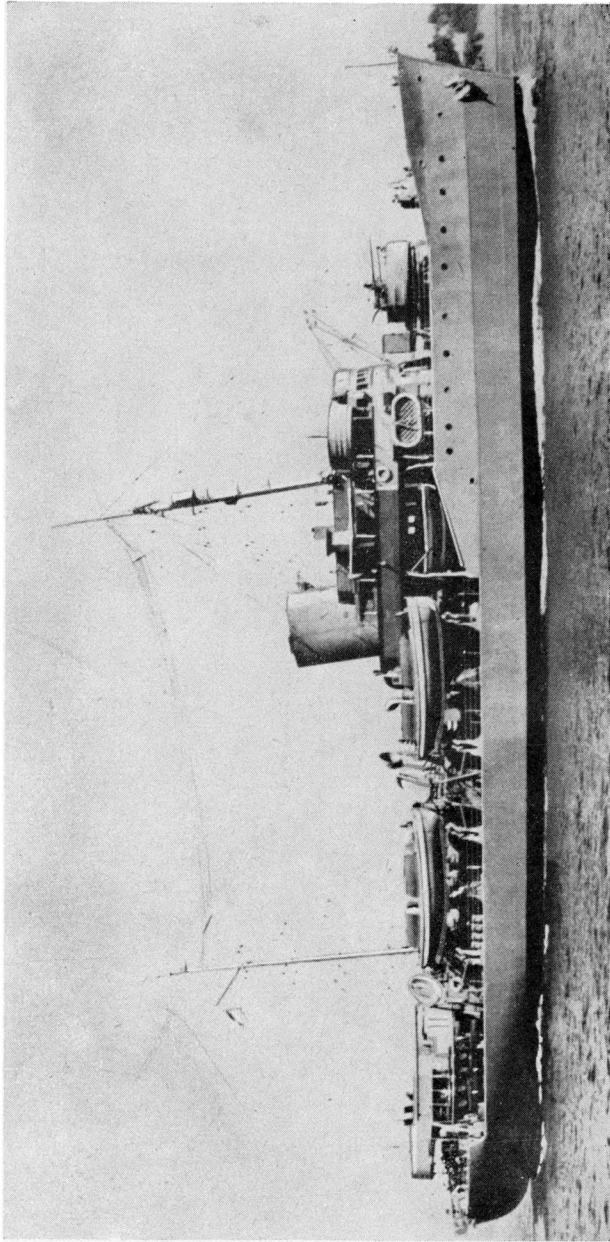
Echo-sounding equipment carried by the ship includes one each of both the NMC-2 and NMC echo-sounding instruments having maximum ranges of 4,000 fathoms; one NJ-3 instrument for sounding in depths under 400 fathoms; and six portable recording echo-sounding instruments for use in the survey launches.

One low-frequency and two intermediate-frequency transmitters and a number of portable units for ship-launch and ship-shore voice communication are included in the radio equipment of the vessel.

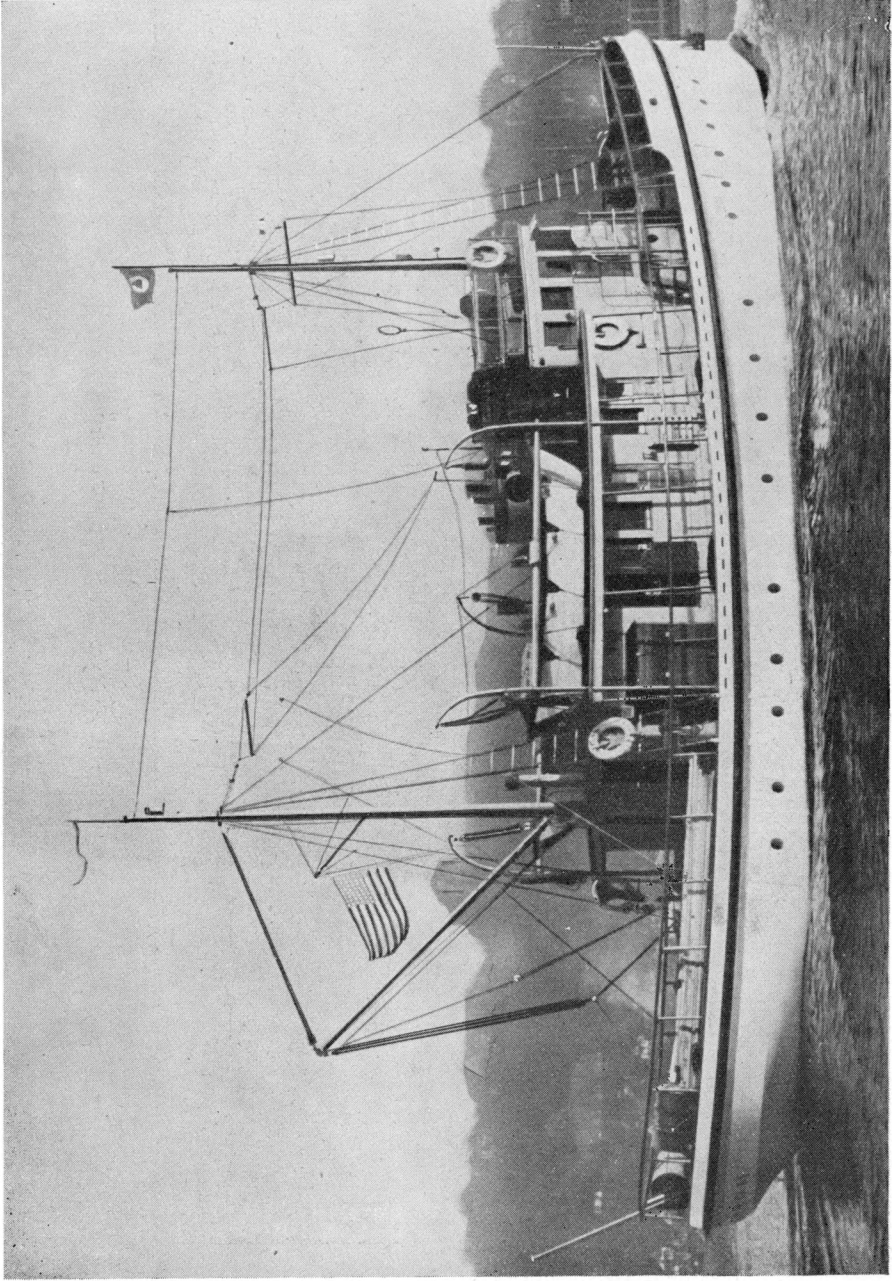
Shoran equipment is installed in the ship to give the hydrographer instantaneous information as to his position by indicating distances from two ground stations which are accurately located on shore. This equipment consists of two ship and three ground stations which are commercial instruments modified to provide control for hydrographic surveys in areas too far offshore for conventional methods of control to be effective. Loran and radar units are also installed in the ship.

Launch and small-boat equipment aboard the ship includes 8 diesel-powered launches, 2 dories, 2 skiffs, and 2 rafts.

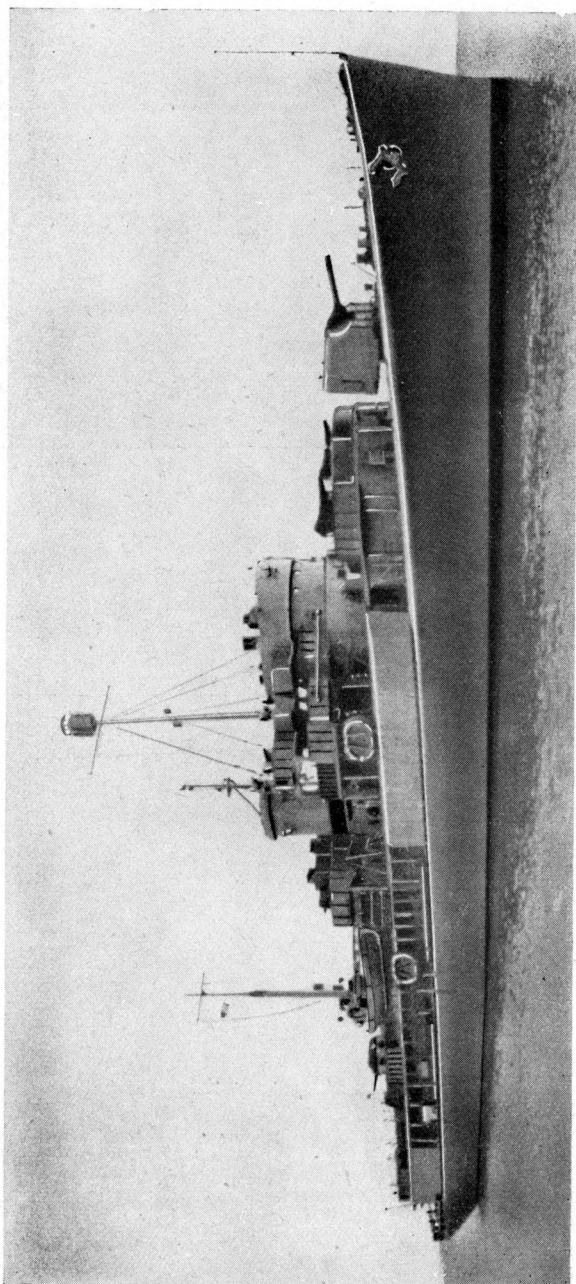
The "Bowie", "Derickson" and "Hodgson" are YMS-type vessels acquired from the U.S. Navy and renamed by the Survey. They are of wood construction, 136 feet in length, and are propelled by twin-diesel engines. Each vessel is equipped with a NMC-type echo-sounding instrument having a maximum range of 4,000 fathoms. Portable-type recording instruments for shoal-water sounding are



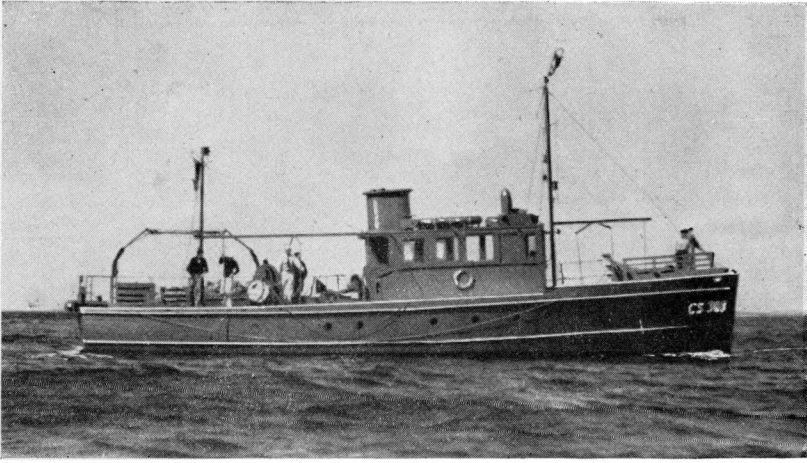
U.S. Coast and Geodetic Survey Ship "**Pathfinder**".



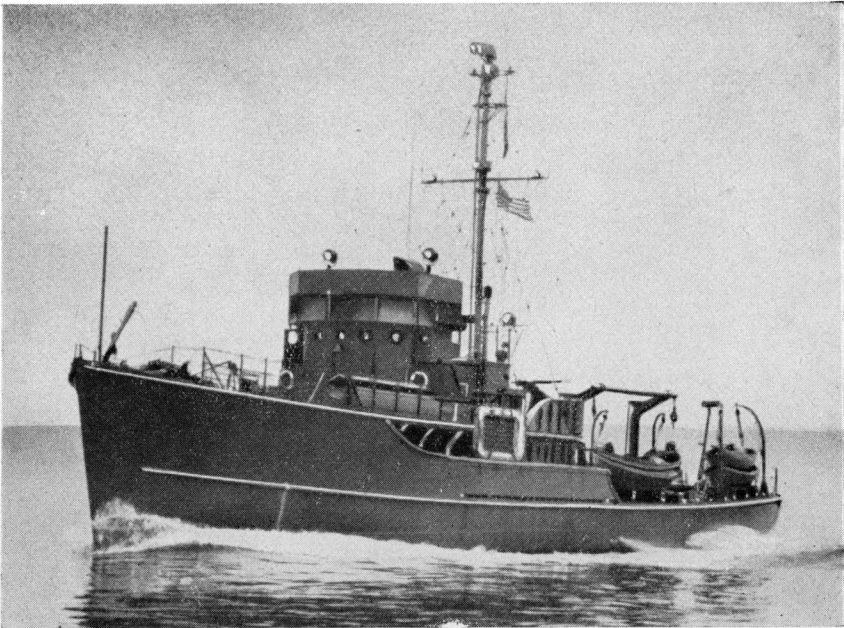
U.S. Coast and Geodetic Survey Ship "Patton".



U.S. Coast and Geodetic Survey Ship "Pioneer".



U.S. Coast and Geodetic Survey Ship "Wainwright".



U.S. Coast and Geodetic Survey Ship "Derickson".

permanent installations in the vessels. Other standard equipment includes all-wave radio transmitters, S-band radars, sonar instruments, automatic radio direction finders, and gyrocompasses. There are carried aboard each ship one motor launch and one whale boat equipped with portable echo-sounding equipment. Each vessel also carries two dories and two rafts.

The tenders "Bowen", "Stirni" and "Parker", former U.S. Navy SC vessels, have been refitted for wire-drag operations and hydrographic development surveys. They are of wood construction, about 110 feet in length, and are propelled by twin-diesel engines. A novel feature of two of the three vessels is a third screw powered by a 56-horsepower diesel engine for use while engaged in low-speed wire-drag operations. Each tender is equipped with a HJ-type echo-sounding instrument with a maximum range of 800 fathoms. In addition, each tender has two portable echo-sounding instruments for small-boat use. One power launch and two rafts provide small-boat equipment.

Low-and intermediate-frequency transmitters and frequency-modulated voice equipment for intership communication while engaged in wire-drag operations are included in each of these vessels. Other standard radio equipment carried by each tender are sonar and S-band radar instruments.

	« Pioneer »	« Bowie » type	« Bowen » type	« Hilgard » type
Displacement, tons.....	2,600	267	140	48
Length, overall, feet.....	311.6	136.0	111.5	66.0
Beam, feet	41.0	24.5	13.7	14.8
Draft, mean, feet	13.8	8.0	6.8	5.0
Propulsion	4 diesels	2 diesels	2 diesels	2 diesels
Screws	twin	twin	twin	twin
Indicated horsepower	4,000	1,000	1,000	170
Speed, knots	16	14	14	13
Cruising radius, Naut. miles	12,000	2,200	1,800	500
Complement, Officers	21	3	3	2
— Men	110	24	14	8

