Research Vessels of the National Marine Fisheries Service

ROBERT S. WOLF
NOAA TECHNICAL REPORTS

National Marine Fisheries Service, Circulars

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Research Vessels of the National Marine Fisheries Service

ROBERT S. WOLF

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Research Vessels of the National Marine Fisheries Service

By
ROBERT S. WOLF

National Marine Fisheries Service
Exploratory Fishing and Gear Research Base
Woods Hole, Massachusetts 02453

ABSTRACT

The research fleet of the National Marine Fisheries Service (formerly the Bureau of Commercial Fisheries) of the National Oceanic and Atmospheric Administration, U.S. Department of Commerce, is described in detail by individual ship. The descriptions are accompanied by photographs. A brief text covering fleet activities and modernization precedes the vessel descriptions.

INTRODUCTION

The National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce, operates a research fleet to provide its scientists and technicians with mobile platforms on which they may more closely approach, observe, sample, and study commercial and game fishes and associated plants and animals and to test methods for their capture and utilization. As a means to the service's end, these vessels average over half of their useful life in a working capacity, with the total annual fleet effort estimated at 3,500 sea days per year. Including vessel crews and associated administrative shore personnel, but not scientific staff, about 225 people are involved in operating the fleet at an annual cost of approximately $4 million (fiscal year 1969).

While this paper was being put together, the NMFS organization, program emphasis, and funding underwent significant changes. Corresponding modification of vessel management and utilization are not reflected in the paper. The 1969-vintage general account of the fleet and comprehensive descriptions and illustrations of individual vessels remain valid, however.

FLEET ACTIVITIES

Each vessel is assigned to a parent activity or group which is responsible for nearly all phases of its operation and maintenance. The parent group may be a Center, a Biological Laboratory, an Exploratory Fishing and Gear Research Base, or an associated Field Station.

Operations

The vessels operate primarily to serve the research program needs of the parent organization. The ships are generally fitted out in accordance with these needs. A few were actually designed and built specifically for that group. Vessel sea time is usually divided

1 Robert S. Wolf is serving as Chief, Exploratory Fishing, UNSF/FAO Caribbean Fisheries Development Project, Bridgetown, Barbados, West Indies, on leave from the National Marine Fisheries Service.
among the various research programs of the group by its director or by a committee composed of representatives from the various programs. Often there is cooperative effort wherein a group not having control of a vessel may acquire sea time from a group which does; or two or more groups, each operating a vessel, may combine vessel effort on a work program of mutual interest.

Crew

Vessel crews are usually recruited locally from members of the fishing industry that the parent group serves. Where a particular vessel's mission is less of a direct fishing nature, consideration is given to ex-military or other individuals having seagoing experience. The crew size of each vessel is determined generally by the complexity of the vessel and by the work it does. Some small boats do not have a permanent crew but are operated by parent group shore personnel.

Crews, including licensed personnel of all major NMFS vessels and some lesser vessels, are members of and are represented by some kind of labor organization. These organizations include large maritime unions, fishermen's unions, and Federal Government employee unions. Some vessels have as many as three separate unions representing their crews.

Crew wages and some working conditions are negotiated. Wage rates are based on prevailing rates in the applicable portion of the maritime industry. Working hours and other conditions are based again on prevailing practices in the maritime industry. Wage rates and working conditions vary widely in the NMFS fleet, generally depending on locale and precedents in the pertinent maritime industry of that region.

Labor negotiations are conducted between representatives of NMFS management and vessel labor on a periodic basis, usually annually, as provided for in their basic work contract. During these negotiations, the vessel crew representatives may be supplemented or replaced by regular labor organization representatives. Management may be represented by personnel from the parent group, the appropriate Regional Office, and/or the Central Office (Washington, D.C.) staff. There is a current trend toward combined negotiations covering a number of vessels of more than one Region and guided by the Central Office staff.

Vessel Classification

The NMFS has found it convenient to classify its ships for purposes of labor negotiation. This is accomplished by means of a horsepower-tonnage (HPT) rating which is the sum of maximum brake horsepower plus gross tonnage. Classes are as follows:

- Large Ship Class A 1800 HPT and above
- Medium Ship Class B 1100-1799 HPT
- Small Ship Class C 400-1099 HPT
- Large Boat Class D under 400 HPT

The research vessels and one large ship, Pribilof, which is operated as a supply vessel for the Pribilof Islands, are categorized in Table 1.

Shore Facilities

Depending upon its size and the size of its vessel, a parent group may have one or more persons employed in full-time vessel shore support. The vessels are usually berthed in the near vicinity of the operating group and have some warehousing or storage facilities nearby. Operating supplies are obtained through the General Services Administration, other military or civilian agencies of the Federal Government, or private suppliers. Normal maintenance is accomplished at the ship's berth by the ship's force but occasionally by contract labor. Shipyard overhaul is usually accomplished in commercial shipyards located within a reasonable distance of the parent group's location.

FLEET MODERNIZATION

In 1960, funds were appropriated for the design and construction of a vessel to replace Albatross III at the Woods Hole Biological Laboratory. This began a period of construction and conversion which, by the end of 1968, resulted in nine major vessels being added to the fleet (Table 2) at a cost of about $14.5 million. Some of these ships were replacements
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<th>Length overall</th>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><em>Rorqual</em></td>
<td>Boothbay Harbor, Maine</td>
<td>Boothbay Harbor, Biological Laboratory</td>
<td>65’ 19.9</td>
<td>238 D</td>
</tr>
<tr>
<td><em>Phalarope II</em></td>
<td>Boothbay Harbor, Maine</td>
<td>Boothbay Harbor, Biological Laboratory</td>
<td>40’6” 12.4</td>
<td>241 D</td>
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<tr>
<td><em>Albatross IV</em></td>
<td>Woods Hole, Mass.</td>
<td>Woods Hole, Biological Laboratory</td>
<td>187’ 57.1</td>
<td>1939 A</td>
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<tr>
<td><em>Blueback</em></td>
<td>Woods Hole, Mass.</td>
<td>Woods Hole, Biological Laboratory</td>
<td>38’ 11.6</td>
<td>177 D</td>
</tr>
<tr>
<td><em>Delaware II</em></td>
<td>Woods Hole, Mass.</td>
<td>Woods Hole Exploratory Fishing and Gear Research Base</td>
<td>155’6” 47.5</td>
<td>1482 B</td>
</tr>
<tr>
<td><em>Shang Wheeler</em></td>
<td>Milford, Conn.</td>
<td>Milford Biological Laboratory</td>
<td>50’10” 15.6</td>
<td>241 D</td>
</tr>
<tr>
<td><em>Dolphin</em></td>
<td>Highlands, N.J.</td>
<td>Sandy Hook Sport Fisheries Marine Laboratory</td>
<td>107’ 32.6</td>
<td>1590 B</td>
</tr>
<tr>
<td><em>Challenger</em></td>
<td>Highlands, N.J.</td>
<td>Sandy Hook Sport Fisheries Marine Laboratory</td>
<td>65’ 19.8</td>
<td>— D</td>
</tr>
<tr>
<td><em>Martha E II</em></td>
<td>Highlands, N.J.</td>
<td>Sandy Hook Sport Fisheries Marine Laboratory</td>
<td>42’10½” 13.1</td>
<td>272 D</td>
</tr>
<tr>
<td><em>Alosa</em></td>
<td>Oxford, Md.</td>
<td>Oxford Biological Laboratory</td>
<td>48’6” 14.8</td>
<td>95 D</td>
</tr>
<tr>
<td><strong>Southeast region</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><em>Kingfish</em></td>
<td>St. Petersburg, Fla.</td>
<td>St. Petersburg Beach Biological Laboratory</td>
<td>43’ 13.1</td>
<td>369 D</td>
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<tr>
<td><em>Point of Marsh - J-3486</em></td>
<td>Beaufort, N.C.</td>
<td>Center for Estuarine and Menhaden Research</td>
<td>42’4” 12.9</td>
<td>600 C</td>
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<tr>
<td><em>Rachel Carson</em></td>
<td>Panama City, Fla.</td>
<td>Eastern Gulf Sport Fisheries Marine Laboratory</td>
<td>43’ 13.1</td>
<td>440 C</td>
</tr>
<tr>
<td><em>Oregon II</em></td>
<td>Pascagoula, Miss.</td>
<td>Pascagoula Exploratory Fishing and Gear Research Base</td>
<td>170’ 51.9</td>
<td>2304 A</td>
</tr>
<tr>
<td><em>George M. Bowers</em></td>
<td>Pascagoula, Miss.</td>
<td>Pascagoula Exploratory Fishing and Gear Research Base</td>
<td>73’11” 22.7</td>
<td>321 D</td>
</tr>
<tr>
<td><strong>Alaska</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Oregon</em></td>
<td>Kodiak, Alaska</td>
<td>Kodiak Marine Fisheries Center</td>
<td>100’ 30.6</td>
<td>819 C</td>
</tr>
<tr>
<td><em>Murre II</em></td>
<td>Juneau, Alaska</td>
<td>Auke Bay Biological Laboratory</td>
<td>86’ 26.3</td>
<td>293 D</td>
</tr>
<tr>
<td><em>Sablefish</em></td>
<td>Homer, Alaska</td>
<td>Auke Bay Biological Laboratory</td>
<td>38’ 11.6</td>
<td>181 D</td>
</tr>
<tr>
<td><strong>Northwest region</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>John N. Cobb</em></td>
<td>Seattle, Wash.</td>
<td>Seattle Exploratory Fishing and Gear Research Base</td>
<td>93’5” 30.1</td>
<td>685 C</td>
</tr>
<tr>
<td><em>George B. Kelez</em></td>
<td>Seattle, Wash.</td>
<td>Seattle Biological Laboratory</td>
<td>177’6” 54.1</td>
<td>1450 B</td>
</tr>
<tr>
<td><em>Miller Freeman</em></td>
<td>Seattle, Wash.</td>
<td>Seattle Biological Laboratory</td>
<td>214’10” 65.7</td>
<td>3666 A</td>
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</tbody>
</table>
### NMFS region and vessel name

<table>
<thead>
<tr>
<th>NMFS region and vessel name</th>
<th>Home port</th>
<th>Parent group</th>
<th>Length overall</th>
<th>Vessel class</th>
</tr>
</thead>
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<tr>
<td><strong>Northwest region—Cont.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pribilof</td>
<td>Seattle, Wash.</td>
<td>Marine Mammal Resources</td>
<td>222'10&quot;</td>
<td>HPT A</td>
</tr>
<tr>
<td><strong>Southwest region</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>David Starr Jordan</em></td>
<td>San Diego, Calif.</td>
<td>Fishery-Oceanography Center, La Jolla</td>
<td>171'</td>
<td>A</td>
</tr>
<tr>
<td><em>Charles H. Gilbert</em></td>
<td>Honolulu, Hawaii</td>
<td>Hawaii Area Fishery Research Center</td>
<td>122'11&quot;</td>
<td>C</td>
</tr>
<tr>
<td><em>Townsend Cromwell</em></td>
<td>Honolulu, Hawaii</td>
<td>Hawaii Area Fishery Research Center</td>
<td>158'6&quot;</td>
<td>B</td>
</tr>
</tbody>
</table>

1 HPT (horsepower-tonnage) are official NMFS figures.
2 Class A — Large ship
   - Class B — Medium ship
   - Class C — Small ship
   - Class D — Large boat

### Table 2.—Summary of National Marine Fisheries Service research fleet modernization since 1962.

<table>
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<tr>
<th>Vessel</th>
<th>Year acquired</th>
<th>Vessel replaced</th>
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<tr>
<td>Albatross IV</td>
<td>1962</td>
<td>Albatross III</td>
</tr>
<tr>
<td>Geronimo*</td>
<td>1963</td>
<td></td>
</tr>
<tr>
<td>George B. Kelez*</td>
<td>1963</td>
<td></td>
</tr>
<tr>
<td>Townsend Cromwell</td>
<td>1963</td>
<td>Hugh M. Smith*</td>
</tr>
<tr>
<td>Pribilof</td>
<td>1964</td>
<td>Penguin</td>
</tr>
<tr>
<td>David Starr Jordan</td>
<td>1965</td>
<td>Black Douglas</td>
</tr>
<tr>
<td>Undaunted*</td>
<td>1965</td>
<td></td>
</tr>
<tr>
<td>Miller Freeman</td>
<td>1967</td>
<td></td>
</tr>
<tr>
<td>Oregon II</td>
<td>1967</td>
<td></td>
</tr>
<tr>
<td>Delaware II</td>
<td>1968</td>
<td>Delaware*</td>
</tr>
</tbody>
</table>

1 Decommissioned and sold 1958.
2 Converted from loaned Navy ATA. Returned to Navy 1968.
3 Converted from surplus Navy AKL.
4 Transferred to American Samoa 1963.
5 On loan from Navy.
6 Converted from loaned Navy ATA. Returned to Navy 1970.
7 Decommissioned and sold 1969.

Vessel descriptions for overdue and obsolete vessels, while others have provided entirely new seagoing capability for their parent groups. *Geronimo* and *undaunted* were acquired on loan from the Navy, converted, and returned after NMFS no longer required them because of changes in program direction.

### VESSEL DESCRIPTION

A questionnaire was prepared and sent to all parent groups operating a vessel or vessels. Descriptions based on the responses, as well as a photograph of each NMFS vessel, are presented in the following pages.

Table 3 gives additional technical data on the newer vessel hull forms.

### Table 3.—Additional technical data on newer National Marine Fisheries Service vessel hull forms.

<table>
<thead>
<tr>
<th>Data</th>
<th>Albatross IV</th>
<th>Delaware II</th>
<th>Townsend Cromwell</th>
<th>David Starr Jordan</th>
<th>Miller Freeman</th>
<th>Oregon II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immersed volume (cu ft)</td>
<td>37,100</td>
<td>23,900</td>
<td>22,295</td>
<td>30,860</td>
<td>62,475</td>
<td>31,500</td>
</tr>
<tr>
<td>Immersed area amidships (sq ft)</td>
<td>383</td>
<td>292</td>
<td>--</td>
<td>351</td>
<td>550</td>
<td>330</td>
</tr>
<tr>
<td>Waterplane area (sq ft)</td>
<td>4,300</td>
<td>3,240</td>
<td>--</td>
<td>4,090</td>
<td>6,400</td>
<td>3,961</td>
</tr>
<tr>
<td>Wetted surface (sq ft)</td>
<td>6,635</td>
<td>4,800</td>
<td>4,860</td>
<td>5,780</td>
<td>9,500</td>
<td>5,750</td>
</tr>
<tr>
<td>Longitudinal prismatic coefficient</td>
<td>.58</td>
<td>.585</td>
<td>.566</td>
<td>.562</td>
<td>.565</td>
<td>.605</td>
</tr>
<tr>
<td>Midship section coefficient</td>
<td>.84</td>
<td>.835</td>
<td>--</td>
<td>.878</td>
<td>.805</td>
<td>.778</td>
</tr>
<tr>
<td>Waterline coefficient</td>
<td>.787</td>
<td>.771</td>
<td>--</td>
<td>.715</td>
<td>.762</td>
<td>.737</td>
</tr>
<tr>
<td>Vertical prismatic coefficient</td>
<td>.625</td>
<td>.633</td>
<td>--</td>
<td>--</td>
<td>.597</td>
<td>.639</td>
</tr>
<tr>
<td>Block coefficient</td>
<td>.488</td>
<td>.488</td>
<td>.496</td>
<td>.494</td>
<td>.455</td>
<td>.471</td>
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<tr>
<td>Froude number (at max. speed)</td>
<td>0.32781</td>
<td>1.657</td>
<td>.36</td>
<td>.00902</td>
<td>.2945</td>
<td>0.192</td>
</tr>
</tbody>
</table>
RORQUAL

General Description:
Capabilities—No laboratories — best suited for estuarine and coastal work offshore to 20 miles, water transparency, hydrographic casts, plankton and bottom sampling, trawling, scuba diving, dredging, and coring.

Hull style—Round bottom — round stern

Number of masts—1

Construction material—Steel

Method of fabrication—

Screw type:
Fixed pitch or CP—Fixed

Manufacture—

Structural Parameters:
Length:
Length, overall (LOA)—65’
Length, waterline (LWL)—
Length, between perpendiculars (LBP)—

Breadth:
Beam, molded—
Beam, extreme (including permanent projections)—18’

Draft:
Maximum, loaded—7’
Mean—
Depth (main deck to keel, amidships)—2’
Minimum freeboard (loaded amidships)—2’6”

Tonnage:
Displacement (full load)—
Gross—78
Net—

Complement:

Officers:
Deck—1 (Master)
Engineer—

Crew:
Fishermen—
Seamen—
Oilers—
Wipers—
Cooks—1
Messmen—
Radiomen—
Others—

Scientific staff—2 to 4

Operating Parameters:
Range (linear miles of steaming)—1,600
Calculated endurance (days)—16
Performance (avg # days worked/year)—220

Speed:
Cruising—8 knots
Flank—9 knots
Minimum possible (under steerageway)—3 knots

Power:
Main engine rating:
Maximum BHP—160
Continuous BHP—
Manufacturer—Superior

Auxiliaries (number): 1
Continuous BHP (each)—165
Power supplied (each, max kw)—20
Manufacturer—Gray Marine

Boiler (capacity and manufacturer)—

Capacities:
Liquid (gal):
Fresh water—800
Fuel—2,400
Lube oil—45
Ballast—
Other—

Space (ft²):
Hold—
Galley stores:
Dry—500 lb.
Chilled—150 lb.
Frozen—100 lb.

Laboratories:
Physical—
Chemical—
Biological—
Other—
Accommodations—
PHALAROPE II

General Description:
Capabilities—No laboratories — best suited for bay and estuarine work, water transparency measurements, hydrographic casts, plankton and bottom sampling, trawling, scuba diving, dredging, and coring

Hull style—Stock model fishing hull
Number of masts—1
Construction material—Wood
Method of fabrication—
Screw type:
Number of blades—3
Fixed pitch or CP—Fixed
Manufacture—Columbian

Structural Parameters:
Length:
Length, overall (LOA)—40'6"
Length, waterline (LWL)—38'
Length, between perpendiculars (LBP)—40'6"

Breadth:
Beam, molded—12'6"
Beam, extreme (including permanent projections)—12'6"

Draft:
Maximum, loaded—
Mean—4'6"

Depth (main deck to keel, amidships)—2'
Minimum freeboard (loaded amidships)—3'

Tonnage:
Displacement (full load)—
Gross—16
Net—15
COMPLEMENT:

Officers:
Deck—1 (Master)
Engineer—

Crew:
Fishermen—
Seamen—
Oilers—
Wipers—
Cooks—
Messmen—
Radiomen—
Others—
Scientific staff—2 to 4

Other—

OPERATING PARAMETERS:

Range (lineal miles of steaming)—100
Calculated endurance (days)—1
Performance (avg = days worked/year)—154

Speed:
Cruising—8
Flank—9
Minimum possible (under steerageway)—2

Power:
Main engine rating:
Maximum BHP—225
Continuous BHP—165
Manufacturer—GM

Auxiliaries (number): 1
Continuous BHP (each)—2.5

Power supplied (each, max kw) = 3/4
Manufacturer—Onan

Boiler (capacity and manufacturer)—

CAPACITIES:

Liquid (gal):
Fresh water—
Fuel—200
Lube oil—10
Ballast—
Other—

Space (ft³):
Hold—96 ft³

Galley stores:
Dry—
Chilled—
Frozen—

Laboratories:
Physical—
Chemical—
Biological—

Other—

COMPLEMENT:

Accommodations—

ELECTRONICS:

Communications—Apelco Model AE-56A radiotelephone
Underwater sounders:
Echo sounding—
Kelvin Hughes MS-29F-MK.9-Model 1, 480 fm.
Fathometer Cadet Model DE 112, 300 ft

Echo ranging—
Radar—Raytheon 1900
Radio direction finders—
Position indicators—
Other—

LIFESAVING EQUIPMENT:
Boats—1
Inflatable rafts—
Other—Life jackets

DECK MACHINERY:
Winches—2 - trawling and BT
Anchor windlass—
Booms—1
Cranes—
Reels—
Other—

SPECIAL FEATURES:
Bow positioner—
Freshwater makers—
Cathodic protection—
Underwater viewing ports or lighting—
Other—

OPERATING LABORATORY BASE, REGION, OR AREA:
Biological Laboratory, Boothbay Harbor, Maine

HISTORY:

Design:
Name of designer—
Year designed—

Construction:
Name of builder—Newport Shipyard, Newport, R.I.
Year completed—1932

Conversion:
Year converted (if applicable)—
Name of facility doing conversion—

SEAKEEPING CHARACTERISTICS:

Performance:
Pitch period—
Roll period—
Comfort:
Decks wet—No
Hull pound—No
Motion easy—Yes

Special Remarks:

ALBATROSS IV

General Description:
Capabilities—Fishing, oceanographic, biological research
Hull style—
Number of masts—1 foremast - tandem kingpost aft
Construction material—Steel
Method of fabrication—Welded plate
Screw type:
Number of blades—3
Fixed pitch or CP—CP
Manufacture—Lianen

Structural Parameters:
Length:
Length, overall (LOA)—187'
Length, waterline (LWL)—173.75'
Length, between perpendiculars (LBP) — 165'

Breadth:
Beam, molded—33'
Beam, extreme (including permanent projections) —

Draft:
Maximum, loaded—16'4''
Mean—13'9''

Depth (main deck to keel, amidships) —
19'21/2'' - molded
Minimum freeboard (loaded amidships) —
4'163/4'' - "tropical"

Tonnage:
Displacement (full load)—1,088.50 (summer freeboard)
Gross—939
Net—300-260.76 deadweight

Complement:
Officers:
Deck—3
Engineer—3
Crew:
Fishermen—8
Seamen—
Oilers—1 oiler-wiper
Wipers—
Cooks—1
Messmen—
Radiomen—
Others—2 (1 steward, 1 electronic technician)
Scientific staff—10 to 13
Other—

Operating Parameters:
Range (linear miles of steaming) — 9,000
Calculated endurance (days) — 14
Performance (avg = days worked/year) — 210 +

Speed:
Cruising—11.5 knots
Flank—12 knots
Minimum possible (under steerageway) — 3 knots

Power:
Main engine rating:
Maximum BHP—1,000
Continuous BHP—
Manufacturer—Caterpillar
Auxiliaries (number): 3
Continuous BHP (each)—211
Power supplied (each, max kw)—150kw
Manufacturer—Caterpillar
Boiler (capacity and manufacturer) —
2 boilers

Capacities:
Liquid (gal):
Fresh water—80.92 tons
Fuel—166.30 tons
Lube oil—4.04 tons
Ballast—32 tons - permanent
Other—

Space (ft³):
Hold—None
Galley stores:
Dry—
Chilled—
Frozen—
Laboratories: 10,855 cu ft (6 laboratories)
Physical—
Chemical—1
Biological—
Other—1 each rough, dry, wet, hydro, darkroom
Accommodations—

Electronics:
Communications—
RCA Model P7A transceiver
Westrex SSB transceiver
RCA Model AR-8516 receiver
Underwater sounders:
Echo sounding—2 Edo UQNIC, Elac LAZ 22 BT, Elac flasher
Echo ranging—Simrad Model 480-10
Radar—RCA Model CR 103 (3 c.m.), RCA Model CRM (10 c.m.)
Radio direction finders—RCA AR-8714A RDF
Position indicators—RCA Model LR 8803 loran
Other—Alden P.G.R. recorder, RCA closed circuit TV network, Sperry gyrocompass, magnetic compass, 12 repeaters, 4 Bendix barometers, Aerovane anemometer

Lifesaving Equipment:
Boats—20-ft standard lifeboat
Inflatable rafts—3 Elliott, 3 U.S. Rubber
Other—

Deck Machinery:
Winches—2 trawl winches, 2 hydrographic winches, 2 BT winches, 1 dredge winch
Anchor windlass—Hyde windlass
Booms—1 - 5-ton, 2 - 1-ton
Cranes—None
Reels—None
Other—

Special Features:
Bow positioner—1 - 150 hp
Freshwater makers—2 maxim evaps
Cathodic protection—Anodes (bow, rolling chocks, sea chests, wheel aperture, stern)
Underwater viewing ports or lighting—None
Other—

Operating Laboratory, Base, Region, or Area: Biological Laboratory, Woods Hole, Mass.

History:
Design:
Name of designer—Dwight S. Simpson Associates
Year designed—1960
Construction:
Name of builder—Southern Shipbuilding Corp., Slidell, La.
Year completed—1962
Conversion:
Year converted (if applicable)—N/A
Name of facility doing conversion—

Seakeeping Characteristics:
Performance:
Pitch period—Depends on type sea
Roll period—13 to 15 sec
Comfort:
Decks wet—Aft - moderate heavy sea
Hull pound—In heavy seas (have to reduce speed to eliminate)
Motion easy—No - rolls heavily, very uncomfortable

Special Remarks:—Stability requirements USCG: (1) water tanks must be pressed up at all times (using evaporators) and (2) anti-roll tanks #1 and #2 blocked off USCG req.

BLUEBACK

General Description:
Capabilities—Limited inshore operations
Hull style—Displacement
Number of masts—1
Construction material—Wood
Method of fabrication—Conventional carvel planked over oak frames
Screw type:
   Number of blades—3
   Fixed pitch or CP—Fixed
Manufacture—

Structural Parameters:
Length:
   Length, overall (LOA)—38'
   Length, waterline (LWL)—36'10"
   Length, between perpendiculars (LBP)—36'8"

Breadth:
   Beam, molded—9'6"
   Beam, extreme (including permanent projections)—10'3"

Draft:
   Maximum, loaded—5'
   Mean—4'4"

Depth (main deck to keel, amidships)—2'
Minimum freeboard (loaded amidships)—2'9"

Tonnage:
Displacement (full load)—19 (approx)
Gross—Thames rule tonnage - 12½
Net—

Complement: Vessel operated by aquarium personnel
Officers:
   Deck—
   Engineer—
Crew:
Fishermen—
Seamen—
Oilers—
Wipers—
Cooks—
Messmen—
Radiomen—
Others—
Scientific staff—
Other—

Operating Parameters:
Range (lineal miles of steaming)—200 nautical miles
Calculated endurance (days)—1
Performance (acw = days worked/year)—50

Speed:
Cruising—9½ knots
Flank—13 knots

Minimum possible (under steerageway)—3 knots

Power:
Main engine rating:
   Maximum BHP—165
   Continuous BHP—130
Manufacturer—General Motors

Auxiliaries (number): None
   Continuous BHP (each)—
   Power supplied (each, max kw)—
Manufacturer—
Boiler (capacity and manufacturer)—

Capacities:
Liquid (gal):
   Fresh water—100
   Fuel—160
   Lube oil—
   Ballast—
   Other—
Space (ft²): Not applicable
Hold—
Galley stores:
   Dry—
   Chilled—
   Frozen—
Laboratories:
   Physical—
   Chemical—
   Biological—
   Other—
   Accommodations—

Electronics:
Communications—Apelco AE 42A radiotelephone transceiver, 2000-6000 kc
Underwater sounders:
   Echo sounding—Elac LAZ 13A/13
   Echo ranging—
   Radar—None
   Radio direction finders—None
   Position indicators—None
   Other—

Lifesaving Equipment:
Boats—
   Inflatable rafts—
   Other—Life vests, USCG approved

Deck Machinery:
Winches—Hancock double-drum trawl winch, 100-fm (each drum) 5/16” wire
Anchor windlass—
Booms—1
Cranes—
Reels—
Other—

Special Features:—None

Bow positioner—
Freshwater makers—
Cathodic protection—
Underwater viewing ports or lighting—
Other—

Operating Laboratory, Base, Region, or Area: Biological Laboratory, Woods Hole, Mass.

History:
Design—Standard Coast Guard 38’ picket boat
Name of designer—
Year designed—
Construction:
Name of builder—
Year completed—
Conversion:
Year converted (if applicable)—1959
Name of facility doing conversion—Stonington-Deer Island Yacht Basin, Stonington, Maine

Seakeeping Characteristics:
Performance:
Pitch period—
Roll period—
Comfort:
Decks wet—Yes
Hull pound—No
Motion easy—No

Special Remarks:—None

DELAWARE II

General Description:
Capabilities—Trawling, dredging, longlining, gillnetting, purse seining
Hull style—Stern trawler
Number of masts—2 sets kingposts
Construction material—Steel
Method of fabrication—Welded
Screw type:—
Number of blades—4
Fixed pitch or CP—Fixed
Manufacture—Columbian, 96x50

Structural Parameters:
Length:
Length, overall (LOA)—155’6”
Length, waterline (LWL)—140’
Length, between perpendiculars (LBP)—132’

Breadth:
Beam, molded—30’
Beam, extreme (including permanent projections)—30’5”

Draft:
Maximum, loaded—14’6”
Mean—11’
Depth (main deck to keel, amidships)—19’6”
Minimum freeboard (loaded amidships)—8’

Tonnage:
Displacement (full load)—720
Gross—483
Net—231

Complement:
Officers:
Deck—2
Engineer—3

Crew:
Fishermen—6
Seamen—
Oilers—
Wipers—
Cooks—1
Messmen—1
Radiomen—
Others—
Scientific staff—8
Other—

Operating Parameters:
Range (lineal miles of steaming)—8,000
Calculated endurance (days)—30
Performance (avg = days worked/year)—220 (est)

Speed:
Cruising—12.2
Flank—12.5
Minimum possible (under steerageway) — 1

Power:
Main engine rating:
Maximum BHP—1,025
Continuous BHP—1,000
Manufacturer—General Motors

Auxiliaries (number): 2 S.S. generators
(also trawl winch engine and emergency generator unit)
Continuous BHP (each)—280
Power supplied (each, max kw)—150
Manufacturer—General Motors - Delco

Boiler (capacity and manufacturer)—200 gal, Way-Wolff

Capacities:
Liquid (gal):
  fresh water—7,000
  fuel—42,000
  lube oil—600
  ballast—34,000 +
  other—

Space (ft³):
  hold—1,800 ft³ (fish hold)
  galley stores:
    Dry—500 ft³
    Chilled—140
    Frozen—75
  Laboratories:
    Physical—Not applicable
    Chemical—Not applicable
    Biological—1,500
    Other—400 (electronics)
  Accommodations—4,800

Electronics:
Communications—
  SSB transceiver, RF Communications, SB 6FC
  AM transceiver, Apeleo, AE 160M, “High Seas”
Underwater sounders:
Echo sounding:
  Simrad ES2C “Skipper” whiteline, 0-300 fm
  Simrad EA3A whiteline, 0-860 fm
Echo ranging—
  Simrad Sonar, SK3
  Simrad Sonar Scope, SK2
  Simrad Scientific Sounder, EK30B
Radar—Kelvin-Hughes 14/12 & Decca RM326

Radio direction finders—Bendix Model ADF100
Position indicators—2 RCA 8803 loran receivers
Other—Sperry autopilot with magnetic compass

Lifesaving Equipment:
Boats—12’ Coast Guard approved rescue boat
Inflatable rafts—2 U.S. Rubber 20-man and 2 Elliott 15-man
Other—Normal USCG requirements

Deck Machinery:
Winches—Trawl winch hydraulic driven from separate engine, capacity 2,000
  fm 3/4” wire
Anchor windlass—
Booms—5-ton power operated remote control
  net handling, 2 each 1-ton stores handling, boat handling

Cranes—
Reels—
Other—Hydraulic powered deck capstans and gypsy heads

Special Features:
Bow positioner—
Freshwater makers—AMF Aquafresh IIJ-
  50, 200 gal/hr capacity
Cathodic protection—No
Underwater viewing ports or lighting—
  16” x 16” underwater port, starboard-side forward
Other—Stern trawler retrieves trawl along complete length of main deck

Operating Laboratory, Base, Region, or Area: Exploratory Fishing and Gear

History:
Design:
  Name of designer—George G. Sharp, Inc., New York
  Year designed—1963

Construction:
  Name of builder—South Portland Engineering Company
  Year completed—1968

Conversion:
  Year converted (if applicable)—
  Name of facility doing conversion—

Seakeeping Characteristics:
  Performance:
Pitch period —
Roll period—11 sec

**Comfort:**

Decks wet—No
Hull pound—Some

**Motion easy**—Yes

**Special Remarks:** — Vessel designed and built as stern trawler. Net is drawn up inclined stern ramp along main deck through deckhouse penetration to forward located trawl winch.

**SHANG WHEELER**

**General Description:**

**Capabilities** — Fishing, oceanographic, biological research

**Hull style** — Dragger type

**Number of masts** — 1

**Construction material** — Wood

**Method of fabrication** — Normal construction (wood)

**Screw type:**

**Number of blades** — 3

**Fixed pitch or CP** — Fixed pitch, 34” × 34”

**Manufacture** — Columbia Propeller Company

**Structural Parameters:**

**Length:**

Length, overall (LOA) — 50’10”
Length, waterline (LWL) — 47’6”
Length, between perpendiculars (LBP) — 50’10”

**Breadth:**

Beam, molded — Unknown
Beam, extreme (including permanent projections) — 14’9”

**Draft:**

Maximum, loaded — 5’3”
Mean — 4’9”
Depth (main deck to keel, amidships) — 7’
Minimum freeboard (loaded amidships) — 2’

**Tonnage:**

Displacement (full load) — Unknown
Gross — 40.61 tons
Net — 33 tons

**Complement:**

**Officers:**

Deck — Engineer — 1

**Crew:**

Fishermen —
Seamen —
Oilers —
Wipers —
Cooks —
Messmen —
Radiomen —
Others — 1 (summer deckhand)

**Scientific staff — As required for each trip**

**Other —**

**Operating Parameters:**

Range (linear miles of steaming) — 700
Calculated endurance (days) — 8
Performance (avg = days worked/year) — 75

**Speed:**

Cruising — 9 knots
Flank — 10½ knots
Minimum possible (under steageway) — 2 knots

**Power:**

Main engine rating —

Maximum BHP — 200 hp at 2,000 rpm
Continuous BHP — 200 hp at 2,000 rpm
Manufacturer — General Motors diesel

**Auxiliaries (number):** — None

Continuous BHP (each) —
Power supplied (each, max kw) —
Manufacturer —

Boiler (capacity and manufacturer) — None

**Capacities:**

**Liquid (gal):**

Fresh water — 150
Fuel — 450
Lube oil — 20
Ballast — None
Other — None

Space (ft³):
Hold—None
Galley stores: None
Dry—None
Chilled—None
Frozen—None
Laboratories:
Physical—None
Chemical—None
Biological—10' x 15'
Other—None
Accommodations—Sleeps 6

Electronics:
Communications—Pierce-Simpson 150-Watt ship-to-shore radio
Underwater sounders:
  Echo sounding—Raytheon DE-119A, 240 ft
  Echo ranging—None
  Radar—None
  Radio direction finders—None
  Position indicators—None
  Other—None

Lifesaving Equipment:
  Boats—1 - 14'
  Inflatable rafts—None
  Other—1 raft, 20-person capacity

Deck Machinery:
  Winches—2 - 300' of 3/8" wire capacity
  Anchor windlass—None
  Booms—1
  Cranes—None
  Reels—None
  Other—None

Special Features:
  Bow positioner—None
  Freshwater makers—None
  Cathodic protection—None
  Underwater viewing ports or lighting—None
  Other—None

Operating Laboratory, Base, Region, or Area:—Biological Laboratory, Milford, Conn.

History:
  Design: Dragger Type Hull
  Name of designer—Winthrop L. Warner, Middletown, Conn.
  Year designed—1950
  Construction—Wood
  Name of builder—West Haven Shipyard, Inc.
  Year completed—1951
  Conversion:

  Year converted (if applicable)—None
  Name of facility doing conversion—None

Seakeeping Characteristics:
  Performance: N/A (operated on Long Island Sound only)
  Pitch period—None
  Roll period—None
  Comfort:
    Decks wet—Yes (when rough)
    Hull pound—No
    Motion easy—Fair

Special Remarks:—None

DOLPHIN

General Description:
Capabilities—None
Hull style—Army tug (L.T. 1959)
Number of masts—2
Construction material—steel
Method of fabrication—welded
Screw type:
  Number of blades—4
  Fixed pitch or CP—Fixed
  Manufacture—None

Structural Parameters:
Length:
  Length, overall (LOA)—107'
  Length, waterline (LWL)—96'3"
  Length, between perpendiculars (LBP)—100'3"

Breadth:
  Beam, molded—26'6"
  Beam, extreme (including permanent projections)—27'10"

Draft:
  Maximum, loaded—14'10"
Mean—D.W. L. - 10'9"

Depth (main deck to keel, amidships)—Molded base line to top of sheer strake 14'10"

Minimum freeboard (loaded amidships)—4'1"

TONNAGE:
Displacement (full load)—390 tons
Gross—
Net—

COMPENET:
Officers:
Deck—2
Engineer—2
Crew:
Fishermen—4
Seamen—
Oiliers—
Wipers—
Cooks—1
Messmen—
Radiomen—
Others—
Scientific staff—7 (max)
Other—

OPERATING PARAMETERS:
Range (lineal miles of steaming)—6,000 n. m.
Calculated endurance (days)—15
Performance (avg ≈ days worked/year)—120

Speed:
Cruising—11 nm/hr
Flank—12 nm/hr
Minimum possible (under steerage way)—5

Power:
Main engine rating:
Maximum BHP—1,200
Continuous BHP—1,200
Manufacturer—Fairbanks Morse
Auxiliaries (number): 2 (371 G. M.)
Continuous BHP (each)—61 hp
Power supplied (each, max kw)—40 kw
120 v DC
Manufacturer—Delco
Boiler (capacity and manufacturer)—
Crane 15 lb. steam side
30 lb. water side

Cacptes:  
Liquid (gal):
Fresh water—5,800
Fuel—19,808

Lube oil—427
Ballast—3,061 forward peak tank; 5,860 after peak tank
Other—

Space (ft'):
Hold—None

Galley stores:
Dry—3 lockers (72, 46.5, 56)
Chilled—2 chillers (17, 14)
Frozen—2 freezers (18, 4.5)

Laboratories—67 ft²
Physical—
Chemical—
Biological—
Other—
Accommodations—

ELECTRONICS:
Communications—1 - 150 W Apelco
Underwater sounders:
Echo sounding—1 - Simrad
Echo ranging—
Radar—1 - R. C. A. (1 to 40 mile range)
Radio direction finders—
Position indicators—2 - Loran A (DX Navigator)
Other—2 station intercom

LIFESAVING EQUIPMENT:
Boats—1 - (16 man) steel lifeboat
Inflatable rafts—1 - (16 man) survival type
Other—2 - (8 man) cork life rafts
8 - cork life rings

DECK MACHINERY:
Winches—1 New England trawl winch with
2 independent reels, 2 BT winches,
1 hydraulic winch, 1 boom winch,
power block (gill net or purse seine)

Anchor windlass—1
Booms—1
Cranes—
Reels—
Other—1 longline winch

SPECIAL FEATURES:
Bow positioner—
Fresh water makers—
Cathodic protection—
Underwater viewing ports or lighting—
Other—Active rudder (electric)

OPERATING LABORATORY, BASE, REGION, OR AREA:—Sandy Hook Sport Fisheries
Marine Laboratory, Highlands, N. J.

HISTORY:
Design: No. 3006, Hull 418, Boat 1959
Name of designer—(Design agent) M. Rosenblatt & Son
Year designed—Approved 6/9/52, New York City
Construction:
Name of builder—Avondale Marine Ways, Westwego, La.
Year completed—June 1953
Conversion:
Year converted (if applicable)—August 1964
Name of facility doing conversion—Wilmingtom Shipyard, Wilmington, N.C., Norlantic Shipyard, Fairhaven, Mass.
(1967 - addition of raised bow).

SEAKEEPING CHARACTERISTICS:
Performance:
Pitch period—1
Roll period—1
Comfort:
Decks wet—
Hull pound—
Motion easy—

SPECIAL REMARKS:

CHALLENGER

GENERAL DESCRIPTION:
Capabilities:
Hull style—Displacement
Number of masts—2
Construction material—Wood
Method of fabrication—Bolted beams, nailed sheathing
Screw type:
Number of blades—3
Fixed pitch or CP—35"

MANUFACTURE—

STRUCTURAL PARAMETERS:
Length:
Length, overall (LOA)—65'
Length, waterline (LWL) —
Length, between perpendiculars (LBP) —
Breadth:
Beam, molded—
Beam, extreme (including permanent projections)—16'
Draft:
Maximum, loaded—7 1/2'
Mean—
Depth (main deck to keel, amidships)—2'
Minimum freeboard (loaded amidships)—4'

TONNAGE:
Displacement (full load) —
Gross—
Net—

COMPLEMENT:
Officers:
Deck—1 (Master)
Engineer—
Crew:
Fishermen—
Seamen—
Oilers—
Wipers—
Cooks—1 (deckhand)
Messmen—
Radiomen—
Others—
Scientific staff—5
Other—

OPERATING PARAMETERS:
Range (lineal miles of steaming)—500
Calculated endurance (days)—3
Performance (avg # days worked/year)—158

Speed:
Cruising—9
Flank—9
Minimum possible (under steerageway)—2

Power:
Main engine rating:
Maximum BHP—225 hp
Continuous BHP—180 hp
Manufacturer—GM 671
Auxiliaries (number): 1
Continuous BHP (each)—150
Power supplied (each, max kw)—30

16
Manufacturer—Continental
Boiler (capacity and manufacturer)—
Capacities:
Liquid (gal):
Fresh water—320
Fuel—950
Lube oil—
Ballast—
Other—
Space (ft³):
Hold—1,056
Galley stores:
Dry—
Chilled—22
Frozen—6
Laboratories:
Physical—
Chemical—
Biological—1
Other—7 bunks
Accommodations—
Electronics:
Communications—Simpson 85W
Underwater sounders:
Echo sounding—Simrad
Echo ranging—
Radar—Decca 101
Radio direction finders—
Position indicators—Nelco Autofix 500 loran
A&C direct readout
Other—
Lifesaving Equipment:
Boats—
Inflatable rafts—
Other—1 - 8-man life raft
15 - life jackets
Deck Machinery:
Winches—
Anchor windlass—Electric
Booms—1 boom fwd.
Cranes—
Reels—
Other—1 - A frame aft with hydraulic winch
Special Features:
Bow positioner—
Freshwater makers—
Cathodic protection—
Underwater viewing ports or lighting—
Other—
Operating Laboratory, Base, Region, or Area:—Sandy Hook Sport Fisheries Marine Laboratory, Highlands, N.J.
History:
Design:
Name of designer—
Year designed—
Construction—wood
Name of builder—
Year completed—
Conversion:
Year converted (if applicable)—1961
Name of facility doing conversion—Sandy Hook Marine Laboratory
Seakeeping Characteristics:
Performance:
Pitch period—
Roll period—
Comfort:
Decks wet—No
Hull pound—No
Motion easy—Yes - 28' rolling chocks
Special Remarks:—This vessel is very seaworthy, handles very well, is very versatile — can go to sea and also work all inlets, is a very good diving boat being equipped with electric compressor and cascade air filling for scuba tanks, also has flying bridge with controls for handling when men are in water, and has hot and cold showers for divers.

MARTHA E II

General Description:
Capabilities—
Hull style—Round bottom, ditch keel
Number of masts—1
Construction material—White cedar tongue
and groove strips

Method of fabrication—Everdur fasteners and glue

Screw type:
Number of blades—4
Fixed pitch or CP—Fixed, 21 × 20

STRUCTURAL PARAMETERS:

Length:
Length, overall (LOA)—42' 10½"
Length, waterline (LWL)—36'10½"
Length, between perpendiculars (LBP)—

Breadth:
Beam, molded—11'
Beam, extreme (including permanent projections)—11'

Draft:
Maximum, loaded—3'
Mean—
Depth (main deck to keel, amidships)—
Minimum freeboard (loaded amidships)—

TONNAGE:
Displacement (full load)—
Gross—12
Net—8

COMPLEMENT:

Officers:
Deck—1 (Master)
Engineer—

Crew:
Fishermen—
Seamen—
Oilers—
Wipers—
Cooks—
Messmen—
Radiomen—
Other—
Scientific staff—Up to 4

OPERATING PARAMETERS:
Range (lineal miles of steaming)—200
Calculated endurance (days)—
Performance (avg # days worked/year)—140

Speed:
Cruising—16 knots
Flank—18 knots
Minimum possible (under steerageway)—

Power:
Main engine rating—2 - 130 hp diesels
Maximum BHP—125

Continuous BHP—100
Manufacturer—GM 453

Auxiliaries (number):
Continuous BHP (each)—
Power supplied (each, max kw)—
Manufacturer—
Boiler (capacity and manufacturer)—

Capacities:
Liquid (gal):
Fresh water—35
Fuel—130 (2 - 65 gal each)
Lube oil—30 qt
Ballast—
Other—

Space (ft²):
Hold—
Galley stores:
Dry—10
Chilled—3
Frozen—

Laboratories:
Physical—
Chemical—
Biological—
Other—
Accommodations—2 bunks

ELECTRONICS:
Communications—Apelco radio - ship-to-shore
Underwater sounders:
Echo sounding—Bendix depth recorder, Simrad whiteline
Echo ranging—
Rad—
Radio direction finders—
Position indicators—Loran A ENA6 Uniton Com 100
Other—

LIFESAVING EQUIPMENT:
Boats—
Inflatable rafts—1
Other—8 life preservers

DECK MACHINERY:
Winches—1 - hydraulic boom
Anchor windlass—1
Booms—1
Cranes—
Reels—1
Other—

SPECIAL FEATURES:
Bow positioner—
Freshwater makers—
Cathodic protection—
Underwater viewing ports or lighting—
Other—

Operating Laboratory, Base, Region, or Area:—Sandy Hook Sport Fisheries Marine Laboratory, Highlands, N.J.

History:
Design:
Name of designer—
Year designed—
Construction:
Name of builder—Bay Shore Marine
Year completed—
Conversion:
Year converted (if applicable)—
Name of facility doing conversion—

Seakeeping Characteristics:
Performance:
Pitch period—
Roll period—
Comfort:
Decks wet—
Hull pound—
Motion easy—

Special Remarks:—Stability markedly improved under power.

ALOSA

General Description:
Capabilities—
Hull style—Trawler
Number of masts—1
Construction material—Wood
Method of fabrication—
Screw type:
Number of blades—3

Fixed pitch or CP—Fixed
Manufacturer—Michigan

Structural Parameters:
Length:
Length, overall (LOA)—48'6"
Length, waterline (LWL)—44'4"
Length, between perpendiculars (LBP)—47'6"

Breadth:
Beam, molded—15'10"
Beam, extreme (including permanent projections)—16'3"

Draft:
Maximum, loaded—
Mean—5'4"

Depth (main deck to keel, amidships)—5'8"
Minimum freeboard (loaded amidships)—3'8"

Tonnage:
Displacement (full load)—20
Gross—19.75
Net—15.5

Complement:
Officers:
Deck—1 (Master)
Engineer—
Crew:
Fishermen—
Seamen—
Oilers—
Wipers—
Cooks—
Messmen—
Radiomen—
Others—
Scientific staff—2 to 4
Other—

Operating Parameters:
Range (lineal miles of steaming)—2,240
Calculated endurance (days)—12
Performance (avg = days worked/year)—24
Speed:
Cruising—8
Flank—9
Minimum possible (under steageway)—4

Power:
Main engine rating:
Maximum BHP—75
Continuous BHP—
Manufacturer—Caterpillar
Auxiliaries (number):
Continuous BHP (each) —
Power supplied (each, max kw) —
Manufacturer —
Boiler (capacity and manufacturer) —

Capacities:

Liquid (gal):
Fresh water—120
Fuel—560
Lube oil—10
Ballast—3,000 lb.
Other—

Space (ft²):
Hold—800

Galley stores:
Dry—20
Chilled—5
Frozen—

Laboratories:
Physical—
Chemical—
Biological—
Other—

Accommodations—355

Electronics:
Communications—Raytheon Ray 41
Underwater sounders:
Echo sounding—Raytheon, 120 ft
Echo ranging—
Radar—
Radio direction finders—
Position indicators—
Other—

Lifesaving Equipment:
Boats—1
Inflatable rafts—
Other—12 life jackets

Deck Machinery:
Winches—1
Anchor windlass—
Booms—
Cranes—
Reels—
Other—

Special Features:
Bow positioner—
Freshwater makers—
Cathodic protection—
Underwater viewing ports or lighting—
Other—

Operating Laboratory, Base, Region, or Area:—Biological Laboratory, Oxford, Md.

History:
Design: Shrimp trawler
Name of designer—Sarris
Year designed—

Construction:
Name of builder—Sarris Bros.
Year completed—1939

Conversion:
Year converted (if applicable)—1957
Name of facility doing conversion—Rogers Boat Yard

Seakeeping Characteristics:
Performance:
Pitch period—
Roll period—

Comfort:
Decks wet—No
Hull pound—No
Motion easy—Yes

Special Remarks:—

KINGFISH

General Description:
Capabilities—General coastal oceanographic sampling, benthic dredging, gill net fishing, 2nd limited trawling
Hull style—VEE, planning cruiser
Number of masts—1, for navigation lights only
Construction material—Mahogany
Method of fabrication—Bottom double, sides batten
Screw type:
Number of blades—3
Fixed pitch or CP—Fixed, 21”×21” RH + LH
**Manufacture**—General Propeller Company

**Structural Parameters:**

- **Length:**
  - Length, overall (LOA)—43'
  - Length, waterline (LWL)—40'
  - Length, between perpendiculars (LBP)—10'

- **Breadth:**
  - Beam, molded—13'
  - Beam, extreme (including permanent projections)—12'4"

- **Draft:**
  - Maximum, loaded—4'
  - Mean—3'6"

- **Depth (main deck to keel, amidships)—2'**

- **Minimum freeboard (loaded amidships)—40"**

**Tonnage:**

- **Displacement (full load)—Unknown**
- **Gross—19 tons**
- **Net—10 tons**

**Complement:**

- **Officers:**
  - Deck—1 (Master)
  - Engineer—

- **Crew:**
  - Fishermen—
  - Seamen—
  - Oilers—
  - Wipers—
  - Cooks—
  - Seamen—
  - Radiomen—
  - Others—

- **Scientific staff—Up to 4**

- **Other—**

**Operating Parameters:**

- **Range (lineal miles of steaming)—300 miles**
- **Calculated endurance (Days)—1½ days constant running; 5 days provisions and water**
- **Performance (avg. # days worked/year)—100 days**

- **Speed:**
  - Cruising—18 knots
  - Flank—23 knots
  - Minimum possible (under steerageway)—3 knots

- **Power—Twin 4.71 Diesel (GM)**
  - **Main engine rating:**
    - Maximum BHP—175 each
    - Continuous BHP—175 each

**Manufacturer**—General Motors

**Auxiliaries (number):** 1 Lister, 3 kw
- **Continuous BHP (each)—10 hp**
- **Power supplied (each, max kw)—3 kw**

**Boiler (capacity and manufacturer)—**

- **None**

**Capacities:**

- **Liquid (gal)—440 gal**
  - Fresh water—35 gal
  - Fuel—392 gal
  - Lube oil—13 gal
  - Ballast—None
  - Other—None

- **Space (ft²):**
  - **Hold—None**
  - **Galley stores:** 12 ft² - 2x3x2 ft
  - **Dry—None**
  - **Chilled—4 ft² - 2x2x1 ft**
  - **Frozen—4 ft² - 2x2x1 ft**

**Laboratories:**

- No fixed laboratory spaces. Approximately 100 cubic feet of interior space available for limited laboratory work
  - **Physical—**
  - **Chemical—**
  - **Biological—**
  - **Other—**

- **Accommodations—1 crew; 4 scientific**

**Electronics:**

- **Communications—Raytheon Marine radio telephone Model No. 1130**
  - **Underwater sounders—Benmar echo sounder Model No. DR 28**
  - **Echo sounding—0-360 fm**
  - **Echo ranging—None**
  - **Radar—1 Deca-Mar radar Model No. 101**
  - **Radio direction finders—None**
  - **Position indicators—None**
  - **Other—**

**Lifesaving Equipment:**

- **Boats—None**
  - **Inflatable rafts—None**
  - **Other—Styrofoam 6 capacity**

**Deck Machinery:**

- **Winches—None**
  - **Anchor windlass—Electric**
  - **Booms—Davit only**
  - **Cranes—None**
  - **Reels—Davit reel—manual**
  - **Other—Hydraulic power block (gill net), davit mounted**

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Special Features:
- Bow positioner: None
- Freshwater makers: None
- Cathodic protection: None
- Underwater viewing ports or lighting: None
- Other: None

Operating Laboratory, Base, Region, or Area: - NMFS Biological Laboratory St. Petersburg Beach, Florida Southeast Region

History:
Design:
- Name of designer: Cris-Craft
- Year designed: 1953
Construction:
- Name of builder: Cris-Craft
- Year completed: 1953
Conversion:
- Year converted (if applicable): Not applicable
- Name of facility doing conversion: Not applicable

Seakeeping Characteristics:
Performance: Limited seakeeping characteristics
- Pitch period: Unknown
- Roll period: Unknown
Comfort:
- Decks wet: No
- Hull pound: Yes
- Motion easy: Fair

Seakeeping Remarks: Limited to coastal and estuarine operations, restricted accommodations

POINT OF MARSH - J-3486

General Description:
- Capabilities: Trawling, sampling, etc.
- Hull style: Patrol
- Number of masts: 1
- Construction material: Wood
- Method of fabrication: 
  - Number of blades: 3
  - Fixed pitch or CP: Fixed
  - Manufacture: Unknown

Structural Parameters:
- Length: 42'4"
- Length, overall (LOA): —
- Length, waterline (LWL): —
- Length, between perpendiculars (LBP): —
- Breadth: 11'8½"
- Beam, molded: —
- Beam, extreme (including permanent projections): —
- Draft: 2'9"
- Maximum, loaded: —
- Mean: —
- Depth (main deck to keel, amidships): —
- Minimum freeboard (loaded amidships): —

Tonnage:
- Displacement (full load): Unknown
- Gross: —
- Net: —

Complement: N/A
- Officers: 
  - Deck: —
  - Engineer: —
- Crew:
  - Fishermen: —
  - Seamen: —
  - Oilers: —
  - Wipers: —
  - Cooks: —
  - Messmen: —
  - Radiomen: —
  - Others: —
  - Scientific staff: —
  - Other: —

Operating Parameters:
- Range (lineal miles of steaming): 11 hr
- Calculated endurance (days): —
- Performance (avg = days worked/year): —
- Speed:
  - Cruising: 16 knots
  - Flank: —
  - Minimum possible (under steerageway): —
Power:
Main engine rating (Dual): 300 hp each
Maximum BHP—
Continuous BHP—
Manufacturer—Cummins
Auxiliaries (number):
Continuous BHP (each)—
Power supplied (each, max kw)—
Manufacturer—
Boiler (capacity and manufacturer)—

Capacities:
Liquid (gal)—
Fresh water—
Fuel—210 gal
Lube oil—
Ballast—
Other—

Space (ft²):
Hold—
Galley stores—
Dry—
Chilled—
Frozen—

Laboratories:
Physical—
Chemical—
Biological—
Other—

Accommodations—

Electronics:
Communications—Marine and CB
Underwater sounders:
Echo sounding—
Echo ranging—
Radar—
Radio direction finders—
Position indicators—
Other—

Lifesaving Equipment:
Boats—
Inflatable rafts—1 - 4-man
Other—

Deck Machinery:
Winches—
Anchor windlass—
Booms—
Cranes—
Reels—
Other—

Special Features:
Bow positioner—
Fresh water makers—

Cathodic protection—
Underwater viewing ports or lighting—
Other—

Operating Laboratory, Base, Region, or Area:—Center for Estuarine and Menhaden Research, Beaufort, N.C.

History:
Design:
Name of designer—
Year designed—

Construction:
Name of builder—
Year completed—

Conversion:
Year converted (if applicable)—
Name of facility doing conversion—

Seakeeping Characteristics:
Performance:
Pitch period—
Roll period—

Comfort:
Decks wet—
Hull pound—
Motion easy—

Special Remarks:—

Rachel Carson

General Description:
Capabilities—Sports fishing, trolling, hand lines, hand trawling, scuba diving, plankton net towing.

Hull style—Curved stem, rectangular transom

Number of masts—
Construction material—Wood
Method of fabrication—Carvel planked
Screw type:
- Number of blades—4
- Fixed pitch or CP—Single fixed
- Manufacture—Columbian

**STRUCTURAL PARAMETERS:**

**Length:**
- Length, overall (LOA)—43'
- Length, waterline (LWL)—
- Length, between perpendiculars (LBP)—

**Breadth:**
- Beam, molded—
- Beam, extreme (including permanent projections)—15'5"

**Draft:**
- Maximum, loaded—42"
- Mean—
- Depth (main deck to keel, amidships)—4'
- Minimum freeboard (loaded amidships)—

**TONNAGE:**
- Displacement (full load)—
  - Gross—
  - Net—16

**COMPLEMENT:**
- Officers:
  - Deck—1 (Master)
  - Engineer—
- Crew:
  - Fishermen—
  - Seamen—
  - Oilers—
  - Wipers—
  - Cooks—
  - Messmen—
  - Radiomen—
  - Others—
- Scientific staff—
- Other—

**OPERATING PARAMETERS:**
- Range (lineal miles of steaming)—200 maximum
- Calculated endurance (days)—
- Performance (avg # days worked/year)—
- Speed:
  - Cruising—12 knots
  - Flank—16 knots
  - Minimum possible (under steerageway)—1 knot
- Power—2-6V53N (210 hp each)
  - Main engine rating—2:1 rpm
  - Maximum BHP—
  - Continuous BHP—
  - Manufacturer—

**Auxiliaries (number):**
- Continuous BHP (each)—
- Power supplied (each, max kw)—
- Manufacturer—
- Boiler (capacity and manufacturer)—

**Capacities:**
- Liquid (gal):
  - Fresh water—80
  - Fuel—300
  - Lube oil—
  - Ballast—
  - Other—
- Space—Deck house 9'x10', self bailing cockpit, deck 10'x14'
- Hold—
- Galley stores:
  - Dry—
  - Chilled—
  - Frozen—
- Laboratories:
  - Physical—
  - Chemical—
  - Biological—
  - Other—
  - Accommodations—

**ELECTRONICS:**
- Communications—130 Watt Konel radio telephone, 2-3 mHz
- Underwater sounders:
  - Echo sounding—Simrad recorder 420 ft
  - Echo ranging—
  - Radar—
  - Radio direction finders—
  - Position indicators—Konel Loran “A”
  - Other—Metal Marine autopilot

**LIFESAVING EQUIPMENT:**
- Boats—
  - Inflatable rafts—
  - Other—As per USCG regulations

**DECK MACHINERY:**
- Winches—
  - Anchor windlass—
  - Booms—
  - Cranes—
  - Reels—
  - Other—

**SPECIAL FEATURES:**
- Bow positioner—
- Freshwater makers—
- Cathodic protection—
- Underwater viewing ports or lighting—
- Other—
OPERATING LABORATORY, BASE, REGION, OR AREA:—Eastern Gulf Sport Fisheries Marine Laboratory, Panama City, Fla.

HISTORY:
Design:
Name of designer—Julian Guthrie, Davis, N.C.
Year designed—? (prior to 1967)

Construction:
Name of builder—Julian Guthrie, Davis, N.C.
Year completed:
Conversion:
Year converted (if applicable)—
Name of facility doing conversion—

SEAKEEPING CHARACTERISTICS:
Performance:
Pitch period—
Roll period—
Comfort:
Decks wet—No
Hull pound—No
Motion easy—Yes - rather quick in short chop

Special Remarks:—This vessel was constructed as a “Day Boat” to be used for a day-long sports fishing boat and to return to dock each night. She has two berths and a good deal of open deck space. Under extreme conditions she could make a 4- or 5-day cruise.

OREGON II

Hull style—North Atlantic trawler
Number of masts—1 forward - 2 kingposts aft
Construction material—Steel hull - aluminum house
Method of fabrication—Welded - short arc
Screw type:
Number of blades—4
Fixed pitch or CP—CP
Manufacture—KA ME WA

STRUCTURAL PARAMETERS:
Length:
Length, overall (LOA)—170'
Length, waterline (LWL)—158'
Length, between perpendiculars (LBP)—152'

Breadth:
Beam, molded—34'
Beam, extreme (including permanent projections)—

Draft:
Maximum, loaded—14.95' mean (moulded)
Mean—12½' (designed)

Depth (main deck to keel, amidships)—18½'
Minimum freeboard (loaded amidships)—5½'

TONNAGE:
Displacement (full load)—1,013 (long tons)
Gross—703.70
Net—228

COMPLEMENT:
Officers:
Deck—3
Engineer—3

Crew:
Fishermen—6
Seamen—
Oilers—
Wipers—
Cooks—1
Messmen—1
Radiomen—
Others—
Scientific staff—11

Other—

OPERATING PARAMETERS:
Range (lineal miles of steaming)—10,700
Calculated endurance (days)—60
Performance (avg ≠ days worked/year)—250 (est)

Speed:
Cruising—13.5

GENERAL DESCRIPTION:
Capabilities—Fishing, oceanographic, biological research, etc.
Flank—14.5
Minimum possible (under steerageway)— 0.5 to 1.0

Power:
Main engine rating:
Maximum BHP—1,600
Continuous BHP—1,440 (90%)
Manufacturer—Fairbanks-Morse

Auxiliaries (number): 2
Continuous BHP (each)—320
Power supplied (each, max kw)—220
Manufacturer—Fairbanks-Morse

Boiler (capacity and manufacturer)—
Way Wolf - 400,000 BTU’s

Capacities:
Liquid (gal):
Fresh water—8,000
Fuel—80,900
Lube oil—1,500
Ballast—79.2 LT
Other—

Space (ft^2):
Hold—4 (freezer) - 3,500 total
Galley stores:
Dry—1,078
Chilled—187
Frozen—374

Laboratories:
Physical—1,925 (wet)
Chemical—1,470 (hydro and chemical)
Biological—2,135
Other—

Accommodations—25 men (11 double cabins, 3 single cabins)

Electronics:
Communications—RCA, SSB, P23A, 1,000 W PEP

Underwater sounders:
Echo sounding—Simrad, Skipper, 600 fm
Echo ranging—Elac LAZ 17 Atair, 560 fm
Radar—Decca RM, RM-326
Radio direction finders—Bendix ADF 100G
Position indicators—Sperry Model 2, Mark I, ENAC-AC with cycle matching
Other—Elac Super Lodar-0-2200 fm

Lifesaving Equipment:
Boats—1 - 12-man
Inflatable rafts—4 - 15-man Switlik
Other—

Deck Machinery:
Winches—MARCO - all-hydraulic

Anchor windlass—Ideal
Booms—2 swinging, hydraulic
Cranes—
Reels—
Other—

Special Features:
Bow positioner—
Freshwater makers—2 AMF (maxim)
Cathodic protection—Sacrificial zinc anodes
Underwater viewing ports or lighting—
Other—

Operating Laboratory, Base, Region, or Area:—Exploratory Fishing and Gear Research Base, Pascagoula, Miss.

History:
Design:
Name of designer—Robert H. Macy
Year designed—1965

Construction:
Name of builder—Ingalls Shipbuilding Corp.
Year completed—1967

Conversion:
Year converted (if applicable)—
Name of facility doing conversion—

Seakeeping Characteristics:
Performance:
Pitch period—4 -6 sec
Roll period—8 - 10 sec
Comfort:
Decks wet—No
Hull pound—No
Motion easy—Extremely so

Special Remarks:—

GEORGE M. BOWERS
General Description:
Capabilities—Fishing, oceanographic, biological research, etc.
Hull style—Shrimp trawler
Number of masts—1
Construction material—Wood
Method of fabrication—Transverse framing, carvel planked
Screw type:
   Number of blades—3
   Fixed pitch or CP—CP
   Manufacturer—Hunested

Structural Parameters:
Length:
   Length, overall (LOA)—73'10½''
   Length, waterline (LWL)—66'6''
   Length, between perpendiculars (LBP)—64'2''
Breadth:
   Beam, molded—20'
   Beam, extreme (including permanent projections)—
Draft:
   Maximum, loaded—8'
   Mean—6'6''
   Depth (main deck to keel, amidships)—9'4''
   Minimum freeboard (loaded amidships)—2'

Tonnage:
Displacement (full load)—125 LT (est)
Gross—91.3
Net—76

Complement:
Officers:
   Deck—1
   Engineer—1
Crew:
   Fishermen—1
   Seamen—
   Oilers—
   Wipers—
   Cooks—1
   Messmen—
   Radiomen—
   Others—
Scientific staff—6
Other—

Operating Parameters:
Range (lineal miles of steaming)—2,000
Calculated endurance (days)—10
Performance (avg = days worked/year)—160
Speed:
Cruising—9
Flank—10
Minimum possible (under steerageway)—1 to 2

Power:
Main engine rating:
   Maximum BHP—230
   Continuous BHP—200
   Manufacturer—GM
Auxiliaries (number): 2
   Continuous BHP (each)—
   Power supplied (each, max kw)—20 to 30 kw
   Manufacturer—GM
Boiler (capacity and manufacturer)—

Capacities:
Liquid (gal):
   Fresh water—2,000
   Fuel—2,400
   Lube oil—125
   Ballast—
   Other—

Space (ft²):
   Hold—
   Galley stores:
      Dry—
      Chilled—30
      Frozen—20
Laboratories:
   Physical—
   Chemical—
   Biological—
   Other—General utility lab - 637
Accommodations—

Electronics:
Communications—RCA, SSB-5-125W
   RCA, AM-8012-75W
Underwater sounders:
   Echo sounding—Elac, 6B-0-560 fm
   Echo ranging—Elac LAZ 17 Atair, 0-560 fm
Radar—RCA
   Radio direction finders—
   Position indicators—RCA, 8803
   Other—

Lifesaving Equipment:
   Boats—1
   Inflatable rafts—2 - 10-man Aircruisers
   Other—

Deck Machinery:
   Winches—Northern Line, parallel shaft
   Anchor windlass—Northern Line
**OREGON**

**General Description:**

**Capabilities**—Exploratory fishing, shrimp, swordfish, tuna, scallops, clams, etc., gillnetting, trolling, longlining, trawling, including midwater

**Hull style**—Raised deck tuna clipper, full molded hull design, round bottom with bilgekeels

**Number of masts**—1

**Construction material**—Steel plate on 4” x 3” x 5/16” angle frames, 22” centers

**Method of fabrication**—Welded on transverse frames

**Screw type**—Right hand

**Number of blades**—3

**Fixed pitch or CP**—68” diameter 38” pitch

**Manufacturer**—Columbian

**Structural Parameters:**

**Length:**
- Length, overall (LOA)—100’
- Length, waterline (LWL)—95’6”
- Length, between perpendiculars (LBP)—91’8”

**Breadth:**
- Beam, molded—26’
- Beam, extreme (including permanent projections)—26’8”

**Draft:**
- Maximum, loaded—14’
- Mean—10’
- Depth (main deck to keel, amidships)—13’6”
- Minimum freeboard (loaded amidships)—3’

**Tonnage:**
- Displacement (full load)—410 long tons
- Gross—219 tons
- Net—158 tons

**Complement:**

**Officers:**
- Deck—2
- Engineer—3

**Crew:**
- Fishermen—4
- Seamen—1
- Oilers—1
- Wipers—
- Cooks—1
- Messmen—1
- Radiomen—
- Others—
- Scientific staff—1
- Other—5

**Operating Parameters:**
Range (lineal miles of steaming) — 1,800
Calculated endurance (days) — 30
Performance (avg = days worked/year) — 200

Speed:
Cruising — 9 knots
Flank — 10 knots
Minimum possible (under steerageway) — 2 knots

Power:
Main engine rating — 600 Shp at 400 rpm
Maximum BHP —
Continuous BHP —
Manufacturer — Enterprise Engine
Company DMG-36
Auxiliaries (number) — 2
Continuous BHP (each) — 148 HSP
Power supplied (each, max kw) — 85 kw
Manufacturer — Caterpillar D-32b
Boiler (capacity and manufacturer) — None

Capacities:
Liquid (gal) — 29,200 total
Fresh water — 12,000
Fuel — 16,000
Lube oil — 1,200
Ballast —
Other —

Space (ft²):
Hold —
Galley stores:
Dry —
Chilled —
Frozen —
Laboratories:
Physical — 1
Chemical —
Biological —
Other —
Accommodations —

Electronics:
Communications — RMCA 8050 HF, 85 watt
- RMCA SSB - Johnson Messenger -
CB 7-11-22 - Halicraft receiver, SX43,
0-30 MG
Underwater sounders:
Echo sounding — Ross Fineline 200A, 0-200
fm - Atlas Fishfinder, 0-500 fm -
Electroacoustic LAZ-17, 0-560 fm -
EDO = 185, 0-6000 fm
Echo ranging —
Radar — Decca D202, 0-24 miles
Radio direction finders — DX Navigator, A/C

Position indicators — RCA LR-8803, direct
reading

Other —

Lifesaving Equipment:
Boats — 16' Boston Whaler and 13' Boston
Whaler
Inflatable rafts — Air cruiser - 15-man and
Elliott - 10-man
Other — 1 life rings with lights, 30 life jackets

Deck Machinery:
Winches — Rowe Model 16-C
Anchor windlass — Northern Anchor, Model
2030, type 1W
Booms — 1 main boom
Cranes — None
Reels — None
Other — Small boom starboardside amidships

Special Features:
Bow positioner — None
Freshwater makers — None
Cathodic protection — Sacrificial zinc anodes
Underwater viewing ports or lighting —
None
Other — None

Operating Laboratory, Base, Region, or
Area — Marine Fisheries Center, Kodiak,
Alaska

History:
Design:
Name of designer — H. C. Hanson
Year designed — 1946
Construction:
Name of builder — Astoria Marine Construc-
tion Company
Year completed — 1946
Conversion:
Year converted (if applicable) —
Name of facility doing conversion —

Seakeeping Characteristics:
Performance:
Pitch period — Depending on sea condi-
tions, usually 0 to 5 sec
Roll period —
Comfort:
Decks wet — Yes
Hull pound — Depending on height of sea
Motion easy — Somewhat

Special Remarks: — One of a class of 100' steel
seiners built after the war by the Fed-
eral Government. Group included
vessels California, Oregon, Washing-
town, and Alaska. Alaska is presently
owned and operated as a fishery research vessel by the California Department of Fish and Game.

**MURRE II**

**General Description:**
- **Capabilities**—Fishing, oceanographic, biological research, freight hauling
- **Hull style**—Power barge
- **Number of masts**—1
- **Construction material**—Wood
- **Method of fabrication**—Timbered construction
- **Screw type**:
  - **Number of blades**—3
  - **Fixed pitch or CP**—No
- **Manufacture**—Coolidge

**Structural Parameters:**
- **Length**:
  - **Length, overall (LOA)**—86'
  - **Length, waterline (LWL)**—77'
  - **Length, between perpendiculars (LBP)**—73'
- **Breadth**:
  - **Beam, molded**—26'8"
  - **Beam, extreme (including permanent projections)**—27'2"
- **Draft**:
  - **Maximum, loaded**—7'6"
  - **Mean**—6'6", 7'6" aft, 3'6" forward
- **Depth (main deck to keel, amidships)**—9'
- **Minimum freeboard (loaded amidships)**—30"

**Tonnage:**
- **Displacement (full load)**—295
- **Gross**—189

**Net**—95

**Complement:**
- **Officers**:
  - **Deck**—1
  - **Engineer**—1
- **Crew**:
  - **Fishermen**—
  - **Seamen**—
  - **Oilers**—
  - **Wipers**—
  - **Cooks**—1 (temporary basis)
  - **Messmen**—
  - **Radiomen**—
  - **Others**—
- **Scientific staff**—2 to 6
- **Other**—

**Operating Parameters:**
- **Range (lineal miles of steaming)**—2,500
  (nautical miles)
- **Calculated endurance (days)**—15 to 25
- **Performance (avg # days worked/year)**—200

**Speed:**
- **Cruising**—8 knots
- **Flank**—8.2 knots
- **Minimum possible (under steerageway)**—2 knots

**Power:**
- **Main engine rating**—Twin D 13,000
  - **Maximum BHP**—115
  - **Continuous BHP**—104
- **Manufacturer**—Caterpillar
- **Auxiliaries (number)**—2
  - **Continuous BHP (each)**—45 hp and 63 hp
  - **Power supplied (each, max kw)**—20 kw and 30 kw
- **Manufacturer**—GM

**Boiler (capacity and manufacturer)**—

**Capacities:**
- **Liquid (gal)**:
  - **Fresh water**—2,000
  - **Fuel**—5,000
  - **Lube oil**—500
  - **Ballast**—
  - **Other**—100 (gasoline)

**Space (ft')**:
- **Hold**—2,600
- **Galley stores**:
  - **Dry**—380
  - **Chilled**—
  - **Frozen**—13
Laboratories:
- Physical
  - Chemical—600
  - Biological—1,400
- Other
  - Accommodations—1,330

Electronics:
- Communications—Northern transmitter-receiver (WZ 2003), 250 watt
- Underwater sounders:
  - Echo sounding—Kelvin Hughes MS 29F, MK 3, wet paper, 480 fm
  - Raytheon flasher type, DE 116, 110 fm
- Echo ranging—
  - Radar—2 Raytheon Pathfinder, Model 1500
  - Radio direction finders—Heathkit MR-21A
- Position indicators—
  - Other—

Lifesaving Equipment:
- Boats—14' Boston Whaler outboard
- Inflatable rafts—2 Switlik 4-man self-inflated
- Other—Lighted ring buoys, life jackets, etc.

Deck Machinery:
- Winches—Marco Co. hydraulic trawl & cargo, 550 m, 3/4", galvanized - New England Trawler Co. electric hydrographic, 1,000 m, 5/32", stainless - Markey hydraulic deck winch, 800 m, 1/32", stainless
- Anchor windlass—Rowe Machine, 7/8", cable, 100 fm
- Booms—Cargo and trawling, hydraulic topping gear by Braden and Apex boom cargo winch
- Cranes—
- Reels—
- Other—Braden hydraulic boom vanging winches

Special Features:
- Bow positioner—
- Freshwater makers—
- Cathodic protection—Zinc plates on rudders
- Underwater viewing ports or lighting—
- Other—Large open deck for carrying quantities of scientific gear or freight

Operating Laboratory, Base, Region, or Area:—Biological Laboratory, Auke Bay, Alaska

History:
- Design: Built for U.S. Army to carry supplies to Aleutian Islands in WW II.
- Military designation (BPS)
- Name of designer—
- Year designed—
- Construction:
  - Name of builder—Maritime Shipyards, Seattle, Wash.
  - Year completed—1943
- Conversion:
  - Year converted (if applicable) —
  - Name of facility doing conversion—

Seakeeping Characteristics:
- Performance:
  - Pitch period—Unavailable
  - Roll period—Unavailable
- Comfort:
  - Decks wet—Cargo deck wet in light sea
  - Hull pound—in moderate sea
  - Motion easy—Snap roll

Special Remarks:—Vessel is used only in relatively calm inside waters of southeastern Alaska.

SABLEFISH

General Description:
- Capabilities—
  - Hull style—Seine type
  - Number of masts—1
- Construction material—Wood
- Method of fabrication—
  - Screw type:
    - Number of blades—3
    - Fixed pitch or CP—Fixed
  - Manufacture—Coolidge

Structural Parameters:
- Length:
Length, overall (LOA)—38’
Length, waterline (LWL)—
Length, between perpendiculars (LBP)—

Breadth:
  Beam, molded—12’
  Beam, extreme (including permanent projections)—

Draft:
  Maximum, loaded—
  Mean—4.5’

Depth (main deck to keel, amidships)—
Minimum freeboard (loaded amidships)—

TONNAGE:
Displacement (full load)—
Gross—
Net—

COMPLEMENT:
  Officers:
    Deck—1 (Master)
    Engineer—
  Crew:
    Fishermen—
    Seamen—
    Oilers—
    Wipers—
    Cooks—
    Messmen—
    Radiomen—
    Others—
  Scientific staff—2
  Other—

OPERATING PARAMETERS:
  Range (linear miles of steaming)—600
  Calculated endurance (days)—
  Performance (avg # days worked/year)—
  Speed:
    Cruising—8 knots
    Flank—9 knots
    Minimum possible (under steerageway)—

Power:
  Main engine rating:
    Maximum BHP—165
    Continuous BHP—
    Manufacturer—GM
  Auxiliaries (number):
    Continuous BHP (each)—
    Power supplied (each, max kw)—
    Manufacturer—
  Boiler (capacity and manufacturer)—

Capacities:
  Liquid (gal):
    Fresh water—150

Fuel—600
Lube oil—
Ballast—1,600 lb. cement, aft
Other—

Space (ft²):
  Hold—
  Galley stores:
    Dry—
    Chilled—
    Frozen—
  Laboratories:
    Physical—
    Chemical—
    Biological—
    Other—

ACCOMMODATIONS—

ELECTRONICS:
  Communications—Northern Radio, 50 watts
  Underwater sounders—
    Echo sounding:
      Bendix depth recorder, Model Dr 7A,
      100 fm, 32v, DC, SN 039
      Ross depth recorder, Model 100
      100 fm, 12 v, DC, SN 2080
  Echo ranging—
  Radar—
  Radio direction finders—
  Position indicators—
  Other—

LIFESAVING EQUIPMENT:
  Boats—
    Inflatable rafts—Elliott 6-man liferaft
  Other—

DECK MACHINERY:
  Winches—1
  Anchor windlass—1
  Booms—1
  Cranes—
  Reels—
  Other—

SPECIAL FEATURES:
  Bow positioner—
  Freshwater makers—
  Cathodic protection—
  Underwater viewing ports or lighting—
  Other—

OPERATING LABORATORY, BASE, REGION, OR AREA:

HISTORY:
Design:
Name of designer—
Year designed—

Construction:
Name of builder—Grandy Boat Co., Seattle, Wash.
Year completed—1949

Conversion:
Year converted (if applicable)—
Name of facility doing conversion—

Seakeeping Characteristics:
Performance:
Pitch period—
Roll period—
Comfort:
Decks wet—
Hull pound—
Motion easy—

Special Remarks:—

JOHN N. COBB

General Description:
Capabilities—Exploratory fishing and gear research
Hull style—West coast purse-seiner type
Number of masts—1
Construction material—Wood
Method of fabrication—Sawed frames
Screw type:
Number of blades—3
Fixed pitch or CP—Fixed pitch
Manufacture—Contractor furnished

Structural Parameters:
Length:
Length, overall (LOA)—93'51/4"
Length, waterline (LWL)—85'0"

Length, between perpendiculars (LBP)—82'6"

Breadth:
Beam, molded—24'6"
Beam, extreme (including permanent projections)—25'63/4"

Draft:
Maximum, loaded—12' (approx)
Mean—8'6"
Depth (main deck to keel, amidships)—12'7"
Minimum freeboard (loaded amidships)—32"

Tonnage:
Displacement (full load)—250 tons
Gross—185 tons
Net—78 tons

Complement:
Officers:
Deck—2
Engineer—2
Crew:
Fishermen—2
Seamen—
Oilers—
Wipers—
Cooks—1
Messmen—
Radiomen—
Others—
Scientific staff—1 to 4
Other—Space for 2 extra

Operating Parameters:
Range (lineal miles of steaming)—4,800
Calculated endurance (days)—21 days (fuel consumption: 20 gal/hr + 20 gal/day)

Performance (avg = days worked/year)—210

Speed:
Cruising—9 knots
Flank—101/2 knots
Minimum possible (under steerageway)—5 knots

Power:
Main engine rating—Diesel, 8 cylinder, 2 cycle
Maximum BHP—500 BHP at 540 rpm
Continuous BHP—345 BHP at 375 rpm
Manufacturer—Fairbanks Morse
Auxiliaries (number)—2 diesel, 3 cylinder, 4 cycle
Continuous BHP (each)—45 BHP at

NORTHWEST REGION

33
1,200 rpm

Power supplied (each, max kw)—30 kw
Manufacturer—GMC
Boiler (capacity and manufacturer)—85 gal - American Arcoline

 Capacities:
 Liquid (gal):
 Fresh water—6,000 gal
 Fuel—11,200 gal
 Lube oil—150 gal
 Ballast—None
 Other—None
 Space (ft³):
 Hold—3,400 ft³ (incl. two 0° F freezers of 160 ft³ each)
 Galley stores:
 Dry—80 ft³ (approx)
 Chilled—20 ft³, 34° F locker
 Frozen—20 ft³, 10° F locker + one or both freezers in hold
 Laboratories: Laboratory space in corner of hold, approximately 850 ft³
 Physical—
 Chemical—
 Biological—
 Other—
 Accommodations—Not available

 ELECTRONICS:
 Communications—
 Northern transmitter, Model A, 150 watt, type N388
 Northern transmitter, Model C, 250 watt, type N507-E
 National receiver NC, Model HRO-50T and NC-2-40D

 Underwater sounders:
 Echo sounding—
 2 Bendix D.R. 6A, SN001, 400-fm range
 Simrad Special 510-5, 1-100-fm range
 Echo ranging—Simrad, Model 510-5, 1-650-yard range
 Radar—1 Sperry-Mark O, ranges 1, 2, 6, 15, or 30 miles
 Radio direction finders—Loran: Sperry-Mark II, Model 1
 Other—Net telemetry system, warp load indicator, Triton fish counting echo sounder

 Lifesaving Equipment:
 Boats—14' B+B utility outboard (10 hp)
 16' Western Fairliner inboard (115 hp gas)

 Inflatable rafts—15-man Navships, 15-man U.S. Rubber
 Other—Coast Guard approved life preservers and 3 life rings with lights

 DECK MACHINERY:
 Winches—Trawl, West Coast type, hydraulic, 2 drum, capacity 1,000 fm of ½" cable drum
 Anchor windlass—Dual (chain and cable), hydraulic, cap.: chain side 105 fm 3/4" chain, cable side 125 fm 7/8" cable
 Booms—Electric 1½ ton and hydraulic 3 ton boom winches
 Cranes—None
 Reels—Net reel for trawls
 Other—Electric BT winch, Cap. 600 fm 3/32" wire, hydraulic oceanographic winch, cap. 2,000 m 3/16" wire

 SPECIAL FEATURES:
 Bow positioner—None
 Fresh water makers—None
 Cathodic protection—Zines
 Underwater viewing ports or lighting—None
 Other—

 OPERATING LABORATORY, BASE, REGION, OR AREA:—Exploratory Fishing and Gear Research Base, Seattle, Wash.

 HISTORY:
 Design:
 Name of designer—W. C. Nickum and Sons, Seattle, Wash.
 Year designed—1949
 Construction:
 Name of builder—Western Boat Building Co., Tacoma, Wash.
 Year completed—1950
 Conversion:
 Year converted (if applicable)—
 Name of facility doing conversion—

 SEAKEEPING CHARACTERISTICS:
 Performance:
 Pitch period—Not available
 Roll period—6 sec
 Comfort:
 Decks wet—Entirely
 Hull pound—Yes
 Motion easy—No, fast

 SPECIAL REMARKS:—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.

Approximately 270 miles off the coast of Washington there is a sea mount that was discovered by this vessel in August 1950. This sub-surface peak now bears the name Cobb Seamount on U.S. Coast and Geodetic Survey navigation charts.

GEORGE B. KELEZ

General Description:
Capabilities—
Hull style—Converted Navy AKL (Army FS)
Number of masts—2
Construction material—Steel
Method of fabrication—Welded
Screw type:
Number of blades—4 bronze
Fixed pitch or CP—Fixed, diameter 60", pitch 6.531'
Manufacture—Sturgeon Bay Shipbuilding & Drydock Co.

Structural Parameters:
Length:
Length, overall (LOA)—176’6"
Length, waterline (LWL)—
Length, between perpendiculars (LBP)—164’11"
Breadth:
Beam, molded—32’0"

Beam, extreme (including permanent projections)—32’

Draft:
Maximum, loaded—8’2” forward, 11’8” aft
Mean—9’11”

Depth (main deck to keel, amidships)—14’3” molded at
Minimum freeboard (loaded amidships)—4’37/8”

Tonnage:
Displacement (full load)—936
Gross—550
Net—262

Complement:
Officers:
Deck—3
Engineer—3

Crew:
Fishermen—5
Seamen—
Oilers—
Wipers—
Cooks—1
Messmen—1
Radio men—
Others—1 (electrician)
Scientific staff—6

Other—

Operating Parameters:
Range (lineal miles of steaming)—7,300
Calculated endurance (days)—30
Performance (avg # days worked/year)—270

Speed:
Cruising—10.5 knots
Flank—13.25 knots
Minimum possible (under steerageway)—

Power:
Main engine rating:
Maximum BHP—900
Continuous BHP—900
Manufacturer—GM 6-278A

Auxiliaries (number): 2 (1 GMC 4-71, 50 kw, AC - new, being installed)
Continuous BHP (each)—147

Power supplied (each, max kw)—100 kw
Manufacturer—GM 3-268A

Boiler (capacity and manufacturer)—25 lb - unknown

Capacities:
Liquid (gal):
Fresh water—24,220
Fuel—28,333
Lube oil—1,000
Ballast—4,875
Other—

Space (ft²):
Hold—1 dry, 4,000 ft²; 1 reefer, 6,000 ft²

Galley stores:
Dry—Relocating and remodeling
Chilled—1,275 ft²
Frozen—1,019 ft²

Laboratories:
Physical—
Chemical—
Biological—
Other—

Accommodations—

Electronics:
Communications—
1 NW3 radiotelephone
1 Northern Model D
1 Apelco AE-50M radiotelephone

Underwater sounders:
Echo sounding—Edo/UGN Model 185
Echo ranging—Kelvin Hughes Ceres Fishmaster MS29
Radar—Decca Model 326 - Bendix MR4
Radio direction finders—2 Raytheon Model 358 ADF
Position indicators—
2 Sperry direct-reading loran
1 D-X Navigator Loran C

Other—

Life-saving equipment:
Boats—
Inflatable rafts—2 Switlik, 15-person each
Other—1 inboard powered "bartender" utility boat (24')

Other—

Deck machinery:
Winches—Bissett-Berman (Howard Turner Mfg.), Pacific Fisherman, Inc., Spen-
cer Aircraft (Seattle)
Anchor windlass—Superior Iron Works, Superior, Wis.

Booms—None

Cranes—1 hydraulic, 5-ton (est.), custom fabricated

Reels—
Other—Hydraulic net block

Special Features:
Bow positioner—None
Freshwater makers—None
Cathodic protection—None
Underwater viewing ports or lighting—None

Operating laboratory, base, region, or area:—Biological Laboratory, Seattle, Wash.

History:
Design:
Name of designer—Sturgeon Bay Shipbuilding & Drydock Co. with Nickum & Sons, Seattle, Consultants
Year designed—1944
Construction:
Name of builder—
Year completed—1944
Conversion:
Year converted (if applicable)—
Name of facility doing conversion—

Seakeeping characteristics:
Performance:
Pitch period—No records available
Roll period—No records available

Comfort:
Decks wet—Minimum
Hull pound—Minimum
Motion easy—Excellent

Special remarks:—Excellent seagoing characteristics

Miller Freeman

General description:
Capabilities—Fishing (incl. midwater trawling, bottom trawling, plankton trawling, gill net fishing, longline for salm-
Hull style—Stern trawler
Number of masts—2 signal masts
Construction material—Steel
Method of fabrication—Welded
Screw type: Bronze
Number of blades: 3
Fixed pitch or CP—Variable pitch
Manufacture—Bird Johnson Co., Walpole, Mass. (KA-ME-WA)

STRUCTURAL PARAMETERS:
Length:
Length, overall (LOA)—214'10"
Length, waterline (LWL)—200'
Length, between perpendiculars (LBP)—192'
Breadth:
Beam, molded—42'
Beam, extreme (including permanent projections)—42'7"
Draft:
Maximum, loaded—18'3"
Mean—16'2"
Depth (main deck to keel, amidships)—25'11\frac{3}{4}""\nMinimum freeboard (loaded amidships)—8'9\frac{3}{4}""

TONNAGE:
Displacement (full load)—1,782 tons
Gross—1,515.78 tons
Net—680 tons

COMPLEMENT:
Officers:
Deck—4
Engineer—4
Crew:
Fishermen—7
Seamen—
Oilers—1
Wipers—2
Cooks—1 steward, 1 cook
Messmen—2
Radiomen—1
Others—1 (electrician)
Scientific staff—9

OPERATING PARAMETERS:
Range (lineal miles of steaming)—16,000
Calculated endurance (days)—46
Performance (avg = days worked/year)—240 (avg = days scheduled/year)

Speed:
Cruising—14.5 knots
Flink—16.0 knots
Minimum possible (under steerageway)—1.5 knots

Power:
Main engine rating:
Maximum BHP—2,200
Continuous BHP—2,150 (shaft hp)
Manufacturer—General Motors Electromotive Division
Auxiliaries (number): 3
Continuous BHP (each)—2 - 510 hp, 1 - 240 hp
Power supplied (each, max kw)—2 - 350 kw, 1 - 125 kw
Manufacturer—Caterpillar
Boiler (capacity and manufacturer)—100 hp, 3,156 lb/hr, Seattle Boiler Works, Inc.

Capacities:
Liquid (gal):
Fresh water—7,350
Fuel—150,155
Lube oil—5,557
Ballast—47,651
Other—None

Space (ft\(^2\)):
Hold—
Galley stores:
Dry—1,830
Chilled—1,050
Frozen—1,380
Laboratories:
Physical—925
Chemical—1,080
Biological—3,300, ocean biology 1,720
Other—
Accommodations—Officers: 6 1-man and 2 2-man rooms; crew: 8 2-man rooms; scientists: 1 1-man (chief) and 4 2-man rooms

ELECTRONICS:
Communications—
Northwest Instrument Co. radio transmitter-receiver NW3B with high seas adaption
Knar CH25 single-sideband trans-receiver radio
Apelco emergency trans-receiver radio

Underwater sounders:
Echo sounding—Edo fathometer, 6000 fm, Model 181
Echo ranging—Ross fathometer, 200 fm, Model 200A
Radar—Decca Model RM 429, range 48 miles
Radio direction finders—Apeleo Automatic, Model D.F.R. 200
Position indicators—2 AC Loran ITT World Communications, Inc., Mackay Marine Division

Other—

Lifesaving Equipment:
Boats—35-man lifeboat
Inflatable rafts—4 inflatable 25-man life rafts
Other—8 life rings

Deck Machinery:
Winches—2 trawl and accessory winches (Northern Line), 1 plankton trawl winch (Marco), 1 STD winch, 1 BT winch
Anchor windlass—1 - 2 capstans on after deck
Booms—
Cranes—1 crane on forecastle head port side
Reels—None
Other—None

Special Features:
Bow positioner—(Future installation)
Freshwater makers—2
Cathodic protection—None
Underwater viewing ports or lighting—None
Other—None

Operating Laboratory, Base, Region, or Area:—Biological Laboratory, Seattle, Wash.

History:
Design:
Name of designer—Philip F. Spaulding, Naval Architect
Year designed—1965

Construction:
Name of builder—American Ship Building Co., Lorain, Ohio
Year completed—1967

Conversion:
Year converted (if applicable)—
Name of facility doing conversion—

Seakeeping Characteristics:
Performance:
Pitch period—7 to 9 sec
Roll period—Not counted

Comfort:
Decks wet—Fairly dry
Hull pound—Some when excess speed is used

Motion easy—A little too stiff

Special Remarks:—A Triton fish counting echo sounder—100 kc, 1 kw peak power, optimum depth 15-180 fm, 10° beam width, pulse lengths of 120, 600, 1000 microseconds, with recorder, electronic fish echo counter, and digital counter—will be installed when funds become available.

A second radar with automatic plot will be procured and installed when funds become available. (Name, type, manufacturer not known.)

An articulated crane with 15' horizontal reach, with a lift capability of 2 tons, is currently installed on forecastle port side; a second and similar crane is contemplated for future installation. Since no lift capability is currently existent on the after deck, future planning contemplates the procurement of a crawler crane with a 5-ton lift capability when funds become available.

The vessel deactivated July 1, 1970.
Number of masts—2 - tripod type
Construction material—Steel
Method of fabrication—Welded
Screw type:
  Number of blades—3 bronze, dia. 82", 1 right hand, 1 left hand
Fixed pitch or CP—65"
Manufacturer—Ferguson Propeller & Reconditioning Co. (also 2 spares)

Structural Parameters:
Length:
  Length, overall (LOA)—222'93/4"
  Length, waterline (LWL)—210'
  Length, between perpendiculars (LBP)—
Breadth:
  Beam, molded—38'8"
  Beam, extreme (including permanent projections)—
Draft:
  Maximum, loaded—15'7" forward, 16'1" aft
  Mean—15'10"
Depth (main deck to keel, amidships)—19'0"
Minimum freeboard (loaded amidships)—3'23/8" (summer draft)

Tonnage:
Displacement (full load)—1,640
Gross—1,187
Net—924

Complement:
Officers:
  Deck—3
  Engineer—3
Crew:
  Fishermen—
  Seamen—6
  Oilers—1
  Wipers—2
  Cooks—1
  Messmen—2
  Radiomen—1
  Others—
  Scientific staff—
  Other—

Operating Parameters:
Range (lineal miles of steaming)—8,400
Calculated endurance (days)—35
Performance (avg = days worked/year)—

Speed:
  Cruising—11 knots
  Flank—12 +
  Minimum possible (under steerageway)—3-4

Power:
Main engine rating: Twin diesel, Superior Model 40-M-SX8
Maximum BHP—1,400
Continuous BHP—700 hp at 900 rpm each \( \times 2 = 1,400 \)
Manufacturer—National Supply Co. (White-Superior)
Auxiliaries (number): 3
Continuous BHP (each)—240
Power supplied (each, max kw)—120 kw
Manufacturer—GM, Westinghouse
Boiler (capacity and manufacturer)—
Heating only

Capacities:
Liquid (gal):
  Fresh water—25,000
  Fuel—54,000
  Lube oil—650
  Ballast—180 tons
Other—
Space (ft³): Total: 40,920 ft³, hatches
  15' x 18'
  Hold—#1 - 11,220 ft³, #2 - 15,700 ft³,
  #3 - 14,000 ft³
  Galley stores: Special cargo hold, 3,382 ft³
  Dry—940 ft³
  Chilled—250 ft³
  Frozen—400 ft³
Laboratories: None
Physical—
Chemical—
Biological—
Other—
Accommodations—

Electronics:
Communications—
  Radio Marine Console 5 U
  Northern radiotelephone
Underwater sounders:
  Echo sounding—Simrad, 600-fm range
  Echo ranging—

39
DAVID STARR JORDAN

General Description:
Capabilities—Fishing, oceanographic, biological research, acoustical surveys, hydrographic, meteorological, bottom sampling, and coring
Hull style—Specifically designed for type of oceanic work needed
Number of masts—2
Construction material—Steel
Method of fabrication—Welded
Screw type:
Number of blades—3
Fixed pitch or CP—Controllable pitch
Manufacture—Ka Me Wa (Bird-Johnson Co.)

Structural Parameters:
Length:
Length, overall (LOA)—171'
Length, waterline (LWL)—158'
Length, between perpendiculars (LBP)—158'
Breadth:
Beam, molded—36'8"
Beam, extreme (including permanent projections)—36'8"
Draft:
Maximum, loaded—11'9"
Mean—11'4"
Depth (main deck to keel, amidships)—17'3"
Minimum freeboard (loaded amidships)—5'9"

Tonnage:
Displacement (full load)—890
Gross—873
Net—714
Complement:
Officers:
- Deck—3
- Engineer—3
Crew:
- Fishermen—3
- Seamen—3
- Oilers—3
- Wipers—1
- Cooks—2
- Messmen—1
- Radiomen—1
- Others—1 (boatswain)
Scientific staff—16
Other—
Operating Parameters:
- Range (linear miles of steaming)—9,000
- Calculated endurance (days)—33
- Performance (avg = days worked/year)—230
Speed:
- Cruising—11
- Flank—12
- Minimum (possible under steerageway)—1
Power—2 White Superior diesel engines
- Maximum BHP—1,010
- Continuous BHP—918
Manufacturer—White Diesel Engine Div., General Motors Corp.
Boiler (capacity and manufacturer)—Continuous circulating water circuit, Clayton Mfg. Co.
Capacities:
- Liquid (gal): 80,102
- Fresh water—15,380 (6,890 in antiroll tank for emergency)
- Fuel—49,864
- Lube oil—786
- Ballast—9,320
- Other—4,136 biological specimen tanks, 616 miscellaneous tanks
Space (ft^2):
- Hold—1,300
- Galley stores:
  - Dry—2,200
  - Chilled—874
  - Frozen—774
- Laboratories:
  - Physical—210 ft^2
  - Chemical—370 ft^2
Biological—531 ft^2
Other—5,150 ft^2 scientific storeroom, 271 ft^2 photo darkroom and sonar rooms
Accommodations—19 rooms, 1,710 ft^2
Electronics:
Communications—
- Mackay MRU-19B/20BP
- Raytheon Model Ray-1130
- 2 - Hallicrafter SX62A
- Apelco AE-125 SB, radio teletype Model 28
- Mackay 401.A (Emergency)
- Johnson CB radios 5 watt and 1 watt
Underwater sounders—
- Echo sounding—Simrad 580-10, 30 kHz & 11 kHz, 0-deepest trench
- Simrad EH3a, 0-600
- Alpine PESR, 0-deepest ocean w/ Giffst EsRTR transceivers
- Raytheon Model DE721, 0-200 fm, 40 KC
- Edo 14 KC, 0-deepest
- Echo ranging—Simrad 580-10, 30 kHz, 0-1300 m, 11 kHz, 0-2500 m
Radar—Decca 404 and Decca 838
Radio direction finders—None
Other—Electro magnetic log, Simplex electronic monitoring system & time system, Executone intercom
Lifesaving Equipment:
- Boats—16' and 12' Boston Whalers w/ 90 and 35 hp motors
- Inflatable rafts—2 - 15-man Elliot and 2 - 20-man Elliot
- 1 - 15-man Switlik and 1 - 20-man Switlik
Other—None
Deck Machinery:
- Winches—2 hydraulic hydrographic winches to 25,000 ft, triple drum combination trawl seine winch to 1,000 fm. Marine Construction & Design Co. E6S BT winch (Navy)
- Anchor windlass—Marine Construction & Design Co. hydraulic
- Booms—None
- Cranes—Bucyrus Erie articulated crane to
12 tons, Tico Stores loading to 1½ tons hydraulically operated
Reels—hydraulic net winding
Other—Puretic power block

Special Features:
Bow positioner—Schottel bow thruster
Freshwater makers—2 aqua-fresh water makers good to 1,500 gal/day, Maxim HJ-50 and HJ-10
Cathodic protection—Lockheed impressed current cathodic protection
Underwater viewing ports or lighting—Underwater viewing ports in bulbous bow chamber and amidships port, mercury vapor underwater lights aft under hydrographic winches
Other—Stern ramp and stern gantry

Operating Laboratory, Base, Region, or Area:—Fishery-Oceanography Center, La Jolla, Calif.

History:
Design:
Year designed—1963
Construction:
Year converted (if applicable)—
Name of facility doing conversion—

Seakeeping Characteristics:
Performance:
Pitch period—9 sec
Roll period—11 sec
Comfort:
Decks wet—Decks dry
Hull pound—Hull pounds when heading into 6’ seas
Motion easy—Motion is sharp

Special Remarks:—The vessel has the following power for scientific use: 450 v 3 ph 60 cycle AC, 230 v single ph 60 cycle AC, 120 v single ph 60 cycle AC.

The vessel has the following features for use in temperate and tropical waters: revolving Nansen bottle rack located adjacent to the hydrographic bucket, internal monorail system for moving laboratory equipment, monitored aquaria sea water system, constant temperature room, tie down pegs throughout the ship.

General Description:
Capabilities—Trawling, seining, gillnetting, handlining, trolling, longlining, fish transportation (live), oceanography, biological research
Hull style—Raked stem and elliptical stern
Number of masts—1
Construction material—Steel
Method of fabrication—All welded, new construction
Screw type:
Number of blades—3
Fixed pitch or CP—Single fixed
Manufacture—Columbian

Structural Parameters:
Length:
Length, overall (LOA)—122’11”
Length, waterline (LWL)—110’3¾”
Length, between perpendiculars (LBP)—102’8”

Breadth:
Beam, molded—21’
Beam, extreme (including permanent projections)—21½’

Draft:
Maximum, loaded—10’8½”
Mean—8’8½”
Depth (main deck to keel, amidships)—10’6”
Minimum freeboard (loaded amidships)—1.24’

Tonnage:
Displacement (full load)—383.4
Gross—205
Net—97
Complement:
Officers:
Deck—2
Engineer—3
Crew:
Fishermen—6
Seamen—
Oilers—
Wipers—
Cooks—1
Messmen—
Radiomen—
Others—
Scientific staff—4
Other—

Operating Parameters:
Range (lineal miles of steaming)—8,500
normal - 10,000 extreme
Calculated endurance (days)—45-80 extreme
Performance (avg = days worked/year)—220

Speed:
Cruising—9.0 knots
Flank—11.0 knots
Minimum possible (under steerageway)—3.5 knots

Power:
Caterpillar D397, turbocharged, 500 hp

Main engine rating: Reduction: 3.68:1, 1225 rpm
Maximum BHP—650 hp @ 1300 rpm
Continuous BHP—500 hp @ 1225 rpm
Manufacturer—Caterpillar Tractor Company

Auxiliaries (number): 2 GM 4-71, RC56 generators, 110 hp, 1200 rpm, 40 kw
Continuous BHP (each)—95 hp @ 1800 rpm
Power supplied (each, max kw)—115 v, DC, 40 kw
Manufacturer—General Motors Corporation

Boiler (capacity and manufacturer)—None

Capacities:
Liquid (gal)—57,000
Fresh water—15,000
Fuel—26,000
Lube oil—500
Ballast—6,000
Other—Portable stern bait tank 3,500
Space (ft³)—Midship bait tanks p/s 3,000

Hold—600 ft³
Galley stores:
Dry—250 ft³
Chilled—264 ft³
Frozen—264 ft³

Laboratories:
Physical—None
Chemical—None
Biological—100 ft³
Other—Open deck 525 ft³

Accommodations—

Electronics:

Communications—
RCA TCP-2 Navy 75 W. Serial 458 (voice)
Northern Model C Type N
Collins ART-13
National & Collins receivers

Underwater sounders:
Echo sounding—
Bendix Model DR-6A 400F/0-400 fm (recording)
Edo AN/UQN-1B 0-600F/0-6000 fm (recording)

Echo ranging—
Radar—Raytheon Mariner's Pathfinder Mod. 1500B Serial 2048 0-32 miles
Radio direction finders—Bendix ADF-100
Position indicators—Sperry Mark-2 Mod. 2A Loran A

Other—
Hose-McCann Telephone Co. Type A Model W., intercom system
Sperry Mark 22 Model 1 gyrocompass
Sperry Mod. Controller Serial 223 steering control.
Bendix Aerovane Model 510083-1 Serial 218 (nonrecording) wind speed and direction indicator

Lifesaving Equipment:
Boats—6-man utility
Inflatable rafts—4 Switlik 8-man rigid container ocean service
Other—As per USCG regulations for oceanographic vessels

Deck Machinery:
Winches—Rowe Model 9-HH hydraulic, Navy Hoist Model E6S modified electric BT winch, Northern 2-drum electric plankton winch, Izui Model 4 longline hauler, Puretic power block, and
TOWNSEND CROMWELL

GENERAL DESCRIPTION:
Capabilities—Trawling, trolling, longlining, gillnetting, oceanography, biological research
Hull style—Curved stem and elliptical stern
Number of masts—2
Construction material—Steel
Method of fabrication—All welded, new construction
Screw type:
Number of blades—3
Fixed pitch or CP—Twin, variable pitch, "Liaen" type G-40
Manufacture—A. M. Liaen, Aalesund, Norway

STRUCTURAL PARAMETERS:
Length:
Length, overall (LOA)—158'6"
Length, waterline (LWL)—147'
Length, between perpendiculars (LBP)—142'8"

Breadth:
Beam, molded—33'
Beam, extreme (including permanent projections)—33'1½"

Draft:
Maximum, loaded—11'6"
Mean—9'6"
Depth (main deck to keel, amidships)—14'6"
Minimum freeboard (loaded amidships)—5'3"

TONNAGE:
Displacement (full load)—652.5 (LWL, salt water)

SEAKEEPING CHARACTERISTICS:
Performance:
Pitch period—None available
Roll period—
6.25 sec (light condition)
8.0 sec (loaded condition)

Comfort:
Decks wet—No
Hull pound—No
Motion easy—Yes

SPECIAL REMARKS:—Good seaworthiness both drifting and underway. Vessel has excellent initial and final stability. No special instructions for her loading and handling. Vessel is U.S. Coast Guard inspected.
Gross—564.85
Net—384.0

Complement:
Officers:
- Deck—3
- Engineer—1
Crew:
- Fishermen—5
- Seamen—5
- Oilers—5
- Wipers—5
- Cooks—1
- Messmen—1
- Radiomen—1
- Others—1
Scientific staff—7
Other—3 additional accommodations

Operating Parameters:
Range (linear miles of steaming) — 12,000
Calculated endurance (days) — 60 (80 days extreme)
Performance (avg = days worked year) — 220

Speed:
- Cruising—12.0 knots
- Flank—13.5 knots
Minimum possible (under steerageway) — 1.0 knots

Power: Superior Model 10S-2X-6 twin turbocharged diesels

Main engine rating:
- Maximum BHP—550 hp @ 820 rpm × 2 = 1100
- Continuous BHP—400 hp @ 714 rpm × 2 = 800
Manufacturer—White Superior Division, White Motor Corp.

Auxiliaries (number): 3 (4-71 GM Model #4061-A; Generator “Delco” Model Y-1-4627, 60 kw, 75 KVH
- Continuous BHP (each)—115 hp @ 1800 rpm
- Power supplied (each, max kw)—440 v., 60 cycle, 3 phase, AC, 60 kw
Manufacturer—General Motors Corporation

Boiler (capacity and manufacturer)—None

Capacities:
- Liquid (gal): 74,209
- Fresh water—8,900
- Fuel—13,212
- Lube oil—500
- Ballast—7,812
- Other—13,785 - flume stabilizer tank

Space (ft²):
- Hold—1,650 ft²
- Galley stores:
  - Dry—880 ft²
  - Chilled—945 ft²
  - Frozen—1,275 ft²
- Laboratories:
  - Physical—180 ft² (hydro lab)
  - Chemical—127.5 ft²
  - Biological—95 ft²
- Other—96 ft² (sick room), 100 ft² (electronic room)
- Accommodations—80 ft² (sick bay - 2 bunks)

Electronics:

Communications—
Northern Marine radiotelephone, transmitter N-529-E, receiver N-620-VEQ
Northwest Marine radiotelephones, NW-3-HST & NW-3-HST CW (companion unit)
National receivers, NC-190 & HRO-50T1
Eldico single-sideband transceiver S-100

Underwater sounders—
Echo sounding—
Furuno Model FNZ2500, 2-2500 fm
Edo Model 185, 0-600 FT, 0-6000 fm
Simrad Model 513-2, 0-260 fm, 0-650 fm

Echo ranging—
CTFM Sonar Model 505, range 1600 m
Straza Industries

Radar—Sperry Mark 3 Model 1, 40-mile range

Radio direction finders—Bendix Model ADF-100

Position indicators—Sperry Mark 2 Model 1 Loran A

Other—Marine Magnetic Log, thermograph “Foxboro” Model 49; anemometer “Bendix Friez” Type B; Sperry Mark 14 gyrocompass; Bissett-Berman Model 6600-T salinograph/thermograph; STD Model 9006

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Lifesaving Equipment:

Boats—10-man Whelan life and utility
Inflatable rafts—2 Elliot 15-man Mark 3A ocean service
Other—As per USCG regulations

Deck Machinery:

Winches—New England WJ80S Model X-1077 trawl winch; Markey DYSH-3 electric; Markey DYSH-3 hydro; USN BT E6/S (starboard); USN BT E6/S (port); Marco Model W-0800 topping lift; Izui Type 6 longline; Type NHB-224 electronic steering winch
Anchor windlass—Markey type WF-WD-18
Booms—None
Cranes—None
Reels—None
Other—None

Special Features:

Bow positioner—Inui bulb 7'x20'
Freshwater makers—Evaporator system utilizes heat from propulsion units to distill fresh water, 700-1000 gal/day
Cathodic protection—Piping
Underwater viewing ports or lighting—5-10" diameter ports on Inui bulb
Other—McMullen flume tank stabilization system

Operating Laboratory, Base, Region, or Area:—Hawaii Area Fishery Research Center, Honolulu, Hawaii.

History:

Design:
Name of designer—W. C. Nickum & Sons, Seattle, Wash.
Year designed—1963
Construction:
Name of builder—J. Ray McDermott Co., Amelia, La.
Year completed—1963
Conversion:
Year converted (if applicable)—
Name of facility doing conversion—N/A

Seakeeping Characteristics:

Performance:
Pitch period—None available
Roll period—7.16 sec
Comfort:
Decks wet—No
Hull pound—Slightly in short swell periods and in sea state number 5 plus
Motion easy—Yes

Special Remarks:—The vessel, together with its machinery and equipment, was built to the classification +A1 and +AMS and under the special survey of the American Bureau of Shipping. To date the vessel remains in class. The vessel was also built to the inspection and to the requirements of the U.S. Coast Guard for oceanographic service.
349. Use of abstracts and summaries as communication devices in technical articles. By F. Bruce Sanford. February 1971, iii + 11 pp., 1 fig.


