

SHIPS of the NOAA FLEET



U.S. DEPARTMENT of COMMERCE
NATIONAL OCEANIC and ATMOSPHERIC ADMINISTRATION

NATIONAL OCEAN SURVEY
OFFICE OF FLEET OPERATIONS
ROCKVILLE, MARYLAND 20852

VM
453
.SS
1979

F
453
N32
1979

SHIPS OF THE NOAA FLEET

//



July 1979
Rockville, Md.

~~GEORGETOWN
CENTER
DEC 14 1979
N.O.A.A.
U. S. Dept. of Commerce~~

U.S. DEPARTMENT OF COMMERCE

Juanita M. Kreps, Secretary

National Oceanic and Atmospheric Administration

Richard A. Frank, Administrator

National Ocean Survey

Allen L. Powell, Director

LIBRARY
JUN 17 1993
N.O.A.A.
U.S. Dept. of Commerce

78 4288

INTRODUCTION

The ships of the NOAA Fleet are the vessels which serve the needs of the Department of Commerce and the Nation. They are found operating off the Atlantic and Pacific Coasts, in the Gulfs of Mexico and Alaska, and in the Great Lakes. They suffer through the bitter North Atlantic and Bering Sea winters and bask in the warmth of the tropical sun of Hawaii and the Caribbean Islands.

The operational duties assigned to the ships range from service with the National Ocean Survey's (NOS) nautical charting program to the scientific endeavors of the National Marine Fisheries Service or the research activities of the Environmental Research Laboratories. The particular tasks may be as well defined as a tide and current survey in a brackish estuary or may be an extensive international oceanographic study spanning an entire ocean. Thus, the variety of configurations, characteristics, and equipment of the vessels described in this publication reflects the versatility of the ships of the NOAA Fleet.

Centralized management of the NOAA Fleet is the responsibility of the Office of Fleet Operations, an integral part of NOS. Regional management and operational support for the fleet is provided through the Atlantic Marine Center in Norfolk, Va., the Pacific Marine Center in Seattle, Wash., and their several satellite support facilities.

Ships of the NOAA Fleet are identified by color scheme, letter-number designator, and by the display of the NOAA logo on the superstructure. Hull and superstructure are painted white; masts and stacks, buff; and boot top and trim, black. Letter number designators appear on both sides of the bow above the letters "NOAA." The designator is a three-digit number preceded by the identification letter, "R" for research vessels or "S" for survey vessels. The first number of the three-digit identification is the class grouping for NOAA vessels and is determined from a combination of the vessel's gross tonnage and its main propulsion plant's rated horsepower. The remaining digits are the vessel's hull number.

The loose-leaf presentation of NOAA's Fleet of ships will be revised as necessary to maintain an accurate description of each ship in an operational status.

Information on changes or omissions should be addressed to:

U.S. Department of Commerce, NOAA
WSC#1, 6001 Executive Boulevard
Office of Fleet Operations, C7x4
Rockville, MD 20852
(301) 443-8101

SHIPS OF THE NOAA FLEET

<i>Vessel</i>	<i>Class</i>	<i>Length</i>	<i>Designator</i>	<i>Page</i>
OCEANOGRAPHER	I	303 ft	R101.....	1
DISCOVERER	I	303 ft	R102.....	5
RESEARCHER	I	278 ft	R103.....	9
SURVEYOR	I	292 ft	S 132.....	13
FAIRWEATHER	II	231 ft	S 220.....	17
RAINIER	II	231 ft	S 221.....	21
MT. MITCHELL	II	231 ft	S 222.....	25
MILLER FREEMAN	II	215 ft	R223.....	29
PEIRCE	III	163 ft	S 328.....	33
WHITING	III	163 ft	S 329.....	36
McARTHUR	III	175 ft	S 330.....	39
DAVIDSON	III	175 ft	S 331.....	42
OREGON II	III	170 ft	R332.....	45
ALBATROSS IV	III	187 ft	R342.....	48
GEORGE B. KELEZ	IV	177 ft	R441.....	51
TOWNSEND CROMWELL	IV	164 ft	R443.....	54
DAVID STARR JORDAN	IV	171 ft	R444.....	57
DELAWARE II	IV	156 ft	R445.....	60
CHAPMAN	IV	127 ft	R446.....	63
FERREL	IV	133 ft	S 492.....	66
OREGON	V	100 ft	R551.....	69
JOHN N. COBB	V	94 ft	R552.....	72
RUDE	V	90 ft	S 590.....	75
HECK	V	90 ft	S 591.....	78
MURRE II	VI	86 ft	S 663.....	81
*VIRGINIA KEY	VI	65 ft	R680.....	84

*Operated by NOAA Environmental Research Laboratories (AOML).



OCEANOGRAPHER R101

LAUNCHED: April 1964
DELIVERED: April 1966
COMMISSIONED: July 1966

DESIGNER: Maritime Administration
BUILDER: Aerojet-General Shipyards,
Jacksonville, Fla.
SISTER SHIP(S): DISCOVERER

CALL LETTERS: WTEP

HOME PORT: Seattle, Wash.

Complement:

COMMISSIONED OFFICERS: 14
LICENSED OFFICERS: 6
CREW: 57
SCIENTISTS: 20

HULL: Welded steel/ice strengthened
DISPLACEMENT: 4,033 tons
GROSS TONNAGE: 3,701
NET TONNAGE: 1,095

LENGTH (LOA): 303.0 ft (92.4 m)
BREADTH (moulded): 52.0 ft (15.8 m)
DRAFT, MAXIMUM: 19.8 ft (6.0 m)

CRUISING SPEED: 15 kn
RANGE: 12,250 nmi
POWER: 5,000 SHP

FUEL TYPE: #2 diesel
FUEL CAPACITY: 297,000 gal
FUEL CONSUMPTION: 310 gal/h
(normal cruising speed)
ENDURANCE: 34 d
ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The OCEANOGRAPHER conducts worldwide oceanographic research. The ship normally operates in the Pacific Ocean and adjoining seas.

HABITABILITY

Berthing

Single staterooms: 21
Double staterooms: 46
Total bunks aboard: 113

Food-Service Seating Capacity

Captain's cabin: 6
Wardroom: 27
Ships officer's mess: 14
Technicians' mess: 18
Crew's mess: 24

MEDICAL FACILITIES

The ship has a complete sickbay with five beds administered by a trained medical technician.

SCIENTIFIC LABORATORY FACILITIES

Chemistry lab: 138 ft²
Dry oceanographic lab: 1,800 ft²
Wet oceanographic lab: 106 ft²
Meteorological lab: 182 ft²

Gravity lab: 176 ft²
Photographic lab: 194 ft²
CTD lab: 282 ft²

DECK MACHINERY

Winches

Quantity: 2
Type: Oceanographic winch
Manufacturer: Northern Line
Drive: Electrohydraulic
Line Speed: 400 ft/min
Maximum Pull: 1,500 lb
Drum Capacity:
 Upper drum: 10,000 ft of 3-conductor cable
 Lower drum: 15,000 ft of wire rope

Quantity: 1
Type: Deep-sea winch w/traction unit (TU)
Manufacturer: Western Gear
Drive: Electrohydraulic
Line Speed: 133 ft/min-600 ft/min (TU)
Maximum Pull: 6,800 lb-30,000 lb (TU)
Drum Capacity:
 Front drum: 42,000 ft of 1/2-in. wire rope

Quantity: 1
Type: Oceanographic winch
Manufacturer: Morgan
Drive: Electrohydraulic
Line speed: 200 ft/min
Maximum pull: 5,000 lb
Drum capacity:
 20,000 ft of 7/16 in single conductor cable

Cranes and Booms

Quantity: 1
Type: Telescoping boom
Manufacturer: Skagit
Boom length: 40 ft
Lifting capacity: 7,300 lb
 (boom extended) 4,700 lb
Location(s): Forward

Quantity: 1
Type: Fixed length boom
Manufacturer: Lake Shore
Boom length: 35 ft
Lifting capacity: 10,000 lb
 (boom extended)
Location(s): Aft

A-Frames

Quantity: 1
Type: Movable
Clearance over side: 9 ft
Location(s): Stern

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight (each): 4,850 lb
Anchor Chain(s)
Quantity: 2
Size and type: 1-11/16 in stud link chain
Length (each): 135 fm

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
Teletype capability
MF transmitters
Emergency radio auto alarm
Portable emergency transceiver
EPIRB's

Acoustics

Deepwater echo sounder
Shallow-water echo sounders
Narrow beam stabilized transducer system

Navigation

Radar
Gyrocompass
Loran
Satnav
RDF
Omega

Scientific Equipment

CTD system
XBT system
Rosette water sampling system

Data Acquisition and Processing System:

A Shipboard Data System (SDS) is dedicated to the acquisition and processing of oceanographic data. The SDS comprises the Data Recording and Processing Subsystems. In the Data Recording Subsystem, the individual sensor signals are routed to a Sensor Acquisition Module (SAM) near the sensor array. The SAM acquires the multiple data inputs, synchronizes them, formats the data into a PCM-FM train, and records them on an analog magnetic tape recorder. The Processing Subsystem is a PDP 11/20 computer with a 24K memory. The computer is used to verify that accurate and complete data are being recorded and to advise scientific personnel of experiment status and provide information for experiment control.

ENGINEERING

Propulsion Plant

Type: Diesel electric
Main Propulsion Motors
Quantity: 2
Type: D.c. electric
Manufacturer: Westinghouse
Rated power (each): 2,500 hp

Propulsion Generators

Quantity: 4
Type: Diesel
Manufacturer: Westinghouse
Power rating: 1,150 kw

Auxiliary Propulsion

Type: Through hull bow thruster
Manufacturer: Murray and Tregurtha
Drive: Diesel electric
Rated power: 400 hp

Propeller(s)

Quantity: 2
Type: Fixed pitch
Blades: 4
Diameter: 12 ft

Electrical System

Ship's Service Generators

Quantity: 3
Manufacturer: Fairbanks Morse/Westinghouse
Output voltage: 450 a.c.
Power rating: 400 kW

Emergency Generator

Quantity: 1
Manufacturer: Fairbanks Morse/GE
Output voltage: 450 a.c.
Power rating: 100 kW

Electrical Service

440 V a.c. three phase
110 V a.c. single phase

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM

System Capacities

Storage capacity: 26,800 gal
Normal consumption: 6,500 gal/d
Maximum production: 8,000 gal/d

Evaporators

Quantity: 2
Type: Steam-heat generated
Manufacturer: Aqua Chem

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Holding tanks
Holding capacity: 6,000 gal (2 d)

Oily Waste Control

Type of treatment: Oily water separator
Manufacturer: SRS
Holding capacity: 2,000 gal

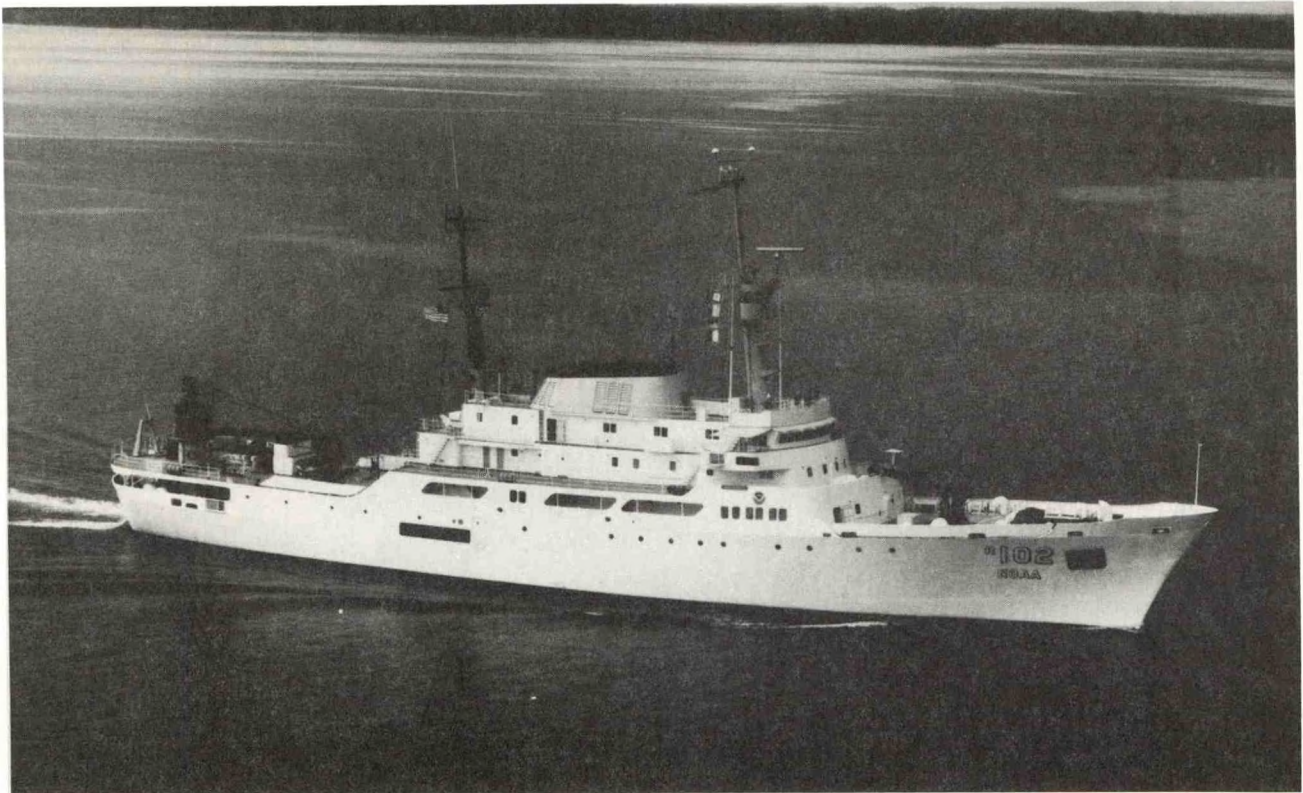
LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Fiberglass motor whaleboat
Quantity: 1
Manufacturer: U.S. Navy
Length: 26 ft
Propulsion: Diesel

SPECIAL FEATURES

Deep-sea anchoring capability
Underwater observation chambers
Diver's decompression chamber



DISCOVERER R102

LAUNCHED: October 1964
DELIVERED: December 1966
COMMISSIONED: April 1967

DESIGNER: Maritime Administration
BUILDER: Aerojet-General Shipyards,
Jacksonville, Fla.
SISTER SHIP(S): OCEANOGRAPHER

CALL LETTERS: WTEA

HOME PORT: Seattle, Wash.

Complement:

COMMISSIONED OFFICERS: 13
LICENSED OFFICERS: 6
CREW: 60
SCIENTISTS: 24

HULL: Welded steel/ice strengthened
DISPLACEMENT: 4,033 tons
GROSS TONNAGE: 3,701
NET TONNAGE: 1,095

LENGTH (LOA): 303 ft (92.4m)
BREADTH (moulded): 52.0 ft (15.8 m)
DRAFT, MAXIMUM: 19.8 ft (6.0 m)

CRUISING SPEED: 15 kn
RANGE: 12,250 nmi
POWER: 5,000 SHP

FUEL TYPE: #2 diesel
FUEL CAPACITY: 297,000 gal
FUEL CONSUMPTION: 310 gal/h
(normal cruising speed)
ENDURANCE: 34 d
ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The DISCOVERER conducts worldwide oceanographic research. The ship normally operates in the Pacific Ocean and Alaska waters.

HABITABILITY

Berthing

Single staterooms: 21
Double staterooms: 46
Total bunks aboard: 113

Food-Service Seating Capacity

Captain's cabin: 6
Wardroom: 27
Ship Officers' mess: 14
Technicians' mess: 16
Crew's mess: 20

MEDICAL FACILITIES

The ship has a complete sickbay with four beds administered by a trained medical technician.

SCIENTIFIC LABORATORY FACILITIES

Dry oceanographic lab: 1,800 ft²
Wet oceanographic lab: 156 ft²
Meteorological lab: 160 ft²

Gravity lab: 176 ft²
Photographic lab: 165 ft²

DECK MACHINERY

Winches

Quantity: 2
Type: Oceanographic winch
Manufacturer: Jered
Drive: Electrohydraulic
Line speed: 98 ft/min
Maximum pull: 2,500 lb
Drum capacity: 30,000 ft of 3/16-in wire rope

Quantity: 1
Type: C/STD winch
Manufacturer: Marco
Drive: Electrohydraulic
Line speed: 330 ft/min
Maximum pull: 3,000 lb
Drum capacity: 6,000 m of 0.292-in conductor cable

Quantity: 1
Type: Dredge and trawl winch
Manufacturer: Marco
Drive: Electrohydraulic
Line speed: 350 ft/min
Maximum pull: 2,000 lb
Drum capacity: 6,000 m of 3/8-in wire rope

Quantity: 1
Type: Deep-sea winch w/traction unit (TU)
Manufacturer: Western Gear
Drive: Electrohydraulic
Line speed: 133 ft/min-600 ft/min (TU)
Maximum pull: 6,800 lb-30,000 lb (TU)
Drum capacity:
Front drum: 42,000 ft of 1/2-in wire rope

Cranes and Booms

Quantity: 1
Type: Telescoping boom
Manufacturer: Skagit
Boom length: 40 ft
Lifting capacity: 7,300 lb
(boom extended) 4,700 lb
Location(s): Forward

Quantity: 1
Type: Fixed length boom
Manufacturer: Lake Shore
Boom length: 35 ft
Lifting capacity: 10,000 lb
(boom extended)
Location(s): Aft

A-Frames

Quantity: 1
Type: Movable
Clearance over side: 9 ft
Location(s): Stern

Quantity: 1
Type: Movable
Clearance over side: 6 ft
Location(s): Portside aft

Quantity: 1
Type: Movable
Clearance over side: 6 ft
Location(s): Port quarter

Ground Tackle

Bower Anchor(s)
 Quantity: 2
 Type: Stockless
 Weight (each): 4,850 lb

Anchor Chain(s)

Quantity: 2
 Size and type: 1-11/16 in stud link chain
 Length(each): 135 fm

ELECTRONICS**Communications**

VHF/FM transceivers
 HF transceivers
 Teletype capability
 MF transmitters
 Emergency radio auto alarm
 Portable emergency transceiver
 EPIRB's

Navigation

Radar
 Gyrocompass
 Loran
 Satnav
 RDF

Acoustics

Deepwater echo sounder
 Shallow-water echo sounders
 Narrow beam stabilized transducer system

Scientific Equipment

CTD system
 XBT system
 Rosette water sampling system

Data Acquisition and Processing System:

A Shipboard Data System (SDS) is dedicated to the acquisition and processing of oceanographic data. The SDS comprises the Data Recording and Processing Subsystems. In the Data Recording Subsystem, the individual sensor signals are routed to a Sensor Acquisition Module (SAM) near the sensor array. The SAM acquires the multiple data inputs, synchronizes them, formats the data into a PCM-FM train, and records them on an analog magnetic tape recorder. The Processing Subsystem is a PDP 11/20 computer with a 24K memory. The computer is used to verify that accurate and complete data are being recorded and to advise scientific personnel of experiment status and provide information for experiment control.

ENGINEERING**Propulsion Plant**

Type: Diesel electric
Main Propulsion Motors
 Quantity: 2
 Type: D.c. electric
 Manufacturer: Westinghouse
 Rated power (each): 2,500 hp

Auxiliary Propulsion

Type: Through hull bow thruster
 Manufacturer: Murray and Tregurtha
 Drive: Diesel electric
 Rated power: 400 hp

Propulsion Generators

Quantity: 4
 Type: Diesel
 Manufacturer: Westinghouse
 Power rating: 1,150 kW

Propeller(s)

Quantity: 2
 Type: Fixed pitch
 Blades: 4
 Diameter: 12 ft

Electrical System

Ship's Service Generators
 Quantity: 3
 Manufacturer: Fairbanks Morse/Westinghouse
 Output voltage: 450 a.c.
 Power rating: 400 kW

Emergency Generator

Quantity: 1
 Manufacturer: Fairbanks Morse/GE
 Output voltage: 450 a.c.
 Power rating: 100 kW

Electrical Service

440 Va.c. three phase
 110 Va.c. single phase

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM

System Capacities

Storage capacity: 26,800 gal
Normal consumption: 5,000 gal/d
Normal production: 6,500 gal/d
Maximum production: 8,000 gal/d

Evaporators

Quantity: 2
Type: Steam-heat generated
Manufacturer: Aqua Chem

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Holding tanks
Holding capacity: 6,000 gal (2 d)

Oily Waste Control

Type of treatment: Oily water separator
Manufacturer: SRS
Holding capacity: 2,000 gal

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

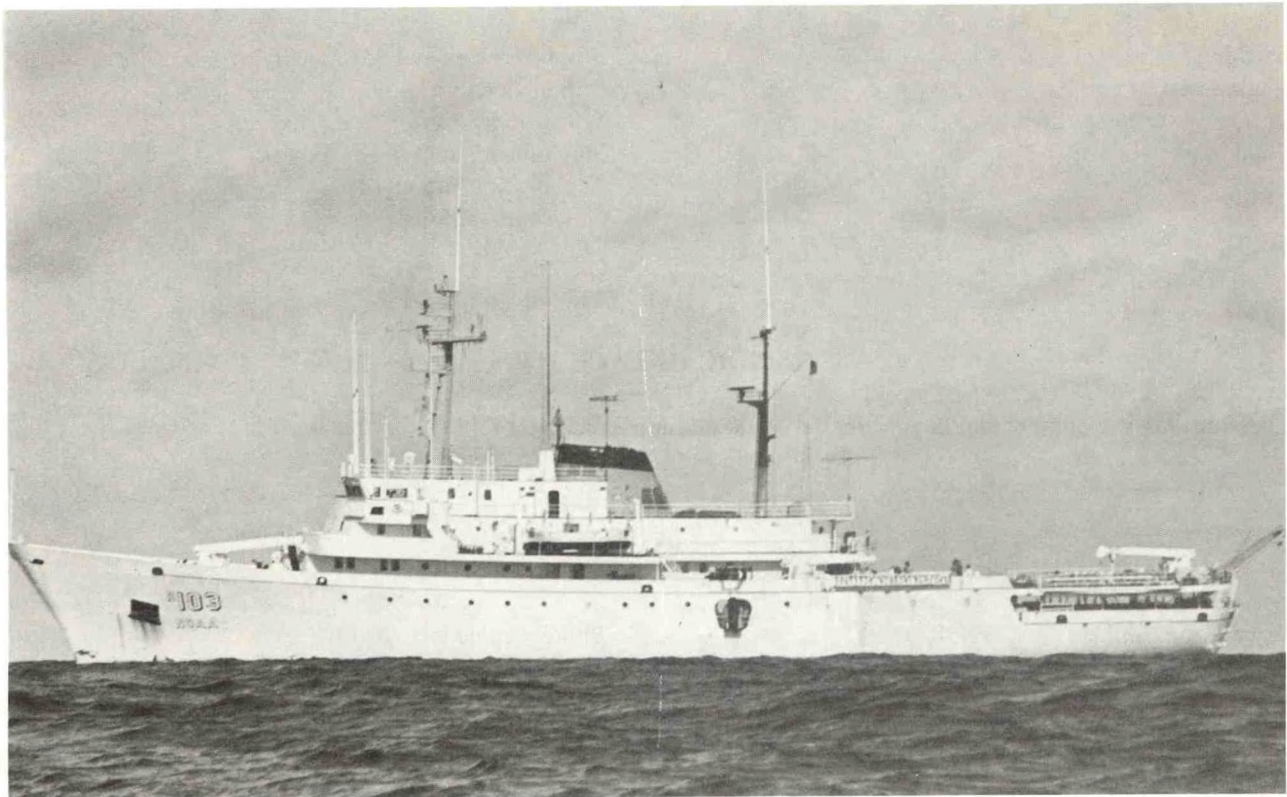
Hull type: Fiberglass motor whaleboat
Quantity: 3
Manufacturer: U.S. Navy
Length: 26 ft
Propulsion: Diesel

Utility Boat

Hull type: Fiberglass open boat
Quantity: 1
Manufacturer: Boston Whaler
Length: 16 ft
Propulsion: Gasoline outboard

SPECIAL FEATURES

Deep-sea anchoring capability
Underwater observation chambers



RESEARCHER ^R103

LAUNCHED: October 1968
DELIVERED: June 1970
COMMISSIONED: October 1970

DESIGNER: Maritime Administration
BUILDER: American Shipbuilding, Toledo, Ohio

CALL LETTERS: WTER

HOME PORT: Miami, Fla.

Complement:

COMMISSIONED OFFICERS: 13
LICENSED OFFICERS: 5
CREW: 50
SCIENTISTS: 14

HULL: Welded steel/ice strengthened
DISPLACEMENT: 2,963 tons
GROSS TONNAGE: 2,802
NET TONNAGE: 946

LENGTH (LOA): 278.3 ft (84.8 m)
BREADTH (moulded): 51.0 ft (15.5 m)
DRAFT, MAXIMUM: 18.3 ft (5.6 m)

CRUISING SPEED: 12.5 kn
RANGE: 10,800 nmi
POWER: 3,200 SHP

FUEL TYPE: #2 diesel
FUEL CAPACITY: 180,000 gal
FUEL CONSUMPTION: 175 gal/h
(normal cruising speed)
ENDURANCE: 36 d
ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The RESEARCHER conducts worldwide oceanographic research. The ship normally operates in the Atlantic Ocean and adjoining seas.

HABITABILITY

Berthing

Single staterooms: 10
Double staterooms: 36
Total bunks aboard: 82

Food-Service Seating Capacity

Captain's cabin: 4
Wardroom: 24
Ship officer's mess: 10
Technicians' mess: 14
Crew's mess: 16

MEDICAL FACILITIES

The ship has a complete sickbay with four beds administered by a Chief Pharmacist Mate.

SCIENTIFIC LABORATORY FACILITIES

Dry oceanographic lab: 1,598 ft²
Wet oceanographic lab: 140 ft²
Meteorological lab: 179 ft²

Photographic lab: 100 ft²
Gravity lab: 174 ft²

DECK MACHINERY

Winches

Quantity: 2
Type: Oceanographic winch
Manufacturer: Northern Line
Drive: Electrohydraulic
Line speed: 400 ft/min
Maximum pull: 3,000 lb
Drum capacity:
12,000 ft of 0.292-in wire
30,000 ft of 3/16-in wire (interchangeable drum)

Quantity: 2
Type: GEK & magnetometer winch
Manufacturer: Industrial Electric
Drive: Electric
Line speed: 188 ft/min
Maximum pull: 300 lb
Drum capacity:
750 ft of 0.7-in wire (interchangeable drum)

Quantity: 1
Type: Deep-sea anchor and coring winch
Manufacturer: Western Gear
Drive: Electrohydraulic
Line speed: 460 ft/min-133 ft/min
Maximum pull: 8,000 lb-30,000 lb
Drum capacity: 45,000 ft of 9/16-in wire rope

Cranes and Booms

Quantity: 4
Type: Telescoping boom
Manufacturer: Grove Mfg.
Boom length: 34 ft
Lifting capacity: 5,500 lb
(boom extended)
Location(s): 2 foredeck port & stbd.
2 aft port & stbd.

Quantity: 1
Type: Telescoping boom
Manufacturer: Grove Mfg.
Boom length: 40 ft
Lifting capacity: 10,000 lb
(boom extended) 1,800 lb
Location(s): Aft

A-Frames

Quantity: 2
Type: Movable
Clearance over side: 5 ft
Location(s): Amidships port & stbd.

Quantity: 1
Type Movable
Clearance over side: 12 ft
Location(s): Stern

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight (each): 4,223 lb

Anchor Chain(s)
Quantity: 2
Size and type: 1-9/16-in stud link chain
Length (each): 120 fm

NOTE: Owing to transducers in bow bubble, vessel does not normally anchor.

Deep-Sea Anchor
Type: Danforth
Weight: 250 lb

Deep-Sea Cable
Size and type: 9/16-in wire rope
Length: 45,000 ft

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
Teletype capability
MF transmitters
Emergency radio auto alarm
Portable emergency transceiver
EPIRB's

Navigation

Radar
Gyrocompass
Loran
Satnav
RDF
Omega

Acoustics

Deepwater echo sounder
Shallow-water echo sounders
Side scan sonar
Narrow beam stabilized transducer system
Doppler speed log
Subbottom profiler

Scientific Equipment

CTD system
XBT system
Gravity meter
Magnetometer

Data Acquisition and Processing System:

A Shipboard Data System (SDS) is dedicated to the acquisition and processing of oceanographic data. The SDS comprises the Data Recording and Processing Subsystems. In the Data Recording Subsystem, the individual sensor signals are routed to a Sensor Acquisition Module (SAM) near the sensor array. The SAM acquires the multiple data inputs, synchronizes them, formats the data into a PCM-FM train, and records them on an analog magnetic tape recorder. The Processing Subsystem is a PDP 11/20 computer with a 24K memory. The computer is used to verify that accurate and complete data are being recorded and to advise scientific personnel of experiment status and provide information for experiment control.

ENGINEERING

Propulsion Plant

Type: Geared diesel
Main Propulsion Engines
Quantity: 2
Type: Diesel engines
Manufacturer: Alco
Rated power (each): 1,600 hp

Propeller(s)
Quantity: 2
Type: Controllable pitch
Blades: 3
Diameter: 10.5 ft
Manufacturer: Bird Johnson

Auxillary Propulsion

Type: Retractable bow thruster
Manufacturer: Pleuger Unterwasserpumpen GMBH
Drive: Diesel electric — Detroit Diesel/Delco
Rated power: 450 hp

Electrical System

Ship's Service Generators

Quantity: 2

Manufacturer: Detroit Diesel/Delco

Output voltage: 450 a.c.

Power rating: 500 kW

Emergency Generator

Quantity: 1

Manufacturer: Detroit Diesel/Delco

Output voltage: 450 a.c.

Power rating: 125 kW

Electrical Service

450 Va.c. three phase

220 Va.c. three phase

120 Va.c. single phase

Auxiliary Generators — Bow Thruster

Quantity: 1

Manufacturer: Detroit Diesel/Delco

Output voltage: 450 a.c.

Power rating: 500 kW

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM

System Capacities

Storage capacity: 24,000 gal

Normal consumption: 7,000 gal/d

Normal production: 7,500 gal/d

Maximum production: 8,000 gal/d

Evaporators

Quantity: 2

Type: Steam-heat generated

Manufacturer: General Electric

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Bacterial digestion

Manufacturer: American Shipbuilding

Holding capacity: 6,500 gal

Oily Waste Control

Type of treatment: Holding tanks

Holding capacity: 15,000 gal

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Fiberglass lifeboats

Quantity: 2

Manufacturer: Marine Safety Equip. Corp.

Length: 24 ft

Propulsion: Diesel

Utility Boats

Hull type: Fiberglass open boat

Quantity: 2

Manufacturer: Boston Whaler

Length: 17 ft

Propulsion: Gasoline outboard

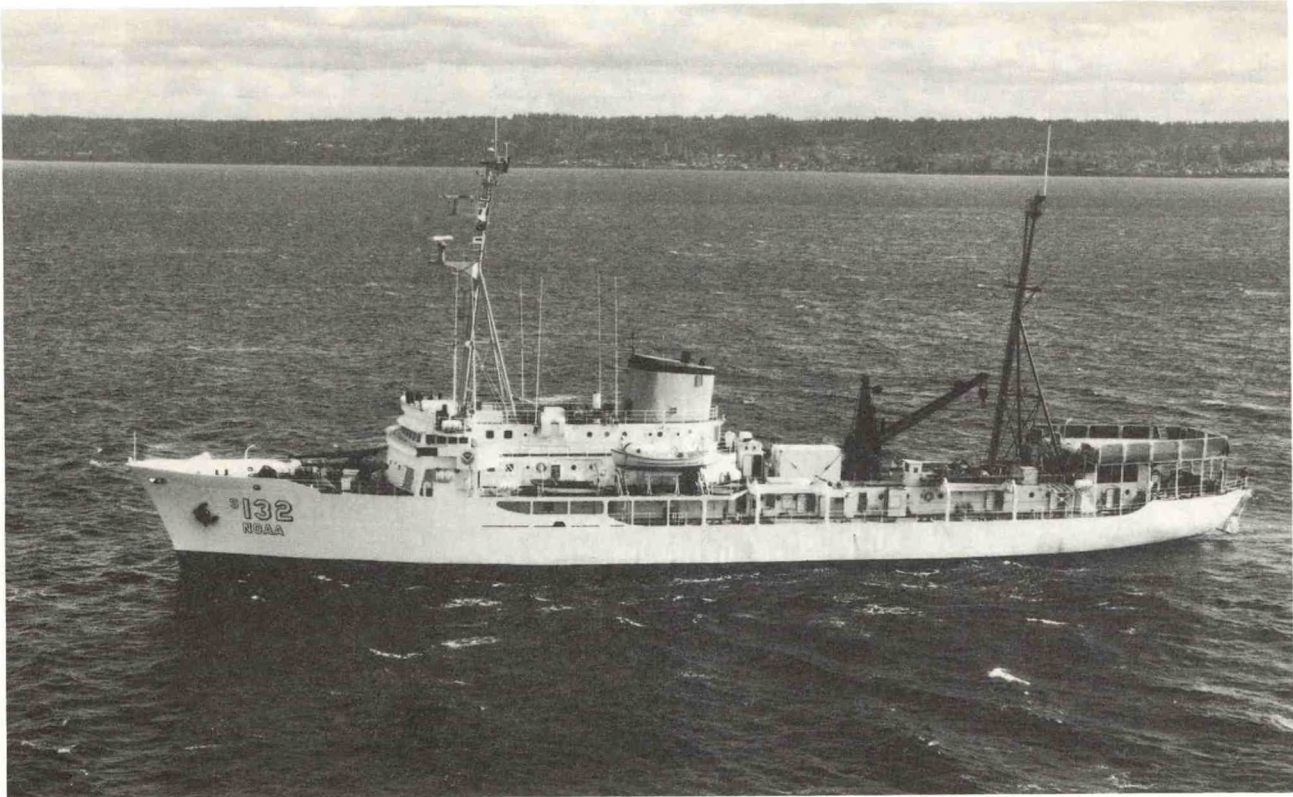
SPECIAL FEATURES

Lowerable stern ramp

Underwater observation chambers

Seismic reflection profile compressors

Portable helicopter platform



SURVEYOR ^s132

LAUNCHED: April 1959
DELIVERED: April 1960
COMMISSIONED: April 1960

DESIGNER: Maritime Administration
BUILDER: National Steel & Shipbuilding Co.,
San Diego, Calif.

CALL LETTERS: WTES

HOME PORT: Seattle, Wash.

Complement:

COMMISSIONED OFFICERS: 12
LICENSED OFFICERS: 6
CREW: 58
SCIENTISTS: 16

HULL: Welded steel/ice strengthened
DISPLACEMENT: 3,440 tons
GROSS TONNAGE: 2,653
NET TONNAGE: 682

LENGTH (LOA): 292.2 ft (89.0 m)
BREADTH (moulded): 46.0 ft (14.0 m)
DRAFT, MAXIMUM:: 19.5 ft (5.9 m)

CRUISING SPEED: 15 kn
RANGE: 13,680 nmi
POWER: 3,200 SHP

FUEL TYPE: NSFO or Bunker C
FUEL CAPACITY: 241,000 gal
FUEL CONSUMPTION: 224 gal/h
(normal cruising speed)
ENDURANCE: 38 d
ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The SURVEYOR conducts worldwide oceanographic research and is also capable of conducting hydrographic surveys for nautical charting. The SURVEYOR normally operates in the Pacific Ocean and Alaska waters.

HABITABILITY

Berthing

Single staterooms: 15
Double staterooms: 21
Four-bunk rooms: 16
Total bunks aboard: 121

Food-Service Seating Capacity

Captain's cabin: 4
Wardroom: 24
Ship officer's mess: 11
Crew's mess: 52

MEDICAL FACILITIES

The ship has a complete sickbay with four beds administered by a trained medical technician.

SCIENTIFIC LABORATORY FACILITIES

Dry oceanographic lab: 105 ft²
Wet oceanographic lab: 120 ft²

Photographic lab: 102 ft²
Gravity lab: 60 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Deep sea winch w/traction unit
Manufacturer: Western Gear
Drive: Electrohydraulic
Line speed: 460 ft/min-133 ft/min
Maximum pull: 8,800 lb-30,000 lb
Drum capacity: 30,000 ft of 5/8-in wire rope

Quantity: 1
Type: Trawl winch
Manufacturer: Rowe
Drive: Electrohydraulic
Line speed: 150 ft/min
Maximum pull: 2,000 lb
Drum capacity: 6,000 ft of 3/8-in wire rope

Cranes and Booms

Quantity: 2
Type: Telescoping boom
Manufacturer: Austin Western
Boom length: 24 ft
Lifting capacity: 1,400 lb
(boom extended) 1,000
Location(s): Foredeck

A-Frames

Quantity: 1
Type: Movable
Clearance over side: 4 ft over bow
Location(s): Bow (deep-sea anchoring)

Quantity: 1
Type: Movable
Clearance over side: 6 ft
Location(s): Stbd side

Quantity: 1
Type: Oceanographic winch
Manufacturer: Jered
Drive: Electrohydraulic
Line speed: 350 ft/min
Maximum pull: 2,000 lb
Drum capacity: 9,000 ft of 3/8-in wire rope

Quantity: 1
Type: Oceanographic/hydrographic
Manufacturer: Wheeler
Drive: Electrohydraulic
Line speed: 350 ft/min
Maximum pull: 960-1,200 lb
Drum capacity: 30,000 ft of 5/32-in wire rope

Quantity: 1
Type: Fixed length boom
Manufacturer: Western Gear
Boom length: 36 ft
Lifting capacity: 25,000 lb
(boom extended)
Location(s): Aft

Quantity: 1
Type: Movable boom
Clearance over side: 6 ft
Location(s): Stern

Ground Tackle

Bower Anchor(s)
 Quantity: 2
 Type: Stockless
 Weight (each): 5,100 lb

Anchor Chain(s)

Quantity: 2
 Size and type: 1-11/16-in stud link chain
 Length (each): 150 fm — port
 135 fm — starboard

Deep-Sea Cable

Size and type: 5/8-in wire rope
 Length: 30,000 ft

ELECTRONICS**Communications**

VHF/FM transceivers
 HF transceivers
 Teletype capability
 MF transmitters
 Emergency radio auto alarm
 Portable emergency transceiver
 EPIRB's
 VHF/AM aircraft transceiver

Navigation

Radar
 Gyrocompass
 Loran
 Satnav
 RDF
 Precision positioning equipment

Acoustics

Deepwater echo sounder
 Shallow-water echo sounders
 Narrow beam stabilized transducer system

Scientific Equipment

CTD system
 XBT system
 Rosette water sampling system

Data Acquisition and Processing System:

The vessel has the National Ocean Survey's Hydroplot Data Processing System for nautical charting surveys.

ENGINEERING**Propulsion Plant**

Type: Steam turbine

Main Propulsion Boilers

Quantity: 2
 Type: Water tube
 Manufacturer: Combustion Engr.
 Design pressure: 465 psi
 Superheat temp: 750°

Propulsion Turbines

Quantity: 2
 Type: Cross compound
 Manufacturer: DeLaval
 Power rating: 3,200 SHP

Auxiliary Propulsion

Type: Stern-mounted auxiliary
 Manufacturer: Harbormaster
 Drive: Electric
 Rated power: 200 hp

Propeller(s)

Quantity: 1
 Type: Fixed pitch
 Blades: 4
 Diameter: 13 ft

Electrical System*Ship's Service Generators*

Quantity: 2
 Type: Steam turbine
 Manufacturer: Worthington/GE
 Output voltage: 450 a.c.
 Power rating: 400 kW (each)

Emergency Generator

Quantity: 1
 Type: Diesel
 Manufacturer: Detroit Diesel/Delco
 Output voltage: 450 a.c.
 Power rating: 100 kW

Electrical Service

450 Va.c. three phase

110 Va.c. single phase

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM

System Capacities

Storage capacity: 27,000 gal

Normal consumption: 5,000 gal/d

Maximum production: 7,000 gal/d

Evaporators

Quantity: 1

Type: Steam-heat generated

Manufacturer: Cleaver-Brooks

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Collecting tanks

Holding capacity: 400 gal

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Fiberglass motor whaleboat

Quantity: 2

Manufacturer: U.S. Navy

Length: 26 ft

Propulsion: Diesel

Utility Boats

Hull type: LCVP — wood

Quantity: 1

Manufacturer: U.S. Navy

Length: 36 ft

Propulsion: Diesel

Survey Launches

Hull type: Wooden survey launch

Quantity: 3

Length: 36 ft

Propulsion: Diesel

Hull type: Fiberglass open boat

Quantity: 2

Manufacturer: Boston Whaler

Length: 16 ft

Propulsion: Gasoline outboard

SPECIAL FEATURES

Helicopter flight deck

Seismic reflection profile compressors



FAIRWEATHER S220

LAUNCHED: March 1967
 DELIVERED: January 1968
 COMMISSIONED: October 1968

DESIGNER: Maritime Administration
 BUILDER: Aerojet-General Shipyards,
 Jacksonville, Fla.

SISTER SHIP(S): RAINIER, MT. MITCHELL

CALL LETTERS: WTEB

HOME PORT: Seattle, Wash.

Complement:

COMMISSIONED OFFICERS: 12
 LICENSED OFFICERS: 5
 CREW: 52
 SCIENTISTS: 4

HULL: Welded steel/ice strengthened
 DISPLACEMENT: 1,800 tons
 GROSS TONNAGE: 1,591
 NET TONNAGE: 578

LENGTH (LOA): 231.0 ft (70.4 m)
 BREADTH (moulded): 42.0 ft (12.8 m)
 DRAFT, MAXIMUM: 14.3 ft (4.2 m)

CRUISING SPEED: 13 kn
 RANGE: 7,000 nmi
 POWER: 2,400 SHP

FUEL TYPE: #2 diesel
 FUEL CAPACITY: 112,000 gal
 FUEL CONSUMPTION: 125 gal/h
 (normal cruising speed)
 ENDURANCE: 22 d
 ENDURANCE CONSTRAINT: Fuel/ballast

Operational Commitments:

The FAIRWEATHER is designed and outfitted for hydrographic surveys involving nautical charting. Scientific equipment normally on board is limited to that equipment which supports and is related to these survey operations. The ship normally operates off the U.S. Pacific Coast, in Alaska coastal waters, and off the Hawaiian Islands.

HABITABILITY

Berthing

Single staterooms: 5
Double staterooms: 19
Four-bunk rooms: 9
Total bunks aboard: 79

Food-Service Seating Capacity

Captain's cabin: 4
Wardroom: 12
Ship officer's mess: 11
Technicians' mess: 18
Crew's mess: 24

MEDICAL FACILITIES

The ship has a complete sickbay with two beds administered by a trained medical technician.

SCIENTIFIC LABORATORY FACILITIES

Oceanographic lab: 240 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Oceanographic winch
Manufacturer: Northern Line
Drive: Electrohydraulic
Line speed: 400 ft/min
Maximum pull :1,500 lb
Drum capacity:
Upper drum: 10,000 ft of 0.292-in conductor cable
Lower drum: 15,000 ft of 3/16-in wire rope

Cranes and Booms

Quantity: 1
Type: Fixed length boom
Manufacturer: Skagit
Boom length: 40 ft
Lifting capacity: 3,000 lb
(boom extended) 2,500 lb
Location(s): Aft

Quantity: 2
Type: Telescoping boom
Manufacturer: Skagit
Boom length: 25 ft
Lifting capacity: 2,500 lb
Location(s): Port and starboard forward

A-Frames

Quantity: 1
Type: Movable
Clearance over side: 3 ft
Location(s): Starboard quarter

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight (each): 4,850 lb

Anchor Chain(s)
Quantity: 2
Size and type: 1³/₈-in stud link chain
Length (each): 165 fm

Deep-Sea Anchor

Type: Stockless
Weight: 700 lb

Deep-Sea Cable
Size and type: ³/₈-in steel wire cable
Length: 1,800 ft

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
Teletype capability
Emergency radio auto alarm
Portable emergency transceiver
EPIRB's

Navigation

Radar
Gyrocompass
Loran
RDF
Precision positioning equipment

Acoustics

Deepwater echo sounder
Shallow-water echo sounders

Scientific Equipment

XBT system

Data Acquisition and Processing System:

A shipboard computer system, the National Ocean Survey's Hydroplot system, is dedicated to the real-time acquisition and processing of hydrographic data. An identical Hydroplot system is also installed in two 30-ft. survey launches aboard ship. The Hydroplot system uses a PDP 8/E computer with a 24K memory to generate a real-time position-corrected plot of sounding data, steering commands to the helmsman, and a punched paper tape for shore-based processing.

ENGINEERING

Propulsion Plant

Type: Geared diesel

Main Propulsion Engines

Quantity: 2
Type: Diesel
Manufacturer: General Motors
Rated power (each): 1,200 hp

Auxiliary Propulsion

Type: Through hull bow thruster
Manufacturer: Detroit Diesel/Bird Johnson
Drive: Diesel
Rated power: 200 hp

Propeller(s)

Quantity: 2
Type: Controllable pitch
Blades: 3
Diameter: 8.5 ft
Manufacturer: Bird Johnson

Electrical System

Ship's Service Generators

Quantity: 2
Manufacturer: Detroit Diesel/GE
Output voltage: 450 a.c.
Power rating: 300 kW

Electrical Service

450 V a.c. three phase
120 V a.c. three phase
120 V a.c. single phase

Emergency Generator

Quantity: 1
Manufacturer: Detroit Diesel/Delco
Output voltage: 450 a.c.
Power rating: 75 kW

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM

System Capacities

Storage capacity: 16,000 gal
Normal consumption: 3,500 gal/d
Normal production: 5,000 gal/d
Maximum production: 6,000 gal/d

Evaporators

Quantity: 2
Type: Steam-heat generated
Manufacturer: Cuno Engineering

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Holding tank
Holding capacity: 8,000 gal

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Fiberglass motor whaleboat
Quantity: 1
Manufacturer: Triumph Storecrafters
Length: 26 ft
Propulsion: Diesel

Utility Boats

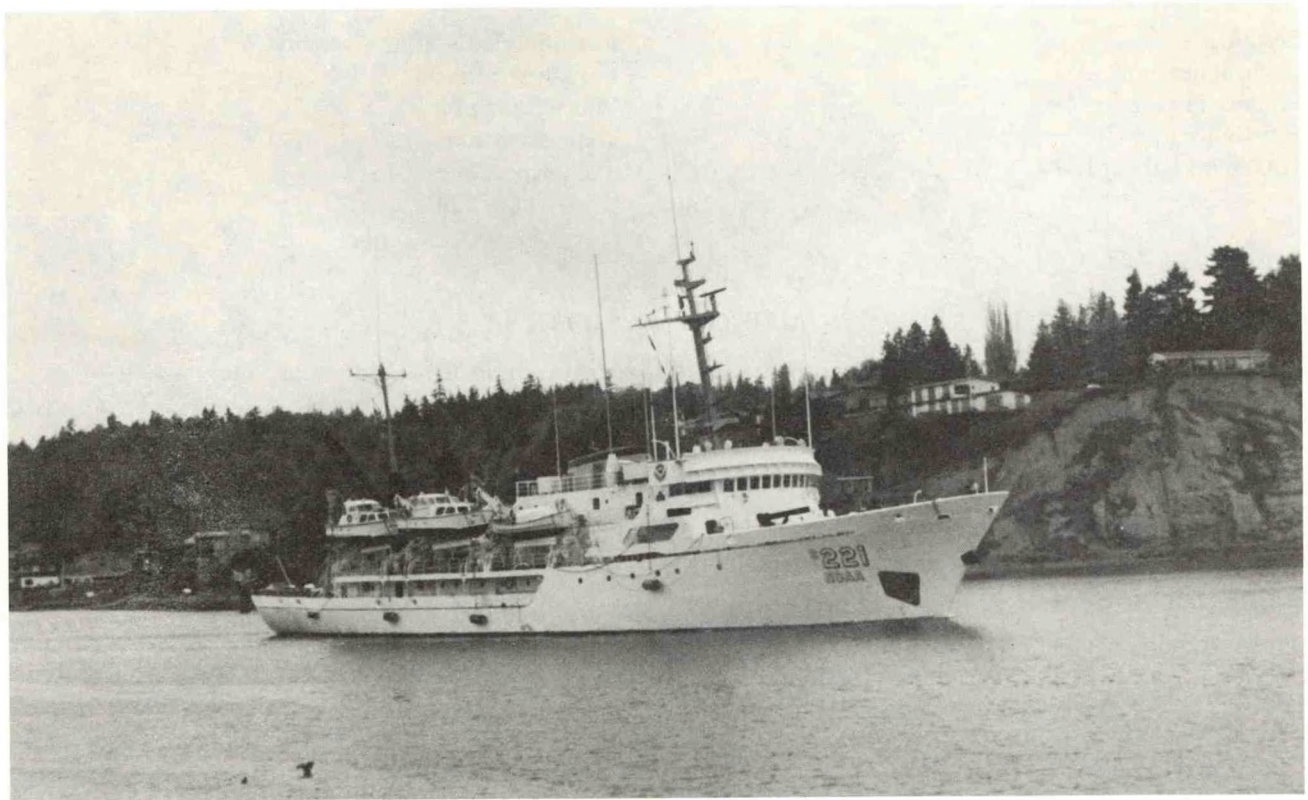
Hull type: Fiberglass open boat
Quantity: 2
Manufacturer: Boston Whaler
Length: 16 ft/13 ft
Propulsion: Gasoline outboard

Survey Launches

Hull type: Wooden survey launch
Quantity: 1
Manufacturer: Pacific Boat
Length: 31 ft
Propulsion: Diesel

Survey Launches

Hull type: Type I aluminum
Quantity: 3
Manufacturer: The Boatyard (Jensen)
Length: 29 ft
Propulsion: Diesel



RAINIER ^S221

LAUNCHED: March 1967
 DELIVERED: April 1968
 COMMISSIONED: October 1968

DESIGNER: Maritime Administration
 Aerojet-General Shipyards, Jacksonville, Fla.

SISTER(S): FAIRWEATHER, MT. MITCHELL

CALL LETTERS: WTEF

HOME PORT: Seattle, Wash.

Complement:

COMMISSIONED OFFICERS: 12
 LICENSED OFFICERS: 5
 CREW: 52
 SCIENTISTS: 4

HULL: Welded steel/ice strengthened
 DISPLACEMENT: 1,800 tons
 GROSS TONNAGE: 1,591
 NET TONNAGE: 578

LENGTH (LOA): 231.0 ft (70.4 m)
 BREADTH (moulded): 42.0 ft (12.8 m)
 DRAFT, MAXIMUM: 14.3 ft (4.2 m)

CRUISING SPEED: 13 kn

RANGE: 7,000 nmi

POWER: 2,400 SHP

FUEL TYPE: #2 diesel

FUEL CAPACITY: 112,000 gal

FUEL CONSUMPTION: 125 gal/h
 (normal cruising speed)

ENDURANCE: 22 d

ENDURANCE CONSTRAINT: Fuel/ballast

Operational Commitments:

The RAINIER is designed and outfitted for hydrographic surveys involving nautical charting. Scientific equipment normally on board is limited to that equipment which supports and is related to these survey operations. The ship normally operates off the U.S. Pacific Coast, in Alaska coastal waters, and off the Hawaiian Islands.

HABITABILITY

Berthing

Single staterooms: 5
Double staterooms: 19
Four-bunk rooms: 9
Total bunks aboard: 79

Food-Service Seating Capacity

Captain's cabin: 4
Wardroom: 12
Ship officer's mess: 11
Technicians' mess: 18
Crew's mess: 24

MEDICAL FACILITIES

The ship has a complete sickbay with two beds administered by a trained medical technician.

SCIENTIFIC LABORATORY FACILITIES

Oceanographic lab: 240 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Dredge and trawl winch
Manufacturer: Northern Line
Drive: Electrohydraulic
Line speed: 400 ft/min
Maximum pull: 3,000 lb
Drum capacity: 6,000 ft of 3/8-in wire rope
(interchangeable drum)

Quantity: 1
Type: Oceanographic winch
Manufacturer: Northern Line
Drive: Electrohydraulic
Line speed: 400 ft/min
Maximum pull: 3,000 lb
Drum capacity: 12,000 ft of 0.298-in conductor cable
30,000 ft of 3/16-in wire

Cranes and Booms

Quantity: 1
Type: Fixed length boom
Manufacturer: Skagit
Boom length: 40 ft
Lifting capacity: 5,000 lb
(boom extended)
Location(s): Aft

Quantity: 2
Type: Telescoping boom
Manufacturer: Skagit
Boom length: 25 ft
Lifting capacity: 3,000 lb
(boom extended) 2,500 lb
Location(s): Port and starboard forward

A-Frames

Quantity: 2
Type: Movable
Clearance over side: 3 ft
Location(s): Port and starboard quarters

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight (each): 4,850 lb

Anchor Chain(s)
Quantity: 2
Size and type: 1 3/8-in stud link chain
Length: (each): 165 fm

Deep-Sea Anchor

Type: Stockless
Weight: 700 lb

Deep-Sea Cable

Size and type: 3/8-in steel wire cable
Length: 1,800 ft

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
Teletype capability
Emergency radio auto alarm
Portable emergency transceiver
EPIRB's

Navigation

Radar
Gyrocompass
Loran
Precision positioning equipment

Acoustics

Deepwater echo sounder
Shallow-water echo sounders

Scientific Equipment

XBT system
TDC system (shallow-water)

Data Acquisition and Processing System:

A shipboard computer system, the National Ocean Survey's Hydroplot system, is dedicated to the real-time acquisition and processing of hydrographic data. An identical Hydroplot system is also installed in two 30-ft. survey launches aboard ship. The Hydroplot system uses a PDP 8/E computer with a 24K memory to generate a real-time position-corrected plot of sounding data, steering commands to the helmsman, and a punched paper tape for shore-based processing.

ENGINEERING

Propulsion Plant

Type: Geared diesel

Main Propulsion Engines

Quantity: 2
Type: Diesel
Manufacturer: General Motors
Rated power (each): 1,200 hp

Propeller(s)

Quantity: 2
Type: Controllable pitch
Blades: 3
Diameter: 8.5 ft
Manufacturer: Bird Johnson

Auxiliary Propulsion

Type: Through hull bow thruster
Manufacturer: Detroit Diesel/Bird Johnson
Drive: Diesel
Rated power: 200 hp

Electrical System

Ship's Service Generators

Quantity: 2
Manufacturer: Detroit Diesel/GE
Output voltage: 450 a.c.
Power rating: 300 kW

Emergency Generator

Quantity: 1
Manufacturer: Detroit Diesel/Delco
Output voltage: 450 a.c.
Power rating: 75 kW

Electrical Service

450 V.a.c. three phase
120 V.a.c. three phase
120 V.a.c. single phase

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM

System Capacities

Storage capacity: 16,000 gal
Normal consumption: 3,500 gal/d
Normal production: 5,000 gal/d
Maximum production: 6,500 gal/d

Evaporators

Quantity: 2
Type: Steam-heat generated
Manufacturer: Cuno Engineering

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Holding tank
Holding capacity: 8,000 gal

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Fiberglass motor whaleboat
Quantity: 2
Manufacturer: U.S. Navy
Length: 26 ft
Propulsion: Diesel

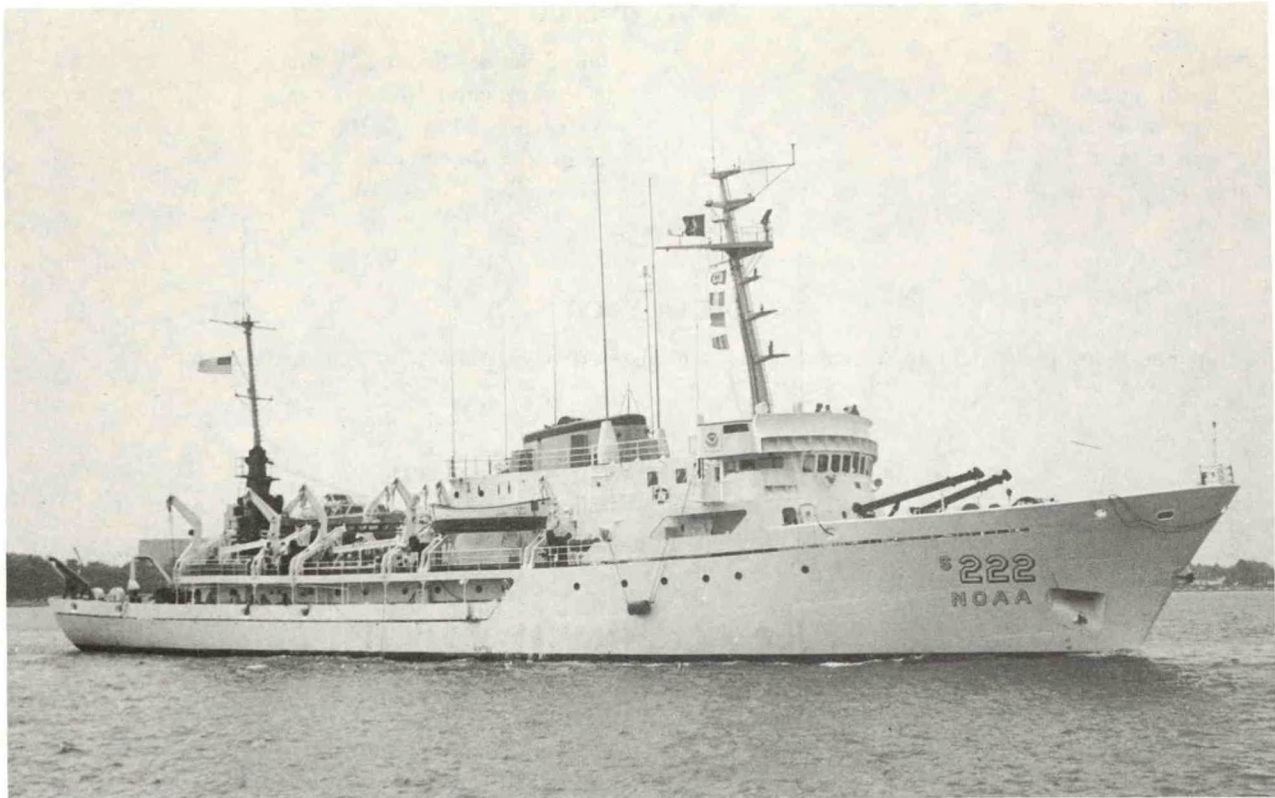
Hull type: Fiberglass
Quantity: 2
Manufacturer: Boston Whaler
Length: 16 ft
Propulsion: Gasoline outboard

Hull type: Aluminum skiff
Quantity: 2
Manufacturer: Starcraft
Length: 16 ft
Propulsion: Gasoline outboard

Survey Launches

Hull type: Type I aluminum
Quantity: 3
Manufacturer: The Boatyard (Jensen)
Length: 29 ft
Propulsion: Diesel

Hull type: Fiberglass
Quantity: 1
Manufacturer: Bertram
Length: 26 ft
Propulsion: Diesel



MT. MITCHELL ^S222

LAUNCHED: November 1966
 DELIVERED: October 1967
 COMMISSIONED: March 1968

DESIGNER: Maritime Administration
 BUILDER: Aerojet-General Shipyards,
 Jacksonville, Fla.

SISTER SHIP(S): FAIRWEATHER, RAINIER

CALL LETTERS: WTEG

HOME PORT: Norfolk, Va.

Complement:

COMMISSIONED OFFICERS: 12
 LICENSED OFFICERS: 5
 CREW: 52
 SCIENTISTS: 4

HULL: Welded steel/ice strengthened
 DISPLACEMENT: 1,800 tons
 GROSS TONNAGE: 1,591
 NET TONNAGE: 578

LENGTH (LOA): 231.0 ft (70.4 m)
 BREADTH (moulded): 42.0 ft (12.8 m)
 DRAFT, MAXIMUM: 14.3 ft (4.2 m)

CRUISING SPEED: 13 kn
 RANGE: 7,000 nmi
 POWER: 2,400 SHP

FUEL TYPE: #2 diesel
 FUEL CAPACITY: 112,000 gal
 FUEL CONSUMPTION: 125 gal/h
 (normal cruising speed)

ENDURANCE: 22 d
 ENDURANCE CONSTRAINT: Fuel/ballast

Operational Commitments:

The MT. MICHELL is designed and outfitted for hydrographic surveys involving nautical charting. Scientific equipment normally on board is limited to that equipment which supports and is related to these survey operations. The ship normally operates off the U.S. Atlantic Coast, in the Gulf of Mexico, and in the U.S. Caribbean Island territorial waters.

HABITABILITY

Berthing

Single staterooms: 5
Double staterooms: 17
Four-bunk rooms: 10
Total bunks aboard: 79

Food-Service Seating Capacity

Captain's cabin: 4
Wardroom: 16
Ship officer's mess: 11
Technicians' mess: 16

MEDICAL FACILITIES

The ship has a complete sickbay with two beds administered by a trained medical technician.

SCIENTIFIC LABORATORY FACILITIES

Oceanographic Lab: 240 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Oceanographic winch
Manufacturer: Northern Line
Drive: Electrohydraulic
Line speed: 400 ft/min
Maximum pull: 3,000 lb
Drum capacity:
Front drum: 12,000 ft of 0.298-in electric cable
Rear drum: 30,000 ft of 3/16-in wire rope

Quantity: 1
Type: Oceanographic winch
Manufacturer: Northern Line
Drive: Electrohydraulic
Line speed: 400 ft/min
Maximum pull: 1,000 lb
Drum capacity:
Front drum: 12,000 ft of 0.250-in conductor cable
Rear drum: 30,000 ft of 3/16-in wire rope

Cranes and Booms

Quantity: 1
Type: Fixed length boom
Manufacturer: Skagit
Boom length: 40 ft
Lifting capacity: 5,000 lb
(boom extended)
Location(s): Aft

Quantity: 2
Type: Telescoping boom
Manufacturer: Skagit
Boom length: 25 ft
Lifting capacity: 3,000 lb
(boom extended) 2,500 lb
Location(s): Port and starboard forward

A-Frames

Quantity: 2
Type: Movable
Clearance over side: 3 ft
Location(s): Port and starboard quarters

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight (each): 4,850 lb

Deep-Sea Anchor

Type: Stockless
Weight: 700 lb

Anchor Chain(s)

Quantity: 2
Size and type: 1³/₈-in stud link chain
Length (each): 165 fm

Deep-Sea Cable

Size and type: ³/₈-in steel wire cable
Length: 1,800 ft

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
Teletype capability
Emergency radio auto alarm
Portable emergency transceiver
EPIRB's

Acoustics

Deepwater echo sounder
Shallow-water echo sounders

Navigation

Radar
Gyrocompass
Loran
RDF
Precision positioning equipment

Scientific Equipment

XBT system

Data Acquisition and Processing System:

A shipboard computer system, the National Ocean Survey's Hydroplot system, is dedicated to the real-time acquisition and processing of hydrographic data. An identical Hydroplot system is also installed in each 30-ft. survey launch aboard ship. The Hydroplot system uses a PDP 8/E computer with a 24K memory to generate a real-time position-corrected plot of sounding data, steering commands to the helmsman, and a punched paper tape for shore-based processing.

ENGINEERING

Propulsion Plant

Type: Geared diesel

Main Propulsion Engines

Quantity: 2
Type: Diesel
Manufacturer: General Motors
Rated power (each): 1,200 hp

Auxiliary Propulsion

Type: Through hull bow thruster
Manufacturer: Detroit Diesel/Bird Johnson
Drive: Diesel
Rated power: 200 hp

Electrical System

Ship's Service Generators

Quantity: 2
Manufacturer: Detroit Diesel/GE
Output voltage: 450 a.c.
Power rating: 300 kW

Electrical Service

450 Va.c. three phase
120 Va.c. three phase
120 Va.c. single phase

Propeller(s)

Quantity: 2
Type: Controllable pitch
Blades: 3
Diameter: 8.5 ft
Manufacturer: Bird Johnson

Emergency Generator

Quantity: 1
Manufacturer: Detroit Diesel/Delco
Output voltage: 450 a.c.
Power rating: 75 kW

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM

System Capacities

Storage capacity: 16,000 gal
Normal consumption: 3,500 gal/d
Normal production: 5,000 gal/d
Maximum production: 6,000 gal/d

Evaporators

Quantity: 2
Type: Steam-heat generated
Manufacturer: Cuno Engineering

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Aerobic bacterial
Manufacturer: St. Louis Shipbuilding
Holding capacity: 90 d

Oily Waste Control

Type of treatment: Filter
Manufacturer: Harco
Holding capacity: 6,800 gal or flow with 10 ppm
contaminant

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Fiberglass lifeboat
Quantity: 1
Manufacturer: Pacific Plastics
Length: 26 ft
Propulsion: Diesel

Utility Boats

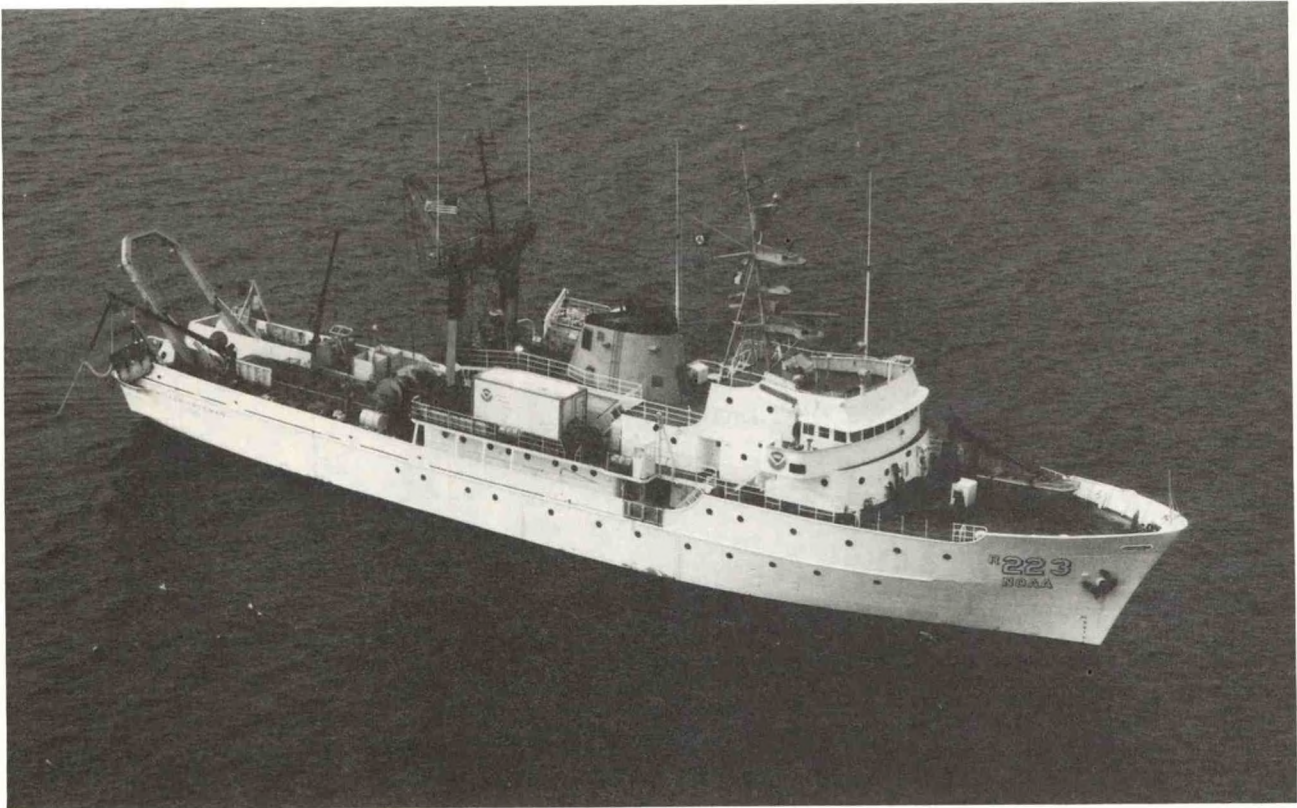
Hull type: Aluminum open boat
Quantity: 1
Manufacturer: Monark
Length: 17 ft
Propulsion: Gasoline outboard

Survey Launches

Hull type: Type I aluminum
Quantity: 4
Manufacturer: The Boatyard (Jensen)
Length: 29 ft
Propulsion: Diesel

Hull type: Fiberglass open boat
Quantity: 1
Manufacturer: Boston Whaler
Length: 16 ft
Propulsion: Gasoline outboard

Hull type: Aluminum skiff
Quantity: 1
Manufacturer: Monark
Length: 13 ft
Propulsion: Gasoline outboard



MILLER FREEMAN ^R223

LAUNCHED: 1967
DELIVERED: 1968
COMMISSIONED: 1974

DESIGNER: Philip F. Spaulding
BUILDER: American Shipbuilding
Lorain, Ohio

CALL LETTERS: WTDM

HOME PORT: Seattle, Wash.

Complement:

COMMISSIONED OFFICERS: 7
LICENSED OFFICERS: 4
CREW: 30
SCIENTISTS: 11

HULL: Welded steel
DISPLACEMENT: 1,920 tons
GROSS TONNAGE: 1,515
NET TONNAGE: 680

LENGTH (LOA): 215.0 ft (66.0 m)
BREADTH (moulded): 42.0 ft (12.5 m)
DRAFT, MAXIMUM: 20.0 ft (6.1 m)

CRUISING SPEED: 14 kn
RANGE: 13,800 nmi
POWER: 2,150 SHP

FUEL TYPE: #2 diesel
FUEL CAPACITY: 145,000 gal
FUEL CONSUMPTION: 125 gal/h
(normal cruising speed)
ENDURANCE: 41 d
ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The MILLER FREEMAN conducts fishery and living marine resources research. The ship normally operates off the U.S. Pacific Coast and in Alaska waters.

HABITABILITY

Berthing

Single staterooms: 3
Double staterooms: 22
Four-bunk rooms: 1
Total bunks aboard: 51

Food-Service Seating Capacity

Wardroom: 20
Crew's mess: 20

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by a trained medical technician.

SCIENTIFIC LABORATORY FACILITIES

Chemical lab: 370 ft²
Oceanographic wet lab: 320 ft²
Fish processing lab: 384 ft²

Utility lab: 432 ft²
Rough lab: 288 ft²
XBT room: 160 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Oceanographic winch
Manufacturer: Marco
Drive: Hydraulic
Line speed: 328 ft/min
Maximum pull: 10,000 lb
Drum capacity: 19,685 ft of 7/16-in wire rope

Quantity: 1
Type: Oceanographic winch
Manufacturer: Marco
Drive: Hydraulic
Line speed: 340 ft/min
Maximum pull: 3,000 lb
Drum capacity: 9,480 ft of 0.294-in conductor cable

Winches

Quantity: 1
Type: Ramp haul-in winch
Manufacturer: Lantec
Drive: Hydraulic
Maximum pull: 30,000 lb
Drum capacity: 200 ft of 1-in wire cable

Cranes and Booms

Quantity: 2
Type: Telescoping boom
Manufacturer: Rowe Machine
Boom length: 28 ft
Lifting capacity: 6,000 lbs
(boom extended) 3,000 lb

Quantity: 1
Type: Fixed length boom
Boom length: 40 ft
Lifting capacity: 20,000 lb

Quantity: 1

Type: Oceanographic winch
Manufacturer: Markey
Drive: Hydraulic
Line speed: 250 ft/min
Maximum pull: 2,750 lb
Drum capacity: 9,480 ft of 0.294-in conductor cable

Quantity: 2
Type: Trawl winch
Manufacturer: Northern Line
Drive: Hydraulic
Line speed: 175 ft/min
Maximum pull: 20,000 lb
Drum capacity: 3,300 ft of 1-in wire cable

Quantity: 1
Type: Double drum net reel
Manufacturer: Pacific Fisherman
Drive: Hydraulic

Quantity: 1
Type: Articulated boom
Manufacturer: Daybrook
Boom length: 18 ft
Lifting capacity: 2,400 lb
(boom extended) 1,800 lb

Quantity: 1
Type: Fixed length boom
Boom length: 8 ft
Lifting capacity: 750 lb

A-Frames

Quantity: 1
 Type: Movable stern gantry
 Clearance over side: 4 ft
 Location: Stern

Ground Tackle

Bower Anchor(s)
 Quantity: 2
 Type: Stockless
 Weight (each): 3,815 lb

Anchor Chain(s)
 Quantity: 2
 Size and type: 1-7/16-in stud link chain
 Length: 120 fm

ELECTRONICS**Communications**

VHF/FM transceivers
 HF transceivers
 Teletype capability
 Portable emergency transceiver
 EPIRB's

Navigation

Radar
 Gyrocompass
 Loran
 Satnav
 RDF
 Precision positioning equipment

Acoustics

Deepwater echo sounder
 Shallow-water echo sounders
 Fish finder

Scientific Equipment

STD system
 XBT system
 Rosette water sampling system

ENGINEERING**Propulsion Plant**

Type: Geared diesel

Main Propulsion

Quantity: 1
 Type: Diesel
 Manufacturer: General Motors
 Rated power (each): 2,200 hp

Propeller(s)

Quantity: 1
 Type: Controllable pitch
 Blades: 3
 Diameter: 10.1 ft
 Manufacturer: Bird Johnson

Auxiliary Propulsion

Type: Lowerable bow thruster
 Manufacturer: Schottle
 Drive: Electric
 Rated power: 400 hp

Electrical System*Ship's Service Generators*

Quantity: 2
 Manufacturer: Caterpillar/GE
 Output voltage: 450 a.c.
 Power rating: 350 kW

Emergency Generator

Quantity: 1
 Manufacturer: Caterpillar/GE
 Output voltage: 450 a.c.
 Power rating: 100 kW

Electrical Service

450 a.c. three phase
 120 a.c. single phase

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM

System Capacities

Storage capacity: 7,350 gal
Normal consumption: 2,000 gal/d
Normal production: 2,000 gal/d
Maximum production: 2,400 gal/d

Evaporators

Quantity: 2
Type: Steam-heat generated
Manufacturer: Cuno Engineering

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Holding tank
Holding capacity: 7,600 gal

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Aluminum workboat
Quantity: 1
Manufacturer: Monark
Length: 26 ft
Propulsion: Diesel

Hull type: Aluminum open boat
Quantity: 1
Manufacturer: Monark
Length: 17 ft
Propulsion: Gasoline outboard

SPECIAL FEATURES

Stern ramp
Lowerable stabilizing centerboard
(increases draft by 10.5 ft)



PEIRCE ^S328

LAUNCHED: October 1962
 DELIVERED: May 1963
 COMMISSIONED: May 1963

DESIGNER: Maritime Administration
 BUILDER: Marietta Mfg. Co., Pt. Pleasant, W.V.

SISTER SHIP(S): WHITING

CALL LETTERS: WTEQ

HOME PORT: Norfolk, Va.

Complement:

COMMISSIONED OFFICERS: 8
 LICENSED OFFICERS: 3
 CREW: 30
 SCIENTISTS: 2

HULL: Welded steel/ice strengthened
 DISPLACEMENT: 907 tons
 GROSS TONNAGE: 696
 NET TONNAGE: 151

LENGTH (LOA): 163.0 ft (49.7 m)
 BREADTH: (moulded): 33.0 ft (10.1 m)
 DRAFT, MAXIMUM: 11.2 ft (3.4 m)

CRUISING SPEED: 12 kn
 RANGE: 5,700 nmi
 POWER: 1,600 SHP

FUEL TYPE: #2 diesel
 FUEL CAPACITY: 44,000 gal
 FUEL CONSUMPTION: 80 gal/h
 (normal cruising speed)

ENDURANCE: 20 d
 ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The PEIRCE is designed and outfitted for hydrographic surveys involving nautical charting. Scientific equipment normally on board is limited to that equipment which supports and is related to these survey operations. The ship normally operates off the U.S. Atlantic Coast, in the Gulf of Mexico, the Great Lakes, and the U.S. Caribbean Island territorial waters.

HABITABILITY

Berthing

Single staterooms: 2
Double staterooms: 9
Four-bunk rooms: 5
Total bunks aboard: 40

Food-Service Seating Capacity

Wardroom mess: 8
Crew's mess: 23

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by designated vessel personnel.

DECK MACHINERY

Winches

Quantity: 1
Type: Oceanographic winch
Manufacturer: Northern Line
Drive: Hydraulic
Line speed: 400 ft/min
Maximum pull: 1,500 lb
Drum capacity: 10,000 ft of ¼-in wire rope

Cranes and Booms

Quantity: 1
Type: Telescoping boom
Manufacturer: C. H. Wheeler
Boom length: 27 ft
Lifting capacity: 2,500 lb
(boom extended)
Location(s): Foredeck

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight: 2,050 lb

Anchor Chain(s)

Quantity: 2
Size and type: 1½-in stud link chain
Length: 105 fm

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
Teletype capability
Portable emergency transceiver
EPIRB's

Navigation

Radar
Gyrocompass
Loran
Precision positioning equipment

Acoustics

Deepwater echo sounder
Shallow-water echo sounders

Scientific Equipment

XBT system

Data Acquisition and Processing System:

A shipboard computer system, the National Ocean Survey's Hydroplot System, is dedicated to the real-time acquisition and processing of hydrographic data. An identical Hydroplot system is also installed in each survey launch aboard ship. The Hydroplot system uses a PDP/8E computer with a 24K memory to generate a real-time position-corrected plot of sounding data, steering commands to the helmsman and a punched paper tape for shore-based processing.

ENGINEERING

Propulsion Plant

Type: Geared diesel

Main Propulsion Engines

Quantity: 2

Type: Diesel

Manufacturer: General Motors

Rated power (each): 800 hp

Propeller(s)

Quantity: 2

Type: Controllable pitch

Blades: 3

Diameter: 6.0 ft

Manufacturer: Bird Johnson

Electrical System

Ship's Service Generators

Quantity: 2

Manufacturer: Detroit Diesel/Delco

Output voltage: 225 a.c./450 a.c.

Power rating: 220 kW

Emergency Generator

Quantity: 1

Manufacturer: Detroit Diesel/Delco

Output voltage: 225 a.c./450 a.c.

Power rating: 60 kW

Electrical Service

450 Va.c. three phase

225 Va.c. three phase

120 Va.c. single phase

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM

System Capacities

Storage capacity: 5,400 gal

Normal consumption: 2,000 gal/d

Normal production: 2,000 gal/d

Maximum production: 3,600 gal/d

Evaporators

Quantity: 1

Type: Steam-heat generated

Manufacturer: Baldwin Lima Hamilton

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Aerobic bacterial

Manufacturer: St. Louis Ship (FAST)

Holding capacity: 30 d

Oily Waste Control

Type of treatment: Oily water separator

Manufacturer: HARCO

Holding capacity: 500 gal or flow with 10 ppm
contaminant

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Fiberglass open boat

Quantity: 1

Manufacturer: Boston Whaler

Length: 16 ft

Propulsion: Gasoline outboard

Survey Launches

Hull type: Type I aluminum

Quantity: 2

Manufacturer: The Boat Yard (Jensen)

Length: 29 ft

Propulsion: Diesel

Utility Boats

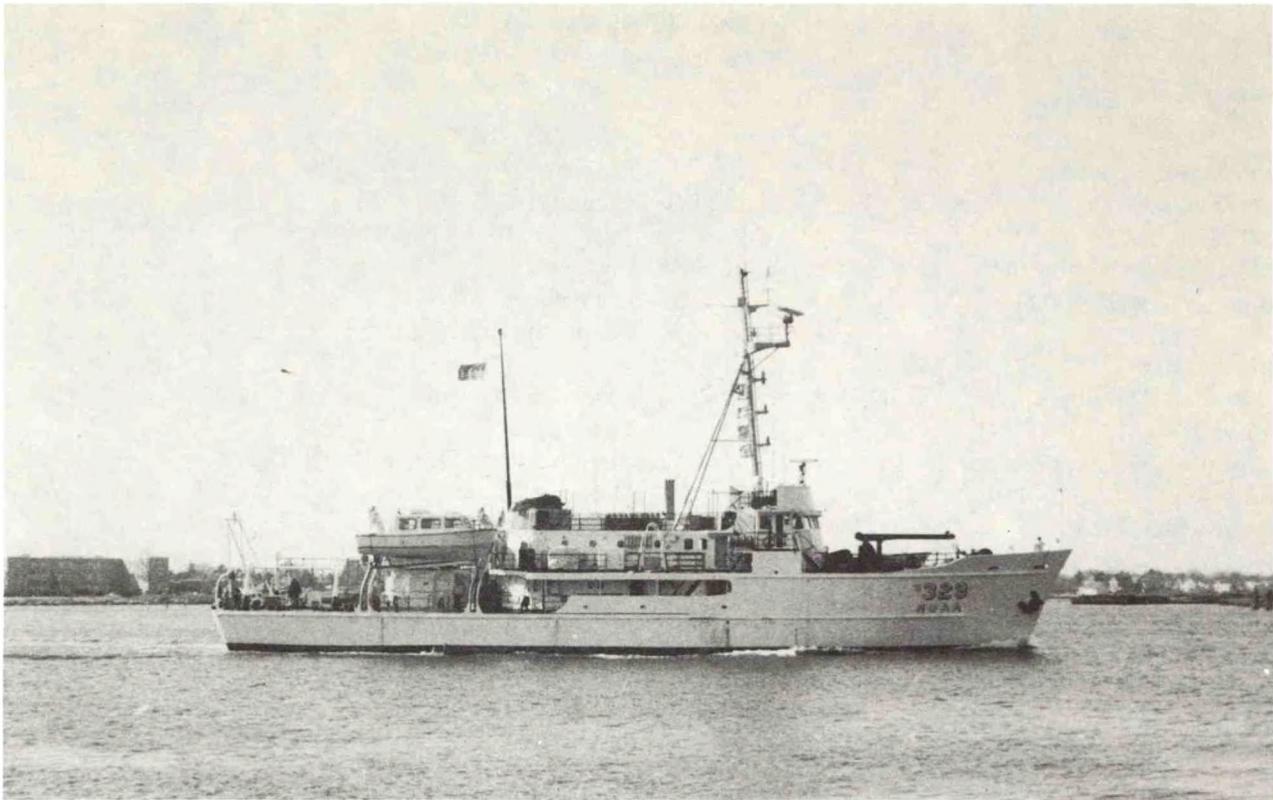
Hull type: Aluminum open boat

Quantity: 1

Manufacturer: Monark

Length: 17 ft

Propulsion: Gasoline outboard



WHITING #329

LAUNCHED: November 1962

DELIVERED: July 1963

COMMISSIONED: July 1963

DESIGNER: Maritime Administration

BUILDER: Marietta Mfg. Co., Pt. Pleasant, W.V.

SISTER SHIP(S): PEIRCE

CALL LETTERS: WTEW

HOME PORT: Norfolk, Va.

Complement:

COMMISSIONED OFFICERS: 8

LICENSED OFFICERS: 3

CREW: 30

SCIENTISTS: 2

HULL: Welded steel/ice strengthened

DISPLACEMENT: 907 tons

GROSS TONNAGE: 696

NET TONNAGE: 151

LENGTH (LOA): 163.0 ft (49.7 m)

BREADTH (moulded): 33.0 ft (10.1 m)

DRAFT, MAXIMUM: 11.2 ft (3.4 m)

CRUISING SPEED: 12 kn

RANGE: 5,700 nmi

POWER: 1,600 SHP

FUEL TYPE: #2 diesel

FUEL CAPACITY: 44,000 gal

FUEL CONSUMPTION: 80 gal/h

(normal cruising speed)

ENDURANCE: 20 d

ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The WHITING is designed and outfitted for hydrographic surveys involving nautical charting. Scientific equipment normally on board is limited to that equipment which supports and is related to these survey operations. The ship normally operates off the U.S. Atlantic Coast, in the Gulf of Mexico, and in the U.S. Caribbean Island territorial waters.

HABITABILITY

Berthing

Single staterooms: 2
Double staterooms: 9
Four-bunk rooms: 5
Total bunks aboard: 40

Food-Service Seating Capacity

Wardroom mess: 8
Crew's mess: 23

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by designated vessel personnel.

DECK MACHINERY

Winches

Quantity: 1
Type: Oceanographic winch
Manufacturer: Northern Line
Drive: Hydraulic
Line speed: 400 ft/min
Maximum pull: 1,500 lb
Drum capacity: 10,000 ft of ¼-in wire rope

Cranes and Booms

Quantity: 1
Type: Telescoping boom
Manufacturer: C. H. Wheeler
Boom length: 27 ft
Lifting capacity: 2,500 lb
(boom extended)
Location(s): Foredeck

A-Frames

Quantity: 1
Type: Movable
Clearance over side: 5 ft
Location(s): Starboard side aft

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight: 2,050 lb

Anchor Chain(s)

Quantity: 2
Size and type: 1½-in stud link chain
Length: 105 fm

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
Teletype capability
Portable emergency transceiver
EPIRB's

Navigation

Radar
Gyrocompass
Loran
Precision positioning equipment

Acoustics

Deepwater echo sounder
Shallow-water echo sounders

Scientific Equipment

XBT system
TDC system (shallow-water)

Data Acquisition and Processing System:

A shipboard computer system, the National Ocean Survey's Hydroplot system, is dedicated to the real-time acquisition and processing of hydrographic data. An identical Hydroplot system is also installed in each survey launch carried aboard ship. The Hydroplot system uses a PDP/8E computer with a 24K memory to generate a real-time position-corrected plot of sounding data, steering commands to the helmsman, and a punched paper tape for shore-based processing.

ENGINEERING

Propulsion Plant

Type: Geared diesel

Main Propulsion Engines

Quantity: 2

Type: Diesel

Manufacturer: General Motors

Rated power (each): 800 hp

Propeller(s)

Quantity: 2

Type: Controllable pitch

Blades: 3

Diameter: 6.0 ft

Manufacturer: Bird Johnson

Electrical System

Ship's Service Generators

Quantity: 2

Manufacturer: Detroit Diesel/Delco

Output voltage: 225 a.c./450 a.c.

Power rating: 220 kW

Emergency Generator

Quantity: 1

Manufacturer: Detroit Diesel/Delco

Output voltage: 225 a.c./450 a.c.

Power rating: 60 kW

Electrical Service

450 Va.c. three phase

225 Va.c. three phase

120 Va.c. single phase

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM

System Capacities

Storage capacity: 5,400 gal

Normal consumption: 2,000 gal/d

Normal production: 2,000 gal/d

Maximum production: 3,600 gal/d

Evaporators

Quantity: 1

Type: Steam-heat generated

Manufacturer: Baldwin Lima Hamilton

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Aerobic bacterial

Manufacturer: St. Louis Ship (FAST)

Holding capacity: 30 d

Oily Waste Control

Type of treatment: Oily water separator

Manufacturer: HARCO

Holding capacity: 500 gal or flow with 10 ppm
contaminant

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Fiberglass open boat

Quantity: 2

Manufacturer: Boston Whaler

Length: 16 ft

Propulsion: Gasoline outboard

Survey Launches

Hull type: Type I aluminum

Quantity: 2

Manufacturer: The Boat Yard (Jensen)

Length: 29 ft

Propulsion: Diesel

Utility Boats

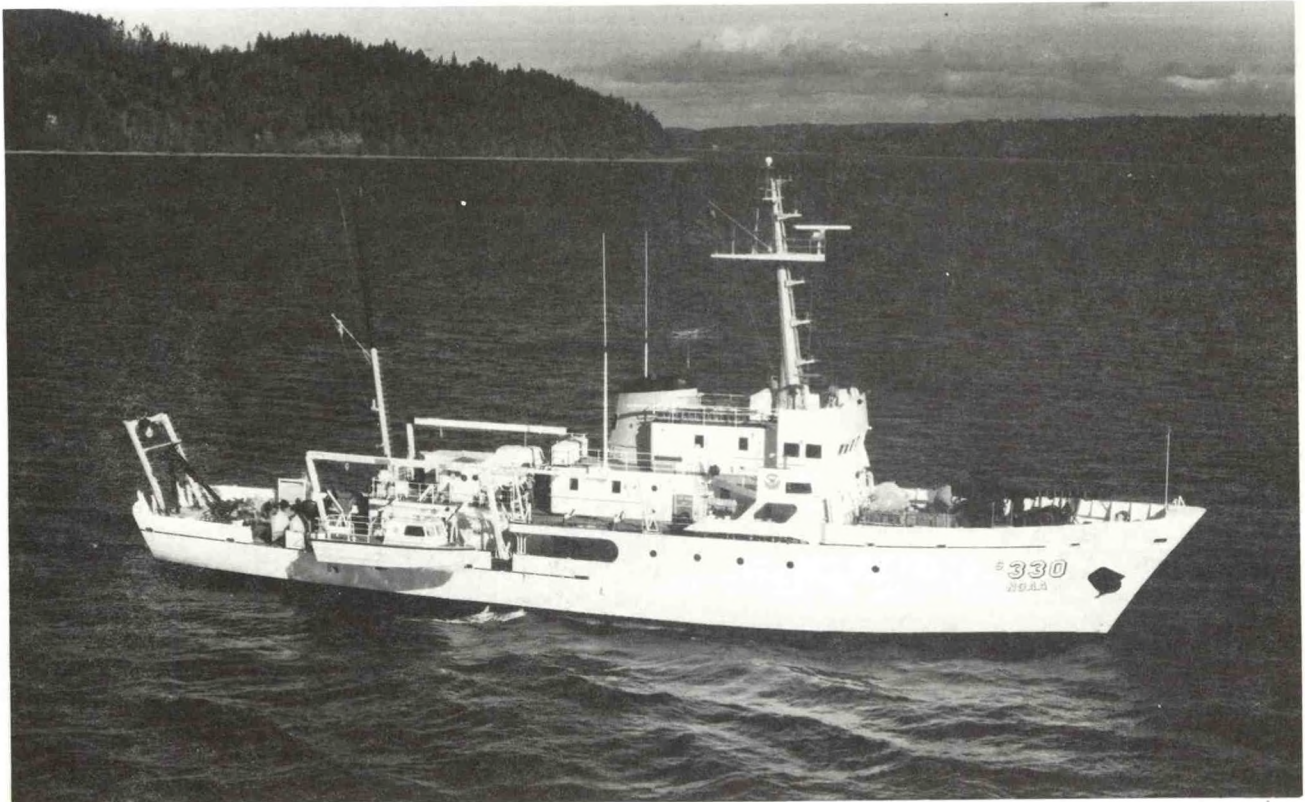
Hull type: Aluminum open boat

Quantity: 1

Manufacturer: Monark

Length: 17 ft

Propulsion: Gasoline outboard



McARTHUR ^S330

LAUNCHED: November 1965
 DELIVERED: November 1966
 COMMISSIONED: December 1966

DESIGNER: Maritime Administration
 BUILDER: Norfolk Shipbuilding and Drydock,
 Norfolk, Va.

SISTER SHIP(S): DAVIDSON

CALL LETTERS: WTEJ

HOME PORT: Seattle, Wash.

Complement:

COMMISSIONED OFFICERS: 8
 LICENSED OFFICERS: 3
 CREW: 27
 SCIENTISTS: 2

HULL: Welded steel/ice strengthened
 DISPLACEMENT: 995 tons
 GROSS TONNAGE: 854
 NET TONNAGE: 207

LENGTH (LOA): 175.0 ft (53.3 m)
 BREADTH (moulded): 38.0 ft (11.6 m)
 DRAFT, MAXIMUM: 12.1 ft (3.7 m)

CRUISING SPEED: 12 kn
 RANGE: 6,000 nmi
 POWER: 1,600 SHP

FUEL TYPE: #2 Diesel
 FUEL CAPACITY: 59,000 gal
 FUEL CONSUMPTION: 120 gal/h
 (normal cruising speed)
 ENDURANCE: 17 d
 ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The McARTHUR now is assigned to operations involving circulatory studies and is outfitted for these operations. This ship was originally designed and outfitted for hydrographic survey operations involving nautical charting. The ship normally operates off the U.S. Pacific Coast and in Alaska coastal waters.

HABITABILITY

Berthing

Single staterooms: 2
Double staterooms: 19
Total bunks aboard: 40

Food-Service Seating Capacity

Wardroom mess: 8
Crew's mess: 22

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by designated vessel personnel.

SCIENTIFIC LABORATORY FACILITIES

Oceanographic lab: 150 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Oceanographic winch
Manufacturer: Northern Line
Drive: Electrohydraulic
Line speed: 400 ft/min
Maximum pull: 3,000 lb
Drum capacity: 30,000 ft of 3/16-in wire rope or
11,000 ft of 5/16-in wire rope (interchangeable
drum)

Quantity: 1
Type: A-frame winch
Manufacturer: Braden
Drive: Hydraulic
Line speed: 120 ft/min
Maximum pull: 4,000 lb
Drum capacity: 820 ft of 3/4-in wire rope

Cranes and Booms

Quantity: 1
Type: Telescoping boom
Manufacturer: Baldwin-UMA-Hamilton
Boom length: 32 ft
Lifting capacity: 5,700 lb
(boom extended) 2,410 lb
Location(s): Foredeck

A-Frames

Quantity: 1
Type: Movable
Clearance over side: 6 ft
Location(s): Stern

Ground Tackle

Bower Anchor(s)

Quantity: 2
Type: Stockless
Weight: 2,000 lb

Quantity: 1
Type: Oceanographic winch
Manufacturer: Braden
Drive: Electrohydraulic
Line speed: 150 ft/min
Maximum pull: 16,000 lb
Drum capacity: 4,000 ft of 5/16-in wire rope

Quantity: 1
Type: Articulated boom
Manufacturer: Husky Hydraulics
Boom length: 22 ft
Lifting capacity: 12,500 lb
(boom extended) 4,500 lb
Location(s): Starboard quarter

Anchor Chain(s)

Quantity: 2
Size and type: 1-3/16 in stud link chain
Length: 165 fm

ELECTRONICS

Navigation

Radar
Gyrocompass
Loran
Precision positioning equipment

Communications

VHF/FM transceivers
HF transceivers
Teletype capability
Portable emergency transceiver
EPIRB's

Acoustics

Deepwater echo sounder
Shallow-water echo sounders

Scientific Equipment

C/STD system
XBT system
TDC system (shallow-water)

ENGINEERING**Propulsion Plant**

Type: Geared diesel

Main Propulsion Engines

Quantity: 2
Type: Diesel
Manufacturer: General Motors
Rated power (each): 800 hp

Propeller(s)

Quantity: 2
Type: Controllable pitch
Blades: 3
Diameter: 6.8 ft
Manufacturer: Bird Johnson

Electrical System*Ship's Service Generators*

Quantity: 2
Manufacturer: Detroit Diesel/GE
Output voltage: 450 a.c.
Power rating: 220 kW

Emergency Generator

Quantity: 1
Manufacturer: Detroit Diesel/GE
Output voltage: 450 a.c.
Power rating: 60 kW

Electrical Service

450 Va.c. three phase
120 Va.c. single phase

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM**System Capacities**

Storage capacity: 6,000 gal
Normal consumption: 1,500 gal/d
Normal production: 1,500 gal/d
Maximum production: 2,500 gal/d

Evaporators

Quantity: 1
Type: Steam-heat generated
Manufacturer: Aqua-Chem

POLLUTION CONTROL**Sewage Waste Control**

Type of treatment: Holding tank
Holding capacity: 5,000 gal

LAUNCHES AND SMALL BOATS**Utility/Rescue Boats**

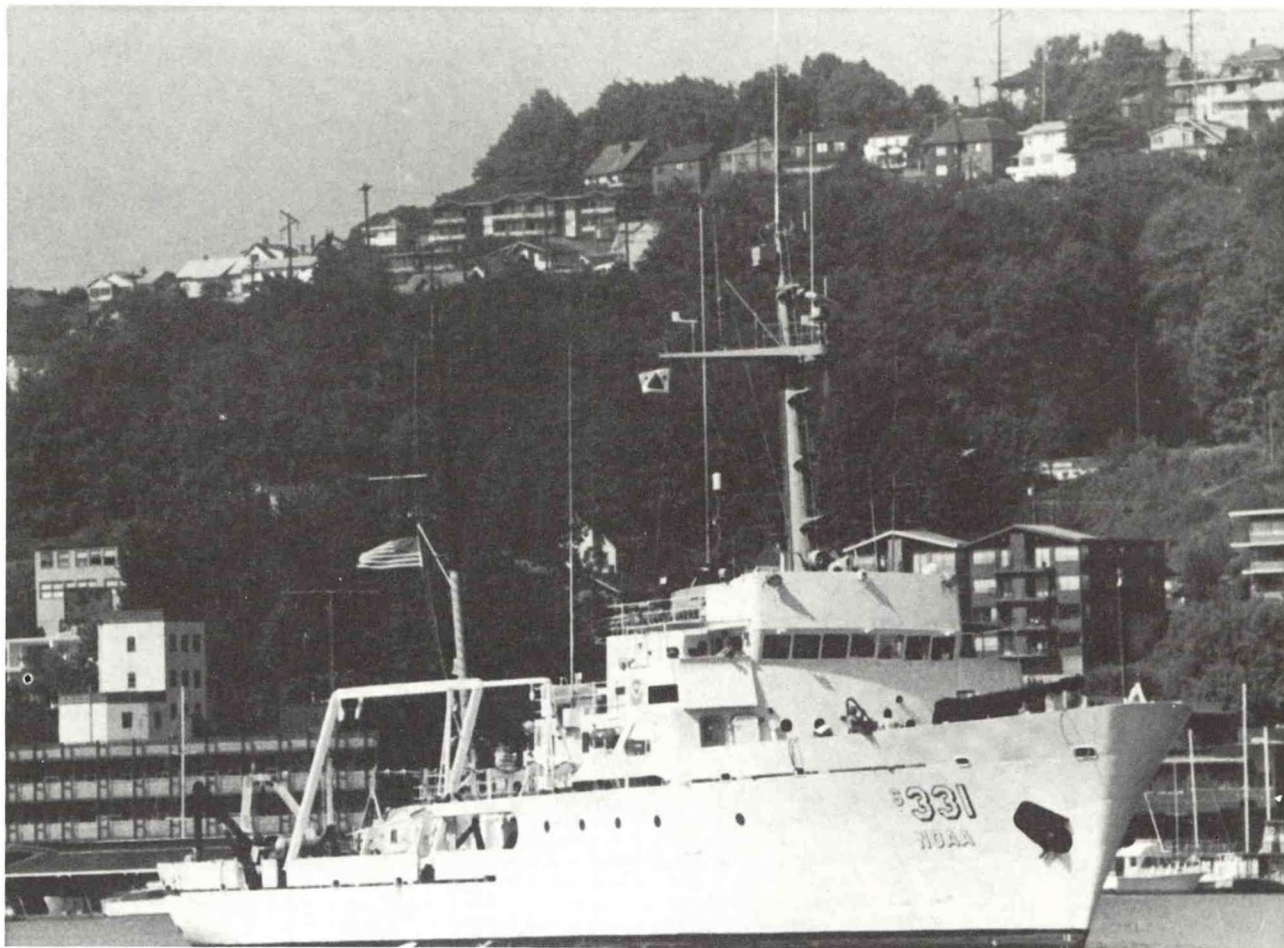
Hull type: Aluminum workboat
Quantity: 1
Manufacturer: Monark
Length: 26 ft
Propulsion: Diesel

Hull type: Aluminum open boat
Quantity: 1
Manufacturer: Monark
Length: 17 ft
Propulsion: Gasoline outboard

Utility Boats

Hull type: Aluminum skiff
Quantity: 1
Manufacturer: Alumacraft
Length: 12 ft
Propulsion: Gasoline outboard

Hull type: Fiberglass open boat
Quantity: 1
Manufacturer: Boston Whaler
Length: 16 ft
Propulsion: Gasoline outboard



DAVIDSON 331

LAUNCHED: May 1966
 DELIVERED: February 1967
 COMMISSIONED: March 1967

DESIGNER: Maritime Administration
 BUILDER: Norfolk Shipbuilding and Drydock,
 Norfolk, Va.

SISTER SHIP(S): McArthur

CALL LETTERS: WTEK

HOME PORT: Seattle, Wash.

Complement:

COMMISSIONED OFFICERS: 8
 LICENSED OFFICERS: 3
 CREW: 29

Operational Commitments:

The DAVIDSON is designed and outfitted for hydrographic surveys involving nautical charting. Scientific equipment normally on board is limited to that equipment which supports and is related to these survey operations. The ship normally operates off the U.S. Pacific Coast and in Alaska coastal waters.

HULL: Welded steel/ice strengthened
 DISPLACEMENT: 995 tons
 GROSS TONNAGE: 854
 NET TONNAGE: 207

LENGTH (LOA): 175.0 ft (53.3 m)
 BREADTH (moulded): 38.0 ft (11.6 m)
 DRAFT, MAXIMUM: 13.3 ft (4.1 m)

CRUISING SPEED: 12 kn
 RANGE: 6,000 nmi
 POWER: 1,600 SHP

FUEL TYPE: #2 diesel
 FUEL CAPACITY: 59,000 gal
 FUEL CONSUMPTION: 120 gal/h
 (normal cruising speed)

ENDURANCE: 17 d
 ENDURANCE CONSTRAINT: Fuel

HABITABILITY

Berthing

Single staterooms: 2
Double staterooms: 19
Total bunks aboard: 40

Food-Service Seating Capacity

Wardroom mess: 8
Crew's mess: 22

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by designated vessel personnel.

SCIENTIFIC LABORATORY FACILITIES

Oceanographic lab: 150 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Oceanographic winch
Manufacturer: Northern Line
Drive: Electrohydraulic
Line speed: 400 ft/min
Maximum pull: 3,000 lb
Drum capacity:
12,000 ft of 0.292-in 6-conductor cable
30,000 ft of 3/16-in wire rope
6,000 ft of 3/8-in wire rope (interchangeable drums)

Cranes and Booms

Quantity: 1
Type: Telescoping boom
Manufacturer: Baldwin-UMA-Hamilton
Boom length: 32 ft
Lifting capacity: 10,000 lb
(boom extended) 2,800 lb
Location(s): Foredeck

Quantity: 1
Type: Articulated boom
Manufacturer: Husky Hydraulics
Boom length: 22 ft
Lifting capacity: 12,500 lb
(boom extended) 4,550 lb
Location(s): Starboard quarter

A-Frames

Quantity: 1
Type: Movable
Clearance over side: 4 ft
Location(s): Stern

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight: 2,000 lb

Anchor Chain(s)
Quantity: 2
Size and type: 1-3/16-in stud link chain
Length: 165 fm

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
Teletype capability
Portable emergency transceiver
EPIRB's

Navigation

Radar
Gyrocompass
Loran
Precision positioning equipment

Acoustics

Deepwater echo sounder
Shallow-water echo sounders

Scientific Equipment

TDC system (shallow-water)
XBT system

Data Acquisition and Processing System

A shipboard computer system, the National Ocean Survey's Hydroplot System, is dedicated to the real-time acquisition and processing of hydrographic data. Each survey launch aboard ship has an identical Hydroplot

System. The Hydroplot System uses a PDP/8E computer with a 24K memory to generate a real-time position-corrected plot of sounding data, steering commands to the helmsman, and a punched paper tape for shore-based processing.

ENGINEERING

Propulsion Plant

Type: Geared diesel

Main Propulsion Engines

Quantity: 2

Type: Diesel

Manufacturer: General Motors

Rated power (each): 800 hp

Propeller(s)

Quantity: 2

Type: Controllable pitch

Blades: 3

Diameter: 6.8 ft

Manufacturer: Bird Johnson

Electrical System

Ship's Service Generators

Quantity: 2

Manufacturer: Detroit Diesel/GE

Output voltage: 450 a.c.

Power rating: 220 kW

Emergency Generator

Quantity: 1

Manufacturer: Detroit Diesel/GE

Output voltage: 450 a.c.

Power rating: 60 kW

Electrical Service

450 Va.c. three phase

120 Va.c. single phase

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM

System Capacities

Storage capacity: 6,000 gal

Normal consumption: 1,500 gal/d

Normal production: 1,500 gal/d

Maximum production: 2,500 gal/d

Evaporators

Quantity: 1

Type: Steam-heat generated

Manufacturer: Aqua Chem

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Holding tank

Holding capacity: 5,000 gal

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Aluminum open boat

Quantity: 2

Manufacturer: Monark

Length: 17 ft

Propulsion: Gasoline outboard

Hull type: Fiberglass motor whaleboat

Quantity: 1

Manufacturer: U.S. Navy

Length: 26 ft

Propulsion: Diesel

Hull type: Fiberglass open boat

Quantity: 1

Manufacturer: Boston Whaler

Length: 16 ft

Propulsion: Gasoline outboard

Survey Launches

Hull type: Type I aluminum

Quantity: 2

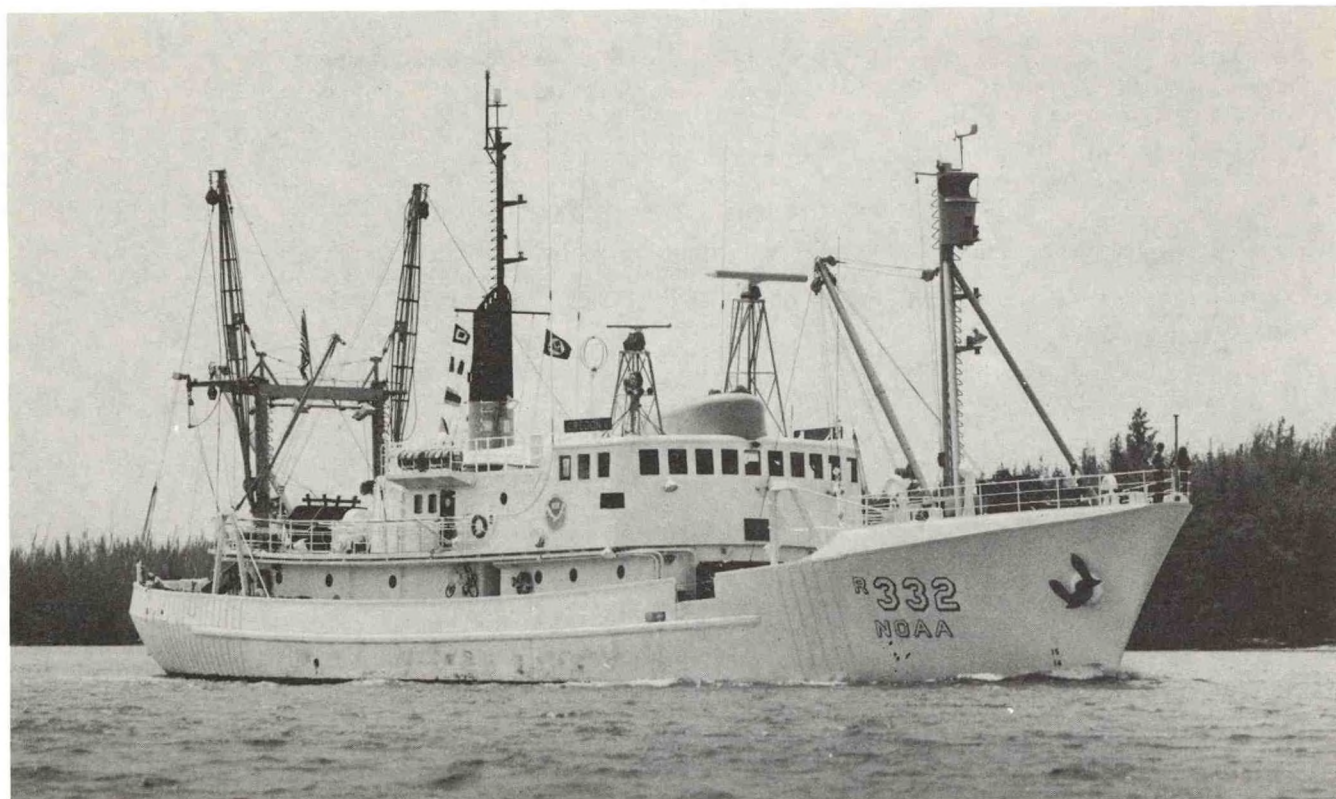
Manufacturer: The Boat Yard (Jensen)

Length: 29 ft

Propulsion: Diesel

SPECIAL FEATURES

A bathymetric swath survey system is installed aboard the DAVIDSON for evaluation and development purposes.



OREGON II ^R332

LAUNCHED: February 1967
DELIVERED: August 1967

DESIGNER: Robert H. Macy
BUILDER: Ingalls Shipbuilding,
Pascagoula, Miss.

CALL LETTERS: WTDO

HOME PORT: Pascagoula, Miss.

Complement:

LICENSED OFFICERS: 6
CREW: 10
SCIENTISTS: 15

HULL: Welded steel
DISPLACEMENT: 952 tons
GROSS TONNAGE: 703
NET TONNAGE: 228

LENGTH: (LOA): 170.0 ft (51.8 m)
BREADTH (moulded): 34.0 ft (10.4 m)
DRAFT, MAXIMUM: 14.0 ft (4.3 m)

CRUISING SPEED: 12 kn
RANGE: 9,500 nmi
POWER: 1,600 SHP

FUEL TYPE: #2 diesel
FUEL CAPACITY: 80,900 gal
FUEL CONSUMPTION: 85 gal/h
(normal cruising speed)
ENDURANCE: 33 d
ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The OREGON II conducts fishery and living marine resources research. The ship normally operates off the U.S. Southeast Atlantic Coast, in the Gulf of Mexico, the Caribbean Sea, and South Atlantic Ocean.

HABITABILITY

Berthing

Single staterooms: 3
Double staterooms: 13
Total bunks aboard: 29

Food-Service Seating Capacity

General mess: 12

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by designated vessel personnel.

SCIENTIFIC LABORATORY FACILITIES

Specimen lab: 100 ft²
Live specimen lab: 75 ft²
Hydrographic lab: 210²

Wet laboratory: 275 ft²
Instrumentation lab: 75 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Trawl winch (former usage)
Manufacturer: Marco
Drive: Hydraulic
Line speed: 105 ft/min
Maximum pull: 42,000 lb
Drum capacity: 7,500 ft of 7/8-in wire rope

Quantity: 1
Type: Hydrographic winch
Manufacturer: New England Trawler
Drive: Hydraulic
Line speed: 190 ft/min
Maximum pull: 3,700 lb
Drum capacity: 28,000 ft of 1/4-in wire rope

Cranes and Booms

Quantity: 1
Type: Fixed length boom
Boom length: 32 ft
Lifting capacity: 6,000 lb
Location(s): Well deck

A-Frames

Quantity: 1
Type: Movable
Clearance over side: 6 ft
Location(s): Portside forward

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight: 2,275 lb

Quantity: 1
Type: Seine/rawl winch
Manufacturer: Marco
Drive: Hydraulic
Line speed: 68 ft/min
Maximum pull: 30,000 lb
Drum capacity: 1,200 ft. of 9/16-in. wire rope

Quantity: 1
Type: Bathythermograph winch
Manufacturer: Tsurumi-Seikiosaku-Sho
Drive: Electric
Line speed: 7 ft/min
Drum capacity: 1,000 ft of 3-mm wire

Quantity: 1
Type: Fixed length boom
Boom length: 25 ft
Lifting capacity: 6,000 lb
Location(s): Aft

Quantity: 1
Type: Fixed
Location(s): Starboard side forward

Anchor Chain(s)
Quantity: 2
Size and type: 1 1/4-in stud link chain
Length: 105 fm

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
Teletype capability
Portable emergency transceiver
EPIRB's

Navigation

Radar
Gyrocompass
Loran
RDF
Omega

Acoustics

Shallow-water echo sounders
 Netsonde
 Vertical fish finder
 Steerable sonar

Scientific Equipment

XBT system

ENGINEERING**Propulsion Plant**

Type: Geared diesel

Main Propulsion Engines

Quantity: 2
 Type: Diesel
 Manufacturer: Fairbanks Morse
 Rated power (each): 800 hp

Propeller(s)

Quantity: 1
 Type: Controllable pitch
 Blades: 4
 Diameter: 7.5 ft
 Manufacturer: Bird-Johnson

Electrical System*Ship's Service Generators*

Quantity: 2
 Manufacturer: Fairbanks Morse
 Output voltage: 450 a.c.
 Power rating: 200 kW

Emergency Generator

Quantity: 1
 Manufacturer: Onan
 Output voltage: 450 a.c.
 Power rating: 12 kW

Electrical Service

450Va.c. three phase
 120 Va.c. single phase

FRESHWATER SYSTEM**System Capacities**

Storage capacity: 8,000 gal
 Normal consumption: 1,000 gal/d
 Normal production: 800 gal/d
 Maximum production: 960 gal/d

Evaporators

Quantity: 2
 Type: Exhaust waste heat generation
 Manufacturer: American Machine and Foundry

POLLUTION CONTROL**Sewage Waste Control**

Type of treatment: Aerobic bacterial
 Manufacturer: St. Louis Ship (FAST)
 Holding capacity: 30 d

LAUNCHES AND SMALL BOATS**Utility/Rescue Boats**

Hull type: Fiberglass open rescue
 Quantity: 1
 Manufacturer: Willard
 Length: 18 ft
 Propulsion: Diesel

Survey Launches

Hull type: Fiberglass open skiff
 Quantity: 1
 Manufacturer: Sea Pip
 Length: 12 ft
 Propulsion: Gasoline outboard



ALBATROSS IV #342

LAUNCHED: April 1962
DELIVERED: November 1962
DEDICATED: May 1963

DESIGNER: Dwight S. Simpson Asso.
BUILDER: Southern Shipbuilding
Slidell, La.

CALL LETTERS: WMVF

HOME PORT: Woods Hole, Mass.

Complement:

LICENSED OFFICERS: 7
CREW: 15
SCIENTISTS: 15

HULL: Welded steel/ice strengthened
DISPLACEMENT: 1,089 tons
GROSS TONNAGE: 931
NET TONNAGE: 300

LENGTH (LOA): 187.0 ft (57.0 m)
BREADTH (moulded): 33.0 ft (10.0 m)
DRAFT, MAXIMUM: 16.2 ft (4.9 m)

CRUISING SPEED: 12 kn
RANGE: 4,300 nmi
POWER: 1,130 SHP

FUEL TYPE: #2 diesel
FUEL CAPACITY: 47,270
FUEL CONSUMPTION: 46 gal/h
(normal cruising speed)
ENDURANCE: 15 d
ENDURANCE CONSTRAINT: Stability
considerations

Operational Commitments:

The ALBATROSS IV conducts fishery and living marine resources research. The ship normally operates off the U.S. Northeast Atlantic Coast.

HABITABILITY

Berthing

Single staterooms: 9
Double staterooms: 7
Three-bunk rooms: 5
Total bunks aboard: 38

Food-Service Seating Capacity

Ship's officers' mess: 14
Crew's mess: 8

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by designated vessel personnel.

SCIENTIFIC LABORATORY FACILITIES

Dry oceanographic lab: 156 ft²
Wet oceanographic lab: 125 ft²
Photographic lab: 30 sq. ft

Biological lab: 350 ft²
Plankton lab: 120 ft²
Electronics lab: 412 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Dredge winch
Manufacturer: New England Trawler
Drive: Electrohydraulic
Line speed: 220 ft/min
Maximum pull: 4,000 lb
Drum capacity: 3,900 ft of 5/8-in steel cable

Quantity: 1
Type: Hydrographic winch
Manufacturer: New England Trawler
Drive: Electric
Line speed: 250 ft/min
Maximum pull: 3,800 lb
Drum capacity: 20,000 ft of 1/4-in wire rope

Cranes and Booms

Quantity: 1
Type: Fixed length boom
Lifting Capacity: 2,000 lb
Location(s): Main deck aft

A-Frames

Quantity: 1
Type: Movable
Location(s): Starboard amidships boat deck

Quantity: 1
Type: Movable
Location(s): Starboard boat deck

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight: 2,000 lb

Communications

VHF/FM Transceivers
HF transceivers
Emergency radio auto alarm
Portable emergency transceiver
EPIRB's

Quantity: 1
Type: Trawl winch
Manufacturer: New England Trawler
Drive: Electric
Line speed: 215 ft/min
Maximum pull: 16,000 lb
Drum capacity: 6,000 ft of 7/8-in steel cable

Quantity: 1
Type: Neuston winch
Manufacturer: New England Trawler
Drive: Electrohydraulic
Line speed: 200 ft/min
Maximum pull: 3,500 lb
Drum capacity: 6,000 ft of 3/8-in wire rope

Quantity: 2
Type: Fixed length boom
Lifting capacity: 2,000 lb
Location(s): Port and starboard boat deck aft

Quantity: 1
Type: Movable gantry
Location(s): Stern

Anchor Chain(s)
Quantity: 2
Size and type: 1 1/2-in stud link chain
Length: 105 fm

ELECTRONICS

Navigation

Radar
Gyrocompass
Loran

Acoustics

Deepwater echo sounder
 Shallow-water echo sounders
 Vertical fish finder

Scientific Equipment

XBT system

ENGINEERING**Propulsion Plant**

Type: Geared diesel

Main Propulsion Engines

Quantity: 2
 Type: Diesel
 Manufacturer: Caterpillar
 Rated power (each): 565 hp

Auxiliary Propulsion

Type: Through hull bow thruster
 Manufacturer: Reliance
 (drive train) Murrey & Tregurtha
 Drive: Electric
 Rated power: 125 hp

Electrical System*Ship's Service Generators*

Quantity: 3
 Manufacturer: Caterpillar
 Output voltage: 450 a.c.
 Power rating: 150 kW

Electrical Service

450 V.a.c. three phase
 120 V.a.c. single phase
 240 V.d.c.
 120 V.d.c.

Propeller(s)

Quantity: 1
 Type: Controllable pitch/Kort nozzle
 Blades: 3
 Diameter: 6 ft
 Manufacturer: Liaaen

Emergency Generator

Quantity: 1
 Output voltage: 240 d.c.
 Power rating: 25 kW

FRESHWATER SYSTEM**System Capacities**

Storage capacity: 21,770 gal
 Normal consumption: 1,100 gal/d
 Normal production: 800 gal/d
 Maximum production: 1,920 gal/d

Evaporators

Quantity: 2
 Type: Exhaust waste heat generated
 Manufacturer: American Foundry

POLLUTION CONTROL**Sewage Waste Control**

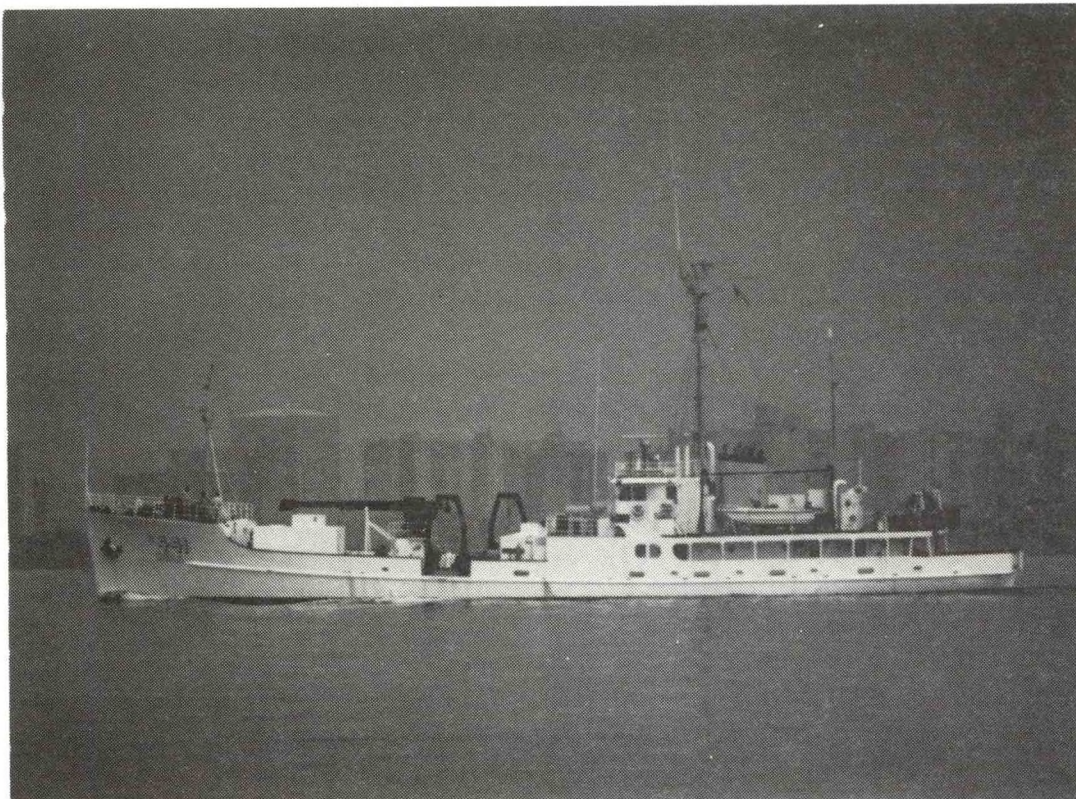
Type of treatment: Holding tank
 Holding capacity: 1,000 gal

LAUNCHES AND SMALL BOATS**Utility/Rescue Boats**

Hull Type: Fiberglass open rescue
 Quantity: 1
 Manufacturer: Willard
 Length: 18 ft
 Propulsion: Diesel

SPECIAL FEATURE

Stern ramp



GEORGE B. KELEZ ^R441

LAUNCHED: 1944
DELIVERED: 1944 (Army)
COMMISSIONED: March 1975 (NOAA)
DEDICATED: 1964 (BCF)

DESIGNER: Sturgeon Bay Shipbuilding
BUILDER: Ingalls Shipyard
Decatur, Ala.

SISTER SHIP(S): Converted U.S. Army FS400
supply vessel

CALL LETTERS: KNBG

HOME PORT: Norfolk, Va.

Complement:

COMMISSIONED OFFICERS: 7
LICENSED OFFICERS: 3
CREW: 15
SCIENTISTS: 5

HULL: Welded steel
DISPLACEMENT: 936 tons
GROSS TONNAGE: 550
NET TONNAGE: 262

LENGTH (LOA): 176.5 ft (53.8 m)
BREADTH (moulded): 32.0 ft (9.8 m)
DRAFT, MAXIMUM: 12.5 ft (3.8 m)

CRUISING SPEED: 10.5 kn
RANGE: 3,800 nmi
POWER: 900 SHP

FUEL TYPE: #2 diesel
FUEL CAPACITY: 26,000 gal
FUEL CONSUMPTION: 60 gal/h
(normal cruising speed)
ENDURANCE: 15 d
ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The GEORGE B. KELEZ conducts coastal oceanographic and fishery research. The ship normally operates off the U.S. Atlantic Coast.

HABITABILITY

Berthing

Single staterooms: 4
Double staterooms: 12
Four-bunk rooms: 1
Total bunks aboard: 32

Food-Service Seating Capacity

General mess: 18

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by designated vessel personnel.

SCIENTIFIC LABORATORY FACILITIES

Oceanographic dry lab: 32 ft²
Oceanographic wet lab: 80 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Oceanographic winch
Manufacturer: Rowe
Drive: Hydraulic
Line speed: 300 ft/min
Maximum pull: 10,000 lb
Drum capacity: 20,000 ft of 7/16-in wire rope
Quantity: 1
Type: Hydrographic winch
Manufacturer: Hydrohoist
Drive: Hydraulic
Line speed: 33 ft/min
Maximum pull: 500 lb
Drum capacity: 2,000 ft of 3/16-in multiconductor cable

Quantity: 1
Type: Trawl winch
Manufacturer: Marco
Drive: Hydraulic
Line speed: 233 ft/min
Maximum pull: 10,000 lb
Drum capacity: 3,000 ft of 9/16-in wire rope
Quantity: 1
Type: BT winch
Drive: Hydraulic

Cranes and Booms

Quantity: 1
Type: Telescoping boom
Manufacturer: Austin-Western
Boom Length: 35 ft
Lifting capacity: 3,500 lb
(boom extended) 1,750 lb
Location(s): Well deck

A-Frames

Quantity: 2
Type: Movable
Clearance over side: 6 ft
Location(s): Well deck, port and starboard

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight: 1,500 lb

Anchor Chain(s)
Quantity: 2
Size and type: 1-3/16-in stud link chain
Length: 105 fm

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
Teletype capability
Portable emergency transceiver
EPIRB's

Navigation

Radar
Gyrocompass
Loran
Precision positioning equipment

Acoustics

Deepwater echo sounder
 Shallow-water echo sounders

Scientific Equipment

XBT system
 C/STD system
 Rosette water sampling system

ENGINEERING**Propulsion Plant**

Type: Geared diesel

Main Propulsion Engines

Quantity: 2
 Type: Diesel
 Manufacturer: General Motors
 Rated power (each): 450 hp

Propeller(s)

Quantity: 2
 Type: Fixed pitch
 Blades: 3
 Diameter: 6 ft

Electrical System*Ship's Service Generator*

Quantity: 1
 Manufacturer: Detroit Diesel/Delco
 Output voltage: 225 a.c.
 Power rating: 150 kW

Auxiliary Generator

Quantity: 1
 Manufacturer: General Motors/Delco
 Output voltage: 225 a.c.
 Power rating: 60 kW

Electrical Service

225 Va.c. three phase
 110 Va.c. single phase
 230 Vd.c.
 115 Vd.c.

Auxiliary Generators

Quantity 2:
 Manufacturer: Cleveland/Allis Chalmers
 Output voltage: 230 d.c.
 Power ratings: 100 kW

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM**System Capacities**

Storage capacity: 24,000 gal
 Normal consumption: 1,000 gal/d

POLLUTION CONTROL**Sewage Waste Control**

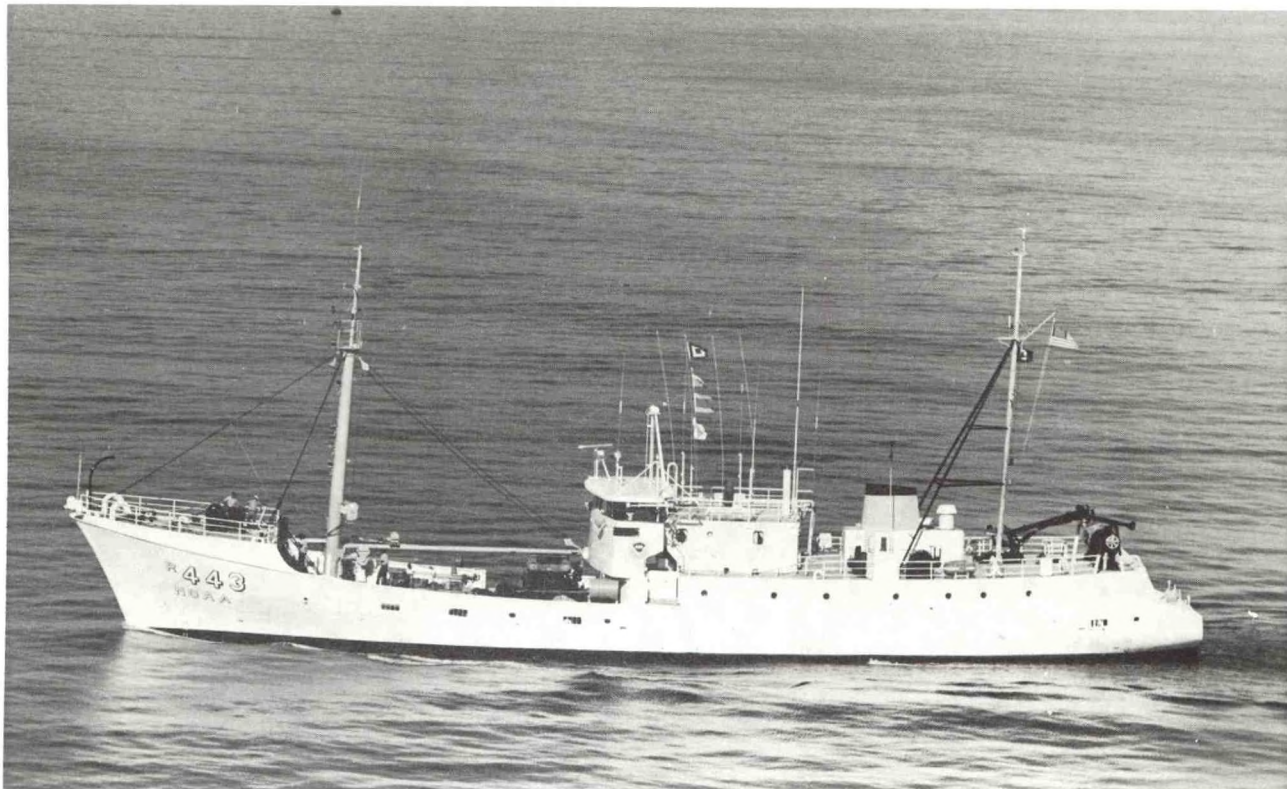
Type of treatment: Holding tank
 Holding capacity: 3,000 gal

LAUNCHES AND SMALL BOATS**Utility/Rescue Boats**

Hull Type: Aluminum open boat
 Quantity: 1
 Manufacturer: Monark
 Length: 19 ft
 Propulsion: Gasoline outboard

SPECIAL FEATURES

Equipped to handle laboratory and dormitory portable vans.



TOWNSEND CROMWELL ^R443

LAUNCHED: July 1963
DELIVERED: November 1963
COMMISSIONED: June 1975 (NOAA)
DEDICATED: July 1963 (BCF)

DESIGNER: W. C. Nickum & Sons
BUILDER: J. Ray McDermott Co.
Morgan City, La.

CALL LETTERS: WTDF

HOME PORT: Honolulu, Hawaii

Complement:

COMMISSIONED OFFICERS: 4
LICENSED OFFICERS: 3
CREW: 10
SCIENTISTS: 9

HULL: Welded steel
DISPLACEMENT: 652 tons
GROSS TONNAGE: 564
NET TONNAGE: 384

LENGTH (LOA): 163.0 ft (49.7 m)
BREADTH (moulded): 33.0 ft (10.0 m)
DRAFT, MAXIMUM: 12.7 ft (3.9 m)

CRUISING SPEED: 11.5 kn
RANGE: 8,300 nmi
POWER: 800 SHP

FUEL TYPE: #2 diesel
FUEL CAPACITY: 42,000 gal
FUEL CONSUMPTION: 50 gal/h
(normal cruising speed)
ENDURANCE: 30 d
ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The TOWNSEND CROMWELL conducts fishery and living marine resources research. The ship normally operates off the Hawaiian Islands and in the Central Pacific Ocean.

HABITABILITY

Berthing

Single staterooms: 4
Double staterooms: 11
Total bunks aboard: 26

Food-Service Seating Capacity

General mess: 22

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by designated vessel personnel.

SCIENTIFIC LABORATORY FACILITIES

Oceanographic lab: 290 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Net reel winch
Manufacturer: Wheeler
Drive: Electrohydraulic
Line speed: 350 ft/min
Maximum pull: 1,200 lb
Drum capacity: 30,000 ft of 5/32-in wire rope

Quantity: 2
Type: General purpose winches
Manufacturer: Rowe
Drive: Hydraulic
Drum capacity: 3,600 ft of 5/8-in wire rope

Cranes and Booms

Quantity: 1
Type: Fixed length boom
Boom length: 32 ft
Lifting capacity: 20,000 lb
Location(s): Well deck

A-Frames

Quantity: 1
Type: Fixed gallows
Clearance over side: 2 ft
Location(s): Well deck, starboard side

Ground Tackle

Bower Anchor(s)
Quantity: 1
Type: Stockless
Weight: 1,365 lb

Communications

VHF/FM transceivers
HF transceivers
Teletype capability
Portable emergency transceiver
EPIRB's

Acoustics

Deepwater echo sounder
Shallow-water echo sounders
Steerable sonar
Netsonde

Quantity: 1
Type: Oceanographic winch
Manufacturer: Markey
Drive: Hydraulic
Line speed: 240 ft/min
Maximum pull: 2,750 lb
Drum capacity: 30,000 ft of 3/16-in wire rope

Quantity: 1
Type: Articulated boom
Manufacturer: Husky Mariner
Boom length: 25 ft
Lifting capacity: 2,000 lb
Location(s): Starboard side aft

Quantity: 1
Type: CTD boom
Clearance over side: 4 ft
Location(s): Well deck, starboard side

Anchor Chain(s)
Quantity: 1
Size and type: 1 1/8-in stud link chain
Length: 165 fm

ELECTRONICS

Navigation

Radar
Gyrocompass
Loran
Satnav
RDF
Omega

Scientific Equipment

CSTD system
XBT system
Rosette water sampling system

ENGINEERING

Propulsion Plant

Type: Geared diesel

Main Propulsion Engines

Quantity: 2

Type: Diesel

Manufacturer: White-Superior

Rated power (each): 400 hp

Propeller(s)

Quantity: 2

Type: Controllable pitch

Blades: 3

Diameter: 5.5 ft

Manufacturer: Liaaen Shipbuilding

Electrical System

Ship's Service Generators

Quantity: 2

Manufacturer: Caterpillar

Output voltage: 450 a.c.

Power rating: 175 kW

Electrical Service

450 Va.c. three phase

225 Va.c. three phase

110 Va.c. single phase

Power isolation protection available for sensitive equipment.

Emergency Generator

Quantity: 1

Manufacturer: Onan

Output voltage: 120 a.c.

Power rating: 6 kW

FRESHWATER SYSTEM

System Capacities

Storage capacity: 13,000 gal

Normal consumption: 750 gal/d

Normal production: 750 gal/d

Maximum production: 1,800 gal/d

Evaporators

Quantity: 2

Type: Exhaust-waste-heat generated

Manufacturer: Triton

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Holding tank

Holding capacity: 200 gal

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Fiberglass open boat

Quantity: 1

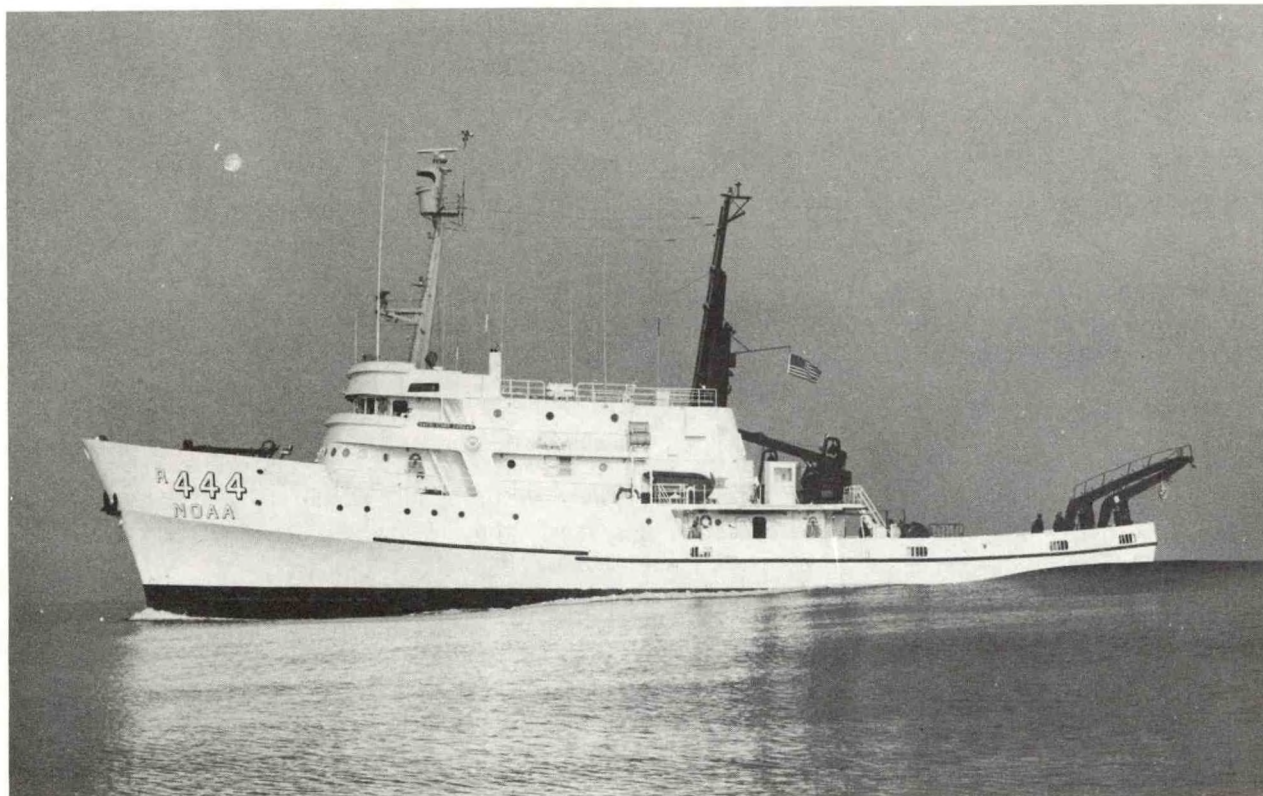
Manufacturer: Boston Whaler

Length: 16 ft

Propulsion: Gasoline outboard

SPECIAL FEATURES

Bow underwater observation chamber



DAVID STARR JORDAN ^R444

LAUNCHED: December 1964
DELIVERED: October 1965
DEDICATED: January 1966

DESIGNER: Harco Engineering
BUILDER: Christy Corporation
Sturgeon Bay, Wis.

CALL LETTERS: WTDK

HOME PORT: San Diego, Calif.

Complement:

LICENSED OFFICERS: 6
CREW: 10
SCIENTISTS: 13

HULL: Welded steel
DISPLACEMENT: 993 tons
GROSS TONNAGE: 873
NET TONNAGE: 262

LENGTH (LOA): 171.0 ft (52.1 m)
BREADTH (moulded): 36.6 ft. (11.2 m)
DRAFT, MAXIMUM: 12.5 ft (3.8 m)
16.0 ft (4.8 m) (sonar dome down)

CRUISING SPEED: 11.5 kn
RANGE: 8,560 nmi
POWER: 1,068 SHP

FUEL TYPE: #2 diesel
FUEL CAPACITY: 56,865 gal
FUEL CONSUMPTION: 58 gal/h
(normal cruising speed)
ENDURANCE: 31 d
ENDURANCE CONSTRAINT: Fuel/ballast

Operational Commitments:

The DAVID STARR JORDAN conducts fishery and living marine resources research. The ship normally operates off the U.S. Pacific Coast and the Pacific Coasts of Central and South America.

HABITABILITY

Berthing

Single staterooms: 3
Double staterooms: 16
Total bunks aboard: 35

Food-Service Seating Capacity

General mess: 27

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by designated vessel personnel.

SCIENTIFIC LABORATORY FACILITIES

Chemical oceanography lab: 370 ft²
Physical oceanography lab: 210 ft²
Biological oceanography lab: 53 ft²

Constant temperature room: 76 ft²
X-ray room: 55 ft²
Dark room: 40 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Hydrographic winch
Manufacturer: Marco
Drive: Hydraulic
Line speed: 780 ft/min
Maximum pull: 1,600 lb
Drum capacity: 15,000 ft of 5/16-in wire rope
Quantity: 1
Type: Combination winch
Manufacturer: Marco
Drive: Hydraulic
Line speed: 160 ft/min
Maximum pull: 6,500 lb
Drum capacity: 6,080 ft of 3/8-in wire rope

Quantity: 1
Type: Hydrographic winch
Manufacturer: Marco
Drive: Hydraulic
Line speed: 780 ft/min
Maximum pull: 1,600 lb
Drum capacity: 30,000 ft of 3/16-in wire rope
Quantity: 2
Type: Trawl winches
Manufacturer: Marco
Drive: Hydraulic
Line speed: 200 ft/min
Maximum pull: 12,000 lb
Drum capacity: 8,830 ft of 5/8-in wire rope

Cranes and Booms

Quantity: 1
Type: Articulated telescoping boom
Manufacturer: Bucyrus Erie
Boom length: 47 ft
Lifting capacity: 10,000 lb
(boom extended) 2,500 lb
Location(s): Foredeck

Quantity: 1
Type: Articulated boom
Manufacturer: Husky Marine
Boom length: 18 ft
Lifting capacity: 4,650 lb
(boom extended) 1,800 lb
Location(s): Centerline aft

A-Frames

Quantity: 1
Type: Movable
Clearance over stern: 8 ft
Location(s): Stern

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight: 1,940 lb

Anchor Chain(s)
Quantity: 2
Size and type: 1-3/16-in stud link chain
Length: 105 fm

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
Teletype capability
Portable emergency transceiver
EPIRB's

Navigation

Radar
Gyrocompass
Loran
Satnav
RDF
Omega

Acoustics

Deepwater echo sounder
 Shallow-water echo sounders
 Steerable sonar
 Vertical fish finder

Scientific Equipment

CSTD system
 XBT system

ENGINEERING**Propulsion Plant**

Type: Geared diesel

Main Propulsion Engines

Quantity: 2
 Type: Diesel
 Manufacturer: White Superior
 Rated power (each): 543 hp

Auxiliary Propulsion

Type: Lowerable bow thruster
 Manufacturer: Schottle
 Drive: Electric
 Rated power: 200 hp

Propeller(s)

Quantity: 2
 Type: Controllable pitch
 Blades: 3
 Diameter: 5.7 ft
 Manufacturer: Bird Johnson

Electrical System*Ship's Service Generators*

Quantity: 2
 Manufacturer: General Motors/Delco
 Output voltage: 245 a.c.
 Power rating: 200 kW

Electrical Service

450 V.a.c. three phase
 225 V.a.c. three phase
 110 V.a.c. three phase

Power isolation protection available for sensitive equipment.

Emergency Generator

Quantity: 1
 Manufacturer: General Motors/Delco
 Output voltage: 450 a.c.
 Power rating: 30 kW

FRESHWATER SYSTEM**System Capacities**

Storage capacity: 8,000 gal
 Normal consumption: 1,000 gal/d
 Normal production: 2,280 gal/d

Evaporators

Quantity: 2
 Type: Exhaust-waste-heat generated
 Manufacturer: Cuno Engineering

POLLUTION CONTROL**Sewage Waste Control**

Type of treatment: Aerobic bacterial
 Manufacturer: Hamworthy
 Holding capacity: 30 d

Oily Waste Control

Type of treatment: Separator
 Manufacturer: Harco

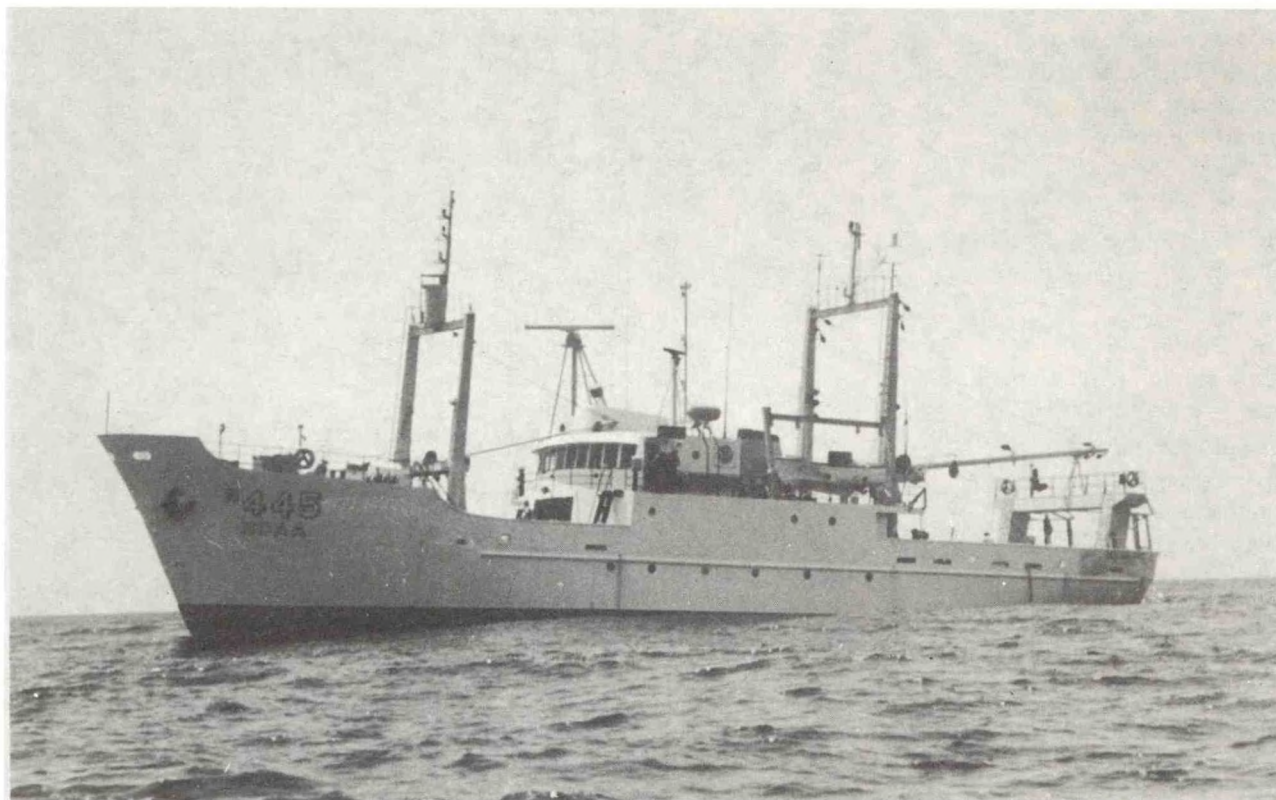
LAUNCHES AND SMALL BOATS**Utility/Rescue Boats**

Hull type: Fiberglass rescue boat
 Quantity: 1
 Manufacturer: Willard Co.
 Length: 18 ft
 Propulsion: Diesel
 Hull type: Fiberglass open boat
 Quantity: 1
 Manufacturer: Boston Whaler
 Length: 12 ft
 Propulsion: Gasoline outboard

Hull type: Fiberglass open boat
 Quantity: 1
 Manufacturer: Boston Whaler
 Length: 16 ft
 Propulsion: Gasoline outboard

SPECIAL FEATURES

Bow underwater observation chamber



DELAWARE II ^R445

LAUNCHED: December 1967

DELIVERED: October 1968

DESIGNER: George C. Sharp, Inc.

BUILDER: South Portland Engineering
South Portland, Maine

CALL LETTERS: KNBD

HOME PORT: Sandy Hook N.J.

Complement:

LICENSED OFFICERS: 6

CREW: 9

SCIENTISTS: 9

HULL: Welded steel

DISPLACEMENT: 758 tons

GROSS TONNAGE: 483

NET TONNAGE: 231

LENGTH (LOA): 155.0 ft (47.2 m)

BREADTH (moulded): 30.1 ft (9.2 m)

DRAFT, MAXIMUM: 14.7 ft (4.5 m)

CRUISING SPEED: 11.5 kn

RANGE: 6,600 nmi

POWER: 1,230 SHP

FUEL TYPE: #2 diesel

FUEL CAPACITY: 41,900 gal

FUEL CONSUMPTION: 60 gal/d

(normal cruising speed)

ENDURANCE: 24 d

ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The DELAWARE II conducts fishery and living marine resources research. The ship normally operates off the U.S. Atlantic Coast.

HABITABILITY

Berthing

Single staterooms: 2
Double staterooms: 8
Four-bunk rooms: 2
Total bunks aboard: 26

Food-Service Seating Capacity

General mess: 18

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by designated vessel personnel.

SCIENTIFIC LABORATORY FACILITIES

Oceanographic labs: (two) 650 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Oceanographic winch
Manufacturer: Hathaway Machinery
Drive: Hydraulic
Maximum pull: 4,000 lb

Quantity: 1
Type: BT winch
Manufacturer: American Chain & Cable
Drive: Electric
Line speed: 200 ft/min
Maximum pull: 400 lb
Drum capacity: 3,000 ft of 3/32-in wire rope

Quantity: 1
Type: Trawl winches
Manufacturer: Marine Engines Specialties
Drive: Hydraulic
Line speed: 119 ft/min
Maximum pull: 20,000 lb
Drum capacity: 12,000 ft. of 3/4 -in wire rope

Quantity: 1
Type: Constant tension winch
Manufacturer: Control Data, Canada Ltd.
Drive: Hydraulic
Line speed: 320 ft/min
Maximum pull: 400 lb
Drum capacity: 1,000 ft of 1/2 -in wire rope

Cranes and Booms

Quantity: 1
Type: Fixed length boom
Boom length: 45 ft
Lifting capacity: 10,000 lb
Location(s): Centerline forward

Quantity: 1
Type: Fixed length boom
Boom length: 23 ft
Lifting capacity: 2,000 lb
Location(s): Centerline aft

A-Frames

Quantity: 1
Type: Gallows frame
Location(s): Stern

Quantity: 1
Type: Movable A-frame
Clearance over side: 4 ft
Location(s): Starboard side forward

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight: 1,140 lb

Anchor Chain(s)
Quantity: 1
Size and type: 1-1/16-in stud link chain
Length: 135 fm

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
Portable emergency transceiver
EPIRB's

Navigation

Radar
Gyrocompass
Loran

Acoustics

Shallow-water echo sounders
Steerable sonar
Fish finder

Scientific Equipment

XBT system

ENGINEERING

Propulsion Plant

Type: Geared diesel

Main Propulsion Engines

Quantity: 1

Type: Diesel

Manufacturer: General Motors

Rated power (each): 1,230 hp

Propeller

Quantity: 1

Type: Fixed pitch

Blades: 4

Diameter: 8 ft

Electrical System

Ship's Service Generators

Quantity: 2

Manufacturer: General Motors/Delco

Output voltage: 440 a.c.

Power rating: 150 kW

Emergency Generator

Quantity: 1

Manufacturer: Hercules/Cato

Output voltage: 440 a.c.

Power rating: 10 kW

Electrical Service

440 Va.c. three phase

220 Va.c. three phase

110 Va.c. three phase

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM

System Capacities

Storage capacity: 7,300 gal

Normal consumption: 600 gal/d

Normal production: 1,800 gal/d

Maximum production: 2,400 gal/d

Evaporators

Quantity: 1

Type: Steam-heat generated

Manufacturer: Maxim Aquafresh

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Aerobic bacterial

Manufacturer: St. Louis Shipbuilding

Holding capacity: 30 days

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

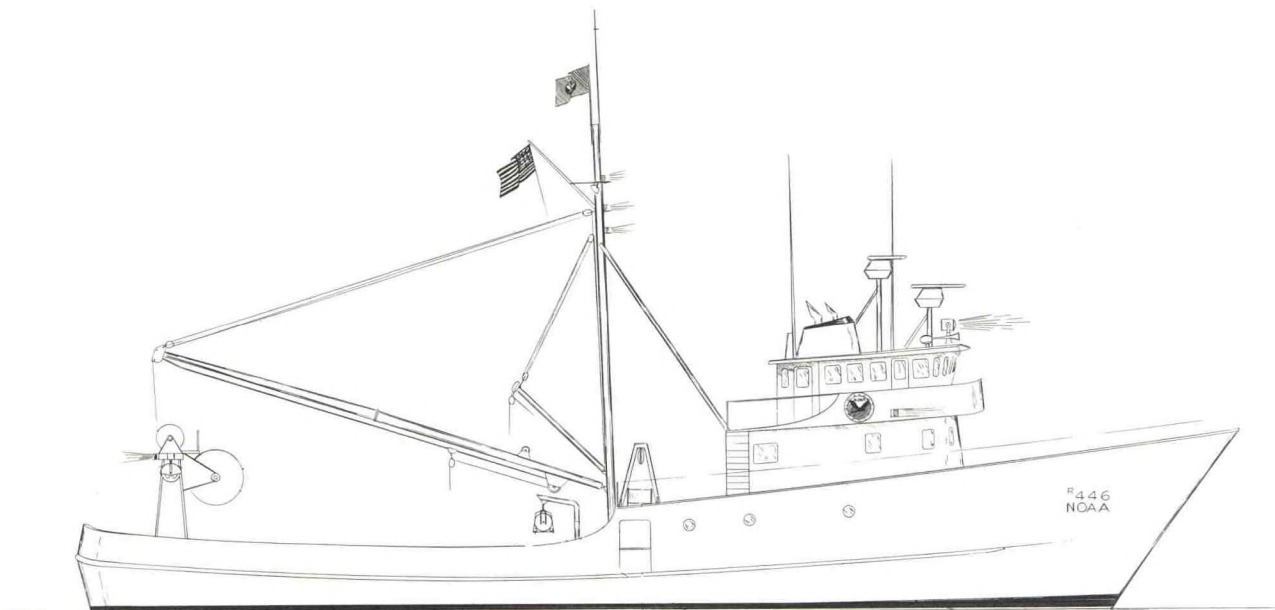
Hull type: Fiberglass rescue boat

Quantity: 1

Manufacturer: Willard

Length: 18 ft

Propulsion: Diesel



CHAPMAN R446

LAUNCHED: } Presently
 DELIVERED: } Under
 COMMISSIONED: } Construction

DESIGNER: Bender Welding & Machine Co.
 BUILDER: Bender Welding & Machine Co.

CALL LETTERS: WTDL

HOME PORT: Seattle, Wash.

Complement:

COMMISSIONED OFFICERS: 3
 LICENSED OFFICERS: 1
 CREW: 7
 SCIENTISTS: 6

HULL: Welded steel
 DISPLACEMENT: 520 tons
 GROSS TONNAGE:
 NET TONNAGE:

LENGTH (LOA): 127.0 ft (38.7 m)
 BREADTH (moulded): 29.6 ft (9.1 m)
 DRAFT, MAXIMUM: 14.0 ft (4.3 m)

CRUISING SPEED: 11 kn
 RANGE: 6,000 nmi
 POWER: 1,250 SHP

FUEL TYPE: #2 diesel
 FUEL CAPACITY: 40,000 gal
 FUEL CONSUMPTION:
 (normal cruising speed)
 ENDURANCE:
 ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

This vessel will conduct fishery and living marine resources research. It is anticipated that the ship normally will operate in the Pacific Northwest and Alaska coastal waters.

HABITABILITY

Berthing

Single staterooms: 2
Double staterooms: 8
Total bunks aboard: 18

Food-Service Seating Capacity

General mess: 17

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by designated vessel personnel.

SCIENTIFIC LABORATORY FACILITIES

Dry laboratory: 202 ft²
Fish processing laboratory: 163 ft²
Portable laboratory van: 8 ft by 8 ft by 20 ft

DECK MACHINERY

Winches

Quantity: 2
Type: trawl winches
Manufacturer: Marco
Drive:
Line speed:
Maximum pull:
Drum capacity:
Quantity: 1
Type: CTD winch
Manufacturer: Northern Line
Drive:
Line speed:
Maximum pull:
Drum capacity:

Cranes and Booms

Quantity: 1
Type: Fixed length boom
Boom length: 54 ft
Lifting capacity:
(boom extended)
Location(s): Amidships

Ground Tackle

Bower Anchor(s)
Quantity: 1
Type: Danforth
Weight (each): 1,000 lb

Electronics

Communications
VHF/FM transceivers
HF transceivers
Portable emergency transceiver
EPIRB's

Acoustics

Deepwater echo sounder
Shallow-water echo sounders
Fish finder
Net sonde

Quantity: 1
Type: Net sonde winch
Manufacturer: Svendberg
Drive:
Line speed:
Maximum pull:
Drum capacity:

A-Frames

Quantity: 1
Type: Movable
Clearance over side:
Location(s): Starboard

Anchor Chain(s)

Quantity: 1
Size and type: 1-in stud link chain; 1-in wire rope
Length (each): 30 fm; 100 fm wire rope

Navigation

Radar
Gyrocompass
Loran
Satnav

Scientific Equipment

CTD system
XBT system

Data Acquisition and Processing System:

The vessel will be equipped with a Computer Automated Measurement and Control (CAMAC) interface system that will integrate oceanographic and navigational data detected by shipboard sensors.

ENGINEERING

Propulsion Plant

Type: Geared diesel

Main Propulsion Engines

Quantity: 1

Type: D 399

Manufacturer: Caterpillar

Rated power (each): 1,250 hp

Auxiliary Propulsion

Type: Waterjet bow thruster

Manufacturer: Omnithruster

Drive: Electric

Rated power: 150 hp

Electrical System

Ship's Service Generators

Quantity: 2

Manufacturer: Caterpillar

Output voltage: 440 Va.c.

Power rating: 210 kw

Electrical Service

440 Va.c. three phase

210 Va.c. three phase

120 Va.c. single phase

Power isolation protection available for sensitive equipment.

Propeller(s)

Quantity: 1

Type: Controllable pitch

Blades: 4

Diameter:

Emergency Generator

Quantity: 1

Manufacturer: Lister

Output voltage: 440 a.c.

Power rating: 17.5 kW

FRESHWATER SYSTEM

System Capacities

Storage capacity: 4,700 gal

Normal consumption:

Normal production:

Maximum production: 8,000 gal

Evaporators

Quantity: 1

Type: Exhaust waste-heat-generated

Manufacturer: Riley Beard

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Aerobic bacterial

Manufacturer: Red Fox 750 M

Holding capacity:

Oily Waste Control

Type of treatment:

Manufacturer:

Holding capacity:

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Fiberglass open boat

Quantity: 1

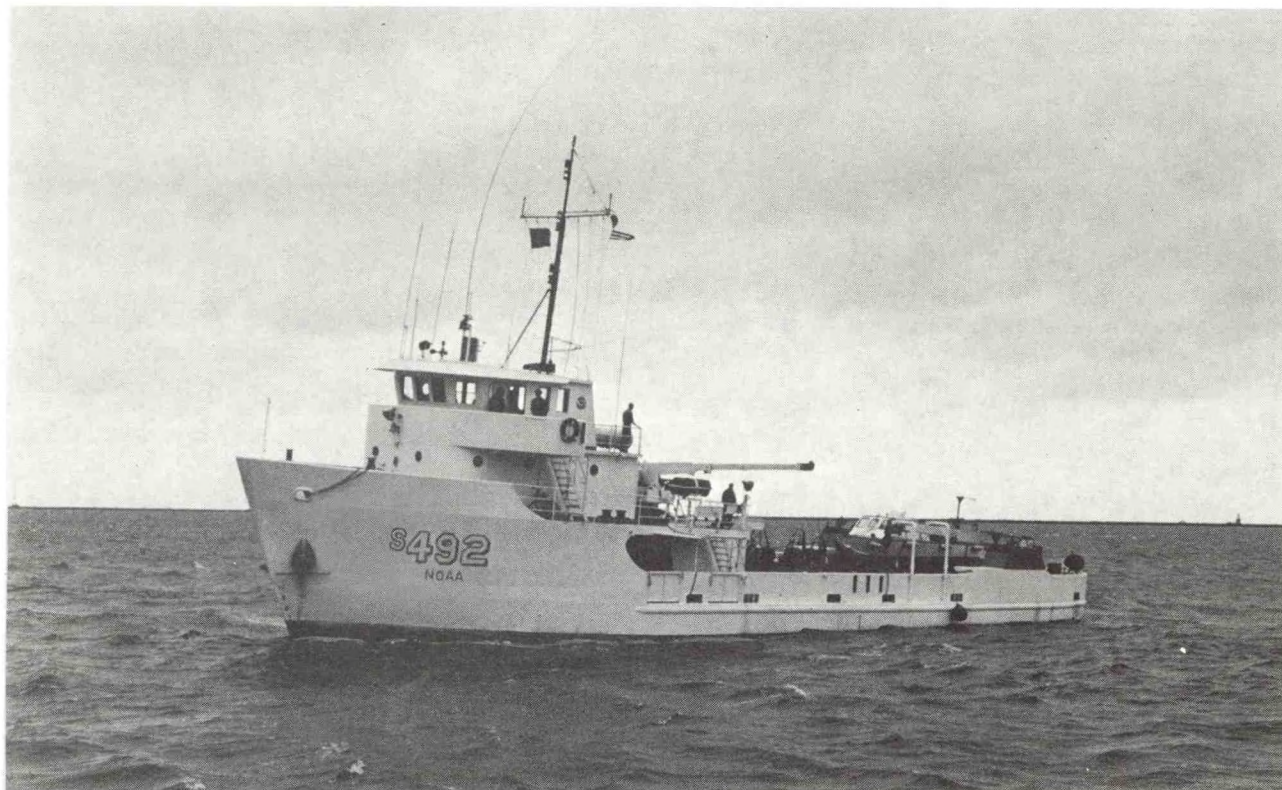
Manufacturer: Boston Whaler

Length: 16 ft

Propulsion: Gasoline outboard

SPECIAL FEATURES

Doppler speed log



FERREL ^S492

LAUNCHED: April 1968
DELIVERED: May 1968
COMMISSIONED: June 1968

DESIGNER: Zigler Shipyards, Inc.
BUILDER: Zigler Shipyards, Inc., Jennings, La.

CALL LETTERS: WTEZ

HOME PORT: Norfolk, Va.

Complement:

COMMISSIONED OFFICERS: 5
LICENSED OFFICERS: 2
CREW: 12

HULL: Welded steel
DISPLACEMENT: 360 tons
GROSS TONNAGE: 349
NET TONNAGE: 86

LENGTH (LOA): 133 ft (40.5 m)
BREADTH (moulded): 32 ft (9.8 m)
DRAFT, MAXIMUM: 8.0 ft (2.5 m)

CRUISING SPEED: 10 kn
RANGE: 2,200 nmi
POWER: 750 SHP

FUEL TYPE: #2 diesel
FUEL CAPACITY: 14,600 gal
FUEL CONSUMPTION: 47 gal/h
(normal cruising speed)
ENDURANCE: 9 d
ENDURANCE CONSTRAINT: Water

Operational Commitments:

The FERREL conducts coastal and estuarine circulatory studies. The ship normally operates off the U.S. Atlantic Coast and in the Gulf of Mexico.

HABITABILITY

Berthing

Double staterooms: 10
Total bunks aboard: 20

Food-Service Seating Capacity

General mess: 23

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by designated vessel personnel.

SCIENTIFIC LABORATORY FACILITIES

Wet oceanographic lab: 40 ft²
Electronics workshop: 500 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Oceanographic winch
Manufacturer: Beebe Brothers Inc.
Drive: Electric
Line speed: 60 ft/min
Maximum pull: 6,000 lb
Drum capacity: 500 ft of 5/16-in wire rope

Quantity: 2
Type: Utility winch
Manufacturer: U.S. Synchrogear
Drive: Electric
Line speed: 96 ft/min
Maximum pull: 400 lb

Cranes and Booms

Quantity: 1
Type: Telescoping boom
Manufacturer: Austin Western
Boom length: 35 ft
Lifting capacity: 4,500 lb
(boom extended) 1,050 lb
Location(s): Amidships

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Danforth
Weight: 800 lb

Communications

VHF/FM transceivers
HF transceivers
Portable emergency transceiver
EPIRB's

Acoustics

Shallow-water echo sounders

Scientific Equipment

CTD system (shallow-water)

Data Acquisition and Processing System

The FERREL has a PDP/8E computer with a 32K memory that is available for data processing.

Quantity: 1
Type: CTD winch
Manufacturer: Plessey
Drive: Electric
Line speed: 50 ft/min
Maximum pull: 400 lb
Drum capacity: 2,100 ft of 0.1-in conductor cable

Quantity: 1
Type: BT winch
Manufacturer: ACCD Equipment
Drive: Electric
Line speed: 60 ft/min
Maximum pull: 35 lb
Drum capacity: 500 ft of 5/16-in wire rope

Quantity: 1
Type: Articulated boom
Manufacturer: Appleton
Boom length: 40 ft
Lifting capacity: 12,000 lb
(boom extended) 2,000 lb
Location(s): Portside aft

Anchor Chain(s)
Quantity: 2
Size and type: 3/4-in stud link chain
Length: 60 fm

ELECTRONICS

Navigation

Radar
Gyrocompass
Loran
Precision positioning equipment

ENGINEERING

Propulsion Plant

Type: Geared diesel

Main Propulsion Engines

Quantity: 2

Type: Diesel

Manufacturer: Caterpillar

Rated power (each): 375 hp

Propeller(s)

Quantity: 2

Type: Fixed pitch

Blades: 4

Diameter: 5 ft

Auxiliary Propulsion

Type: Through hull bow thruster

Manufacturer: General Electric

Drive: Electric

Rated power: 100 hp

Electrical System

Ship's Service Generators

Quantity: 2

Manufacturer: Caterpillar

Output voltage: 440 a.c.

Power rating: 150 kW

Electrical Service

440 Va.c. three phase

220 Va.c. three phase

110 Va.c. three phase

Power isolation protection available for sensitive equipment.

FRESHWATER SYSTEM

System Capacities

Storage capacity: 9,000 gal

Normal consumption: 850 gal/d

POLLUTION CONTROL

Sewage Waste Control

Type of treatment: Aerobic bacterial

Manufacturer: St. Louis Shipbuilding

Holding capacity: 30 d

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Aluminum Workboat

Quantity: 1

Manufacturer: Lafco

Length: 28 ft

Propulsion: Diesel

Hull type: Fiberglass open boat

Quantity: 1

Manufacturer: Mako Marine

Length: 17 ft

Propulsion: Gasoline outboard

Hull type: Aluminum open boat

Quantity: 1

Manufacturer: Monark

Length: 19 ft

Propulsion: Gasoline outboard



OREGON ^R551

LAUNCHED: 1946
DELIVERED: 1949 (BCF)
DEDICATED: 1950

DESIGNER: H. C. Hanson
BUILDER: Astoria Marine, Astoria, Ore.

CALL LETTERS: KNBH
HOME PORT: Kodiak, Alaska

Complement:
LICENSED OFFICERS: 4
CREW: 4
SCIENTISTS: 4

HULL: Welded steel
DISPLACEMENT: 373 tons
GROSS TONNAGE: 219
NET TONNAGE: 153

LENGTH (LOA): 100.0 ft (30.5 m)
BREADTH (moulded): 26.5 ft (8.1 m)
DRAFT, MAXIMUM: 12.9 ft (3.9 m)

CRUISING SPEED: 9.3 kn
RANGE: 5,100 nmi
POWER: 600 SHP

FUEL TYPE: #2 diesel
FUEL CAPACITY: 16,600 gal
FUEL CONSUMPTION: 25 gal/h
(normal cruising speed)
ENDURANCE: 24 d
ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The OREGON conducts fishery and living marine resources research. The vessel normally operates off the coasts of Alaska and in U.S. Pacific Northwest coastal waters.

HABITABILITY

Berthing

Single staterooms: 2
Double staterooms: 3
Forecastle bunks: 4
Total bunks aboard: 12

Food-Service Seating Capacity

General mess: 9

MEDICAL FACILITIES

The vessel has first-aid and emergency equipment administered by designated vessel personnel.

SCIENTIFIC LABORATORY FACILITIES

Oceanographic lab: 60 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Trawl winch (double drum)
Manufacturer: Rowe
Drive: Hydraulic
Line speed: 150 ft/min
Maximum pull: 6,000 lb
Drum capacity: 5,400 ft of 9/16-in wire rope

Quantity: 1
Type: Net reel winch
Drive: Hydraulic

Quantity: 1
Type: BT winch
Manufacturer: Pacific Fisherman
Drive: Hydraulic
Drum capacity: 1,000 ft of 3/16-in wire rope

Cranes and Booms

Quantity: 1
Type: Fixed length boom
Boom length: 20 ft
Lifting capacity: 9,000 lb
Location(s): Aft

Quantity: 1
Type: Fixed length boom
Boom length: 18 ft
Lifting capacity: 3,000 lb
Location(s): Aft

Ground Tackle

Bower Anchor
Type: Danforth
Weight: 750 lb

Anchor Chain
Size and type: Cast iron chain
 7/8-in steel cable
Length: 30 fm chain
 100 fm cable

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
Portable emergency transceiver
EPIRB's

Navigation

Radar
Loran
RDF

Acoustics

Shallow-water echo sounders
Fish finder

Scientific Equipment

XBT system

ENGINEERING

Propulsion Plant

Type: Geared diesel

Main Propulsion Engines

Quantity: 1

Type: Diesel (direct reversing)

Manufacturer: Enterprise

Rated power (each): 600 hp

Propeller

Type: Fixed pitch

Blades: 3

Diameter: 6 ft

Electrical System

Ship's Service Generators

Quantity: 2

Manufacturer: Caterpillar

Output voltage: 220 a.c.

Power rating: 100 kW

Electrical Service

440 V.a.c. three phase

220 V.a.c. three phase

110 V.a.c. single phase

FRESHWATER SYSTEM

System Capacities

Storage capacity: 14,000 gal

Normal consumption: 500 gal/d

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Fiberglass open boat

Quantity: 1

Manufacturer: Boston Whaler

Length: 13 ft

Propulsion: Gasoline outboard

Hull type: Aluminum open boat

Quantity: 1

Manufacturer: Alumnacraft

Length: 13 ft

Propulsion: Gasoline outboard



JOHN N. COBB ^R552

LAUNCHED: January 1950
DELIVERED: February 1950
DEDICATED: February 1950

DESIGNER: W. C. Nickum & Sons
BUILDER: Western Boatbuilding Co.,
Tacoma, Wash.

CALL LETTERS: WMVC

HOME PORT: Seattle, Wash.

Complement:

LICENSED OFFICERS: 4
CREW: 4
SCIENTISTS: 4

HULL: Wood
DISPLACEMENT: 250 tons
GROSS TONNAGE: 185
NET TONNAGE: 78

LENGTH (LOA): 93.0 ft (28.3 m)
BREADTH (moulded): 26.0 ft (7.9 m)
DRAFT, MAXIMUM: 11.0 ft (3.3 m)

CRUISING SPEED: 9.3 kn
RANGE: 2,900 nmi
POWER: 325 SHP

FUEL TYPE: #2 diesel
FUEL CAPACITY: 7,800 gal
FUEL CONSUMPTION: 22 gal/h
(normal cruising speed)
ENDURANCE: 13 d
ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The JOHN N. COBB conducts fishery and living marine resources research. The vessel normally operates in Southeast Alaska and in U.S. Pacific coastal waters.

HABITABILITY

Berthing

Double staterooms: 4
Forecastle bunks: 5
Total bunks aboard: 13

Food-Service Seating Capacity

General mess: 8

MEDICAL FACILITIES

The vessel has first-aid and emergency equipment administered by designated vessel personnel.

SCIENTIFIC LABORATORY FACILITIES

General lab: 150 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Trawl winch (double drum)
Manufacturer: Rowe
Drive: Hydraulic
Maximum pull: 14,000 lb
Drum capacity:
4,800 ft of 9/16-in wire rope
7,200 ft. of 1/2-in wire rope

Quantity: 1
Type: Net reel winch
Drive: Hydraulic

Quantity: 1
Type: Oceanographic winch
Drum capacity: 6,000 ft of 3/16-in wire rope

Cranes and Booms

Quantity: 1
Type: Fixed length boom
Boom length: 30 ft
Lifting capacity: 6,000 lb
Location(s): Aft

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless

Anchor Chain(s)
Quantity: 1
Size and type: 3/4-in cast iron chain; 7/8-in steel cable
Length: 165 fm chain; 125 fm cable

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
Portable emergency transceiver
EPIRB's

Navigation

Radar
Loran

Acoustics

Shallow-water echo sounders
Fish finder

Scientific Equipment

XBT system

ENGINEERING

Propulsion Plant

Type: Geared diesel
Main Propulsion Engines
Quantity: 1
Type: Diesel
Manufacturer: Fairbanks Morse
Rated power (each): 325 hp

Propeller

Type: Fixed pitch
Blades: 3
Diameter: 5 ft

Electrical System*Ship's Service Generators*

Quantity: 2

Manufacturer: General Motors/Elec. Mach.

Output voltage: 240 a.c.

Power rating: 30 kW

Electrical Service

240 Va.c. three phase

110 Va.c. single phase

220 Va.c. single phase (isolated)

FRESHWATER SYSTEM**System Capacities**

Storage capacity: 6,000 gal

Normal consumption: 500 gal/d

POLLUTION CONTROL**Sewage Waste Control**

Holding capacity: 2,200 gal

LAUNCHES AND SMALL BOATS**Utility/Rescue Boats**

Hull type: Fiberglass open boat

Quantity: 1

Manufacturer: Boston Whaler

Length: 13 ft

Propulsion: Gasoline outboard

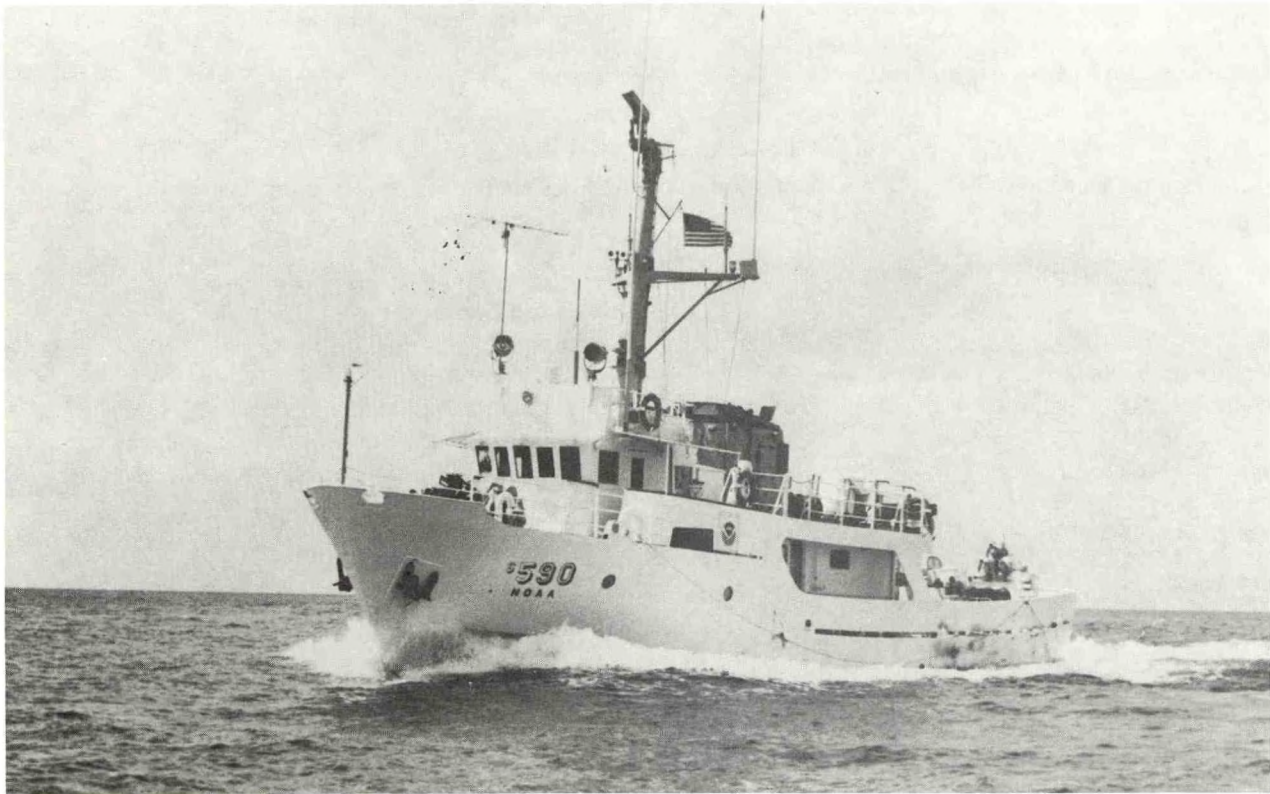
Hull type: Wooden open boat

Quantity: 1

Manufacturer: Fairliner

Length: 18 ft

Propulsion: Gasoline inboard



RUDE 590

LAUNCHED: August 1966
DELIVERED: December 1966
COMMISSIONED: March 1967

DESIGNER: Maritime Administration
BUILDER: Jakobson Shipyard, Oyster Bay, N.Y.

SISTER SHIPS(S): HECK

CALL LETTERS: WTET

HOME PORT: Norfolk, Va.

Complement:
COMMISSIONED OFFICERS: 3
LICENSED OFFICERS: 1
CREW: 7

HULL: Welded steel
DISPLACEMENT: 220 tons
GROSS TONNAGE: 150
NET TONNAGE: 42

LENGTH (LOA): 90.0 ft (27.4 m)
BREADTH (moulded): 22.0 ft (6.7 m)
DRAFT, MAXIMUM: 7.2 ft (2.2 m)

CRUISING SPEED: 10 kn
RANGE: 800 nmi
POWER: 800 SHP

FUEL TYPE: #2 diesel
FUEL CAPACITY: 3,900 gal
FUEL CONSUMPTION: 42 gal/h
(normal cruising speed)
ENDURANCE: 3 d
ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The RUDE operates with her sister ship, the HECK, in making wire drag surveys and was built and outfitted for such operations. The vessels normally operate off the U.S. Atlantic and Gulf coasts.

HABITABILITY

Berthing

Double staterooms: 5
Total bunks aboard: 10

Food-Service Seating Capacity

General mess: 8

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by designated vessel personnel.

DECK MACHINERY

Winches

Quantity: 1
Type: Wire drag winch
Manufacturer: New England Trawler
Drive: Hydraulic
Line speed: 130 ft/min
Maximum pull: 2,800 lb
Drum capacity: 10,000 ft of ¼-in wire rope

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight: 560 lb

Communications

VHF/FM transceivers
HF transceivers
Portable emergency transceiver
EPIRB's

Acoustics

Shallow-water echo sounders
Side scan sonar

Propulsion Plant

Type: Geared diesel
Main Propulsion Engines
Quantity: 2
Type: Diesel
Manufacturer: Cummins
Rated power (each): 400 hp
Auxiliary Propulsion
Quantity: 2
Type: Hydraulic
Manufacturer: Pumps — DeLaval/Lucas
Motors — Staffa
Rated power (each): 70 hp

Electrical System

Ship's Service Generators
Quantity: 2
Manufacturer: Detroit Diesel/Delco
Output voltage: 230 a.c.
Power rating: 60 kW

Cranes and Booms

Quantity: 1
Type: Telescoping boom
Manufacturer: Appleton
Boom length: 27 ft
Lifting capacity: 7,500 lb
(boom extended) 2,000 lb
Location(s): Aft

Anchor Chain(s)

Quantity: 2
Size and type: ¾-in stud link chain
Length: 60 fm

ELECTRONICS

Navigation

Radar
Gyrocompass
Precision positioning equipment

ENGINEERING

Propellers(s)

Quantity: 2
Type: Fixed pitch, Kaplan nozzle
Blades: 4
Diameter: 3.5 ft

Electrical Service

230 V.a.c. three phase
110 V.a.c. single phase

FRESHWATER SYSTEM

System Capacities

Storage capacity: 3,800 gal

Normal consumption: 500 gal/d

POLLUTION CONTROL

Oily Waste Control

Type of treatment: Oily water separator

Manufacturer: Harco

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Fiberglass Workboat

Quantity: 1

Manufacturer: Gull of Bristol

Length: 20 ft

Propulsion: Diesel

Hull type: Fiberglass open boat

Quantity: 1

Manufacturer: Boston Whaler

Length: 16 ft

Propulsion: Gasoline outboard



HECK ^s591

LAUNCHED: August 1966
DELIVERED: December 1966
COMMISSIONED: March 1967

DESIGNER: Maritime Administration
BUILDER: Jakobson Shipyard
Oyster Bay, N.Y.

SISTER SHIP(S): RUDE

CALL LETTERS: WTEY

HOME PORT: Norfolk, Va.

Complement:

COMMISSIONED OFFICERS: 2
LICENSED OFFICERS: 1
CREW: 7

HULL: Welded steel
DISPLACEMENT: 220 tons
GROSS TONNAGE: 150
NET TONNAGE: 42

LENGTH (LOA): 90.0 ft (27.4 m)
BREADTH (moulded) 22.0 ft (6.7 m)
DRAFT, MAXIMUM: 7.2 ft (2.2 m)

CRUISING SPEED: 10 kn
RANGE: 800 nmi
POWER: 800 SHP

FUEL TYPE: #2 diesel
FUEL CAPACITY: 3,900 gal
FUEL CONSUMPTION: 42 gal/h
(normal cruising speed)
ENDURANCE: 3 d
ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The HECK operates with her sister ship, the RUDE, in making wire drag surveys and was built and outfitted for these operations. The vessels normally operate off the U.S. Atlantic and Gulf Coasts.

HABITABILITY

Berthing

Double staterooms: 5
Total bunks aboard: 10

Food-Service Seating Capacity

General mess: 8

MEDICAL FACILITIES

The ship has emergency and first-aid equipment administered by designated vessel personnel.

DECK MACHINERY

Winches

Quantity: 1
Type: Wire drag winch
Manufacturer: New England Trawler
Drive: Hydraulic
Line speed: 130 ft/min
Maximum pull: 2,800 lb
Drum capacity: 10,000 ft of 1/4-in wire rope

Cranes and Booms

Quantity: 1
Type: Telescoping boom
Manufacturer: Appleton
Boom length: 27 ft
Lifting capacity: 7,500 lb
(boom extended) 2,000 lb
Location(s): Aft

Ground Tackle

Bower Anchor(s)
Quantity: 2
Type: Stockless
Weight: 560 lb

Anchor Chain(s)

Quantity: 2
Size and type: 3/4-in stud line chain
Length: 60 fm

Communications

VHF/FM transceivers
HF transceivers
Portable emergency transceiver
EPIRB's

Navigation

Radar
Gyrocompass
Precision positioning equipment

Acoustics

Shallow-water echo sounders
Side scan sonar

ELECTRONICS

ENGINEERING

Propulsion Plant

Type: Geared diesel
Main Propulsion Engines
Quantity: 2
Type: Diesel
Manufacturer: Cummins
Rated power (each): 400 hp

Propeller(s)

Quantity: 2
Type: Fixed pitch, Kaplan nozzle
Blades: 4
Diameter: 3.5 ft

Auxiliary Propulsion

Quantity: 2
Type: Hydraulic
Manufacturer: Pumps — DeLaval/Lucas
Motors — Staffa
Rated power (each): 70 hp

Electrical System

Ship's Service Generators
Quantity: 2
Manufacturer: Detroit Diesel/Delco
Output voltage: 230 a.c.
Power rating: 60 kW

Electrical Service

230 Va.c. three phase
110 Va.c. single phase

FRESHWATER SYSTEM

System Capacities

Storage capacity: 3,800 gal

Normal consumption: 500 gal/d

POLLUTION CONTROL

Oily Waste Control

Type of treatment: oily water separator

Manufacturer: Harco

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

Hull type: Fiberglass workboat

Quantity: 1

Manufacturer: Gull of Bristol

Length: 20 ft

Propulsion: Diesel

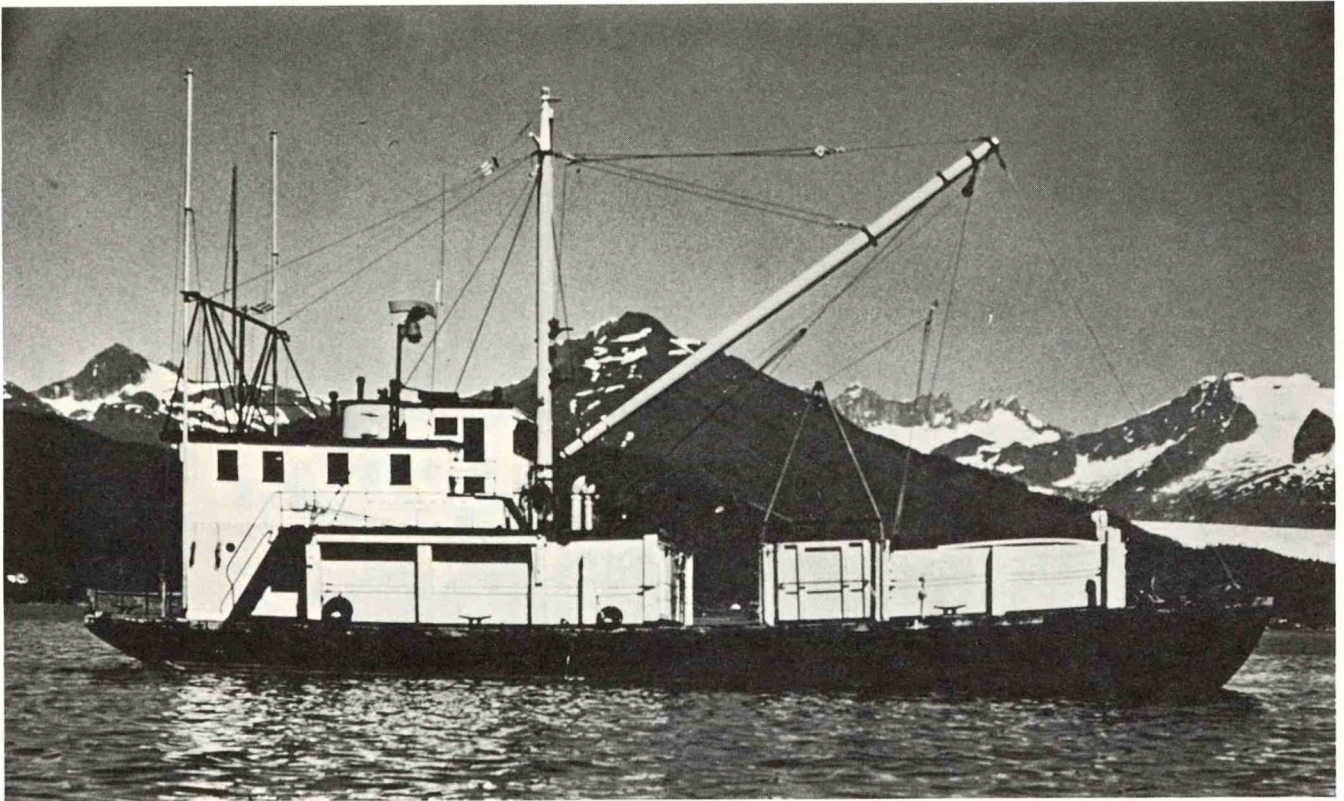
Hull type: Fiberglass open boat

Quantity: 1

Manufacturer: Boston Whaler

Length: 16 ft

Propulsion: Gasoline outboard



MURRE II ^R663

LAUNCHED: 1943

DESIGNER: Converted from U.S. Army
BUILDER: powered barge by Maritime
Shipyards, Seattle, Wash.

CALL LETTERS: KJLM

HOME PORT: Juneau, Alaska

Complement:

LICENSED OFFICERS: 2

CREW: 1

SCIENTISTS: 5

HULL: Wood

DISPLACEMENT: 295 tons

GROSS TONNAGE: 189

NET TONNAGE: 95

LENGTH (LOA): 86.0 ft (26.1 m)

BREADTH (moulded) 26.8 ft (8.2 m)

DRAFT, MAXIMUM: 7.5 ft (2.3 m)

CRUISING SPEED: 8 kn

RANGE: 1500 nmi

POWER: 208 SHP

FUEL TYPE: #2 diesel

FUEL CAPACITY: 5,000 gal

FUEL CONSUMPTION: 25 gal/h
(normal cruising speed)

ENDURANCE: 8 d

ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The MURRE II conducts fishery research and cargo shipment operations in Southeast Alaskan waters.

HABITABILITY

Berthing

Single staterooms: 3
Double staterooms: 1
Three-bunk rooms: 1
Total bunks aboard: 8

Food-Service Seating Capacity

General mess: 7

MEDICAL FACILITIES

The vessel has first-aid and emergency equipment administered by designated vessel personnel.

SCIENTIFIC LABORATORY FACILITIES

Chemical lab: 130 ft²
Biological lab: 200²

DECK MACHINERY

Winches

Quantity: 1
Type: Trawl winch
Manufacturer: Marco
Drive: Hydraulic
Drum capacity: 1,800 ft of 5/8-in wire rope

Quantity: 1
Type: Hydrographic Winch
Manufacturer: New England Trawler
Drive: Electric
Drum capacity: 3,250 ft of 5/32-in wire rope

Cranes and Booms

Quantity: 1
Type: Fixed length boom
Boom length: 40 ft
Lifting capacity: 4,000 lb
Location(s): Amidships

A-Frames

Quantity: 1
Type: Movable
Clearance over side: 8 ft
Location(s): Starboard side amidships

Ground Tackle

Bower Anchor
Type: Danforth

Anchor Chain
Size and type: 7/8-in, steel cable
Length: 100 fm

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
EPIRB's

Navigation

Radar

Acoustics

Shallow-water echo sounders
Fish finder

ENGINEERING

Propulsion Plant

Type: Geared Diesel

Main Propulsion Engines

Quantity: 2
Type: Diesel
Manufacturer: Caterpillar
Rated power (each): 165 hp

Propeller(s)

Quantity: 2
Type: Fixed pitch
Blades: 3
Diameter: 3 ft

Electrical System

Ship's Service Generators

Quantity: 1

Manufacturer: General Motors

Output voltage: 32 d.c.

Power rating: 30 kW

Electrical Service

110 Vd.c.

32 Vd.c.

24 Vd.c.

12 Vd.c.

Emergency Generator

Quantity: 1

Manufacturer: General Motors

Output voltage: 12 d.c.

Power rating: 30 kW

FRESHWATER SYSTEM

System Capacities

Storage capacity: 2,000 gal

LAUNCHES AND SMALL BOATS

Utility/Rescue Boats

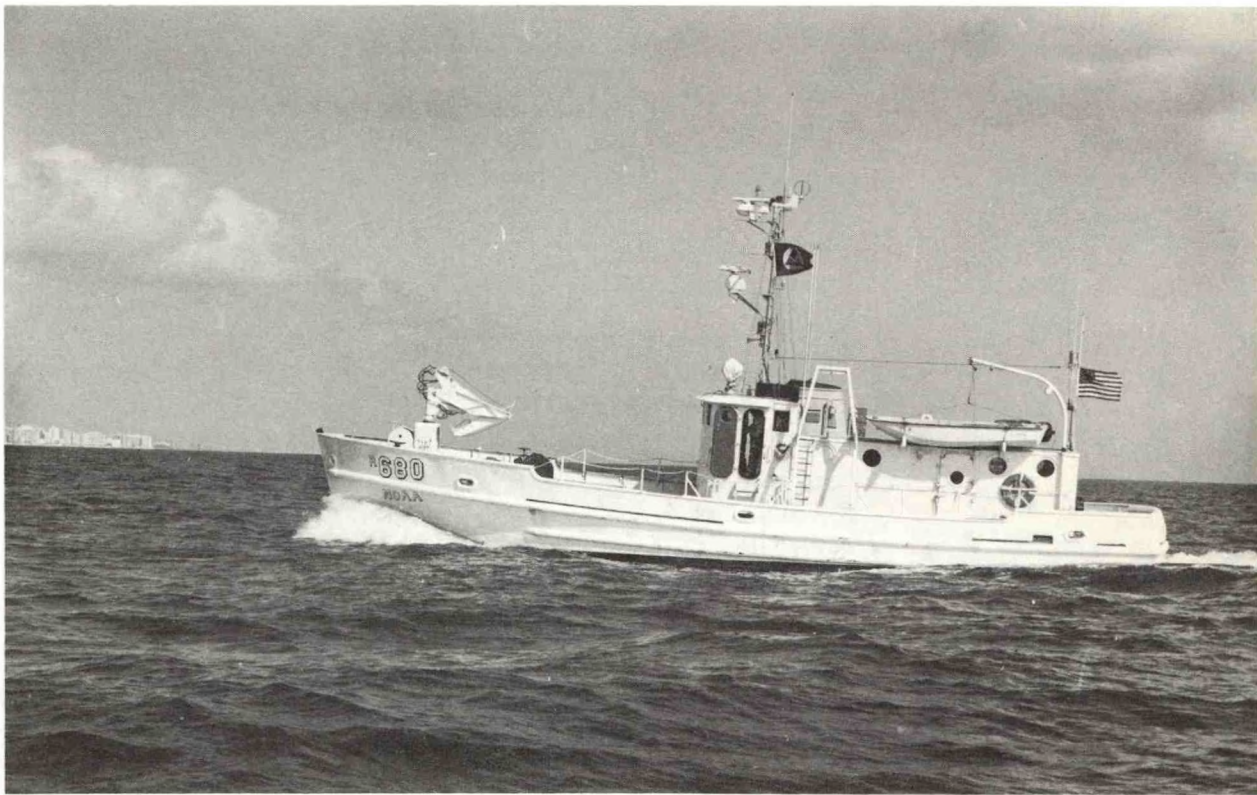
Hull type: Fiberglass open boat

Quantity: 1

Manufacturer: Boston Whaler

Length: 13 ft

Propulsion: Gasoline outboard



VIRGINIA KEY ^R680

LAUNCHED: 1952
 DELIVERED: 1972 (NOAA)

DESIGNER: John Wells
 BUILDER: Higgins Inc.
 New Orleans, La.

SISTER SHIP(S): Converted U.S. Army T boat

CALL LETTERS: WTAV

HOME PORT: Miami, Fla.

Complement:

LICENSED OFFICERS: 1
 CREW: 2
 SCIENTISTS: 5

HULL: Welded steel
 DISPLACEMENT: 90 tons

LENGTH (LOA): 65.0 ft (19.8 m)
 BREADTH (moulded) 17.0 ft (5.2 m)
 DRAFT, MAXIMUM: 7.0 ft (2.1 m)

CRUISING SPEED: 9 kn
 RANGE: 1,100 nmi
 POWER: 300 SHP

FUEL TYPE: #2 Diesel
 FUEL CAPACITY: 1,845 gal
 FUEL CONSUMPTION: 14 gal/h
 (normal cruising speed)

ENDURANCE: 5 d
 ENDURANCE CONSTRAINT: Fuel

Operational Commitments:

The VIRGINIA KEY is operated by the Environmental Research Laboratories (AOML) conducting estuarine and coastal oceanographic research in the Gulf of Mexico, U.S. Southeastern Atlantic coastal waters, and the Caribbean Sea.

HABITABILITY

Berthing

Four-bunk rooms: 2
Total bunks aboard: 8

Food-Service Seating Capacity

General mess: 4

MEDICAL FACILITIES

The vessel has first-aid and emergency equipment administered by designated vessel personnel.

SCIENTIFIC LABORATORY FACILITIES

Oceanographic lab: 120 ft²

DECK MACHINERY

Winches

Quantity: 1
Type: Hydrographic winch
Manufacturer: Rowe
Drive: Electrohydraulic
Line speed: 150 ft/min
Drum capacity: 10,000 ft of 3/16-in wire rope

A-Frames

Quantity: 1
Type: Movable
Clearance over side: 5 ft
Location(s): Port side

Cranes and Booms

Quantity: 1
Type: Articulated boom
Manufacturer: Daybrook
Boom length: 12 ft
Lifting capacity: 6,000 lb
(boom extended) 1,000 lb
Location(s): Foredeck

Ground Tackle

Bower Anchor
Type: Danforth
Weight: 50 lb

Anchor Chain

Size and type: 70 ft of 5/8-in cable
600 ft of 1/2-in cable

ELECTRONICS

Communications

VHF/FM transceivers
HF transceivers
EPIRB's

Navigation

Radar
Gyrocompass
Loran
RDF
Omega

Acoustics

Deepwater echo sounder
Shallow-water echo sounders

ENGINEERING

Propulsion Plant

Type: Geared diesel

Main Propulsion Engines

Quantity: 1
Type: Diesel
Manufacturer: Caterpillar
Rated power (each): 325 hp

Propeller

Type: Fixed pitch
Blades: 3
Diameter: 3 ft

Electrical System*Ship's Service Generators*

Quantity: 1

Manufacturer: General Motors/Delco

Output voltage: 208 a.c.

Power rating: 30 kW

Electrical Service

208 Va.c. three phase

110 Va.c. single phase

120 Vd.c.

Emergency Generator

Quantity: 1

Manufacturer: General Motors/American Marc

Output voltage: 208 a.c.

Power rating: 30 kW

FRESHWATER SYSTEM**System Capacities**

Storage capacity: 700 gal

Normal consumption: 100 gal/d

Normal production: 100 gal/d

Maximum production: 150 gal/d

Evaporators

Quantity: 1

Type: Exhaust-waste-heat-generated

Manufacturer: Maxim

LAUNCHES AND SMALL BOATS**Utility/Rescue Boats**

Hull Type: Fiberglass open boat

Quantity: 1

Manufacturer: Boston Whaler

Length: 13 ft

Propulsion: Gasoline outboard



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

This looseleaf presentation is the most recent edition of "Ships of the NOAA Fleet" and was compiled from shipboard, Marine Center, and Office of Fleet Operations sources in 1978. Since efforts to upgrade and improve our ships are a continuous process, during the past year changes have been made in some areas with respect to equipment or capabilities. One particular change, of note, is that recent fleet-wide restrictions have been placed on vessel cruising speeds in an effort to conserve fuel. Therefore, most vessels are currently operating at speeds less than their designed speeds which are listed in this publication. It is suggested that interested persons contact the Marine Engineering Divisions at the below listed addresses for current information regarding operating speeds.

Director, Atlantic Marine Center
National Ocean Survey, NOAA
439 West York Street
Norfolk, Virginia 23510

Director, Pacific Marine Center
National Ocean Survey, NOAA
1801 Fairview Avenue, East
Seattle, Washington 98102

