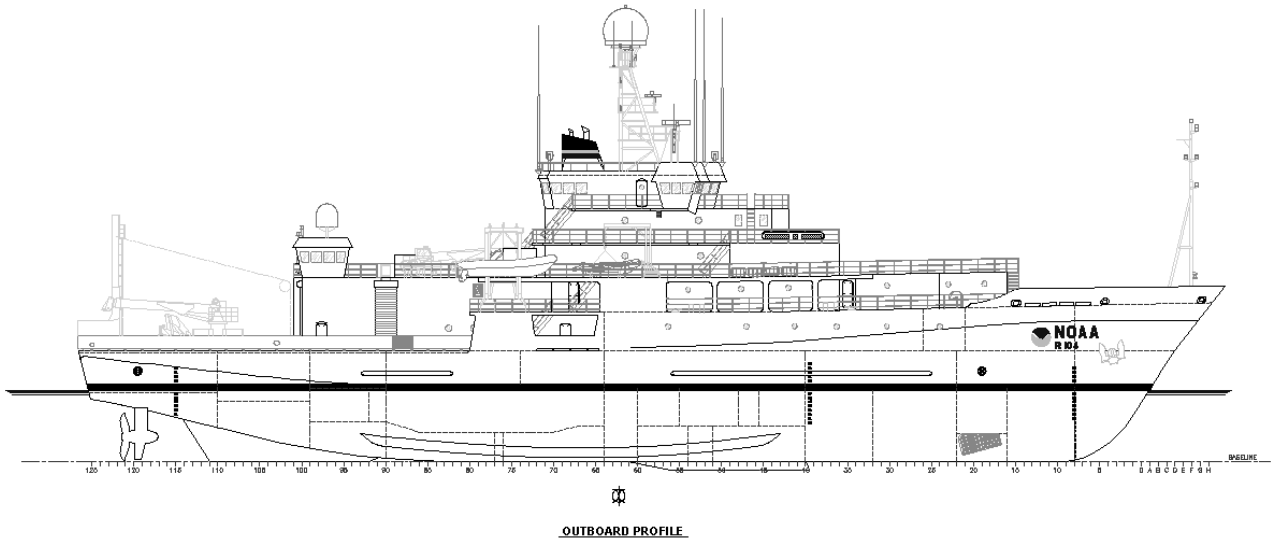
RONALD H. BROWN

NOAA Ship RONALD H. BROWN, a state-of-the-art oceanographic and atmospheric research platform, is the largest vessel in the NOAA fleet. With its highly advanced instruments and sensors, **RONALD H. BROWN** travels worldwide supporting scientific studies to increase our understanding of the world's oceans and climate. Commissioned on July 19, 1997 in its homeport of Charleston, South Carolina, **RONALD H. BROWN** has sailed in the Pacific, Atlantic, and Indian Oceans. The ship was named to honor the late Secretary of Commerce, Ronald H. Brown, who was killed in a plane crash on April 3, 1996, while on a trade mission to Bosnia.



Design

- Designer: Halter Marine
- Builder: Halter Marine, Inc., Moss Point, Mississippi
- Launched: May 30, 1996
- Delivered: April 18, 1997
- Commissioned: July 19, 1997
- Hull Number: R104
- Call Letters: WTEC
- Home Port: Charleston, South Carolina
- Length (LOA): 83.5 m (274 ft)
- Breadth (moulded): 16.0 m (52.5 ft.)
- Draft, Maximum: 5.2 m (17.0 ft.)
- Depth to Main Deck: 8 m (26.5 ft.)
- Hull: Welded steel/ice strengthened
- Displacement: 3,250 tons

Speed & Endurance

- Cruising Speed: 12 knots
- Range: 11,300 nmi at 12 kts, plus 30 days on station
- Endurance: 60 day
- Endurance Constraint: Food

Complement

- Commissioned Officers: 5
- USPHS Medical Officer: 1
- Licensed Engineers: 4
- Crew: 16
- Scientists: 32 (Max)

Food Service Seating Capacity

- Mess Room: 30

Berthing

- Single Staterooms: 9
- Double Staterooms: 25
- Total Bunks: 59

Medical Facilities

- 4 Bed Hospital

Scientific Laboratory Facilities

- Main lab: 1,730 sq. ft.
- Electronics/Computer lab: 720 sq. ft.
- Wet lab: 230 sq. ft.
- Hydro Lab: 700 sq. ft.
- Biochemical Lab: 720 sq. ft.

Winches

- Electric CTD Winch
  - Quantity: 2
  - Manufacturer: Markey
  - Model: DESH-5
  - Drive: Electronically Controlled DC motor and brake
  - Maximum Pull: 8,100 lbs
  - Drum Capacity: 10,000 m. of 0.322 inch conductor cable
  - Length of cable available varies as field season progresses. Nominally 7,500 m.
  - Location: 02 Level, Starboard, Frame 80 and 86
- Traction Winch with Dual Drum Stowage
  - Quantity: 1
  - Manufacturer: Markey
  - Drive: Motor and brake
  - Drum Capacity:
    - 30,000 ft. of 0.690 inch fiber optic cable, or
    - 30,000 ft. of 0.680 inch EM cable, or
    - 40,000 ft. of 9/16 inch 3x19 torque-balanced wire rope
  - Cable Currently Installed: approximately 7,500 m of 0.680 inch coaxial EM cable
  - Location: Stern, below deck

Cranes and Booms

- Telescopic Boom Crane
  - Quantity: 2
  - Manufacturer: Alaska Crane
  - Boom Length: 50 ft.
  - Lifting Capacity: 42,000 lbs.
  - Location: 02 Level, Port, Amidships, and Main Deck, Starboard, Aft
- Portable Foldable Boom Crane
  - Quantity: 1
  - Manufacturer: HIAB
  - Model: HIAB 180 SeaCrane
  - Boom Length: 40 ft.
  - Lifting Capacity: 2,205 lbs.
  - Location: Portable
- Hydrographic Boom
  - Quantity: 1
  - Manufacturer: McElroy
  - Model: 15000
  - Safe Static Working Load: 15,000 lbs perpendicular to ship's deck
  - Location: 02 Level, Starboard, Frame 90

A-Frame

- A Frame
  - Type: Movable
  - Quantity: 1
  - Clearance over the side: 9 ft.
  - Horizontal Clearance: 20 ft.
  - Safe Working Load: 22,000 lbs
  - Location: Stern

Ground Tackle

- Bower anchor
  - Quantity: 2
  - Type: Stockless
  - Weight (each): 4,850 lbs
- Anchor chain
  - Quantity: 2
  - Size and Type: 1 - 11/16 in. stud link
  - Length (each): 135 fathoms

Engineering

General

- Cruising Speed: 12 knots (15 Maximum)
- Total Generator Power: 6,645 kW
- Range: 11,300 nmi
- Power: 6,000 SHP
- Fuel Capacity: 254,910 gallons at 95%
- Fuel Endurance: 11,300 nm at 12 kts + 30 days on station
- Fuel Type: #2 diesel
- Endurance: 60 days
- Endurance Constraint: Food

Propulsion Plant

- Main Propulsion Generators
  - Quantity: 3
  - Type: Diesel
  - Manufacturer: Caterpillar
  - Model: 3516TA
  - Rated Power (each): 1,500 kW
  - Output Voltage: 600 VAC, 60 Hz, 3Ø
- Main Propulsion Units
  - Quantity: 2
  - Type: Fully Rotating Stern Z-Drives
  - Manufacturer: Lips, Type FS 2500-450/1510 BO
  - Motor: GE, Powered from SCR drives
  - Rated Power (each): 3,000 HP
- Propeller
  - Quantity: 2
  - Diameter: 10’6”
  - Blades: 4
- Bowthruster
  - Quantity: 1
  - Type: Azimuthing jet
  - Manufacturer: Elliot White Gill, Model 50 T 35
  - Motor: GE, Powered from SCR drives
  - Rated Power: 1,180 HP

Freshwater System

- Storage capacity: 12,720 gallons
- Normal consumption: 4,000 gallons
- Evaporators
  - Quantity: 2
  - Type: DS-20
  - Manufacturer: Alpha Lavel
  - Production: 5,000 gallons/ day

Pollution Control

- Sewage Waste Control
  - Type: 0122
  - Manufacturer: ENVIRONAC
  - Holding Capacity: 5,150 Gallons
- Oily Waste Control
  - Type: S1-1T
  - Manufacturer: Sigma
  - Holding Capacity:4,824 gallons / 4 gpm
- Waste Oil Storage: 3,714 Gallons

Electrical System

- Ship Service / Propulsion Generators
  - Quantity: 3
  - Type: Diesel
  - Manufacturer: Caterpillar
  - Model: 3508TA
  - Rated Power (each): 715 kW
  - Output Voltage: 600 VAC, 60 Hz, 3Ø
- Emergency Generator
  - Quantity: 1
  - Type: Diesel
  - Manufacturer: Caterpillar
  - Model: 3406TA
  - Rated Power: 250 kW
  - Output Voltage: 480 VAC, 60 Hz, 3Ø
- Electrical Service
  - 480 VAC, 60 Hz, 3Ø
  - 120V VAC, 60 Hz, 1Ø
  - Isolated "Clean" Power for electronics and scientific equipment
  - Uninterrupted Power for Computer Equipment

Communications

- High Frequency SSB (SEA 330)
- Global Maritime Distress and Safety System (GMDSS)
- VHF Radios (Five)
- Cell phone (Motorola)
- Satellite Communications:
  - INMARSAT-B
  - INMARSAT-A
  - INMARSAT Standard C
  - INMARSAT Mini M
  - Iridium Satellite Phone
- E-mail (Ship’s E-mail Address: Noaa.Ship.Ronald.Brown@noaa.gov)

Navigation

- Gyro Compass: Sperry Mark 37
- GPS
  - Trimble Centurian P-code GPS
  - Magnavox MX-200 GPS,
  - Northstar 941x differential GPS.
- Navigation
  - Nobeltec's Visual Navigation Suite
  - Kongsberg Simrad SPS
- Radar:
  - (2) Sperry Rascar Touch Screen navigational radars
  - S-band (10 cm) 30 kW radar
  - X-band (3 cm) 25 kW radar.
- Simrad Robertson Dynamic Positioning System
- Doppler Speed Log
- Raytheon model DSN-450 Doppler sonar
- Position Heading and Attitude Sensor
  - Seatex Seapath 200
- NAVTEX

Scientific Equipment

- **Atmospheric**
  - C-Band Doppler Radar
  - Wind Profiler
  - Radiosondes
- **Bathymetric**
  - Echo Sounder - Deep Water
  - Echo Sounder - Shallow Water
  - SEABEAM
- **Meteorological**
  - Barometer
  - WOCE Meteorological Sensors
  - Rain Sensors
- **Oceanographic**
  - Acoustic Doppler Current Profiler (ADCP)
  - Autosalinometer
  - CTD
  - Fluorometer
  - Thermosalinograph (TSG)
  - Expendable Bathythermograph (XBT)
- **Miscellaneous**
  - Speed Log
  - Winch System

Network and Software

- **Network :**
  - Twenty-eight node PC Local Area Network running NT 4.0 Server and Windows 2000 operating systems.
- **Developed Software:**
  - Scientific Computer System (SCS) software Seabeam Data Acquisition and Processing Software EPIC
- **Commercial Software Packages:**
  - ArcView G.I.S.
  - MatLab
  - Microsoft Office 2000
  - Microsoft Visual Studio Professional 6.0
- **System Utilities:**
  - Microsoft Visual Studio Professional 6.0
  - TCP/IP
- **Data Acquisition System:**
  - Raw data files in binary form
  - Post-processed compressed or merged data sets
  - ASCII data for easy transfer to PC environment
  - UNIX format