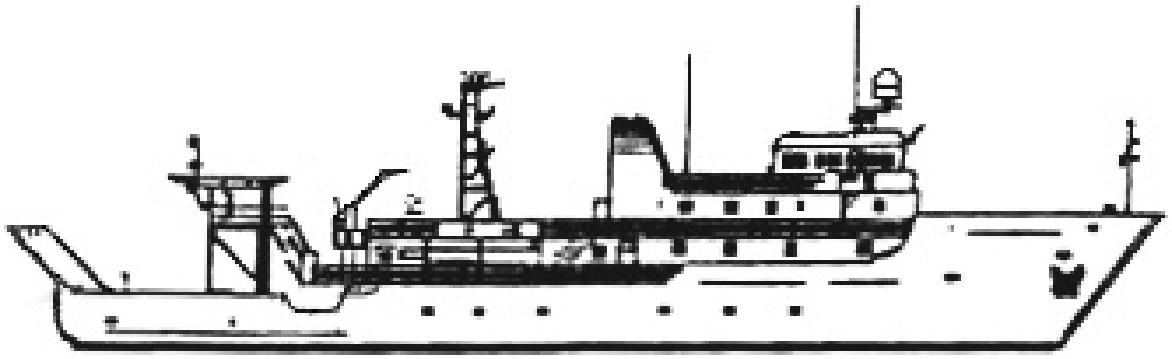
McARTHUR II

McARTHUR II was acquired from the U.S. Navy in 2002 and was converted by NOAA from a T-AGOS surveillance vessel to a multiple-disciplinary platform capable of a broad range of missions. As was it's predecessor, McARTHUR, **McARTHUR II** is named after William Pope McArthur. The vessel is operated by NOAA Marine and Aviation Operations (NMAO), and is home ported at NOAA's Marine Operations Center, Pacific (MOP), in Seattle, Washington.
The ship conducts oceanographic research and assessments, throughout the eastern Pacific, including the U.S. West Coast, Central and South America. **McARTHUR II** is involved in studies in several of the National Marine Sanctuaries on the west coast of the United States. The 224-foot ship engages in measurements of chemical, meteorological, and biological sampling for several large scale programs within NOAA.



Design

- Designer: Maritime Administration
- Builder: Tacoma Boatbuilding Company, Tacoma, WA
- Delivered to MSC: December 1985
- Transferred to NOAA: December 2002
- Commissioned: May 2003
- Hull Number: R330
- Call Letters: WTEJ
- Home Port: Seattle, Washington
- Length (LOA): 68.3 m (224 ft.)
- Breadth (moulded): 13.1 m (43 ft.)
- Draft, Maximum: 4.6 m (15 ft.)
- Displacement: 2,250 tons
- Gross Tonnage: 1914 tons
- Net Tonnage: 574 tons

Speed & Endurance

- Cruising Speed: 11 knots
- Range: 8,000 nmi
- Endurance: 45 days
- Endurance Constraint: Stability

Complement

- Commissioned officers: 5
- Licensed engineers: 4
- Crew: 13
- Scientists: Up to 15

Food Service Seating Capacity

- Crew's mess: 16

Berthing

- Single staterooms: 18
- Double staterooms: 8
- Quadruple staterooms: 1
- Total bunks: 38

Medical Facilities

- Emergency and first-aid equipment, administered by trained vessel personnel.

Cranes and Booms

- Telescoping Boom
  - Quantity: 1
  - Manufacturer: North American Crane Equipment
  - Boom length (extended): 32 ft.
  - Location: 01 Deck – aft
  - Lifting capacity (boom extended): 2,030 lbs
- Boat Davit
  - Quantity: 1
  - Manufacturer: Allied Systems Co.
  - Boom length: 22 ft.
  - Location: 02 deck - Starboard aft
  - Safe working load: 5,300 lbs.
- Rescue Boat Crane
  - Quantity: 1
  - Manufacturer: Schat-Marine Safety Corporation
  - Location: 02 Deck - Port aft
  - Safe Working Load: 4,720 lbs.

Winches

- Oceanographic Winch
  - Quantity: 1
  - Manufacturer: Markey
  - Drive: Electrohydraulic
  - Line Speed: 50-60 m/min
  - Maximum Drum Capacity: 6,000 m of 0.322" conducting cable (3 conductor)
  - Maximum Pull, Low Speed: 12,000 lbs.
  - Maximum Pull, High Speed: 8,000 lbs.
  - Maximum Working Load: 5,000 lbs.
  - Recommended Work Load: 2,000 lbs.
- Type: Winch
  - Quantity: 1
  - Drive: Electrohydraulic
  - Line speed: 38-46 m/min.
  - Maximum Drum Capacity: 3000 m of 1/4" wire
  - Currently Rigged With: 1,500 m of 1/4" stainless steel wire
  - Safe Working Load (SWL): 1,220 lbs.

A-Frame

- Type: Movable
  - Quantity: 1
  - Location: Stern
  - Clearance overside: 8 ft.
  - Useable width: 8 ft. 2 in.
  - Vertical clearance (deck to pad eye): 9 ft. 8 in. at maximum extension forward
  - Lifting capacity: 8,000 lbs.

Ground Tackle

- Bower Anchors
  - Quantity: 2
  - Type: Baldt Stockless
  - Weight: 3500 lbs. each.
- Anchor Chains
  - Quantity: 2
  - Length:
    - Port - 8 shots = 720'
    - Starboard - 7 shots =630'

Small Boats

- 21 foot Rigid Hulled Inflatable Boat (RHIB)
  - Quantity: 1
  - Manufacturer: Zodiac
  - Engine: Yamaha 130 hp gasoline (outboard)
  - Note: carries Garmin GPS unit and fathometer
- 18 foot Rigid Hulled Inflatable Boat (RHIB)
  - Quantity: 1
  - Manufacturer: Willard
  - Engine: Johnson 20 hp gasoline (outboard)

Note: Gasoline storage capacity aboard is 490 gallons

Engineering

General

- Cruising Speed: 11 knots
- Range: 8000 nmi
- Power: 1600 HP
- Fuel Capacity: 224,000 gallons
- Fuel Consumption: 110 gal/hr
- Fuel Type: #2 Diesel
- Endurance: 45 days
- Endurance Constraint:Stability

Propulsion Plant

- Main Propulsion
  - Type: Diesel Electric
  - Quantity: 2
  - Manufacturer: General Electric
  - Rated power (each): 800 hp
- Propellers
  - Type: Fixed Pitch
  - Quantity: 2
  - Diameter: 8.5 ft.
  - Blades: 4 manganese bronze
- Bow Thruster
  - Type: Tunnel Thruster
  - Quantity: 1
  - Manufacturer: General Electric/Harbor Master
  - Rated power: 550 hp
  - Pitch: fixed
  - Blades: 4

Freshwater System

- Storage capacity:
  - Main - 4,063 gal.
  - Reserve - 1,035 gal.
- Normal consumption: 2,500 gal./day with scientists on board
- Desalinator
  - Quantity: 2
  - Type: Evaporator
  - Manufacturer: Alfa Laval
  - Maximum production: 3,000 gal./day (each)

Pollution Control

- Sewage Waste Control
  - Type: Collection, Holding & Transfer
  - Manufacturer: Omnipure
  - Holding Capacity: 6000 gallons
- Oily Waste Control
  - Type: Oily Water Separator
  - Manufacturer: World Water System
  - Holding Capacity:25 gallons
  - Process Rate: 2 gallons per minute
  - Capability: less then 100 ppm

Electrical System

- Ship Service Generator
  - Quantity: 4
  - Manufacturer: Caterpillar/Kato
  - Power Rating: 600 kW
- Emergency Generator
  - Quantity: 1
  - Manufacturer: Caterpillar/Kato
  - Power rating: 250 kW

Communications

- VHF-FM Marine Band Transceivers
- HF Marine Band Transceivers
- HF Alarm Watch Radio Receiver (2182 kHz)
- INMARSAT Standard B Radio Transceiver
- Radio Teletype Capability
- NAVTEX Receiver
- Cellular Telephone
- Emergency Position Indicator Radio Beacons (Class 1 and Mini-B)
- Search and Rescue Transponders (X-Band Radar Frequency)
- E-mail (E-mail Address: Noaa.Ship.McArthur@noaa.gov)

Navigation

- Gyro compass: Sperry MK227 gyro
- Global Positioning System (GPS)
- Nobeltec's Visual Navigation Suite
- Traditional paper charts
- Radar: Furuno ARPA Consoles (2)
  - One X-band
  - One S- band with chart overlay
- NAVTEX receiver (519 kHz)
- Weather Fax

Scientific Refrigerators and Freezers

- Wet Lab Freezer
  - Manufacturer: Kenmore
  - Volume: 32 cu. ft.
  - Capacity: -10 °F
- Oceo lab refrigerator
  - Manufacturer: RSP Ind.
  - Volume: 10 cu. ft.
- Dry lab freezer
  - Manufacturer: Whirlpool
  - Volume: 21.7 cu. Ft.
  - Capacity: -10 °F

Scientific Equipment

- Computers
  - Two Dell PowerEdge 2650 computers running Windows 2000 and Scientific Computer System (SCS) software
  - Can handle data in:
    - Raw Binary,
    - ASCII,
    - UNIX
    - post-processed compressed or merged data sets
- Bathymetric
  - Echo Sounder: Abyss IES-10 Echo sounder (12 kHz and 200 kHz)
- Meteorological
  - Barometer : One Atmospheric Instruments digital barometer. Data is output in millibars and is recorded on SCS
- Oceanographic
  - Autosalinometer: One Guildline model 8400 autosalinometer capable of precision salinity calculation.
  - CTD: One Seabird Electronics Model 9/11 Plus CTD system with SBE-32 12-position carousel water sampler. The SBE 9 Plus underwater assembly has a depth capacity of 6800 meters and a conductivity/temperature sensor pair.
  - Thermosalinograph (TSG):The Seabird Electronics SBE-45 thermosalinograph is plumbed into the Wet Lab and measures the conductivity and temperature of the water. The hull intake is 3 meters below the water line
  - Expendable Bathythermograph (XBT): Installed a Sippican MK-12 XBT system with a portable launcher that is available for scientific use. The user must supply XBT probes.