

NOAA Ship *Rainier*



NOAA Ship *Rainier* is one of the most modern and productive survey platforms of its type in the world. The ship is designed and outfitted for conducting hydrographic surveys with a primary mission in support of NOAA's nautical charting program. *Rainier* regularly operates in the coastal waters of Alaska, Washington, and Oregon, and is homeported in Newport, Oregon.



Rainier is equipped with a Kongsberg EM710 Multibeam Sonar System. The ship's five survey launches are equipped with four Reson 7125 dual-frequency multibeam sonars, one tilted Reson 8125 multibeam sonar, and the HYPACK and HYSWEEP Hydrographic Data Acquisition System.

The ship and her launches also carry many data acquisition and processing computers, Differential Global Positioning

System (DGPS) receivers, Applanix POS MV attitude and positioning systems, and an assortment of CTD instruments, Moving Vessel Profilers (MVPs), bottom samplers, automatic tide gauge equipment, land survey equipment, and precision GNSS receiver stations for position control.

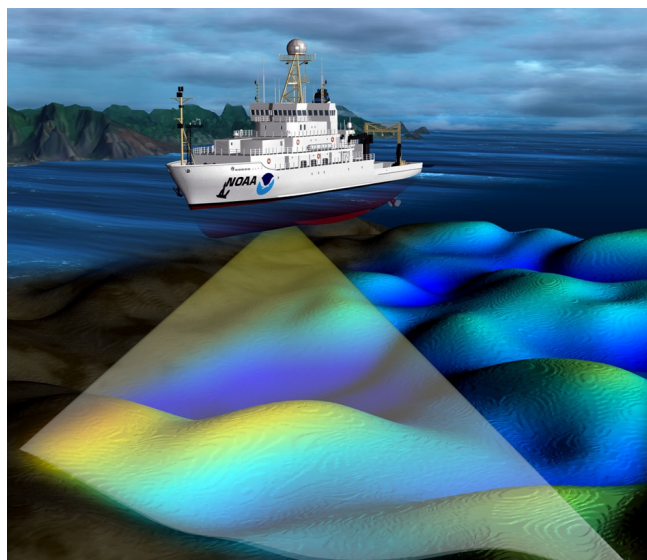
Two 20-foot skiffs are used for diving and shore support operations, such as the installation of tide gauges and GNSS control stations.

The NOAA Ship *Rainier* is named after Mount Rainier, a massive volcanic cone rising 14,410 feet above sea level in Washington State. At the time the ship was built, vessels of this class were named for geologic features.

Rainier received significant upgrades during the 2010 Major Repair Period (MRP), including the replacement of the ship service generators, electrical switchboards, launch davits, foredeck cranes, stateroom & office furniture, and the ship's multibeam sonar system. A Rolls-Royce Moving Vessel Profiler with CTD sensor was added to increase operational efficiency with the new multibeam sonar. Crew safety was enhanced with the addition of a Fast Rescue Boat (FRB), a new Electronic Chart Display and Information System (ECDIS) for navigation, improved launch deployment and recovery mechanisms, and the removal of asbestos materials throughout the ship.

The concurrent use of several multibeam systems allows *Rainier* and her launches to cover large survey areas in a field season. The ship's hydrographers acquire and process massive amounts of data and create high-resolution, three-dimensional terrain models of the ocean floor. Using these models of the seafloor, the hydrographers can quickly identify shoals and obstructions that may be dangerous to navigation.

Scientists can also use the three-dimensional images to study the geologic processes that create and change the shape of the seafloor. Backscatter data collected during the survey are now being utilized for fisheries habitat mapping and sediment classification.



Multibeam sonar enables wide and very detailed coverage of the ocean floor.

Ship Specifications

Length: 231 ft.
Breadth: 42 ft.
Draft: 17 ft.
Hull: Welded steel, ice strengthened
Displacement: 1,600 tons
Cruising Speed: 13 knots
Range: 5,898 nm
Endurance: 22 days
Hull Number: S221
Call Letters: WTEF
Commissioned Officers: 12
Licensed Engineers: 4
Crew: 40
Launched: March 1967
Delivered: April 1968
Commissioned: October 1968
Builder: Aerojet-General Shipyards, Jacksonville, FL
Designer: Maritime Administration

Office of Marine and Aviation Operations

Since NOAA's beginning, NOAA ships and aircraft have played a critical role in the acquisition and monitoring of the country's oceanographic, atmospheric, hydrographic, fisheries, and coastal data. This fleet of platforms is managed and operated by NOAA's Office of Marine and Aviation Operations (OMAO), an office made up of civilians and officers of the NOAA Commissioned Corps, the Nation's seventh service. In addition to research and monitoring activities critical to NOAA's mission, NOAA ships and aircraft provide immediate response capabilities for unpredictable events. NOAA hydrographic survey ships discovered the wreckage of EgyptAir Flight 990, TWA Flight 800, and John F. Kennedy Jr.'s aircraft. Our ships, aircraft, and personnel have also conducted damage assessments after hurricanes, major oil spills, and disasters such as the Exxon Valdez oil spill, Hurricane Katrina, the events of September 11, 2001, and the Deepwater Horizon disaster in the Gulf of Mexico.

NOAA's fleet of research and survey ships is the largest fleet of federal research ships in the Nation. The fleet ranges from large oceanographic research vessels capable of exploring the world's deepest ocean, to smaller ships responsible for charting the shallow bays and inlets of the United States. The fleet supports a wide range of marine activities, including fisheries research, nautical charting and mapping, ocean exploration, and ocean and climate studies.

NOAA's fleet of fixed-wing aircraft operate throughout the world providing a wide range of capabilities, including hurricane prediction research, marine mammal and fisheries assessment, snow water equivalent measurements and coastal mapping. NOAA aircraft are outfitted to carry scientists and specialized instrument packages to conduct research for NOAA's missions.

NOAA Commissioned Officer Corps

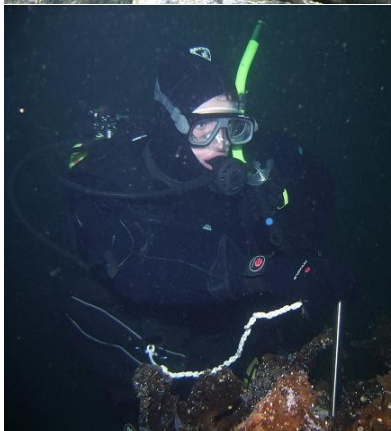
The NOAA Corps is one of the seven uniformed services of the United States, composed of commissioned officers trained in engineering, oceanography, meteorology, earth sciences, fisheries science, and other related disciplines. Officers are trained for positions of leadership and command in the operation of ships and aircraft; in the conduct of field projects on land, under the sea, and in the air; in the management of NOAA observational and support facilities; as members or leaders of research efforts; and in the management of various organizational elements throughout NOAA.

About NOAA

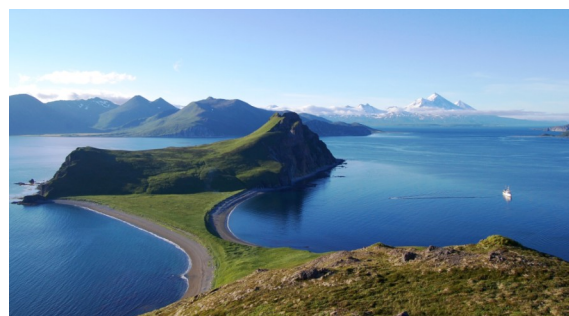
NOAA conducts research and gathers data about the global oceans, atmosphere, space and sun, and applies this knowledge to science and service that touch the lives of all Americans.

NOAA applies science to understand and predict changes in climate, weather, oceans and coasts, shares that knowledge and information with others, and conducts research to conserve and manage coastal and marine ecosystems and resources.

An agency of the Department of Commerce, NOAA provides these services throughout five major divisions: the National Weather Service, the National Ocean Service, the National Marine Fisheries Service, the National Environmental Satellite, Data, and Information Service, and Office of Oceanic and Atmospheric Research; and numerous special program offices. More information about NOAA can be found at www.noaa.gov



Survey operations include installing benchmarks, tide gauges, GPS stations, and diving to measure least depths.



Rainier anchored near Inner Iliasik Is., Alaska
Photo credit: *Rainier* Personnel

Visit the NOAA Ship *Rainier* web site at www.moc.noaa.gov/ra
For more information, contact OMAO at 301-713-1045
or visit the OMAO web site at www.oma.noaa.gov