Okeanos Explorer

America's Ship For Ocean Exploration

National Oceanic and Atmospheric Administration • United States Department of Commerce

Known as "America's ship for ocean exploration" the NOAA Ship *Okeanos Explorer* is a new type of research vessel. 95 percent of the ocean is still unexplored — and the *Okeanos Explorer* is going to help change that.

The ship will travel around the globe to map the seafloor and characterize largely unknown areas of the ocean. Interesting seafloor features can be discovered with the deep water multi-beam sonar mapping system.

Sites will be further explored with the ship's Remotely Operated Vehicle (ROV), which can travel down to a depth of 4,000 meters (13,123 ft). Images and high-definition video from the underwater vehicles will be sent from the vehicle to the ship to the shore in real-time. This technology is referred to as "telepresence." The ship's V-SAT, or very small aperture terminal, (housed in the ship's giant golf-ball dome) can send this information through Internet2, a high-speed Internet connection.

3 Dimensional Mapping System

The vessel has a hull-mounted, first-of-its kind multi-beam mapping system, which will produce high resolution maps of the seafloor.The maps will be used to identify unique seafloor features for further exploration and will provide a road map for exploring a particular site with the remotely-operated vehicles (ROVs).

The Only Ship With a Dedicated ROV

The *Okeanos Explorer* is the only NOAA ship to have a dedicated ROV. Although ROVs have been used on other NOAA ships, they are typically removed at the end of a mission. Having a permanent ROV makes it easier to deploy at any time.

On the *Okeanos Explorer*, there is an integrated control room for operating the ROV and run telepresence communication. Having the screens and computers permanently wired to the ship makes it more efficient to sustain long-term exploration in remote areas of the world.

Not knowing what the ship will encounter, it is impossible to prepare a scientific complement for every possible discovery. Instead, the ship will be capable of sending video, voice, and other data to scientists ashore so that they may follow the cruise from a command center.

The Future of Ocean Exploration

The Exploration Command Centers are located around the country, with a communication's hub at the University Rhode Island, known as the Inner

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Space Center. Currently, other centers are located at NOAA's facility at the Western Regional Center in Seattle, WA, NOAA's Office of Ocean Exploration and Research and NOAA *Ocean Explorer* Web site in Silver Spring, Md., and the University of New Hampshire's Center for Coastal and Ocean Mapping.

Although the ship may be thousands of miles away, the scientists at the centers will be able to guide the ship through its mission. Images from the seafloor also can go live into classrooms, newsrooms, and living rooms through high speed internet. The ability to bring these products directly to people around the world will raise awareness, and hopefully get kids enthusiastic to learn about the ocean.

A New Ship, A Strong Partnership

The *Okeanos Explorer* was previously the U.S. Navy Ship *Capable*, a T-AGOS class vessel. NOAA obtained the vessel on September 10, 2004 and began conversion in 2005. The vessel was named by a team of five students from Woodstock High School in Woodstock, Illinois. Following commissioning and a series of field tests, the ship will begin its first full field season in 2010 and will initially operate in the Pacific.

In addition to numerous partnerships with outside organizations, staff from NOAA's Office of Ocean Exploration and Research worked closely together and with others during the ship's refitting to convert this former naval vessel to explore the ocean with new and exciting scientific and communications capabilities.

OMAO and OER partnered to find innovative ways to staff and operate this ship, and potentially other ships in the NOAA fleet. Cross-training staff from OMAO and OER will provide more depth and flexibility in operating the ship, its telepresence capability, and its exploration sensors and systems. With its assigned missions and with telepresence, the ship will explore the ocean and provide data ashore in new ways.

For more information about NOAA Ship *Okeanos Explorer*, visit http://www.oceanexplorer.noaa.gov/okeanos/. To learn more about NOAA's products and services, visit http://www.noaa.gov.

Ship Specifications

Length: 224 ft
Breadth: 43 ft
Draft: 17 ft
Full Load Displacement: 2,312 lt
Lightship Displacement: 1,616 lt
Speed: 10 knots
Range: 9,600 nautical miles
Endurance: 40 days
Hull Number: R337
Call Letters: WTDH
Commissioned Officers: 6
Licensed Engineers: 3
Crew: 18
Mission Personnel: 19
Launched: 10/28/1988
Transferred to NOAA: 9/10/2004
Commisssioned: 8/13/2008
Builder: VT Halter Marine, Inc.
Moss Point, Miss.