



# NOAA Ship Rainier

## MRP Newsletter



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## Final Edition: The End of the MRP and The Dawn of a New Era

NOAA Ship *Rainier* entered the final phase of her year-long Major Repair Period (MRP) on August 27, 2010 when she was refloated from dry dock at Cascade General Shipyard, Portland, Oregon. The months that followed to complete the project came with great trials and tribulations to the ship and her crew.

## Out with the Old, In with the New: Upgrades & New Equipment

Major accomplishments during the last months of the MRP included installation of new systems and fixtures. The bridge received a new Sperry steering stand and autopilot (pictured right), replacing the original stand which guided *Rainier* on projects and transits up and down the West Coast of the United States, Alaska, and islands in the Pacific (including Hawaii) over the last 40 years.



A new Electronic Chart Display and Information System (ECDIS) was installed which provides real-time navigation information to the bridge watch team. The primary ECDIS station replaced the multipurpose desktop on the aft bulkhead of the bridge. The secondary ECDIS station, mounted forward on the port side of the bridge, includes a movable keyboard tray.



New Steering Stand



New ECDIS Primary Unit  
(top) and Secondary Unit  
(bottom)

The ship's Global Maritime and Distress Signaling System (GMDSS) was reinstalled on the bridge with a number of modifications to improve efficiency and conserve space. All VHF radios remained the same as before the MRP but the HF radio was upgraded to a new Furuno integrated DSC model with a new 35-foot-long HF antenna mounted high atop the aft mast. New antenna cabling was routed to the bridge for all radios. High-speed Ethernet cabling and new digital telephones were also installed throughout the ship.

While the bridge was being restored to operational status, the engine room and engineering systems were being worked on as well. A major upgrade occurred to the ship's electrical service system, which gained a new computerized electrical switchboard (top of next page) to handle the power from the freshly-installed 450 kW MTU generators. Features of this controller include automatic paralleling and shore power shifting. *Rainier* engineers have praised its ease of operation compared to the old system.



New Electrical Switchboard in CERC Room

The decks gained new equipment as well, most notably the new Vestdavit launch davits. This equipment will make operations safer by allowing launches to be “luffed” (pulled) close to the ship during deployment and recovery. This eliminates the large gap that personnel had to step across while loading to or unloading from the launches. Combined with the new Henriksen hook system, recovery and deployment of the launches will be safer and easier than in the past.

A Fast Rescue Boat (FRB) davit was installed on the



Vestdavit FRB Davit

starboard side in the position formerly reserved for launch RA-1. This single-point Vestdavit design required a deck extension for normal operation of rapid deployment of the FRB.

Both ship’s masts were completely removed and refurbished during the MRP. Harness bars were installed to improve safety for any maintenance aloft. After the mast re-installations, all new antennas and weather sensors were mounted.

A problem which had been identified long before the MRP was the poor functionality of the fuel manifolds. New manifolds (pictured below) were installed, making bunkering an easier and safer evolution for the engineering department, reducing the potential for an oil spill.



New Fuel Oil Manifolds in the Engine Room (top) and Shaft Alley (bottom)



RA6 in her new Vestdavit Davit



Refurbished Forward and Aft Masts

The original-equipment cranes on the foredeck were replaced with new units from North Pacific Crane. The new cranes can extend to 33 feet, 3 feet longer than the old cranes. Lifting capacity is about the same but the new cranes provide better reliability and require less maintenance.



New Deck Cranes



Moving Vessel Profiler

A Moving Vessel Profiler (MVP) system was added to the fantail in the old location of the ship's incinerator. The MVP will allow the ship to acquire hydrographic survey data without stopping to collect static CTD (Conductivity, Temperature, and Depth) measurements. A small tow fish deploys from the MVP boom that collects CTD data while the ship is underway collecting hydrographic data. The CTD data are used to calculate the speed of sound through the water, a critical factor in obtaining accurate sonar measurements.

dual swath set-up with roll, pitch and yaw stabilization, and has a depth range of 3 to 2,000 meters. This upgraded multibeam system will greatly improve *Rainier's* overall versatility and capability on future projects.

Inside the ship, the topside unit of the new Kongsberg EM 710 multi-beam sonar system has been installed. The EM 710 is a state of the art multi-beam sonar system that will provide high resolution seabed mapping capability with 256 beams capable of forming 400 soundings per swath.

The system incorporates a



Kongsberg EM 710 Topside Unit

All berthing spaces were overhauled with new carpet, paint and new furniture, including beds, lockers, secretaries and chairs. All

plumbing fixtures were replaced with new toilets, sinks and faucets. Showers were lined with stainless steel interiors and new terrazzo deck surfaces.



Junior Officer Stateroom with New Furniture

A new fire detection system was installed throughout the ship, with three new control panels with all new detectors and pull boxes. The fire system is now

integrated directly into the ship's general alarm system.



Changes and improvements were made to the mess decks. New tables were installed along the forward section, and booths were added to the after section. A new entertainment center was installed at the forward end of the mess. An island in the center of the mess houses a coffee maker, ice and water dispenser, small appliances and storage for various food items.



Messing Areas Looking Aft (top) and Looking Forward (bottom)



New Serving Line

Additional changes were made in the galley, including new ovens, stovetops, deep fryer, and a new serving line that allows diners to serve themselves buffet-style. The scullery was also overhauled with new dishwashing equipment and a new industrial-sized garbage disposal.



The crew moved aboard January 10, 2011, marking the first time the ship was habitable since October of 2009.

## Faces New and Old: *Rainier's* Crew during the MRP

A ship is more than just a collection of steel, paint and glass. The crew of a ship is what makes her a living, breathing object that people are proud to work on and call home. Through the years, *Rainier* has boasted one of NOAA's best crews, and her productivity has reflected that fact. During the MRP, a number of personnel changes occurred, including retirements, promotions and new arrivals.

The most notable personnel change was the retirement of *Rainier's* long-time Chief Steward, Sergio Taguba. Starting on *Rainier* at the age of 18 as a messman, Mr. Taguba gave 37 years of loyal service to the ship and his country, eventually rising to the rate of Chief Steward, a role he held for many years. His retirement on November 29th, 2010 marked the end of an era on *Rainier*.

To fill CS Taguba's position, *Rainier's* Chief Cook, Doretha Mackey, was selected as the ship's new Chief Steward. CS Mackey's service to NOAA began in 1980 when she joined



New Chief Steward Mackey in the *Rainier* galley

*Discoverer* with her sister. Since then, she has sailed on *Oceanographer*, *Miller Freeman*, *McArthur*, *Ronald H. Brown*, *Hi'ialalakai*, *Ka'imimoana*, *Oscar Elton Sette*

and, most recently on *Okeanos Explorer* during *Rainier's* MRP. She joined *Rainier* in 1998, and has served as Chief Cook since then. She brings a great deal of experience to the position, and

her efforts in the galley have thus far met with the approval of the crew.

A large number of new personnel filled the ship's vacant ranks in the months prior to the end of the MRP, exclusively in the Wardroom, Engineering and Deck departments.

**Wardroom**  
 LT Hauser  
 3M Forgione  
 ENS Prieo  
 ENS Phillips  
 ENS Clark  
 ENS Manda  
 ENS Buesseler

**Engineering Dept.**  
 3A/E Plocharzyck  
 JUE Mauldin  
 O Williston  
 O Cummings  
 GVA Doran

**Deck Dept.**  
 AB Lizberg  
 AB Stollard  
 AB MacDonough  
 AB Nichols  
 AB Macawili  
 AB Walls



Chief Steward Taguba Celebrates Retirement with the crew at *Rainier's* Shipyard Offices

NOAA Ship *Rainier* has a reputation for crewmembers with a long history of service to the NOAA fleet. Department chiefs alone have over 110 years of combined service to NOAA, most of which were served aboard *Rainier*. Returning officers and crew include the following individuals:

<u>Wardroom</u>	<u>Engineering</u>	<u>Deck</u>	<u>Stewards</u>	<u>Elect. Tech.</u>	<u>Survey</u>
CAPT Haines	CME Smith	CB Kruger	CS Mackey	LET Skinner	HCST Jacobson
LCDR Moser	EET Gallo	BGL Anderson	2C Pounds	ET Martin	HSST Gendron
LT Pounds	2A/E Riley	SS Allen			HST Wilson
ENS Andvick	JUE Zacharias	DU Sanborn			HAST Walsh
ENS Davison	O Riley				HAST Cruz
ENS Forrest					

Some of *Rainier's* crewmembers found new opportunities across the fleet. We thank the following individuals for their service aboard *Rainier* and wish them much success in their new positions.

CB Davis, NOAA Ship *Fairweather*  
 DU Massey, NOAA Ship *Ronald H. Brown*  
 SS Brooks, NOAA Ship *Fairweather*  
 AB Hauerland, NOAA Ship *Ronald H. Brown*  
 AB Vickers, NOAA Ship *Okeanos Explorer*  
 AB Abraham, NOAA Ship *Fairweather*  
 CME Urban, NOAA Ship *Pisces*

GVA Pittenridge, NOAA Ship *Bell M. Shimana*  
 JUE Zarzycki, NOAA Ship *Fairweather*  
 SST Jackson, NRT 6  
 SST Colvert, NRT 6  
 ST Mitchell, NOAA Ship *Henry B. Bigelow*  
 ST Fuqua, NOAA Ship *Hi'ialakai*



*Rainier* and sistership *Fairweather* in full dress during a past field season.

## The Big Push: The Final Days of the MRP

*Rainier's* departure from Cascade General was uncertain due to the incompleteness of various systems. The original contractual date for leaving the yard was November 19<sup>th</sup>. Due to additional work items added to the contract, in late October the schedule was revised to a December 3<sup>rd</sup> departure. When December 3<sup>rd</sup> came and passed, a new goal of December 21<sup>st</sup> was set. Hopes of spending the holidays in Seattle were dashed when the sailing date was revised to January 3<sup>rd</sup>, 2011. Finally, after much-needed parts arrived and the final systems were brought online, January 19<sup>th</sup> was set as the day for sea trials, and January 20<sup>th</sup> became the final sailing date.



NOAA Ship *Rainier* awaits departure alongside Cascade General Shipyard

On the morning of January 19, 2011, *Rainier* sat port side to Cascade General Shipyard berth 303, as she had for many long months before. Her only movement since November 2009 was under the control of tugboats. At 0855, the main engines came to life and the final underway checks were completed. CAPT Haines took control of the deck and conn. At 1003 *Rainier* was underway, under her own power for the first time in more than a year. She sailed down Swan Island Basin and into the Willamette River where sea trials and adjustment of the magnetic compass (a procedure known as “swinging ship”) were conducted.

Sea trials were successfully completed with the exception of an electrical failure, which caused the new generators to shut down to prevent overheating, but the emergency generator came up instantly. The cause of the shutdown was a restricted flow in a sea strainer. The ship returned to Cascade General’s dock at 1334 to allow the yard to complete minor repairs in the contract and address a number of small items discovered during trails. The following morning, *Rainier* departed Cascade General and transited the seaward on the first leg of her voyage home.



CAPT Haines (center) eases *Rainier* from the pier with LCDR Zezula observing (left) and LT Pounds (right) maintaining the Deck Log.

## Sand Point or Bust: The Return Home

*Rainier* safely transited the Willamette and Columbia Rivers with the assistance of a pilot, dodging numerous logs and large amounts of debris washed down the swollen rivers by recent heavy rains. Upon reaching Astoria, OR, the pilot disembarked and the ship safely crossed the Columbia River Bar.



*Rainier* at Astoria, Oregon

A day long transit brought the ship to Puget Sound and Hiram M. Chittenden locks in Seattle. Families, friends and co-workers met the ship at the locks and welcomed her home.



Pictured left: BGL Anderson catches the traditional supply of cheeseburgers for the crew, sponsored by his fiancée at the Hiram M. Chittenden locks.



Pictured right: 3 A/E Plocharzyck and GVA Doran conduct repairs in the laundry while transiting the locks.

Upon clearing Lake Union and transiting the Montlake Cut, *Rainier* entered Lake Washington and approached the NOAA Western Regional Center to begin winter inport work and preparations for the survey season. The ship docked at 2145, home for the first time in 14 months.

## The Winter Inport and Beyond: *Rainier* after the MRP

With the ship in Seattle, the focus of work shifted to preparing the ship for operational readiness and improving habitability. The crew was glad to be able to work on the ship without constantly wearing hard hats and eye protection, and the scenery was certainly an improvement.

On the agenda for the inport is the addition of the Fast Rescue Boat, various modifications to berthing spaces, personnel training, and incidental work on the ship and boats.



*Rainier* alongside at NOAA's Western Regional Center, Sand Point

## From the Command: A Special Thanks

Sailing under her own power after more than a year of repairs was a great milestone for *Rainier* and her crew. None of the work during the MRP would have been successful without the hard work and determination of CME Brian Smith, CB James Kruger, EET Joseph Gallo, Stephen Currie and Steven Braun. Also, the following personnel deserve special recognition for their work with *Rainier* during the MRP: Greg Speer, Chris Flint, John Skinner, and Jeff Martin. Thank you to everyone for your dedication and perseverance.