

# NOAA Ship Rainier MRP Newsletter

Issue #4

May-August 2010

## Rainier MRP newsletter

This newsletter was created to provide timely information on all aspects of the Major Repair Period for NOAA ship *Rainier* (S221). You will find information about current MRP activities and plans, department updates as crew augment throughout the fleet, and photos showing what has been happening with the ship.

Content and feedback on the newsletter is always welcome. Please send your suggestions, corrections, updates and photos to [matthew.r.forrest@noaa.gov](mailto:matthew.r.forrest@noaa.gov).

## Progress Update

The past several months have been busy with the *Rainier* entering dry-dock on May 7, 2010. Many of the planned improvements have been completed or are nearing completion. The following is a brief description and pictorial of what has been accomplished to date.

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After dry-docking, it became apparent that some underwater vandals had been at work. A hastily scraped “FAIRWEATHER” was found on the port side, just outboard of the propeller shaft. Sources claim that if the *David Starr Jordan* is ever dry-docked a similar engraving in the marine growth will likely be found. Luckily, as part of the MRP *Rainier*'s hull will be receiving a good wash down and a fresh coat of bottom paint to remove this unsightly moniker.

While out of the water, both propeller shafts and rudders were removed for servicing, and many of the now-defunct transducers on the hull were removed, including the ELAC transducers.



Immediately after dry-docking, the *Rainier* was tented over, as seen above, to protect it from inclement weather for painting and resurfacing work. Many new additions and modifications were already in place following the extensive alongside work that was conducted before the dry-docking. These included removal of the old gravity davits, extension of the boat deck to accommodate the new davits and winch for the planned aft a-frame, and the addition of the platform for the new fast recue boat style davit on the starboard side.

With the tenting in place, the ship was able to receive a thorough prepping and a coat of fresh paint on the entire superstructure. All the decks were also cleaned and received a new coat of nonskid while the protective covering was in place. Shown on the right is the bow after repainting and the boat deck with its new coat of nonskid. The masts have also been refurbished and received their first new coat of paint, likely since the commissioning of the ship. The hull paint was renewed later in the dry-docking period.





Virtually every component and surface of the ship is being touched during the MRP. Workers have been swarming all over the ship in a flurry of virtually nonstop activity. In addition to the new paint and decking, all the fixtures throughout the ship are being refurbished or replaced. Seen to the left is an assortment of brass deck light fixtures, power outlets, and switch plates after being sandblasted and prepped for installation.

Of course, the dry-dock has not been without its own set of mishaps, but thankfully they have been relatively minor thanks to the diligent oversight of the Chief Engineer, the Chief Boatswain, and the Port Engineer. Shown to the right is the starboard-aft bridge window that was shattered despite the best efforts to protect it. The yard will be replacing this window free of charge.



Quite a bit of new equipment is finding its way onto the ship. Upgrading every major piece of deck machinery, with the exception of the aft crane and the existing RA-2 Vestdavit, was a main component of the MRP. While the full servicing of the anchor windlass and the installation of the new a-frame and winch has been deferred, the forward cranes, the new Moving Vessel Profiler, and, of course, the new Vestdavits will be installed during the MRP. The photo to the left shows one of the two new forward cranes from North Pacific Crane on the port side.



The engine room is also getting several new pieces of machinery. The original equipment boiler was replaced, the ship's two main engines received an overhaul, new main switchboards have been installed, and the new MTU12V2000P Ships Service Diesel Generators have been installed. In order to make these installations possible, two large holes were cut into the ship's hull on either side of the engine room so that the old generators could be removed and the new generators installed. To the left is a picture of one of the two holes cut into the hull. The new generators will generate 450 kilowatts, which is an increase of 150 kilowatts over the old power system. Above, EET Joe Gallo inspects one of the two new generators.



*New Deck for FRB Style Boat on the Stbd Side*



*New Wall Panels in CB's Office Awaiting Installation*

## Rainier Re-floated

*Rainier* is floating along side the pier in Berth 314 at Cascade General Shipyard after a nearly 4-month long dry dock period. On August 27, 2010 at approximately 07:00 the flooding operations that would refloat the ship commenced. By 10:40 *Rainier* floated free of her keel blocks and was towed out of Dry-dock #5 by Foss Tug Pacific Escort to the pier for continued alongside work. The entire refloating process took only 5 hours and went seamlessly. The Dock Master was heard to remark that on a scale of 1 to 10, this was a 10...they never go this easily. Hopefully this is a good omen for continued success during this repair period. Now that the ship is once again alongside, work will continue on the upgrades being completed on the interior and system installation and integration.



## Captain's Column

Refloating of *Rainier* after nearly 4 months in the dry dock represents a major milestone in the MRP. All the major equipment including new generators, a boiler, and switchboard were placed aboard the ship and installation begun. The shafts and rudders pulled and resurfaced and re-installed. Also, installation of the new multibeam and gondola on the ship was completed. The refloating went off without a hitch and faster than scheduled.

*Rainier* was brought alongside the pier by tugs where work continues on installing all the deck machinery, masts, and other equipment on the exterior. Meanwhile, work continues below decks with installation of bulkheads, furniture, and other equipment at rapid pace, making way towards a finished product.

Rainier personnel are beginning to report back to the ship with the majority of new and returning personnel coming on October 1. The personnel will have a major effort to get the ship ready for Sea Acceptance Trials and transit back to Seattle after completion of the MRP.

The contract completion date is scheduled for November 19 and everything appears to be on schedule although there is still a significant amount of work to be completed prior to NOAA taking possession of *Rainier*.

-CO

## Goings On

This section is to recognize personnel for promotions, awards, and events. Please send any pertinent information to ENS Matthew Forrest at [matthew.r.forrest@noaa.gov](mailto:matthew.r.forrest@noaa.gov).

- Congratulations to Jonathan Anderson, who was selected as Boatswain Group Leader effective September 26, 2010.
- Congratulations to Matthew Nardi and Adam Reed, who were both officially promoted to Lieutenant (junior grade) effective August 8, 2010.
- LT(jg) Adam Reed departed July 1 for Charleston, SC where he will assume his next assignment as Port Captain supporting the NOAA Ships *Ronald H. Brown* and *Nancy Foster*.
- AST Nickolas Mitchell accepted a position on the NOAA ship *Henry B. Bigelow*.
- SST Ian Colvert accepted a position with NRT 7.
- Welcome aboard to *Rainier's* three newest Ensigns, who will officially report for work in September:
  - ENS Jennifer Clark
  - ENS Joseph Phillips
  - ENS Andrea Proie

## Rainier Gets New Kongsberg EM 710

During the dry-dock period one of the most major improvements that will affect *Rainier's* survey capability is the installation of the new ship's multi-beam sonar system. The ELAC 1050D has been removed and officially excessed, hopefully never to be seen again. The new system will allow the *Rainier* to conduct ship's hydro that will actually meet IHO requirements.



*Removed ELAC 1050D Transducers*



*Excessed ELAC 1050D Topside Unit*



Installation of the new Kongsberg EM 710 system was completed on August 18 with a complete survey completed by Westlake Consultants to tie the new transducers into the ship's reference frame. Westlake aligned the new transducers, the POS/MV components, and several existing reference marks throughout the ship to the granite block located just forward of the C-05 lounge. The transducers were mounted in a gondola that extends from the bottom of the hull to isolate the sonar from vessel noise and extend the sonar into the laminar flow below the hull for improved bubble sweep-down rejection performance.

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



## Notes from the Fleet

This section of the newsletter is available for *Rainier* crewmembers augmenting on other ships to provide information on what they are doing. Please keep it succinct and send your text with photos to [matthew.r.forrest@noaa.gov](mailto:matthew.r.forrest@noaa.gov).

*Rainier* crewmembers on the NOAA Ship *Fairweather* were recently indoctrinated into the Order of the Blue Nose during *Fairweather's* work on their Bearing Sea project. Pictured to the right are proud members of the Order of the Blue Nose, ENS Matthew Forest and ST Jennifer Wilson along with members of the *Fairweather* crew.



The FOO, LT Brent Pounds, had a chance to get away from the cubicle at PHB to augment on the NOAA Ship *Nancy Foster* for a few months, working on multi-beam survey for Gray's Reef National Marine Sanctuary and on the Deepwater Horizon response effort. Pictured to the left maneuvering the ship for one of the numerous CTD cast in the Gulf of Mexico. The *Foster* also rescued 9 Cuban refugees that had been at sea for 21 days, without food and water aboard a home built craft.

AST Manuel Cruise has been sailing with the NOAA Ship *Miller Freeman* for the majority of the past field season enjoying the hospitality of the Bering Sea and the exceptional seakeeping abilities of the *Freeman*. To the right Manuel “on the edge” to guide a sampling net into the water.



Divemaster, LT(jg) Matthew Nardi, gets a chance to keep his diving skills proficient aboard the NOAA Ship *Fairweather*. Seen to the left with ENS Leigh Hedgepeth during a tide gage dive off of one of *Fairweather's* new launches.

# Small Boat Updates

During the MRP, the opportunity to do some major modifications and repair work to *Rainier's* small boats is being capitalized on. Below, you will find updates on the ongoing work to RA-2, RA-8, and RA-9.

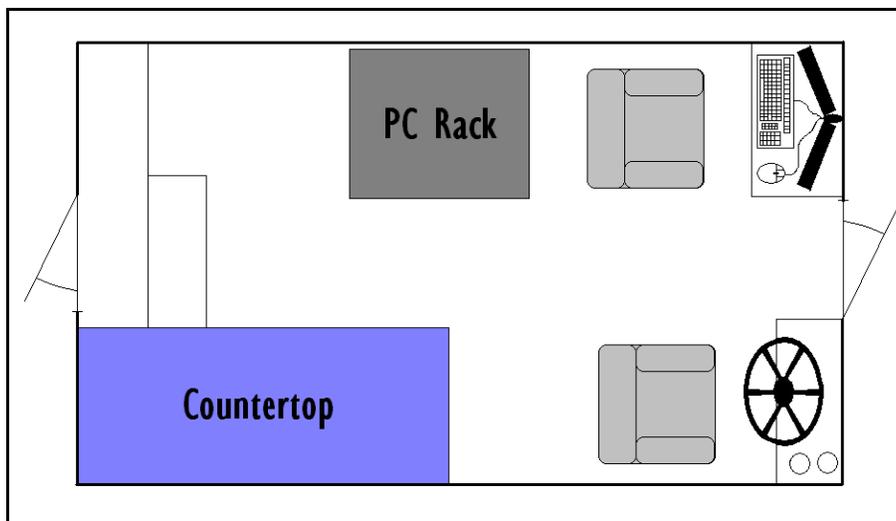
## RA-2 Modification Underway

One of the many changes coming out of the MRP is the addition of a new Fast Rescue Boat style skiff that will replace RA-1. With the retiring of the ship's faithful near-shore workhorse, RA-1, *Rainier* finds herself without the tilted Reson 8125 capability that has proven so effective in acquiring extremely shallow and dangerous near-shore areas. As a result, plans are in the works to do a fairly major overhaul on RA-2 in order to create a multi-purpose, near-shore platform capable of running VBES, shoreline, and tilted multi-beam acquisition.



Design work has been completed and is in the process of being certified by Jensen Maritime Consultants and subsequently approved by the NOAA Small Boat Program. Once approval is received for the proposed modifications and the contract is awarded, work on the hull modifications will begin. A hole will be cut in the hull on the port side, just aft of the coxswain's seat and ahead of the fuel tank. A recessed well, similar to those incorporated into the newer Jensen survey launches, will then be fabricated and installed into this hole. The recessed design will protect the multibeam transducer during shoreline operations and should provide a much safer mounting than the exposed mounting arrangement on RA-1. A new GPS antenna arch and a mounting bracket for the POS/MV IMU will also be fabricated and installed.

Along with this new equipment and capability, the cabin of RA-2 will be receiving a much needed overhaul. The deck department will be removing all the existing fixtures and a new arrangement, incorporating the rack mount shelves from RA-1, a starboard side countertop, and a forward facing workstation with seating, will be constructed in its place. This new interior layout should significantly improve ergonomics and functionality of the cabin, allowing shoreline boat-sheets to be spread out on the ample starboard countertop, while the sonar operator has a seated operating station adjacent to the coxswain.



*The new Proposed RA-2 Cabin Layout*

All the existing equipment, including the POS/MV and Reson SVP71, will be cross decked directly onto RA-2 along with the Reson 8125 multi-beam sonar. Additionally, the purchase of a new Knudsen Rack Sounder system is currently in process. The Knudsen Rack Sounder uses a rack mounted topside unit and a Windows based acquisition software package that can be run on the launches acquisition computer. This system will record an image of the analog return, thus eliminating the need for a paper trace.



## RA-9 Repairs

The Chief Boatswain is taking the opportunity during the MRP to conduct some much needed repair work to RA-9. This maintenance and refurbishment work will revitalize RA-9 and should allow for many more years of useful service. Work will include the replacement of handrails, re-welding of cracked hull chines, filling holes in the console, installing fixed mount navigation lights, installing new instrument cluster and radio box, and re-surfacing the foam sponson.



## RA-8 Getting a Facelift

Repairs and refurbishment were planned for all *Rainier's* small boats during this MRP, but RA-8 drew the short straw and has spent a majority of the field season in use on the NOAA Ship *Fairweather*. Never the less, significant repair work was able to be completed prior to sending RA-8 out and during the period *Fairweather* was in Seattle before sailing for the Bearing Sea. The most major repairs included the rewiring of the electrical system, the repair of several minor hull cracks, and the removal and renewal of the nonskid.

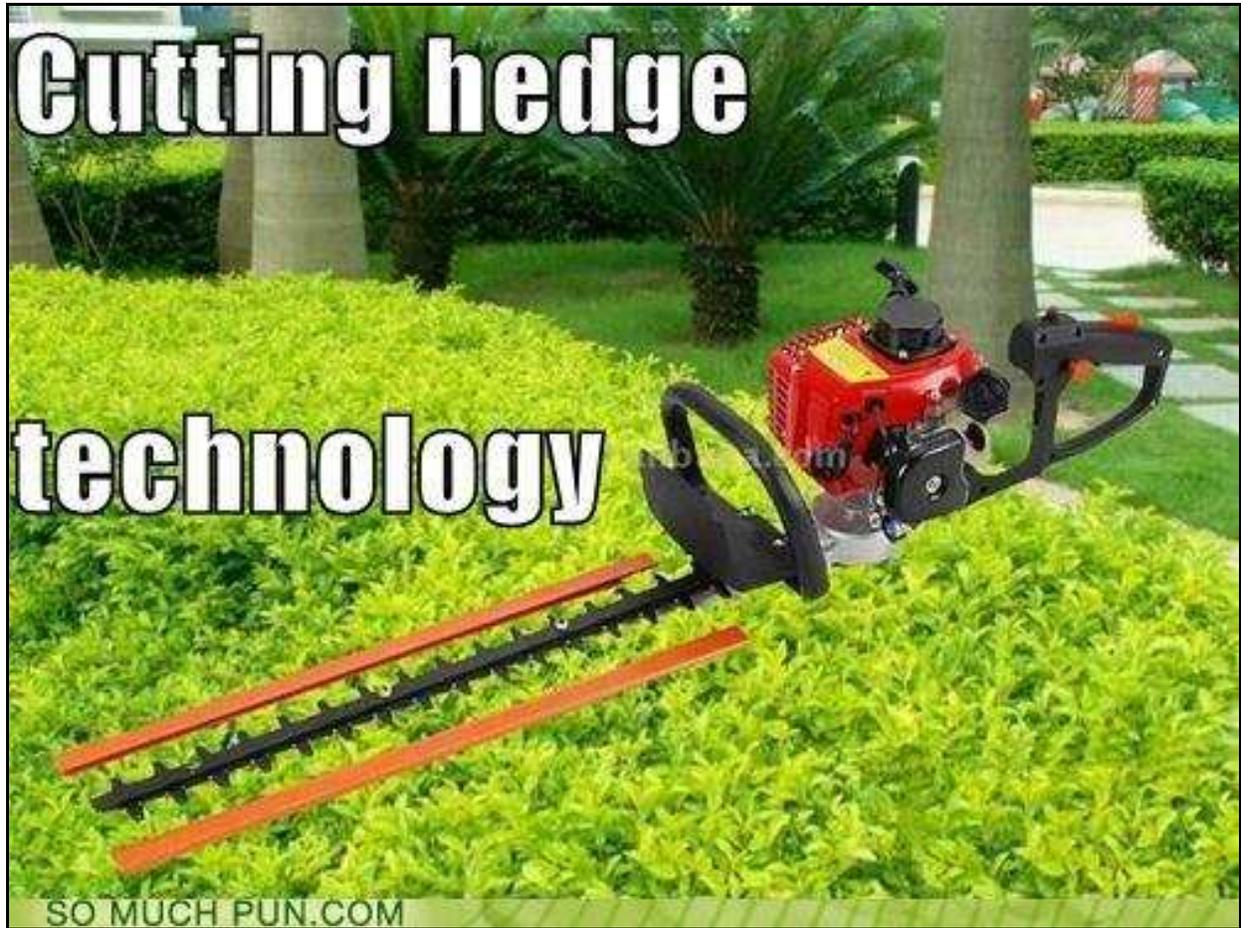
## Deferred Items

The MRP has hit a few snags along the way, and some items have been dropped from the list of tasks to be completed during the major overhaul due to time or budgetary issues. These items have been deferred to be completed at a later date, most likely this coming winter repair period as funding allows. There is an extensive list of items that have been prioritized by the command, but this section of the newsletter will only focus two of the most major and noticeable of these deferrals.

The most major of the items that won't be seen at the completion of the MRP is the installation of the aft A-frame foundations and the removal of the bulwark on the fantail to accommodate the new A-frame. While it was determined early on in the contract that the installation of the actual A-frame would not be completed during the MRP, it was planned to lay the reinforced foundations for the eventual installation of the A-frame and associated winch and equipment during the 2011 winter alongside repair period. It appears that these modifications will not be able to be completed during the MRP and the required deck reinforcement and removal of the bulwark will need to be completed while the ship is alongside for the winter, as well as the installation of the A-frame and winch.

Another major item that will be absent from the MRP work list is the installation of the new incinerator. The new incinerator has been purchased to replace the familiar steel box on the fantail that was lost in favor of a new Moving Vessel Profiler, but due to continuing debate over the best place to locate the new incinerator it remains uninstalled.

Last Line



*When we're done with the MRP we'll have this*