



**NOAA Teacher at Sea  
Marilyn Frydrych  
Onboard NOAA Ship *Delaware II*  
September 15 – 25, 2008**

**NOAA Teacher at Sea: Marilyn Frydrych**

NOAA Ship *Delaware II*

Mission: Atlantic Herring Hydroacoustic Survey

Geographical area of cruise: New England Coastal Waters

Date: Thursday, September 18, 2008

**Weather Data from the Bridge**

41.27 degrees N, 70.19 degrees W

Partly Cloudy Wind out of the W at 19 knots

Dry Bulb Temperature: 26.0 degrees Celsius

Wet Bulb Temperature: 20.9 degrees Celsius

Waves: 2 feet

Visibility: 10 miles

Sea Surface Temperature: 21.6 degrees Celsius

**Science and Technology Log**

We suspended operations. The seas were from 8 to 9 feet for the next day and a half. Conditions were unsafe for the fishermen to work. Everyone spent the day reading, playing board games, watching movies, or typing on the three computers provided for everyone's use.

Erin Earley, the engineer wiper, took the opportunity to show Jacquie and me the engine room. She took us through all the portals marked, "Do Not Enter". They all had ladders under them leading to the bowels of the ship. The engine area was compartmentalized and was entered from different spots from above.



**Marilyn entering below deck.  
(Photo courtesy Jacquie Ostram)**



**Marilyn ducking under pipes below deck. (Photo  
courtesy Jacquie Ostram)**

Erin showed us the ubiquitous colored handles which turned the various valves on and off. There were yellow handles for transmission oil pipes, green for seawater, orange for hydraulic fluid, red for emergency fire hose water, blue for drinking water, and brown for engine oil. We headed down under the galley where we passed next to the 12-cylinder Detroit Diesel engine which powered the screw. It was about ten times the size of a good-sized pickup engine. Erin explained the importance of placing all this heavy machinery so that the weight is evenly distributed within the ship. The engine being so heavy is usually near the center of the ship. This necessitates a huge long drive shaft connecting it to the screw. The drive shaft, spinning away at high speed, was out in the open just under and alongside the catwalk. One slip would be catastrophic. Most of what we saw was large 5' by 5' or larger rectangular tanks for fuel, distilled water, black water, gray water, and used oil. The black water from the toilets is stored in a tank with "bugs" or a bacteria in it which eat the refuse and in



**Erin Earley pointing out hydraulic fluid pipes. (Photo courtesy Jacquie Ostram)**



**Two holding tanks. (Photo courtesy Jacquie Ostram)**

effect clean up the water. The gray water is from the sinks and showers and contains soap which kills the bugs. The gray water has to be saved in tanks separate from the black water. All this is dumped into the sea in designated areas. Only the used oil is saved to be offloaded back at the dock.

We saw two workshop areas, a storeroom with all the parts that might be needed for any possible repair, an extra emergency generator, and the Engine Control Room (CERC), where Engineer Chris O'Keefe was standing watch. The CERC room contained all the gauges to monitor all the engine systems. By the end of the tour Jacquie and I were totally impressed with

how clean and organized everything was and how much knowledge the engineers needed. The four of them had to be experts in heating and cooling, in welding, in diesel engine repair, in electrical repairs, and hydraulics. Each of them had either mastered these fields or was in an apprenticeship with that as their goal. Usually people master one of these fields in a lifetime. We were also impressed with how many safety features were built in everywhere. It seemed

everywhere we went there were three foot CO<sub>2</sub> bottles which would automatically spray everywhere if a fire were to occur.

### **Personal Log**

Sleeping was difficult for me that evening. I did succumb to seasickness Friday morning, but was fine after downing a sea sickness pill. We frittered away the rest of the day. Robert Gamble, second scientist under Mike Jech, got out his game called Hive and taught three or four of us how to play. Otherwise I read, did Sudoku, rode the exercise bike, and ate.

The food was tremendously good. All of it was prepared from scratch. The two cooks were at least four star cooks. They not only cooked, they also cleaned up their own mess, did the dishes, and cleaned up the dining area. They appeared the hardest workers on board. For both lunch and dinner they prepared two entrees, three veggies, homemade soup, and two salads. They baked two luscious desserts as well. So far we have sampled lamb chops, salmon, lobster bisque, crab ravioli, pork chops with a luscious applesauce, and grilled swordfish.