



**NOAA Teacher at Sea
Jessica Schwarz
Onboard NOAA Ship RAINIER
June 19 – July 1, 2006**

**NOAA Teacher at Sea:
Jessica Schwarz**
NOAA Ship RAINIER
Mission: Hydrographic
Surveys
Day 2: Tuesday, June 20,
2006

**Science and Technology
Log**

Today I awoke for my first day in Kanga Bay. The bay was absolutely beautiful this morning, looking perfectly still and glassy. The Captain, CDR Guy Noll, said it's not normally this clear. I was absolutely awe struck by the scenery!



The first boat launching of the day off NOAA ship, RAINIER. RA4 is being lowered into Kanga Bay for a full day of hydrographic surveying!

The first thing I did was head to the fantail for muster with the crew involved in launching the hydrographic survey boats off the ship. The fantail is the area outside in the very back of the ship. Muster was led by the Captain and FOO, Field Operations Officer. They informed the crew of potential weather changes for the day's mission that may affect the survey boats.

It was incredible to watch the boats being launched from the ship. A large crane lifted each boat up and over the side of the ship and into the ocean. After the survey boats were launched two additional skiffs were launched as rescue boats, in case of an emergency. The first skiff lowered weighs up to 3,000 lbs, with the second skiff lowered, weighing 2,400 lbs. The Captain said the rescue skiff can travel up to a speed of 45 knots (nautical mile/hour).

Today survey boats RA4 and RA5 were launched from the ship. RA stands for the RAINIER. Ben, the ships FOO, explained to me the difference between the two survey boats being launched.

RA4 is a Reson 8125. It uses a multi-beam sonar system that covers an area of 120° using 240 individual beams to collect sonar data. This gives the RA4 the ability to

collect very high resolution data. RA5 is a Reson 8101, and is more of an all purpose survey boat Ben mentioned. He said this boat does not have the high resolution capabilities that the RA4 has because it has around 150° of coverage using only 101 individual beams to collect sonar data.



The 3,000lb skiff is being lifted up and over one of the survey boats off of NOAA ship RAINIER. The skiff will serve as a rescue boat in case of an emergency while the survey boats are collecting data near the bay.

Tomorrow I will be going out on a survey and will have a much better understanding of how the data is actually collected and processed.

While the survey boats were out today, I was spending my time on the NOAA ship getting administrative things taken care of. Once most of that was finished I made my way to the bridge to ask a few questions about the navigating process. Olivia, the Officer on Duty, or OOD was very helpful in answering some of my questions and then once she needed to leave the bridge, Jonathon one of the ship's Abs, explained how to get a radar fix.

As I mentioned in my last log, the ship's course is already plotted prior to departure by the Navigation Officer. He plotted the course on a chart of the Sitka area on down to the Islet Passage and Kanga Bay where the ship is anchored now. Jonathon was

on the bridge today collecting radar data to be sure the ship wasn't shifting too much, constantly confirming that the anchor is effectively keeping the ship in place. A reading is taken every 30 minutes. You would never know it while being on board, or at least I didn't notice, but the ship had rotated 300° on the anchor and then swung back again.

Jonathon showed me how to get what you call a radar fix. A radar fix is basically used to find the exact position of the ship. I observed Olivia, one of the officers doing this in the bridge while we were underway yesterday. Although the officers do their best to remain on the plotted course line, there are other factors that will cause the boat to get off the line. Current is one of them. Readings of three points of land, the bearing as well as the range, are taken from the radar screen. Points of land are simply points from the land that are distinctive enough to use to plot the position of the ship using the chart.

Once the three points are taken with the bearings (angle to the point) and range (distance to the point) recorded, they are brought over to the chart where a tool called a divider is used so plot the three angles. The point at which those three angles intersect is the exact

position of the ship. This can then be compared to the line already plotted to mark the ships course. The crew will then have an idea of the ships cross track error. Cross track error is how far the ship is off the plotted course line. Whew.

Personal Log

I have been asking a million questions, picking the brains of the crew. Everyone has been so giving of their time to explain things to me on the ship! Things can be complicated on the RAINIER. There is just so much to learn!!



Fully immersed in her immersion suit, the "Gumby suit" was keeping Jessica Schwarz very warm for the moment!

Something that was particularly fun about today was the abandon ship drill. This was only something I would consider fun because I got to put on my immersion suit (or Gumby suit, as I heard it called today). The immersion suit would be used to keep warm in the water if we all needed to abandon ship. I had fun trying it on. The XO had to help me get it on; these things are not that easy to get into. I tried really hard to make the gloves of the suit shake for a picture, but it wasn't easy!



NOAA ship RAINIER's XO, Julia Neander, is helping, Teacher at Sea, Jessica Schwarz into her immersion suit after an abandon ship drill.



Shaka Hawaii! Jessica Schwarz sends aloha to her home on the Big Island while wearing her Gumby suit onboard the NOAA ship RAINIER.

I grabbed extra blankets for a warmer nights sleep tonight. The ship can feel drafty in my stateroom. I'm looking forward to a long day of surveying!!! I'm so excited to share!

Until tomorrow....
Jessica Schwarz

Calling All Middle Schoolers--We Need Help Answering a Few Questions!

These questions come straight from the RAINIER's Captain:

What is a nautical mile? How is it different from a mile on land? How would I convert a nautical mile into miles/hour?

Grab your chin and scratch your head....then send me the answer at
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