NOAA Teacher at Sea
Christy Garvin
Onboard NOAA Ship RAINIER
June 1 - 8, 2005

Log 3

Day 3: Friday, June 3, 2005
Latitude: 56 deg 59 min N
Longitude: 135 deg 17 min W
Visibility: 10 nautical miles
Wind Direction: 300 deg
Wind Speed: 10 kts
Sea Wave Height: 0-1 ft
Swell Wave Height: 0 ft (we are in a protected bay)
Sea Water Temperature: 54deg F
Sea Level Pressure: 1009.8 mb

Science and Technology Log

Today work began at 0800; four launches were deployed to run survey lines and take bottom samples. I was assigned to launch RA2, a jet propulsion boat. We worked an area on survey sheet Z near Low Island and Kruzof; this area is northwest of Sitka near the base of the volcano Edgecomb.

As was discussed yesterday, running survey lines is one of the most important tasks accomplished by the RAINIER. After technicians have completed all of the preparation work in the plot room, it is time for the launch to be deployed. Many different people play a part in preparing the launch for a day of work. Deck hands make sure the boat is fueled and has necessary supplies, engineers check the engines and electrical equipment, and the kitchen staff prepares lunch, snacks, and beverages for the crew to take aboard. At 0745 the deck crew meets the survey crew on the fantail (back deck) of the ship. The deck crew then lowers the launch using the gravity falls davit, and the survey crew climbs aboard their launch. Once underway, each launch calls the bridge to inform the officer on watch that the launch is underway with all assigned crewmembers on board.

When the launch reaches its work area, the first thing that must be accomplished is a CTD cast. A CTD is a device that measures the conductivity, temperature, and depth of the water. This information is used to create a sound profile that shows how fast sound travels in the water at various depths. This is extremely important to know, because the different refractions must be accounted for when data is processed.

The procedure for casting a CTD is relatively simple. First, the CTD is attached to a rope and turned on for a 3-minute warm-up period. During this time, the CTD is being calibrated to the air pressure. When the 3-minute warm-up is complete, the CTD is

submerged just under the surface of the water for 2 minutes; this allows the machine to calibrate to the water temperature at the surface. Finally, the device is lowered to the ocean floor and the raised back to the surface. Once at the surface, the data is downloaded from the CTD to the specialized computer software used aboard the launches. Once this procedure is complete, it is time to begin running survey lines.

Personal log

One of the neatest things that happened today was a sea otter spotting. As we were working survey lines around some kelp beds, we noticed 10-15 sea otters playing in the beds. They were very cute, and it was an excellent opportunity to observe them in the wild.

Question of the day: What is refraction?

Previous question of the day: What is a CTD?
Answer: A CTD is a device that measures conductivity, temperature, and pressure. Before a launch uses its SWMB (Shallow Water Multi Beam), the crew must cast a CTD to gather information about how sound waves are being diffracted due to the pressure and temperature at various depths.

Until tomorrow,

Christy