



**NOAA Teacher at Sea  
Patricia Donahue  
Onboard NOAA Ship *Rainier*  
August 18 – 23, 2008**

**NOAA Teacher at Sea: Patricia Donahue**

NOAA Ship *Rainier*

Mission: Leveling of the Tidal Gauge in Bear Cove

Geographical Area: Kachemak Bay, Alaska, 59.43.7 N, 151.02.9 W

Date: August 20, 2008

**Weather Data – Glorious!**

**Science and Technology Log**

WOW! That says it all. Today's big excitement was supposed to be the leveling of the tidal gauge and the survey work in the cove. The bigger thrill – and scare – was the bear that approached to within 30 feet of me as I was standing over a benchmark with a leveling rod. Remembering the safety rules about bears, I stayed calm and alerted the others. Then I put down the pole and walked away slowly. Fortunately it was a young and smallish black bear who was easily scared off by the Commander throwing rocks. We were all on our guard the rest of the day. There were several benchmarks to check. Some of the climbing was perilous.



**A black bear comes to inspect what the land party is up to!**

All of the work had to be done at low tide. The survey data was collected and I look forward to seeing what's done with it.

During the afternoon, another emergency drill took place and I was invited to watch. In the scenario, the bridge lost the ability to steer the ship. Control of the vessel had to be made from aft steering, below decks where the rudders protrude from the vessel. By using only a compass and steering orders given in degrees, the helmsman maneuvered the ship. There were no windows or other indicators of the ship's position. To make matters worse, the scenario called for a loss of communications so a sound powered phone that uses only the energy from the speaker's voice to operate had to be used instead.

By late afternoon the ship moved to its new anchorage a few miles from Homer. I was invited to watch the lowering of the anchor. The anchor weighs 3500 pounds and there are two of them. Each length of chain weighs 1200 pounds and there are a total of 12 lengths for each anchor. Today we used only 5 sections of chain and 1 anchor. Each section of chain is 90 feet (15 fathoms) long. The anchor is lowered while the ship is in reverse.



**A benchmark on the Alaskan coastline**

### **Personal Log**

My family and my students enjoy a game called geocaching. We've started by using hand held GPS devices to find benchmarks and eventually we'll move on to finding caches and creating our own. I've only ever seen old benchmarks but today I saw brand new ones. One of the officers even showed me how they're made. Benchmarks indicate the exact location and height above sea level of that particular place.

The Chief Steward took me to see the food storage facilities. The freezer is enormous! The ship carries enough food to last for 6 months, although the fresh

fruits and vegetables only last for one month. They have more food than CostCo!

### **Animals Seen Today**

Stellar's Jay

Black Bear

Two species of Jelly Fish

### **Question of the Day**

How long is the anchor chain on the *Rainier*? Provide your answer in feet and fathoms. How much do the anchors and the chain weigh altogether? Why is the boat in reverse when the anchor is dropped?

### **Challenge Yourself**

Go to <http://www.geocaching.com> and type in your zip code. Identify a benchmark near your home. Find it and take a photograph!