



## **NOAA Teacher at Sea Barney Peterson Onboard NOAA Ship RAINIER August 12 – September 1, 2006**

**NOAA Teacher At Sea:** Barney Peterson  
NOAA Ship RAINIER  
Mission: Hydrographic Survey  
Day 7: Sunday, August 20, 2006

### **Weather Data from Bridge**

Visibility: 10 n.m.  
Wind direction: 295° (true)  
Wind speed: 10 Kts  
Sea wave height: (not recorded)  
Sea wave direction: (not recorded)  
Seawater temperature: 9.4 °C  
Sea level pressure: 1004.5 mb  
Cloud cover: Partly Cloudy  
Temperature Dry: 15.6°C Wet: 13.3°C

### **Science and Technology Log**

It is extremely important for the officers and crew to understand how their ship works. By understanding what happens when the engines are given a particular setting, or the rudder is moved a certain amount, those running the ship can move, steer, and stop with quite a lot of precision.

The RAINIER is 231 feet long, 42 feet at its widest (beam) and displaces 1800 tons. If you think about the football games you may have seen, you can imagine what it looks like when a very large player is running down the field and tries to stop quickly: his feet may freeze on the spot, but the force of his own moving weight keeps his body going for a ways. It is the pressure of his feet on the solid ground that helps him stop at all. Trying to stop the ship is like that, except that water is not solid and so provides less resistance to movement. With nothing solid for the ship to push against it takes a while to lose speed and momentum.



**CDR Guy Noll on the bridge of NOAA ship RAINIER.**

Turning works much the same way. Once the rudder is moved, the ship may begin to change direction, but its weight is still aimed the way it was originally going so there are no crisp right-angle turns. The officers on the bridge have to plan ahead so they begin their turn early and cut their speed when necessary to end up in the right spot at the right time.

Out on the open ocean this is not often a big issue...there is lots of room to maneuver and turns are often just gentle bends in the line of travel. Here, where we are working in the islands of the Alaskan Peninsula, distances between land masses are smaller, rocks and shoals are more common, and the depth sometimes changes quite a lot due to the way the land has been formed. It becomes very important to be able to plan ahead and move carefully around obstacles while still keeping the ship safely in deep water. Learning how carefully we have to steer helps me to understand how important the hydrographic mapping we are doing is. We are helping to develop very accurate charts showing water depths to make navigation safer.

### **Personal Log**

I am really enjoying my time aboard the RAINIER. Every morning seems to bring a new adventure. The weather has been remarkable, especially since higher winds and rougher seas have been forecast several times. We have had three days of beautiful sunrises. Two of those days had sunshine all day as well. Yesterday it got windy and there were showers and last night winds rose to 30 knots. Today it was sunny again with broken clouds and fairly light winds. The crew says this is unusually good weather for this place at this time of year. I am going to enjoy it while we have it.

### **Question of the Day**

What does it mean when I say that the ship has a displacement of 1800 tons?

I will look forward to receiving your answers at [barney.peterson@noaa.gov](mailto:barney.peterson@noaa.gov)

**Barney Peterson**

**Teacher At Sea**

**NOAA ship RAINIER**