



**NOAA Teacher at Sea  
Mavis Peterson  
Onboard NOAA Ship FAIRWEATHER  
June 21 – July 1, 2005**

**Day 8: Monday, June 28, 05**

Lat.: 55-12.8N  
Long.: 160-22.2W  
Visibility: 8(m)  
wind direction: 030  
wind speed: 14  
Sea wave height: 2'  
swell wave height: -  
seawater temperature: 8.5  
sea level pressure: 1017.4  
cloud cover and type: clear

**Science and Technology Log**

I was fortunate to sit with some of the crew at the breakfast table this morning and was able to take part in a discussion regarding what we were doing today. This gave me an opportunity to ask some questions. I'm getting the idea of the science that is taking place here, but conversation today helped me understand the connections that I have been missing. For example there are about eight programs that are used on board to gather and process the data. There are four important data gathering devices that are merged together: The exact time, the GPS location, the motion of the ship and the sonar. Interestingly, as in many computer programs there is a "Bug" that they call the "Midnight Bug" that causes them to sometimes, not always, lose data for about half an hour. The question is whether to stop and circle around and pick up what was missed or to continue. There are pros and cons and are decided by those collecting the data. The information gathered on this ship is processed quickly. This is an advantage because if there is an error or discrepancy the ship has not already moved out of the area so they can adjust or redo immediately. Of course this allows for accurate information to be gathered.

An aside on time: All NOAA ships use the same Greenwich Time no matter what time zone they are in. This saves confusion when crossing time zones. Midnight here, in this time zone is 4:00 in the afternoon. That is then the beginning of a new day. There are three ways the ship can gather bottom data. (1.) When the main ship is "hydroing" as we will be doing for the next few days, 24 hours a day the ship is sonarring the bottom in a wide swath in deep water. (2.) When the water is too shallow for the ship to hydro that is when the launches are sent out to do basically the same thing, although they use less power because the water is not as deep. (3.) The third way of collecting information is by shoreline observations, using the flat-bottomed small boat and physically eyeballing the area, taking notes and pictures and entering that data into the programs when they return to the ship. I discovered today that although all the ships in the fleet that are doing the

same type of science use the same programs, they may not be using them in exact manner. I would liken this to the example that although all fourth grade teachers must meet the same state standards of curriculum, they don't all approach the task in the same way. An example is how the scientists "draw lines" of an area to be hydroed. The FAIRWEATHER marks off polygon areas that need to be scanned. This can be done in any fashion, across-up and down or in any pattern as long as the whole area gets covered. Other ships opt to draw in lines to follow in a selected area. If they can't follow the lines because of swells, or whatever, then they are out of luck as far as surveying that day. However because we are scanning the channel with the ship today, we are following lines.

I am going to observe a training demonstration at 1:00 P.M. in the boiler room and then tour the boiler room. The training session went as planned. It was how to use the oxygen mask and how and when to use the fire extinguishers.

### **Personal Log**

I spent a couple of hours listening and asking questions of those present, and then I worked on some lesson plans after lunch. I also spent a little while at the bridge. It is a beautiful day, bright and sunny. I will be going out on one of the smaller boats tomorrow. I spent the rest of the day answering emails and working on lesson plans. These are pretty heavy concepts for fourth graders, but I am getting some ideas simplified to their level.