



**NOAA Teacher at Sea  
Rita Larson  
Onboard NOAA Ship *Rainier*  
August 10 – 27, 2009**

**NOAA Teacher at Sea: Rita Larson**

NOAA Ship *Rainier*

Mission: Hydrographic Survey

Geographical Area of the Cruise: Kachemak Bay,  
AK

Date: August 19, 2009

**Weather Data from the Bridge**

Latitude: 59° 28.339'N

Longitude: 151° 33.214'W

Sea Water Temperature: 10°C (50°F)

Air Temperature:

Dry Bulb: 11.1°C (52°F)

Wet Bulb: 10.0°C (50°F)

Visibility: 5 miles



**Sunset over Kachemak Bay**

**Science and Technology Log**

I would like to give a very brief explanation of how surveying becomes a nautical chart. When

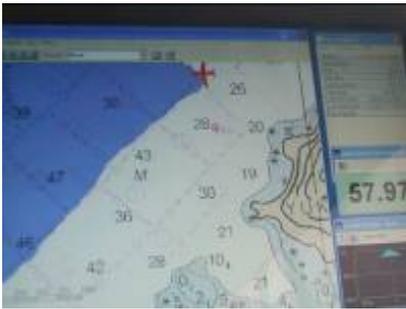


**A launch from the *Rainier***

all the surveying launches return to the *Rainier*, a debriefing meeting takes place in the wardroom. All the hydrographers-in-charge or “Hicks” give a short discription of the successes and complications they had during surveying for the day. At least one night processor attends these debriefing meetings to have a good understanding of what to expect as they process this data. Some of the things the night processors are looking for are: How many CTD (conductivity, temperature, depth) casts were made from each launch? Were there any data problems, such as noisy data or gaps in coverage?

Then, the night processors collect the Hypack and Hysweep data from the launches and transfer the surveys to the ship’s computers where they will process it with CARIS. The night processors use the program CARIS to convert the “RAW” information from the launches into processed data. This processed data has

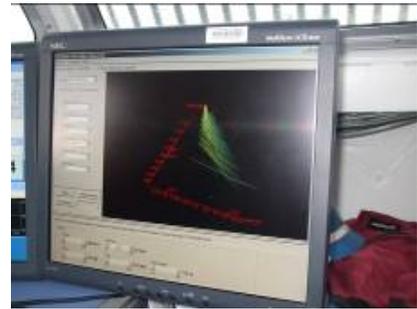
correctors such as tide and SVP applied to it. This is completed in the plotting room on board the *Rainier*. The data is then cleaned and examined for problems.



**Polygons regions**

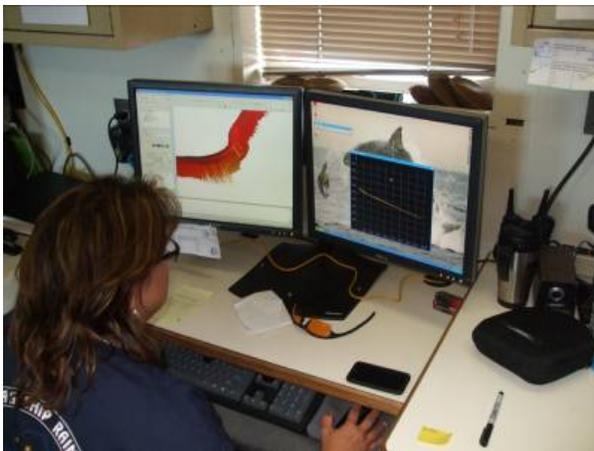
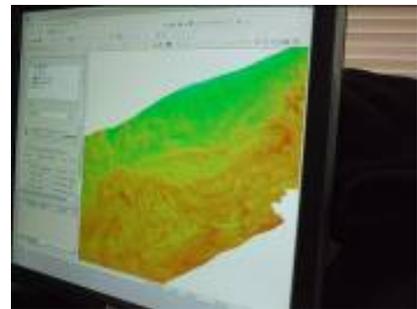
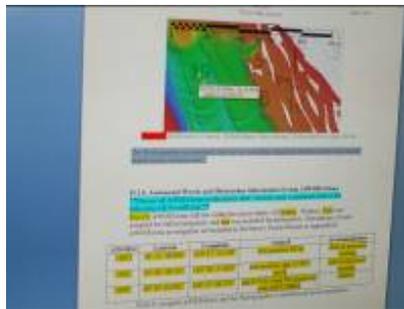


**Surveyed polygon regions**



**3-D image of the sea floor regions**

This process produces a smooth image depicting the water depth over the area surveyed for the sheet managers.



**These are various images of data completed during night processing. (Pictures taken by Nick Mitchell.)**

When this is complete, the sheet manager sets up for the next day's acquisitions and polygon plans for all of the launches. Then, this information is sent to the Pacific Hydrographic Office to further examine the bathymetric data. After that, cartographers use this information to create nautical charts. The U.S. Coast Guard, U.S. Navy, as well as civilian mariners use nautical charts worldwide. This entire process may take up to a year to complete.



Nautical charts of the geographical area the *Rainier* is surveying at this time.

### **Personal Log**

I am so amazed in the way the professionals from NOAA work together and share the responsibilities for the purpose of creating safety for others. By creating these nautical charts, it makes the waters of the world a safer place to be. Everyone on the ship has a meaningful purpose and it is clear to me that they take great pride in what they contribute in the mission of the *Rainier*. I feel like I belong here after such a short time.

### **Animals I Saw Today**

A bald eagle in a tree using the large binoculars nicknamed, "big eyes" from the *Rainier*. I also saw a sea otter.