



**NOAA Teacher at Sea  
Charles "Chuck" Gregory  
Onboard NOAA Ship THOMAS JEFFERSON  
August 12 – 24, 2007**

**NOAA Teacher at Sea: Charles "Chuck" Gregory**  
NOAA ship: THOMAS JEFFERSON  
Mission: Hydrographic Surveys of New York Harbor  
August 13 - Day 2 – 830h

*"He who knows best knows how little he knows." ~Thomas Jefferson*

Andy's alarm clock went off around 0600h. I was already awake but comfortable, so I didn't get up right away. I could hear that one of the Megan's was using the shower. The staterooms on our deck have an interesting arrangement – two guys sharing a bath (shower and toilet) with two gals (Megan & Megan). The trick is to knock first and, once the coast is clear, to enter and lock the gal's door from the inside. But the real trick is to remember to UNlock the gal's door before leaving. Stay tuned...



**Chuck's stateroom aboard the NOAA Ship THOMAS JEFFERSON. During his voyage, Chuck (bottom bunk) shared his stateroom with Ensign Andrew Ostapenko (top bunk).**

After Andy used the shower it was my turn. I've used smaller showers, but not much smaller. The water pressure was good, and the temperature comfortable. I am now awake!

I quickly dressed and went to the Mess Hall to catch up on some eating. I met the CO, and a few other crew. I also met Tom who is from the NOAA office in Silver Springs, Maryland (near DC). He is on board to observe and get a better idea what the ships do to gather the data. Breakfast was simple (I am trying to lose about 10 lbs.) – cereal, fruit and coffee – and I was off to take a few pictures before we headed out to sea.

The morning sky is clear and the day will be hot, so it's probably a good thing we are going to be on the water. Next to us on the pier a group of visitors was getting the tour of the USS INTREPID. Manhattan and the surrounding area was enshrouded in a gray haze. It's going to be a learning day and I have a lot to learn. For now, I think it's time for me to stop writing and take my Dramamine.

The Plan of the Day (Day #225) for the THOMAS JEFFERSON is as follows:

Sunrise = 0604h      Sunset = 1958h

0000h Ship moored alongside Stapleton Pier, Staten Island, NY

1100h Ship underway

1130h Deploy 31' Launches (3101 & 3102)

1215h Anchor @ Sandy Hook Anchorage

1545h Retrieve launches

Tides for Sandy Hook

Low @ 0258h (-0.2 ft.) & 1459h (0.2 ft.); High @ 0855h (5.0 ft.) & 2105h (5.6 ft.)

Currents in Sandy Hook Channel

Flood: 0604h (2.0 kts.) & 1814h (2.3 kts.); Ebb: 1212h (1.6 kts.) & 0041h (1.7 kts.)

Weather from Sandy Hook to Fire Island

AM: W winds 10-15 kts., seas 2-3 ft.; PM: NW winds 10 kts., seas 2 ft.

Today was a learning day as I wanted to learn more about the bathymetry instruments.

The THOMAS JEFFERSON is equipped with a Klein 5000 Side Scan Sonar (aka SSS Fish).

Informative place settings dot the mess hall and I was able to learn the basics of the equipment from them:

“The side-scan sonar is NOT just like a photo of the ocean floor. Objects get “stretched and distorted”. They need to be interpreted.

“The SSS Fish data can be affected by: 1) tides, 2) survey speed, 3) sea conditions, 4) angle of incidence of sound waves, 5) launch (or ship) attitude (roll, yaw & heave), 6) etc.

“When sound waves from the SSS Fish are reflected off an object a dark or “hard” return is created in the data. The object blocks the sound waves from traveling beyond it, which creates a “light colored shadow”.

“Unlike Multibeam Sonar, side-scan sonar created better images of the bottom when objects are off to the side, rather than directly beneath the instrument.

“Side-scan sonar sends out an acoustic pulse out both sides of the vessel. The intensity of the acoustic reflection from each side is measured for a period of time. An image of a stripe of sea bottom is made with each pulse.”

At 1730h I met with Peter the hydrosurveydata technician and observed him downloading today’s data. Peter applied a series of corrections (heave, tide and sound velocity) to the data. This time consuming process took about two hours. This data will be sent to NOAA’s Atlantic Hydrographic Branch (AHB) where it will be reviewed, checked, cross checked, and additional data will be added if needed (e.g., from Army Corp). The raw data is also sent to the National Geographic Data Center in Boulder, CO where it is archived. From AHB the data is sent to NOAA’s Chart Division where it is made into the navigation charts we commonly use.

FOO and Acting XO Chris informed me I will be going on one of the launches tomorrow. #3102 with SSS Fish and Multibeam (MBES). I can’t wait. I’m going to need a good night’s sleep as we’ll be on the launch for about 10 hours! Good night!!