



**NOAA Teacher at Sea
Linda Armwood
Onboard NOAA Ship FAIRWEATHER
April 25 – May 5, 2005**

Mission: Hydrography

Day 6: Sunday, April 30, 2006

Weather Data from Bridge

Visibility: 10 nautical miles (nm)

Wind direction: 160 °

Wind speed: 5 kt

Sea wave height: <1 ft.

Swell wave dir:

Swell wave height: 0 ft.

Seawater temp: 7.3

Sea level pressure: 1017.4 mb

Present weather: Mostly cloudy

Temperature: °C~ 7.0dry/5.0wet

Science and Technology Log

During the morning I spent a considerable amount of time in the pilot house on the bridge. It was imperative that I review the instrumentation and their functions as they relate to the ship's navigation. Among the navigation instruments are the Global Positioning System Navigator which shows the latitude, longitude, speed over ground and course over ground; the Gyro Digital Repeater which copies from the master

compass which provides the true heading; the fathometer which is the echosounder from the bottom of the ocean that listens for how long it takes for sound to come back to the top; the magnetic compass which is the standard compass backup for the gyro; the two-bands Auto Radar Plotting Aid (ARPA) which can be used to get location and pertinent information of nearby vessels; the rudder angle indicator; the steering stand which has two steering positions of either



NOAA Teacher at Sea, Linda Armwood, caught this photo of Arriaga Passage, AK while on her cruise aboard the NOAA Ship FAIRWEATHER.

hand or automatic; and the Machinery Alarm and Control System (MACS) which has multiple functions to include main engine monitoring, water intake, and electrical steering to name a few.

The afternoon was devoted to collecting several bottom samples in the Arriaga Passage which is a channel situated north of Noyes Island. The samples were collected with a specially-designed backpack which contains a GPS and Differential GPS (DGPS) antenna and a laptop with appropriate software. An open metal clamshell scoop which is attached to at least 300 feet of line is used by the surveyor to place in the water. The line is loosened so that the scoop is able to reach the floor of the water without hindrance. Once the line has stopped, the surveyor (or two) reels the line back up to the boat where the mouth of the scoop is opened to identify its contents. The contents are then recorded on the laptop. This data is stored for later analysis of the ocean floor.

Personal Log

The bottom samples assignment was a good workout! It was hard to return the starfish to its home, but an unoccupied clamshell will serve as a suitable souvenir.

Question of the Day

Environmental Science Students

In cooperative groups, create a graphic organizer that identifies and illustrates marine bottom-dwelling organisms. Be certain to isolate similar characteristics of organisms.

Geospatial Semester Students

Explain the disadvantage of absolute reliance on a magnetic compass for navigation.

Mrs. Armwood