NOAA Teacher at Sea
John Schneider
Onboard NOAA Ship *Fairweather*
July 7 – August 8, 2009

NOAA Teacher at Sea: John E. Schneider
NOAA Ship *Fairweather (S-220)*
Mission: Hydrographic Survey
Geographical Area: Shumagin Islands
Date: July 18-20, 2009

Andy and lunch—a nice halibut!

Position
Shumagin Islands, transiting to Dutch Harbor

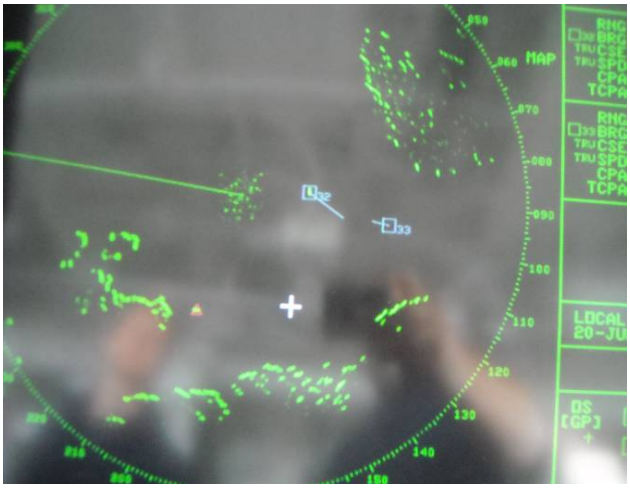
Weather Data from the Bridge
Weather System:
(July 18th) Low system approaching from the South
(July 19th) Fog, gusty wind in the morning, clear afternoon, but getting windier
Wind: southwesterly at 4-6 kts
Sea State: Seas 1-2 feet

Weather System: Projected for the July 20-21 overnight
Barometer: falling rapidly (a warning sign of unsettled weather)
Wind: sustained at 30-40 kts, gusting to 55 kts (This would qualify as a "gale")
Sea State: Predicted wave height next 24-36 hrs – 18 feet!

Science and Technology Log
On the 18th and 19th, the launches went out (including me on the 19th) to clean up some holidays and get more near-shore data. When we got back on the 19th, we found out that a major low pressure system was building to the south and expected to be in our area within a day and a half. A major low system can reach out a couple of hundred miles and the CO decided that we would leave the Shumagins about 18 hours earlier than originally planned. I discussed this with him (he is remarkably approachable) and he reiterates to me what I had already believed: his responsibilities are in three priorities – 1. His crew. 2. His ship. 3. The mission. Our research in the Shumagins does not represent life-or-death, it represents the continuing quest for knowledge and the expansion of our understanding of the Earth. I'm sure you've realized it already, but Captain Baird and his officers have earned my highest regard.

On board the *Fairweather* is a phenomenal array of electronics. Our positioning equipment is able to determine our position with just a couple of meters and when we are on a course it can

tell if the course error is as little as a *decimeter*! Operating in Alaska, where fog is a way of life, RADAR (**Ra**dio **D**irection **A**nd **R**anging) is an absolute must, and we have redundant systems in the event one breaks down. Probably the coolest thing about the radar is the use of ARPA technology. ARPA (**A**utomated **R**adar **P**lotting **A**id) is a system that not only identifies other vessels on the water, but diagrams their projected course and speed vectors on the screen. It does this from as far as 64 miles away! By looking at the screen, you can see the lines of other ships relative to your own and navigate accordingly. Furthermore, the system includes ECDIS, which is an **E**lectronic **C**hart **D**isplay and **I**nformation **S**ystem that *identifies* other ships as to their name, size, destination, and cargo! So when you see on the radar that you are in a situation where you will be passing near to another vessel, you can call them on the radio by name!



We are in the center of the radar screen and two other ships described below – with their courses projected from the boxes that represent them – are behind us. The green line is our track ahead.

This technology is essential, especially going through Unimak Pass. Unimak Pass is about 15 miles wide and is a critical point in commercial shipping traffic between the Americas and Asia. As we were transiting Unimak Pass, We were passed by an 800 foot long container ship that was en route to Yokohama, Japan and going the other way was a 750 foot ship going to Panama. This is a critical area due to what is called "Great Circle" navigation. I'll address this point when in Dutch Harbor next week.

Personal Log

Last night, after the beach party, Andy Medina (who has been on board for almost 200 days this year) was fishing off the fantail and caught a nice halibut. The crew who hail from Alaska all have fishing permits and when the day is done, if we're anchored they get to use their free time for fishing. They even got a freezer to keep their filets in. Earlier in the cruise, we actually had halibut tacos made with about the freshest Alaskan halibut you can find (less than 12 hours from catch to lunch!) Of course, with me being a bio guy, I asked for two things: 1 – to keep and freeze the head (I will clean the tissue and mount the skull back at school) and 2 – to open and evaluate the stomach contents. Both done, and the stomach had 5 baby king crabs and an eel!

The filleted tail of the halibut and some crabs found in its stomach

For the last night of the leg before making port in Dutch Harbor (home of the World's *Deadliest Catch* boats) the stewards, Cathy Brandts, Joe Lefstein and Mike Smith really outdid themselves. I sure hope you can read the menu board, but if you can't, dinner was **Grilled NY Strip Steak and Steamed Crab legs with Butter!**

Eat your hearts out!

We went through about 10 trays like this!!!

After dinner, everybody secured as much equipment as possible in the labs, galley and cabins as possible in anticipation of the run ahead of the weather into Dutch Harbor. We ran through the night and got to Unimak pass in the middle of the day on the 20th. About half way through the pass was an unusual announcement, "Attention on the *Fairweather*, there are a lot of whales feeding off to starboard!" It's the only time whales were announced and it was worth the announcement. For about 2 to 3 miles, we were surrounded by literally MILLIONS of seabirds and a score or more of whales. Comments from everybody were that they had never seen anything like it. I kept thinking of the old Hitchcock film *The Birds* and the scenes in *Moby Dick* where Ahab says to "watch the birds." We were all agog at the sight. With the collective 200-300 years of at-sea experience, no one had ever seen anything like it.

Fifteen minutes of this! Incredible!

After 2½ weeks that seems like 2½ days, we approach Dutch Harbor and are secured to the pier by 1700 hours. Tonight we'll head into town, but if not for the news in the next paragraph, this would be the worst time of the trip, however . . .

The Best news of the trip: I've requested and been approved to stay on board the *Fairweather* for the next leg! WOO-HOO!!! It's called FISHPAC and deals with integrating bottom characteristics to commercially viable fish populations! I'm going to the Bering Sea!!!

Questions for You to Investigate

- When did the *Andrea Doria* and *Stockholm* collide? Where? In what conditions?
- What was the D.E.W. Line in the Cold War?
- Why did the Japanese want bases in the Aleutians in WWII?
- Why did we pass a ship going from North America to Yokohama well over 1000 miles north of both ends of the trip?
- What are Great Circles?

Did You Know?

That almost 10% of all commercial fishing catch in the United States comes through Unalaska and Dutch Harbor?

Approaching Dutch Harbor