



**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 9, 2009

**Position**

Shumagin Islands

**Weather Data from the Bridge**

Barometer: 1022.3

Wind: light & variable

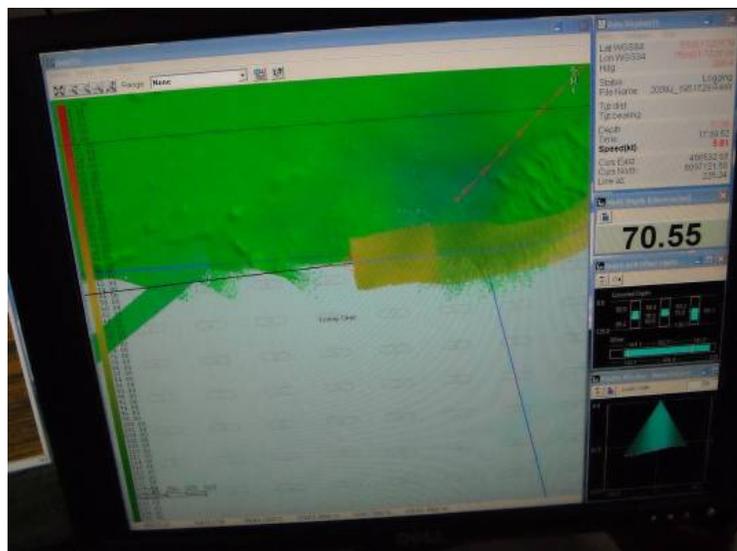
Temperature: 12.1°C

Sea State: <1 foot

**Science and Technology Log**

While part of the survey crew was doing more bottom sampling, launches 1010 and 1018 were deployed to acquire other data from areas ranging between 5 and 15 miles away. The launch deployments today were for 8 hours and the chefs prepare to-go lunches for the crews.

The *Fairweather* is well-suited to its task here in the Shumagins. The crew is experienced at this and it shows. While the launches are away gathering data close to shorelines, the ship sails back-and-forth across wide swaths of open ocean using the multi-beam sonar to document depth. Some members of the crew call this “mowing the lawn” which is a perfect analogy (I like to think of it more like a Zamboni cutting the ice in a hockey rink!) The swath covered by the multi-beam sonar can extend to 75° up from vertical on each side of the ship. As you can see in the picture, the top half of the screen is green. This is an area that has been surveyed with Multi-Beam Echo Sounders (MBES). The white at the bottom is bottom that has not been surveyed. *Fairweather* is sailing a course from East to West on the screen and the MBES is sweeping



**This top of this picture shows the area that has been surveyed, and the bottom half has not been surveyed yet.**

a path indicated on the screen in orange. The colors are significant – they represent different depths. (If you look closely you can see a color bar on the left of the screen. Red=shallow, blue=deep.) the number on the right is the depth in meters. *Fairweather* does all its bathymetry (<Greek bottom/depth + measure) in meters as they are the units of scientific analysis. Hopefully in the next few days I'll get to have a better understanding. Right now it kind of glazes over . . . too much input!

### Deck Maintenance

A ship the size of the *Fairweather* (230 feet, 7 decks) has an enormous amount of maintenance required just to keep it ship-shape. The permanent crew of AB's (Able Bodied Seaman,) engineers, stewards and officers keep the *Fairweather* spotless and running flawlessly. This



**Look carefully - Blue writing!**

morning there was need for a modification to a pulley used to deploy the bottom sampler. It was constructed in a short amount of time.

The marine environment is merciless on steel and the ship is constantly being stripped of old paint, primed and repainted. Doing this requires that the old finish be removed with a “needle gun” which is a compressed air powered tool consisting of a 1.5cm diameter head of about 25 “needles.” The “needles” are more like 1 mm flathead finishing nails that bounce on the surface like mini-jackhammers. By impacting the

surface thousands of times a minute, old paint is loosened from the underlying steel and chips off. The really cool aspect of this is that the underlying steel isn't even dented! When I started on this piece of steel it was painted with one layer of primer and two layers of white paint. Now it's down to bare metal and the markings from the original construction of the davit are clearly legible! After being stripped, a coat of anti-oxidation paint is applied, then primer, then one or more coats of paint. The crew never stops and the condition of the *Fairweather* is a testament to their diligence.

### Personal Log

The weather is absolutely perfect. It is sunny, warm, calm seas. I'm sure it can be (and probably will be) worse at some time during the trip, but for now everyone is soaking it all in!

The *Fairweather* has a ship's store with some snacks, necessities, T-shirts and other items. It's open periodically (announced on the PA) and I'll be sure to hit it up before leaving Dutch Harbor (but I've got to get to an ATM – they don't take American Express.) ;-)

**Animals (or other cool stuff!) Observed Today**

Whales about a mile off the bow – not close enough to see well - brittle stars, tube worms, more coral(!) and the daily dose of sea birds.

This morning there was a bit of time when some fog was rolling over a mountain island about 10 miles away and it looked like the fog was just cascading over the top from the other side.  
Gorgeous!