



**NOAA Teacher at Sea
Eric Heltzel
Onboard NOAA Ship RONALD H. BROWN
September 26 – October 22, 2005**

Log 5

Teacher at Sea, October 2, 2005, RONALD H. BROWN, Eric Heltzel

We've been in port at Panama City. The whole idea of sailing from the Atlantic basin across part of the continent to the Pacific basin seems rather amazing. Seeing the locks in operation was fascinating. A tug helped us get into the correct position then four cables were attached, two forward and two aft. These cables were each fed out from a winch on railroad switch engines which were on tracks on either side of the lock. The engines moved with us and kept tension on the cables so our ship stayed in



Sailing through the Panama Canal

the center of the lock. The locks are 1000 feet long so our 274' vessel could fit in with another ship.



A closed lock inside the Panama Canal

Once we were in, the lower gate closed and water started to flow in from the base of the sidewalls of the lock. I was surprised at how rapidly the lock filled with water. The water largely flows in by gravity so little has to be pumped. Once we finished going through the three locks we were lifted to the level of the natural lake that acts as a critical part of the passage. This lake, which is filled by the abundant rainfall, provides water to fill the locks and has a navigable channel dredged

across. On the western side is the infamous cut. Here the canal looks like it is a river going through a canyon although it has no current and the canyon is man made. The ship descended through locks on the Pacific side and we docked at Panama City.

When I awoke on Saturday the deck crew and engineers were preparing to take on fuel. This is a ticklish business that requires a lot of attention. It's the same principal as pulling into the local gas station except the hoses are 8" in diameter and get bolted together then bolted to the ship. We took on 80,000 gallons of diesel fuel which we will need for the next leg of our voyage to Arica, Chile. The RON BROWN can hold about 120,000 gallons of fuel. I was pleased that this wasn't billed to my account.

This morning I went out for a walk around the compound where our ship is docked. This is a military compound with nicely kept grounds but around the edges the indigenous vegetation is showing itself.

There were several pathways up into the trees where I got a sense of what the forest in Panama is like. "Green" and "busy" are two operative descriptors. In areas along the edge there were several beautiful plants in bloom. I also got to watch leaf-cutter ants carrying their booty back to their nests. These guys travel back and forth along the same path from the tree they are carving leaves from to their residence. It always reminds me of a safari through the jungle. I also saw an Agouti in an opening. I had only seen photos of this large rodent and I was excited to see one in the field. It was in the 80's and very humid so I returned to the ship very damp.



Tropical flowers

We are preparing to depart on the next leg of the cruise. We expect to pull away about 17:30 after the Pilot comes on board. Twelve more members of the scientific team arrived yesterday so we now have our full compliment. I have assigned my first "watch" tomorrow from 08:00 to 12:00. We will be trained on deployment of drifters and ARGOS buoys this evening. I also will be helping the meteorological team by launching weather balloons. We're going to begin the scientific research tomorrow. Wow!

Things to pursue:

- Design of the Panama Canal
- History of the Panama Canal
- Plants and animals of Panama