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Beaufort Gyre Exploration Project: Dispatch 25: Back and Whack

Chris Linder
August 25, 2005

Last night was rough. After the elation of getting underway again wore off, reality set in. We had entered the hardest, thickest ice yet. The going was slow. First Mate Stephane Legault had a long tiring watch trying to break through pressure ridges using a "back and whack" technique. This involves driving the ship up as far as possible onto the thick ice and letting the weight of the bow (plus the buoyancy applied to the stern--think of a seesaw) crack through the floes. Sometimes, though, it's not enough, and the *Louis* stops dead in her tracks. Then, Stephane has to back up, stop, and ram forward with as much power as possible. Depending on how thick the floe is, it may take two, three, or twenty tries to break through. This means, of course, that our overall progress has slowed to a crawl.

Mary Steele (left) and Michiyo Kawai (right) examine a piece of ice brought up in the bucket sample.

As the clock ticked away through the morning hours, we completed the first science station since Gilligan's ice island--an XCTD cast and a bucket sample of surface water. We're counting every minute now, and with the thick ice slowing us even further, we can't stop just yet for a CTD. Hours later, just before dinner, we arrived at the Mooring C location. John Kemp and Kris Newhall performed a quick survey to make sure the mooring was still there and to confirm its location. Mooring C was a difficult one to deploy last year because of the heavy ice, and this year the conditions were as bad, if not worse. Recoveries are even more challenging because of the danger of having the mooring come up under ice.

Captain Potts positions the ship during the mooring recovery.

After dinner a large crowd gathered on the bridge, where the Captain was maneuvering the ship into position. He performed several test runs, clearing the ice in a "pond" to the starboard side of the bow and timing how long the pond lasted until the ice swept back in. We had about a minute. John estimated that after sending the release code to the mooring, it would appear in about fifteen seconds. Plenty of time.

However, our Beaufort Triangle bad luck struck again. Jeffrey Carpenter and I were waiting on top of the bridge for our photo opportunity of the top float popping up right in the pond. We watched as the pond cleared, then Doug Sieberg lowered the transducer in the water. Fifteen, fourteen,.... two, one.. Nothing. Hmm, not unusual, perhaps one of the releases failed to open. John always uses two releases to be prepared for just this case. More scrambling on the deck below us, another pond created... and nothing. The minutes ticked away, and still no top float appeared. Eventually Sarah Zimmermann came up to fill Jeff and I in. "John says the mooring released, but it must have come up under the ice... you guys keep watch for the yellow floats from the bottom of the mooring-they should pop up in a half hour or so." More waiting, as we drove the ship in circles breaking up more of the ice. Then, half hidden under a jumble of multi-year ice, I saw a hint of yellow. Sure enough, there they were, a tangle of floats that was the bottom end of the mooring. After several failed attempts to hook the floats from the ship, John jumped into a small man basket and hooked the chain by hand. Finally, success--the mooring was coming up... bottom first.

John Kemp gets in close to hook the floats.

When winchman Peter King brought the floats on deck with the crane, we counted five shattered floats in the line. The glass showered out of the yellow casings as the balls were lowered to the deck. As if we didn't respect the power of the ice enough, here was another reminder--in the short time it took us to find the floats and bring them aboard, they had been crumpled by the shifting ice like they were made out of paper.

As I finish the last sentences of this dispatch, I am watching 2000 meters of line spool on deck--it's 11:00PM and the mooring is still coming in. It's going to be a late night for the mooring team and deck crew; they haven't even found the moored profiling instrument or the top sphere yet. Stay tuned to tomorrow's dispatch from the Beaufort Gyre to see how we fared in our battle against the ice.

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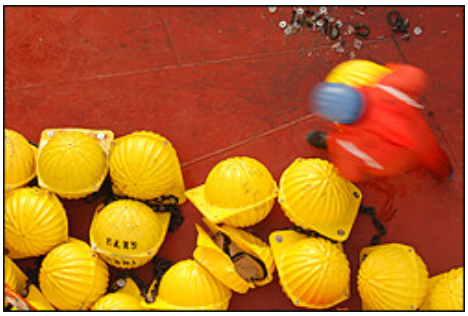

Recovered floats. Notice the crushed float in the center.

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