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Beaufort Gyre Exploration Project: Dispatch 25: Ice Recon

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During the past couple of days, the *Louis* has made tremendous progress northward, steaming generally 10-12 knots through the mostly 1 m (3-4 ft) thick first year ice. As a result, today we find ourselves rapidly approaching the first planned Ice-Tethered Profiler (ITP) buoy deployment which was earmarked for 76.5 °N. ITPs buoys are installed on drifting icefloes and transmit seawater temperature and salinity data via satellite telephone from a profiling CTD mounted on an 800 m (over 2500 ft) wire suspended from the surface package through the ice. Due to the logistic costs associated with trying to recover drifters in the Arctic ice pack, the ITPs will not necessarily be recovered. Hence, it is desirable to find robust ice floes to install the buoys on, in order to maximize the lifetime of the systems (which can collect data for up to 3 years). Hoping to find a 3-4 m (10-13 ft) multiyear floe for the first ITP deployment, this morning we made a reconnaissance of the ice pack in the vicinity of our planned site using the ship's helicopter.

There are a lot of safety regulations that must be followed when flying on helicopters, especially over water or in the Arctic. There are strict rules governing the amount of visibility necessary to fly. There are numerous safety devices that need to be carried on board the helicopter in case of any emergency. Everyone on a flight wears a life preserver, and has adequate clothing to keep warm in case the aircraft is grounded for a time. Furthermore, there are inflatable floats attached to the landing gear that automatically inflate if the helicopter were to land in water. Plus there are many so many others that it would be impossible to describe them all here.

There are also a number of safety precautions that need to be followed when operating near a helicopter. First of all, one needs to keep one's head down when approaching or leaving the helicopter, so that an errant blade rotation does not make contact. This also means that you never should approach a helicopter going downhill, or leave a helicopter going uphill (but this is not normally a concern in the relative flatness of the Arctic ice). Furthermore, it is always stressed that one should NEVER walk behind the aircraft, because the tail rotor is not clearly visible when it is spinning. Now this may sound like a lot of rules, but with an experienced pilot like we have on the *Louis*, Chris Swannell, flying is safer than driving through rush hour in your hometown.

As to our ice recon, we were sorely disappointed to find no multiyear icefloes anywhere around, so had to defer our buoy deployment to another day.

Last updated: October 1, 2014

Helicopter Technician Rob Locke moves the helicopter out onto the helicopter deck. *Photo by Rick Krishfield, WHOI.*

Pilot Chris Swannell in the driver's seat of the helicopter prior to takeoff. Note that the pilot sits on the right side of the aircraft. *Photo by Rick Krishfield, WHOI.*

The marginal ice conditions in the vicinity of the planned buoy deployment as viewed from the ice reconnaissance flight (compare with photo of ice in Dispatch 23). On the bright side, poor ice for the buoy deployment, means that the Louis can cruise rapidly through this region. *Photo by Rick Krishfield, WHOI.*

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