

IODP Expedition 323: Bering Sea Paleoceanography

Week 1 Report (5-11 July 2009)

12 July 2009

OPERATIONS

IODP Expedition 323 officially began at 0800 hr 5 July 2009 with the first line ashore Pier A, Ogden Point, Victoria, B.C., Canada. The *JOIDES Resolution (JR)* arrived on schedule for a full five day port call that included a wide range of activities.

During the portcall, elevator specialists were onboard repairing, testing and certifying the ship elevator. A safety inspection team completed a comprehensive survey of all vessel lifting equipment and an initial survey of all overhead equipment including the derrick for a dropped object safety baseline. The normal on and offloading activities took place including the loading of 10 short tons of Attapulgate drilling mud, 7 short tons of barite and 20 short tons of cement. The vessel received 800 metric tons of marine gas oil. A lifeboat manufacturer was scheduled for what seemed to be a minor cosmetic repair to the lifeboat No 2, which had suffered some damaged during a training deployment in the previous expedition. The 'minor' repair on inspection caused the lifeboat to be condemned and it was removed from the vessel for repair and return. In place of Lifeboat No. 2, three 25 person life rafts were installed on the port side. This temporary installation was approved by both ABS and the flag state (Liberia) for our continued operations on Expedition 323.

The Expedition 323 scientists boarded the vessel on July 5th. Public relations activities were conducted during the course of the port call and included guided tours for the Natural Resources Canada, the University of Victoria, the B.C. Ministry of Mines and Petroleum, and a local newspaper.

The ship departed Victoria, B.C. with the last line away from Pier A at 0704 hr. Transit speed en route to the first site has averaged 11.0 knots over the 449 nm covered by midnight on 11 July 2009.

SCIENCE RESULTS

IODP Expedition 323 aims to recover seafloor sediments that will provide the first comprehensive, high-resolution records of climatic and oceanographic conditions in the Bering Sea over the past 5 million years to reconstruct the history of this important marginal sea, connecting the Pacific and Arctic oceans, and its role in global changes.

Over the last 5 million years, global climate has evolved from being warm with only small Northern Hemisphere glaciers and ice sheets to being cold with major Northern Hemisphere glaciations occurring every 100 to 40 thousand years. The reasons for this major transition and the mechanisms controlling glacial/interglacial and millennial scale climate oscillations are unknown. Although there are data to show that the Pacific experienced oceanographic reorganizations that were just as dramatic as those in the

Atlantic, the scarcity of data in critical regions of the Pacific (the largest ocean with arguably the largest potential to influence global climate) has prevented an evaluation of the role of North Pacific processes in global paleoceanography and climate evolution.

The sedimentary records from the Bering Sea will provide an understanding of the evolution of Pliocene-Pleistocene surface water conditions, paleoproductivity, and sea-ice coverage, including millennial to Milankovitch scale oscillations; the history of past production of the Pacific intermediate and/or deep water masses within the marginal sea, and its link to surface water processes; the interactions between marginal sea conditions and continental climate and the Pacific Ocean; and an evaluation of how the history of ocean/climate of the Bering Strait gateway region may have had an effect on North Pacific and global conditions.

The expedition scientists spent the first week onboard learning their laboratories, instrumentation, preparing and documenting the methods and shipboard sampling strategies and practicing core flow using an Expedition 321 practice core. Downhole logging activities focused on refining the software for analyzing the wireline heave compensation and logging data.

HSE AND TECHNICAL SUPPORT ACTIVITIES

The Expedition 323 technical staff boarded the *JR* on July 5th. Cross over and training with the off going crew took part of most of the day and several marine technicians returned to the ship for the entire port call to help with the laboratory training and orientation of the Expedition 323 scientists. Laboratory and radiation safety, and marine mammal observer trainings were conducted during port call.

Other technical support activities included reorganization of the science pallet storage area, the installation of additional LED lighting over the core description and sampling tables, and a new core rack increasing in-lab core storage. In the analytical laboratories a replacement gas chromatograph for PFT analysis and a third-party DIC analyzer and spectrophotometer were installed. A small -86 degrees freezer was installed on the Fo'c'sle deck. The new cargo basket was successfully load tested and certified by Transocean. Equipment and laboratory spaces were secured for sea prior to departure. The first boat and fire drill was held on July 10th.