IODP Expedition 346: Asian Monsoon

Week 2 Report (4–10 August 2013)

Operations

The transit to Site U1422 (JB-3) continued without incident until 5 August when a low pressure cell crossed directly behind the ship's track bringing with it strong winds and high seas. By midnight on 5 August the vessel experienced sustained winds of 35–40 kt with gusts of 42–48 kt. Seas continued to build throughout the day with 12–15 ft seas, 9–12 ft swells, and maximum roll/pitch recorded at 5 and 4 degrees respectively. At 1600 h on 5 August the captain altered course to reduce the heavy roll of the ship and at 2256 h that evening the shaft rpm was reduced from 140 to 120 turns to prevent cavitation of the ship's main propellers. High winds continued into 6 August with heavy seas making for an uncomfortable ride. Average speed over ground (SOG) was only 7.5 knots for 6 August. The barometer continued to rise throughout the day, however, and by 7 August conditions had moderated considerably. By 8 August, average SOG was over 10 kt and for 10 August it increased to 11.2 kt.

Several time changes took place this week with the clock being turned back a total of five hours (to UTC – 12) and then advanced one full day (to UTC + 12) to compensate for passage across the International Date Line. In effect, the day of 9 August was lost and the ship time jumped from 8 August directly to 10 August at 2400 h on the 8th. Next week the clock will be turned back an additional three hours ultimately placing the ship at UTC + 9 which is the local time for all Expedition 346 sites as well as Japan and Busan, Korea.

Science Results

Our work this week focused on preparing the scientists for shipboard activities. This included holding meetings with each laboratory team to discuss shipboard sampling plans and procedures, and training sessions to learn how to use the wide range of laboratory instruments and applications that we will use during the expedition. In addition we held meetings to converse about all the scientists' primary research interests, and members of the science party have been giving two presentations per day on their personal research as well as research related to the expedition scientific objectives.

The sedimentology and micropaleontology teams underwent training on the scanning electron microscope (SEM) and on the image capture systems available on most light microscopes. The stratigraphic correlators have been assessing the Correlator software, as well as the upload and download links between Correlator output and the LIMS database. They have been working with the USIO programmers to (a) test a means of deriving digital data from the Section Half Imaging Logger (SHIL) that we can import to Correlator, (b) implement modifications to the Affine Splice Uploader software in an effort to get the LIMS database to export the correct splice sections and (c) implement modifications to the LIMS2Correlator software such that importing data to Correlator is more efficient and less prone to operator error. The members of the physical properties team were trained on the Whole-Round Multisensor Loggers (WRMSL), the use of

the cryogenic magnetometer, moisture and density measuring instruments, automated vane shear device, *P*-wave velocity instruments, as well as entering sample data into the LIMS database.

We started to process a "test core" taken by Expedition 341 in the Gulf of Alaska for practicing routine shipboard sampling, physical properties measurements, geochemical and micropaleontological analyses, and core description. The geochemistry group took part in the core-flow exercise with the entire science party. During the exercise we simulated the retrieval of interstitial water (IW) and headspace samples on the Catwalk. We also tested the Rhizon approach for the collection of interstitial water on two core sections and started training on the different analytical systems in the geochemistry laboratory with the support of the geochemistry technicians. To date the group has trained and tested the gas chromatograph (GC), ion chromatograph (IC), IW squeezers, coulometer, and the sample weighing balances. The geochemistry group will continue training on additional systems and perfecting methods prior to arriving at Site U1422 (proposed Site JB-3).

All scientific teams completed the initial drafts of their methods descriptions and laboratory workflows, facilitated by building off ODP Legs 127/128 reports as well as reports from recent IODP expeditions. By week's end, all laboratory teams circulated their first draft of the methods for review.

Technical Support and HSE Activities

We continued to collect seafloor bathymetric and magnetic data as we cruised south of the Aleutians Islands in the North Pacific. USIO Technical Staff continues to work with the science party with laboratory training and procedures.

Logistics:

- Freight secured for heavy seas.

Laboratory:

- Physical Properties Laboratory:
    - Section Half Imaging Logger (SHIL): Operational but offline for SHIL 3.0 development, which is now entering the testing phase. At the request of the science party, we have added the ability to extract RGB data for correlation purposes.
    - Section Half Multisensor Logger (SHMSL): Software maintenance completed and tested.
    - Whole-Round Multisensor Logger (WRMSL) and Special Task Multisensor Logger (STMSL): Successfully completed testing of the new optical switches. Developers found error in code leading to position issues thought related to Acurity laser. 90 mm MS Loops installed on both tracks.
- Magnetics Laboratory:
    - Overflow error issues with Agico JR-6A Spinner #1, recommend return to vendor for repairs.

    - Technician's training in laboratory to support science party due to the lack of a second shipboard paleomagnetist.
- Core Description:
    - Repaired the lift mechanism on the center table and readjusted tables' position on the floor to relieve choke point.
    - Staff working with science party on developing templates and value lists. New UV box for smear slides under construction.
- Underway Geophysics:
    - Over voltage errors on towed magnetometer due to a damaged slip ring connector.
    - Connector was repaired. Staff working on manuals.
- Chemistry Laboratory:
    - Discussing issues with vendor regarding SRA standards.
    - Issues with NGA partially solved, staff working on revised method.
- Other:
    - Holding Arduino and electronic training classes.
    - Completed Laboratory Status reports.

The following HSE activities took place:

- Weekly fire and boat drill held as scheduled, weekly.
- New technicians completed laser safety training.