IODP Expedition 361: Southern African Climates

Week 2 Report (1–7 February 2016)

Operations

Week 2 of IODP Expedition 361 began with the third day of port call. The loading of miscellaneous drilling equipment, expedition stores, and food was completed. On the third and fourth days of the port call, 1350 metric tons of marine gas oil were pumped from a fuel pipeline to the vessel's fuel tank and ~40 standard tons (ST) of barite and 60 ST of sepiolite were loaded aboard the vessel. All trash was offloaded prior to departure. A total of 98 stands of 5 inch drill pipe were made up and stowed in the pipe racker for the expedition.

On 4 February the vessel was made ready for the sea passage. The port call ended with last line away at 0736 h on 4 February. With assistance from two harbour tugs, the vessel left Port Louis, Mauritius. The pilot departed the vessel at 0808 h. The propeller speed was increased to 140 rpm and the *JOIDES Resolution* began the sea passage to the first site (MZC-01C) of Expedition 361.

Since clearance for operating in the Mozambique waters has not been received, on 6 February we decided to deviate to proposed site NV-02C, which is located within the South African waters. Week one ended with the vessel in transit to Site U1474 (NV-02C) at a speed of 11.2 kt. The vessel is estimated to arrive at Site U1474 at 2300 h on 9 February.

Science Results

The Expedition 361 Science Party spent the second week of the expedition becoming oriented to the ship, working with their laboratory groups, and attending planning meetings.

While in port, the science party was introduced to the IODP technical staff. They learned about expedition tasks, reports, and postcruise obligations. The IODP staff gave the science party presentations on computing and I.T. on the ship, curation, writing shipboard reports, using the DESClogik software, and drilling and coring technology. The science party participated in a research planning meeting and shared their personal research goals. All of the scientists were given a core flow tour and were introduced to their laboratories and the laboratory equipment.

The vessel departed Port Louis, Mauritius, on 4 February with the last line away at 0736 h. The first abandon ship drill of the expedition was held that morning. During the transit, the science laboratory teams worked on their methodology sections for the Expedition Report. The Core Description team defined an initial template for the visual core description sheets. Both science shifts were trained to use SampleMaster, the sample input and uploading system on the ship, and the Micropaleontologists were introduced to the BugWin program. We had meetings to discuss interstitial water splits, postcruise XRF core scanning, and methodology related to postcruise

research of terrestrial sediment. The Operations Superintendent led two tours of the ship for interested scientists. To prepare for the first site of the expedition, the science party was given a presentation on recent research done in the Natal Valley off South Africa and introduced to proposed site NV-02C. Finally, the science party and new IODP technical staff were given a ship security overview by the First Mate and shown where their safe rooms are located.

Since diplomatic clearance for operating in Mozambique waters is still pending, we decided to alter the initial operations plan and proceed to proposed site NV-02C, which is located in South African waters.

Technical Support and HSE Activities

Technical Activities

- We loaded the remaining pallets of D-tubes and created a plan to manage the large number of D-tubes.
- We completed the installation of the M-Drive motors on the Whole-Round Multisensor Logger (WRMSL) and the Special Task Multisensor Logger (STMSL). The new interface boards for the motors required some wiring and program changes.
- The new Integrated Measurement System (IMS) application was installed on on the WRMSL and STMSL. IMS has been extensively tested over 3 d. The user guides for the tracks were updated to reflect the IMS software.
- We are working on calibration procedures so that the WRMSL and STMSL produce identical gamma ray attenuation (GRA) and magnetic susceptibility (MS) measurements.
- A new source was installed for the WRMSL GRA, which required some modification to the installation hardware to account for the handle on the housing. The new source has greatly improved the counting statistics.
- The WRMSL *P*-wave logger was dismantled and thoroughly cleaned.
- The fan for one of the fume hoods in the Chemistry Laboratory was repaired and is operational.
- The shield section was removed from the degausser on the cryomagnetometer to address a possible misalignment. There was a build up of dirt within the cryomagnetometer that was cleaned out and the shield was replaced.
- The power switch was replaced on the Paleomagnetics Laboratory oven.
- During the transit, we are collecting routine navigation and bathymetric data, as well as magnetic data, using the towed magnetometer.
- A new power supply, a blue loop light source, and a new mount were installed on the Section Half Multisensor Logger (SHMSL).

Computing Activities

- All of the moisture and density (MAD) vial information was loaded.
- The development and testing of the SQUID and DEGAUSS drivers in the new magnetometer software was completed and the code for ramping up and down the degausser is finished.

HSE Activities

- The weekly fire and boat drill was held on 4 February.
- Security training for the science party and new staff was conducted.