

IODP Expedition 354: Bengal Fan

Week 2 Report (1–7 February 2015)

The second week of the IODP Bengal Fan Expedition 354 consisted of the final few days of port call activities in Singapore, the transit to the Bengal Fan drill sites, and the arrival of the first core from Hole U1449A (MBF-6A).

Operations

Port call continued with activities at the Loyang Offshore Supply Base jetty. This included loading of drilling equipment, expedition stores, and food. All public relation activities were concluded on 1 February. On 2 February, we conducted our first safety drills (fire and boat; anti-piracy security) and then all scientists and staff were given the afternoon off since our departure from Singapore was scheduled for the next day. In the afternoon, the final port call activities included loading life rafts and the remainder of fresh food and dry goods, securing the ship for heading out to sea, and preparing for installation of a new core line.

At 0800 h on 3 February, we were cleared by immigration for departure. The pilot arrived on board at 1020 h and the last line was released at 1048 h. Our departure was assisted by two harbor tugs, and we proceeded to the pilot station where the pilot departed the vessel (1202 h). We then began our transit through the Malacca Strait, into the Bay of Bengal, and to Site U1449 (MBF-6A). During the transit, we retarded the ship's clock two hours to UTC + 6 h. All times from this point until the end of Bengal Fan coring operations are given in this ship local time (UTC + 6 h). During the transit, the Chief Scientists, key IODP staff, and the ship's crew met to review the coring and logging plan for the expedition.

After completing the transit from Singapore (1105 nmi, 3.9 d, 11.8 nmi/h), we arrived at Site U1449 (MBF-6A) at 0623 h on 7 February. We assembled the bit and bottom-hole assembly—including verifying the correct space-out of the core barrel—and started lowering it to the seafloor. We placed the bit at 3660 m DRF and prepared to spud Hole U1449A. After a failed first attempt APC core (the shear pins did not break), Hole U1449A was spudded at 2125 h on 7 February. Core 354-U1449A-1H recovered 6.27 m and established the seafloor at 3652.7 mbsl (3663.3 m DRF). Core U1449A-2H arrived just before midnight (6.2 to 9.9 m CSF-A; 3.72 m recovery).

Wireline logging activities this week included verifying equipment readiness for operations, documenting logging sources, and conducting surface checks on seismic sources in preparation for check shots.

Science Results

Our science activities for this week consisted of science, laboratory, and logistical orientation of the scientists. This included the in-depth orientation to the expedition science objectives, individual research objectives, the laboratory workflow, instrument systems, methods, and software. IODP staff gave presentations and/or tours on drilling operations and core processing, sampling, and sample data entry. The scientists also converged on a plan for shipboard sampling for shipboard analyses and for personal research.

On 7 February, the scientists attended two science presentations to prepare them for the coring that started later in the day. The first was by Tilmann Schwenk who introduced the scientists to the seismic stratigraphy of the Site U1444 that was cored further North on the Bengal Fan during the previous Expedition 353 (via videoconference from Bremen, Germany, to the ship). The second was a Chief Scientist introduction to the seismic stratigraphy of our first site (U1449, MBF-6A) and overall Bengal Fan sedimentary processes. Near the end of 7 February, we started coring in Hole U1449A. Core 354-U1449A-1H recovered 6.27 m and established the seafloor at 3652.7 mbsl. This core is dominated by silty clay with foraminifers with silty fine sand; it also contains a few thin layers of silty clay and a 43 cm thick ash layer.

Education and Outreach Activities

As part of our Education and Outreach activities for the Bengal Fan Expedition, we posted daily updates and photos on our official social media outlets (Facebook [<https://www.facebook.com/joidesresolution>], Twitter [<https://twitter.com/TheJR>], and Instagram [http://instagram.com/joides_resolution]). We posted blogs on the American Geophysical Union (AGU) blog GeoSpace and on <http://joidesresolution.org/>, including two guest blogs by members of the science party. To prepare for our live video interactions with schools and museums around the world, we continued to communicate with shore-based educators to schedule broadcasts and carried out several test connections. We held our first live broadcast with the University of Nebraska's annual museum outreach event, "Dinosaurs and Disasters." One of the Education Officers, a videographer, also began shooting footage of the drilling operations. The Education Officers also gave an overview of their planned activities and opportunities for involvement to the Bengal Fan Expedition scientists.

Technical Support

During the transit, technical staff continued with preparing the laboratories and helping the science party become familiar with laboratory equipment, software, and procedures. The first 100 m of cores from Hole U1444A were scanned on the Section Half Multisensor Logger (SHMSL) and Section Half Imaging Logger (SHIL) to test new code and hardware updates.

Currently, the technical staff is fully engaged supporting coring and science operations at Site U1449.

Laboratory Activities

- Underway Laboratory:
 - Bathy 2010: collected data from the Straits of Malacca to our first site without issue.
 - Magnetometer: collected data from our entry into the Bay of Bengal to our first site without issue.
- SHIL:
 - Updated motion control to M-Drive system.
 - Camera setup checked and image correction parameters updated.
 - Renewed the black track covering.
- SHMSL:
 - Replaced RSC illuminator bulbs.
 - M-Drive hardware mounted but not implemented.
 - Staff trained on sensor alignment and software configuration.
- WRMSL: Installed a temperature logger for post-acquisition velocity corrections.
- NGR: Cleaned linear actuator and resolved issue with clicking noises.
- Gantry: Adjusted the lower transducers so that the neutral position is just touching the bottom of the liner.
- Core Orientation:
 - Investigating issue with crushed batteries found in tool.
 - Quick Start manuals were updated.
 - Staff trained on tool preparation and downloading data to Palm.
- APCT3:
 - Two operational tools onboard, both in good working order.
 - Staff trained on tool preparation and data downloading.
- Liquid Nitrogen: Investigating a possible issue with system. Will continue work once Core Laboratory settles into a routine.
- VSP-GI Cluster:
 - GI Cluster assembled and tested.
 - Changed all washers and bushing on cluster assembly.
 - Trained new staff in the assembly process.
- RigWatch: Cleaned pipe counter wiring.
- Core Splitting: Repaired damaged power cords.
- Freeze Dryer: Replaced damaged vacuum hoses.

Developer Activities

- Begin-of-Expedition: completed database cleanup, setting up user accounts, etc.
- SCOR-QA: Project work started.
- DQ View: Project work started.
- List Manger: Cannot update from Google site due to slow internet speed. Work-around implemented.
- LIMS: Fixed resteasy-lims-webservices “getLIMSFieldData” service for returning null values.
- Passwords:
 - Worked on password standardized pattern issues.
 - Numerous issues with staff and science party passwords not working.
- MadMax: Launch configuration issue fixed.
- XRD ImageCapture: Troubleshooting current issues with software.
- SHIL:
 - Installed new M-Drive motion control system and software without issue.
 - Implemented ColorChecker TIFF image correction.
- SHMSL:
 - Implemented new Quality method.
 - Fixed an error in the calculation from the XYZ to La*b* color space that was causing the L value to exceed 100%.

MCS Activities

- Portcall: Worked with EPM, Co-Chiefs and science party in getting all online on ship network.
- Passwords: Discovered scientists’ passwords not compatible with Apple Mac system login, changed all scientist passwords to be Mac compatible.
- VSAT:
 - Internet outage for 2 h on 31 January, weather related.
 - Started dialog with RigNet regarding bandwidth increase implementation, scheduling for next week.
- V-BRICK: Video Distribution link on *JOIDES Resolution* webpage not working, installed VDU SPD files on multiple Macs so individuals could view camera feeds, investigating.
- McAfee: Discovered ship repository not updating from shore, working with shore to resolve, ongoing issues.

HSE Activities

- The weekly fire and abandon ship and piracy boarding drill was held.

- Completed weekly check of laboratory showers and eye wash stations.
- Provided Laser Engraver specific training to new staff.