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Mariana Expedition Leg 10  
Weekly Reports

SIO

Chief Scientist: George Shor  
February 16 - March 10, 1979

Thomas Washington Mariana Expedition 201230Z February '79. Departed Jakarta on 1700 hrs 16 February, having received all shipped parts and equipment, supplies, and large quantity of dirty fuel, and conducted guided tours of the ship for Institute of Oceanology and American Embassy. Ran north through the fishing fleet and islands in calm seas, setting up and checking out equipment. Started regular echo sounder and magnetometer watches amidst heavy ship traffic in Malacca Straits. Now making air-gun and sono buoy runs across the Andaman Sea. Weather excellent. Ship making 11 to 12 knots.  
Shor

Thomas Washington Mariana Expedition February '79. Ran an airgun survey with sonobuoys across the Andaman Sea, then a long multi-channel seismic reflection line from south tip of the Andamans to station position at 14 north 81-30E. Crossed two buried ridges, then sediments thickened so much that basement went below four seconds and was lost in the multiple. Made a set of airgun refraction lines to our moored buoys and sonobuoys, look like textbook examples. Then shot two deep refraction runs with seafloor hydrophones and large charges fired at 6000 ft. Good data from two of three instruments on each deployment. One of the three never came back on the second time down. Weather has been perfect, for a change. Shor

Thomas Washington 051045Z March '79. Carried out multi-channel seismic reflection lines up west flank of Ninety East Ridge and another from Mergui Ridge across North Sumatra Basin to continental shelf. Single channel reflection digitized on PDP, between multi-channel lines. Airgun/sonobuoys refraction runs analog and digital along entire track. Very good records with good penetration to basement on west flank of ridge; evidence, very deep narrow filled graben along probable strike of Sumatran fault. Rix compressors have about had it, but Norwalk has been very reliable. Entire multi-channel system working well with 24 good working traces and real time 4 channel stack. Collateral observations include 12 kHz scattering layer recording continuously down center of Bay of Bengal and across Malacca Strait, show many large fish echoes within and below the DSL. Some dip net samples but lost plankton net on second tow. In North Sumatra Basin encountered curious phenomenon related to surface streaks at which shallow well defined scattering layers on 12 kHz record show large amplitude internal waves, and Doppler log shows accompanying variations of indicated ship speed, more than one knot amplitude at constant engine RPM. Possibly of interest to physical oceanographers but very disconcerting when trying to hold constant speed for multi-channel seismic run. There are still curious things to be seen in the ocean. On the bad side, gravimeter has given continuing trouble and is apparently down for good until factory overhaul. Now going through Malacca Strait running 3.5 kHz sounder. Will resume magnetometer, 12 kHz, airgun, and sonobuoys work when we get to Palawan Trough, expecting to arrive Subic morning Sunday 11 March. Shor