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CRUISE REPORT

Ship Name: CONRAD

Cruise No: 20-11

Departure: 11 March from Honolulu, Hawaii
Date Port

Arrival: 18 April at Panama City
Date Port

Days at Sea: 38

Days Foreign Port: 3

No. of days in arrival port

Area of Operation: Western Equatorial Pacific

Program Description: Coring, physical properties of sediments

Participants: (All L-DGO unless otherwise specified)

Embley, Robert	Chief Scientist
Selwyn, Steven	Co-Chief Scientist
Gutierrez, Carlos	E.T.
Engvik, Allen	E.T.
Holland, Michael	Camera Tech.
Crimmins, Robert	Core Bosun
Iltzsche, Martin	Air Gun Mechanic
House, Peter	Acoustics Tech.
Phfann, Dickman	Bom Technician

All inquiries regarding cruise should be made to the chief scientist.

OBJECTIVES OF CRUISE

Conrad 20-11 left Honolulu, Hawaii on 11 March 1977 and arrived in Panama City, Panama on 18 April 1977. The primary objectives of this cruise were:

- (1) to recover long piston cores on the north flank of the equatorial sediment high for studies of sound velocity and physical properties of silicious and deep water carbonate sediments.
- (2) to selectively sample several well defined Miocene subbottom reflectors
- (3) to measure in-situ compressional velocity with the 3.5 pinger-bottom hydrophone array and
- (4) to recover two BOM packages (Alice and BIA) which had been placed on the bottom in 1976.

MAIN RESULTS

BOM Packages

Both BIA II and Alice BOM tripod arrays were successfully recovered. The total time for recovery of both packages was approximately 20 hours. Captain Oleander was instrumental in making the pickup of these packages a smooth speedy operation.

Cores

Seven 2.5" piston cores, three 6.0" piston cores and one box core were taken on RC20-11. Compressional velocity was measured and physical properties samples were taken at 20 cm. intervals on all of these cores. The first series of cores were taken along two north-south lines just north of the Clipperton fracture zone. In two of these stations 6.0" and a 2.5" piston core were taken at about the same location for a comparison of the different coring technique and for a comparison of the physical properties measurements.

We were successful in sampling the prime Miocene subbottom reflector in three places. As in the other cores in the area the subbottom reflector correlated with marl and chalk layers interbedded in the radiolarian clay and ooze.

A station was taken at the end of the leg on the Cocos ridge in which both types of piston cores and a box core were taken in the same type of bottom. The physical properties measurements on these three cores should yield valuable information on possible variations in the bulk properties of sediment induced by the coring procedure.

Bottom Pinger-Hydrophone

Due to problems with the STD wire and with the mixing amplifier used in the system no successful in situ velocity measurements were made.

ADDITIONAL COMMENTS

The primary difficulty in the cruise was the very slow speed of the ship. This was due to three factors: (1) fouled bottom (2) engine problem and (3) adverse winds and currents. The ship only averaged about 7.5 knots over ground for the cruise. I believe it would be most helpful in the future if a periodic report on the ship's operating condition (speed over ground, amount and condition of wire, winches) could be posted in the port captain's office for use of chief scientists in planning cruises.

Bob Embley

