July 24, 1985

TO:

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Leyden, R. - LDGO
Raleigh, B. - LDGO
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Sykes, L.R. - LDGO
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RESEARCH CRUISE REPORT

R/V ROBERT D. CONRAD 26-04

Attached is a copy of a cruise report for the above CONRAD cruise.

Ann Burns
Marine Office

Enc.

John Ladd - Lesser Antilles
(Grant OCE83-17040)

CRUISE REPORT

CONRAD LEG 2604

During the period March 22 to April 1, 1985, the R/V ROBERT D. CONRAD (American) working with the R/V CHARLES DARWIN (British) shot seismic reflection lines along the track in the accompanying chart. The purpose of this survey was to obtain accurate seismic velocities at depths in the Barbados Ridge. In order to determine accurate velocities at depths of several kilometers, we needed to measure travel times of reflected sesimic energy at varying horizontal source-receiver offsets at ranges from zero to several tens of kilometers. This was accomplished by using two ships - the ROBERT D. CONRAD and the CHARLES DARWIN. Both ships shot airguns and the reflected energy was recorded on the CONRAD multichannel array. During part of the operation DARWIN shot explosives and CONRAD recorded the reflected energy.

Over the next year this data will be analyzed to determine vertical and horizontal velocity profiles beneath the ship track. From this information we hope to put constraints on porosity and pore pressure gradients within the Barbados Ridge. Porosity and pore pressure are in turn related to the state of strain and fluid migration with the accretionary prism.

Track Chart for R/V CONRAD - Cruise #26-04 - Barbados Ridge