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CRUISE REPORT

Ship Name: RV CONRAD Cruise No: 20-10

Departure: 29 Jan.'77 (Date) from Guam (Port)

Arrival: 27 Feb. '77 (Date) at Honolulu (Port)

Days at Sea: ~~30~~ 29 Days Foreign Port: 12
No. of days in arrival port

Crosses Int'l Date Line

Area of Operation: Western Pacific

Program Description: Layer 2 - Underway geophysics, sonobuoy, reflection & refraction (see attached track)

Participants: (All L-DGO unless otherwise specified)

T. Aitken	Chief Scientist
M. Holland	Camera/Nephelometer
D. Grob	E.T.
P. Casagrande	Gravity Observer
M. Iltzche	Air Gun Mechanic

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

ROBERT D. CONRAD 20-10

OBJECTIVES OF CRUISE

The objective of this leg was mainly to do sonobuoy work for studying layer 2 and trying to get some mantle reflections along with regular marine geophysics.

We were intending to take a couple of nephelometer stations near previous nephelometer sites to calibrate the old data, and to try a core or two in an erosional zone.

With the breakdown of the main generator attached to the starboard engine at 1957 hours on 8 February, which caused the CONRAD to run the rest of the way to Honolulu one one engine with a top speed of 5 knots, the track was changed to a direct line and all the station work was cut out. Even so, the ship was a week late into Honolulu and was delayed there until the generator was fixed. Also, all the "grass" and barnicles on the hull of the ship hindered the speed through the water.

Twenty-eight sonobuoys were shot and a number of them gave mantle reflections. Several of them were shot with the large Bolt air gun. The extra energy of the large gun helped but,without a randomizer, multipliers and refractions became hard to separate.

The sonobuoys in the area southeast of Guam did not yield any refractions. A misunderstanding about how many buoys were to be saved for the rest of the cruise was the reason more sonobuoys were not shot after the engine breakdown.

EQUIPMENT PROBLEMS

The gravity equipment had become nonfunctional on the previous leg and it did not work on this or the next leg.

The magnetometer went bad the morning of 3 February, acting as if the

cable was open. It was brought aboard the ship, everything was checked, the coil was replaced, and it was put in the water again. It worked for about an hour and then started giving poor results again. It was again pulled aboard (for two days) while we checked out every part of the system. Could not find anything wrong, so a third coil was put in and the magnetometer worked fine from then on to Honolulu.

Also, in the middle of the magnetometer flail, the 3.5kHz PDR broke. It was a mechanical problem. The worm gear that drives the paper feed had become stripped. As there were no spares on board, it could not be replaced, and it was impossible to fix it. So this PDR was turned off and the 3.5 kHz records were recorded on the other PDR. So there were no 12 kHz PDR records made after noon on the 5th of February.

The radio-telephone had been installed in Guam and was used for the first time on this leg. It worked fine, very clear, but it is expensive and the only written records are whatever notes people make of their interpretations of the conversations.

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Thomas D. Aitken

RC 20-10