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CRUISE REPORT

Ship Name: R.V. CONRAD Cruise No: 20-03

Departure: July 29 (Date) from Honolulu (Port)

Arrival: August 22 (Date) at Guam (Port)

Days at Sea: 24 Days Foreign Port: _____ (No. of days in arrival port)

Area of Operation: West-Central Pacific

Program Description:

1. Magnetics survey of Jurassic
2. Seismic refraction study of layer 2

Participants: (All L-DGO unless otherwise specified)

NAME	Shipboard Title
S. Cande	Chief Scientist
D. Grab	Electronics Technician
D. Hill	Electronics Technician
B. Crowell	Electronics Technician
M. Iltzsche	Air Gun Technician
R. Crimmins	Core Bosun
P. Casagrande	Gravity Observer

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

CRUISE REPORT - CONRAD 20-03

The CONRAD left Honolulu on July 29th and arrived in Guam on August 22nd following the track shown in Figure 1. The primary objectives of the cruise were to locate linear small-scale magnetic anomalies in the Jurassic Magnetic Quiet Zone and to record seismic refraction profiles in areas of interest along route. From an operational viewpoint the cruise was quite successful with nearly continuous acquisition of seismic reflection, magnetics, gravity and PDR recordings. Although small-scale magnetic anomalies were recorded over a large area in the Jurassic Quiet Zone the interpretation of these anomalies is not straight-forward. Small-scale anomalies were recorded on crust just older than anomaly M-25 on the Hawaiian lineations. These anomalies appear to correlate with other anomalies on parallel tracks in the area. However, small-scale anomalies observed in the Eastern Mariana Basin, where our efforts were concentrated, did not appear to be linear and could not be immediately identified. Since these anomalies are of particularly low amplitude it is hoped that their identification will be enhanced by computer processing of the data.

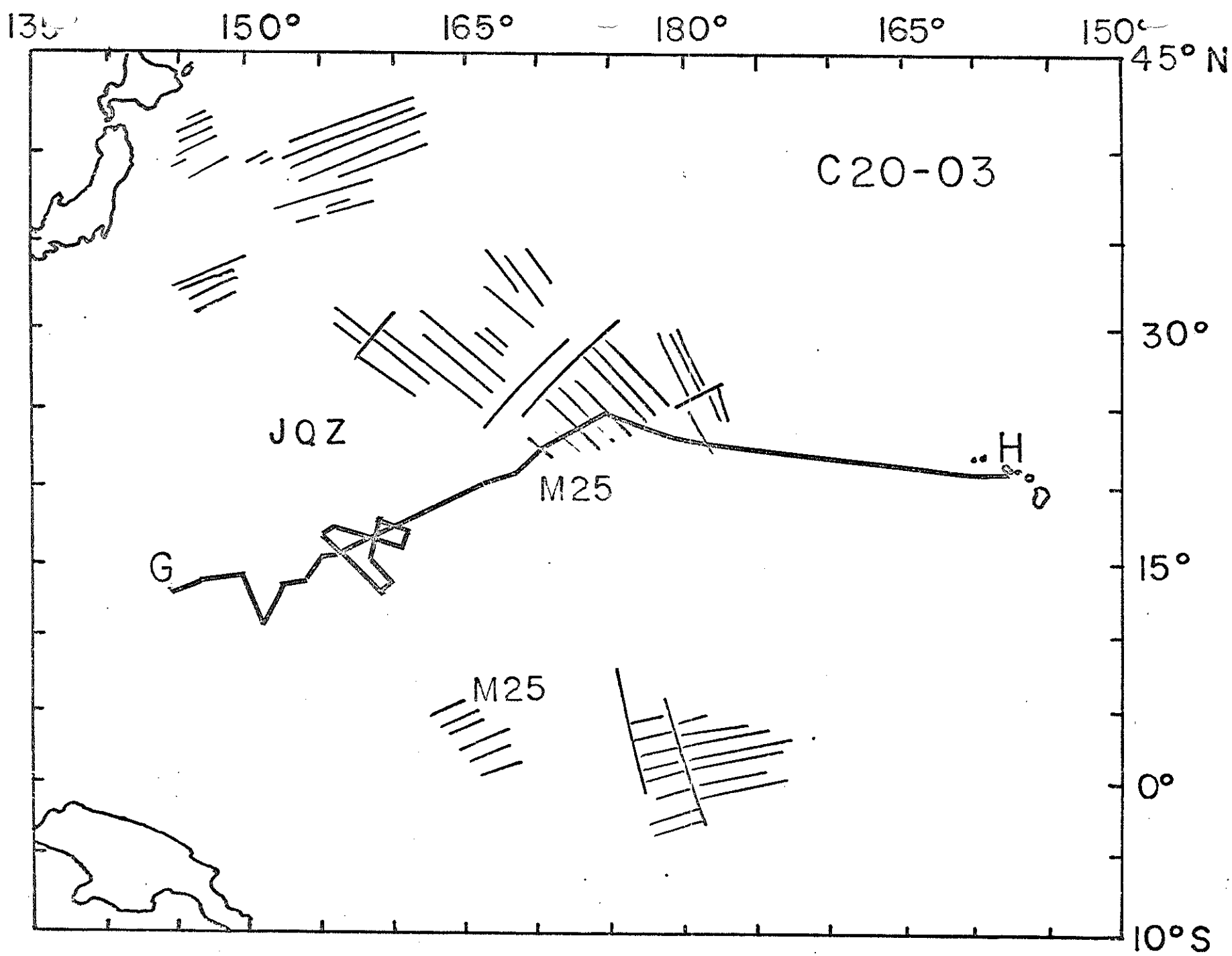
Six seismic refraction profiles were run in the Mariana Basin. Good refractions were obtained on about half of these profiles. A seismic refraction profile also was obtained near anomaly M-20 on the Hawaiian lineations in an area where an acoustic "window" was observed on VEMA 2404. A corresponding acoustic window was not observed on this track.

Equipment problems were concentrated in the gravity system and air gun. The gravity table intermittently "staggered" on the roll axis. The onset of the stagger might have been related to two power failures, the first day out of port. Although no cause of the stagger could be located, the problem

seemed to have corrected itself by the end of the leg. However, the gravity data from the early part of the cruise should be examined carefully for errors. The tail of the air gun was a constant source of problems throughout the leg being subject to frequent fatigue failures. The general design of the tail on the Bolt air gun seems to be inadequate for the stress of constant towing at nine knots.

The core wire was run out its entire length and re-wound under tension. Several attempts were made to set the fleet angle compensator but additional adjustments will have to be made.

Steven C. Cande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