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CRUISE REPORT

Ship Name: R/V CONRAD Cruise No: C20-07

Departure: December 3, 1976 (Date) from Keelung, Taiwan (Port)

Arrival: December 16, 1976 (Date) at Guam (Port)

Days at Sea: 13 Days Foreign Port: 7 (No. of days in arrival port)

Area of Operation:

Okinawa Trough
Philippine Sea

Program Description:

Large airgun seismic profiling
Dredging
Coring

Participants: (All L-DGO unless otherwise specified)

R. N. Anderson	Chief Scientist
C. Gove	Heat Flow Technician
J. Hauptman	Core Describer
R. Crimmins	Core Bosun
P. Casagrande	Gravity Tech
B. Crowell	E. T.
D. Grub	E. T.

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

CRUISE REPORT

R/V CONRAD 20-07

Program Operations

Okinawa Trough Survey: 1000 km slow speed profiling with one large and two small chamber airguns (Figure 1) seven short and two long range sonobuoys. One dredge, three cores. Basement of Okinawa Trough truncates island arc basement of different acoustic character on both flanks. Subsides rather uniformly to floor of central extensional graben (Fig. 2). Basement deformation traced easily through up to 2.5 km sediment on flanks of graben. Intrusions at center of graben frequent (Fig. 3). Dredge of such a diapir yielded fresh pillow basalt with partially devitrified glass. No manganese or phenocrysts. Surface sediments extremely well compacted clay. Sonobuoys show typical oceanic crustal velocities with shallow MOHO.

Equipment Performance

Scientific gear performed routinely entire trip. Shi problems included:

1. Main generator breakdown. Valve stuck in oil circulation system. Filter change in fuel purification system corrected additional problem. Two hours dead in water, 12/4/76. Cause: lack of maintenance and hole between service tank and No. 4 fuel tank (repaired in Guam).

4) Fire in circuit breaker for main engine cut-off. While changing control from No. 1 to No. 2 engine due to heavy weather on station, contact burned. Dead in water 5 hours, 12/8/76, while all tips were refinished. Cause: lack of maintenance. Ultimate cause, lack of electrician aboard.

3. Evaporator fuel pump was not putting out enough power. Used one fire pump to make enough pressure while pump was rebuilt with new bearings.

Salinity alarm failed on old evaporator. Down to 400 gallons usable water for 24 hours, 12/10/76.

General

a) Port main engine overhaul needed badly.

b) Service generators: #1 out since Panama, bad coupling. Being canabalized. #2,3 both rated 200 amps now running in parallel and putting out 165 amp. Diesels both due for overhaul. Ship pulls 75 amps with both Rixes running but exceeds supply when hydraulic pump for MCS reel is used.

c) Spare parts: no repairing of failed parts has been done. Personnel overturn so great that little maintenance has been done.

d) Our MCS compressors:

1. Diesels, of course, run at too low RPM.
2. Poorly supported deck.
3. Captain suggests running big compressor with repaired #1 service generator; not separately, but on same board with #2 and #3 so switching possible.

e) Core winch: Add power take-off to run fantail hydraulics in emergency ship's-power failure.

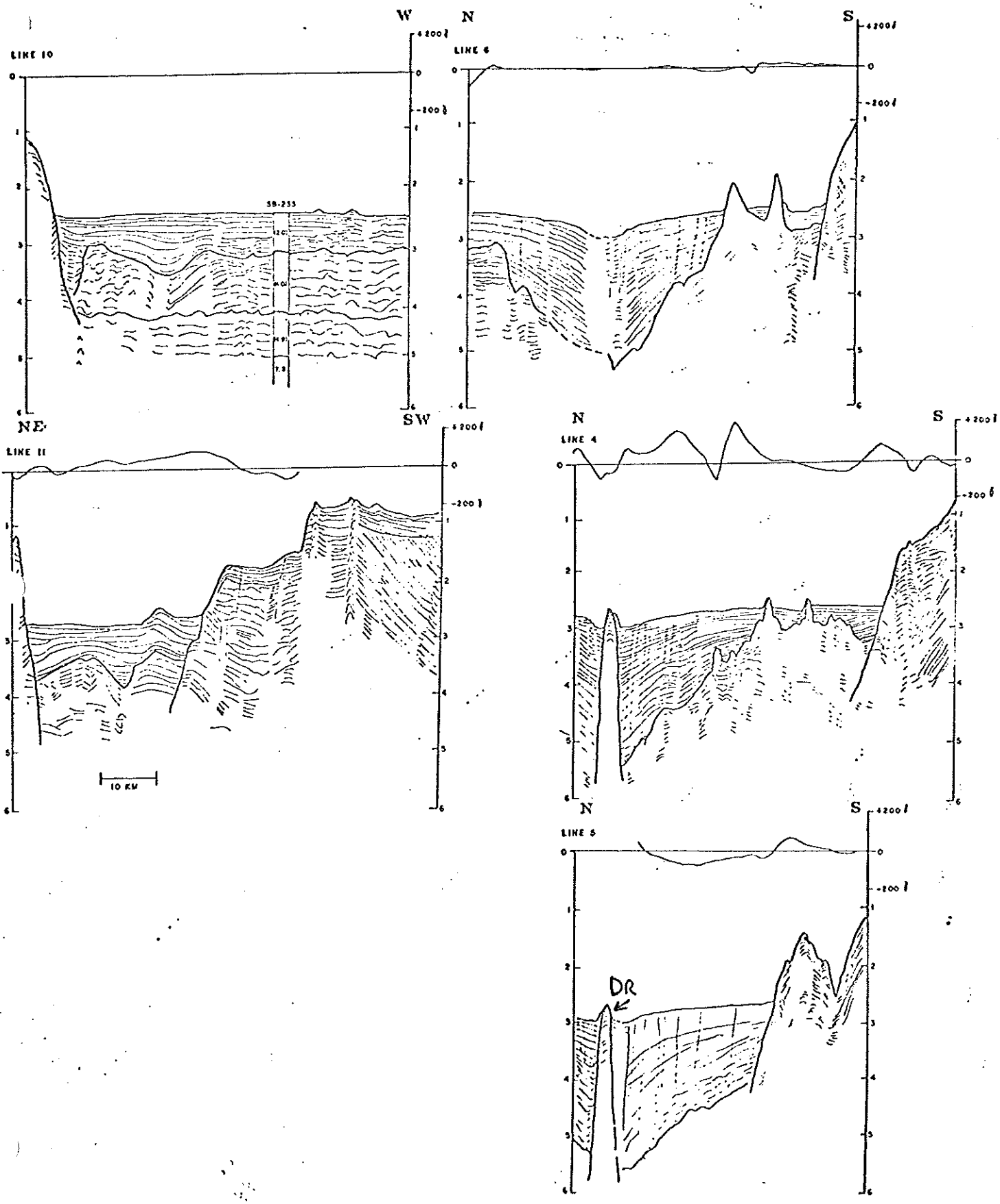
f) Bow Thruster: our of operation from either frozen wheel or shear pin.

Comments

Captain Olander and his Chief Engineer are outstanding. Corrections to the ship's plant and what should have been routine maintenance began immediately upon the command change. I am certain that Olander will have the ship sea-worthy within a couple of months. She was not at the end of C20-07.

Roger N. Anderson/mg

Roger N. Anderson



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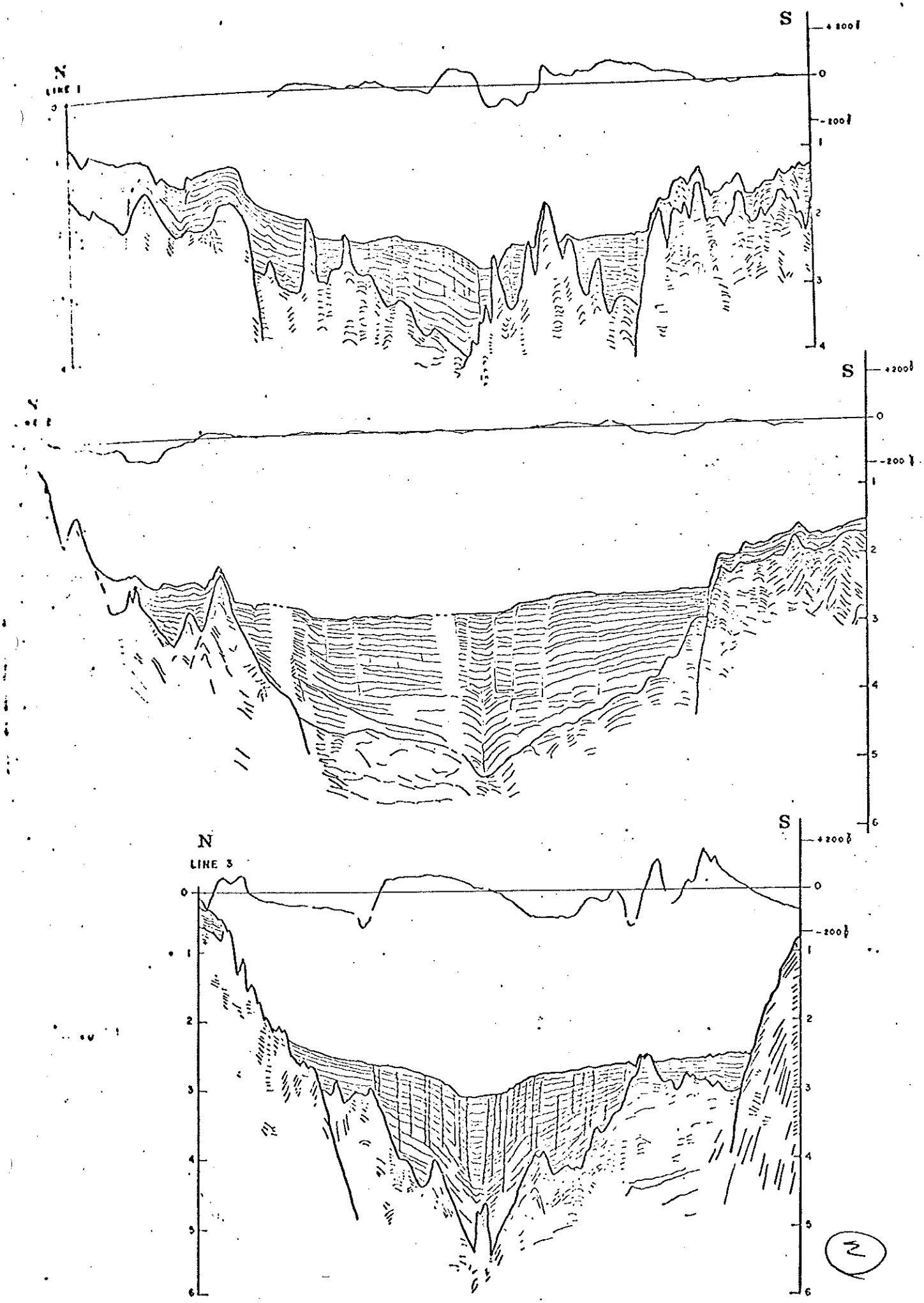
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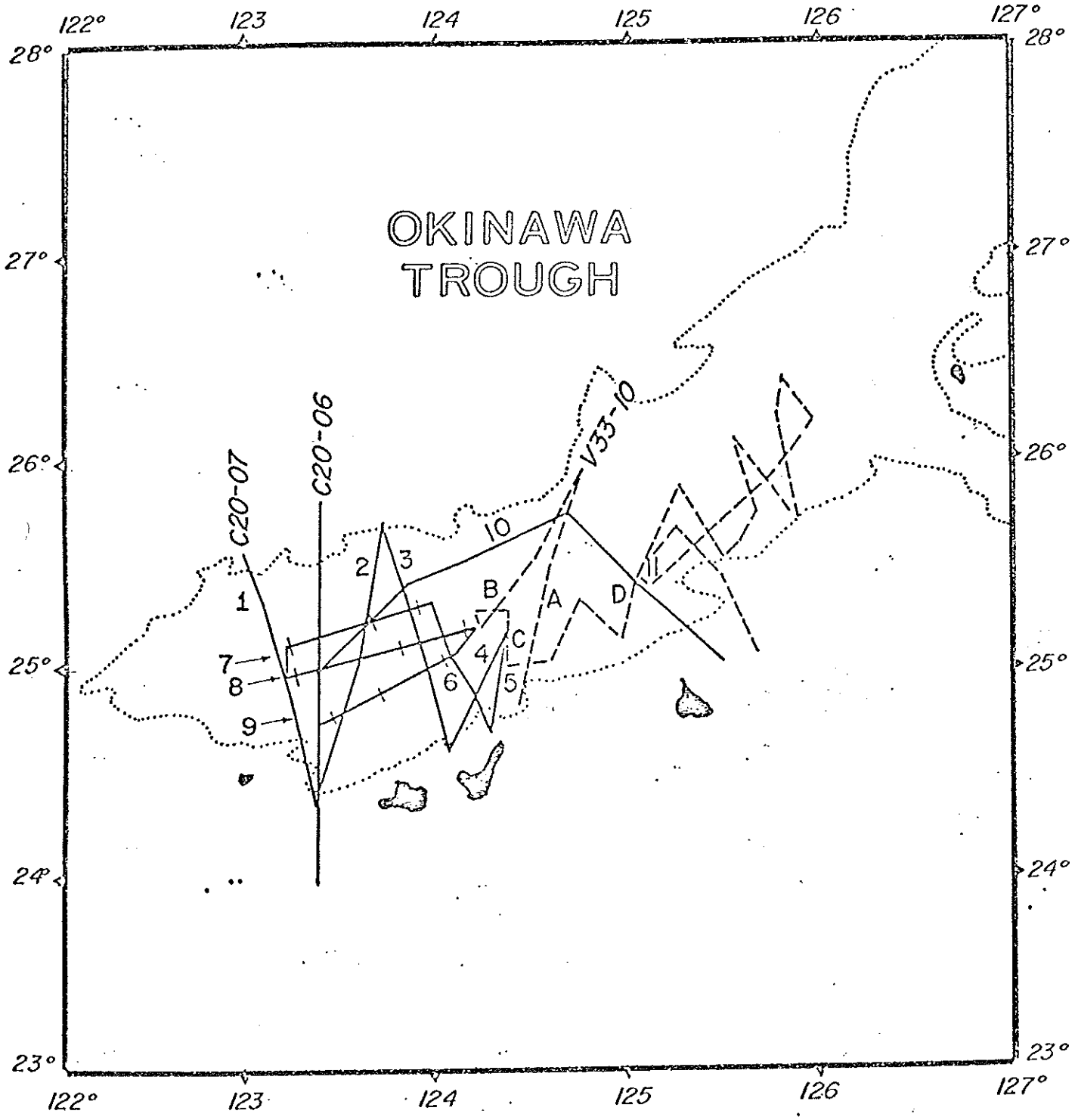
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