

CONRAD 22-14

The ship sailed from Belém on schedule, the 29th of September, and steamed east along the equator. After clearing the continental shelf at $44^{\circ}20'W$, we began a series of equatorial CTD stations (continuous salinity and temperature profiles) to 1500m every 30' of longitude. With breaks for other work, this section eventually extended from $44^{\circ}W$ to $30^{\circ}W$.

The first break was after $40^{\circ}W$, where we attempted to recover two inverted echo sounders deployed in June. At Branca ($01^{\circ}18'N, 39^{\circ}11'W$) the release did not fire; at Eliana ($00^{\circ}04'N, 39^{\circ}45'W$) we were successful. A new sounder was deployed at Eliana and a series of nine CTD stations were made in the area before continuing the equatorial section.

The second break came at $33^{\circ}W$ where we steamed to $2^{\circ}N$ and began a meridional section of nine CTD and profiling current meter stations (1500m and 500m respectively) which extended to $2^{\circ}S$. After completion we steamed to $2^{\circ}S 28^{\circ}W$ and executed an identical meridional section, ending at $2^{\circ}N$.

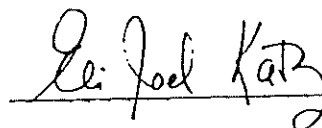
From $28^{\circ}W$ we steamed westward to the vicinity of St. Peter and St. Paul Rocks ($00^{\circ}55'N, 29^{\circ}21'W$) and remained within 12nm of the rocks for four days and three nights. Landings on the rocks occurred on the 15th and 17th of October; the first to recover a wind recorder deployed there last January, the second to return it after changing tape and performing maintenance. Two evenings were devoted to CTD and current meter profiles in the flow around the rocks. Two inverted echo sounders, deployed in January and unrecoverable in July, were scheduled to time-release during this time span. They were neither acoustically active,

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nor did they surface on schedule.

From the rocks we returned to $0^{\circ}\text{N } 30^{\circ}\text{W}$ to complete the last gap in the equatorial zonal section. A second inverted echo sounder (recovered earlier at Eliana) was redeployed at Flavia ($00^{\circ}02'\text{S } 31^{\circ}07'\text{W}$).

Work was completed with an exact repeat of the 33°W meridional section and the ship steamed for Fortaleza, arriving a day ahead of schedule on the 23rd of October.

A handwritten signature in cursive script, reading "Eli Joel Katz", positioned above a horizontal line.

Eli Joel Katz
Chief Scientist

CRUISE REPORT: CONRAD 22-14

A. Scientific Program

The cruise was single purposed, being entirely supported by the National Science Foundation via grant OCE 79-05473 with the Woods Hole Oceanographic Institution and partially subcontracted to Lamont via W.H.O.I. Purchase Order No. 6653. The field work was in support of the objective to describe the annual cycle of wind forcing and oceanic response in the western equatorial Atlantic. The cruise was the third of four and accomplished the following:

1. Recovery and redeployment of a wind recorder on St. Peter and St. Paul Rocks.
2. Recovery of one inverted echo sounder in the vicinity of 40°W and redeployment of two sounders in the vicinities of 40°W and 30°W. The latter are scheduled for recovery in February 1980, and are intended to monitor indirectly the slope in sea surface between the two sites.
3. A hydrographic section between 44°W and 30°W which will provide the initial condition for #2 above.
4. Hydrographic and current profiling stations along 33°W and 28°W, designed to resolve near surface zonal currents in a narrow equatorial band.

B. Ship's Equipment

The three depth recorders worked well, though required maintenance. The hydrowinch worked without fault and the level wind is a thing of beauty. Crane (01 deck, aft) and gallows frame functioned as required. Sat Nav functioned and the Omega Navigator was helpful.

C. Scientific Crew

Included a Brazilian observer, a naval officer with the rank of captain. He assisted the scientific program and exhibited a mild degree of interest in the research. There were no points of conflict.

D. Special Problems

Since this was my first cruise on the CONRAD, I would like to offer some general observations about operations and not limit myself to special problems. I recognize my comments as subjective, colored by my experiences on the CHAIN, AII, KNORR, OCEANUS, RESEARCHER AND WECOMA.

1. Captain, officers and crew. Captain is outstanding in all matters of seamanship, and provides excellent all around support to the science both on the bridge and on the deck (he was even available in port!). Mates however appear cowered by his dominating and abrasive personality. (I have never heard a Captain dress down his Chief Mate in public before and I have little respect for the mate who

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tolerates it). Crew also respond with quick obedience. Thus, though the ship runs with precision and to high standards, it is probably at the price of discouraging individual initiative. The Fijian seamen, while more competent than average at the winches, do represent a communication problem once the accents get further slurred by the squawk box.

2. Radio Communications. Very difficult. A scientist on board who tries to maintain routine contact with shore (to keep work going at the lab, for example) will expend a great deal of time and energy compared to all other ships I have sailed on. That someone on shore cannot initiate a contact with the ship was a unique experience for me. There is nothing more frustrating than after an hour or more in the radio room to reach LAMONT and be informed that nobody answers at the Port Office - or that they are out to lunch, (at 2 pm?). I recommend that the Port Office phone be covered during all working hours - at least.

3. Hydrographic winch. It is a luxury after Woods Hole ships to have a good piece of acoustic wire well taken care of on the ship. I would strongly recommend, however, that a continuous recording tension meter be put on (with read-outs on the bridge and dry lab as well as at the winch). This is a basic precaution for saving wire, gear and even averting potential accidents. (I hooked a sub-surface mooring at 5 knots in '73, the operator wisely ran at 6000 lbs tension). The best system I have seen so far is on the WECOMA, which also has a weather booth for the operator. Given the Captain's proclivity to grind the deck during lowerings, the booth would also help communications between lab and operator.

4. The ET. The ET on board has never met his immediate supervisor and has no clear idea of what his responsibilities are. He was simply shipped **out.** Under the circumstances he is doing a nice job, but there is no advantage not to spell out his job to him.

5. Mess. Separation of the science mess from the officer's mess (not even done on NOAA ships) seems like a needless cutting of communication links and strengthens the already too autocratic aura on board.

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6. Ship's Performance. For the first several days our steaming speed averaged only about 8 knots in moderate seas for reasons never made clear to me. Later in the cruise, cooling problems closed off one engine for about a day. Fresh water was an annoying problem; laundry room was locked for about half the cruise, restricted water hours was necessary for a few days. This occurring on a cruise when the ship was steaming over half the time suggests a well below par capability. Are there any plans to improve this situation?

□ PORT

⊗ I.E.S. SITE and CTD'S

■ STATIONS (CTD and CURRENT
PROFILE)

● STATIONS (CTD ONLY)

30°W

40°W

4°N

2°N

2°S

4°S

FORTALEZA

BELEM

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