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CRUISE REPORT

Ship Name: ROBERT D. CONRAD Cruise No: RC 22-04
Departure: 18 March 1979 from Manzanillo
Date Port
Arrival: 29 March 1979 at Acapulco
Date Port

Days at Sea: 13
(Count day of departure but
not day of arrival in port)

Days Foreign Port: 3
(number of days in arrival port
before next leg)

Area of Operation: East Pacific Orozco F.Z.

Program Description: Post ROSE MCS

Program supported by what contract: OCE78-23822

Participants: (All L-DGO unless otherwise specified)

<u>Name</u>	<u>Title</u>
Karen Jacobs	E.T.
Joseph Cutillo	E.T.
Charles Salcedo	E.T.
Harry Van Santford	Sr. E.T.
Michael Sundvik	Scientist
Dwight Mossman	E.T.
John DiBernardo	Mech. Tech.
Hector Smith	Mech. Tech.
Martin Iltzsche	Sr. Mech. Tech.
Roger Larson	Co-Chief Scientist
Charles Windisch	Chief Scientist

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

R/V Conrad departed Manzanillo on 18 March and arrived in Acapulco early on the morning of March 29. Departure was delayed until the evening of the 18th due to missing shipments which were ultimately located in Guadalajara and flown down. The objective of RC22-04 was to run MCS coverage along all the OBS lines shot during the modified ROSE experiment which took place during the two preceding legs. It took approximately a day and a half to reach the ROSE area. The MCS work was completed without incident in seven days, and ship arrived on schedule in Acapulco.

Some 10 MCS lines were completed. Five were along actual ROSE OBS lines. The remaining coverage included four tie lines and a short N-S line along the axis of the East Pacific Rise.

Total MCS coverage was approximately 840 n. mi. For the statistically minded that amounts to 29,000 shot points and 299 reels of tape.

Magnetics, gravity and bathymetry were continuous. Some 30 sonobuoys were also digitally recorded (we hope) with the MCS data.

The weather was excellent. Data appeared to be good although sediment cover was nil. Nor were continuous subbasement reflectors evident although sonobuoys almost invariably showed strong first arrivals from basement originating beneath acoustic basement. The impression that we were operating a low frequency 24 channel echo sounder was inescapable.

Operations and Equipment. A delay in shipments resulted from the fact that the ship's agent did not receive shipping information until the ship arrived. A cause of this problem was that the agent did not have a teletype connection to Mexico City and therefore all correspondence on shipping matters had to be hand delivered causing considerable delay. Once informed the agent proved very conscientious and effective in tracking things down.

R/V Conrad is, cosmetically at least, in the best condition she has ever been in since birth largely through the tireless efforts of the Captain. Hydro winches and core winch appear to be well maintained in contrast to their condition in the fall of 1978.

The streamer winch was sanded and thoroughly painted on this last leg in anticipation of a long period of disuse.

The new Omega navigation unit has been relocated in the chart room along with the other navigation aids. Omega was not working properly at the time. The Captain insists that the 4051 computer or a similar unit be located on the bridge if we expect the ship to continue computing Fix Pit etc. The same computer could be used for integrating Omega, Loran C etc. with Sat. Nav. A system of this sort will be required in future MCS work in order to continuously compute air gun firing rates for accurate CDP location.

Two short periods of down time were needed, one for repairs to the rudder hydraulics and the other for attention to electrical difficulties with main propulsion system. Both problems found temporary solutions which kept things going to Acapulco. Aris electric was on hand there to work on the electrical difficulties.

Ventilation in the engine room seems marginally adequate for safe operation of the MCS compressors and engines, and probably other equipment as well. Miscellaneous fans were scrounged to improve circulation around the engines and keep operating temperatures down to 180°. Ambient engine room temperature was around 114° when outside temps were 85° (sea water 80°).

I was told that engine room temps have run as high as 127° since the engine room blowers were down-sized a few years ago. Clearly the 1Hp. blower servicing the compressor platform area is much too small. This unit should be replaced with a two-speed 2.5/5 HP. unit. Probably the rest of the engine room air circulation system should be restored to or increased beyond its original capacity.

Noise level on deck with both compressors operating is objectionable during cookouts and other on-deck affairs which are an important part of shipboard life. A single Maxim silencer on the compressor exhaust stack would probably eliminate the problem with minor loss in engine efficiency.

Most underway data acquisition systems worked well except for magnetics and gravity. The magnetics strip-chart recorder proved mechanically troublesome from the start. A replacement recorder proved no better. Various recorder parts were interchanged to produce a working unit which, aside from calibration difficulties, seemed to work reasonably well. This unit will be replaced in the near future with a new two pen recorder of simpler mechanical design. The old unit has seen 15 years service.

Gravity problems were manifest in ever increasing crosscoupling errors in uniformly mild seas. At least part of the problem seemed to result from the stable platform which was off level upon departure. Another difficulty was in drifting power supply voltages. Presumably both problems were corrected in Acapulco.

The PDR's and seismic profilers worked well though we all would benefit from upgrading this equipment over the next few years.

MCS equipment worked without trouble. One small pin hole leak was found and patched in a streamer coupling boot as the streamer was brought aboard.

Air gun tail sections continue to break apart when the guns are used without their wave-shape kits. Various schemes have been and will continue to be explored to eliminate the problem.

Continued indecision about whether to ship Conrad's DFS IV to Vema will make shipping all the more difficult if it has to be done on short notice.

The Captain and crew continue to wonder why there are no new video tapes. TV seems to be an important part of an otherwise sterile cultural environment for the crew. Perhaps our collective intellect cannot grasp their problem? Arguments about money shortages are wearing thin.