

Ramy

CRUISE REPORT FM15

Brief Narrative

6 January 83

0010 Departed dock at Galveston

Orientation and training sessions for 15 students were held, preceding departure, from 7:30 - 11:15 PM - Ken Griffiths & Eddie Nicol participating.

0800 Fire Drill

0900 - 1100 Maneuver for streamer party (up drift of start of line)

1115 - 1525 Streamer party; 60 lbs of chain added to leader

1530 Began deploying guns

Port compressor developed oil seal leak - lack of a replacement part required entire cruise to be run with only one compressor. Also port gun would not seal by itself after first shot. Also its retrieval caused anxiety because of weak hydraulic motor on winch. None of these problems were solved on the rest of the cruise, so we shot all lines with only one gun.

First line shot at rep rate of 30 sec. and ship's speed of 4 kt (12 fold). The second DFS tape was misloaded. It was discovered about mid-tape and drives were switched. A few shots may have been missed or the line processing may have to begin with tape #3.

7 January 83

Late morning toward the end of line 1 part of streamer around 2nd in-board most depth sensor started surfacing. Stopped at end of line 1 ~ 1230 and had streamer adjustment party. Added 30 lbs lead between sections 15 and 43. Thereafter last two segments (1-15) ran 50-55' and the rest ran 25-35'. Streamer party took 3 hours.

8 PM - Began shooting on line 2 at 24 sec. rep. rate and 5.1 kt (12 fold). We maintained this configuration the rest of the trip.

8 January 83

Began line 3 about 7 AM. ARCO RESOLUTION radioed and asked if we were going to stop shooting on the turn or any other time soon. We responded no, we were aware of their or some other seismic ship shooting but were not concerned because their arrivals would not stack with ours and thus should not interfere with our results. I advised that our sound source should similarly not affect their data and furthermore our frequencies were probably lower than theirs. However, they were doing signature tests and their 41 gun array did go down to 5 Hz, so they reckoned they would have to go somewhere else.

10:30 AM - Air gun down due to chaffed connector. Repairs made by ~12:30. This was the only gun down-time on the trip. Line 3 was extended well onto continental rise; surprising amount of deep folding shown by excellent single channel monitor record.

7:15 PM - Turned onto line 4 and changed from 8 sec. to 10 sec. records

9 January 83

Continued line 4 smoothly until about 6 PM. Line went from continental rise to shelf break. Turned back down slope briefly on line 5. Crossed a spectacular, surface-penetrating diapir - students excited. Decided to shoot a crooked line along strike to investigate lateral diapir continuity and to demonstrate scientific 'free spirit' strategy as opposed to industrial 'rigid - geometry' strategy. Lateral diapir continuity was disproven.

10 January 83

Shot until breakfast hour (0730); pulled in maggie and air gun simultaneously. Streamer party 0800 - 0955 making one patch and removing chain on leader and bird collars. Measured drum diameter and number of wraps of leader used to estimate distance to near trace.

At least 5 sonobuoys were deployed during the course of the trip. 8 sec. data was taken on lines 1, 2, 3 and 6; ten second data was taken on lines 4 and 5.

## SUMMARY DISCUSSION

A primary institutional objective of the trip was to standardize a method of simultaneously firing the two large airguns. Due to failure of gun, compressor, and retrieval winch on the port side, this was not accomplished. Likewise the students could not be shown a variety of shooting-speed fold configurations. This was the only significant shortcoming of the cruise.

I feel that the students learned a great deal about both the theory and mechanics of marine seismic data collection. They especially learned alot about where missed shots come from. Furthermore, they got good looks at both diapir-dominated and relatively undisturbed continental slopes through the analogue recordings of 3.5 kHz and single channel monitor data, both being of excellent research quality. Thus the data collection was not just an exercise but was a significant contribution to our marine seismic data base.

The one airgun that worked, did so beautifully producing high quality data with only one interruption in about 4 days of shooting. The magnetometer worked smoothly and the data logger worked almost flawlessly. At first the data logger began recording different record numbers than were displayed on the DFS and did not seem to consistently display comments before or after an 'interrupt'. All comments should be checked carefully against the hand written DFS log, and the latter should be the accurate standard. The tape drives seemed to work perfectly and twice changed data logger tapes automatically.

The students approached the cruise with high degrees of enthusiasm and interest and at worst, left with them undiminished. Both this

and the excellent data were due in no small part to nearly perfect weather. Of course none of this could have been accomplished without the superior professional skills consistently displayed in the performance of the ship's crew and supporting scientific staff of Archie, Ken, Sterling, Ty and George.