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CRUISE REPORT

Ship Name: ROBERT D. CONRAD

Cruise No: 21-12

Departure: 26 JULY 78 from ST. JOHN'S, NEWFOUNDLAND  
Date Port

Arrival: 5 AUGUST 78 at BERGEN, NORWAY  
Date Port

Days at Sea: 10 Days Foreign Port: 3 No. of days in arrival

Area of Operation: NORTH ATLANTIC, NORTH SEA

Program Description: TRANSIT LEG BETWEEN MULTI-CHANNEL SEISMIC LEGS; GRAVITY,  
MAGNETICS, BATHYMETRY AND SINGLE-CHANNEL SEISMICS WITH  
L-DGO AIRGUN

Participants: (All L-DGO unless otherwise specified)

Aitken, Thomas	Chief Scientist
DiBernardo, John	Air Gun
Gutierrez, Carlos	E.T.
Hutchinson, Daniel	Gravity Tech
Jacobs, Karen	E.T.
Koczyński, William	E.T.
Medlicott, David	Computer Tech
Rottier, Ross	<del>E.T.</del> AIR GUN
Salcedo, Charles	E.T.
Stein, Arnold	E.T.
Suozzo, Robert	Computer Tech
Winslow, Kenneth	Air Gun

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

## CONRAD 2112 CRUISE REPORT

This was a short transit leg across the North Atlantic between multi-channel seismic legs. The CONRAD was to sail on Monday the 25th of July from St. John's, Newfoundland, and arrive 11 days later on Saturday, the 5th of August, in Bergen, Norway. The ship did not sail until the evening of the 26th of July as the trailer truck load of supplies that was to be waiting on the dock when the ship came into port, did not arrive on the dock until that afternoon. No one knew, nor could they (agent, captain and port engineer) locate the trailer for a couple of days. When it was located, it was still waiting in North Sydney, Nova Scotia, to cross on the ferry boat to Channel Port-Aux-Basques, Newfoundland, which is 905 kilometers by road to St. John's.

When the trailer arrived, it was unloaded and its cargo stored aboard the ship. Then everything which was to go back to Lamont was loaded into the trailer and the ship sailed. The trailer was to be trucked back to Lamont, but this trailer and its load has still not arrived.

After sailing, the track requested by Dr. Talwani was to be steamed, as it was known that it could be completed by averaging over 10 knots for the leg. The coordinates of the track are as follows:

St. John's to 56°N 35°W to 51.8°N 25°W, to 61.5°N 20°W, to 61°N 6.5°W, to 62°N 6°W, to 61.5°N 2°W, to 60.3°N 2.6°E to Bergen.

The gravimeter, magnetometer and the two P.D.R.s (3.5 and 12 KHz) worked fine without any problem or gaps in the data. The small Lamont air gun worked fine once it started, except for one seal replacement and one big gap of nine hours.

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hours, when we had to rebuild the gun twice before it worked; and then we had a problem with the air regulator valve on the board and had to replace the regulator valve and rebuild the board.

When Martin Itlche went on vacation in Bermuda, the responsibility of the air guns and compressors was given to Ross Rottier. He had two helpers, John DiBernardo and Ken Winslow, as the compressors used on the MCS legs needed continuous care and watching. Because Ross had very little experience with the Lamont air gun and the other two had no experience, we were a little slow in getting started profiling. There were two airguns aboard, a brand new one and an old corroded one. Martin had recommended using the new one, so they got it ready and put it in the water. It leaked around the Teflon seat pad. We pulled the gun aboard and took it to the machine shop to replace the pad. There I discovered that the machined hole in the top of the gun was too large for the pad to make a tight fit to work properly. So we changed to the old gun which had been rebuilt by Martin and was ready to be used.

Later, when we had the major air gun problem and had to rebuild the old gun, we discovered that the pad in it also fit loosely, but that Martin had used some black electrical tape around the base of the pad to make it fit tightly. We tried that with the new air gun but still could not get it to fire, so we rebuilt the old gun and used it all the way to Norway.

On this leg I was to test some commercial sonobuoys for Bill Ludwig. The correct crystals had not been sent to the ship until St. John's for four of these buoys. There were only two crystals which matched three out of four sonobuoys.

After replacing the crystal in the receiver with the correct crystal, we launched the first sonobuoy. We could not pick up anything in the crystal controlled receiver, but could pick it up quite fine on the tunable sonobuoy receiver, so we switched over to that receiver and recorded the sonobuoy. (I would like to thank Willie Koczymzki for having had everything ready for this switchover, which I did not think we would need). I only shot three of the sonobuoys because of time limitations: the first and third worked fine but the second one only lasted six minutes, and then both carrier and signal disappeared. Also, it had acted "funny" from the time it was launched.

Since I have returned, I have learned from Charlie Windisch that even though the crystals were correct, the wrong modules were used for them to be put in on the CONRAD.

A new data logging system was tried out on this leg. It consists of a Tektronix 4924 data cartridge handler attached to a Tektronix 4051 intelligent terminal with 32K of memory, programmable only in BASIC, which accepts one data cartridge. The terminal is connected to a digital clock and an AMS 704 which is interfaced to the data to be recorded on the ship.

As set up on the CONRAD, seven channels are in BCD directly, all five digits of magnetics, and mileage from 0 to 9.9 miles. There are eight channels connected to analog which are converted to digital. There are 1-speed, 2 and 3 mileage 0 to 99 and 0 to 999 miles, 4-course, 5-gravity sum, 6-gravity filtered bean, 7-pitch off level, and 8-DC test value.

## CONRAD 2112 Cruise Report

It appeared to be working fine until the AMS 704 failed. It had three boards and we had the schematic for only one of them. Carlos Gutierrez traced the problem into one of the other boards. When the board was replaced in Bergen, the AMS 704 and the system worked fine again.

Because this was a short transit leg between MCS legs, there was an abundance of electronic technicians, all of whom seemed capable.

Dan Hutchinson was teaching Karen Jacobs and Charles Salcedo all about the gravity system, reading the gravity records and making the port tie-ins. The air gunners rebuilt the Price compressor and the large air guns and checked them out for the upcoming MCS leg.

As the entire leg was done under overcast and often foggy skies, the radar was used continually. The bridge took Loran C and satellite fixes regularly. Also, in Bergen, Carlos Gutierrez adjusted the Loran C for the stations which will be receivable on the next two legs.

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