

RV Langseth Data Redeuction Summary
MGL0804 Limon, Costa Rica – Limon, Costa Rica

Date	Julian Date	Time	Port
2008-02-16	2008-047	1100 L, 1706 UTC	Limon, Costa Rica
2008-02-16	2008-070	0400 L, 1000 UTC	Limon, Costa Rica

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I. Background and Scientific Objectives

Objective was MCS/OBS/land instrument survey of track lines in the Caribbean in support of the April/May 2008 TICO/CAVA Project undertaken by Steve Holbrook of University of Wyoming. Refer to NSF cruise report for further detail on scientific objectives and methods.

II. Crew List

Science Party

1	Steve Holbrook	Chief Scientist
2	Harm Van Avendonk	Co-Chief Scientist
3	Matt McDonald	Scientist
4	Jakob Marson	Scientist
5	Will Fortin	Scientist
6	Dan Eakin	Scientist
7	Lisa Humbert	Scientist
8	Nikolaus Gribb	Scientist
9	Johanna Camacho	Scientist
10	Ernie Aaron	Scientist
11	Mark Gibaud	Scientist
12	Crispin Hollinshead	Scientist
13	David DuBois	Scientist
14	Stephen Swift	Scientist
15	Peter Lemmond	Scientist

Shipboard Technical Staff

1	Anthony Johnson	Technician-in-charge
2	Ted Koczyynski	Science Officer
3	Jim Dolan	Science Officer
4	Lance Conrad	MCS Observer
5	Tom Spoto	Chief Sound Source Technician
6	Brian Goodick	Sound Source Technician
7	Paul Finsterwald	Sound Source Technician
8	Luis Villalobos	Sound Source Technician
9	Mike Martello	NCS Subsea -- Contractor
10	Matt Orme	NCS Subsea -- Contractor
11	Joe Beland	Lead Mammal Observer
12	Gianni Pavan	Mammal Observer
13	Diana Antochiw-Alonzo	Mammal Observer
14	Brandon Hurley	Mammal Observer
15	Nicolas Engelmann	Mammal Observer

Ship's Crew

1	Mark Landow	Master
2	Manuel	Chief Mate
3	Chris Zimmerman	2 nd Mate
4	Nick Gasper	3 rd Mate

5		AB
6		AB
7		AB
8		AB
9		AB
10	Richard Magnan	OS
11	Steve Pica	Chief Engineer
12	Michael Unger	2 nd Asst. Engineer
13	Peter Chizmar	3 rd Asst. Engineer
14	Ryan Vetting	3 rd Asst. Engineer
15	Jeremiah Winters	3 rd Asst. Engineer
16	Guillermo Uribe	Oiler
17	Louis Thibault	Oiler
18	Jack Billings	Oiler
19	Gary Brodock	AB
20	Ricardo Rios	AB

III. Instrumentation Summary

All instruments aboard the Langseth are listed in the science_sensors spreadsheet in the docs section of the cruise archive. Summary notes on operation during this cruise are listed below. Instruments not listed were not in operation.

Instrument Data Files

Instrument	Description	Data Set	Interval	Data Output
FE700	Furuno FE700 Echosounder	Full	1s	serial logs
EM120	Kongsberg EM120 Multibeam Sonar	Full	Variable	raw output to file centerbeam to serial logs
DS50	Furuno DS50 Doppler Speedlog	Full	1s	serial logs
CTD	SeaBird SBE	n/a	Variable	raw output to file
XBT	Sippican MK21 XBT Launcher		Variable	raw output to file converted output to file
WX1	RM Young 5103 Weather Bird and Translator	Full	1s	serial logs
TSG	SeaBird SBE23 Thermosalinograph	None	1s	serial logs
CNAV	C&C Tech. CNAV DGPS Receiver	Full	1s	serial logs
MAG01	GeoMetrics 882 Magnetometer	Partial	1s	serial logs
BGM	Bell Aerospace BGM-3 Gravimeter	Partial	1s	serial logs
GYRO	Simrad GC80 Gyrocompass/AD100	Full	1s	serial logs
POSMV	Applanix POSMV Integrated Nav System	Full	1s	serial logs
SEAPATH	Kongsberg SeaPath Integrated Nav System	Full	1s	serial logs
ATT	LDEO Advanced Time Tagger	Full/Degraded	shot	serial logs

All timestamps in this report is presented using UTC time and day of year in order to avoid confusion with local time changes.

FE700 Echosounder

The FE700 only operated to 800m depth. The echosounder is normally switched off before the unit goes out of depth.

EM120 Sonar

The EM120 multibeam sonar was operated throughout the cruise. Pinging and logging were switched off during OBS deploy and recover operations, to avoid interference with the OBS acoustic communications. The system is designed for deeper water, and does not track ground well in less than 50m of water.

DS50 Speedlog

The speedlog records data once per second. Normal operation for this cruise.

CTD

No CTD casts were taken during this cruise.

XBT

51 XBT/XCTD drops were made during this cruise. Refer to the Expendable_Drops spreadsheet in the deck_log directory of the cruise archive.

RMYoung Weather Station

The RMYoung operated normally.

SBE-23 Thermosalinograph

The TSG was not yet in production.

CNAV DGPS

CNav operated normally.

882 Magnetometer

The magnetometer was towed from the aft end of air gun string 4 (port side). Some magnetometer data was collected. Problems communicating with the instrument while deployed prevented collection of a full data set. Additional rigging options are being considered.

BGM-3 Gravimeter

Gravimeter was operational at the cruise beginning. A hardware malfunction prevented collection of a full data set.

Grav data was not processed during this cruise. Only raw instrument counts are contained in the data set.

GGC80 Gyrocompass

The GC80 gyrocompass operated normally.

POSMV Integrated Nav

The PosMV operated normally. DGPS input was not yet available.

SeaPath Integrated Nav

The Seapath operated normally.

Advance Time Tagger

The ATT time stamps are offset by approx. +702ms. The ATT will be replaced after this cruise with a new event logger.

IV. Seismic Summary

The primary cruise objectives were to deploy OBS instruments along four main survey lines, deploy a single 8km streamer, and survey the lines using all four air gun strings. Water depth limitations precluded MCS survey of the NicRise line and part of the Hess line. All lines were shot to with the air guns, including some additional targets of opportunity.

Physical Configuration

There were two different physical tow configurations of the air guns and streamer. Consult the Tow_Config drawing for details.

Spectra

Spectra was used for recording MCS positions and for triggering the gun system. Refer to the nav line logs for detail.

Spectra streamer, airgun, and GPS antenna configuration was updated several times during the cruise. Spectra vessel and source position should not be used without reprocessing the data. Consult the nav line logs for detail.

MGL0804 Sensor Inventory

Category	SystemID	Owner	Status	Installed Location	Model	Description	Manufacturer	S/N#	P/N
ADCP	ADCP	sci	Installed	Pod	RDI150	150 kHz Hull Mounted Transducer	RDI	??	
	ADCP	sci	Tested	Dlab		ADCP Head Unit	RDI	513	
Sonar	n/a	sci	On hold	n/a	SBP-120	2.5 kHz - 7 kHz Sub-bottom profiler	Simrad/Kongsberg		
Sonar	FE700	ops	Operational	Bridge	FE-700	Fathometer	Furuno		
	FE700	ops	Operational	Pod	FE-700	50 Khz Transducer	Furuno		
	FE700	ops	Operational	Pod	FE-700	200 Khz Transducer	Furuno		
	FE700	ops	Operational	Bridge	FE-700	FE-702 Distribution panel	Furuno		FE-702
Sonar	BATHY	sci	Mounted	Dlab	Bathy2000P	Chirp Sub-bottom Profiler -- BATHY2000	ODEC	2253	A0088-9
Sonar	12K	sci	Installed	Pod	??	12 Khz Transducer	EDO		
	12K	sci	Installed	Dlab	??	12 Khz Transceiver			
	3_5K	sci	Installed	Pod	??	3.5 Khz Transducer	EDO		
Sonar	3_5K	sci	Installed	Dlab	??	3.5 Khz Transceiver			
	EM120	sci	Operational	Pod	EM-120	12 kHz 150 beams/191 degree multibeam echosounder	Simrad/Kongsberg		
	EM120	sci	Operational	DLab		EM 120 Transceiver unit	Simrad/Kongsberg		125-218158
	EM120	sci	Operational	DLab	EM-120	EM 120 Preamp	Simrad/Kongsberg	103	125-213422
	EM120	sci	Operational	Mlab	EM-120	EM120 SIS	Simrad/Kongsberg		
	n/a	sci	On hold	n/a	EM-122	Multibeam Upgrade	Simrad/Kongsberg		
Sonar	SV1	sci	On board	n/a	MicroSV	Sound Velocity	Applied Microsystems		
Sonar	PINGER	sci	Installed	Pod		12 Khz Broadband Pinger			
Sonar	DS50	ops	Operational	Pod	DS-50	Speedlog Transducer	Furuno		DS-520
	DS50	ops	Operational	DLab	DS-50	Speedlog Processing Unit	Furuno	2219-0280	DS-510
	DS50	ops	Operational	Bridge	DS-50	Speedlog Display Unit	Furuno		DS-500
Met	CTD	sci	Operational	Wet Lab		CTD			
Met	XBT	sci	Operational	Racks	MK21-ISA	XBT MK21 ISA card	Sippican	583	
	XBT	sci	Operational	S Deck		XBT launcher	Sippican		
Met	SBE38	sci	Installed?	Pod	SBE-38	Thermometer	Seabird		
Met	SBE48	sci	Storage	ET Shop	SBE-48	Magnetic mount temp sensor	Seabird		
Met	WX1	sci	Operational	Bridge Mast	5103	Integrated Meteorological instrument	RM Young Industries		
	WX1	sci	Operational	Bridge	26700	26700 Translator	RM Young Industries		

Met	WX2	sci	Installed	Fwd Mast	5103	Integrated Meteorological instrument	RM Young Industries		
	WX2	sci	On board	Fwd Stores	26700	26700 Translator	RM Young Industries		
Met	TSG	sci	Installed	WetLab	SBE-21 SEACAT	Thermosalinograph	Seabird	21 30614-3232	
	TSG	sci	Installed	WetLab	90158	TSG Electronics Box	Seabird	27	
	TSG	sci	Installed	Bow Thruster	3-01/s	TSG Remote thermometer	Seabird	31677	none
	TSG	sci	Installed	WetLab	??	O2 Sensor	Seabird	230452	
Met	FLOURO	sci	nonop	WetLab	10-AU-005-CE	Flourometer	Turner Designs	6311 RTX	
Met	PCO2	sci	Installed	WetLab		pCO2	Lamont		
GPS	CNAV	sci	Operational	OdeckFarm	C-NAV	Globally corrected DGPS	C&C Technologies	260046	
	CNAV	sci	Operational	Main Lab		Cnav Display	C&C Technologies		
GPS	TRIMBLE	ops	On board	Bridge	NT-300D	DGPS	Trimble		
GPS	TANSMON	ops	At Lamont	At Lamont	Tansmon	P-Code	Trimble		
GPS	WAAS	sci	At Lamont	At Lamont	17HVS	WAAS	Garmin		
Geo	MAG	sci	On board	n/a	882	Magnetometer	Geometrics	882037	
Geo	BGM	sci	Installed	Lab	BGM-3	Marine Gravity Meter System	Bell Aerospace		
Gyro	GYRO1	sci	Installed	Lab	MK-27	Gyrocompass	Sperry		
Gyro	GYRO1	sci	On board	Bridge	MK-27	Gyrocompass	Sperry	1884068-8	
	GYRO1	sci	On board	Lab	AD100	Step-NMEA converter	Furuno	6986	
	GYRO??	sci	On board	Bridge	MK-37	Step repeater	Sperry	9132	
			Operational	Bridge	GC-80	Gyrocompass Compact Control Unit	Simrad		
Gyro	GYRO2	ops	Operational	Bridge	GC-80	Gyrocompass Master Compass	Simrad		
	GYRO2	ops	Operational	Bridge	AD100	Step-NMEA converter	Furuno		
			On board	Spares	AD100	Step-NMEA converter	Furuno	1-3415	
						POSMV Inertial Navigation System			
IMU	POSMV	sci	Operational	Main Lab	POS/MV 320		Applanix	444	
	POSMV	sci	Operational	Main Lab		POS/MV IMU	Applanix		
						SeaPath Inertial Navigation System			
IMU	SEAPATH	sci	Operational	Main Lab	SeaPath 200		Simrad/Kongsberg	4217	
	SEAPATH	sci	Operational	DLab		SeaPath IMU (fwd)	Simrad/Kongsberg	2695	MRU-M-M83
	SEAPATH	sci	Operational	DLab		SeaPath IMU junction box(aft)	Simrad/Kongsberg		MRU-E-JB1
Clock	TIME1	sci	Operational	Main Lab	1520-S250	GPS Network Time Server	Symmetricom	PR0638P05816	
Clock	TIME2	sci	Installed	Main Lab	TS2100-GPS	GPS Network Time Server	Symmetricom	10502296	
Clock	ATT	sci	Operational	Main Lab	na	Joe's Advanced Time Tagger	LDEO	na	na