

RV Langseth Data Reduction Summary

MGL0907

Kaohsiung, Taiwan – Kaohsiung, Taiwan

PRELIMINARY

v0.1, 2009-06-10
Lamont-Doherty Earth Observatory, Columbia University

Mon May 07 05:00:00 2009

Date	Julian Date	Time	Port
2009-06-07	2009-158	0500 UTC, 1300L	Kaohsiung, Taiwan
2009-06-14	2009-165	0000 UTC, 0800L	Kaohsiung, Taiwan

Wu-Cheng Chi
Co-Chief Scientist
Academia Sinica
chi@earth.sinica.edu.tw

Yoshio Nakamura
Co-Chief Scientist
University of Texas at Austin
yoshio@ig.texas.edu

Prepared by:

Anthony Johnson
Chief Navigator, Technician-in-Charge
ajohnson@ldeo.columbia.edu

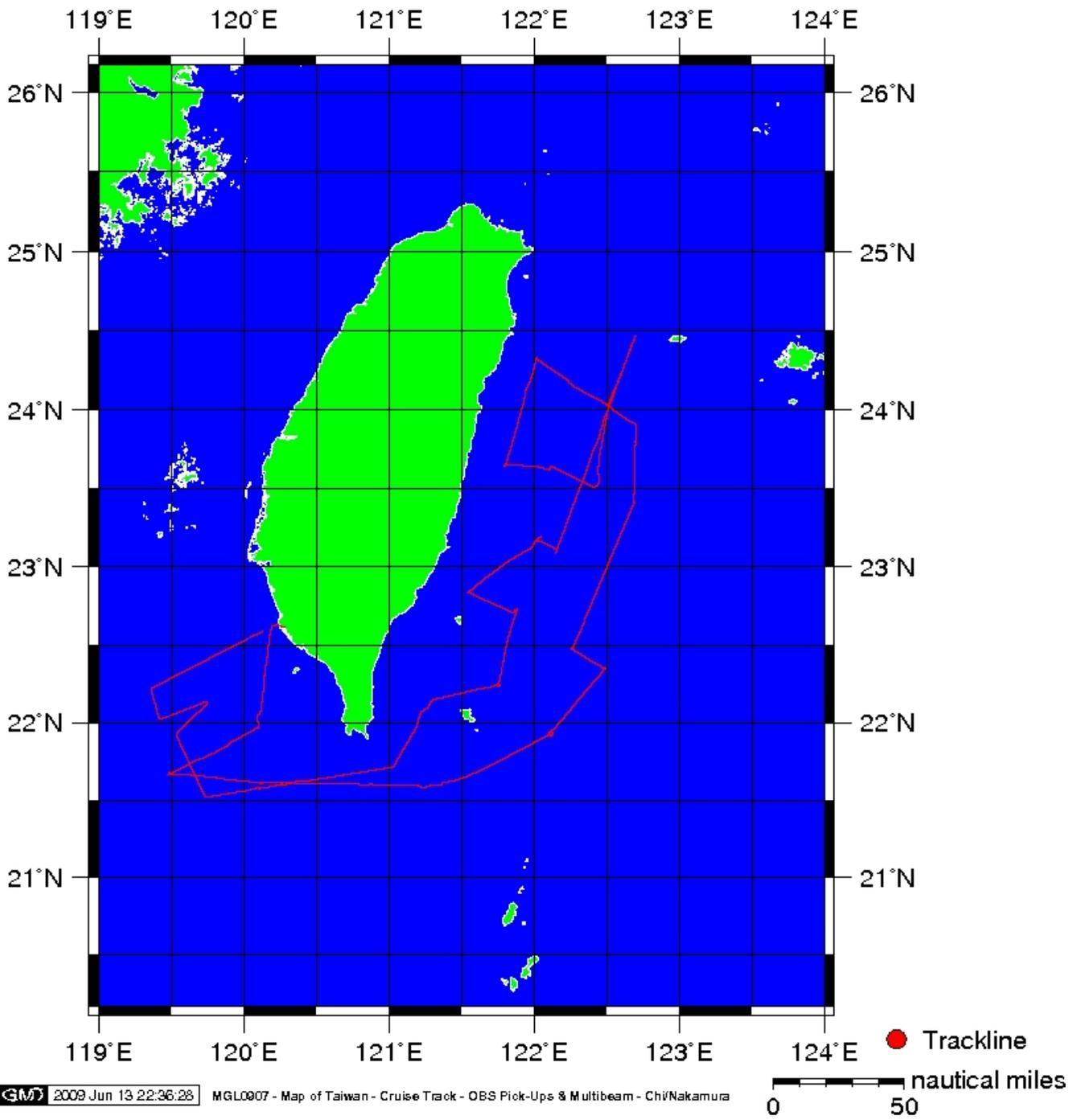
David Ng
IT/Navigation
dng@ldeo.columbia.edu

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Please refer to the Langseth Data Report Supplement for information regarding data formats.

Cruise Track



I. Background and Scientific Objectives

The TAIGER is an US-Taiwan collaboration research project jointed by scientists from France to investigate the mountain building processes, plate boundary dynamics, and seismogenic processes on and around Taiwan. Both natural earthquakes and large airgun array will be used as sources for seismic imaging of the interior of the deep crust and upper mantle. On land seismographs and broadband ocean bottom seismometers will be deployed for a longer period of time (up to one year) to observe the natural earthquake activities (passive source experiment), while large multichannel seismic system of the new US seismic research vessel R/V Marcus Langseth and short-period ocean bottom seismometers will be used to image crustal transects during the active source experiment. Taking the opportunity of having a modern multichannel seismic vessel coming to Taiwan, the marine geosciences community in Taiwan has obtained additional funds from several agencies in Taiwan to carry out an expanded TAIGER survey. The R/V Langseth is scheduled to conduct the TAIGER active source survey in the areas around Taiwan, in the northern South China Sea and in the western Philippine Sea from March 31 to July 20, 2009.

The purpose of this expanded TAIGER survey is to have a complete investigation on the Taiwan arc-continental collision system and its adjacent continental margins and marginal seas, thus to have a better understanding on the structural characters and tectonic evolution of the region. There are several important scientific issues as well as issues having societal impacts can be addressed by conducting additional marine seismic survey, as described below:

1. The subduction system south of Taiwan to northern Luzon Island: The area south of Taiwan is a transition zone from subduction to arc-continent collision. Two E-W trending profiles across the Luzon subduction system have already been planned in the TAIGER survey, however, we would like to lengthen these two profiles to cover the northern South China Sea Basin and the Western Philippine Basin, and to add couple more transects southward to the Luzon Island. From a recent USGS report on the potential risk of large Tsunami hazard zones around the Pacific region, the subduction system from North Luzon to Taiwan is ranked among the highest. Additional seismic profiles across this region will help to understand the tectonic processes, and provide critical information for earthquake and tsunami hazards investigation.
2. Structure and evolution of the northern South China Sea continental margin: The early evolution of the South China Sea Basin and its relationship to the Huatung Basin/West Philippine Basin is still unclear. It has been suggested that there may exist a fossil plate boundary in the most northeastern corner of the South China Sea Basin. We would like to collect several long MCS/OBS profiles across the continental margin of the northern South China Sea to better constrain the structural and tectonic evolution of this region.
3. Seismogenic processes and earthquake hazards off eastern Taiwan: There is a highly active seismic zone off eastern Taiwan in the western Ryukyu forearc region where the Ryukyu subduction system transforms into Taiwan collision system westward. Earthquakes of magnitude 7 or larger occur frequently, and the risk of tsunamigenic large earthquakes (magnitude > 8) is very high. Two of the planned TAIGER onshore-offshore transects will pass through this region roughly in E-W trending, we propose to collect additional two N-S trending MCS/OBS transects in this region. One of the added transects will pass through the center of the most densely distributed earthquake zone. This profile is the key profile of the Taiwan-France cooperative ACTS project, and French OBSs will participate in this part of the investigation.
4. The nature of the Gagua Ridge and evolution of the western Philippine Sea Plate: The Gagua Ridge is a N-S trending linear volcanic ridge separating the Huatung Basin and the West Philippine Basin. This ridge has been suggested to be a fossil plate boundary, but the nature of it is still unclear. We suggest to lengthen the planned E-W trending TAIGER profiles and to add additional MCS/OBS transects across the Gagua Ridge so that this series of transects from north to south could provide insights on the nature of the Gagua Ridge and tectonic evolution of the western Philippine Sea Plate.
5. Gas hydrates on different tectonic settings: Marine geophysical and geochemical data have shown that gas hydrates are present both in the passive northern South China Sea continental margin and the accretionary wedge environment southwest of Taiwan. The area SW of Taiwan thus provides a rare opportunity to compare the formation, migration and accumulation of gas hydrates in both active and passive tectonic settings. The Central Geological Survey of the Ministry of Economic Affairs, Taiwan, has funded 12 days of MCS/OBS surveys off SW Taiwan for the purpose of imaging the deep crustal structures of this region where the accretionary wedge of the Luzon subduction system meets with the passive continental margin of the South China Sea.

Taiwan will also provide additional ships during the TAIGER active source experiment to deploy and retrieve OBSs, thus reducing the time spent for handling OBSs onboard R/V Langseth to a minimum. We expect R/V Langseth will be used to collect 2-D MCS data during most of her survey time, and the seismic data collected will greatly enhance the understanding of the regional tectonics, crustal structures and seismogenic processes of the region.

Figure 1a – Planned Cruise Track

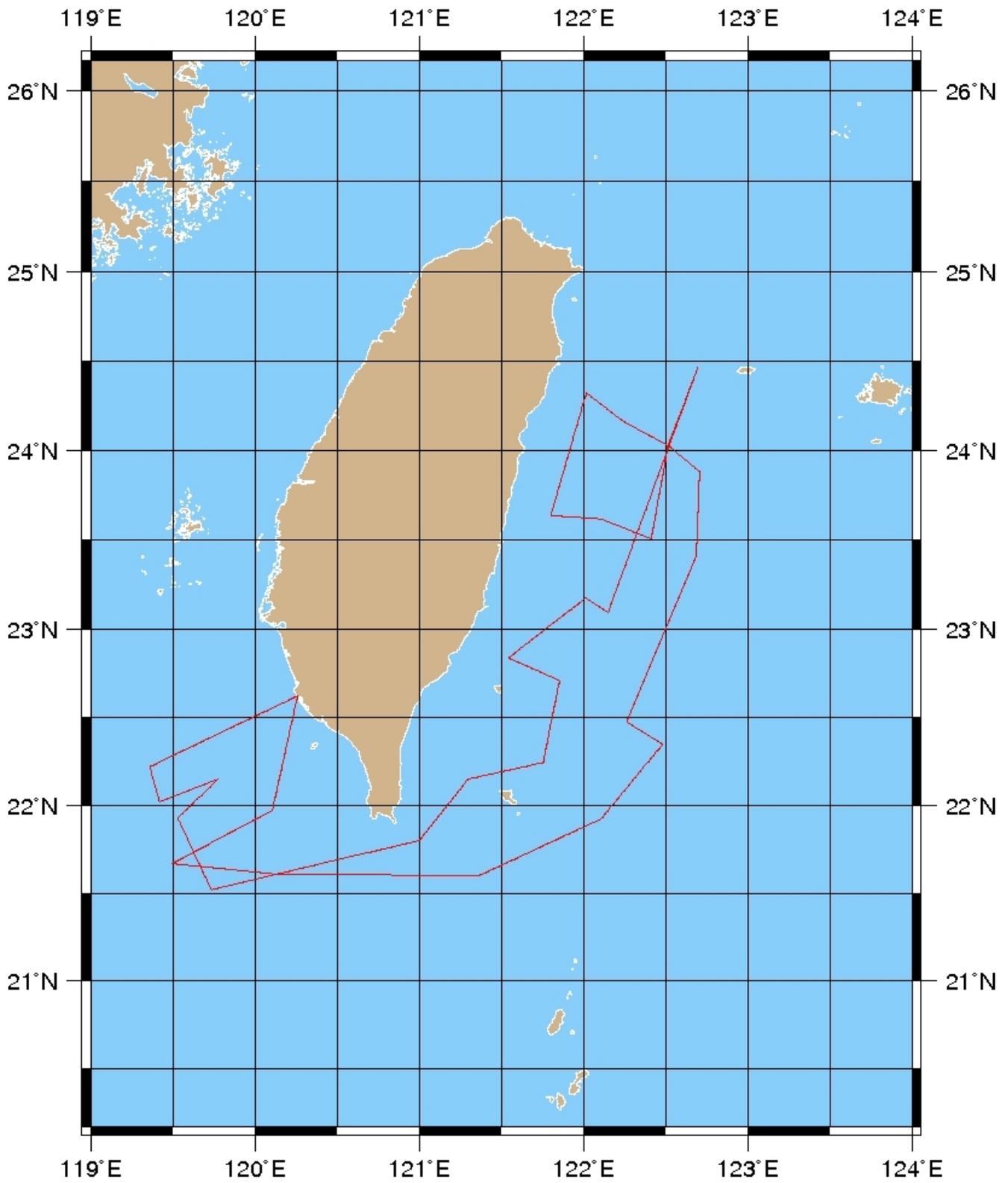
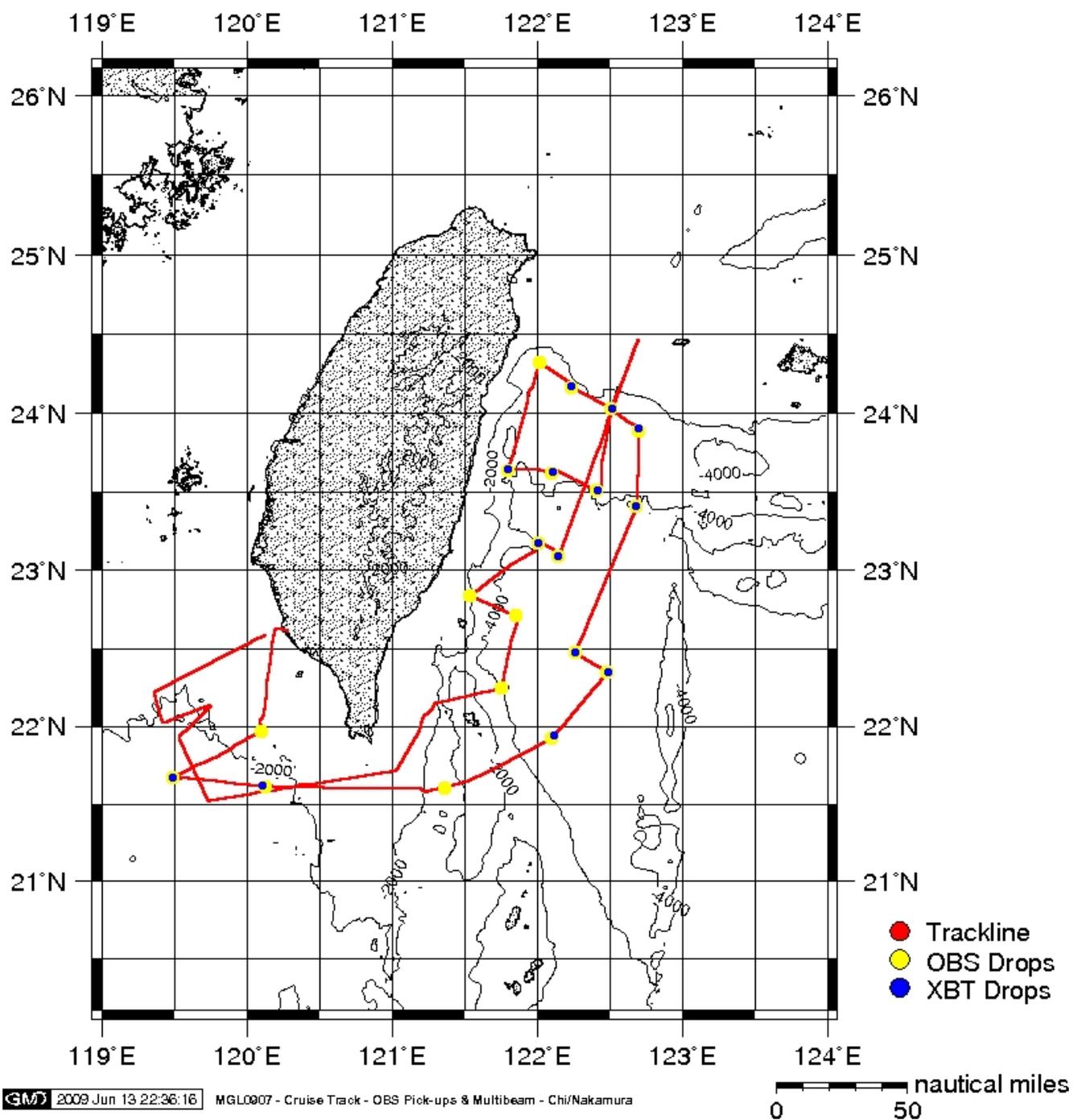


Figure 1b – OBS Pick-ups & Multibeam Survey, cruise track



II. Personnel

Science Party

1	Yoshio Nakamura	Co-Chief Scientist	Univ. Texas at Austin
2	Wu-Cheng Chi	Co-Chief Scientist	Academia Sinica
3	Francis Taming Wu	Professor	Binghamton Univ.
4	Harm Van Avendonk	Research Scientist	Univ. Texas at Austin
5	How-Wei Chen	Professor	National Central Univ.
6	Emmy T.Y. Chang	Assistant Professor	National Taiwan Univ.
7	Kuo-Chen Hao	Ph. D. Student	Binghamton Univ.
8	William R Lester	Ph. D. Student	Univ. Texas at Austin
9	Mark Ziminsky	B.S. Student	Binghamton Univ.
10	Shang-Hsueh Yu	Assistant Researcher	National Taiwan Univ.
11	Shuen-Jung Jian	Assistant Researcher	National Taiwan Univ.
12	Di-Yao Hsu	Military Observer	CNMOO, Ministry National Defense

Shipboard Technical Staff

1	Anthony Johnson	Technician-in-charge, Chief Navigator/IT
2	Ted Koczynski	Acq Shift Leader
3	David Ng	Nav/IT
4	Bern McKiernan	Acq Shift Leader
5	Thomas Spoto	Chief Sound Source/Handling
6	Patrick Ferrell	Termination Technician
7	Andrew Barclay	OBS Tech
8	Stephen Pugsley	OBS Tech
9	David Gassier	OBS Tech
10	George Lozefski	OBS Tech

Ship's Crew

1	James O'Loughlin	Captain
2	Matthew Bakis	Chief Mate
3	Chris Zimmerman	2 nd Mate
4	Breckenridge Crum	3 rd Mate
5	Sal Oboza	AB
6	Inocencio Rimando	AB
7	Ping Paragas	AB
8	Bernard Clark	AB
9	Ben Nadler	OS
10	Jeromial Webster	OS
11	Albert Karlyn	Chief Engineer
12	Matthew Tucke	1 st Asst. Engineer

13	Randall Juanzemis	2 nd Asst. Engineer
14	David Lawson	3 rd Asst. Engineer
15	Phil Neis	Electrician
16	Fernando Uribe	Oiler
17	Stephen Collier	Oiler
18	Jack Billings	Oiler
19	Hervin Fuller	Steward
20	Michael Duffy	Cook

III. Instrumentation Summary

All science 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. Seismic equipment is not listed here, refer to Part IV for the seismic summary. Other instruments not listed were not in operation.

For details on the data formats and interpretation notes, see Appendix A, Data Formats, included on the cruise archive.

Instrument Data Files

Instrument	Description	Data Set	Data Outputs	Files	Interval
FE700	Furuno FE700 Echosounder	Partial	serial logs	MGL-bath01.*	1s
EM120	Kongsberg EM120 Multibeam Sonar	Partial	raw output to file	See below	variable
			centerbeam serial logs	MGL-bath02.*	variable
DS50	Furuno DS50 Doppler Speedlog	Full	serial logs	MGL-slog01.*	1s
XBT	Sippican MK21 XBT Launcher		raw output to file	See below	n/a
			converted output to file	See below	
WX1	RM Young 5103 Weather Bird and Translator	Full	serial logs	MGL-wx01.*	1s
			mwv conversion	MGL-mwv01.*	
TSG	SeaBird SBE23 Thermosalinograph	Partial	raw serial logs	MGL-tsg.*	1s
			converted data	MGL-tsgconv.*	
CNAV	C&C Tech. CNAV DGPS Receiver	Full	serial logs	MGL-cnav.*	1s
MAG01	GeoMetrics 882 Magnetometer	None	serial logs	MGL-mag01.*	1s
BGM	Bell Aerospace BGM-3 Gravimeter	Partial	serial logs	MGL-vc01.*	1s
GYRO	Simrad GC80 Gyrocompass/AD100	Full	serial logs	MGL-gy01.*	1s
POSMV	Applanix POSMV Integrated Nav System	Full	serial logs	MGL-posmv.*	1s
SEAPATH	Kongsberg SeaPath Integrated Nav System	Full	serial logs	MGL-seapath.*	1s
STU	Sercel Streamer Tension	None	serial logs	MGL-stu1.*	10s
TAGGER	Spectrum Instruments intelligent reference TM-4	Full	serial logs	MGL-tagger01.*	shot
			filtered logs	MGL-shot01.*	shot

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

Science Navigation Instrumentation

FE700

Logging interval: 1 second

File id: bath01

The FE700 only operated to 800m depth. The echosounder is normally switched off before the unit goes out of depth. The unit was not logged during this cruise.

Interruptions greater than twenty seconds are displayed in the following table.

Log Date	Event	Comment
2009:158:00:00:00.5402		Logging officially started
2009:164:22:08:00.6948		Logging officially ended

bath01 data sample:

bath01	2008:220:13:45:42.0681	\$SDDBT,,,,,,
bath01	2008:220:13:45:42.0690	\$SDDBS,,,,,,
bath01	2008:220:13:45:42.0691	\$SDDPT,,0006.6*49
bath01	2008:220:13:45:42.1482	\$PFEC,Alarm,0,0*6F
bath01	2008:220:13:45:42.1483	\$PFEC,xdr,FORE,050*79

EM-122 Mutibeam

The EM122 multibeam sonar was operated throughout the cruise. The system is designed for deeper water, and does not track ground well in less than 50m of water.

EM122 swath data is saved to the cruise archive under MGL0903/multibeam. Center beam depth is recorded separately to serial log. MicroSV sound velocity was used up through Feb 28. TSG sound velocity was used beginning 0900 on Feb 28.

Logging interval: variable with water depth

File id: bath02

Interruptions greater than sixty seconds are displayed in the following table.

Log Date	Event	Comment
2009:158:08:26:07.2890		Logging officially started
2009:158:10:19:57.8010 – 2009:158:12:58:21.7396	Missing data	Instrument off for OBS acoustics
2009:158:16:32:15.1197 – 2009:158:22:06:39.8452	Missing data	Instrument off for OBS acoustics
2009:159:00:31:20.4079 – 2009:159:00:49:35.2291	Missing data	Instrument off for OBS acoustics
2009:159:00:49:35.2291 – 2009:159:01:04:01.3198	Missing data	Instrument off for OBS acoustics
2009:159:01:04:26.5538 – 2009:159:02:37:28.8563	Missing data	Instrument off for OBS acoustics
2009:159:04:43:22.3581 – 2009:159:14:16:49.2146	Missing data	Stopped logging; 24nm

		zone
2009:159:15:25:18.4023 – 2009:159:15:29:13.0688	Missing data	Instrument off for OBS acoustics
2009:159:15:29:46.6465 – 2009:159:17:51:15.3409	Missing data	Instrument off for OBS acoustics
2009:159:20:44:33.2749 – 2009:159:23:19:48.1981	Missing data	Instrument off for OBS acoustics
2009:160:00:49:27.3875 – 2009:160:03:25:09.5007	Missing data	Instrument off for OBS acoustics
2009:160:09:08:27.7750 – 2009:160:11:31:33.5754	Missing data	Instrument off for OBS acoustics
2009:160:14:14:42.7399 – 2009:160:16:14:15.9092	Missing data	Instrument off for OBS acoustics
2009:160:17:29:27.4742 – 2009:160:21:13:05.1412	Missing data	Instrument off for OBS acoustics
2009:161:02:02:19.6854 – 2009:161:03:38:21.0537	Missing data	Instrument off for OBS acoustics
2009:161:05:24:19.3007 – 2009:161:05:32:54.3528	Missing data	Reason unrecorded
2009:161:05:33:40.9461 – 2009:161:06:00:52.0372	Missing data	BIST Test
2009:161:06:15:55.1762 – 2009:161:06:53:18.5848	Missing data	Computer maintenance
2009:161:08:20:59.7632 – 2009:161:11:19:46.1339	Missing data	Reason unrecorded
2009:161:12:32:21.0505 – 2009:161:14:30:33.7736	Missing data	Instrument off for OBS acoustics
2009:161:16:16:08.9976 – 2009:161:17:56:41.5230	Missing data	Instrument off for OBS acoustics
2009:161:20:48:22.1892 – 2009:161:22:57:29.9647	Missing data	Instrument off for OBS acoustics
2009:162:01:35:52.2351 – 2009:162:01:58:13.9132	Missing data	Instrument off for OBS acoustics
2009:162:12:03:06.5554 – 2009:162:14:33:37.2289	Missing data	Instrument off for OBS acoustics
2009:162:15:26:04.8891 – 2009:162:20:35:42.9895	Missing data	Instrument off for OBS acoustics
2009:163:01:01:15.3071 – 2009:163:02:14:42.0826	Missing data	Instrument off for OBS acoustics
2009:163:04:01:36.6308 – 2009:163:08:06:59.1682	Missing data	Instrument off for OBS acoustics
2009:163:11:25:32.2702 – 2009:163:17:08:51.4718	Missing data	Instrument off for OBS

		acoustics
2009:164:00:25:35.0772 – 2009:164:00:45:50.1802	Missing data	Reason unrecorded
2009:164:00:46:23.8040 – 2009:164:00:48:52.1464	Missing data	Reason unrecorded
2009:164:22:08:01.1567		Logging officially ended

Bath02 data format

bath02	2008:192:00:00:12.6663	\$KGDPT,2938.25,0.0,12000.0*4a
bath02	2008:192:00:00:30.3301	\$KGDPT,2954.08,0.0,12000.0*4f
bath02	2008:192:00:00:46.5831	\$KGDPT,2958.32,0.0,12000.0*4a
bath02	2008:192:00:01:03.0606	\$KGDPT,2954.18,0.0,12000.0*4e

DS50 Speedlog

File id: slog01

Logging interval: 1 second

The Furuno DS-50 is a Doppler speed log. It was in operation for the length of the cruise.

Interruptions greater than ten seconds are displayed in the following table.

Log Date	Event	Comment
2009:158:00:00:01.8775		Logging officially started
2009:164:22:08:23.1655		Logging officially ended

Slog01 data format:

slog01	2008:231:00:00:00.0744	\$VDVHW,,T,,M,09.68,N,17.93,K*4C
slog01	2008:231:00:00:00.1906	\$VDVBW,009.68,000.09,A,009.68,000.09,V*46
slog01	2008:231:00:00:00.1908	\$VDVLW,0005960.30,N,0005960.30,N*5F

RMYoung Integrated Weather

File id: wx01

Logging interval: 1 second

The weather station is used to log wind speed, direction, air temperature, and barometric pressure. The unit was functioning during the cruise. See also mww01 below.

Log Date	Event	Comment
2009:158:00:00:00.5090		Logging officially started

2009:164:22:08:37.3302		Logging officially ended
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File id: mwv01

Logging interval: 1 second

The weather station is used to log wind speed, direction, air temperature, and barometric pressure. The wx01 strings are converted in real-time to produce mwv strings for the DP. The mwv output is strictly a derivative of the w01 output. See also the wx01 description above.

Interruptions greater than ten seconds are displayed in the following table.

Log Date	Event	Comment
2009:158:00:00:00.5090		Logging officially started
2009:164:22:08:09.3305		Logging officially ended

Mwv01 data sample:

mwv01 2008:231:00:00:00.5173	6.1	6.6	6.6	8.8	354	321	5	0.0	0.0	0.0
0.0 355 355	0	*****	*****	*****	*****	8 8	8	1009.7		
mwv01 2008:231:00:00:01.5172	5.9	6.6	6.6	8.8	353	321	5	0.0	0.0	0.0
0.0 355 355	0	*****	*****	*****	*****	8 8	8	1009.6		
mwv01 2008:231:00:00:02.5190	6.3	6.6	6.6	8.8	354	321	5	0.0	0.0	0.0
0.0 355 355	0	*****	*****	*****	*****	8 8	8	1009.8		

CNAV

Logging interval: 1 second

File id: cnav

The C-NAV is a global satellite-based differential receiver. This is the best individual receiver currently on the ship. This system was operational during the cruise.

Interruptions greater than ten seconds are displayed in the following table.

Log Date	Event	Comment
2009:158:00:00:00.0180		Logging officially started
2009:164:16:14:19.9361		Logging officially ended

Cnav data format:

cnav 2008:231:00:00:00.6936	\$GPGGA,000000.00,1434.94372,N,10444.85748,W,2,8,1.1,15.52,M,-20.60,M,9,0108*65
cnav 2008:231:00:00:00.7137	\$GPVTG,006.5,T,,M,9.64,N,17.85,K*53

GC80 Gyrocompass

The GC80 gyrocompass is installed on the bridge and used for ship and seismic navigation.

File id: gy01

Logging interval: 1 second

The GC80 gyrocompass operated normally.

Interruptions greater than ten seconds are displayed in the following table.

Log Date	Event	Comment
2009:158:00:00:00.0932		Logging officially started
2009:164:22:08:07.6532		Logging officially ended

Gy01 data format:

gy01	2008:231:00:00:00.4110	\$PTKM,HEALM,0000,0,G1*09
gy01	2008:231:00:00:00.6395	\$HEHDT,005.8,T*22
gy01	2008:231:00:00:00.6396	\$HEROT,-005.25,A*34
gy01	2008:231:00:00:01.6394	\$HEHDT,005.7,T*2D
gy01	2008:231:00:00:01.6395	\$HEROT,-004.53,A*34

POSMV Integrated Nav

The POS/MV is a receiver that uses CNAV input in addition to its own antennae, an inertial sensor and optional RTG, WTC, or WAAS corrections and a Kalman filter to produce a smooth navigation output and very accurate heading.

The PosMV operated normally during the cruise.

File id: posmv

Logging interval: 1 second

Interruptions greater than ten seconds are displayed in the following table.

Log Date	Event	Comment
2009:158:00:00:00.3506		Logging officially started
2009:164:22:08:11.5257		Logging officially ended

Posmv data format:

posmv	2008:231:00:00:00.0885	\$INGGA,235959.842,1434.95002,N,10444.85734,W,2,,1.1,12.71,M,,9.0,0108*2E
posmv	2008:231:00:00:00.0889	\$INHDT,15.0,T*11
posmv	2008:231:00:00:00.2047	\$INVTG,7.0,T,,M,9.7,N,17.9,K*46
posmv	2008:231:00:00:00.3208	\$INGST,235959.842,,0.9,0.9,0.0,0.9,0.9,2.5*51

```
posmv 2008:231:00:00:00.4411 $PASHR,235959.842,15.05,T,-
0.58,0.48,0.15,0.069,0.069,0.045,2,0*05
posmv 2008:231:00:00:00.4412 $INZDA,235959.0000,17,08,2008,,*73
```

SeaPath Integrated Nav

The Kongsberg Seapath is an integrated navigation system. It was in operation for the length of the cruise.

Logging interval: 1 second

File id: seapath

Interruptions greater than ten seconds are displayed in the following table.

Log Date	Event	Comment
2009:158:00:00:00.1293		Logging officially started
2009:164:22:08:18.5384		Logging officially ended

Seapath data format:

```
seapath 2008:231:00:00:00.0504 $INZDA,235959.99,17,08,2008,,*73
seapath 2008:231:00:00:00.1686
$INGGA,235959.99,1434.953109,N,10444.859147,W,2,08,1.1,-
16.30,M,,M,1.0,0291*70
seapath 2008:231:00:00:00.1687 $INVTG,5.97,T,,M,9.7,N,,K,D*03
seapath 2008:231:00:00:00.1688 $INHDT,5.82,T*1A
```

Spectrum Instruments TDM-4 Event Logger

The Event logger time stamps time-break triggers from DigiShot in all fire modes.

File id: tagger1

Logging interval: 1 second

Interruptions greater than ten seconds are displayed in the following table.

Log Date	Event	Comment
2009:158:00:00:00.0290		Logging officially started
2009:164:22:08:24.8607		Logging officially ended

Tagger1 data format:

```
tagger1 2008:231:00:00:00.0383 #51,08182008,000001
tagger1 2008:231:00:00:00.2027 #79,00000000
tagger1 2008:231:00:00:00.2948 #68,2
tagger1 2008:231:00:00:00.3689 #70,0
tagger1 2008:231:00:00:00.4010 #56,-00000
```

tagger1	2008:231:00:00:00.4210	#72,FF
---------	------------------------	--------

SBE-23 Thermosalinograph

The Seabird TSG output is logged by LDS to the “tsg” set. Output is also converted in real-time and recorded to the “tsgconv” data set.

File id: tsg

Logging interval: 1 second

Interruptions greater than ten seconds are displayed in the following table.

2009:158:16:59:05.0042		Logging officially started
2009:159:04:35:24.9458 – 2009:159:14:36:34.8946	Missing data	Inside 24 nm zone
2009:161:00:56:34.7231 – 2009:161:12:40:34.6654	Missing data	Inside 24 nm zone
2009:164:18:10:14.2620		Logging officially ended

tsg data sample:

tsg	2008:231:00:00:01.9179	B479CB5528A6D6ABFB2D
tsg	2008:231:00:00:11.9187	B474CB5428A799ABBB2D
tsg	2008:231:00:00:21.9176	B46FCB5328A70CAB8B2D

File id: tsgconv

Logging interval: 1 second

2009:158:16:59:05.0042		Logging officially started
2009:159:04:35:24.9458 – 2009:159:14:36:34.8946	Missing data	Inside 24 nm zone
2009:161:00:56:34.7231 – 2009:161:12:40:34.6654	Missing data	Inside 24 nm zone
2009:164:02:36:04.3608 – 2009:164:04:00:34.3351	Missing data	Reason unrecorded
2009:164:18:10:14.2620		Logging officially ended

tsgconv data sample:

tsgconv	2008:231:00:00:01.9179	B479CB5528A6D6ABFB2D	1531.59	28.85	24.35	5.53
33.74						
tsgconv	2008:231:00:00:11.9187	B474CB5428A799ABBB2D	1531.61	28.85	24.36	5.53
33.74						
tsgconv	2008:231:00:00:21.9176	B46FCB5328A70CAB8B2D	1531.60	28.85	24.35	5.53
33.74						

BGM-3 Gravimeter

File id: vc01

Logging interval: 1 second

Interruptions greater than ten seconds are displayed in the following table.

2009:158:00:00:00.9899		Logging officially started
2009:159:04:35:30.0420 – 2009:159:14:36:24.0576	Missing data	Inside 24 nm zone
2009:161:00:56:42.1175 – 2009:161:12:40:27.1367	Missing data	Inside 24 nm zone
2009:164:18:10:22.2674		Logging officially ended

Mk21 XBT System

Files: *.RDF,*.EDF

Many XBT drops were made during this cruise. Refer to the Expendable_Drops spreadsheet in the operations directory of the cruise archive.

IV. Seismic Summary

A. Acquisition Parameter Table

Acquisition Parameter Table	
AcquisitionParameterID	N/A
FieldActivityID	MGL0907
ReceiverType	N/A
SourceType	N/A
Acquisition System Name	N/A
Acquisition System Type	N/A
Seismic_Nav_System	C-Nav primary
Survey_datum	WGS84
Navigation Reference Point	N/A
NRP_to_Antennae	N/A
NRP to source	N/A
Antenna_to_Source	N/A
Source_to_Near_Channel	N/A
Number_of_channels_recorded	N/A
Number_of_cables	N/A
Number_of_channels_each_cable	N/A
Channel_length	N/A
Cable_length	N/A
Cable_spacing	N/A
Near_Channel_Number	N/A
Cable_depth	N/A
Number_source_arrays	N/A
Alternate_Shooting	N/A
Source_array_separation	N/A
Source_volume	N/A
Source_pressure	N/A
Source_make,model	N/A
Source_number	N/A
Source_depth	N/A
Shot_control	N/A
Shot_Interval	N/A
Sample_interval	N/A
Record_length	N/A
Compass_birds	N/A
Tail_buoy_Positioning	N/A
Recording_delay	N/A

B. Seismic Overview

No seismic data collection on this cruise.

V. Client Instrumentation

No OBS deployed.

VI. RV Langseth Gravity Tie Information

Not available.

VII. Archive Contents

Key files are bolded.

MGL0907/docs	Cruise documents and logs
MGL0907/docs/elog	Cruise elog
MGL0907/docs/map	Cruise maps, track map
MGL0907/docs/Operations/	Operations documents
MGL0907/docs/Operations/Daily Reports	Cruise Daily Reports from Tech-in-charge
MGL0907/docs/Operations/ Issued Clearances	Clearance Documents
MGL0907/docs/Operations/ShipmentDocuments	Shipment logs/invoices
MGL0907/docs/Operations/Waypoints	Waypoint files
MGL0907/docs/Personnel	Personnel rosters, org chart, bunk and phone lists
MGL0907/docs/Report	Cruise Report and supplemental docs
MGL0907/docs/Report/MGL0907_Data Report.doc	This file
MGL0907/docs/Report/ Taiger Final Report	Job Book with Nav & Technical Support Final Report
MGL0907/docs/ScreenCaps	Screen captures
MGL0907/docs/tapelogs	Backup tape index / log files
MGL0907/processed	Processed data
MGL0907/processed/svp	Sound velocity profiles
MGL0907/raw	Raw data
MGL0907/raw/knudsen	Raw Knudsen sub-bottom profiler data
MGL0907/raw/multibeam	Raw EM120 data
MGL0907/raw/serial	Underway data: gps, tsg, weather, etc.
MGL0907/raw/XBT	Raw XBT data