PAPUA NEW GUINEA CRUISE REPORT
HIGH RESOLUTION SINGLE CHANNEL SEISMIC SURVEY
CRUISE ON THE R/V FRANKLIN
19 MAY 1997 TO 04 JUNE 1997

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The following is a technical summary for two legs of the Papua New Guinea (PNG) cruise aboard the R/V *Franklin* beginning on 5/24 and ending on 6/4/97. The PNG single channel high resolution survey was a joint project between the Virginia Institute of Marine Science (VIMS) of William and Mary, Australian Institute of Marine Science (AIMS), James Cook University (JCU), Stony Brook University of New York (SUNY), and Rice University. The cruise incorporated single channel and side scan sonar.

Seismic acquisition was digital using the Elics digital acquisition system, D2x. Seismic data collected in compressed Elics format and stored on 2.3 GB Exabyte tapes. Navigation was GPS acquired every shot (1 to 2 seconds) and input directly to the Elics system through the RS232 serial port. Energy sources were 1 SIG-100 sparker and ORE boomer in conjunction with a Benthos 10 hydrophone single channel 3 m streamer. Huntec 750 J power supply was used to supply energy to the sparker and boomer sources. On the first leg of the cruise 15 seismic lines were collected in the Bismarck Sea on the northeast side of PNG. On the second leg 16 seismic lines were collected in the Gulf of Papua on the south side of PNG.

Departed IAH at 1405 on 5/19/97 via UA arrive in LAX at 2240. Depart LAX at 2240 on 5/19/97 via UA and arrive in Sydney, Australia at 0605 on 5/21/97. Departed Sydney for Madang, Papua New Guinea (PNG) transiting through Port Moresby, PNG, arriving at 1600 on 5/21/97. Accommodations were at the Madang Resort Hotel from 5/21 - 23/97. The R/V *Franklin* (CSIRO) arrived at 0900 on 5/23/97, boarded vessel at 1030 to unpack science cargo in aft cargo hold. We boarded the vessel to begin Leg 1 at 0800, ship departed dock at 1030 on 5/24/97.

Leg 1 cruise objectives: obtain grab samples, piston cores, and seismic in the Bismarck Sea off of the Sepik River, then return to Port of Madang for science party change. Leg 2 cruise objectives: obtain grab samples and seismic in the Gulf of Papua. AIMS, JCU, SUNY were responsible for the grab samples and piston cores, VIMS, JCU, and Rice were responsible for the seismic. Seismic on both legs included a combination of high resolution sources (SIG 100 element sparker and ORE Boomer), 3.5 KHz sub-bottom profiler, and EdgeTech Side Scan Sonar (260-TH recorder, 380 tape drive, and 272 tow fish). The was not enough energy from the Huntec power supply to operate the SIG 200 element sparker.

Last seismic line ended at 1730 on 6/3/97 to begin transit to Port Moresby, PNG. During transit the all seismic gear was packed and secured for shipment. Arrived in Port Moresby at 0730 on 6/4/97. Departed for the airport at 0900. Departed PNG at 1130 and arrived in Sydney, Australia at 2100. Departed Sydney at 0600 on 6/4/97 for San Francisco, arrived at 0720 on 6/4/97. Remained in SF until 6/6/97 to visit at Stanford University. Departed SF for IAH at 1100, arrived at 1730.

Seismic acquisition:

Parameters	SIG-100	ORE Boomer
Shooting Interval =	1000 - 2000	1000 ms
Sampling Frequency =	5000 & 6000	8000 Hz
Recording Length =	896 &1024	896 ms
Energy =	375 - 750	375 J
High Pass Filter Digital =	240	900 Hz
Low Pass Filter Digital =	960	1500 Hz
Source distance from ship =	20	20 m
Source depth =	0.1	0.3 m
Distance to 1st phone from ship =	25	25 m

Total Seismic Statistics: 4,015 minutes (66.92 hr.) of seismic data collected
476.29 MB of data on Tape 1 and Tape 2 (archive) in Index 1 - 6
157,662 shots using both the SIG-100 sparker and ORE boomer
343 nm. of track lines estimated (5 kts.@ 2.57 m/s)