

R/V Shumpu Maru Cruise SU9307

1 Cruise Narrative

1.1 Highlights

Expedition Designation
Shumpu Maru Cruise SU9307

Chief Scientists
Leg 1 and Leg 2: Ryohei OKADA, Kobe Marine observatory (KMO)

Ship
R/V Shumpu Maru

Ports of Call
Leg 1: Kobe to Kagoshima
Leg 2: Kagoshima to Kochi

Cruise Dates
Leg 1: July 13 to July 19, 1993
Leg 2: July 24 to July 28, 1993

1.2 Cruise Summary

The cruise track and station locations of leg 1 and Leg 2 are shown in Figure 1.

The ship departed Kobe on July 13, 1993, and made 3 CTD/rosette stations of a section PR17. 2 XBT stations were made after CTD/rosette stations. To first CTD/rosette station the ship reached at 1402 UTC on July 16, from last station departed at 1055 UTC on July 17. (Leg 1)

The ship departed Kagoshima on July 24, 1993, and made 3 CTD/rosette stations of a section pr17. 1 XBT stations were made between CTD/rosette stations. To first CTD/rosette station the ship reached at 1128 UTC on July 25, from last station departed at 2104 UTC on July 25. (Leg 2)

The CTD is EG&G NBIS Mark III B (6500 db type, no oxygen sensor). Water samples were collected from 1.7 liter Niskin bottles mounted on the General Oceanics Rosette multisampler. However, surface water samples were collected by a bucket.

1.3 List of Principal Investigators

The principal investigators for all the parameters measured on the cruise are listed in Table 1.

Table 1: Principal Investigators for All Measurements

Name	Responsibility	Affiliation
Sukeyoshi TAKATANI	Oxygen, Nutrients	KMO
Ryohei OKADA	CTD, S	KMO

1.4 List of Cruise Participants

The cruise participants for leg 1 and leg 2 are listed in Table 2.

Table 2: Cruise Participants for leg 1 and leg 2

Name	Responsibility	Affiliation
Ryohei OKADA	Chief Scientist	KMO
	CTD Hardware	
Sukeyoshi TAKATANI	Oxygen, Nutrients	KMO

Nobuo SATO	Oxygen,Nutrients	KMO
Satoshi SUGIMOTO	CTD Software	KMO
Akira NAKADATE	Oxygen,Nutrients	KMO
Keiichi SATO	Watch Stander	KMO
Kouji HAYASHI	Watch Stander	KMO
Toshiaki BABA	Watch Stander	KMO
Hiroki SUZUKI	Watch Stander	KMO

2 Measurement Techniques and Calibrations

2.1 CTD

The CTD is EG&G NBIS Mark III B(6500 db type, no oxygen sensor).

A HP 9000 Series 300 model 330(Hewlett Packard) with a 4 MByte of memory was used as the primary data collection device.

The temperature and pressure sensor were calibrated at the calibration facility of SŶEŶA CO., LTD before the cruise. The results are shown in Table 3.

Temperature and pressure(increasing) calibration values are used to correct CTD data, by linear interpolation inside the calibrated regime. CTD data outside of the regime in corrected by the calibration values on the boundary, at the each side.

Notice that the upcast pressure data is corrected by Pressure(increasing), not Pressure(dcreasing) in table 3.

Table 3: The temperature and pressure sensor calibration values

Temperature(Calibrated on January 8, pre-cruise)

Standard Temperature	CTD Temperature	Difference
0.9780	1.0005	-0.0226
1.9783	1.9998	-0.0215
5.0641	5.0858	-0.0216
7.5101	7.5325	-0.0224
10.2024	10.2261	-0.0237
12.5013	12.5257	-0.0244
15.0366	15.0631	-0.0265
20.0372	20.0648	-0.0276
25.0080	25.0375	-0.0296
30.0841	30.1176	-0.0335

Pressure(increasing, Calibrated on January 1, pre-cruise)

Standard Pressure	CTD Pressure	Difference
0.0	0.2	-0.2
98.0	97.4	0.6
293.9	292.5	1.5
489.9	489.7	0.2
979.8	982.9	-3.1
1959.6	1963.7	-4.1
2939.5	2941.2	-1.7
3919.3	3918.6	0.7
4899.1	4897.1	2.0
5878.9	5877.3	1.6

Pressure(decreasing, calibrated on September 6, pre-cruise)

Standard Pressure	CTD Pressure	Difference
0.0	1.6	-1.6
98.0	101.4	-3.4
293.9	298.6	-4.7
489.9	496.3	-6.4
979.8	988.2	-8.4
1959.6	1965.9	-6.3

