

R/V Shumpu Maru Cruise SU9402

## 1 Cruise Narrative

### 1.1 Highlights

#### Expedition Designation

Shumpu Maru Cruise SU9402

#### Chief Scientists

Leg 2: Kouji HAYASHI, Kobe Marine Observatory (KMO)

#### Ship

R/V Shumpu Maru

#### Ports of Call

Leg 2: Komatushima to Kochi

#### Cruise Dates

Leg 2: February 13 to February 20, 1994

### 1.2 Cruise Summary

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

The ship departed Komatushima on February 13, 1994, and made 2 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 2314 UTC on February 17, from last station departed at 0859 UTC on February 18.

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 2 are listed in Table 2.

Table 2: Cruise Participants for leg 2

Name	Responsibility	Affiliation
Kouji HAYASHI	Chief Scientist	KMO
Sukeyoshi TAKATANI	Oxygen, Nutrients	KMO
Ryohei OKADA	CTD Hardware	KMO
Nobuo SATO	Oxygen, Nutrients	KMO
Hiroki SUZUKI	CTD Software	KMO
Akira NAKADATE	Oxygen, Nutrients	KMO
Keiichi SATO	Watch Stander	KMO
Hayato WAKIMOTO	Watch Stander	KMO
Toshiaki BABA	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 SYEYA 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 interpolatin inside the the calibrated regime. CTD data outside of the regime is 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(decreasing) in Table 3.

Table 3: The temperature and pressure sensor calibration values

Temperature(Caliblated on December 15, pre-creise)

Standard Temperature	CTD Temperature	Difference
0.0409	0.0379	0.0030
1.0037	1.0001	0.0036
2.0041	2.0002	0.0039
3.0045	3.0004	0.0041
4.0044	4.0001	0.0043
5.0046	5.0003	0.0044
6.0050	6.0005	0.0045
7.0045	6.9998	0.0047
8.0052	8.0003	0.0049
9.0050	8.9998	0.0052
10.0050	9.9999	0.0051
11.0050	11.0001	0.0049
12.0053	12.0006	0.0047
15.0512	15.0471	0.0042
17.5359	17.5320	0.0039
20.0594	20.0562	0.0031
25.0204	25.0181	0.0022
29.9502	29.9493	0.0009

Pressure(increasing, Caliblated on December 28, pre-cruise)

Standard Pressure	CTD Pressure	Difference
0.0	1.6	-1.6
98.0	98.0	0.0
293.9	293.4	0.5
489.9	489.2	0.6
979.7	980.3	-0.6
1959.4	1960.5	-1.1
2939.1	2937.7	1.4
3918.8	3915.7	3.1
4898.5	4895.6	2.9
5878.2	5878.3	-0.1

Pressure(decreasing, calibiated on December 28, pre-cruise)

Standard Pressure	CTD Pressure	Difference
0.0	0.4	-0.4
98.0	100.8	-2.8
293.9	298.0	-4.1
489.9	495.2	-5.4
979.7	986.4	-6.7

