OCEANOGRAPHICAL OBSERVATIONS
IN THE INDIAN OCEAN IN 1964
H.M.A.S. *DIAMANTINA*
Cruise Dm2/64

OCEANOGRAPHICAL CRUISE REPORT NO. 36

DIVISION OF FISHERIES AND OCEANOGRAPHY
COMMONWEALTH SCIENTIFIC AND INDUSTRIAL
RESEARCH ORGANIZATION, AUSTRALIA 1967

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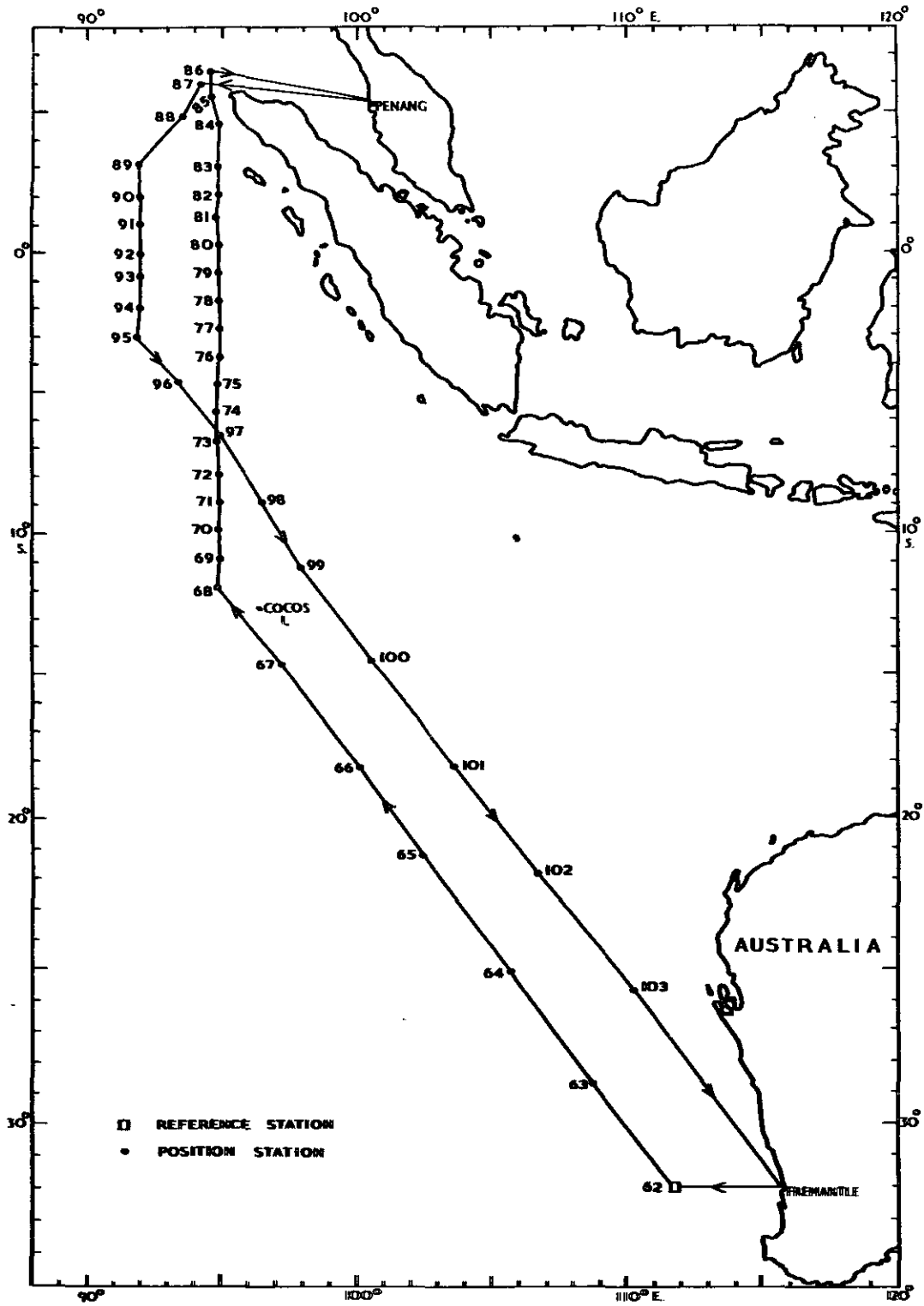

Fig. 1—Track chart

OCEANOGRAPHICAL CRUISE REPORT

No. 36

Oceanographical Observations in the Indian Ocean in 1964

H.M.A.S. Diamantina

Cruise Dm2/64

March 24 - April 21, 1964

I. INTRODUCTION

This report records the data collected during the second cruise in 1964 of H.M.A.S. Diamantina, Royal Australian Navy oceanographical frigate.

Objectives

To study in detail the hydrological structure in the equatorial region along 92° and 95°E. and to look for indications of an Indian Ocean under-current, the development of which was suggested by earlier studies in the region.

Itinerary

The cruise began at Fremantle on March 24, worked SCOR-UNESCO Reference Station 1, a line of stations north-west to 12°S., 95°E., and then a line of stations along 95°E. to Penang. The cruise left Penang on April 9, worked a line of stations along 92°E. to 3°S., and then a line of stations back to Fremantle.

Scientific Personnel

D. Rochford (Cruise Leader)
F. Davies
N. Dyson
J. Prothero

The analyses of hydrological samples were done in the ship's laboratory by Messrs Davies, Dyson, and Prothero. Nitrate analyses were done at Cronulla by Mr Klye.

The data were processed, under the direction of Mr Hedge, by Mrs Bailey, Miss Hammond, Mrs Sander, and Miss Wanstall. The track chart was prepared by Mr Breach.

II. WORK ACCOMPLISHED

Forty-two stations were worked (Dm2/62/64-Dm2/103/64). At each station a bathythermograph cast was made and surface and subsurface hydrology samples collected.

TABLE 1

WORK DONE AT EACH STATION

Stn No.	BT	Hydrology Surface to Depth (m)	Stn No.	BT	Hydrology Surface to Depth (m)
62	+	4500	83	+	900
63	+	5000	84	+	1500
64	+	5000	85	+	1000
65	+	5000	86	+	1400
66	+	5000	87	+	1500
67	+	4300	88	+	1400
68	+	5000	89	+	1500
69	+	1500	90	+	3800
70	+	4500	91	+	1500
71	+	1500	92	+	4000
72	+	4500	93	+	1500
73	+	1500	94	+	4000
74	+	4500	95	+	1500
75	+	1500	96	+	4000
76	+	4500	97	+	4000
77	+	700	98	+	4000
78	+	1500	99	+	4000
79	+	1500	100	+	1500
80	+	4000	101	+	1500
81	+	1500	102	+	1500
82	+	4500	103	+	1500

BT Bathythermograms

III. METHOD OF COLLECTION AND ANALYSIS OF SAMPLES

1. Physics

Temperature.- Water temperatures were taken with deep-sea reversing thermometers: protected thermometers with a range of -2° to 30°C, and unprotected thermometers with a range of -2° to 30°C, or -4° to 60°C. The accuracy of the temperatures is considered to be $\pm$ 0.03 degC.

Bathythermograms.- A 900 ft bathythermogram was used at the stations indicated in Table 1. Slides were digitized according to the method of the U.S. National Oceanographic Data Centre (1964) and the results transferred to punched cards.

Thermometric Depth.- Depth calculations were made by the method described by Pollak (1950), and are considered accurate to $\pm$ 15 m at depths greater than 1000 m and to 1% above that depth.

Sigma-t.- Sigma-t values were calculated by computer, from temperature and salinity values, using the equations of Knudsen (La Fond 1951).

2. Chemistry

Salinity.- Salinity was measured on board with an inductive salinometer (Brown and Hamon 1961).

Dissolved Oxygen.- A version of the standard Winkler method was used to determine the amount of dissolved oxygen in the sea-water samples. The version used is a modification of that described by Thompson and Robinson (1939) and differs in some respects from the revision by Jacobsen, Robinson, and Thompson (1950). Potassium iodate was used as the iodometric standard, and the reagents necessary to fix the oxygen in solution were used at different concentrations. Duplicate titrations were made on approximately every tenth sample. Saturation values were calculated by computer using the simpler of the equations given by Richards and Corwin (1956) -

$$O_2(\%\ \text{Satn.}) = \frac{O_2(\text{ml/l}) \times (33.5 + T^\circ C) \times 100}{332.4 - (1.854 \times S‰)} \quad .$$

Inorganic Phosphate.- The method of Atkins (1923) was used with 1 ml molybdate reagent (300 ml 10% w/v ammonium molybdate and 100 ml 50% v/v sulphuric acid) and 0.1 ml 1% w/v stannous chloride diluted afresh from a 40% stock solution in hydrochloric acid, which was kept under paraffin. The reagents were dispensed automatically by a piston dispenser.

Standard phosphate solutions were made up in distilled water. At air temperatures less than 25°C, analyses were carried out in batches of 10; readings were begun within 10 min of adding reagents, and completed within 10 min. At air temperatures greater than 25°C, batches of 6 were analysed; readings were begun within 5 min of adding reagents, and completed within 7 min. Each batch was compared with a distilled water blank and a 0.65 µg-atom/l standard in a Hilger Spekker absorptiometer using 4 cm

cells and Ilford 608 filters. Each day a complete calibration was made using standards up to 3.25 µg-atom/l. Results are given as µg-atom/l with no correction for salt error and are precise to ± 10% for values less than 0.5 µg-atom/l and to ± 5% for higher values. To correct for salt effects, the results given can be multiplied by 1.15.

Total Phosphorus.- 100 ml samples were drawn from the Nansen bottles into 150 ml Pyrex conical flasks, 0.2 ml of 72% v/v perchloric acid was added and digestion at 200°-250°C carried out immediately on a sand tray. After evaporation of water, heating was continued until fuming of the salt residue began. The samples were then allowed to cool and 100 ml of distilled water and 2 drops of 2% w/v phenolphthalein were added. If alkaline, perchloric acid was added until a slight acidity persisted. The flasks were allowed to stand for about 24 hr to allow the salts to dissolve. Phosphate was then determined as described above for inorganic phosphate. Results are given as µg-atom/l, with no salt correction. To correct for salt effects, the results given can be multiplied by 1.15.

Nitrate.- After collection, water samples were stored in plastic bottles and preserved with 2 drops of saturated $HgCl_2$. Nitrate was determined at Cronulla by the strychnidine method (Rochford 1947). The reagent was prepared by adding 0.64 g strychnidine to a litre of nitrate-free sulphuric acid. Five ml of this reagent were added, with minimum agitation, to 5 ml seawater or standard nitrate solution. The standards were made up in a mixture of equal volumes of artificial seawater and nitrate-free sulphuric acid. The standards and samples were shaken to distribute the reagent, and the colour developed for 2 hr. The solutions were read in a Unicam SP 600 spectrophotometer at a wavelength of 530 mµ using a 5 mm cell. Samples with an absorbance greater than that of the standard corresponding to 14.4 µg-atom/l were diluted with artificial seawater-sulphuric acid mixture before reading. Results are given in µg-atom/l.

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IV. DATA SHEETS

The data were processed in a C.D.C. 3600 Computer. An explanation of the headings is given before the listing.

DATA

HYDROLOGY

EXPLANATION OF HEADINGS

Hydrology

STATION	Gives the station identification. For example, Dm2/62/64 signifies the 62nd station worked by Diamantina in 1964, on her 2nd cruise for that year
DATE	Given as day/month/year
TIME	Given in Zone Time, and is the time at the beginning of the first cast. Zone Time throughout the cruise was Code H, G.M.T. + 8 hours
LATITUDE LONGITUDE	Given in degrees and minutes
SONIC DEPTH	Given in metres, measured at standard sound velocity of 800 fm (1463 m) per second
AIR TEMP. WET DRY	Air temperatures recorded from wet and dry bulb thermometers in °C
WIND DIR. SP.	Wind direction and speed are coded using Tables 8 and 9 in U.S. Hydrogr. Office (1955)
ANEM. HEIGHT	The average height of the anemometer above sea level, given in metres
CLOUD TYPE AMT.	Cloud type and amount are coded using Tables 2 and 3 in U.S. Hydrogr. Office (1955)
VIS.	Visibility is coded using Table 4 in U.S. Hydrogr. Office (1955)
SEA DIR. AMT.	Sea direction and amount are coded using Tables 5 and 8 in U.S. Hydrogr. Office (1955)
SWELL DIR. AMT.	Sea swell direction and amount are coded using Tables 6 and 8 in U.S. Hydrogr. Office (1955)

ATMOS. PRESSURE	Atmospheric pressure given in millibars
WIRE ANGLES CAST 1 CAST 2 CAST 3	Wire angles are measured at the surface and expressed in degrees for each cast
CAST	The cast number corresponding to the wire angle is shown
DEPTH	Actual sampling depth, given in metres
TEMP.	Sea temperatures recorded in °C
SALINITY	Given in parts per thousand
SIGMA-T	Sigma-t to 2 decimal places
OXYGEN	Given in ml/l
OXYGEN % SAT.	Oxygen percentage saturation
INORG. P, TOTAL P, and NITRATE	Given in μg-atom/l

* and *** indicate no data available

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 62/64	25/ 3/64	0705 H	32 00 S	111 50 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4938	19,4	21,1	10	2	16	8	1	8	10	2	15	1	1014,0	6	5	0

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	20,54	35,964	25,37	5,04	102	0,10	0,42	0,2
2	25	20,41	35,968	25,41	5,05	102	0,10	***	0,1
2	50	20,41	35,982	25,42	5,04	102	0,10	0,50	0,0
2	75	20,42	35,968	25,41	5,00	101	0,10	***	0,0
2	100	16,87	35,718	26,11	4,74	90	0,19	0,31	0,0
2	150	15,19	35,596	26,41	5,12	94	0,32	***	0,8
2	200	13,96	35,437	26,55	5,30	94	0,43	0,53	2,1
2	300	11,53	35,050	26,74	5,38	91	0,69	1,09	6,4
2	500	8,60	34,645	26,92	5,31	83	1,25	1,36	17,6
2	700	5,34	34,419	27,20	4,45	64	1,81	1,92	29,1
2	900	3,88	34,447	27,38	4,07	57	2,12	2,04	35,2
2	1100	3,34	34,539	27,51	3,50	48	2,21	2,29	36,3
1	1300	2,98	34,595	27,59	3,52	48	2,24	1,87	35,7
1	1500	2,72	34,651	27,65	3,58	48	2,21	2,10	35,7
1	2000	2,23	34,730	27,76	3,72	50	2,19	2,05	35,0
1	2500	1,90	34,741	27,79	3,86	51	2,18	1,90	39,1
1	3000	1,58	34,753	27,83	4,12	54	2,12	1,81	36,3
1	3500	1,33	34,735	27,83	4,23	55	2,09	1,75	49,0
1	4000	1,19	34,727	27,83	4,34	56	2,10	1,76	36,3
1	4500	1,09	34,724	27,84	4,48	58	2,00	1,75	36,3

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 63/64	26/ 3/64	0800 H	28 40 S	108 50 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5394	20,6	21,7	26	4	16	6	3	8	26	2	30	1	1014,3	10	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	21,38	35,921	25,11	4,92	102	0,06	0,44	0,2
2	25	20,95	35,916	25,22	4,81	99	0,07	***	0,2
2	49	20,86	35,925	25,25	4,95	101	0,06	0,59	0,0
2	74	19,83	35,861	25,48	5,12	103	0,10	***	0,0
2	98	17,11	35,745	26,08	5,11	97	0,20	0,69	0,0
2	147	14,92	35,588	26,46	5,24	95	0,30	***	1,3
2	196	13,64	35,424	26,61	5,30	94	0,40	0,69	2,9
2	295	11,61	35,098	26,76	5,44	92	0,65	0,90	6,8
2	491	9,25	34,714	26,87	5,43	87	1,01	1,18	14,2
2	687	7,55	34,533	26,99	4,84	74	1,40	1,54	22,0
2	884	4,48	34,418	27,29	4,18	59	1,94	2,01	34,3
2	1080	3,75	34,516	27,45	3,41	47	2,19	2,38	39,0
1	1263	3,43	34,576	27,53	3,25	45	2,22	2,30	34,6
1	1460	3,08	34,628	27,60	3,28	45	2,18	2,30	38,3
1	1955	2,41	34,712	27,73	3,54	47	2,10	2,24	39,6
1	2450	1,99	34,733	27,78	3,68	49	2,10	2,22	36,9
1	2945	1,72	34,739	27,81	3,91	51	2,11	2,17	36,9
1	3440	1,45	34,726	27,82	4,15	54	2,11	2,21	35,6
1	3934	1,27	34,722	27,82	4,27	55	2,05	2,18	36,5
1	4429	1,16	34,719	27,83	4,49	58	2,05	2,11	35,8
1	4924	1,08	34,715	27,83	4,52	58	1,94	2,07	35,8

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 64/64	27/ 3/64	0830 H	25 06 S	105 44 E

SONIC DEPTH	AIR TEMP, WET	AIR TEMP, DRY	WIND DIR,	WIND SP,	ANEM, HEIGHT	CLOUD TYPE	CLOUD AMT,	VIS,	SEA DIR,	SEA AMT,	SWELL DIR,	SWELL AMT,	ATMOS, PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5577	20,6	22,8	13	3	16	8	5	8	13	2	16	1	1019,5	5	0	*

CAST	DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT,	INORG, P	TOTAL P	NITRATE
2	0	22,25	35,849	24,81	4,85	102	0,02	0,43	0,4
2	25	22,24	35,847	24,81	4,89	102	0,02	***	0,0
2	50	21,55	35,890	25,04	4,98	103	0,04	0,43	0,0
2	74	18,90	35,817	25,69	5,34	105	0,06	***	0,0
2	99	16,96	35,767	26,13	5,13	97	0,15	0,50	0,1
2	149	15,66	35,688	26,37	5,07	94	0,24	***	1,1
2	199	14,04	35,504	26,59	5,18	92	0,33	0,65	3,1
2	298	12,18	35,205	26,73	5,34	91	0,50	0,93	6,4
2	497	9,11	34,716	26,90	5,30	84	0,91	1,22	21,7
2	696	6,98	34,507	27,05	4,61	70	1,39	1,65	25,6
2	895	4,77	34,506	27,33	3,42	49	1,94	2,30	36,1
2	1094	3,77	34,536	27,46	3,31	46	2,18	2,30	41,1
1	1290	3,24	34,581	27,55	3,36	46	1,98	2,46	38,7
1	1489	2,94	34,652	27,63	3,31	45	2,03	2,34	38,7
1	1987	2,24	34,724	27,75	3,53	47	2,00	2,41	38,3
1	2485	1,85	34,733	27,79	3,71	49	1,98	2,22	36,1
1	2983	1,59	34,750	27,82	3,86	51	1,91	2,30	35,2
1	3481	1,37	34,733	27,83	4,12	54	1,94	2,26	35,2
1	3979	1,20	34,735	27,84	4,24	55	1,87	2,22	34,1
1	4477	1,14	34,725	27,84	4,39	57	1,88	2,23	33,9
1	4975	1,09	34,725	27,84	4,52	58	1,81	2,10	33,9

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 65/64	28/ 3/64	0930 H	21 18 S	102 30 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5303	20,3	23,3	15	7	16	8	7	7	15	3	15	4	1016,5	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	25,28	35,078	23,34	4,66	102	0,07	0,40	0,0
2	25	25,29	35,078	23,33	4,60	101	0,07	***	0,0
2	50	24,84	35,192	23,56	4,65	102	0,07	0,40	0,0
3	75	22,65	35,615	24,52	5,07	107	0,07	***	0,0
3	100	20,74	35,664	25,09	4,91	100	0,14	0,46	0,1
3	150	18,59	35,788	25,75	4,57	89	0,27	***	1,0
3	200	16,93	35,759	26,13	4,64	88	0,36	0,62	2,1
3	300	13,58	35,401	26,60	5,04	89	0,50	0,83	4,2
3	500	9,58	34,784	26,87	5,37	86	0,92	1,18	13,2
3	700	6,76	34,493	27,07	4,54	68	1,53	1,68	26,1
3	900	5,03	34,387	27,37	2,65	38	2,10	2,44	36,5
3	1100	4,28	34,654	27,50	2,59	36	2,22	2,48	39,6
1	1256	3,78	34,646	27,55	2,78	39	2,18	2,41	39,6
1	1452	3,22	34,670	27,62	3,09	42	2,15	2,54	41,5
1	1947	2,29	34,725	27,75	3,42	46	2,06	2,62	36,7
1	2443	1,83	34,733	27,79	3,77	50	2,01	2,26	36,7
1	2940	1,52	34,733	27,82	3,93	51	1,98	2,23	37,2
1	3438	1,29	34,733	27,83	4,17	54	1,98	2,31	39,1
1	3936	1,19	34,723	27,83	4,23	55	1,97	2,08	35,9
1	4434	1,13	34,734	27,84	4,40	57	1,92	2,63	35,9
1	4933	1,12	34,723	27,84	4,43	57	1,86	2,20	35,2

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 66/64	29/ 3/64	0830 H	18 21 S	100 07 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5577	21,1	25,0	17	5	16	8	6	7	17	2	17	4	1015,1	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	26,94	34,754	22,57	4,54	102	0,11	0,41	0,0
2	25	26,95	34,725	22,55	4,55	103	0,14	***	0,5
2	50	26,92	34,729	22,56	4,50	101	0,13	0,34	0,0
2	75	24,07	34,844	23,52	4,71	101	0,17	***	0,0
2	100	22,41	35,056	24,17	4,26	89	0,29	0,48	0,3
2	125	21,49	35,090	24,45	3,70	76	0,48	***	3,4
2	150	20,89	35,395	24,84	4,10	84	0,40	***	2,1
3	200	18,79	35,290	25,31	3,57	70	0,69	0,80	8,6
3	250	14,92	34,813	25,86	2,56	46	1,25	***	17,8
3	300	15,80	35,652	26,31	4,66	86	0,48	0,65	2,4
3	400	12,25	***	***	5,15	***	0,71	***	6,7
3	500	9,90	34,830	26,86	5,26	85	1,00	1,09	13,2
3	700	6,65	34,518	27,11	4,07	61	1,65	1,82	27,9
3	900	5,25	34,613	27,36	2,32	34	2,19	2,44	36,9
3	1100	4,62	34,654	27,47	2,27	32	2,30	2,53	36,3
1	1275	4,01	34,669	27,54	2,53	35	2,22	2,43	36,5
1	1471	3,39	34,675	27,61	2,87	39	2,19	2,40	36,3
1	1962	2,48	34,721	27,73	3,30	44	2,12	2,38	35,2
1	2453	1,92	34,737	27,79	3,59	47	1,99	2,18	34,3
1	2946	1,61	34,732	27,81	3,81	50	1,99	2,18	36,3
1	3441	1,39	34,725	27,82	4,01	52	1,99	2,18	35,2
1	3939	1,25	34,721	27,83	4,14	54	1,97	2,18	33,9
1	4436	1,16	34,719	27,83	4,38	57	2,01	2,10	34,8
1	4934	1,12	34,719	27,83	4,45	57	1,86	2,05	35,4

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 67/64	30/ 3/64	0830 H	14 45 S	97 12 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4572	22,7	26,6	12	4	16	8	3	8	12	1	14	1	1013,6	12	13	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	27,67	34,703	22,30	4,49	102	0,13	0,34	0,0
2	24	27.67	34,691	22,29	4,49	102	0,14	***	0,0
2	49	27,69	34,739	22,32	4,43	101	0,14	0,31	0,0
2	73	24,79	34,626	23,14	4,29	93	0,23	***	0,0
2	98	22,73	34,634	23,75	3,34	70	0,59	0,71	4,7
2	122	21,07	34,657	24,23	2,64	54	0,84	***	10,5
2	146	20,11	35,023	24,77	3,13	63	0,76	***	8,7
2	195	17.27	35,111	25,55	3,00	57	0,97	1,00	12,7
2	244	14,56	34,951	26,05	2,81	50	1,19	***	16,4
2	293	12,60	34,829	26,36	2,66	46	1,42	1,44	20,2
2	391	10,66	34,910	26,79	4,07	67	1,15	***	18,0
2	489	8,83	34,732	26,95	3,84	61	1,47	1,53	23,0
2	684	6,78	34,670	27,21	2,10	32	2,07	2,18	34,5
2	880	5,83	34,673	27,34	1,93	28	2,21	2,27	33,6
2	1075	4,84	34,668	27,45	2,10	30	2,30	2,39	***
1	1300	4,11	34,662	27,53	2,33	33	2,29	2,45	33,7
1	1500	3,52	34,686	27,61	2,59	36	2,27	2,35	35,0
1	2000	2,47	34,737	27,74	3,16	42	2,15	2,22	33,9
1	2500	1,92	34,739	27,79	3,53	47	2,07	2,25	31,4
1	3000	1,57	34,736	27,81	3,87	51	2,07	2,17	33,1
1	3500	1,32	34,728	27,83	4,01	52	2,05	2,12	33,5
1	4000	1,16	34,726	27,84	4,29	55	2,00	2,06	33,7
1	4300	1,09	34,737	27,85	4,18	54	1,86	2,01	30,9

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 68/64	31/ 3/64	0330 H	12 00 S	94 58 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5075	23,9	27,2	14	1	16	3	2	8	14	1	17	1	1010,4	5	5	5

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	27,94	34,494	22,06	4,44	102	0,07	0,38	0,3
2	25	27,90	34,475	22,05	4,37	100	0,07	***	0,0
2	50	25,79	34,637	22,85	4,53	100	0,10	0,34	0,0
2	70	22,77	34,776	23,85	3,76	79	0,39	***	2,7
2	80	21,12	34,822	24,35	3,18	65	0,66	***	8,1
2	100	18,77	34,734	24,90	2,52	49	0,91	1,09	13,9
2	125	16,29	34,641	25,42	2,31	43	1,10	***	19,2
2	150	14,37	34,656	25,86	2,40	43	1,21	***	21,3
2	200	12,30	34,696	26,32	2,44	42	1,42	1,67	23,9
2	250	11,06	34,697	26,55	2,33	39	1,53	***	24,8
2	300	10,04	34,710	26,74	2,32	38	1,63	2,01	26,0
3	389	9,32	34,724	26,87	2,71	43	1,63	***	25,7
3	488	8,03	34,666	27,03	2,18	34	1,83	2,28	31,2
3	588	7,33	34,684	27,14	1,78	27	2,05	***	33,9
3	687	6,54	34,651	27,23	1,89	28	2,12	2,29	34,8
3	787	6,08	34,661	27,30	1,87	28	2,19	***	36,4
3	886	5,65	34,656	27,35	1,87	27	2,19	2,41	36,6
3	985	4,99	34,655	27,42	1,94	28	2,17	***	36,6
3	1085	4,99	34,672	27,44	1,94	28	2,15	2,47	36,0
3	1184	4,73	34,680	27,47	1,97	28	2,24	***	36,4
3	1284	3,88	34,681	27,57	2,10	29	2,19	2,45	35,4
3	1483	3,88	34,721	27,60	2,33	32	2,11	2,39	35,8
1	1992	2,62	34,735	27,73	3,04	41	2,11	2,30	36,0
1	2500	1,99	34,745	27,79	3,55	47	2,04	2,19	34,1
1	3000	1,65	34,729	27,80	3,69	48	1,84	2,15	34,8
1	3500	1,41	34,721	27,81	3,99	52	1,87	2,17	33,3
1	4000	1,20	34,720	27,83	4,20	54	1,84	2,10	33,3
1	4500	1,18	34,714	27,83	4,33	56	1,83	2,09	33,3

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 69/64	31/ 3/64	1100 H	11 00 S	95 01 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5212	25,0	29,4	14	8	16	8	2	7	15	2	15	1	*	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	28,18	34,483	21,97	4,47	103	0,07	***	***
2	25	28,10	34,473	21,99	4,45	102	0,08	***	***
2	50	26,86	34,450	22,37	4,60	103	0,08	***	***
2	70	22,64	34,731	23,85	3,62	76	0,43	***	***
2	80	21,86	34,746	24,08	3,23	67	0,58	***	***
2	100	17,98	34,633	25,01	2,34	45	1,07	***	***
2	125	16,20	34,651	25,45	2,37	44	1,11	***	***
2	150	14,79	34,700	25,80	2,43	44	1,24	***	***
2	200	12,45	34,662	26,26	2,28	39	1,48	***	***
2	250	10,97	34,676	26,55	2,40	40	1,52	***	***
2	300	9,89	34,697	26,75	2,26	37	1,64	***	***
1	400	9,09	34,723	26,91	2,48	39	1,66	***	***
1	500	8,20	34,707	27,03	2,14	33	1,81	***	***
1	600	7,47	34,720	27,15	1,74	27	2,03	***	***
1	700	7,01	34,732	27,23	1,63	25	2,12	***	***
1	800	6,26	34,701	27,30	1,74	26	2,15	***	***
1	900	5,77	34,694	27,36	1,80	26	2,20	***	***
1	1000	5,26	34,685	27,42	1,91	28	2,22	***	***
1	1100	4,88	34,677	27,46	2,00	29	2,18	***	***
1	1200	4,59	34,700	27,51	2,00	28	2,22	***	***
1	1300	4,26	34,705	27,55	2,15	30	2,20	***	***
1	1500	3,71	34,744	27,63	2,43	34	2,20	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 70/64	31/ 3/64	1830 H	9 59 S	94 59 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4755	25,6	28,9	13	1	16	8	3	8	13	1	16	1	1008,1	10	5	10

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	28,62	34,326	21,71	4,39	101	0,05	***	***
2	25	28,47	34,335	21,76	4,30	99	0,06	***	***
2	50	28,40	34,350	21,80	4,44	102	0,04	***	***
2	70	22,84	34,654	23,74	3,60	76	0,41	***	***
2	80	21,03	34,705	24,28	2,76	56	0,75	***	***
2	100	19,01	34,814	24,90	2,58	51	0,93	***	***
2	125	16,10	34,601	25,44	2,33	43	1,21	***	***
2	150	14,36	34,662	25,87	2,31	41	1,34	***	***
2	200	12,05	34,646	26,32	2,26	38	1,54	***	***
2	250	10,99	34,686	26,55	1,99	33	1,63	***	***
2	300	10,61	34,842	26,74	2,06	34	1,64	***	***
3	373	***	34,830	***	2,56	***	1,54	***	***
3	467	8,76	34,769	27,00	2,33	37	1,75	***	***
3	562	7,97	34,769	27,12	1,74	27	2,00	***	***
3	658	7,27	34,756	27,21	1,54	23	2,17	***	***
3	755	6,63	34,746	27,29	1,50	22	2,31	***	***
3	853	5,96	34,693	27,34	1,74	26	2,21	***	***
3	951	5,64	34,708	27,39	1,74	25	2,26	***	***
3	1050	5,20	34,706	27,44	1,83	26	2,23	***	***
3	1149	4,81	34,710	27,49	1,90	27	2,33	***	***
3	1248	4,58	34,724	27,53	1,95	28	2,26	***	***
3	1447	4,04	34,741	27,60	2,23	31	2,24	***	***
1	2000	2,66	34,746	27,74	2,95	40	2,12	***	***
1	2500	2,06	34,743	27,78	3,43	46	2,08	***	***
1	3000	1,73	34,733	27,80	3,71	49	2,05	***	***
1	3500	1,42	34,725	27,82	3,88	51	1,99	***	***
1	4000	1,20	34,712	27,82	4,22	55	1,96	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 71/64	1/ 4/64	0115 H	8 55 S	95 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5121	25,6	27,8	14	2	16	8	4	7	13	1	13	1	*	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,01	33,872	21,24	4,40	102	0,04	***	***
2	25	28,61	34,393	21,76	4,51	104	0,08	***	***
2	50	24,51	34,520	23,15	4,25	92	0,18	***	***
2	70	22,44	34,616	23,82	3,28	68	0,50	***	***
2	80	20,59	34,636	24,35	2,66	54	0,83	***	***
2	100	18,08	34,668	25,02	2,41	46	1,02	***	***
2	125	16,46	34,654	25,39	2,36	44	1,12	***	***
2	150	14,53	34,600	25,78	2,27	41	1,31	***	***
2	200	13,16	34,880	26,29	1,54	27	1,58	***	***
2	250	11,00	34,802	26,64	1,93	32	1,66	***	***
2	300	10,65	34,892	26,77	1,87	31	1,66	***	***
1	392	***	34,858	***	1,91	***	1,68	***	***
1	490	8,82	34,802	27,01	1,95	31	1,88	***	***
1	587	8,00	34,778	27,12	1,67	26	2,04	***	***
1	685	7,23	34,750	27,21	1,29	20	2,19	***	***
1	783	6,65	34,752	27,29	1,55	23	2,22	***	***
1	881	6,14	34,736	27,35	1,67	25	2,22	***	***
1	979	5,53	34,724	27,41	1,75	25	2,20	***	***
1	1077	5,11	34,714	27,46	1,90	27	2,22	***	***
1	1175	4,80	34,728	27,50	1,90	27	2,22	***	***
1	1273	4,53	34,737	27,54	1,98	28	2,25	***	***
1	1469	3,94	34,747	27,61	2,27	32	2,44	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 72/64	1/ 4/64	0720 H	7 52 S	95 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4938	25,6	25,0	10	3	16	6	8	7	12	1	15	1	*	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,03	33,608	21,03	4,48	104	0,10	0,34	0,3
2	25	28,76	33,990	21,41	4,51	104	0,10	***	0,2
2	50	25,61	34,434	22,75	4,25	94	0,25	0,49	0,1
2	70	23,10	34,498	23,54	3,13	66	0,62	***	5,0
2	80	21,03	34,549	24,16	2,49	51	0,94	***	11,6
2	100	19,05	34,591	24,71	2,29	45	1,16	1,22	15,1
2	125	17,29	34,768	25,29	1,79	34	1,36	***	19,9
2	150	14,73	34,656	25,78	2,07	37	1,49	***	19,9
2	200	12,86	34,874	26,34	1,54	27	1,73	1,77	24,9
2	250	11,84	34,957	26,61	1,51	26	1,73	***	25,9
2	300	10,81	34,919	26,77	1,50	25	1,82	2,01	29,1
3	400	9,96	34,910	26,91	1,49	24	1,88	***	28,9
3	500	9,05	34,852	27,01	1,52	24	2,02	2,09	28,3
3	600	8,26	34,817	27,11	1,44	22	2,13	***	31,4
3	700	7,59	34,809	27,20	1,33	20	2,27	2,26	32,3
3	800	6,83	34,781	27,29	1,37	21	2,30	***	33,3
3	900	6,08	34,729	27,35	1,68	25	2,33	2,52	32,5
3	1000	5,54	34,717	27,41	1,74	25	2,33	***	34,7
3	1100	5,14	34,747	27,48	1,82	26	2,35	2,49	33,5
3	1200	4,80	34,726	27,50	1,88	27	2,35	***	34,5
3	1300	4,52	34,739	27,54	1,94	28	2,38	2,52	33,1
3	1500	3,89	34,751	27,62	2,26	32	2,36	2,49	34,1
1	2000	2,62	34,756	27,75	2,93	39	2,26	2,33	34,1
1	2500	2,04	34,748	27,79	3,32	44	2,16	2,27	32,9
1	3000	1,71	34,736	27,80	3,62	48	2,14	2,17	32,9
1	3500	1,37	34,739	27,83	3,91	51	2,06	1,68	32,5
1	4000	1,18	34,721	27,83	4,23	55	2,04	2,08	31,2
1	4500	1,14	34,722	27,83	4,32	56	1,93	2,11	32,7

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 73/64	1/ 4/64	1530 H	6 48 S	94 59 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5121	25,0	26,7	02	3	16	6	7	7	02	1	16	1	1010,6	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,15	33,802	21,14	4,38	102	0,05	***	***
2	25	29,05	33,951	21,28	4,48	104	0,05	***	***
2	50	27,99	34,318	21,91	4,59	105	0,05	***	***
2	70	24,04	34,422	23,21	3,83	82	0,30	***	***
2	80	21,53	34,537	24,02	2,64	54	0,82	***	***
2	100	18,49	34,730	24,96	1,94	38	1,19	***	***
2	125	15,95	34,825	25,64	1,67	31	1,41	***	***
2	150	13,71	34,752	26,07	1,82	32	1,54	***	***
2	200	12,41	34,943	26,48	1,54	26	1,68	***	***
2	250	11,34	34,910	26,66	1,49	25	1,69	***	***
2	300	10,80	34,914	26,76	1,49	25	1,69	***	***
1	400	9,98	34,903	26,90	1,46	24	1,86	***	***
1	500	9,07	34,859	27,02	1,44	23	1,97	***	***
1	600	8,33	34,822	27,10	1,44	22	2,07	***	***
1	700	7,67	34,811	27,20	1,33	20	2,17	***	***
1	800	7,03	34,785	27,27	1,38	21	2,23	***	***
1	900	6,12	34,710	27,33	1,69	25	2,20	***	***
1	1000	5,58	34,696	27,39	1,84	27	2,25	***	***
1	1100	5,21	34,719	27,45	1,86	27	2,23	***	***
1	1200	4,98	34,726	27,48	1,83	26	2,28	***	***
1	1300	4,67	34,896	27,65	1,57	22	1,81	***	***
1	1500	4,08	34,750	27,60	2,26	32	2,25	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 74/64	1/ 4/64	2130 H	5 45 S	94 57 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4755	25,0	27,2	31	3	16	5	7	7	00	0	16	1	1008,8	*	o	o

CAST	DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT,	INORG, P	TOTAL P	NITRATE
2	0	29,35	33,565	20,89	4,33	101	0,14	***	0,0
2	25	28,87	33,818	21,24	4,50	104	0,14	***	0,1
2	50	27,53	34,698	22,34	4,10	93	0,31	***	0,0
2	70	23,84	34,833	23,58	2,94	63	0,75	***	***
2	80	21,00	34,674	24,27	2,44	50	1,09	***	13,3
2	100	18,84	34,973	25,06	1,56	31	1,37	***	19,4
2	125	15,16	34,795	25,80	1,70	31	1,63	***	23,1
2	150	13,52	34,935	26,25	1,46	26	1,78	***	25,9
2	200	12,29	34,967	26,53	1,55	27	1,86	***	25,9
2	250	11,52	34,986	26,69	1,66	28	1,86	***	25,7
2	300	10,88	34,951	26,78	1,61	27	1,90	***	27,8
3	400	10,11	34,908	26,88	1,89	31	1,99	***	27,0
3	500	9,29	34,880	27,00	1,55	25	2,02	***	29,6
3	600	8,78	34,883	27,08	1,38	22	1,95	***	31,2
3	700	8,17	34,874	27,17	1,26	20	2,27	***	31,4
3	800	7,61	34,867	27,25	1,20	18	2,32	***	33,7
3	900	6,89	34,818	27,31	1,35	20	2,30	***	33,1
3	1000	6,20	34,786	27,38	1,55	23	2,55	***	32,1
3	1100	5,43	34,780	27,47	1,72	25	2,49	***	34,3
3	1200	5,04	34,753	27,50	1,78	26	2,57	***	33,7
3	1300	4,68	34,769	27,55	1,86	27	2,58	***	33,7
3	1500	3,96	34,774	27,63	2,19	31	2,55	***	33,3
1	2000	2,59	34,758	27,75	2,98	40	2,36	***	32,9
1	2500	2,05	34,750	27,79	3,24	43	2,39	***	33,3
1	3000	1,73	34,739	27,81	3,74	49	2,23	***	30,9
1	3500	1,44	34,729	27,82	3,82	50	2,24	***	31,8
1	4000	1,15	34,716	27,83	4,19	54	2,16	***	28,4
1	4500	1,12	34,722	27,83	4,30	56	2,09	***	32,3

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 75/64	2/ 4/64	0505 H	4 48 S	95 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5029	23,9	30,0	15	2	16	5	2	7	00	0	15	1	1010,5	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,31	33,680	20,99	4,36	101	0,13	***	***
2	25	29,25	33,741	21,06	4,40	102	0,13	***	***
2	50	27,18	34,666	22,43	4,10	93	0,26	***	***
2	70	24,08	35,172	23,77	2,93	63	0,70	***	***
2	80	22,92	35,210	24,14	2,57	54	0,85	***	***
2	100	19,58	35,170	25,02	1,71	34	1,23	***	***
2	125	17,28	35,093	25,54	1,56	30	1,37	***	***
2	150	14,35	34,893	26,05	1,43	26	1,54	***	***
2	200	12,68	34,951	26,44	1,50	26	1,66	***	***
2	250	11,89	34,983	26,62	1,60	27	1,66	***	***
2	300	11,22	34,960	26,72	1,81	30	1,66	***	***
1	400	10,12	34,909	26,88	1,53	25	1,84	***	***
1	500	9,30	34,884	27,00	1,43	23	1,97	***	***
1	600	8,75	34,889	27,09	1,43	23	2,07	***	***
1	700	8,06	34,885	27,20	1,26	20	2,23	***	***
1	800	7,45	34,863	27,27	1,25	19	2,26	***	***
1	900	6,76	34,820	27,33	1,29	19	2,34	***	***
1	1000	6,09	34,803	27,41	1,45	21	2,34	***	***
1	1100	5,45	34,778	27,47	1,60	23	2,34	***	***
1	1200	5,15	34,803	27,52	1,68	24	2,34	***	***
1	1300	4,85	34,811	27,56	1,78	25	2,34	***	***
1	1500	4,12	34,803	27,64	2,13	30	2,30	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 76/64	2/ 4/64	1015 H	3 51 S	95 01 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4755	27,2	30,0	00	0	16	3	4	7	*	*	23	1	1011,5	*	*	*

CAST	DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT,	INORG, P	TOTAL P	NITRATE
2	0	29,50	33,482	20,78	4,27	100	0,10	0,40	0,0
2	25	29,40	33,548	20,86	4,18	97	0,10	***	0,1
2	50	28,06	34,944	22,36	4,18	96	0,25	0,53	0,0
2	70	24,26	35,022	23,60	2,43	52	0,74	***	4,1
2	80	23,21	35,063	23,94	2,59	55	0,84	***	3,5
2	100	20,75	35,208	24,74	1,91	39	1,15	1,50	13,4
2	125	18,99	35,168	25,17	1,52	30	1,31	***	18,6
2	150	17,51	35,139	25,52	1,40	27	1,44	***	10,2
2	200	12,57	34,819	26,36	1,63	28	1,69	1,91	21,7
2	250	11,94	35,002	26,62	1,75	30	1,65	***	25,7
2	300	11,43	35,000	26,72	2,02	34	1,62	2,26	20,4
3	400	10,43	34,958	26,86	1,31	22	1,89	***	30,5
3	500	9,53	34,917	26,99	1,44	23	1,99	2,26	32,4
3	600	8,87	34,901	27,08	1,29	20	2,16	***	34,2
3	700	8,05	34,869	27,18	1,23	19	2,29	2,58	36,8
3	800	7,38	34,862	27,28	1,22	19	2,40	***	36,8
3	900	6,71	34,842	27,36	1,32	20	2,40	2,58	38,0
3	1000	6,35	34,865	27,42	1,29	19	2,44	***	38,6
3	1100	5,72	34,819	27,47	1,55	23	2,35	2,72	36,6
3	1200	5,40	34,825	27,51	1,55	23	2,41	***	39,1
3	1300	4,80	34,788	27,55	1,83	26	2,40	2,79	36,1
3	1500	4,03	34,811	27,65	2,13	30	2,38	2,65	35,7
1	2000	2,80	34,775	27,75	2,69	36	2,26	2,61	35,0
1	2500	2,06	34,748	27,79	3,26	43	2,22	2,43	29,1
1	3000	1,71	34,738	27,81	3,52	46	2,12	2,24	34,1
1	3500	1,40	34,726	27,82	3,84	50	2,10	2,34	29,9
1	4000	1,14	34,710	27,82	4,29	55	2,04	2,33	31,5
1	4500	1,14	34,718	27,83	4,27	55	1,98	2,26	33,2

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 77/64	2/ 4/64	1750 H	2 51 S	95 01 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4755	25,6	25,3	09	3	16	6	8	6	09	1	19	1	1010,7	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	30,09	33,269	20,42	4,24	100	0,15	***	***
1	25	29,53	33,637	20,89	4,33	101	0,14	***	***
1	50	25,89	34,931	23,04	3,77	84	0,47	***	***
1	70	23,40	35,079	23,90	2,73	58	0,93	***	***
1	80	23,13	35,114	24,00	2,71	57	1,06	***	***
1	100	22,17	35,194	24,34	2,37	49	1,11	***	***
1	125	18,58	35,156	25,27	1,41	27	1,44	***	***
1	150	16,63	35,131	25,72	1,40	26	1,56	***	***
1	200	14,62	35,108	26,16	1,62	29	1,77	***	***
1	250	13,39	35,096	26,41	1,86	33	1,66	***	***
2	300	12,33	35,087	26,61	1,82	31	1,66	***	***
2	400	10,83	34,989	26,82	2,09	35	1,80	***	***
2	500	9,63	34,946	26,99	1,63	26	1,84	***	***
2	700	8,59	34,965	27,18	1,21	19	2,16	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 78/64	3/ 4/64	0045 H	1 56 S	95 01 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4755	25,3	26,7	19	2	16	0	3	7	00	0	19	1	1012,1	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,71	33,115	20,43	4,06	95	0,06	***	***
2	25	29,73	33,702	20,86	3,83	90	0,09	***	***
2	50	26,94	34,420	22,32	3,76	85	0,31	***	***
2	70	23,37	35,130	23,95	2,88	61	0,78	***	***
2	80	22,95	35,159	24,09	2,72	57	0,83	***	***
2	100	20,69	35,200	24,75	1,80	37	1,16	***	***
2	125	19,28	35,173	25,10	1,58	31	1,31	***	***
2	150	17,67	35,148	25,49	1,34	26	1,46	***	***
2	200	14,25	35,134	26,26	1,61	29	1,52	***	***
2	250	13,18	35,097	26,45	1,60	28	1,58	***	***
2	300	12,37	35,000	26,54	1,79	31	1,58	***	***
1	400	10,54	34,987	26,87	1,82	30	1,75	***	***
1	500	9,67	34,979	27,01	1,50	24	1,96	***	***
1	600	8,81	34,965	27,14	1,27	20	2,16	***	***
1	700	8,47	34,973	27,20	1,16	18	2,22	***	***
1	800	7,87	34,951	27,27	1,05	16	2,29	***	***
1	900	7,40	34,945	27,34	1,10	17	2,36	***	***
1	1000	6,57	34,914	27,43	1,19	18	2,39	***	***
1	1100	6,00	34,890	27,49	1,37	20	2,39	***	***
1	1200	5,56	34,871	27,53	1,48	22	2,37	***	***
1	1300	5,02	34,857	27,58	1,70	24	2,34	***	***
1	1500	4,12	34,835	27,66	2,05	29	2,32	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 79/64	3/ 4/64	0730 H	0 55 S	94 59 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4572	25.0	26.7	24	2	16	8	8	7	24	1	25	1	1011.2	10	10	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29.58	33.145	20.50	4.23	98	0.05	***	***
2	25	29.32	33.379	20.76	4.12	96	0.08	***	***
2	50	29.21	33.917	21.20	4.21	98	0.11	***	***
2	70	23.27	35.148	23.99	2.89	61	0.79	***	***
2	80	22.92	35.187	24.12	2.72	57	0.87	***	***
2	100	21.06	35.275	24.71	2.22	45	1.05	***	***
2	125	20.03	35.207	24.93	1.73	35	1.20	***	***
2	150	17.19	35.136	25.59	1.24	24	1.49	***	***
2	200	14.49	35.111	26.19	1.33	24	1.63	***	***
2	250	12.78	35.088	26.52	1.74	30	1.61	***	***
2	300	11.83	35.060	26.69	1.86	32	1.63	***	***
1	400	10.85	34.999	26.82	1.70	28	1.75	***	***
1	500	9.49	34.978	27.04	1.39	22	1.99	***	***
1	600	9.07	34.982	27.11	1.21	19	2.13	***	***
1	700	8.83	34.982	27.15	1.15	18	2.16	***	***
1	800	8.30	34.988	27.24	1.04	16	2.26	***	***
1	900	7.47	34.956	27.34	1.04	16	2.33	***	***
1	1000	6.83	34.939	27.41	1.13	17	2.38	***	***
1	1100	6.03	34.901	27.49	1.32	19	2.08	***	***
1	1200	5.33	34.872	27.56	1.54	22	2.10	***	***
1	1300	4.94	34.858	27.59	1.70	24	2.33	***	***
1	1500	4.15	34.832	27.66	2.04	29	2.26	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 27 80/64	3/ 4/64	1300 H	0 04 N	95 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4480	23,3	29,4	27	2	16	4	7	8	22	1	20	1	1015,8	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,72	33,135	20,45	3,74	87	0,09	0,28	0,8
2	25	29,42	33,378	20,73	3,24	75	0,10	***	0,6
2	50	27,68	33,782	21,60	3,86	88	0,21	0,34	0,8
2	70	23,16	35,238	24,09	2,94	62	0,79	***	7,7
2	80	22,62	35,272	24,27	2,70	57	0,85	***	9,2
2	100	21,53	35,291	24,59	2,46	51	0,99	1,10	11,7
2	125	19,77	35,197	24,99	1,67	33	1,22	***	18,0
2	150	17,07	35,146	25,63	1,28	24	1,42	***	22,2
2	200	13,48	35,098	26,39	1,41	25	1,50	1,68	25,3
2	250	12,66	35,076	26,54	1,49	26	1,67	***	26,2
2	300	11,72	35,054	26,70	1,54	26	1,72	1,77	27,9
3	400	11,14	35,042	26,80	1,78	30	1,72	***	27,5
3	500	9,65	34,984	27,02	1,45	23	1,93	2,05	34,1
3	600	9,05	35,004	27,13	1,16	18	2,18	***	32,5
3	700	8,69	35,004	27,19	1,00	16	2,26	2,22	34,6
3	800	8,15	34,989	27,26	0,99	15	2,29	***	34,8
3	900	7,37	34,955	27,35	1,01	15	2,43	2,53	39,8
3	1000	6,61	34,937	27,44	1,18	18	2,45	***	38,2
3	1100	5,86	34,900	27,51	1,38	20	2,43	2,62	37,7
3	1200	5,32	34,884	27,57	1,56	23	2,43	***	36,8
3	1300	5,03	34,874	27,59	1,68	24	2,43	2,50	35,0
3	1500	4,24	34,846	27,66	1,96	28	2,33	2,40	36,4
1	2000	2,63	34,781	27,77	2,92	39	2,29	2,35	35,1
1	2500	2,10	34,758	27,79	3,29	44	2,22	2,29	35,2
1	3000	1,65	34,752	27,82	3,59	47	2,10	2,23	34,6
1	3500	1,39	34,735	27,83	3,84	50	2,09	2,14	33,0
1	4000	1,13	34,727	27,84	4,22	55	1,94	2,11	32,3

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 81/64	3/ 4/64	2050 H	1 05 N	94 57 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4389	26,1	28,3	00	0	16	1	2	7	00	0	20	1	1010,8	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,74	33,184	20,48	4,15	97	0,07	***	***
2	25	29,75	33,246	20,52	3,94	92	0,08	***	***
2	50	27,86	33,931	21,66	4,03	92	0,15	***	***
2	70	22,58	35,191	24,22	2,47	52	0,92	***	***
2	80	22,27	35,254	24,35	2,35	49	0,92	***	***
2	100	20,83	35,215	24,72	1,84	37	1,11	***	***
2	125	19,22	35,167	25,11	1,48	29	1,30	***	***
2	150	17,25	35,134	25,57	1,28	24	1,44	***	***
2	200	13,66	35,092	26,35	1,22	22	1,65	***	***
2	250	12,61	35,088	26,56	1,45	25	1,67	***	***
2	300	11,92	35,055	26,67	1,62	28	1,66	***	***
1	400	10,72	35,026	26,87	1,50	25	1,80	***	***
1	500	9,68	35,000	27,03	1,39	22	1,95	***	***
1	600	9,30	35,018	27,10	1,09	17	2,12	***	***
1	700	8,63	35,016	27,21	0,99	16	2,16	***	***
1	800	7,88	34,986	27,30	0,91	14	2,27	***	***
1	900	7,17	34,950	27,38	1,11	17	2,34	***	***
1	1000	6,54	34,933	27,45	1,20	18	2,38	***	***
1	1100	6,05	34,916	27,50	1,35	20	2,34	***	***
1	1200	5,33	34,885	27,57	1,28	19	2,34	***	***
1	1300	4,90	34,873	27,61	1,70	24	2,32	***	***
1	1500	4,15	34,844	27,67	2,01	28	2,28	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 82/64	4/ 4/64	0215 H	1 59 N	95 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4755	25,0	27,8	17	2	16	8	3	7	18	1	21	4	1009,3	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,61	33,033	20,41	3,72	87	0,04	***	***
2	25	29,55	33,233	20,58	3,18	74	0,05	***	***
2	50	24,83	34,659	23,16	2,75	60	0,99	***	***
2	70	23,03	35,065	24,00	2,38	50	0,95	***	***
2	80	22,16	35,210	24,35	2,22	46	0,99	***	***
2	100	20,48	35,205	24,81	1,67	34	1,22	***	***
2	125	18,33	35,078	25,27	1,16	22	1,49	***	***
2	150	17,35	35,072	25,50	1,09	21	1,98	***	***
2	200	14,41	35,075	26,18	1,08	19	1,76	***	***
2	250	12,50	35,069	26,56	1,26	22	1,79	***	***
2	300	11,74	35,065	26,71	1,45	25	1,84	***	***
3	400	10,57	35,036	26,90	1,20	20	1,91	***	***
3	500	9,79	35,022	27,02	1,15	19	2,07	***	***
3	600	9,04	35,018	27,14	0,71	11	2,20	***	***
3	700	8,54	35,005	27,21	0,90	14	2,27	***	***
3	800	7,90	34,980	27,29	1,00	15	2,31	***	***
3	900	7,54	34,957	27,33	0,99	15	2,39	***	***
3	1000	7,04	34,956	27,40	1,11	17	2,46	***	***
3	1100	6,26	34,923	27,48	1,31	19	2,34	***	***
3	1200	5,58	34,894	27,54	1,53	22	2,36	***	***
3	1300	4,98	34,872	27,60	1,70	24	2,35	***	***
3	1500	4,33	34,846	27,65	1,96	28	2,18	***	***
1	2000	2,59	34,776	27,77	2,91	39	2,22	***	***
1	2500	2,15	34,755	27,78	3,23	43	2,20	***	***
1	3000	1,78	34,741	27,80	3,47	46	2,14	***	***
1	3500	1,43	34,728	27,82	3,74	49	2,13	***	***
1	4000	1,14	34,717	27,83	4,14	54	2,00	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 83/64	4/ 4/64	1000 H	2 59 N	94 58 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
969	26.1	29.3	11	1	16	1	4	7	11	1	18	1	1015.2	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29.19	33.415	20.83	3.77	87	0.11	***	***
2	25	29.50	33.555	20.83	3.30	77	0.11	***	***
2	50	27.55	34.455	22.15	3.53	80	0.27	***	***
2	70	23.85	34.622	23.42	2.51	54	0.86	***	***
2	80	21.99	34.998	24.24	1.84	38	1.18	***	***
2	100	20.68	35.072	24.66	1.55	31	1.25	***	***
2	125	19.05	35.060	25.07	1.18	23	1.39	***	***
2	150	17.86	35.063	25.37	0.14	3	1.56	***	***
2	200	14.81	35.090	26.10	1.06	19	1.72	***	***
2	250	13.57	35.074	26.35	1.15	20	1.75	***	***
2	300	12.23	35.060	26.61	1.09	19	1.83	***	***
1	400	10.54	35.035	26.90	1.24	20	2.04	***	***
1	500	9.52	35.022	27.07	1.03	17	2.22	***	***
1	600	9.00	35.010	27.15	1.09	17	2.24	***	***
1	700	8.38	35.002	27.24	1.02	16	2.29	***	***
1	800	7.97	34.986	27.29	1.03	16	2.40	***	***
1	900	7.54	35.028	27.38	1.08	17	2.34	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 84/64	4/ 4/64	1700 H	4 23 N	94 60 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1829	27,2	30,6	24	1	16	6	4	7	00	0	20	1	1006,8	12	10	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	30,02	33,628	20,71	4,19	99	0,08	0,29	0,3
2	25	29,53	33,751	20,97	4,11	96	0,07	***	0,3
2	50	27,24	34,165	22,03	3,76	85	0,27	0,90	1,6
2	70	25,25	***	***	3,17	***	0,60	***	5,1
2	80	22,56	34,727	23,87	2,26	47	0,97	***	12,3
2	100	19,58	35,001	24,89	1,49	30	1,32	1,37	19,9
2	125	17,32	35,076	25,51	1,16	22	1,51	***	25,4
2	150	15,77	35,070	25,87	1,11	20	1,62	***	27,2
2	200	13,28	35,012	26,36	0,75	13	1,83	1,91	33,1
2	250	12,36	35,055	26,58	0,90	15	1,85	***	31,9
2	300	11,55	***	***	0,99	***	1,89	1,95	32,7
1	400	10,62	35,044	26,90	0,96	16	1,95	***	30,1
1	500	9,80	35,029	27,03	0,82	13	2,13	2,24	36,1
1	600	8,94	35,010	27,15	0,81	13	2,23	***	38,4
1	700	8,38	34,993	27,23	0,95	15	2,26	2,28	40,4
1	800	7,80	34,977	27,31	0,98	15	2,27	***	42,4
1	900	7,36	34,961	27,36	1,11	17	2,33	2,52	42,4
1	1000	6,77	34,939	27,42	1,20	18	2,38	***	43,1
1	1100	6,24	34,918	27,48	1,33	20	2,32	2,47	39,7
1	1200	5,59	34,893	27,54	1,24	18	2,32	***	39,9
1	1300	5,27	34,883	27,57	1,60	23	2,36	2,44	40,8
1	1500	5,02	34,873	27,59	1,61	23	2,36	2,31	42,8

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 85/64	4/ 4/64	2235 H	5 23 N	94 45 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1097	26,1	29,4	19	1	16	6	5	6	00	0	22	1	1015,7	*	10	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,94	33,625	20,74	4,28	101	0,06	***	***
2	25	28,99	34,301	21,57	4,03	94	0,14	***	***
2	50	25,21	34,465	22,89	3,06	67	0,61	***	***
2	70	22,05	34,828	24,09	2,03	42	1,09	***	***
2	80	20,92	34,954	24,50	1,71	35	1,21	***	***
2	100	19,38	35,042	24,97	1,45	29	1,37	***	***
2	125	17,90	35,054	25,36	1,22	23	1,46	***	***
2	150	17,42	35,057	25,48	1,18	22	1,55	***	***
2	200	14,59	34,957	26,05	0,72	13	1,81	***	***
2	250	12,76	35,013	26,47	0,86	15	1,92	***	***
2	300	11,79	34,998	26,65	0,71	12	2,00	***	***
1	400	10,69	35,040	26,88	0,86	15	2,06	***	***
1	500	9,86	35,028	27,02	0,81	13	2,11	***	***
1	600	8,87	35,010	27,17	0,86	14	2,26	***	***
1	700	8,36	34,991	27,23	0,91	14	2,30	***	***
1	800	7,85	34,979	27,30	0,99	15	2,32	***	***
1	900	7,27	34,958	27,37	1,13	17	2,35	***	***
1	1000	6,65	34,935	27,44	1,31	20	2,48	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 86/64	5/ 4/64	0330 H	6 15 N	94 46 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1810	26,1	26,7	17	7	16	1	1	7	17	1	*	*	1008,7	25	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,30	33,102	20,56	4,28	99	0,10	0,66	0,4
2	25	29,25	34,021	21,27	4,20	98	0,16	***	0,4
2	50	24,89	34,705	23,17	2,84	62	0,72	0,97	7,1
2	70	21,71	34,798	24,16	1,83	38	1,19	***	13,0
2	80	20,44	34,860	24,56	1,56	31	1,29	***	19,3
2	100	18,96	34,972	25,03	1,36	27	1,44	1,58	22,2
2	125	17,09	34,882	25,42	1,01	19	1,59	***	28,1
2	150	15,00	34,904	25,92	0,85	15	1,73	***	29,6
2	200	13,57	34,989	26,29	0,62	11	1,91	1,96	31,5
2	250	12,19	35,029	26,59	0,75	13	1,94	***	35,7
2	300	11,23	35,039	26,78	0,09	2	2,01	2,11	34,3
1	363	11,06	35,039	26,81	0,82	14	1,96	***	33,8
1	450	10,52	34,982	26,87	0,92	15	2,01	1,98	37,5
1	537	9,49	35,005	27,06	0,84	14	2,15	***	36,1
1	625	9,08	35,016	27,14	0,77	12	2,12	2,18	36,1
1	717	8,20	35,034	27,29	0,79	12	2,30	***	36,6
1	811	7,62	34,965	27,32	1,11	17	2,33	2,41	40,2
1	906	7,44	34,958	27,34	1,11	17	2,37	***	40,8
1	1001	6,68	34,933	27,43	1,23	18	2,23	2,42	41,5
1	1098	6,13	34,913	27,49	1,43	21	2,01	***	41,5
1	1196	5,46	34,887	27,55	1,59	23	2,04	2,40	38,8
1	1394	5,11	34,877	27,59	1,65	24	2,01	2,41	39,0

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 87/64	10/ 4/64	1815 H	5 59 N	94 23 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1691	25,8	29,2	25	1	16	0	8	9	23	.1	17	1	1008,5	40	5	5

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,90	33,407	20,59	4,36	102	0,06	***	***
2	23	29,84	33,492	20,67	4,31	101	0,07	***	***
2	45	26,57	34,143	22,23	3,72	83	0,42	***	***
2	63	24,16	34,703	23,39	2,58	55	0,87	***	***
2	72	22,93	34,731	23,77	2,19	46	1,02	***	***
2	90	20,81	34,815	24,42	1,55	31	1,31	***	***
2	113	17,85	34,915	25,26	1,09	21	1,53	***	***
2	135	15,41	34,882	25,81	0,80	15	1,77	***	***
2	180	13,82	34,967	26,22	0,57	10	1,91	***	***
2	225	12,84	35,026	26,46	0,68	12	1,93	***	***
2	270	11,78	35,055	26,69	0,89	15	1,93	***	***
1	310	11,41	35,055	26,76	0,92	15	1,91	***	***
1	377	10,32	35,039	26,95	0,77	13	2,07	***	***
1	445	9,68	35,030	27,05	0,95	15	2,21	***	***
1	510	9,41	35,022	27,09	0,79	13	2,14	***	***
1	587	8,88	35,008	27,16	0,83	13	2,24	***	***
1	649	8,54	34,997	27,21	0,86	14	2,30	***	***
1	720	8,25	34,990	27,25	0,89	14	2,25	***	***
1	792	8,01	34,980	27,28	0,95	15	2,33	***	***
1	865	7,61	34,967	27,33	1,00	15	2,33	***	***
1	943	7,27	34,954	27,36	1,09	17	2,34	***	***
1	1107	5,89	34,924	27,53	1,35	20	2,30	***	***
3	1300	5,32	34,881	27,56	1,66	24	2,41	***	***
3	1500	4,95	34,871	27,60	1,73	25	2,38	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 88/64	11/ 4/64	0345 H	4 40 N	93 37 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1646	24,4	27,8	17	1	16	4	2	7	*	1	o	o	o	20	15	o

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,70	33,604	20,80	4,22	99	0,09	0,29	0,6
2	25	29,78	33,839	20,95	4,04	95	0,11	***	0,5
2	50	27,81	34,622	22,19	4,04	92	0,28	0,51	0,8
2	70	25,95	34,868	22,97	3,33	74	0,56	***	3,7
2	80	24,12	34,815	23,49	2,58	55	0,87	***	9,6
2	100	***	34,808	***	1,55	***	1,33	1,47	21,0
2	125	16,99	34,869	25,43	0,98	18	1,63	***	30,6
2	150	15,00	34,899	25,91	0,76	14	1,84	***	31,5
2	200	13,51	35,031	26,33	0,77	14	1,86	1,95	32,6
2	250	12,59	35,058	26,54	1,03	18	1,85	***	32,6
2	300	11,83	35,069	26,69	1,20	20	1,84	2,43	34,1
1	370	11,03	35,049	26,83	0,80	13	2,01	***	36,4
1	463	10,42	35,041	26,93	0,98	16	2,00	2,15	37,0
1	558	9,73	35,030	27,04	0,86	14	2,16	***	39,0
1	654	9,00	35,016	27,15	0,80	13	2,21	2,34	38,2
1	750	8,31	34,997	27,24	0,87	14	2,29	***	42,2
1	845	7,82	34,977	27,30	1,03	16	2,31	2,41	40,4
1	941	7,27	34,957	27,37	1,15	18	2,33	***	39,5
1	1037	6,68	34,936	27,43	1,23	18	2,39	2,42	42,2
1	1132	6,11	34,926	27,50	1,41	21	2,28	***	44,0
1	1228	5,62	34,898	27,54	1,29	19	2,33	2,42	41,7
1	1420	4,63	34,866	27,63	1,86	26	2,27	2,37	41,7

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 89/64	11/ 4/64	1515 H	3 01 N	92 01 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
3977	27,2	33,3	35	2	16	5	5	7	00	0	21	1	1010,8	5	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	30,38	33,688	20,63	4,31	102	0,10	***	***
2	25	29,66	33,891	21,03	4,31	101	0,14	***	***
2	50	27,79	34,480	22,09	4,19	96	0,34	***	***
2	70	25,13	34,769	23,15	3,09	68	0,70	***	***
2	80	23,50	34,926	23,75	2,35	50	0,94	***	***
2	100	21,27	35,005	24,44	1,54	32	1,39	***	***
2	125	17,08	35,056	25,56	0,98	19	1,62	***	***
2	150	15,58	35,083	25,92	1,07	20	1,69	***	***
2	200	13,43	35,111	26,41	1,44	25	1,62	***	***
2	250	12,85	35,096	26,52	1,63	28	1,67	***	***
2	300	12,10	35,072	26,64	1,47	25	1,77	***	***
1	400	11,32	35,052	26,78	1,30	22	1,78	***	***
1	500	10,37	35,035	26,93	0,92	15	2,09	***	***
1	600	9,57	35,022	27,06	0,89	14	2,19	***	***
1	700	9,04	35,017	27,15	0,91	14	2,19	***	***
1	800	8,26	35,000	27,25	0,88	14	2,37	***	***
1	900	7,51	34,981	27,35	0,92	14	2,42	***	***
1	1000	6,69	34,937	27,43	1,24	19	2,37	***	***
1	1100	6,18	34,915	27,48	1,37	20	2,36	***	***
1	1200	5,46	34,887	27,55	1,60	23	2,37	***	***
1	1300	5,04	34,877	27,59	1,63	23	2,40	***	***
1	1500	4,15	34,846	27,67	2,04	29	2,33	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 90/64	11/ 4/64	2145 H	1 57 N	92 02 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4023	25,6	29,2	00	0	16	4	7	7	00	1	o	*	1008,9	0	0	0

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,99	33,582	20,69	4,25	100	0,09	0,31	2,7
2	25	29,72	33,581	20,78	4,14	97	0,09	***	0,2
2	50	27,99	34,161	21,79	4,16	95	0,18	0,41	0,2
2	70	24,16	35,005	23,62	2,97	64	0,75	***	6,1
2	80	23,86	35,055	23,74	2,88	62	0,77	***	6,9
2	100	22,18	35,297	24,41	2,37	49	1,00	1,13	11,6
2	125	17,99	35,110	25,38	1,07	21	1,54	***	21,5
2	150	15,43	35,114	25,98	1,18	22	1,67	***	27,7
2	200	13,74	35,118	26,35	1,53	27	1,59	1,61	28,9
2	250	13,20	35,104	26,45	1,47	26	1,67	***	28,3
2	300	12,52	35,076	26,57	1,21	21	1,80	1,83	29,2
3	400	11,28	35,061	26,79	1,07	18	1,90	***	33,8
3	500	10,21	35,039	26,97	1,24	20	1,99	2,26	34,0
3	600	9,38	35,031	27,10	0,97	16	2,19	***	37,7
3	700	8,69	35,024	27,21	0,91	14	2,24	2,34	39,5
3	800	7,96	35,005	27,30	0,91	14	2,32	***	37,5
3	900	7,34	34,984	27,38	0,98	15	2,40	2,57	39,5
3	1000	6,85	34,961	27,43	1,09	16	2,39	***	41,1
3	1100	6,24	34,926	27,48	1,30	19	2,40	2,75	41,7
3	1200	5,53	34,899	27,55	1,53	22	2,40	***	40,2
3	1300	5,16	34,902	27,60	1,62	23	2,40	2,53	42,0
3	1500	4,32	34,855	27,66	1,94	27	2,34	2,57	39,5
1	2000	2,69	34,789	27,77	2,79	38	2,28	2,41	40,2
1	2500	2,01	34,754	27,80	3,27	43	2,20	2,33	27,9
1	3000	1,65	34,742	27,81	3,55	47	2,15	2,27	38,2
1	3500	1,36	34,735	27,83	3,82	50	2,09	2,32	38,4
1	3800	1,17	34,727	27,84	4,12	53	2,00	2,05	36,9

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 91/64	12/ 4/64	0505 H	0 55 N	92 03 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4206	26,1	27,8	18	1	16	9	8	5	*	*	20	1	1010,0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,67	33,505	20,74	4,21	98	0,05	***	***
2	25	29,72	33,611	20,80	4,07	95	0,07	***	***
2	50	29,36	34,026	21,24	4,28	100	0,11	***	***
2	70	24,50	35,069	23,57	3,34	72	0,59	***	***
2	80	23,75	35,269	23,94	3,16	68	0,68	***	***
2	100	23,02	35,233	24,13	2,83	60	0,83	***	***
2	125	19,28	35,220	25,14	1,58	31	1,28	***	***
2	150	18,29	35,182	25,36	1,48	29	1,35	***	***
2	200	14,30	35,107	26,22	1,27	23	1,64	***	***
2	250	13,32	35,098	26,42	1,39	24	1,66	***	***
2	300	12,34	35,082	26,61	1,48	25	1,65	***	***
1	400	11,07	35,039	26,81	1,70	28	1,70	***	***
1	500	9,86	35,016	27,01	1,24	20	1,95	***	***
1	600	9,17	34,999	27,11	1,19	19	2,04	***	***
1	700	8,71	35,063	27,23	1,05	17	2,07	***	***
1	800	8,02	35,001	27,29	0,98	15	2,31	***	***
1	900	7,35	34,981	27,37	1,00	15	2,33	***	***
1	1000	6,63	34,944	27,45	1,18	18	2,35	***	***
1	1100	6,09	34,919	27,50	1,32	20	2,30	***	***
1	1200	5,33	34,892	27,57	1,58	23	2,32	***	***
1	1300	4,93	34,872	27,60	1,77	25	2,32	***	***
1	1500	4,15	34,845	27,67	2,05	29	2,27	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 92/64	12/ 4/64	1100 H	0 10 S	92 05 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4297	25,8	28,9	*	*	16	8	6	7	00	0	25	1	1010,3	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,77	33,759	20,90	4,10	96	0,13	0,27	0,7
2	25	29,77	33,775	20,91	3,91	92	0,13	***	0,6
2	50	29,69	33,835	20,98	4,05	95	0,15	0,32	0,3
2	70	23,56	35,181	23,93	3,22	69	0,68	***	6,0
2	80	22,58	35,287	24,29	3,01	63	0,79	***	7,8
2	100	21,40	35,269	24,61	3,08	63	0,79	0,91	8,7
2	125	20,26	35,270	24,92	2,12	43	1,07	***	17,2
2	150	19,13	35,213	25,17	1,70	33	1,22	***	20,3
2	200	13,64	35,110	26,37	1,41	25	1,50	1,65	29,1
2	250	12,62	35,079	26,55	1,57	27	1,67	***	30,7
2	300	11,91	35,051	26,66	1,67	28	1,67	1,77	31,1
3	400	10,88	35,014	26,83	1,83	30	1,68	***	32,7
3	500	9,65	34,982	27,02	1,52	25	1,94	2,02	35,4
3	600	9,22	34,997	27,10	1,23	20	2,09	***	38,4
3	700	8,78	34,998	27,17	1,12	18	2,14	2,25	38,6
3	800	8,18	34,986	27,26	1,05	16	2,21	***	40,6
3	900	7,44	34,970	27,35	1,11	17	2,35	2,44	40,4
3	1000	6,73	34,943	27,43	1,18	18	2,32	***	40,6
3	1100	5,98	34,914	27,51	1,35	20	2,35	2,46	39,1
3	1200	5,37	34,888	27,56	1,57	23	2,35	***	42,4
3	1300	4,76	34,869	27,62	1,80	26	2,32	2,41	39,5
3	1500	3,81	34,852	27,71	1,96	27	2,25	2,38	40,0
1	2000	2,70	34,790	27,77	2,82	38	2,21	2,36	39,7
1	2500	2,19	34,761	27,79	3,17	42	2,09	2,25	39,7
1	3000	1,70	34,743	27,81	3,48	46	2,11	2,25	37,3
1	3500	1,32	34,730	27,83	3,92	51	2,01	2,21	36,9
1	4000	1,12	34,723	27,84	4,21	54	1,88	1,99	35,5

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 93/64	12/ 4/64	1730 H	1 00 S	92 05 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4480	27,8	32,2	03	1	16	6	7	7	00	0	22	1	*	0	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	30,09	33,594	20,66	4,23	100	0,08	***	***
2	25	29,69	33,649	20,84	4,16	97	0,09	***	***
2	50	26,95	34,192	22,15	3,80	85	0,29	***	***
2	70	23,50	35,232	23,98	3,24	69	0,70	***	***
2	80	22,56	35,280	24,29	2,81	59	0,84	***	***
2	100	21,06	35,285	24,71	2,41	49	1,00	***	***
2	125	19,04	35,226	25,20	1,69	33	1,27	***	***
2	150	18,06	35,181	25,41	1,44	28	1,40	***	***
2	200	13,50	35,113	26,40	1,48	26	1,60	***	***
2	250	12,65	35,098	26,56	1,80	31	1,60	***	***
2	300	11,95	35,084	26,68	1,91	32	1,61	***	***
1	400	10,55	35,050	26,91	1,69	28	1,78	***	***
1	500	9,70	35,000	27,02	1,41	23	1,95	***	***
1	600	9,15	35,000	27,11	1,27	20	2,09	***	***
1	700	8,53	34,991	27,21	1,18	19	2,17	***	***
1	800	8,00	34,979	27,28	1,11	17	2,25	***	***
1	900	7,32	34,957	27,36	1,10	17	2,33	***	***
1	1000	6,56	34,929	27,44	1,22	18	2,37	***	***
1	1100	6,04	34,925	27,51	1,34	20	2,37	***	***
1	1200	5,51	34,902	27,56	1,52	22	2,35	***	***
1	1300	4,84	34,878	27,62	1,77	25	2,33	***	***
1	1500	4,27	34,859	27,67	1,99	28	2,29	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 94/64	12/ 4/64	2400 H	2 03 S	92 02 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4572	26,0	28,6	*	*	16	8	3	7	*	*	21	1	1010,4	o	o	o

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,94	33,779	20,85	4,30	101	0,12	0,70	0,3
2	25	28,86	33,686	21,15	4,36	101	0,12	***	0,5
2	50	28,25	34,263	21,79	4,29	99	0,18	0,77	0,3
2	70	23,85	35,195	23,85	3,05	65	0,69	***	5,8
2	80	23,28	35,226	24,04	2,73	58	0,81	***	8,4
2	100	***	35,217	***	2,05	***	1,09	1,64	15,8
2	125	19,26	35,208	25,13	1,76	35	1,26	***	18,0
2	150	17,02	35,153	25,64	1,45	27	1,44	***	26,6
2	200	14,00	35,124	26,30	1,46	26	1,61	2,05	28,2
2	250	12,91	35,112	26,52	1,89	33	1,51	***	27,4
2	300	12,15	35,076	26,64	2,06	35	1,55	2,00	25,8
3	400	10,88	34,998	26,81	1,96	33	1,70	***	31,2
3	500	9,78	34,936	26,96	1,72	28	1,82	2,31	33,8
3	600	8,72	34,911	27,11	1,92	24	2,06	***	37,1
3	700	8,25	34,943	27,21	1,18	18	2,17	2,67	38,9
3	800	7,69	34,941	27,29	1,11	17	2,34	***	43,7
3	900	7,18	34,936	27,36	1,16	18	2,33	2,90	41,5
3	1000	6,66	34,917	27,42	1,21	18	2,42	***	42,0
3	1100	6,00	34,881	27,48	1,37	20	2,40	2,88	41,7
3	1200	5,60	34,886	27,53	1,47	21	2,33	***	43,6
3	1300	5,09	34,854	27,57	1,65	24	2,35	2,89	39,7
3	1500	4,21	34,838	27,66	1,98	28	2,17	2,77	39,1
1	2000	2,70	34,789	27,77	2,83	38	2,27	2,79	36,9
1	2500	2,00	34,756	27,80	3,36	45	2,17	2,85	30,9
1	3000	1,65	34,743	27,81	3,54	46	2,03	2,68	36,9
1	3500	1,38	34,736	27,83	3,82	50	2,00	2,40	34,4
1	4000	1,14	34,727	27,84	4,18	54	1,92	2,44	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 95/64	13/ 4/64	0618 H	3 05 S	91 59 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4435	25,6	28,3	08	2	16	4	3	7	00	0	06	1	*	0	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,82	33,918	21,00	4,22	99	0,17	***	***
2	25	29,55	34,071	21,20	4,24	99	0,14	***	***
2	50	28,56	34,471	21,83	4,15	96	0,17	***	***
2	70	25,63	35,164	23,29	3,72	82	0,41	***	***
2	80	24,64	35,177	23,61	3,25	71	0,59	***	***
2	100	22,83	35,243	24,19	2,59	55	0,85	***	***
2	125	19,22	35,199	25,14	1,87	37	1,16	***	***
2	150	17,16	35,145	25,60	1,52	29	1,38	***	***
2	200	14,22	35,135	26,26	2,02	36	1,37	***	***
2	250	13,09	35,088	26,46	1,91	33	1,51	***	***
2	300	12,14	35,060	26,63	2,11	36	1,47	***	***
1	385	10,55	34,968	26,85	2,04	34	1,61	***	***
1	485	9,63	34,923	26,97	1,58	25	1,92	***	***
1	584	8,96	34,934	27,09	1,40	22	2,10	***	***
1	683	8,42	34,934	27,18	1,23	19	2,16	***	***
1	783	7,89	34,926	27,25	1,17	18	2,30	***	***
1	882	7,16	34,904	27,34	1,21	18	2,31	***	***
1	981	6,54	34,886	27,41	1,28	19	2,36	***	***
1	1080	6,18	34,903	27,47	1,31	19	2,23	***	***
1	1180	5,81	34,903	27,52	1,44	21	2,23	***	***
1	1279	5,37	34,863	27,54	1,58	23	2,23	***	***
1	1478	4,27	34,824	27,64	2,00	28	2,23	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 96/64	13/ 4/64	1815 H	4 56 S	93 31 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4663	27,2	32,2	00	1	16	8	2	7	16	2	15	1	1009,5	0	°	°

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,72	33,686	20,86	4,34	102	0,11	0,39	0,5
2	25	29,46	33,693	20,95	4,28	100	0,11	***	0,3
2	50	28,15	34,630	22,09	4,29	99	0,22	0,50	0,3
2	70	25,33	34,919	23,20	3,36	74	0,52	***	0,5
2	80	24,45	35,014	23,54	3,15	68	0,62	***	1,4
2	100	21,90	35,143	24,38	2,31	48	1,01	1,19	11,8
2	125	17,73	35,092	25,43	1,69	32	1,32	***	18,7
2	150	16,29	35,108	25,78	1,74	32	1,42	***	22,5
2	200	13,05	34,950	26,36	1,52	26	1,65	1,70	28,5
2	250	12,02	35,020	26,62	1,75	30	1,65	***	29,4
2	300	11,05	34,970	26,76	1,70	28	1,71	1,89	26,6
3	393	10,41	34,955	26,86	1,96	32	1,71	***	27,4
3	492	9,49	34,899	26,98	1,88	30	1,81	1,94	32,0
3	592	8,79	34,876	27,07	1,51	24	2,01	***	33,8
3	692	8,14	34,874	27,17	1,30	20	2,10	2,19	36,8
3	791	7,56	34,863	27,25	1,28	20	2,26	***	36,8
3	891	6,99	34,861	27,33	1,26	19	2,33	2,42	39,4
3	990	6,31	34,835	27,40	1,40	21	2,32	***	39,8
3	1090	5,77	34,810	27,45	1,56	23	2,24	2,50	40,9
3	1189	5,25	34,799	27,51	1,66	24	2,33	***	39,1
3	1289	4,94	34,822	27,56	1,80	26	2,33	2,43	40,7
3	1488	4,13	34,814	27,65	2,07	29	2,25	2,41	39,6
1	2000	2,67	34,778	27,76	2,86	39	2,21	2,22	37,9
1	2500	2,04	34,754	27,79	3,33	44	2,17	2,55	38,1
1	3000	1,68	34,743	27,81	3,56	47	2,10	2,28	38,3
1	3500	1,34	34,735	27,83	3,92	51	2,05	2,38	37,6
1	4000	1,10	34,728	27,84	4,22	54	1,93	1,99	36,8

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 97/64	14/ 4/64	0850 H	6 58 S	95 01 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4975	23,9	27,8	16	4	16	8	2	7	16	2	15	1	1009,5	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	29,46	33,671	20,93	4,32	101	0,07	0,34	0,4
2	25	29,31	33,709	21,01	4,24	99	0,10	***	0,5
2	50	27,68	34,426	22,09	4,53	103	0,16	0,35	0,4
2	70	24,15	34,414	23,17	3,81	82	0,33	***	0,0
2	80	21,85	34,514	23,91	2,64	54	***	***	9,3
2	100	18,55	34,746	24,96	1,90	37	0,86	1,38	17,7
2	125	16,68	34,852	25,49	1,61	30	1,28	***	22,3
2	150	14,44	34,735	25,91	1,84	33	1,40	***	22,6
2	200	12,17	34,781	26,40	1,32	23	1,53	2,17	28,5
2	250	11,36	34,908	26,66	1,52	25	1,72	***	32,0
2	300	10,93	34,940	26,76	1,55	26	1,78	1,84	29,9
3	400	9,90	34,897	26,91	1,55	25	1,76	***	34,4
3	500	8,88	34,840	27,03	1,55	25	1,93	2,10	16,3
3	600	8,13	34,819	27,13	1,46	23	2,05	***	38,5
3	700	7,53	34,811	27,22	1,34	21	2,19	2,31	38,5
3	800	6,95	34,785	27,28	1,36	21	2,30	***	35,9
3	900	6,31	34,751	27,34	1,55	23	2,36	2,33	36,3
3	1000	5,47	34,704	27,41	1,78	26	2,32	***	38,3
3	1100	5,25	34,732	27,46	1,78	26	2,39	2,42	38,3
3	1200	4,79	34,722	27,50	1,90	27	2,38	***	36,3
3	1300	4,46	34,745	27,56	1,99	28	2,37	2,41	37,4
3	1500	3,79	34,758	27,64	2,28	32	2,31	2,40	39,4
1	2000	2,45	34,756	27,76	3,04	41	2,27	2,33	35,1
1	2500	1,94	34,749	27,80	3,45	46	2,15	2,21	34,6
1	3000	1,64	34,741	27,81	3,59	47	2,05	2,18	38,5
1	3500	1,30	34,729	27,83	3,89	51	2,03	2,16	34,0
1	4000	1,12	34,727	27,84	4,18	54	1,99	2,08	31,7

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 98/64	14/ 4/64	2330 H	9 00 S	96 29 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5203	25,8	28,9	10	4	16	0	0	7	10	2	18	1	1009,2	5	15	10

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
3	0	29,09	33,804	21,16	4,34	101	0,14	0,33	0,4
3	25	28,82	34,133	21,50	4,39	102	0,14	***	0,4
3	50	26,00	34,456	22,64	4,51	100	0,20	0,39	0,5
3	70	23,12	34,602	23,62	3,61	76	0,48	***	1,2
3	80	21,08	34,611	24,20	2,72	55	0,78	***	10,8
3	100	18,87	34,676	24,83	2,18	43	1,16	1,26	18,1
3	125	16,56	34,625	25,35	2,30	43	1,22	***	19,6
3	150	14,19	34,754	25,98	2,35	42	1,39	***	17,7
3	200	12,18	34,747	26,38	1,80	31	1,60	1,77	28,0
3	250	11,12	34,764	26,59	1,83	30	1,70	***	28,4
3	300	10,63	34,845	26,74	1,80	30	1,70	1,95	32,3
2	385	9,80	34,855	26,89	2,44	39	1,70	***	30,4
2	481	8,89	34,807	27,01	2,20	35	1,68	1,96	31,7
2	578	8,01	34,780	27,12	1,77	27	1,99	***	33,9
2	674	7,33	34,756	27,20	1,63	25	2,14	2,35	37,0
2	771	6,75	34,750	27,28	1,60	24	2,20	***	37,6
2	868	6,29	34,751	27,34	1,60	24	2,24	2,43	36,1
2	965	5,66	34,727	27,40	1,72	25	2,24	***	38,6
2	1063	5,30	34,713	27,43	1,81	26	2,30	2,48	40,7
2	1162	4,88	34,725	27,49	1,93	28	2,31	***	39,2
2	1260	4,55	34,753	27,55	2,02	29	2,27	2,47	37,9
2	1459	3,91	34,747	27,62	2,28	32	2,29	2,45	37,0
1	2000	2,50	34,756	27,76	3,04	41	2,18	2,36	37,4
1	2500	1,98	34,751	27,80	3,49	46	2,09	2,34	37,6
1	3000	1,70	34,747	27,81	3,66	48	2,06	2,29	35,3
1	3500	1,36	34,735	27,83	4,01	52	2,00	2,16	36,6
1	4000	1,17	34,728	27,84	4,20	54	2,00	2,12	33,1

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 99/64	15/ 4/64	1330 H	11 11 S	98 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4755	27,2	30,0	10	5	16	8	6	7	11	2	12	1	1009,0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
3	0	29,03	33,674	21,08	4,39	102	0,12	0,28	0,2
3	25	28,83	33,834	21,27	4,33	100	0,11	***	0,2
3	50	27,29	34,456	22,24	4,86	110	0,11	0,30	0,2
3	75	23,27	34,532	23,52	3,63	77	0,47	***	0,6
3	100	19,73	34,656	24,59	2,41	48	1,04	1,22	13,3
3	125	17,95	34,677	25,06	2,33	45	1,17	***	16,5
3	150	16,76	34,685	25,35	2,12	40	1,22	***	20,2
3	200	13,07	34,596	26,08	2,27	39	1,49	2,18	25,5
3	250	11,77	34,626	26,36	2,18	37	1,60	***	26,8
3	300	11,04	34,711	26,56	1,91	32	1,69	1,99	30,7
2	374	9,72	34,717	26,80	2,22	36	1,71	***	28,9
2	464	8,68	34,722	26,97	2,41	38	1,81	2,01	32,3
2	651	7,05	34,695	27,19	1,74	26	2,18	2,36	37,9
2	838	5,89	34,664	27,32	1,86	27	2,24	2,43	39,2
2	1027	4,95	34,658	27,43	2,04	29	2,23	2,57	42,6
2	1217	4,41	34,684	27,51	2,15	30	2,30	2,46	43,1
2	1411	3,87	34,724	27,60	2,30	32	2,29	2,62	39,6
1	1956	2,76	34,752	27,73	2,98	40	2,18	2,46	39,6
1	2450	2,06	34,747	27,79	3,42	45	2,09	2,25	37,3
1	2946	1,68	34,741	27,81	3,69	48	2,06	2,46	37,3
1	3444	1,40	34,729	27,82	3,90	51	2,02	2,21	39,9
1	3942	1,24	34,725	27,83	4,04	52	2,00	2,22	36,9

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 100/64	16/ 4/64	1315 H	14 28 S	100 39 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5669	24,7	29,2	14	5	16	8	3	8	14	3	15	1	1010,0	*	15	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	27,78	34,795	22,33	4,46	102	0,08	0,30	0,2
2	25	27,62	34,840	22,42	4,41	101	0,09	***	0,4
2	50	27,24	34,828	22,53	4,46	101	0,07	0,30	0,2
2	75	24,09	34,675	23,39	4,41	95	0,20	***	0,0
2	100	21,27	34,640	24,17	3,01	61	0,77	0,90	8,8
2	125	19,90	34,841	24,69	2,81	56	0,86	***	10,5
2	150	18,95	35,111	25,14	3,16	62	0,79	***	8,6
2	200	16,92	35,211	25,81	3,16	59	1,01	0,98	11,7
2	250	14,81	35,318	26,28	3,74	68	0,83	***	10,2
2	300	12,89	35,173	26,57	3,92	68	0,94	1,01	11,3
1	382	10,31	34,895	26,84	4,58	75	1,06	***	12,9
1	478	8,41	34,671	26,97	4,56	71	1,36	1,39	19,4
1	670	6,61	34,652	27,22	2,14	32	2,18	2,22	35,4
1	862	5,53	34,644	27,35	2,03	30	2,26	2,30	39,3
1	1058	4,66	34,636	27,45	2,17	31	2,31	2,35	41,1
1	1255	4,00	34,661	27,54	2,35	33	2,30	2,35	39,9
1	1454	3,46	34,689	27,61	2,59	36	2,30	2,35	38,8

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 101/64	17/ 4/64	1245 H	18 10 S	103 39 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5669	23,9	27,8	11	4	16	8	5	8	11	3	14	1	1012,5	5	10	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	27,13	34,783	22,53	4,48	101	0,13	0,31	0,1
2	25	27,03	34,792	22,57	4,43	100	0,11	***	0,1
2	50	27,02	34,777	22,57	4,34	98	0,13	0,28	0,3
2	75	23,77	34,929	23,68	4,54	97	0,23	***	0,3
2	100	22,21	35,155	24,30	4,34	90	0,31	0,46	0,5
2	125	21,04	35,242	24,69	3,86	79	0,45	***	2,0
2	150	20,49	35,445	24,99	4,03	82	0,40	***	2,5
2	200	18,24	35,352	25,50	3,38	66	0,73	0,78	7,0
2	250	17,82	35,681	25,93	4,29	82	0,50	***	3,0
2	300	15,14	35,527	26,36	4,31	79	0,62	0,67	4,7
1	386	11,83	35,126	26,74	5,08	86	0,73	***	7,7
1	483	9,56	34,788	26,88	5,19	83	1,04	1,09	14,1
1	678	6,39	34,560	27,18	3,33	50	1,90	1,95	33,7
1	874	5,38	34,623	27,35	2,31	33	2,20	1,98	31,0
1	1071	4,62	34,643	27,46	2,34	33	2,22	2,32	31,8
1	1269	3,98	34,658	27,54	2,54	36	2,32	2,31	32,7
1	1468	3,37	34,707	27,64	2,88	40	2,31	2,29	30,8

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 102/64	18/ 4/64	1240 H	22 00 S	106 50 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4663	21,1	25,6	12	3	16	8	3	7	13	2	15	1	1014,8	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	24,57	35,458	23,84	4,65	101	0,09	0,31	0,3
2	25	24,44	35,461	23,88	4,60	100	0,09	***	0,1
2	50	24,44	35,462	23,88	4,60	100	0,09	0,31	0,2
2	75	24,40	35,461	23,89	4,62	100	0,09	***	0,0
2	100	21,42	35,437	24,73	4,60	95	0,22	0,41	0,0
2	125	20,48	35,510	25,04	4,34	88	0,29	***	0,4
2	150	19,72	35,631	25,33	4,37	87	0,29	***	0,8
2	200	18,79	35,745	25,66	4,54	89	0,30	0,47	0,9
2	250	17,69	35,786	25,97	4,60	89	0,33	***	0,9
2	300	15,75	35,680	26,34	4,74	88	0,37	0,53	1,5
1	390	12,65	35,262	26,68	5,10	88	0,58	***	4,4
1	488	10,43	34,911	26,83	5,31	87	0,87	0,96	9,8
1	683	7,41	34,581	27,05	4,17	64	1,55	1,64	24,4
1	878	5,74	34,621	27,31	2,27	33	2,17	2,20	35,4
1	1073	5,06	34,635	27,40	2,27	33	2,24	2,33	36,2
3	1282	4,13	34,607	27,48	2,76	39	2,22	2,30	38,0
3	1480	3,58	34,646	27,57	2,83	39	2,22	2,28	37,9

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 103/64	19/ 4/64	1230 H	25 53 S	110 18 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
3658	22,8	25,6	17	2	16	1	2	7	16	2	16	1	1011,5	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	22,83	35,732	24,56	4,82	102	0,10	0,26	0,5
2	25	22,71	35,740	24,60	4,77	101	0,10	***	0,4
2	50	22,57	35,727	24,63	4,71	99	0,10	0,31	0,2
2	75	20,08	35,569	25,19	4,40	88	0,25	***	0,3
2	100	18,98	35,672	25,56	4,29	85	0,35	0,48	1,4
2	125	18,55	35,703	25,69	4,29	84	0,37	***	1,6
2	150	17,93	35,792	25,91	4,60	89	0,29	***	0,9
2	200	16,46	35,743	26,23	4,71	88	0,34	0,44	1,8
2	250	14,91	35,599	26,47	4,96	90	0,41	***	1,8
2	300	13,61	35,435	26,62	5,16	91	0,45	0,62	2,6
1	397	11,21	35,024	26,77	5,25	88	0,74	***	8,8
1	495	9,58	34,766	26,86	5,39	87	0,96	1,10	12,9
1	694	7,19	34,518	27,03	4,67	71	1,46	1,65	24,2
1	892	5,31	34,544	27,30	2,93	42	2,06	2,20	34,8
1	1090	4,53	34,583	27,42	***	***	2,17	2,30	37,5
1	1289	3,86	34,603	27,51	2,88	40	2,14	2,30	37,1
1	1487	3,30	34,638	27,59	3,05	42	2,17	2,28	35,4

OCEANOGRAPHICAL CRUISE REPORTS

1. Oceanographical observations in the Indian Ocean in 1959. H.M.A.S. *Diamantina* Cruises Dm1/59 and Dm2/59.
2. Oceanographical observations in the Indian Ocean in 1960. H.M.A.S. *Diamantina* Cruise Dm1/60.
3. Oceanographical observations in the Indian Ocean in 1960. H.M.A.S. *Diamantina* Cruise Dm2/60.
4. Oceanographical observations in the Indian Ocean in 1960. H.M.A.S. *Diamantina* Cruise Dm3/60.
5. Oceanographical observations in the Pacific Ocean in 1960. H.M.A.S. *Gascoyne* Cruises G1/60 and G2/60.
6. Oceanographical observations in the Pacific Ocean in 1960. H.M.A.S. *Gascoyne* Cruise G3/60.
7. Oceanographical observations in the Indian Ocean in 1961. H.M.A.S. *Diamantina* Cruise Dm1/61.
8. Oceanographical observations in the Pacific Ocean in 1961. H.M.A.S. *Gascoyne* Cruise G1/61.
9. Oceanographical observations in the Indian Ocean in 1961. H.M.A.S. *Diamantina* Cruise Dm2/61.
10. Oceanographical observations in the Indian and Pacific Oceans in 1961. H.M.A.S. *Gascoyne* Cruise G2/61.
11. Oceanographical observations in the Indian Ocean in 1961. H.M.A.S. *Diamantina* Cruise Dm3/61.
12. Oceanographical observations in the Pacific Ocean in 1961. H.M.A.S. *Gascoyne* Cruise G3/61.
13. Oceanographical observations in the Pacific Ocean in 1962. H.M.A.S. *Gascoyne* Cruise G1/62.
14. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Diamantina* Cruise Dm1/62.
15. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Diamantina* Cruise Dm2/62.
16. Oceanographical observations in the Pacific and Indian Oceans in 1962. H.M.A.S. *Gascoyne* Cruises G2/62 and G3/62.
17. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Gascoyne* Cruise G4/62.
18. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Diamantina* Cruise Dm3/62.
19. Oceanographical observations in the Pacific Ocean in 1962. H.M.A.S. *Gascoyne* Cruise G5/62.
20. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Diamantina* Cruise Dm4/62.
21. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G1/63.
22. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G2/63.
23. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Diamantina* Cruise Dm1/63.
24. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Diamantina* Cruise Dm2/63.

OCEANOGRAPHICAL CRUISE REPORTS

(Continued)

25. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Diamantina* Cruise Dm3/63.

29. Oceanographical observations in the Pacific Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G4/63.

31. Oceanographical observations in the Pacific Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G5/63.

32. Oceanographical observations in the Pacific Ocean in 1964. H.M.A.S. *Gascoyne* Cruise G1/64.

34. Oceanographical observations in the Indian Ocean in 1964. H.M.A.S. *Gascoyne* Cruise G2/64.

35. Oceanographical observations in the Indian and Pacific Oceans in 1964. H.M.A.S. *Gascoyne* Cruise G3/64.

36. Oceanographical observations in the Indian Ocean in 1964. H.M.A.S. *Diamantina* Cruise Dm2/64.

39. Oceanographical observations in the Pacific Ocean in 1964. H.M.A.S. *Gascoyne* Cruise G4/64.

46. Oceanographical observations in the Indian Ocean in 1965. H.M.A.S. *Gascoyne* Cruise G5/65.