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UNIVERSITY OF CALIFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

## data report

PHYSICAL AND CHEMICAL DATA  
CCOFI CRUISE 5806  
4-26 June 1958

SIO Reference 59-29  
5 January 1959

UNIVERSITY OF CALIFORNIA  
SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

CCOFI CRUISE 5806

4-26 June 1958

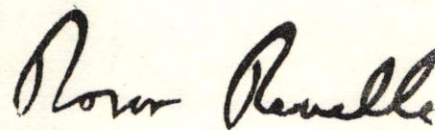
Sponsored by

Marine Research Committee

SIO Reference 59-29

5 January 1959

Approved for distribution:



Roger Revelle, Director

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## FIGURES

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## INTRODUCTION

The data presented in this report were collected on the one hundred and ninth consecutive cruise of the California Cooperative Oceanic Fisheries Investigations program. The R/V Black Douglas of the U. S. Bureau of Commercial Fisheries, the R/V Orca and the R/V Stranger of the Scripps Institution participated in this cruise.

The data are tabulated at observed depths, and the interpolated and computed values are tabulated at standard depths. They are accompanied by charts of horizontal distribution. The presentation of data in this report does not constitute publication; however, the data contained in this report have been carefully edited and no modifications should be necessary before final publication.

## STANDARD PROCEDURES

Processing of the data was carried out using the method described by Klein.<sup>1/</sup> Certain approximations have been introduced for the determination of the integrated pressure terms which may result in errors whose maximum values are less than 0.5 dynamic centimeter at 0 over 200 decibars, 1.0 dynamic centimeter at 0 over 500 decibars, and 2.0 dynamic centimeters at 0 over 1000 decibars. The 125-meter level was introduced into the integration to obtain greater accuracy in the determination of  $\Delta D$ . The interpolated values at 125 meters are not tabulated.

To indicate degree of accuracy, temperatures are recorded in tenths of a degree when obtained by bucket thermometer, thermograph, or bathythermograph, while temperatures from reversing thermometers are recorded in hundredths of a degree. Extrapolated values and values interpolated between remote observations are entered within parentheses. A hyphen is used to indicate a missing observed value. The time is the time of messenger release. When more than one cast was made on a station, messenger times and wire angles are given in the order of increasing depth. A line is left blank between the observed data of each cast.

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<sup>1/</sup>

Klein, Hans T. A new technique for processing physical oceanographic data. MS.

## FOOTNOTES

Footnotes which appear frequently are "loose bottle cap" and "possible evaporation." To avoid any confusion as to their meaning the following explanation is included.

Laboratory personnel, before titrating the salinity samples, note any possible imperfections in the sealing of the bottles as follows:

- Loose bottle cap: The cap is definitely loose so that it could be moved with very little applied pressure. The salinity values obtained from these samples may be usable depending on time and/or conditions of storage.
- Possible evaporation: Either the cap was sealed with less than usual pressure, the bottle edge chipped, the rubber washer cracked, or the bale broke on opening, etc.

Use of the above values in interpolation depends upon consistency with other values of salinity and other properties, and these footnotes are supplemented with "falls on property curve" or "does not fall on property curve," depending upon whether the property curve was drawn through the value or not.

In addition to standard footnotes, three special notations are used without footnotes because their meaning is always the same.

To indicate a premature or a delayed reversal of the water-sampling device which results in certain depth and property errors, the following notation is used.

p: pretrip or posttrip.

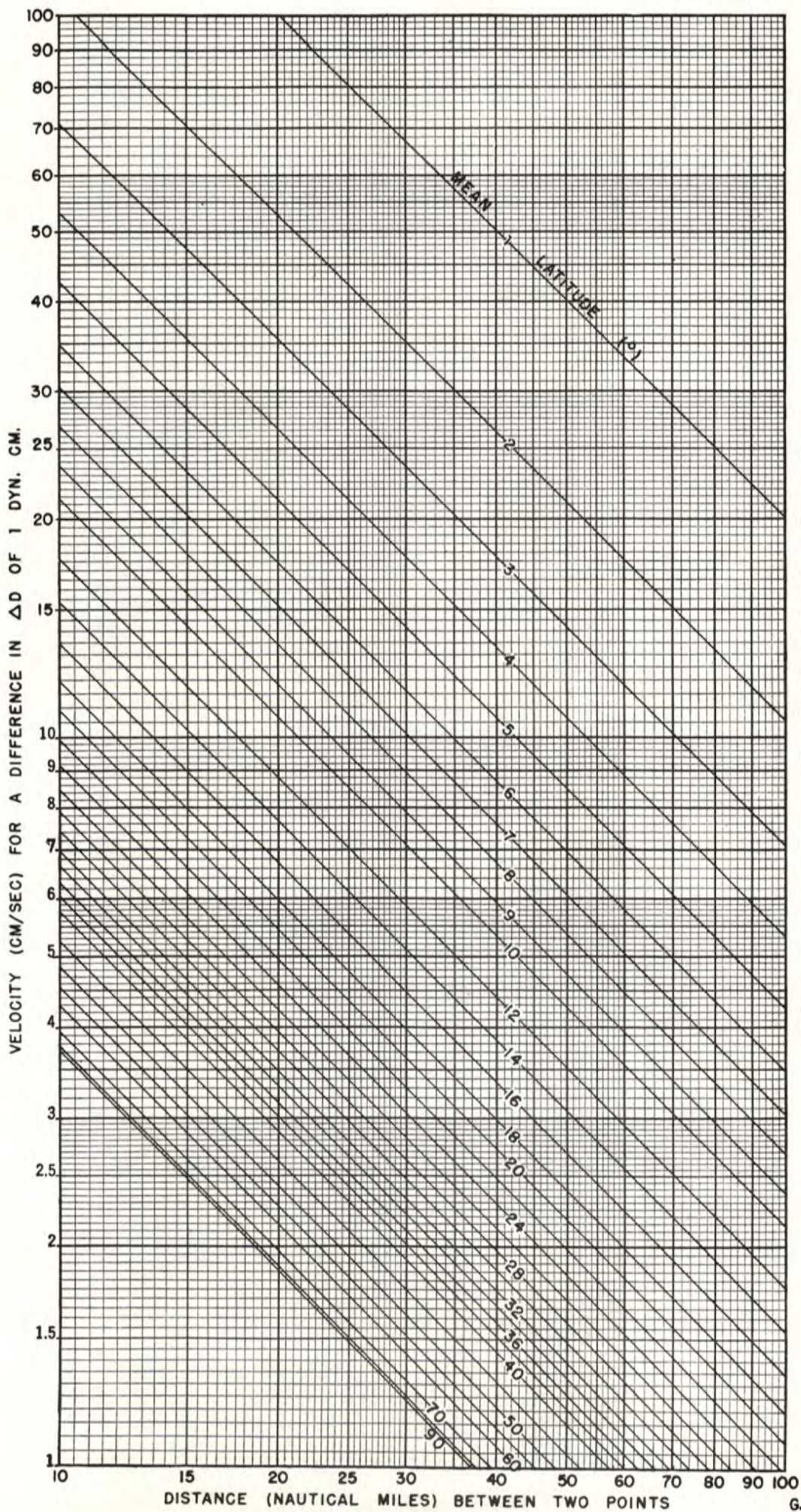
Values which are not drawn through because they seem to be in error without apparent reason are indicated by one of the following notations.

r: rejected value (value seems to be definitely wrong),

u: uncertain value (value may be correct; occasionally it can influence the drawing of the property curve).

## FORMAT

These data are typed in the format of the University of California Press publication, "Oceanic Observations of the Pacific." So that these pages can be used as copy for the 1958 volume, the first page of the Cruise 5806 data is numbered 162.



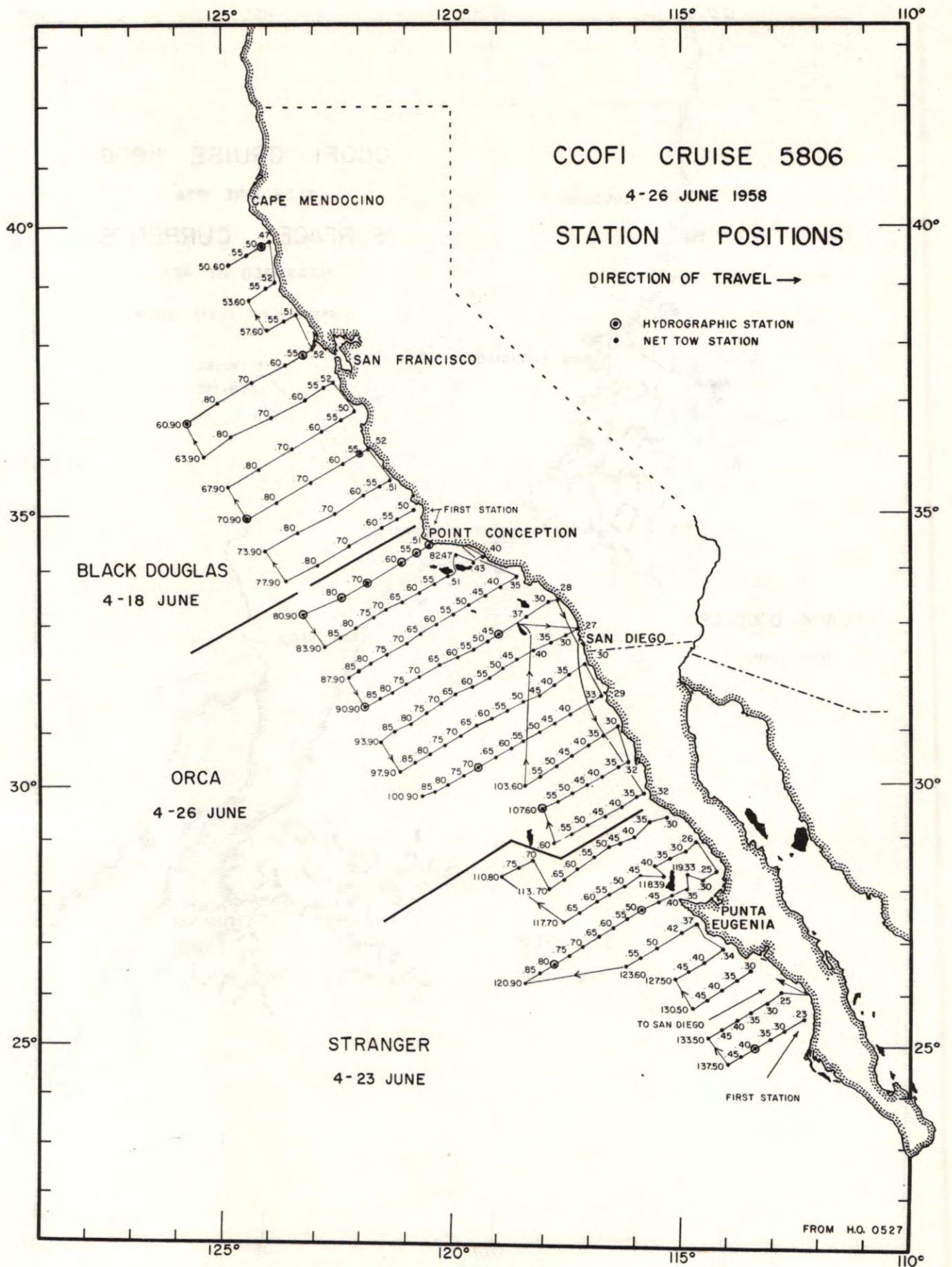


FIGURE 1

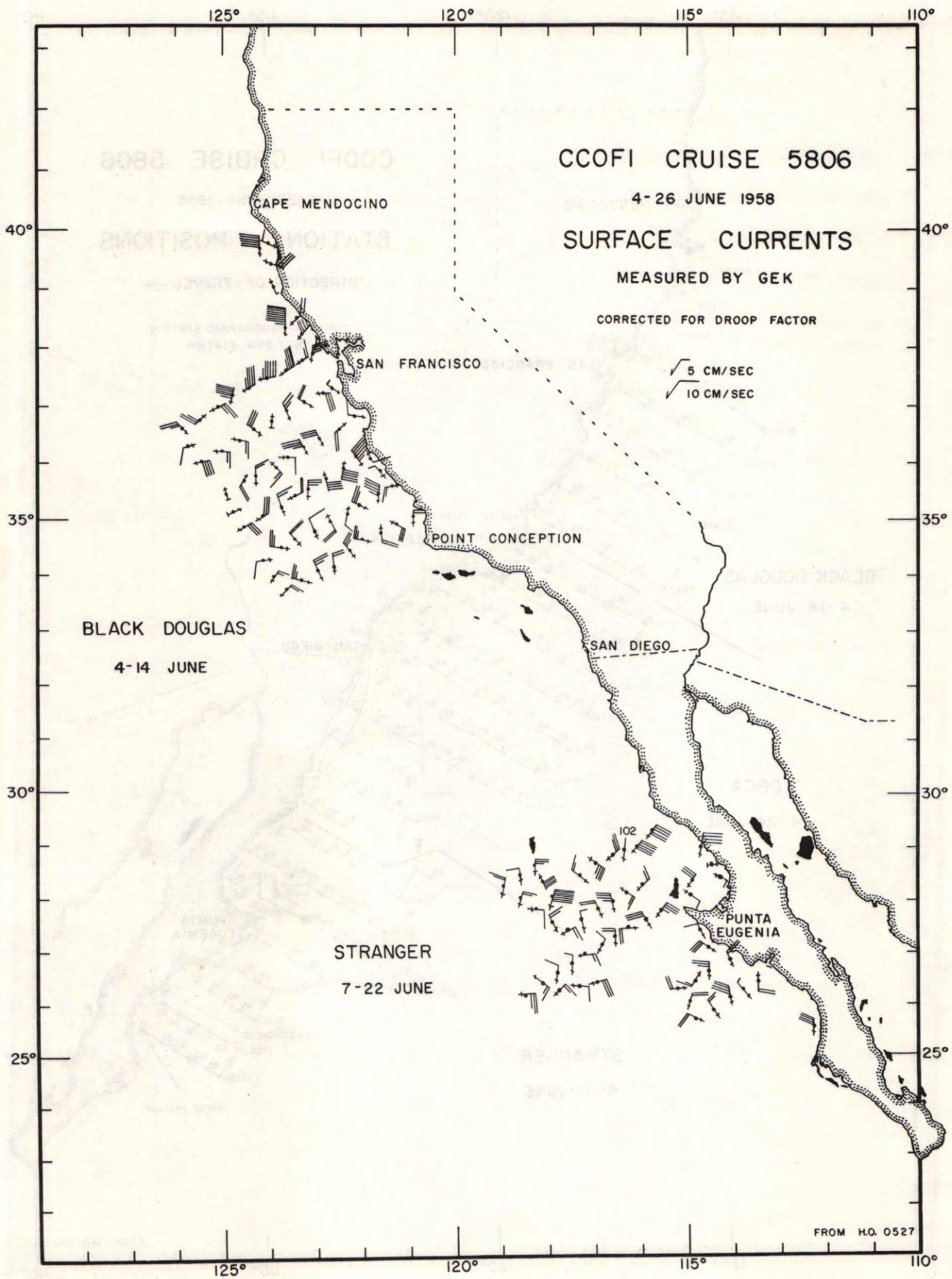


FIGURE 2



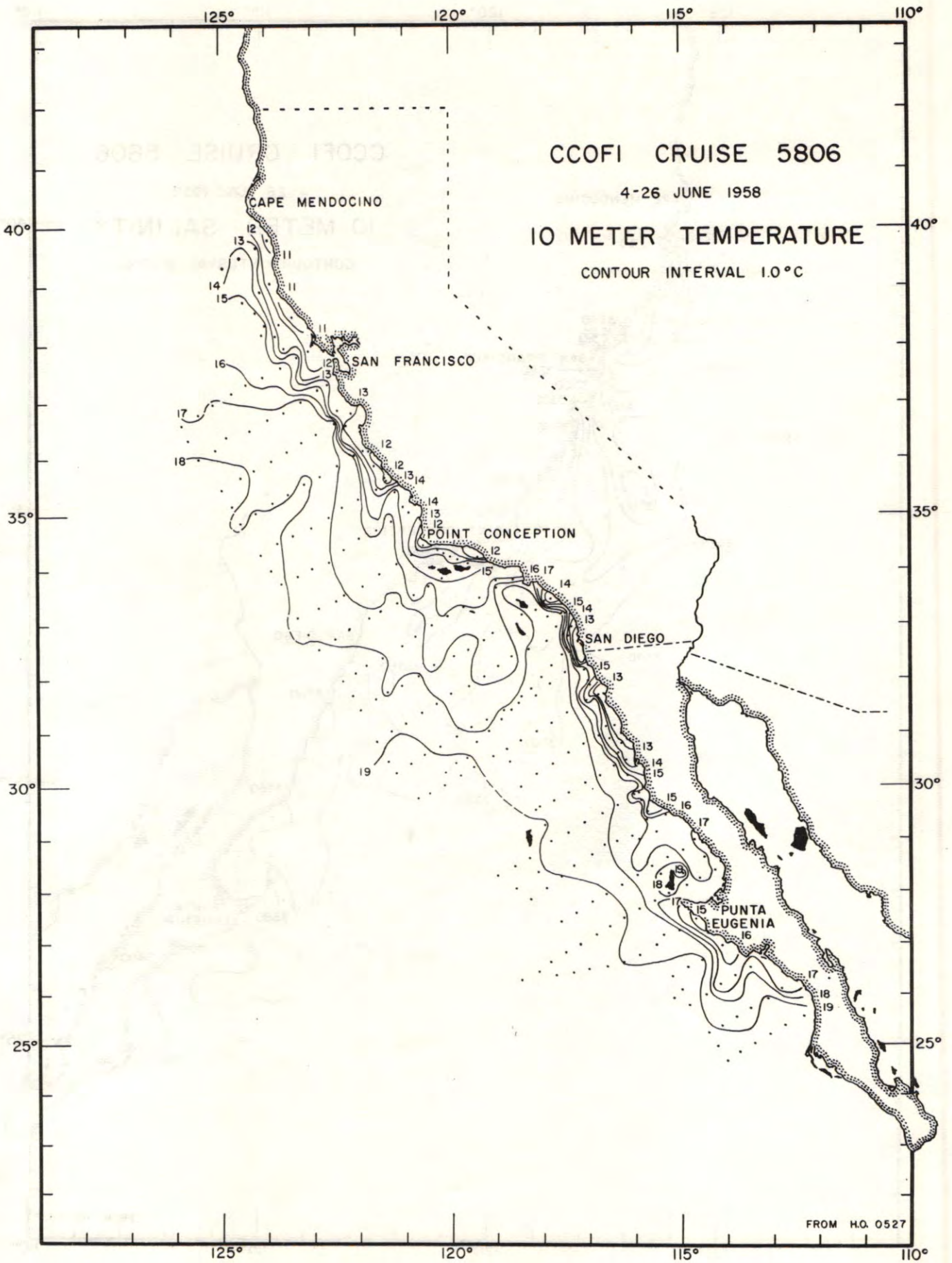


FIGURE 3

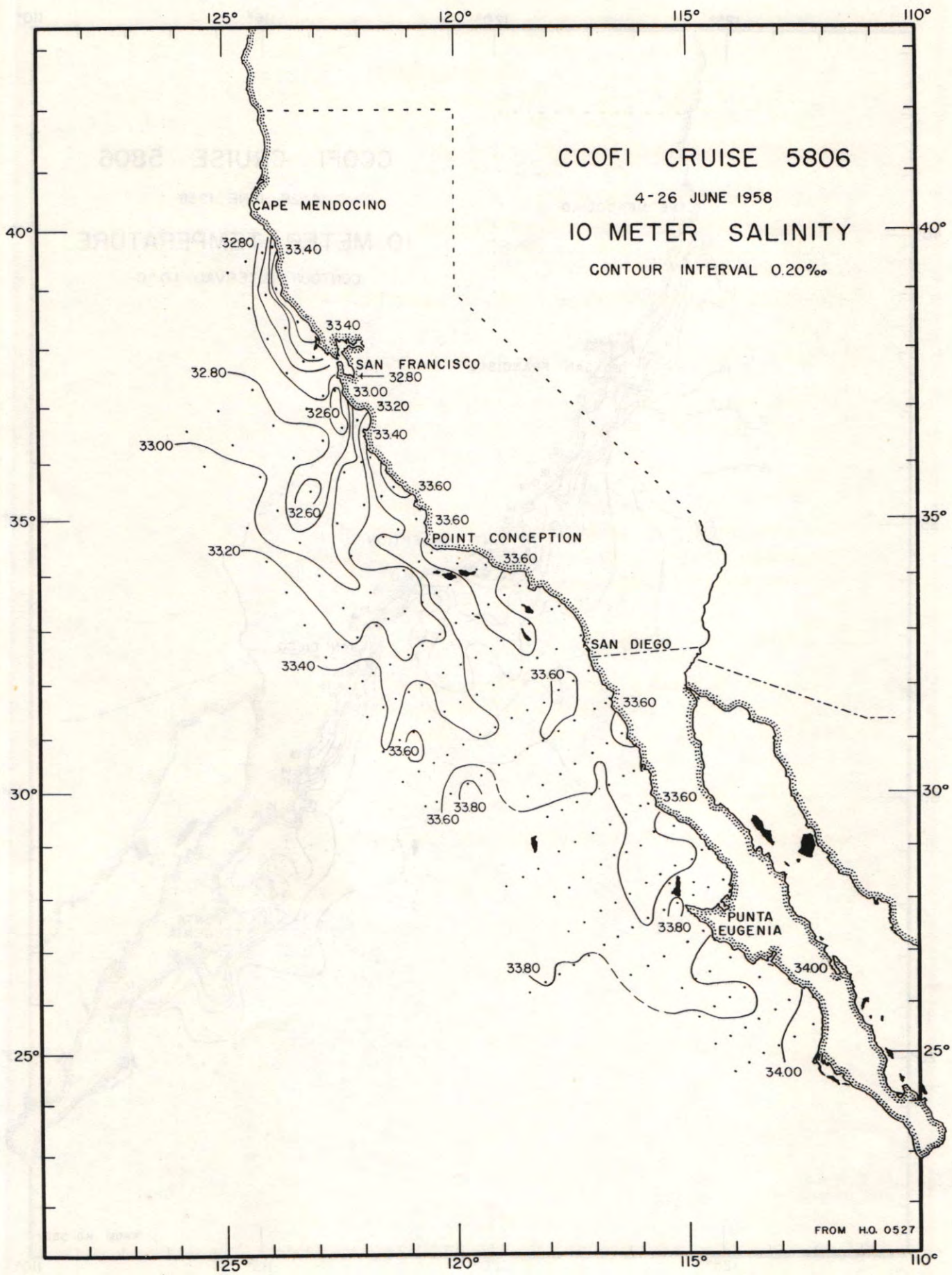


FIGURE 4

PERSONNEL	
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**SHIPS' CAPTAINS**

- Davis, Laurence E. , R/V Orca
- Forster, Charles W. , R/V Black Douglas
- Smith, Charles H. , R/V Stranger

**PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA**

R/V Black Douglas

- Davoll, Peter J. , Marine Technician (in charge)
- Justice, David K. , Fishery Aid, Bureau of Commercial Fisheries

R/V Orca

- \*Froerer, Arthur I. , Senior Marine Technician
- Blackburn, Gene T. , Fishery Aid, Bureau of Commercial Fisheries
- Kiwala, Robert S. , Marine Technician

R/V Stranger

- Anderson, Norman E. , Senior Marine Technician
- Anderson, James L. , Fishery Aid, Bureau of Commercial Fisheries
- \*\*Hubbard, Lyle T. , Jr. , Fishery Aid, Bureau of Commercial Fisheries

\*Lines 80 and 83 only.

\*\*Replaced J. L. Anderson after Line 133 was completed.

S10

CCOFI  
5806

OBSERVED					INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	$\delta T_3$	Z	T	S	O <sub>2</sub>	$\sigma_t$	$\delta T_3$	$\Delta D$
m	°C	‰	ml/L	$10^{-5} \text{ cm}^3/\text{g}$	m	°C	‰	ml/L	g/L	$10^{-5} \text{ cm}^3/\text{g}$	dyn. m

50.50 BLACK DOUGLAS; June 15, 1958; 0412 GCT; 39°40'N, 124°08'W; sounding, 520 fm; wind, 300°, force 5; weather, clear; sea, rough; wire angle, 18°.

0	13.72	32.92	5.98	329	0	13.72	32.92	5.98	24.66	329	0.00
10	13.71	32.92	6.05	329	10	13.71	32.92	6.05	24.66	329	0.03
28	13.45	32.92	5.91	324	20	13.63	32.92	6.02	24.68	327	0.07
42	10.98	32.92	5.43	279	30	13.42	32.92	5.90	24.72	323	0.10
51	10.02	33.01	5.15	257	50	10.07	33.01	5.17	25.41	258	0.16
60	9.14	33.04	4.99	241	75	8.70	33.17	5.24	25.76	224	0.22
69	8.84	33.13	5.29	230	100	8.26	33.46	4.62	26.04	198	0.27
87	8.42	33.27	5.07	214	150	8.39	33.90	2.88	26.38	166	0.36
100	8.26	33.46	4.62	198	200	7.80	33.99	2.40	26.54	151	0.44
113	8.34	33.62	4.23	186	250	7.37	34.04	1.66	26.63	142	0.52
135	8.26	33.78	3.30	174	300	6.66	34.06	1.52	26.74	131	0.59
160	8.18	33.92	2.85	162	400	6.21	34.15	0.69	26.88	118	0.72
194	7.82	33.97	2.70	153	500	5.64	34.21	0.54	27.00	107	0.83
241	7.46	34.04	1.73	143							
313	6.52	34.07	1.49	128							
405	6.20	34.16	0.68	118							
538	5.40	34.22	0.51	104							

60.55 BLACK DOUGLAS; June 12, 1958; 0300 GCT; 37°47.5'N, 123°15'W; sounding, 65 fm; wind, 320°, force 6; weather, partly cloudy; sea, very rough; wire angle, 07°.

0	15.92	32.99	6.50	368	0	15.92	32.99	6.50	24.25	368	0.00
10	14.38	33.15	6.76	325	10	14.38	33.15	6.76	24.70	325	0.03
29	10.21	33.08	5.52	256	20	11.17	33.09	5.80	25.28	270	0.06
48	10.42	33.40	4.82	234	30	10.24	33.09	5.51	25.44	255	0.09
72	9.32	33.68	2.88	196	50	10.38	33.42	4.70	25.68	232	0.14
96	9.10	33.75	2.39	188	75	9.27	33.69	2.80	26.07	195	0.19
					100	(9.08)	(33.76)	(2.32)	(26.16)	(187)	(0.24)

60.90 BLACK DOUGLAS; June 11, 1958; 0335 GCT; 36°37'N, 125°47'W; sounding, 2400 fm; wind, 330°, force 5; weather, partly cloudy; sea, very rough; wire angle, 10°.

0	17.34	32.97	5.46	401	0	17.34	32.97	5.46	23.90	401	0.00
10	17.32	32.95	5.55	402	10	17.32	32.95	5.55	23.89	402	0.04
29	14.90	33.22	5.80	331	20	16.10	33.09	5.69	24.28	365	0.08
43	14.69	33.30	5.74	320	30	14.90	33.22	5.80	24.65	330	0.11
53	13.72	33.18	5.71	310	50	13.87	33.20	5.72	24.84	312	0.18
63	13.50	33.19	5.53	305	75	13.25	33.16	5.84	24.94	302	0.25
72	13.28	33.16	5.93	303	100	11.70	33.29	5.16	25.34	264	0.33
90	13.04	33.24	4.73	293	150	9.05	33.46	4.84	25.92	209	0.44
104	11.12	33.31	5.32	253	200	8.23	33.78	3.98	26.30	173	0.54
116	10.37	33.34	5.18	238	250	7.60	33.96	2.98	26.53	151	0.62
139	9.31	33.39	4.93	218	300	6.78	33.98	2.44	26.67	138	0.70
165	8.76	33.55	4.70	198	400	5.92	34.02	1.55	26.81	125	0.84
199	8.24	33.78	3.99	173	500	5.41	34.08	0.93	26.93	114	0.96
248	7.62	33.95	3.01	152							
322	6.48	33.99	2.29	134							
415	5.83	34.02	1.48	124							
549	5.16	34.15	0.62	106							

OBSERVED					INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	$\delta T_3$	Z	T	S	O <sub>2</sub>	$\sigma_t$	$\delta T_3$	$\Delta D$
m	°C	‰	ml/L	$\frac{10^{-5}}{10 \text{ cm/g}}$	m	°C	‰	ml/L	g/L	$\frac{10^{-5}}{10 \text{ cm/g}}$	dyn. m

BLACK DOUGLAS; June 7, 1958; 1535 GCT; 36°03'N, 122°02'W; sounding, 750 fm; wind, calm; weather, partly cloudy; sea, slight; wire angle, 04°.

70.55

0	16.49	33.06	5.53	376	0	16.49	33.06	5.53	24.16	376	0.00
10	16.06	33.01	5.49	369	10	16.06	33.01	5.49	24.24	369	0.04
29	13.47	33.27	6.02	298	20	15.05	33.12	5.71	24.53	341	0.07
39	11.61	33.42	-	254	30	13.38	33.28	6.02	25.01	296	0.10
48	11.38	33.49	4.62	244	50	11.38	33.50	4.55	25.56	243	0.16
58	11.34	33.60	4.38	235	75	10.26	33.65	3.80	25.88	213	0.22
67	11.05	33.66	4.49	226	100	8.94	33.70	3.40	26.14	189	0.27
80	9.88	33.64	3.52	208	150	8.53	33.94	2.30	26.39	165	0.36
94	9.12	33.64	3.46	196	200	7.92	34.06	1.56	26.57	147	0.44
107	8.80	33.78	3.21	181	250	7.68	34.15	1.20	26.67	138	0.51
129	8.82	33.86	2.68	175	300	7.36	34.16	1.14	26.72	133	0.58
186	8.06	34.04	1.98	152	400	6.64	34.25	0.66	26.90	116	0.70
231	7.81	34.14	1.21	140	500	5.80	34.27	0.44	27.02	104	0.82
302	-	34.16	1.14	-							
393	6.68	34.25	0.68	117							
513	5.70	34.27	0.41	103							

BLACK DOUGLAS; June 8, 1958; 1054 GCT; 34°53'N, 124°30'W; sounding, 2250 fm; wind, 300°, force 4; weather, overcast; sea, moderate; wire angle, 07°.

70.90

0	17.76	33.02	5.39	407	0	17.76	33.02	5.39	23.84	407	0.00
10	17.74	33.01	5.30	407	10	17.74	33.01	5.30	23.84	407	0.04
30	16.30	33.27	5.69	356	20	17.68	33.01	5.32	23.85	406	0.08
39	15.38	33.31	5.75	334	30	16.30	33.27	5.69	24.37	356	0.12
49	15.02	33.28	5.58	329	50	15.00	33.27	5.61	24.66	329	0.19
58	14.62	33.22	5.98	325	75	13.98	33.23	5.83	24.85	311	0.27
68	14.34	33.22	5.88	320	100	11.46	33.33	5.06	25.41	257	0.34
81	13.34	33.25	5.76	297	150	9.42	33.72	3.00	26.07	195	0.45
95	11.88	33.30	5.35	267	200	9.04	34.04	2.18	26.38	166	0.54
108	10.81	33.39	4.56	242	250	8.48	34.11	1.76	26.52	152	0.63
130	9.84	33.60	3.41	210	300	7.88	34.09	1.85	26.60	145	0.70
157	9.30	33.77	2.86	190	400	6.76	34.17	1.04	26.82	124	0.84
188	9.10	33.98	2.30	171	500	5.88	34.21	0.62	26.97	110	0.96
232	8.68	34.11	1.74	155							
304	-	34.09	1.86	-							
395	6.80	34.17	1.06	124							
516	5.76	34.22	0.52	108							

ORCA; June 5, 1958; 0020 GCT; 34°26'N, 120°31.5'W; sounding, 52 fm; wind, 280°, force 3; weather, clear; sea, rough; wire angle, 06°.

80.51

0	11.69	33.69	5.07	235	0	11.69	33.69	5.07	25.65	235	0.00
10	11.65	33.64	5.10	238	10	11.65	33.64	5.10	25.62	238	0.02
30	11.32	33.72	4.80	226	20	11.50	33.69	5.00	25.69	231	0.05
50	11.04	33.69	4.37	224	30	11.32	33.72	4.80	25.74	226	0.07
76	10.21	33.72	3.34	208	50	11.04	33.69	4.37	25.77	224	0.12
					75	10.25	33.72	3.37	25.93	208	0.17

S10

CCOFI  
5806

OBSERVED					INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	$\delta T_{3-5}$	Z	T	S	O <sub>2</sub>	$\sigma_t$	$\delta T_{3-5}$	$\Delta D$
m	°C	‰	ml/L	10 <sup>-5</sup> cm/g	m	°C	‰	ml/L	g/L	10 <sup>-5</sup> cm/g	dyn. m

80.55 ORCA; June 5, 1958; 0258 GCT; 34°17.5'N, 120°47.5'W; sounding, 400 fm; wind, 280°, force 3; weather, clear; sea, rough; wire angle, 18°.

0	14.66	33.59	8.36	298	0	14.66	33.59	8.36	24.98	298	0.00
10	14.00	33.58	8.32	286	10	14.00	33.58	8.32	25.12	286	0.03
28	13.45	33.58	6.38	275	20	13.60	33.58	6.75	25.20	278	0.06
38	12.29	33.55	4.94	256	30	13.43	33.58	6.35	25.23	275	0.08
47	11.87	33.62	4.56	243	50	11.60	33.66	4.27	25.65	235	0.14
57	11.18	33.71	3.75	224	75	9.93	33.78	2.78	26.03	199	0.19
66	10.10	33.75	2.84	204	100	9.35	33.87	2.29	26.20	183	0.24
81	9.80	33.79	2.74	196	150	8.92	34.03	1.90	26.40	164	0.33
94	9.42	33.86	2.32	185	200	8.56	34.16	1.42	26.55	150	0.41
108	9.22	33.90	2.27	179	250	8.20	34.22	1.17	26.65	140	0.48
131	9.02	33.97	2.18	170	300	8.00	34.24	1.16	26.70	136	0.55
158	8.86	34.06	1.79	161	400	7.28	34.24	0.79	26.80	126	0.68
191	8.61	34.15	1.52	151	500	6.40	34.23	0.46	26.92	115	0.81
237	8.30	34.21	1.20	142							
310	7.98	34.24	1.13	134							
404	7.22	34.24	0.76	125							
527	6.13	34.22	0.38	112							

80.60 ORCA; June 5, 1958; 0655, 0749 GCT; 34°08'N, 121°08'W; sounding, 1200 fm; wind, 280°, force 3; weather, partly cloudy; sea, rough; wire angle, 29°, 29°.

0	16.42	33.04	5.80	376	0	16.42	33.04	5.80	24.17	376	0.00
10	16.44	33.04	6.00	376	10	16.44	33.04	6.00	24.16	376	0.04
28	14.04	32.94	6.08	334	20	15.72	33.00	6.01	24.30	363	0.07
43	13.48	33.20	6.40	303	30	13.96	32.96	6.13	24.64	331	0.11
52	13.02	33.22	5.76	294	50	13.18	33.22	5.94	25.00	297	0.17
61	11.51	33.23	5.35	266	75	10.60	33.38	5.03	25.60	239	0.24
71	10.84	33.36	5.11	244	100	9.40	33.44	4.37	25.86	215	0.30
90	9.70	33.42	4.55	221	150	8.82	33.89	2.47	26.30	173	0.40
104	9.34	33.45	4.34	214	200	8.06	33.99	2.30	26.50	154	0.48
117	9.16	33.60	4.07	200							
140	9.13	33.82	2.50	183							
149	8.82	33.89	2.47a)	173							
181	8.32	33.96	2.44	160							
226	7.78	34.03	1.96	147							

80.70 ORCA; June 5, 1958; 1344, 1409 GCT; 33°44.5'N, 121°51.5'W; sounding, 2000+ fm; wind, 290°, force 2; weather, cloudy; sea, moderate; wire angle, 07°, 07°.

0	16.74	32.98	5.78	387	0	16.74	32.98	5.78	24.05	387	0.00
10	16.75	33.04	5.85	383	10	16.75	33.04	5.85	24.10	383	0.04
29	15.62	32.96	5.98	365	20	16.74	33.04	5.86	24.10	383	0.08
45	13.42	32.94	6.22	322	30	15.40	32.96	6.00	24.33	360	0.11
55	12.90	33.00	6.29	308	50	13.16	32.96	6.26	24.81	315	0.18
65	12.32	32.99	6.02	297	75	12.00	33.11	5.48	25.15	283	0.26
74	12.02	33.10	5.52	284	100	10.22	33.39	4.40	25.68	232	0.32
94	10.59	33.32	4.70	243	150	8.92	33.73	3.28	26.16	186	0.43
108	9.98	33.50	4.11	220	200	8.29	33.98	2.59	26.45	159	0.52
122	9.92	33.60	3.80	212	250	7.80	34.08	2.02	26.61	144	0.59
147	9.04	33.71	3.28	190	300	7.25	34.13	1.56	26.72	133	0.66
175	8.55	33.88	3.27	170	400	6.58	34.19	0.93	26.86	120	0.80
213	8.18	34.03	2.27	153	500	5.96		0.48			
265	7.60	34.10	1.92	140	600	(5.32)		(0.27)			
347	6.86	34.17	1.18	125							
449	6.22	34.22	0.62	114							
593	5.38	34.16u	0.30	-							

a) Alternate value, 2.74 ml/L, not used in interpolation.

OBSERVED					INTERPOLATED				COMPUTED			
Z	T	S	O <sub>2</sub>	$\delta_T$	Z	T	S	O <sub>2</sub>	$\sigma_t$	$\delta_T$	$\Delta D$	
m	°C	‰	ml/L	$\frac{-5}{10} \frac{3}{g}$	m	°C	‰	ml/L	g/L	$\frac{-5}{10} \frac{3}{g}$	dyn. m	

ORCA; June 5, 1958; 1954, 2023 GCT; 33°29'N, 122°26'W; sounding, 2000+ fm; wind, 290°, force 2; weather, partly cloudy; sea, moderate; wire angle, 13°, 14°.

80.80

0	17.72	33.04	5.62	405	0	17.72	33.04	5.62	23.86	405	0.00
10	17.40	33.12	5.68	392	10	17.40	33.12	5.68	24.00	392	0.04
29	15.67	33.30	5.88	340	20	17.37	33.12	5.69	24.00	392	0.08
38	15.46	33.31	5.90	336	30	15.63	33.30	5.89	24.54	340	0.12
48	14.65	33.27	6.03	322	50	14.55	33.26	6.02	24.75	321	0.18
57	14.36	33.23	6.00	319	75	14.18	33.39	6.03	24.92	304	0.26
66	14.22	33.30	6.04	311	100	11.65	33.42	5.48	25.45	254	0.33
80	14.18	33.40	6.03	303	150	9.25	33.63	4.57	26.02	200	0.45
94	12.42	33.43	5.94	267	200	8.59	33.85	3.12	26.30	173	0.54
108	10.80	33.42	5.09	240	250	8.09	34.07	2.18	26.55	150	0.62
132	9.78	33.51	5.08	216	300	7.38	34.07	1.63	26.66	140	0.70
159	9.14	33.66	4.39	195	400	6.57	34.08	0.99	26.78	128	0.84
191	8.66	33.81	3.36	177	500	5.86	34.11	0.53	26.89	117	0.96
238	8.24	34.06	2.38	152							
312	7.26	34.07	1.54	138							
407	6.52	34.09a)	0.94	126							
534	5.66	34.12a)	0.46	114							

ORCA; June 6, 1958; 0300 GCT; 33°10'N, 123°16'W; sounding, 2000+ fm; wind, 290°, force 1; weather, partly cloudy; sea, moderate; wire angle, 01°.

80.90

0	18.36	33.31	5.46	399	0	18.36	33.31	5.46	23.93	399	0.00
10	17.88	33.30	5.44	390	10	17.88	33.30	5.44	24.02	390	0.04
30	16.18	33.28	5.74	353	20	17.43	33.30	5.49	24.12	380	0.08
39	15.22	33.24	5.91	336	30	16.18	33.28	5.74	24.41	353	0.11
49	14.90	33.26	5.86	328	50	14.86	33.26	5.86	24.68	328	0.18
59	14.41	33.28	5.82	316	75	14.15	33.33	5.92	24.88	308	0.26
68	14.26	33.31	5.90	311	100	11.27	33.40	4.79	25.50	249	0.33
82	14.05	33.36	5.96	303	150	9.39	33.68	3.60	26.04	198	0.44
96	11.62	33.40	4.92	255	200	8.55	33.91	2.63	26.36	168	0.54
111	10.60	33.40	4.56	238	250	8.00	34.10	2.17	26.60	145	0.62
135	9.67	33.59	3.88	209	300	7.40	34.11	1.68	26.68	137	0.69
164	9.19	33.75	3.37	189	400	6.67	34.18	0.83	26.84	122	0.82
198	8.58	33.90	2.66	169	500	6.05	34.26	0.45	26.98	108	0.95
245	8.04	34.10	2.22	146							
323	7.20	34.11	1.44	134							
420	6.54	34.20	0.70	118							
551	5.76	34.30	0.32	102							

ORCA; June 12, 1958; 0445 GCT; 32°50'N, 119°01'W; sounding, 950 fm; wind, 300°, force 4; weather, clear; sea, rough; wire angle, 31°.

90.45

0	16.32	33.67	6.02	328	0	16.32	33.67	6.02	24.68	328	0.00
8	16.32	33.58	5.90	334	10	16.28	33.58	5.89	24.60	334	0.03
30	12.86	33.45	5.46	274	20	16.18	33.57	5.87	24.64	331	0.07
38	12.38	33.54	5.08	258	30	12.86	33.45	5.46	25.24	274	0.10
51	11.58	33.60	4.61	239	50	11.62	33.60	4.63	25.59	241	0.15
60	11.07	33.57	4.38	233	75	10.32	33.62	3.90	25.84	216	0.20
68	10.74	33.60	4.13	225	100	9.27	33.78	3.28	26.14	188	0.26
85	9.67	33.65	3.69	204	150	8.72	34.07	2.37	26.46	158	0.35
101	9.26	33.78	3.28	188	200	8.40	34.20	1.54	26.61	144	0.42
113	9.10	33.82	2.88	183	250	8.07	34.26	1.31	26.70	135	0.49
132	9.00	33.96	2.54	171	300	7.72	34.34	0.98	26.82	124	0.56
162	8.59	34.10	2.30	154	400	6.82	34.42	0.51	27.01	106	0.68
191	8.42	34.20	1.58	144	500	(6.06)	(34.42)	(0.33)	(27.10)	(97)	(0.78)
234	8.20	34.19u	1.40	-							
300	7.72	34.34	0.98	124							
384	6.96	34.42	0.55	108							
499	6.07	34.42	0.34	97							

a) Salinity samples at 407 and 534 meters appear to have been reversed; it is assumed that they are in the order listed.

S10

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5806

OBSERVED					INTERPOLATED				COMPUTED			
Z	T	S	O <sub>2</sub>	$\delta T_3$	Z	T	S	O <sub>2</sub>	$\sigma_t$	$\delta T_3$	$\Delta D$	
m	°C	‰	ml/L	$10^{-5} \text{ cm}^3/\text{g}$	m	°C	‰	ml/L	g/L	$10^{-5} \text{ cm}^3/\text{g}$	dyn. m	

90.90

ORCA; June 10, 1958; 2335 GCT; 31°27'N, 121°55'W; sounding, 2000+ fm; wind, 300°, force 4; weather, cloudy; sea, rough; wire angle, 30°.

0	18.58	33.48	5.12	393	0	18.58	33.48	5.12	23.99	393	0.00
8	18.56	33.47	5.06	393	10	18.56	33.47	5.06	23.99	393	0.04
26	15.86	33.25	5.36	348	20	18.50	33.46	5.06	24.00	392	0.08
39	15.62	33.35	5.36	336	30	15.77	33.28	5.36	24.50	345	0.12
47	15.53	33.40	5.36	330	50	15.45	33.41	5.36	24.66	329	0.18
57	15.34	33.44	5.36	324	75	14.47	33.48	5.43	24.94	303	0.26
66	15.16	33.40u	5.36	-	100	11.86	33.44	4.84	25.42	257	0.33
82	13.81	33.48	5.52	290	150	9.30	33.64	3.59	26.03	199	0.45
95	12.37	33.42	5.02	267	200	8.50	33.97	3.18	26.41	163	0.54
108	11.10	33.47	4.63	240	250	7.90	34.05	2.20	26.56	148	0.62
129	10.02	33.52	4.06	220	300	7.41	34.11	1.92	26.68	137	0.69
154	9.20	33.68	3.54	195	400	6.42	34.26	0.96	26.94	113	0.82
187	8.69	33.92	3.42	170	500	5.96	34.33	0.63	27.05	102	0.94
232	8.09	34.02	2.35	153							
307	7.36	34.12	1.86	135							
401	6.42	34.26	0.96	113							
538	5.78	34.34	0.51	99							

100.70

ORCA; June 24, 1958; 1837 GCT; 30°21'N, 119°27.5'W; sounding, 2000+ fm; wind, 280°, force 5; weather, overcast; sea, high; wire angle, 28°.

0	19.08	33.64		393	0	19.08	33.64		23.99	393	0.00
10	19.08	-		-	10	19.08	33.64		23.99	393	0.04
33	18.78	33.73		380	20	19.03	33.66		24.02	390	0.08
43	17.43	33.59		358	30	18.99	33.68		24.04	388	0.12
57	16.96	-		-	50	17.00	33.59		24.46	348	0.19
67	16.96	33.68		342	75	16.43	33.68		24.65	330	0.28
76	16.38	33.68		329	100	15.00	33.66		24.96	301	0.36
95	15.36	33.66		308	150	10.73	33.55		25.72	228	0.49
113	13.88	33.68		276	200	9.03	33.76		26.16	186	0.60
127	12.46	33.59		256	250	8.08	33.95		26.46	158	0.68
149	10.78	33.55		229	300	7.37	34.07		26.66	139	0.76
184	9.44	33.71		196	400	6.50	34.19		26.87	119	0.90
220	8.61	33.82		175	500	5.85	34.29		27.03	104	1.01
274	7.72	34.03		147	600	5.30	34.36		27.16	92	1.12
356	6.80	34.13		127							
463	6.08	34.26		108							
608	5.22	34.37		90							

107.60

ORCA; June 15, 1958; 1917 GCT; 29°34'N, 118°04'W; sounding, 1800 fm; wind, 310°, force 2; weather, overcast; sea, rough; wire angle, 09°.

0	18.76	33.68	5.36	382	0	18.76	33.68	5.36	24.10	382	0.00
10	18.65	33.75	5.20	376	10	18.65	33.75	5.20	24.16	376	0.04
30	18.48	33.74	-	372	20	18.57	33.75		24.19	374	0.08
60	18.03	33.69	-	365	30	18.48	33.74		24.21	372	0.11
70	14.49	33.64	-	291	50	18.20	33.71		24.26	367	0.19
79	12.72	33.49	-	268	75	13.40	33.55		25.21	277	0.27
94	10.88	33.51	-	234	100	10.65	33.52		25.70	230	0.33
109	10.44	33.57	-	222	150	10.05	33.93		26.12	190	0.44
123	10.26	33.68	-	211	200	9.50	34.24		26.46	158	0.53
143	10.14	33.89	-	194	250	9.02	34.31		26.60	145	0.60
163	9.92	34.02	-	181	300	7.90	34.24		26.72	133	0.68
191	9.64	34.22	-	161	400	6.81	34.23		26.86	120	0.81
215	9.25	34.27	-	152	500	6.20	34.28		26.98	109	0.93
268	8.44	34.27	-	139	600	(5.55)	(34.37)		(27.13)	(94)	(1.04)
349	7.21	34.22	-	126							
455	6.47	34.25	-	114							
592	5.60	34.36	-	95							



OBSERVED					INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	$\delta T_3$	Z	T	S	O <sub>2</sub>	$\sigma_t$	$\delta T_3$	$\Delta D$
m	°C	‰	ml/L	$\frac{1}{10} \text{ cm/g}$	m	°C	‰	ml/L	g/L	$\frac{1}{10} \text{ cm/g}$	dyn. m

STRANGER; June 19, 1958; 0442 GCT; 27° 37'N, 115° 53'W; sounding, 2400 fm; wind, 320°, force 6; weather, missing; sea, very rough; wire angle, 26°.

120.50

0	18.20	33.58	5.63	377	0	18.20	33.58	5.63	24.15	377	0.00
9	18.18	33.58	5.60	376	10	18.18	33.58	5.61	24.16	376	0.04
27	18.19	33.58	5.77	376	20	18.18	33.58	5.65	24.16	376	0.08
40	16.64	33.49	5.92	349	30	18.16	33.58	5.79	24.16	376	0.11
49	15.50	33.46	6.03	325	50	15.32	33.46	6.03	24.74	321	0.18
57	14.20	33.43	6.02	301	75	11.46	33.46	4.96	25.52	247	0.25
64	13.04	33.46	5.56	277	100	10.24	33.60	4.18	25.84	217	0.31
78	11.26	33.47	4.88	244	150	10.82	34.26	1.24	26.25	178	0.41
90	10.68	33.50	4.58	231	200	10.34	34.42	0.88	26.46	158	0.50
100	10.24	33.60	4.18	217	250	9.83	34.47	0.76	26.59	146	0.58
118	10.22	33.78	3.20	203	300	9.28	34.46	0.60	26.67	138	0.65
140	10.82	34.20	1.58	182	400	8.05	34.41	0.28	26.83	123	0.78
168	10.76	34.33	1.12	171	500	(6.90)	(34.41)		(26.99)	(108)	(0.90)
206	10.20	34.42	0.87	155							
272	9.68	34.48	0.73	143							
354	8.52	34.42	0.36	129							
473	7.24	34.41	0.21	113							

STRANGER; June 18, 1958; 1118 GCT; 26° 35'N, 117° 48.5'W; sounding, 2100 fm; wind, 330°, force 5; weather, cloudy; sea, rough; wire angle, 05°.

120.80

0	19.56	33.82	5.10	392	0	19.56	33.82	5.10	24.00	392	0.00
10	19.58	33.84	4.95	392	10	19.58	33.84	4.95	24.00	392	0.04
29	19.52	33.84	5.12	389	20	19.56	33.84	5.04	24.01	391	0.08
44	18.95	34.03	5.26	362	30	19.50	33.84	5.16	24.03	389	0.12
54	18.40	33.98	5.29	352	50	18.57	33.99	5.27	24.38	356	0.19
63	18.26	33.99	5.42	349	75	18.10	33.98	5.44	24.49	346	0.28
73	18.13	33.98	5.44	346	100	15.69	33.81	5.29	24.92	304	0.36
92	16.88	33.91	5.47	322	150	10.68	33.59	4.10	25.75	225	0.50
106	14.75	33.74	5.18	290	200	10.00	33.93	2.82	26.14	189	0.60
121	13.48	33.73	4.54	265	250	9.34	34.20	1.76	26.45	159	0.69
144	11.30	33.58	4.42	236	300	8.78	34.17	1.25	26.53	152	0.77
166	10.23	33.75	3.67	206	400	7.86	34.19	0.46	26.68	137	0.92
208	9.87	34.02	2.46	180	500	6.90	34.21	0.20	26.83	123	1.06
257	9.21	34.20	1.66	156							
335	8.44	34.15	0.96	148							
431	7.55	34.20	0.32	132							
563	6.25	34.21	0.19	114							

STRANGER; June 7, 1958; 1730 GCT; 24° 58.5'N, 113° 22'W; sounding, 1500 fm; wind, 320°, force 6; weather, clear; sea, very rough; wire angle, 18°.

137.40

0	19.75	33.94	5.01	389	0	19.75	33.94	5.01	24.03	389	0.00
9	19.74	33.95	4.83	387	10	19.74	33.95	4.83	24.06	386	0.04
32	18.99	33.86	5.06	375	20	19.74	33.95	4.83	24.06	386	0.08
42	16.84	33.77	5.58	333	30	19.74	33.95	4.83	24.06	386	0.12
55	15.12	33.72	5.22	298	50	15.70	33.73	5.42	24.86	310	0.18
64	14.54	33.76	4.61	284	75	13.22	33.77	3.95	25.42	257	0.26
72	13.42	33.75a)	4.12	262	100	12.12	33.99	2.62	25.80	220	0.32
90	12.46	33.86a)	3.20	237	150	11.17	34.25	1.80	26.19	184	0.42
107	11.99	34.04a)	2.32	214	200	10.47	34.44	1.09	26.46	158	0.51
120	11.82	34.14a)	2.13	204	250	9.90	34.54	0.70	26.64	141	0.58
142	11.32	34.21a)	1.96	190	300	9.43	34.55	0.38	26.72	134	0.66
176	10.77	34.41a)	1.19	166	400	8.16	34.51		26.88	118	0.78
212	10.32	34.45	1.02	155	500	7.25	34.50		27.02	105	0.90
266	9.88	34.58	0.42	138	600	(6.26)	(34.49)		(27.14)	(93)	(1.01)
347	8.77	34.51	0.36	127							
453	7.67	34.51	1.23u	111							
595	6.31	34.49	0.32	93							

a) Salinity bottle numbers from 72 to 176 meters, inclusive, appear to have been entered in reverse order on the original data sheet. Since standard handling and titrating procedures were used, it is assumed that they are in the order listed.

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
50.47-B	VI-15	0135	39°46.0'	123°54.0'	55	300°	2	partly cloudy	rough	10.92	33.35	8.50	33.77
50.55-B	15	0825	39°30.0'	124°30.0'	1200	320°	7	clear	very high	14.24	32.68	11.88	32.81
50.60-B	15	1145	39°20.0'	124°52.0'	1600	330°	7	clear	high	13.68	32.70	12.78	32.76
53.52-B	14	1850	39°02.0'	123°51.0'	60	310°	4	clear	very rough	11.79	33.42	8.91	33.58
53.55-B	14	1640	38°56.0'	124°04.5'	650	330°	5	clear	very rough	13.46	33.08	10.56	33.03
53.60-B	14	1225	38°46.0'	124°26.5'	1800	330°	7	partly cloudy	high	15.28	32.77	11.38	32.88
57.51-B	13	2305	38°30.0'	123°22.0'	55	300°	4	partly cloudy	very rough	10.56	33.54	8.92	33.75
57.55-B	14	0145	38°22.0'	123°39.5'	400	320°	7	clear	high	12.56	33.04	11.08	33.10
57.60-B	14	0440	38°12.0'	124°02.0'	1900	320°	7	clear	high	15.07	32.91	12.77	32.96
60.52-B	12	0515	37°53.5'	123°02.0'	43	300°	6	partly cloudy	very rough	11.45	33.24	9.32	33.73
60.60-B	11	2315	37°37.0'	123°37.0'	1800	320°	6	cloudy	very rough	15.58	32.81	10.72	33.23
60.70-B	11	1705	37°20.0'	124°21.0'	2200	310°	6	cloudy	high	16.08	32.89	10.02	33.44
60.80-B	11	1045	36°59.0'	125°06.0'	2400	320°	7	cloudy	very rough	17.14	32.86	12.69	32.90
63.52-B	9	2115	37°19.0'	122°36.0'	49	300°	4	cloudy	moderate	14.66	32.57	10.80	33.35
63.55-B	9	2325	37°14.0'	122°49.5'	150	280°	3	cloudy	moderate	15.41	32.81	10.68	33.40
63.60-B	10	0215	37°02.5'	123°10.5'	1400	280°	4	partly cloudy	rough	17.71	32.73	11.98	33.18
63.70-B	10	0755	36°43.0'	123°55.0'	2100	300°	4	partly cloudy	rough	17.26	32.88	14.12	33.18
63.80-B	10	1425	36°23.0'	124°37.5'	2400	320°	5	overcast	rough	17.16	32.95	13.64	33.04
63.90-B	10	2020	36°01.0'	125°23.0'	2500	320°	5	cloudy	very rough	18.01	33.16	14.75	33.19

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
67.50-B	VI-9	1535	36°49.0'	122°04.5'	57	calm		cloudy	moderate	13.20	33.17	9.96	33.64
67.55-B	9	1250	36°39.0'	122°26.0'	1150	280°	3	cloudy	moderate	17.44	32.52	10.34	33.44
67.60-B	9	0910	36°26.5'	122°52.5'	1650	300°	4	partly cloudy	moderate	17.39	32.94	10.54	33.41
67.70-B	9	0410	36°08.0'	123°30.0'	1400	300°	4	cloudy	rough	17.24	32.90	13.32	32.95
67.80-B	8	2300	35°48.0'	124°12.0'	2200	280°	5	cloudy	rough	17.80	33.06	13.14	33.01
67.90-B	8	1750	35°28.0'	124°55.0'	2400	280°	4	cloudy	rough	18.20	-	14.60	33.21
70.52-B	7	1310	36°08.5'	121°50.0'	350	320°	1	partly cloudy	slight	12.45	33.57	10.08	33.72
70.60-B	7	1846	35°53.0'	122°23.0'	1750	280°	3	partly cloudy	moderate	17.16	33.07	12.32	33.13
70.70-B	7	2350	35°33.0'	123°06.0'	2100	270°	3	partly cloudy	moderate	18.20	32.41	11.83	32.94
70.80-B	8	0500	35°13.0'	123°48.0'	2200	260°	4	clear	moderate	17.87	32.90	13.68	33.02
73.51-B	7	0745	35°35.5'	121°20.0'	125	320°	3	partly cloudy	moderate	11.57	33.64	9.70	33.69
73.55-B	7	0510	35°27.5'	121°37.5'	540	320°	3	partly cloudy	moderate	13.00	33.46	10.66	33.37
73.60-B	7	0205	35°18.0'	121°58.5'	1300	260°	2	partly cloudy	moderate	16.80	33.08	12.56	33.31
73.70-B	6	2045	34°58.0'	122°35.0'	2200	-	1	partly cloudy	slight	17.23	33.03	12.14	33.12
73.80-B	6	1550	34°38.0'	123°21.5'	2150	-	1	partly cloudy	moderate	17.22	32.92	12.80	32.89
73.90-B	6	0950	34°19.0'	124°03.0'	2300	270°	2	partly cloudy	slight	18.22	33.22	14.57	33.21
77.50-B	5	0500	35°04.5'	120°52.0'	75	-	1	partly cloudy	smooth	14.80	33.46	11.86	33.60
77.55-B	5	0805	34°54.5'	121°13.0'	300	320°	2	partly cloudy	smooth	16.09	33.35	-	-
77.60-B	5	1125	34°44.0'	121°34.0'	500	270°	3	cloudy	slight	15.57	33.46	-	-

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
77.70-B	VI-5	1710	34°24.0'	122°16.0'	2100	270°	3	partly cloudy	moderate	16.74	33.29	10.54	33.36
77.80-B	5	2219	34°04.0'	122°57.0'	2300	300°	3	partly cloudy	moderate	17.79	33.03	14.83	33.20
77.90-B	6	0405	33°45.5'	123°38.0'	2400	240°	3	partly cloudy	slight	18.09	33.30	15.27	33.24
82.47-O	7	1310	34°16.0'	119°57.0'	310	260°	3	clear	moderate	13.80	33.66	10.44	33.69
83.40-O	7	1752	34°14.0'	119°21.5'	12	-	1	clear	slight	11.89	33.63	-	-
83.43-O	7	1605	34°08.0'	119°34.0'	132	-	1	clear	slight	14.26	33.67	-	-
83.51-O	7	0850	33°52.0'	120°06.0'	58	260°	2	partly cloudy	moderate	14.34	33.58	10.98	33.61
83.55-O	7	0608	33°44.0'	120°24.0'	532	260°	2	clear	slight	16.18	33.53	10.65	33.46
83.60-O	7	0311	33°33.5'	120°43.0'	750	270°	1	clear	slight	15.82	33.20	12.29	33.26
83.65-O	7	0004	33°24.0'	121°05.0'	2000+	-	1	partly cloudy	slight	17.50	33.05	15.73	33.41
83.70-O	6	2110	33°16.0'	121°28.0'	2000+	-	1	partly cloudy	slight	17.12	33.18	15.20	33.26
83.75-O	6	1850	33°07.5'	121°44.0'	2000+	-	1	partly cloudy	slight	17.18	33.24	14.52	33.19
83.80-O	6	1510	32°56.0'	122°08.0'	2200	280°	1	cloudy	slight	17.34	33.19	15.39	33.47
83.85-O	6	1200	32°45.0'	122°28.0'	2000	-	1	cloudy	slight	17.56	33.24	14.97	33.33
83.90-O	6	0853	32°34.5'	122°48.0'	2000+	-	1	partly cloudy	slight	18.29	33.35	15.79	33.55
87.35-O	9	0000	33°50.0'	118°37.5'	300	280°	3	partly cloudy	moderate	16.18	33.51	11.13	33.63
87.40-O	9	0320	33°40.0'	118°58.5'	450	280°	4	clear	rough	17.19	33.55	10.79	33.58
87.45-O	9	0650	33°29.5'	119°18.0'	917	280°	4	clear	rough	15.64	33.78	9.76	33.58
87.50-O	9	1205	33°20.0'	119°39.0'	40	280°	5	clear	rough	16.18	33.59	10.44	33.66

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
87.55-O	VI-9	1615	33°10.0'	120°01.0'	600+	290°	5	clear	rough	16.18	33.58	11.75	33.31
87.60-O	9	2045	33°00.0'	120°21.0'	500+	290°	4	clear	rough	16.54	33.09	14.45	33.17
87.65-O	10	0205	32°47.0'	120°44.0'	2000+	290°	5	partly cloudy	very rough	17.74	33.23	14.94	33.19
87.70-O	10	0420	32°36.0'	121°02.0'	2100	290°	5	partly cloudy	very rough	17.72	33.18	14.45	33.22
87.75-O	10	0835	32°24.0'	121°27.0'	2400	290°	5	partly cloudy	very rough	18.02	33.33	15.90	33.65
87.80-O	10	1205	32°14.0'	121°48.0'	2000+	290°	5	partly cloudy	very rough	18.50	33.51	16.09	33.53
87.85-O	10	1500	32°06.5'	122°02.5'	2000+	290°	5	cloudy	very rough	18.38	33.57	16.16	33.53
87.90-O	10	1815	31°58.0'	122°19.0'	2000+	290°	5	cloudy	very rough	18.46	33.48	15.80	33.44
90.28-O	12	1605	33°28.5'	117°46.5'	200	-	1	partly cloudy	moderate	13.34	33.55	10.02	33.73
90.30-O	12	1445	33°25.0'	117°55.0'	300	-	1	partly cloudy	rough	14.27	33.55	10.04	33.71
90.37-O	12	1030	33°11.0'	118°24.0'	600	310°	4	clear	rough	17.82	33.60	10.58	33.52
90.50-O	12	0115	32°42.0'	119°13.0'	85	300°	4	clear	rough	16.98	33.48	15.49	33.50
90.55-O	11	2225	32°32.5'	119°34.5'	605	300°	4	clear	rough	17.13	33.45	14.18	33.30
90.60-O	11	1935	32°24.0'	119°54.0'	485	300°	4	clear	rough	17.22	33.40	-	-
90.65-O	11	1610	32°15.0'	120°18.0'	2000	290°	4	cloudy	very rough	16.75	33.26	-	-
90.70-O	11	1200	32°01.5'	120°45.0'	2000	310°	4	partly cloudy	rough	18.10	33.45	16.62	33.42
90.75-O	11	0850	31°53.0'	121°02.0'	2200	310°	4	partly cloudy	rough	18.35	33.53	16.18	33.48
90.80-O	11	0540	31°45.0'	121°19.0'	2000	310°	4	partly cloudy	rough	17.86	33.38	15.38	33.39
90.85-O	11	0305	31°37.0'	121°35.0'	2300	310°	4	partly cloudy	rough	18.50	33.48	16.24	33.49

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)



Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
97.55-O	VI-22	1915	31°24.5'	118°48.0'	250	280°	4	clear	rough	18.14	33.51	14.38	33.37
97.60-O	22	1605	31°14.0'	119°10.0'	1900	280°	3	partly cloudy	rough	17.71	33.39	14.68	33.35
97.65-O	22	1250	31°06.0'	119°31.0'	1900	280°	2	partly cloudy	rough	17.82	33.28	16.07	33.43
97.70-O	22	0945	30°55.5'	119°50.5'	1900+	280°	2	partly cloudy	moderate	18.80	33.49	15.96	33.46
97.75-O	22	0640	30°45.0'	120°11.0'	1900+	280°	2	partly cloudy	moderate	18.72	33.48	16.11	33.46
97.80-O	22	0330	30°35.0'	120°31.0'	2000+	280°	2	partly cloudy	moderate	19.16	33.55	15.72	33.35
97.85-O	22	0030	30°25.0'	120°50.5'	2000	280°	3	partly cloudy	moderate	19.12	33.57	16.37	33.49
97.90-O	21	2130	30°16.0'	121°10.0'	2000+	290°	2	partly cloudy	moderate	19.04	33.54	15.41	33.23
100.29-O	23	1540	31°41.0'	116°45.5'	80	-	1	fog	moderate	12.52	33.50	10.60	-
100.33-O	23	1800	31°34.0'	117°00.0'	650	280°	2	overcast	moderate	14.96	33.52	11.72	33.49
100.40-O	23	2205	31°21.0'	117°27.0'	1140	280°	5	cloudy	rough	18.46	33.59	-	-
100.45-O	24	0125	31°11.0'	117°47.0'	1100	280°	5	partly cloudy	very rough	18.47	33.50	-	-
100.50-O	24	0435	31°01.0'	118°07.0'	800	280°	5	cloudy	very rough	18.56	33.60	15.08	-
100.55-O	24	0755	30°51.0'	118°26.0'	1300	280°	6	cloudy	very rough	18.16	33.46	16.09	33.39
100.60-O	24	1110	30°42.0'	118°45.0'	1500	280°	6	cloudy	very rough	18.56	33.53	17.46	33.39
100.65-O	24	1425	30°33.0'	119°03.0'	1300	280°	5	overcast	very rough	18.60	33.48	16.22	33.41
100.75-O	24	2158	30°11.5'	119°45.0'	2000+	280°	5	overcast	high	19.40	33.82	16.94	33.69
100.80-O	25	0135	30°01.0'	120°07.0'	2000+	280°	5	overcast	high	19.22	33.68	17.09	33.69
100.85-O	25	0357	29°53.0'	120°25.5'	2000+	280°	5	overcast	very rough	19.32	33.51	16.78	33.64

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
100.90-O	VI-25	0640	29°47.0'	120°40.0'	2000+	280°	5	overcast	very rough	19.24	33.59	15.80	33.33
103.30-O	16	1840	31°05.5'	116°25.0'	39	310°	2	partly cloudy	moderate	12.20	33.64	10.28	33.77
103.35-O	16	2140	30°55.0'	116°45.0'	1120	310°	2	partly cloudy	moderate	16.66	33.53	11.87	33.42
103.40-O	17	0045	30°45.5'	117°03.5'	1040	310°	3	cloudy	rough	18.39	33.59	16.42	33.47
103.45-O	17	0345	30°34.0'	117°25.0'	1250	310°	3	cloudy	rough	18.36	33.56	16.86	33.49
103.50-O	17	0700	30°22.5'	117°46.5'	1900	310°	3	cloudy	rough	18.36	33.48	16.45	33.53
103.55-O	17	1005	30°11.0'	118°07.5'	1083	310°	3	cloudy	rough	18.55	33.51	17.26	33.60
103.60-O	17	1240	29°59.0'	118°28.5'	1800	310°	3	overcast	rough	18.60	33.51	16.42	33.50
107.32-O	16	1305	30°26.5'	116°11.0'	250	310°	3	overcast	moderate	13.94	33.48	10.67	33.49
107.35-O	16	1045	30°20.5'	116°23.5'	900	310°	3	cloudy	rough	17.19	33.55	14.40	33.54
107.40-O	16	0750	30°10.5'	116°43.5'	1550	310°	3	cloudy	rough	17.91	33.60	14.36	33.48
107.45-O	16	0440	30°01.0'	117°04.0'	1250	310°	3	cloudy	rough	18.57	33.60	16.47	33.48
107.50-O	16	0130	29°50.5'	117°24.0'	1500	310°	3	cloudy	rough	18.62	33.62	15.86	33.33
107.55-O	15	2230	29°43.0'	117°43.0'	1750	310°	3	partly cloudy	rough	18.44	33.62	18.50	33.68
110.33-O	14	1948	29°50.5'	115°52.0'	60	310°	4	partly cloudy	moderate	15.34	33.53	10.74	33.56
110.35-O	14	2110	29°46.5'	116°01.0'	500	310°	3	partly cloudy	rough	15.94	33.51	12.28	33.49
110.40-O	15	0030	29°36.5'	116°21.0'	1100	310°	4	partly cloudy	rough	17.96	33.58	-	-
110.45-O	15	0330	29°26.0'	116°41.0'	500	310°	4	cloudy	rough	18.74	33.72	18.31	33.68
110.50-O	15	0635	29°15.0'	117°03.5'	1900	310°	4	clear	rough	18.69	33.73	18.04	33.71

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)



Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
110.55-O	VI-15	0950	29°05.0'	117°26.0'	1900	310°	4	clear	rough	18.15	33.70	17.88	33.64
110.60-O	15	1250	28°54.0'	117°49.5'	2000	310°	3	cloudy	rough	18.82	33.68	17.44	33.60
110.70-S	22	0434	28°35.0'	118°15.0'	2150	320°	4	partly cloudy	rough	19.31	33.70	17.76	33.64
110.75-S	22	0137	28°25.5'	118°35.0'	2000	010°	5	partly cloudy	moderate	19.26	33.68	18.93	33.67
110.80-S	21	2255	28°16.0'	118°57.0'	2000	010°	4	cloudy	moderate	19.34	33.66	18.08	33.58
113.30-S	23	0835	29°23.0'	115°17.5'	34	calm		fog	slight	16.13	33.67	11.06	33.79
113.35-S	23	0455	29°18.0'	115°43.5'	1000	330°	4	clear	moderate	17.22	33.60	14.44	33.52
113.40-S	23	0155	29°02.0'	116°03.0'	750	320°	4	cloudy	moderate	17.64	33.58	11.86	33.63
113.45-S	22	2302	28°54.0'	116°22.0'	1350	340°	3	cloudy	moderate	17.70	33.57	16.02	33.53
113.50-S	22	2042	28°51.0'	116°36.5'	2000	340°	3	overcast	rough	18.94	33.63	17.04	33.64
113.55-S	22	1751	28°39.0'	116°55.0'	1900	330°	4	cloudy	rough	18.51	33.63	17.65	33.58
113.60-S	22	1452	28°26.0'	117°15.5'	2000	340°	4	cloudy	moderate	18.85	33.67	17.12	33.53
113.65-S	22	1200	28°14.0'	117°35.0'	2150	320°	4	cloudy	moderate	19.26	33.71	17.82	33.58
113.70-S	22	0914	28°02.0'	117°55.5'	1900	340°	4	partly cloudy	rough	19.02	33.61	17.64	33.58
117.26-S	20	0223	28°58.0'	114°41.0'	40	290°	4	cloudy	rough	17.94	33.73	10.84	33.86
117.30-S	20	0425	28°46.0'	114°55.5'	60	340°	4	cloudy	rough	16.83	33.58	12.84	33.58
117.35-S	20	0708	28°38.0'	115°16.0'	120	340°	4	partly cloudy	moderate	17.46	33.55	13.24	33.51
117.40-S	20	0929	28°28.0'	115°35.5'	540	320°	3	clear	moderate	17.42	33.59	12.82	33.53
117.45-S	20	2310	28°18.0'	115°55.0'	1600	340°	4	rain	moderate	17.03	33.55	15.01	33.56

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
117.50-S	VI-21	0200	28°06.5'	116°15.0'	2500	340°	4	cloudy	rough	18.35	33.58	16.74	33.57
117.55-S	21	0425	27°56.0'	116°35.5'	2000	320°	3	partly cloudy	moderate	19.16	33.68	16.36	33.60
117.60-S	21	0724	27°45.5'	116°55.0'	2000+	320°	3	missing	moderate	19.26	33.66	17.70	33.53
117.65-S	21	1007	27°35.0'	117°15.0'	2000+	340°	4	partly cloudy	moderate	19.38	33.63	17.79	33.57
117.70-S	21	1241	27°24.5'	117°35.5'	2000	340°	4	partly cloudy	moderate	19.31	33.62	17.88	33.58
118.39-S	20	1130	28°18.5'	115°24.0'	147	320°	2	cloudy	moderate	18.22	33.62	-	-
119.33-S	19	1622	28°19.0'	114°54.0'	58	330°	5	partly cloudy	rough	17.11	33.62	16.22	33.62
120.25-S	19	2100	28°23.0'	114°14.5'	40	320°	5	cloudy	rough	17.15	33.68	11.44	33.57
120.30-S	19	1839	28°13.0'	114°34.0'	48	330°	4	partly cloudy	moderate	16.84	33.62	12.54	33.65
120.35-S	19	1310	28°04.0'	114°52.0'	41	350°	4	partly cloudy	rough	17.57	33.68	13.66	33.58
120.40-S	19	1050	27°56.5'	115°14.0'	24	290°	5	clear	very rough	18.87	33.82	16.29a)	33.66a)
120.45-S	19	0831	27°47.0'	115°33.0'	650	320°	5	overcast	very rough	17.12	33.73	11.05	33.78
120.55-S	19	0147	27°28.0'	116°13.0'	2350	340°	5	cloudy	very rough	19.22	33.72	-	-
120.60-S	18	2244	27°18.0'	116°31.5'	2050	330°	4	cloudy	moderate	19.06	33.70	16.95	33.45
120.65-S	18	2027	27°07.5'	116°50.0'	2150	330°	5	cloudy	rough	19.28	33.68	-	-
120.70-S	18	1710	26°56.0'	117°11.0'	2100	340°	4	overcast	rough	19.45	33.80	19.17	34.13
120.75-S	18	1432	26°46.0'	117°30.0'	2250	330°	4	overcast	rough	19.44	33.80	18.70	34.02

a) Depth, 20 meters.

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
120.85-S	VI-18	0815	26°24.0'	118°07.0'	2200	330°	4	overcast	rough	19.06	33.79	-	-
120.90-S	18	0505	26°13.0'	118°26.5'	2250	330°	4	overcast	rough	19.78	33.89	19.17	34.18
123.37-S	17	0519	27°24.0'	114°39.5'	35	270°	2	clear	moderate	14.74	33.78	12.01	33.86
123.42-S	17	0740	27°12.5'	115°01.0'	1500	340°	5	clear	rough	18.14	33.74	15.74	33.63
123.50-S	17	1137	26°55.0'	115°32.5'	1930	320°	4	overcast	moderate	18.45	33.77	16.37	33.72
123.55-S	17	1415	26°44.0'	115°53.0'	2100	320°	4	cloudy	moderate	18.56	33.72	16.90	33.64
123.60-S	17	1645	26°33.5'	116°14.0'	2100	320°	4	overcast	rough	19.00	33.74	17.78	33.71
127.34-S	16	2345	26°54.0'	114°06.0'	41	270°	4	haze	moderate	15.76	33.86	12.94	34.09
127.40-S	16	2023	26°38.5'	114°31.5'	1950	320°	4	partly cloudy	moderate	19.42	33.86	18.60	33.82
127.45-S	16	1724	26°27.5'	114°51.0'	1950	320°	4	cloudy	moderate	19.36	33.88	19.14	33.91
127.50-S	16	1450	26°17.5'	115°10.0'	1600	320°	4	overcast	moderate	19.46	33.71	18.85	33.78
130.30-S	15	2152	26°29.0'	113°29.0'	41	270°	4	partly cloudy	slight	17.84	33.94	15.37	34.01
130.35-S	16	0043	26°18.0'	113°48.5'	190	290°	4	clear	moderate	16.57	33.79	12.72	33.78
130.40-S	16	0337	26°07.0'	114°07.0'	1350	290°	4	clear	moderate	16.34	33.68	14.46	33.67
130.45-S	16	0650	25°56.0'	114°27.0'	1900	320°	4	clear	moderate	18.68	33.76	18.06	33.75
130.50-S	16	0954	25°43.5'	114°47.0'	2100	320°	4	partly cloudy	moderate	19.78	33.86	19.86	34.00
133.25-S	8	1842	26°03.0'	112°47.5'	45	320°	4	clear	rough	16.36	33.93	14.10	34.13
133.30-S	8	1608	25°51.5'	113°06.5'	106	320°	4	partly cloudy	very rough	19.18	33.96	14.80	34.08
133.35-S	8	1305	25°39.5'	113°29.0'	125	320°	6	partly cloudy	very rough	18.38	33.83	14.40	33.64

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
133.40-S	VI-8	1018	25°30.0'	113°47.5'	2350	320°	6	cloudy	high	18.28	33.85	17.00	33.71
133.45-S	8	0740	25°20.5'	114°05.5'	1800	320°	6	partly cloudy	high	18.76	33.86	17.65	33.74
133.50-S	8	0445	25°11.0'	114°23.5'	1700	330°	6	partly cloudy	high	19.18	33.88	19.40	34.20
137.23-S	7	0804	25°32.0'	112°18.0'	30	320°	4	clear	moderate	19.87	34.19	14.76	34.26
137.30-S	7	1110	25°19.0'	112°44.0'	90	320°	6	clear	rough	19.96	34.14	14.76	34.14
137.35-S	7	1430	25°09.0'	113°03.0'	650	320°	6	clear	very rough	19.18	33.95	15.24	33.80
137.45-S	7	2025	24°48.5'	113°41.5'	1100	320°	6	partly cloudy	very rough	19.97	33.95	16.48	33.78
137.50-S	7	2310	24°38.5'	114°00.0'	2100	320°	6	partly cloudy	high	19.36	33.88	18.61	34.20

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

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