

UNIVERSITY OF CALIFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL AND CHEMICAL DATA

CCOFI Cruise 6002
11 February - 3 March 1960

SIO Reference 62-3
18 August 1961

UNIVERSITY OF CALIFORNIA
SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

CCOFI CRUISE 6002

11 February - 3 March 1960

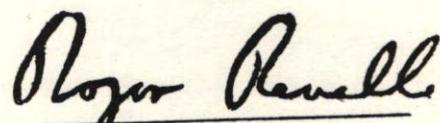
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Marine Research Committee

SIO Reference 62-3

18 August 1961

Approved for distribution:


Roger Revelle
Roger Revelle, Director

CONTENTS

List of Figures	ii
Introduction	iii
Personnel	vii
Tabulated Data	91
Distribution List	119

FIGURES

1. CCOFI Cruise 6002, station positions
2. Horizontal distribution of dynamic height anomaly (0 over 500 d-bar)
3. Horizontal distribution of temperature at 10 meters
4. Horizontal distribution of salinity at 10 meters
5. Horizontal distribution of temperature at 200 meters
6. Horizontal distribution of salinity at 200 meters

INTRODUCTION

The data presented in this report were collected by the R/V Black Douglas of the Bureau of Commercial Fisheries and the R/V Hugh M. Smith of the Scripps Institution of Oceanography on Cruise 6002 of the California Cooperative Oceanic Fisheries Investigations program. The first two figures in this cruise numbering system represent the year of the cruise; the last two figures, the month. In the case of quarterly cruises the last figures are hyphenated. The cruises preceding this one in the series are 5911 and 5912 (Scripps Institution report, SIO Ref. 61-21) and 6001 (SIO Ref. 61-23).

The data are tabulated at observed depths; the interpolated and computed values are tabulated at standard depths and 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.^{1/} 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 ΔD .

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. The salinity values obtained by salinometer are recorded to three decimal places, provided they meet accepted standards. The third decimal place has been offset to emphasize that the accuracy of the observations is not to one unit in that place, but that the values recorded "have a reproducibility of $\pm 0.004\%$ salinity at the 95 percent probability level, and a probable accuracy of $\pm 0.01\%$ salinity or better at the same level of probability."^{2/} The values are recorded to two decimal places when obtained by chlorinity titration, or by salinometer where only one determination

^{1/}Klein, Hans T. A new technique for processing physical oceanographic data. MS.

^{2/}Quotation from Department of Oceanography, University of Washington, Tech.

Rep. No. 66, UW Ref. 60-18, October 1960.

per sample was obtained, or where there is doubt concerning the accuracy of a particular sample, or of all samples on a station. The accuracy of all samples obtained by salinometer and recorded to two decimal places is believed to be equal to or better than those obtained by manual titration.

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.

On stations where more than one cast is lowered, the various property curves may not agree perfectly. This discrepancy may be caused by changes in geographical position, real property changes with time, slight error in measurement, or a combination of these factors. Stations with overlapping casts have the following footnote: Overlapping casts; reconciliation of property curves when necessary.

FOOTNOTES

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 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.

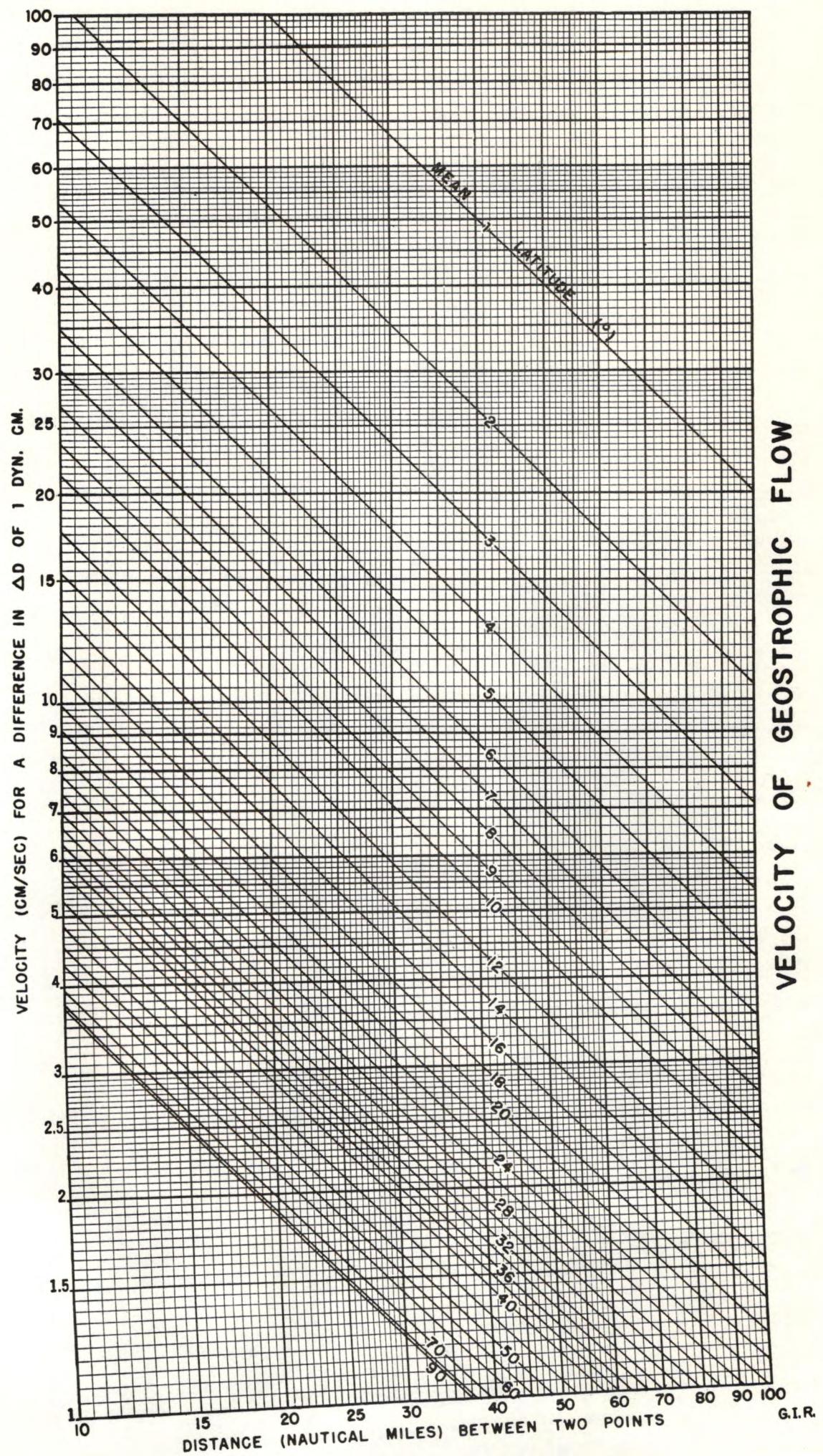
Values which are not drawn through because they seem to be in error without apparent reason are indicated by one of the following notations.

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 1960 volume, the first page of Cruise 6002 data is numbered 91.



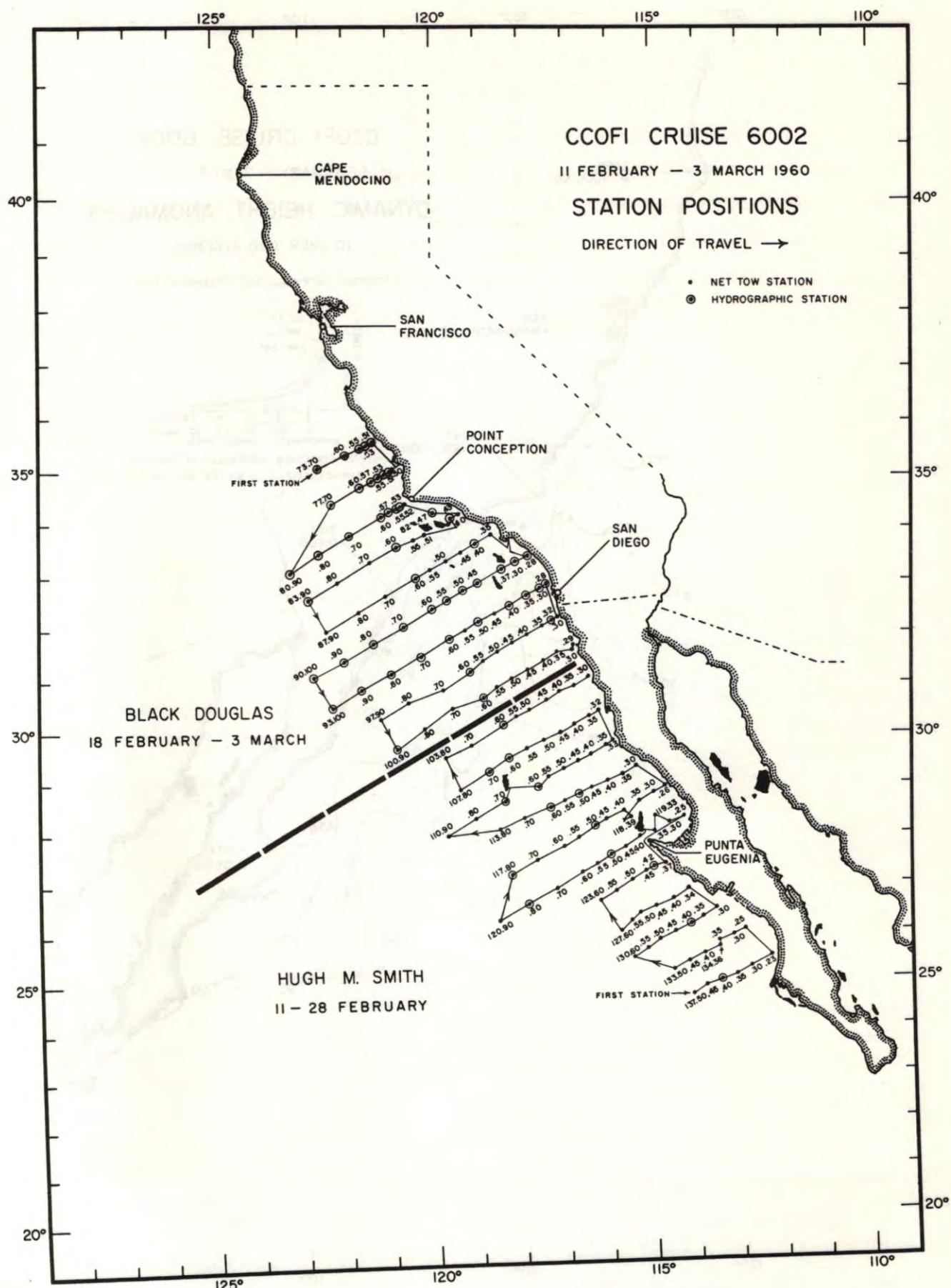
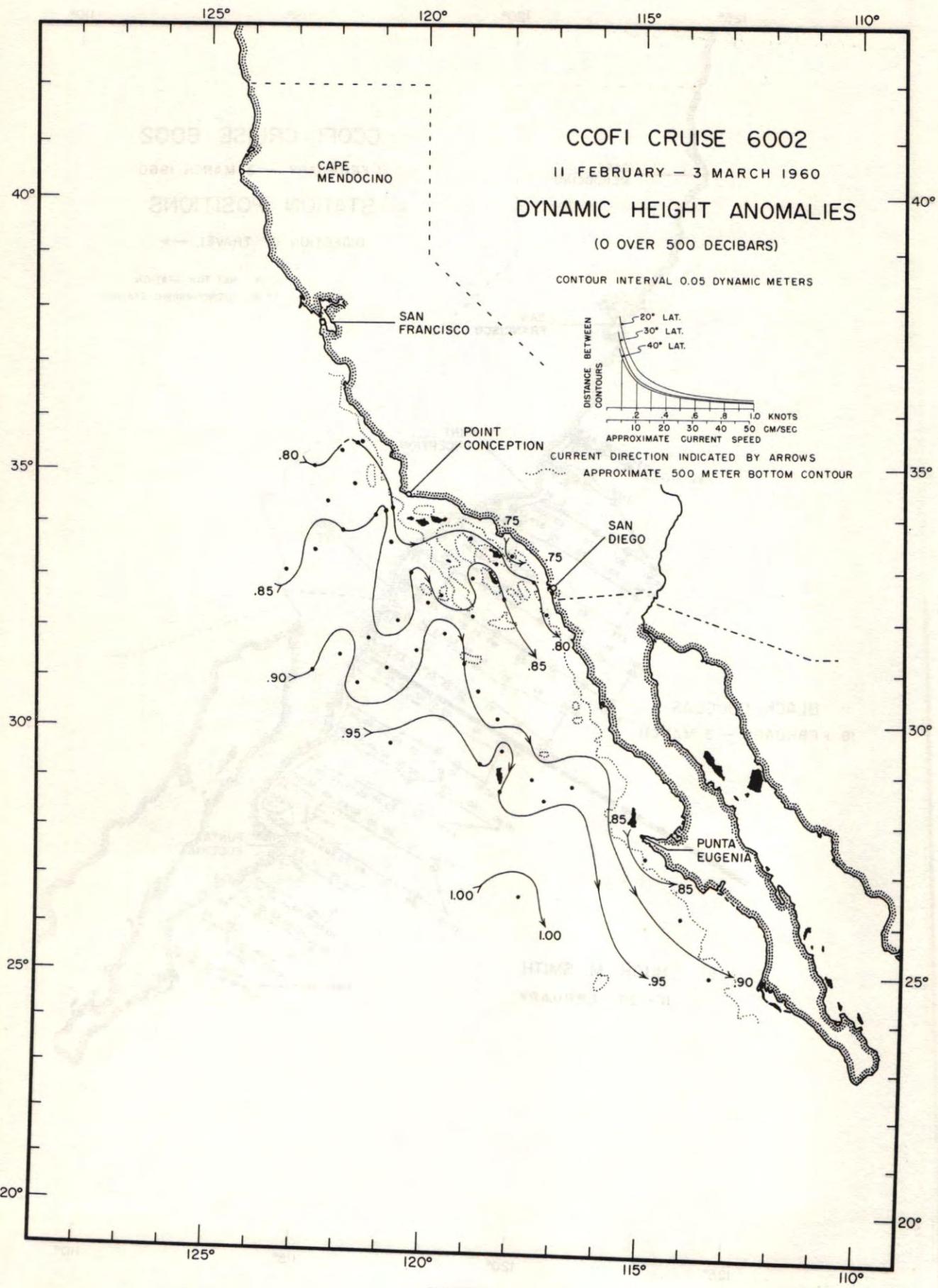


FIGURE I



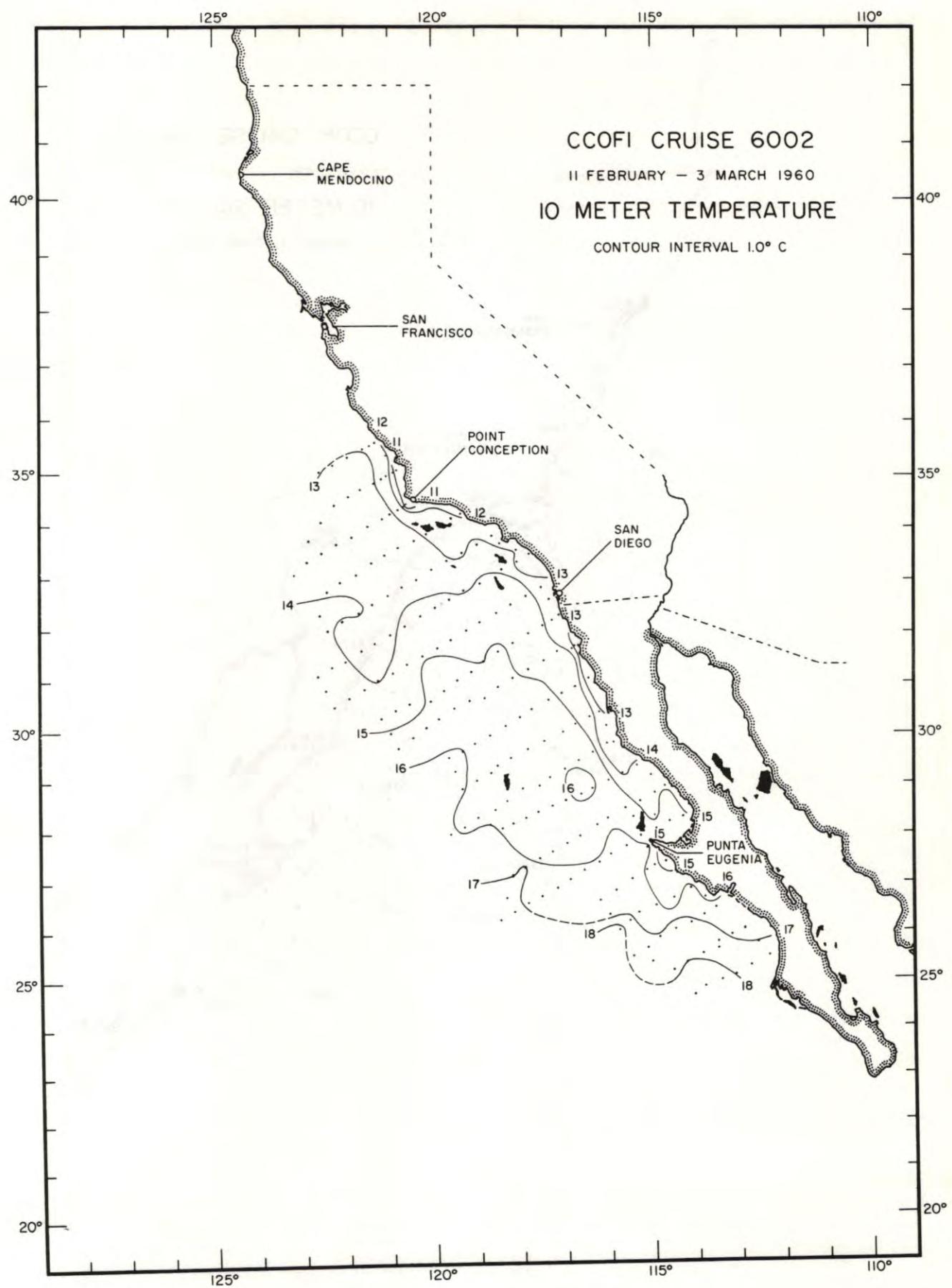


FIGURE 3

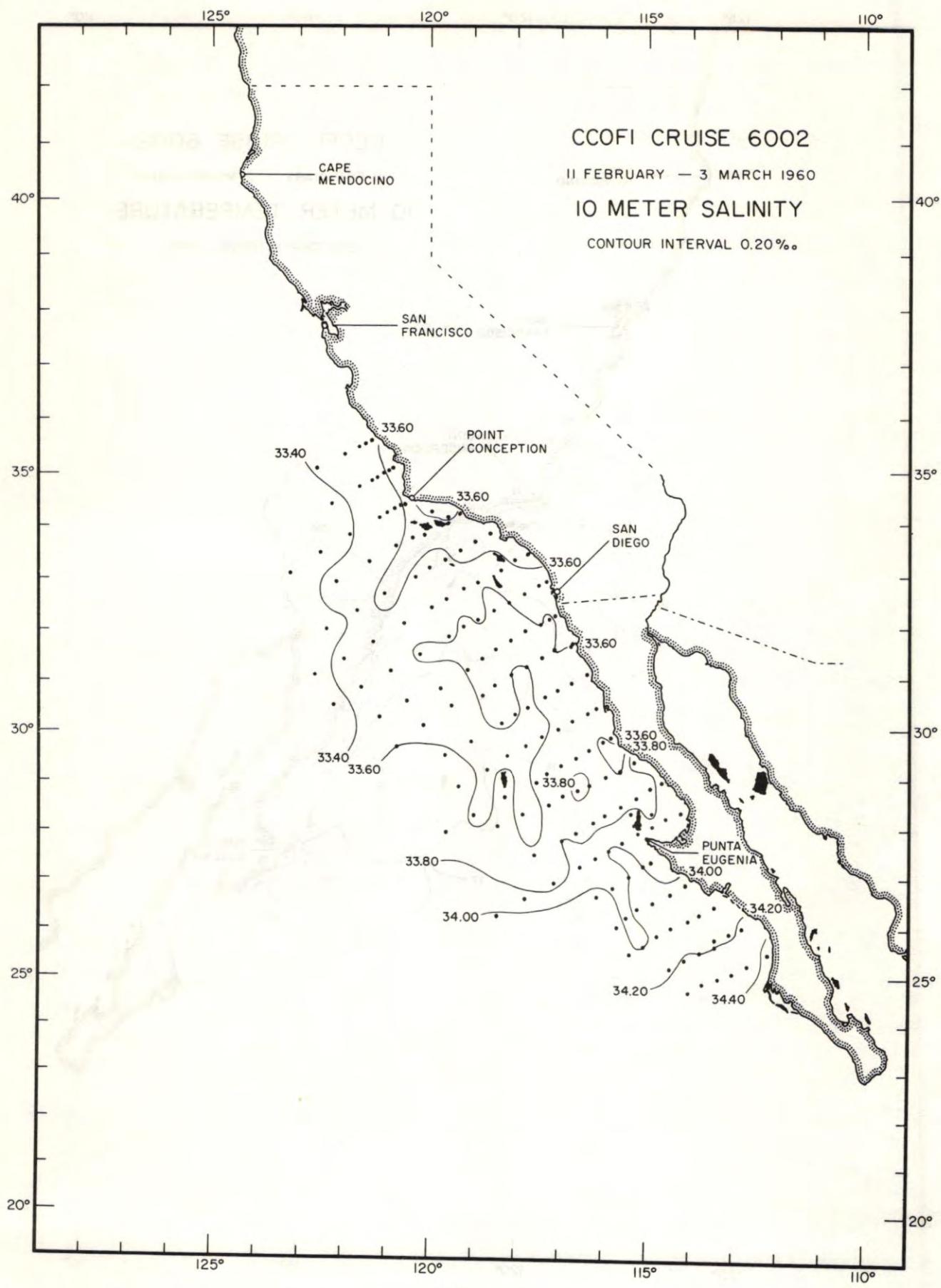


FIGURE 4

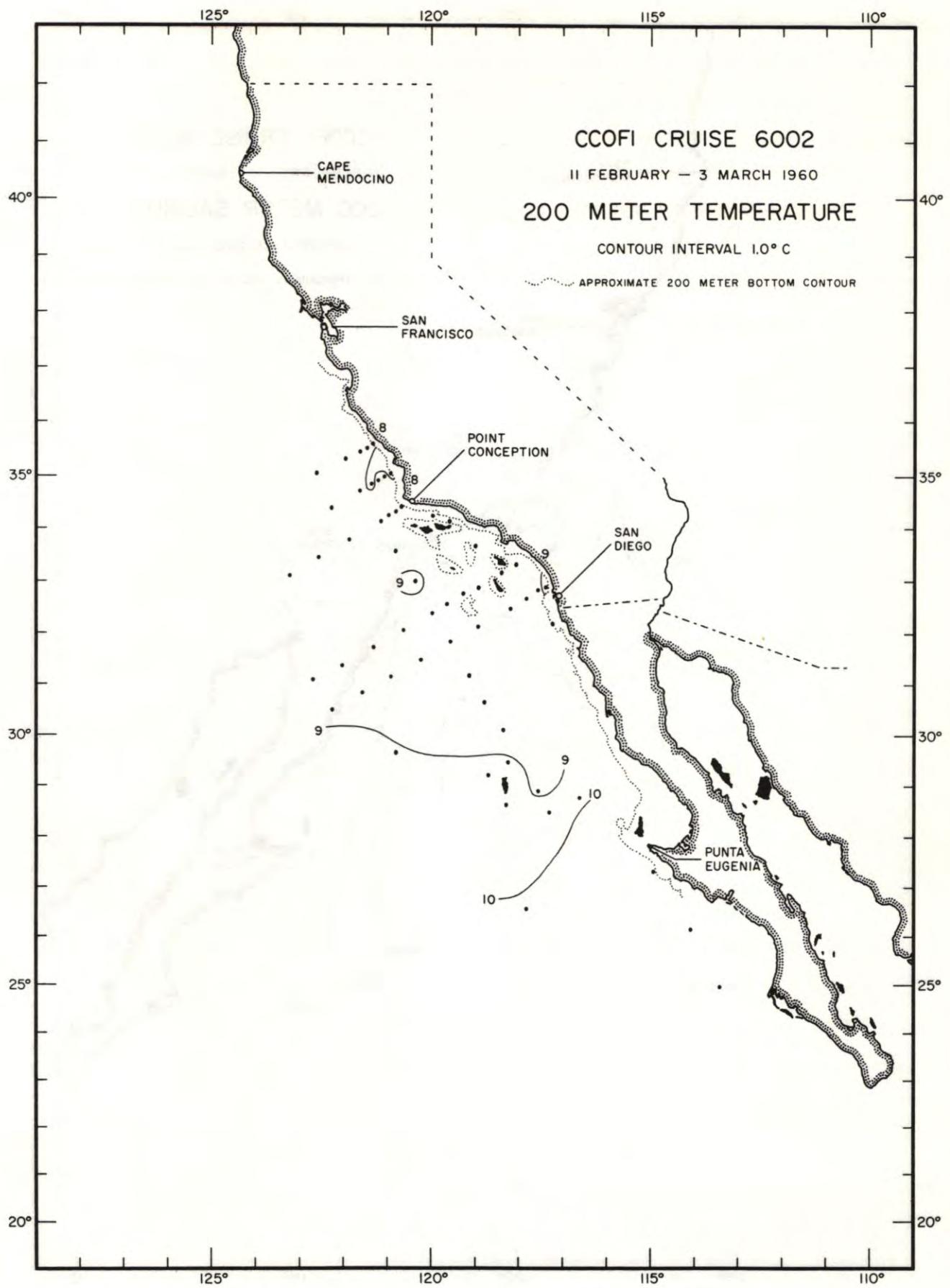


FIGURE 5

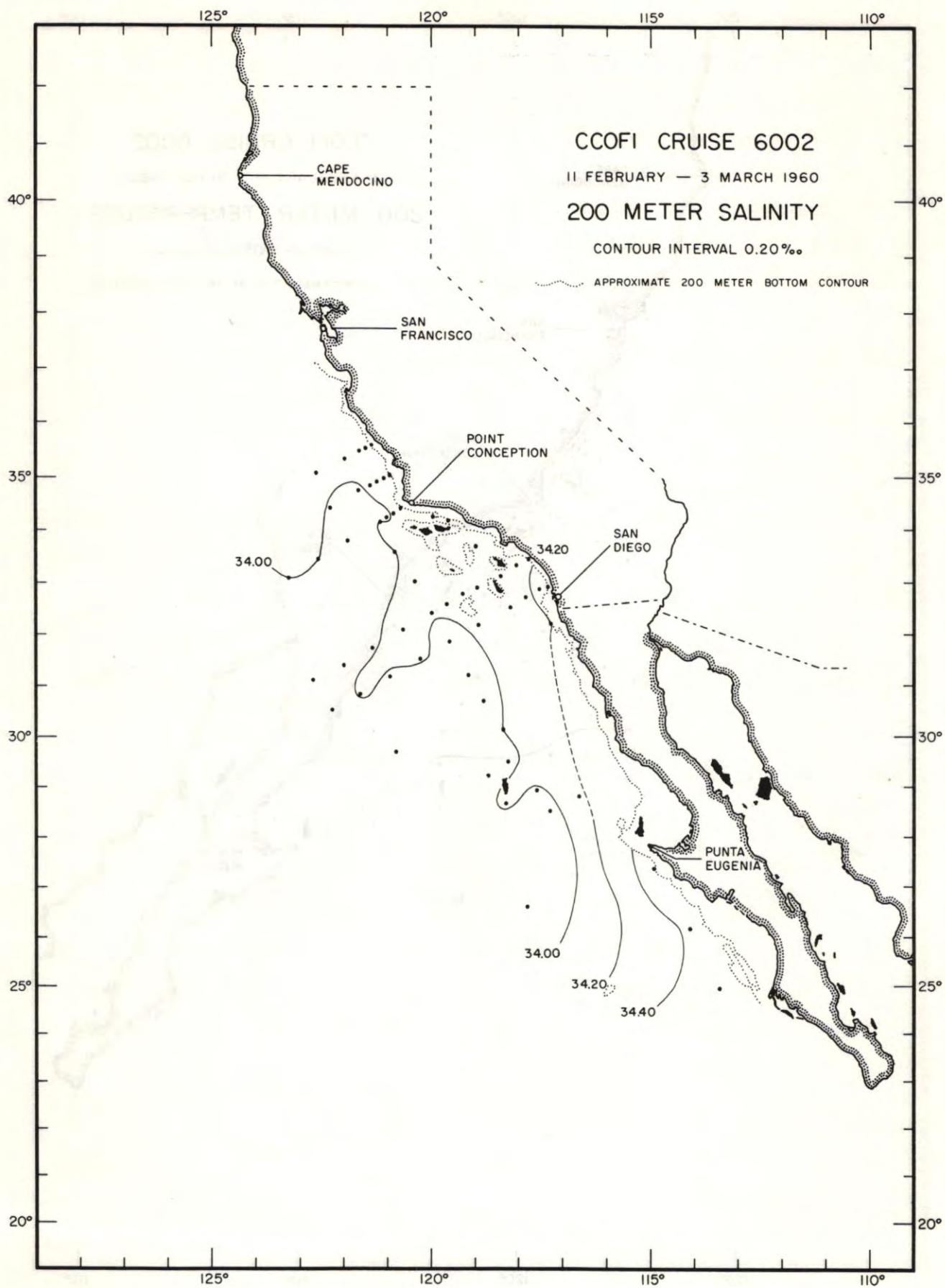


FIGURE 6

PERSONNEL

SHIPS' CAPTAINS

- Forster, Charles W., R/V Black Douglas
- Miller, Frank, R/V Hugh M. Smith

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

R/V Black Douglas

Wyllie, John G., Laboratory Technician II
Bottom, Kenneth S., Marine Technician
Kimura, Makota, Fishery Research Biologist, Bureau of Commercial Fisheries
Metoyer, Jack D., Fishery Aid, Bureau of Commercial Fisheries

R/V Hugh M. Smith

Joyal, Norman F., Marine Technician
Leong, Roderick J. H., Fishery Research Biologist, Bureau of Commercial Fisheries

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O ₂ ml/L	δ _T cl/ton	Z m	T °C	S ‰	O ₂ ml/L	σ _t g/L	δ _T cl/ton	ΔD dyn m

SIO
CCOFI
6002

BLACK DOUGLAS; February 20, 1960; 0450 GCT; 35°35'N, 121°21'W; sounding, 164 fm; wind, 310°, force 3;
weather, clear; sea, moderate; wire angle, 20°.

1	12.22	33.53	5.61	256	0	(12.22)	(33.53)	(5.61)	(25.43)	(256)	(0.00)
10	12.24	33.58	5.51	253	10	12.24	33.58	5.51	25.46	253	0.03
29	12.24	33.53	5.57	257	20	12.24	33.56	5.54	25.44	254	0.05
49	11.94	33.55	5.33	249	30	12.24	33.53	5.57	25.42	257	0.08
73	10.20	33.74	3.54	206	50	11.90	33.55	5.30	25.50	249	0.13
97	9.70	33.85	3.32	190	75	10.14	33.74	3.49	25.97	204	0.18
121	9.20	33.86	3.11	181	100	9.65	33.85	3.30	26.14	189	0.23
161	8.40	34.02	2.79	157	125	9.17	33.87	3.08	26.23	180	0.28
201	8.04	34.11	2.12	146	150	8.62	33.98	2.88	26.40	164	0.32
					200	8.06	34.11	2.13	26.59	146	0.40

BLACK DOUGLAS; February 20, 1960; 0308 GCT; 35°31.5'N, 121°28.5'W; sounding, 400 fm; wind, 300°, force 5;
weather, clear; sea, very rough; wire angle, 12°.

0	12.87	33.54	5.95	267	0	12.87	33.54	5.95	25.31	267	0.00
10	12.88	33.54	5.95	267	10	12.88	33.54	5.95	25.31	267	0.03
29	12.88	33.55	5.90	267	20	12.88	33.54	5.93	25.31	267	0.05
40	12.85	33.51	5.91	269	30	12.88	33.55	5.90	25.31	267	0.08
50	12.26	33.54	5.32	256	50	12.26	33.54	5.32	25.43	256	0.13
59	11.04	33.58	4.35	232	75	10.22	33.67	3.85	25.89	211	0.19
69	10.44	33.64	3.94	217	100	9.56	33.82	3.28	26.13	189	0.24
84	9.90	33.71	3.70	203	125	9.04	33.94	2.82	26.30	173	0.29
99	9.58	33.82	3.29	190	150	8.73	34.02	2.38	26.42	162	0.33
112	9.21	33.89	3.08	179	200	8.25	34.11	1.83	26.56	148	0.41
136	8.90	33.98	2.62	167	250	7.62	34.19	1.40	26.71	134	0.48
165	8.56	34.05	2.18	157	300	7.21	34.18	1.28	26.77	129	0.55
199	8.26	34.11	1.84	149	400	6.56	34.27	0.86	26.93	113	0.67
248	7.64	34.19	1.43	134	500	(5.95)	(34.29)	(0.46)	(27.03)	(104)	(0.79)
296	7.24	34.18	1.31	129							
399	6.57	34.27	0.87	113							
499	5.96	34.29	0.46	104							

BLACK DOUGLAS; February 20, 1960; 0103 GCT; 35°27'N, 121°37'W; sounding, 550 fm; wind, 320°, force 7;
weather, clear; sea, high; wire angle, 18°.

0	12.96	33.53	5.85	269	0	12.96	33.53	5.85	25.29	269	0.00
9	12.95	33.53	5.95	269	10	12.95	33.53	5.96	25.29	269	0.03
28	12.96	33.52	6.02	270	20	12.95	33.52	5.99	25.28	270	0.05
58	12.97	33.56	5.79	267	30	12.96	33.52	5.99	25.28	270	0.08
67	12.95	33.56	5.82	267	50	12.97	33.55	5.88	25.29	268	0.13
82	11.20	33.45	4.61	244	75	11.80	33.48	4.99	25.47	252	0.20
96	10.50	33.61	3.98	220	100	10.22	33.71	3.77	25.93	208	0.26
110	10.28	33.84	3.62	200	125	9.82	33.92	3.11	26.16	186	0.31
135	9.38	33.98	2.66	175	150	8.92	34.04	2.36	26.40	164	0.35
154	8.82	34.05	2.30	161	200	8.10	34.16	1.98	26.63	142	0.43
184	8.36	34.12	2.05	149	250	7.58	34.16	1.52	26.70	135	0.50
212	7.90	34.18	1.89	138	300	7.17	34.27	0.98	26.85	121	0.57
243	7.64	34.16	1.61	136	400	6.63	34.32	0.66	26.96	111	0.69
294	7.21	34.27	1.03	122	500	5.98	34.34	0.50	27.06	101	0.80
348	6.90	34.29	0.81	116	600	5.56	34.36	0.36	27.13	95	0.90
432	6.46	34.34	0.60	107							
517	5.86	34.34	0.47	100							
602	5.55	34.36	0.35	95							

SIO CCOFI 6002	OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
	Z m	T °C	S ‰	O ₂ ml/L	δ _T cl/ton	Z m	T °C	S ‰	O ₂ ml/L	σ _t g/L	δ _T cl/ton	ΔD dyn m
73.60	BLACK DOUGLAS; February 18, 1960; 2148 GCT; 35°18'N, 121°57.5'W; sounding, 1300 fm; wind, 320°, force 6; weather, partly cloudy; sea, high; wire angle, 08°.											
	2	13.05	33.53	5.82	271	0	(13.05)	(33.53)	(5.82)	(25.27)	(271)	(0.00)
	12	13.04	33.52	5.82	272	10	13.04	33.52	5.82	25.26	272	0.03
	32	13.04	33.51	5.95	272	20	13.04	33.52	5.89	25.26	272	0.05
	62	12.23	33.58	5.01	253	30	13.04	33.51	5.94	25.25	272	0.08
	72	11.21	33.60	4.24	233	50	13.03	33.51	5.94	25.26	272	0.14
	88	10.06	33.68	3.59	208	75	10.97	33.61	4.06	25.73	227	0.20
	102	9.61	33.72	3.45	197	100	9.67	33.71	3.46	26.02	199	0.25
	117	9.27	33.83	3.18	184	125	9.11	33.86	3.16	26.23	180	0.30
	142	8.86	33.89	3.14	173	150	8.77	33.91	3.05	26.33	171	0.34
	162	8.65	33.96	2.87	165	200	8.20	34.04	2.57	26.51	153	0.43
	192	8.28	34.04	2.60	154	250	7.62	34.08	2.24	26.63	142	0.50
	221	7.99	34.04	2.50	150	300	6.86	34.07	1.85	26.73	132	0.57
	253	7.57	34.08	2.16	141	400	5.97	34.15	0.89	26.91	115	0.70
	304	6.79	34.07	1.83	132	500	5.56	34.29	0.53	27.07	100	0.81
	359	6.21	34.10	1.15	122	600	5.06	34.31	0.36	27.14	93	0.92
	445	5.76	34.22	0.68	108							
	529	5.44	34.32	0.45	97							
	615	4.94	34.30	0.34	92							
73.70	BLACK DOUGLAS; February 18, 1960; 1652 GCT; 35°03'N, 122°36'W; sounding, 2100 fm; wind, 320°, force 7; weather, cloudy; sea, high; wire angle, 08°.											
	1	12.95	33.43	5.76	276	0	(12.95)	(33.43)	(5.76)	(25.21)	(276)	(0.00)
	11	12.96	33.46	5.75	274	10	12.96	33.43	5.75	25.23	274	0.03
	36	12.97	33.42	5.81	277	20	12.96	33.43	5.76	25.23	275	0.06
	66	11.88	33.55	5.04	249	30	12.97	33.42	5.79	25.20	277	0.08
	76	10.96	33.63	4.19	226	50	12.92	33.42	5.77	25.21	276	0.14
	96	9.71	33.69	3.32	201	75	11.02	33.62	4.28	25.72	228	0.20
	111	9.42	33.78	2.97	190	100	9.60	33.71	3.19	26.04	198	0.26
	125	9.20	33.91	2.79	177	125	9.20	33.91	2.79	26.25	177	0.30
	156	8.78	33.96	2.61	167	150	8.86	33.95	2.65	26.34	169	0.35
	175	8.47	34.02	2.37	158	200	8.17	34.05	2.36	26.52	152	0.43
	205	8.10	34.05	2.33	151	250	7.60	34.11	1.89	26.66	139	0.50
	239	7.76	34.09	2.01	143	300	7.02	34.18	1.35	26.79	126	0.57
	271	7.23a)	34.16	1.63	131	400	5.97	34.17	1.00	26.93	113	0.70
	320	6.90	34.19	1.21	124	500	5.56	34.31	0.47	27.08	99	0.80
	385	6.06	34.16	1.08	116	600	4.89	34.35	0.35	27.19	88	0.90
	486	5.67	34.31	0.51	100							
	575	5.02	34.34	0.37	90							
	650	4.72	34.37	0.29	85							
77.51	BLACK DOUGLAS; February 20, 1960; 1925 GCT; 35°02'N, 120°56.5'W; sounding, 150 fm; wind, 270°, force 3; weather, clear; sea, high; wire angle, 12°.											
	1	11.42	33.66	5.03	232	0	(11.42)	(33.66)	(5.03)	(25.68)	(232)	(0.00)
	11	11.34	33.68	5.02	230	10	11.34	33.67	5.02	25.70	230	0.02
	30	11.14	33.63	4.94	230	20	11.24	33.65	4.98	25.70	230	0.05
	50	10.22	33.73	3.55	207	30	11.14	33.63	4.94	25.70	230	0.07
	74	9.58	33.85	3.03	188	50	10.22	33.73	3.55	25.94	207	0.11
	99	9.07	33.89	2.58	177	75	9.58	33.85	3.00	26.15	187	0.16
	124	8.72	33.99	2.26	164	100	9.05	33.89	2.57	26.26	177	0.21
	163	8.30	34.04	1.92	155	125	8.68	33.99	2.25	26.40	164	0.25
	204	7.83	34.09	1.74	144	150	8.43	34.03	2.04	26.47	157	0.29
						200	7.88	34.09	1.76	26.59	145	0.37

a) Alternate value, 7.58°C, not used in interpolation.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O ₂ ml/L	δ _T cl/ton	Z m	T °C	S ‰	O ₂ ml/L	σ _t g/L	δ _T cl/ton	ΔD dyn m

SIO
CCOFI
6002

BLACK DOUGLAS; February 20, 1960; 2047 GCT; 34°58'N, 121°04.5'W; sounding, 280 fm; wind, 270°, force 2;
weather, clear; sea, very rough; wire angle, 13°.

1	12.46	33.49	5.80	263	0	(12.46)	(33.49)	(5.80)	(25.35)	(263)	(0.00)
11	12.34	33.48	5.82	262	10	12.35	33.48	5.82	25.37	262	0.03
30	12.10	33.53	5.30	254	20	12.22	33.50	5.59	25.40	258	0.05
50	10.76	33.67	3.94	220	30	12.10	33.53	5.30	25.45	254	0.08
75	9.81	33.75	3.39	199	50	10.76	33.67	3.94	25.81	220	0.13
99	9.39	33.89	2.90	182	75	9.81	33.75	3.39	26.03	199	0.18
123	9.06	33.96	2.48	171	100	9.38	33.89	2.89	26.22	181	0.23
161	8.58	34.04	2.16	159	125	9.03	33.96	2.47	26.32	171	0.27
200	8.22	34.14	1.90	146	150	8.72	34.01	2.26	26.41	162	0.31
249	7.84	34.16	1.73	140	200	8.22	34.14	1.90	26.59	146	0.39
298	7.55	34.18	1.32	133	250	7.83	34.16	1.72	26.66	139	0.46
402	6.72	34.23	0.84	119	300	7.53	34.18	1.30	26.72	133	0.53
					400	6.74	34.23	0.85	26.87	119	0.66

BLACK DOUGLAS; February 20, 1960; 2225 GCT; 34°54.5'N, 121°13'W; sounding, 320 fm; wind, 310°, force 2;
weather, partly cloudy; sea, very rough; wire angle, 10°.

1	13.14	33.53	5.91	273	0	(13.14)	(33.53)	(5.91)	(25.25)	(273)	(0.00)
11	12.84	33.50	5.91	270	10	12.85	33.50	5.91	25.28	270	0.03
30	12.72	33.49	5.88	268	20	12.77	33.49	5.90	25.29	269	0.05
50	12.66	33.51	5.97	265	30	12.72	33.49	5.88	25.30	268	0.08
74	12.20	33.57	5.15	253	50	12.66	33.51	5.97	25.33	265	0.13
99	10.70	33.65	3.89	220	75	12.18	33.57	5.11	25.47	252	0.20
124	9.98	33.77	3.32	200	100	10.68	33.65	3.87	25.81	220	0.26
163	9.22	33.91	2.72	178	125	9.97	33.77	3.31	26.03	199	0.31
202	8.36	34.04	2.27	155	150	9.49	33.86	2.94	26.17	186	0.36
252	7.87	34.14	1.63	141	200	8.41	34.04	2.29	26.48	156	0.45
301	7.43	34.16	1.41	134	250	7.88	34.14	1.64	26.63	141	0.52
405	6.44	34.25	0.71	114	300	7.44	34.16	1.42	26.72	134	0.59
					400	6.50	34.25	0.74	26.92	115	0.72

BLACK DOUGLAS; February 21, 1960; 0007 GCT; 34°50'N, 121°21'W; sounding, 265 fm; wind, 310°, force 3;
weather, clear; sea, very rough; wire angle, 20°.

0	13.37	33.42	5.91	285	0	13.37	33.42	5.91	25.12	285	0.00
9	13.02	33.49	5.93	274	10	13.01	33.49	5.93	25.24	274	0.03
28	12.92	33.50	5.96	271	20	12.93	33.50	5.95	25.27	271	0.06
48	12.88	33.48	5.93	272	30	12.91	33.48	5.95	25.27	271	0.08
71	10.86	33.48	4.58	236	50	12.87	33.48	5.90	25.27	271	0.14
94	9.84	33.67	3.87	205	75	10.62	33.49	4.44	25.69	231	0.20
118	9.34	33.86	3.49	183	100	9.70	33.72	3.77	26.03	199	0.25
155	8.60	33.95	2.85	166	125	9.19	33.89	3.36	26.24	179	0.30
192	8.00	34.02	2.71	152	150	8.70	33.94	2.91	26.36	168	0.35
240	7.50	34.04	2.35	143	200	7.89	34.02	2.65	26.54	150	0.43
289	7.24	34.22	1.70	126	250	7.44	34.07	2.25	26.65	141	0.50
390	6.52	34.22	0.86	117	300	7.17	34.22	1.60	26.81	125	0.57
					400	(6.43)	(34.22)	(0.86)	(26.91)	(116)	(0.69)

BLACK DOUGLAS; February 21, 1960; 0222 GCT; 34°43'N, 121°37.5'W; sounding, 500+ fm; wind, 300°, force 3;
weather, partly cloudy; sea, very rough; wire angle, 05°.

0	13.74	33.49	5.96	288	0	13.74	33.49	5.96	25.09	288	0.00
10	13.50	33.50	6.03	282	10	13.50	33.50	6.03	25.15	282	0.03
30	13.44	33.52	5.98	280	20	13.47	33.51	6.00	25.16	281	0.06
55	13.37	33.49	5.85	280	30	13.44	33.52	5.98	25.17	280	0.08
65	12.66	33.44	5.57	271	50	13.40	33.50	5.88	25.17	280	0.14
75	11.22	33.41	4.86	248	75	11.22	33.41	4.86	25.51	248	0.21
90	10.45	33.44	4.53	232	100	10.07	33.52	4.20	25.81	220	0.27
104	9.90	33.57	4.02	213	125	9.71	33.66	3.76	25.97	204	0.32
129	9.67	33.68	3.71	201	150	8.94	33.83	3.34	25.24	179	0.37
149	8.97	33.83	3.34	179	200	8.06	33.99	3.05	26.49	155	0.45
175	8.50	33.93	3.34	165	250	7.23	34.03	2.46	26.64	141	0.53
205	7.96	34.00	2.98	152	300	6.70	34.07	1.90	26.75	130	0.60
234	7.44	34.02	2.61	144	400	5.91	34.16	0.88	26.93	114	0.72
275	6.94	34.05	2.27	135	500	5.39	(34.23)	(0.53)	(27.05)	(102)	(0.84)
335	6.40	34.12	1.32	123							
410	5.84	34.17	0.83	113							
485	5.43	34.22	0.57	104							
565	5.24	34.40u	0.35	-							

SIO CCOFI 6002	OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
	Z m	T °C	S ‰	O ₂ ml/L		Z m	T °C	S ‰	O ₂ ml/L	σ _t g/L	δ _T cl/ton	ΔD dyn m

77.70	BLACK DOUGLAS; February 21, 1960; 0637 GCT; 34°24'N, 122°16'W; sounding, 2150 fm; wind, 270°, force 4; weather, partly cloudy; sea, very rough; wire angle, 07°.											
	0	13.55	33.34	5.97	295	0	13.55	33.34	5.97	25.02	295	0.00
	10	13.46	33.35	5.93	292	10	13.46	33.35	5.93	25.05	292	0.03
	30	13.45	33.39	5.92	289	20	13.45	33.37	5.92	25.06	291	0.06
	60	12.96	33.48	5.87	273	30	13.45	33.39	5.92	25.08	289	0.09
	71	12.18	33.42	5.27	263	50	13.04	33.47	5.89	25.21	276	0.14
	86	10.99	33.44	4.68	241	75	12.10	33.43	5.16	25.38	261	0.21
	100	9.86	33.53	4.32	216	100	9.86	33.53	4.32	25.85	216	0.27
	115	9.32	33.77	3.81	189	125	9.15	33.81	3.56	26.18	184	0.32
	140	8.96	33.86	3.22	177	150	8.85	33.91	3.07	26.31	173	0.37
	160	8.72	33.95	3.00	167	200	8.17	33.99	3.03	26.48	156	0.45
	190	8.28	33.98	3.05	159	250	7.59	34.05	2.41	26.61	144	0.53
	220	7.94	34.02	2.91	151	300	6.94	34.07	1.96	26.72	133	0.60
	251	7.58	34.05	2.40	144	400	6.03	34.18	1.06	26.91	115	0.73
	301	6.92	34.07	1.95	133	500	5.57	34.25	0.52	27.04	103	0.84
	355	6.44	34.13	1.32	123	600	5.23	34.30	0.41	27.12	95	0.95
	441	5.72	34.23	0.75	106							
	524	5.50	34.25	0.49	102							
	608	5.18	34.31	0.41	94							
80.53	BLACK DOUGLAS; February 22, 1960; 1736 GCT; 34°23'N, 120°40'W; sounding, 220 fm; wind, 300°, force 5; weather, clear; sea, rough; wire angle, 26°.											
	1	11.96	33.58	5.48	248	0	(11.96)	(33.58)	(5.48)	(25.51)	(248)	(0.00)
	10	11.96	33.58	5.44	248	10	11.96	33.58	5.44	25.51	248	0.02
	28	11.64	33.58	5.11	242	20	11.79	33.58	5.22	25.54	245	0.05
	45	11.54	33.58	5.18	240	30	11.62	33.58	5.12	25.58	242	0.07
	66	10.86	33.75	4.28	216	50	11.47	33.59	5.14	25.61	239	0.12
	87	10.15	33.73	3.57	206	75	10.63	33.75	4.09	25.88	212	0.18
	108	9.78	33.80	3.25	195	100	9.95	33.75	3.39	26.01	201	0.23
	141	8.74	33.93	2.93	169	125	8.94	33.87	3.02	26.27	176	0.28
	175	8.60	34.07	2.03	156	150	8.68	33.96	2.70	26.37	166	0.32
	220	8.29	34.14	1.59	147	200	8.43	34.11	1.76	26.53	151	0.40
	267	7.96	34.18	1.09	139	250	8.07	34.17	1.29	26.63	142	0.48
80.55	BLACK DOUGLAS; February 22, 1960; 1556 GCT; 34°19'N, 120°48'W; sounding, 409 fm; wind, 310°, force 5; weather, clear; sea, very rough; wire angle, 20°.											
	1	12.74	33.46	5.72	271	0	(12.74)	(33.46)	(5.72)	(25.27)	(271)	(0.00)
	11	12.72	33.48	5.67	269	10	12.72	33.48	5.68	25.29	269	0.03
	30	12.70	33.48	5.64	268	20	12.71	33.48	5.66	25.30	268	0.05
	40	12.06	33.49	5.18	256	30	12.70	33.48	5.64	25.30	268	0.08
	53	11.29	33.46	4.68	245	50	11.47	33.46	4.80	25.51	248	0.13
	67	10.60	33.51	4.31	229	75	9.90	33.60	3.88	25.89	211	0.19
	91	9.75	33.73	3.53	199	100	9.49	33.80	3.26	26.12	190	0.24
	108	9.30	33.86	3.03	183	125	8.97	33.95	2.73	26.32	171	0.29
	126	8.96	33.95	2.72	171	150	8.78	34.04	2.10	26.42	161	0.33
	144	8.82	34.02	2.27	163	200	8.42	34.15	1.60	26.56	148	0.41
	170	8.61	34.08	1.81	156	250	8.08	34.16	1.54	26.62	143	0.48
	203	8.40	34.15	1.59	148	300	7.64	34.18	1.29	26.70	135	0.55
	232	8.21	34.15	1.58	145	400	6.59	34.24	0.67	26.90	116	0.68
	278	7.88	34.17	1.43	139	500	6.00	34.31	0.59	27.04	103	0.80
	328	7.31	34.18	1.10	130							
	411	6.48	34.26	0.62	113							
	491	6.05	34.31	0.60	105							
	575	5.58	34.33	0.37	97							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O ₂ ml/L	δ _T cl/ton	Z m	T °C	S ‰	O ₂ ml/L	σ _t g/L	δ _T cl/ton	ΔD dyn m

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6002

BLACK DOUGLAS; February 22, 1960; 1340 GCT; 34°15.5'N, 120°57.5'W; sounding, 500 fm; wind, 320°, force 6;
weather, partly cloudy; sea, very rough; wire angle, 43°.

1	13.22	33.40	5.77	284	0	(13.22)	(33.40)	(5.77)	(25.13)	(284)	(0.00)
10	13.22	33.42	5.97	283	10	13.22	33.42	5.97	25.14	283	0.03
25	13.24	33.40	5.92	285	20	13.23	33.40	5.93	25.13	284	0.06
45	13.18	33.42	5.90	282	30	13.23	33.40	5.90	25.13	284	0.08
53	13.10	33.44	5.82	279	50	13.14	33.43	5.83	25.17	280	0.14
62	12.98	33.44	5.85	277	75	12.20	33.48	4.80	25.39	259	0.21
74	12.28	33.48	4.86	261	100	10.22	33.65	3.81	25.89	212	0.27
85	11.18	33.52	4.36	239	125	9.37	33.78	3.26	26.13	190	0.32
103	10.08	33.66	3.75	210	150	8.98	33.86	2.95	26.25	178	0.37
117	9.51	33.75	3.40	194	200	8.38	33.99	2.63	26.45	159	0.45
138	9.18	33.82	3.07	184	250	7.87	34.07	2.06	26.59	146	0.53
160	8.77	33.89	2.87	172	300	7.27	34.12	1.58	26.71	134	0.60
183	8.54	33.96	2.75	164	400	6.45	34.23	0.93	26.90	116	0.73
219	8.19	34.03	2.50	154	500	(6.08)	(34.27)	(0.45)	(26.98)	(108)	(0.85)
261	7.74	34.09	1.90	143							
327	6.96	34.13	1.39	129							
401	6.44	34.23	0.92	115							
480	6.15	34.26	0.45	109							

BLACK DOUGLAS; February 22, 1960; 1100 GCT; 34°09'N, 121°09'W; sounding, 1200 fm; wind, 320°, force 8;
weather, partly cloudy; sea, high; wire angle, 30°.

1	13.24	33.46		280	0	(13.24)	(33.46)		(25.17)	(280)	(0.00)
10	13.22	33.45		280	10	13.22	33.45		25.17	280	0.03
28	13.25	33.42		283	20	13.23	33.44		25.15	282	0.06
54	13.28	33.53		276	30	13.26	33.42		25.14	283	0.08
63	13.29	33.51		277	50	13.28	33.52		25.21	277	0.14
74	13.25	33.51		276	75	13.25	33.51		25.22	276	0.21
87	12.29	33.55		256	100	11.19	33.57		25.65	235	0.27
100	11.19	33.57		235	125	9.79	33.75		26.03	199	0.33
121	9.92	33.73		202	150	9.18	33.81		26.18	184	0.38
138	9.44	33.78		191	200	8.23	34.00		26.47	157	0.46
214	8.00	34.07		148	250	7.73	34.14		26.66	139	0.54
255	7.70	34.15		138	300	7.46	34.19		26.73	132	0.61
301	7.45	34.19		132	400	6.48	34.23		26.90	116	0.74
378	6.66	34.22		119	500	5.92	34.27		27.01	106	0.85
456	6.10	34.25		109							
539	5.82	34.30		102							

BLACK DOUGLAS; February 22, 1960; 0505 GCT; 33°48.5'N, 121°51'W; sounding, 2000+ fm; wind, 320°, force 7;
weather, partly cloudy; sea, rough; wire angle, 25°.

0	13.24	33.40	5.84	284	0	13.24	33.40	5.84	25.13	284	0.00
8	13.24	33.39	5.88	285	10	13.24	33.39	5.88	25.12	285	0.03
27	13.24	33.39	5.88	285	20	13.24	33.39	5.88	25.12	285	0.06
55	13.24	-	5.84	-	30	13.24	33.39	5.88	25.11	286	0.09
64	13.22	33.37	5.81	286	50	13.24	33.37	5.87	25.10	287	0.14
77	12.78	33.44	5.35	273	75	12.92	33.42	5.45	25.22	276	0.21
90	12.02	33.42	4.98	261	100	10.28	33.54	4.03	25.79	221	0.28
103	10.24	33.55	4.01	220	125	9.66	33.64	3.77	25.97	204	0.33
125	9.66	33.64	3.77	204	150	9.07	33.89	3.33	26.26	177	0.38
143	9.18	33.86	3.41	181	200	8.29	33.98	2.94	26.45	159	0.46
169	8.74	33.93	3.14	169	250	7.65	34.10	1.94	26.64	141	0.54
196	8.36	33.97	2.99	160	300	7.20	34.13	1.40	26.72	133	0.61
223	7.96	34.05	2.41	149	400	6.40	34.22	0.71	26.91	115	0.74
266	7.48	34.11	1.73	137	500	5.92	34.29	0.49	27.02	105	0.85
315	7.09	34.14	1.24	130							
394	6.43	34.22	0.73	116							
475	6.06	34.27	0.54	107							
558	5.50	34.34	0.32	95							

SIO CCOFI 6002	OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
	Z m	T °C	S %	O ₂ ml/L	δT cl/ton	Z m	T °C	S %	O ₂ ml/L	σ _t g/L	δT cl/ton	ΔD dyn m
8080	BLACK DOUGLAS; February 21, 1960; 2226 GCT; 33°28.5'N, 122°32'W; sounding, 2000+ fm; wind, 310°, force 5; weather, cloudy; sea, rough; wire angle, 22°.											
	0	13.73	33.24	5.90	306	0	13.73	33.24	5.90	24.90	306	0.00
	9	13.68	33.25	5.95	304	10	13.69	33.25	5.94	24.92	304	0.03
	28	13.83	33.29	5.90	304	20	13.78	33.27	5.91	24.92	304	0.06
	56	13.55	33.30	5.79	298	30	13.82	33.29	5.89	24.92	304	0.09
	65	13.14	33.35	5.60	286	50	13.67	33.30	5.85	24.96	300	0.15
	79	12.48	33.39	5.37	271	75	12.52	33.38	5.40	25.25	273	0.22
	93	11.53	33.40	5.08	253	100	11.21	33.42	4.94	25.52	247	0.29
	107	10.74	33.49	4.60	233	125	9.65	33.69	4.08	26.01	201	0.35
	129	9.44	33.75	4.00	193	150	8.85	33.82	3.71	26.24	179	0.40
	147	8.90	33.81	3.75	180	200	8.09	34.00	3.05	26.49	155	0.48
	175	8.54	33.93	3.37	166	250	7.63	34.11	1.98	26.64	140	0.56
	202	8.06	34.00	3.03	154	300	7.25	34.18	1.36	26.76	129	0.62
	230	7.80	34.07	2.28	145	400	6.26	34.24	0.75	26.94	113	0.75
	277	7.44	34.14	1.62	135	500	5.73	34.30	0.51	27.06	101	0.86
	328	7.04	34.23	1.09	123							
	409	6.18	34.24	0.69	111							
	490	5.77	34.29	0.54	102							
	575	5.44	34.35	0.31	94							
8090	BLACK DOUGLAS; February 21, 1960; 1712 GCT; 33°05'N, 123°12'W; sounding, 2200 fm; wind, 300°, force 3; weather, partly cloudy; sea, very rough; wire angle, 02°.											
	0	13.39	33.22	5.98	300	0	13.39	33.22	5.98	24.97	300	0.00
	10	13.37	33.21	6.01	301	10	13.37	33.21	6.01	24.96	301	0.03
	30	13.38	33.21	6.01	301	20	13.38	33.21	6.01	24.96	301	0.06
	60	12.54	33.46	5.51	267	30	13.38	33.21	6.01	24.96	301	0.09
	71	12.08	33.51	5.18	255	50	12.77	33.42	5.60	25.24	274	0.15
	86	10.41	33.44	4.62	231	75	11.69	33.49	5.04	25.50	249	0.21
	100	9.66	-	-	-	100	9.66	33.55	4.16	25.89	211	0.27
	115	9.24	33.68	3.80	195	125	9.02	33.75	3.44	26.16	187	0.32
	140	8.73	33.82	3.08	177	150	8.72	33.86	3.08	26.30	173	0.37
	161	8.70	33.91	3.08	170	200	8.08	34.00	3.24	26.49	154	0.45
	190	8.26	33.98	3.37	158	250	7.16	34.01	2.50	26.64	141	0.53
	220	7.70	34.03	2.83	147	300	6.56	34.05	1.88	26.75	130	0.60
	251	7.14	34.01	2.49	141	400	5.86	34.15	0.83	26.92	114	0.72
	301	6.55	34.05	1.87	130	500	5.32	34.22	0.78	27.05	102	0.84
	356	6.19	34.11	1.17	121	600	4.87	34.31	0.44	27.17	91	0.94
	442	5.60	34.18	0.69	109							
	528	5.18	34.23	0.78	100							
	613	4.82	34.33	0.34	89							
8247	BLACK DOUGLAS; February 22, 1960; 2225 GCT; 34°15'N, 119°58'W; sounding, 280 fm; wind, 300°, force 3; weather, clear; sea, rough; wire angle, 10°.											
	0	12.88	33.58	5.80	264	0	12.88	33.58	5.80	25.34	264	0.00
	10	12.44	33.54	5.98	260	10	12.44	33.54	5.98	25.39	260	0.03
	29	12.31	33.54	5.64	257	20	12.34	33.54	5.82	25.41	258	0.05
	49	11.66	33.60	4.81	241	30	12.30	33.54	5.63	25.42	257	0.08
	73	9.96	33.71	3.59	204	50	11.45	33.62	4.62	25.64	236	0.13
	98	9.62	33.90	2.85	185	75	9.92	33.72	3.54	25.99	202	0.18
	121	9.26	34.00	2.51	172	100	9.58	33.91	2.80	26.19	183	0.23
	161	8.75	34.11	1.66	155	125	9.21	34.01	2.48	26.33	171	0.28
	200	8.49	34.18	1.36	147	150	8.88	34.08	1.92	26.44	160	0.32
	249	7.90	34.19	1.34	137	200	8.49	34.18	1.36	26.57	147	0.40
	298	7.61	34.22	0.72	131	250	7.89	34.19	1.33	26.68	137	0.47
	402	6.82	34.23	0.52	120	300	7.59	34.22	0.71	26.74	131	0.54
						400	6.83	34.23	0.53	26.86	120	0.67

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O ₂ ml/L	δ _T cl/ton	Z m	T °C	S ‰	O ₂ ml/L	σ _t g/L	δ _T cl/ton	ΔD dyn m

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6002

BLACK DOUGLAS; February 23, 1960; 0355 GCT; 34°08'N, 119°34'W; sounding, 135 fm; wind, 270°, force 3;
weather, clear; sea, rough; wire angle, 15°.

0	12.54	33.58	6.35	258	0	12.54	33.58	6.35	25.40	258	0.00
9	12.51	33.58	6.35	258	10	12.49	33.58	6.34	25.41	257	0.03
29	11.82	33.60	5.49	244	20	12.27	33.58	6.10	25.45	253	0.05
48	10.96	33.64	4.40	226	30	11.75	33.60	5.41	25.57	243	0.08
72	10.14	33.78	3.26	202	50	10.92	33.64	4.36	25.76	225	0.12
97	9.62	33.90	2.85	185	75	10.08	33.79	3.21	26.02	200	0.18
122	9.42	33.90	2.66	182	100	9.59	33.90	2.83	26.18	184	0.22
161	8.48	34.13	1.69	150	125	9.37	33.91	2.58	26.23	180	0.27
201	8.18	34.19	1.33	142	150	8.77	34.07	1.96	26.45	159	0.31
					200	8.19	34.19	1.34	26.63	142	0.39

BLACK DOUGLAS; February 23, 1960; 1419 GCT; 33°35'N, 120°47.5'W; sounding, 800 fm; wind, 310°, force 6;
weather, clear; sea, high; wire angle, 20°.

1	13.48	33.53	5.98	280	0	(13.48)	(33.53)	(5.98)	(25.18)	(280)	(0.00)
10	13.47	33.55	5.84	278	10	13.47	33.55	5.84	25.20	278	0.03
29	13.50	33.53	5.79	280	20	13.49	33.54	5.82	25.19	279	0.06
58	11.50	33.60	4.27	238	30	13.50	33.53	5.79	25.18	280	0.08
67	10.80	33.61	3.81	225	50	12.90	33.54	5.37	25.31	268	0.14
80	10.19	33.66	3.64	211	75	10.40	33.64	3.68	25.84	217	0.20
95	9.65	33.70	3.44	200	100	9.56	33.73	3.37	26.06	196	0.25
109	9.40	33.78	3.26	190	125	9.10	33.88	3.10	26.24	178	0.30
133	8.94	33.91	3.03	173	150	8.74	33.92	2.98	26.33	170	0.34
153	8.71	33.92	2.95	169	200	8.15	34.00	2.71	26.49	155	0.42
209	8.03	34.02	2.66	152	250	7.59	34.09	2.38	26.64	141	0.50
237	7.74	34.07	2.53	144	300	7.10	34.14	1.60	26.75	130	0.57
285	7.20	-	-	400	6.52	34.20	1.12	26.87	118	0.70	
338	6.91	34.20	1.13	123	500	5.87	34.38	0.49	27.10	97	0.81
420	6.39	34.21	1.14	116	600	(5.55)	(34.46)		(27.21)	(87)	(0.91)
502	5.86	34.38a)	0.47	97							
587	5.58	34.45a)	0.37	88							

BLACK DOUGLAS; February 24, 1960; 0505 GCT; ^{b)} 32°34.5'N, 122°47.5'W; sounding, 2050 fm; wind, 320°,
force 6; weather, partly cloudy; sea, high; wire angle, 23°.

411	5.97	34.27u	0.90	-
414	5.96	34.20	0.89	111
415	5.96	34.20	0.92	111
440	5.84	34.18	0.75	111
443	5.79	34.16	0.72	112
446	5.70	34.28u	0.63	-
469	5.64	34.18	0.64	107
472	5.64	34.18	0.62	107
475	5.62	34.18	0.62	107
499	5.41	34.20	0.57	105
502	5.40	34.22	0.53	103
506	5.42	34.22	0.50	103
530	5.29	34.27	0.43	98
533	5.27	34.25	0.43	100
536	5.28	34.25	0.45	100
561	5.08	34.26	0.42	97
563	5.06	34.28	0.42	95
566	5.04	34.28	0.42	95

a) Salinity samples at 502 and 587 meters appear to have been reversed; they are assumed to be listed in correct order.

b) Test cast.

SIO CCOFI 6002	OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
	Z m	T °C	S ‰	O ₂ ml/L		δ _T cl/ton	Z m	T °C	S ‰	O ₂ ml/L	σ _t g/L	δ _T cl/ton

87.40	BLACK DOUGLAS; February 25, 1960; 1007 GCT; 33°40'N, 118°58.5'W; sounding, 400 fm; wind, 290°, force 2; weather, clear; sea, smooth; wire angle, 01°.												
	0	13.34	33.64	5.93	269		0	13.34	33.64	5.93	25.29	269	0.00
	10	13.34	33.62	5.93	270		10	13.34	33.62	5.93	25.28	270	0.03
	30	13.04	33.59	5.49	267		20	13.21	33.60	5.78	25.29	269	0.05
	40	12.94	33.58	5.45	265		30	13.04	33.59	5.49	25.31	267	0.08
	50	12.80	33.60	5.27	261		50	12.80	33.60	5.27	25.37	261	0.13
	60	12.70	33.58	5.14	261		75	11.96	33.62	4.72	25.55	245	0.20
	70	12.23	33.60	4.86	251		100	10.16	33.77	3.55	25.99	203	0.25
	85	11.46	33.66	4.40	233		125	9.43	33.87	2.93	26.18	184	0.30
	100	10.16	33.77	3.55	203		150	9.13	33.98	2.56	26.32	171	0.35
	115	9.64	33.82	3.14	191		200	8.47	34.18	1.69	26.58	146	0.43
	140	9.24	33.96	2.68	174		250	8.05	34.22	1.36	26.68	137	0.50
	171	8.90	34.02	2.30	165		300	7.69	34.23	1.07	26.73	132	0.57
	205	8.38	34.20	1.62	143		400	6.93	34.33	0.73	26.93	113	0.70
	256	8.01	34.22	1.31	137		500	6.17	34.37	0.63	27.06	101	0.81
	307	7.66	34.23	1.04	131								
	411	6.84	34.34	0.71	112								
	511	6.10	34.38	0.62	100								

87.60	BLACK DOUGLAS; February 24, 1960; 2353 GCT; 33°00'N, 120°21.5'W; sounding, 450 fm; wind, 060°, force 2; weather, clear; sea, missing; wire angle, 03°.												
	0	13.83	33.51	5.81	288		0	13.83	33.51	5.81	25.09	288	0.00
	10	13.49	33.53	5.86	280		10	13.49	33.53	5.86	25.18	280	0.03
	30	13.44	33.56	5.73	276		20	13.45	33.55	5.79	25.20	277	0.06
	55	13.38	33.60	5.66	273		30	13.44	33.56	5.73	25.23	276	0.08
	65	13.06	33.59	5.22	267		50	13.41	33.59	5.67	25.24	274	0.14
	76	12.48	33.63	4.73	253		75	12.53	33.63	4.76	25.44	255	0.20
	91	11.10	33.73	3.64	221		100	10.76	33.77	3.32	25.88	213	0.26
	106	10.61	33.79	3.18	209		125	10.17	33.88	2.80	26.07	195	0.32
	131	10.05	33.91	2.72	191		150	9.80	33.96	2.60	26.19	183	0.36
	150	9.80	33.96	2.60	183		200	9.36	34.11	2.03	26.39	165	0.45
	175	9.54	34.03	2.31	174		250	8.82	34.21	1.67	26.55	149	0.53
	206	9.32	34.13	1.98	163		300	8.26	34.25	1.40	26.66	138	0.61
	236	8.93	34.18	1.76	153		400	7.09	34.31	0.97	26.89	117	0.74
	277	8.59	34.23	1.50	144		500	6.46	34.39	0.53	27.04	103	0.85
	336	7.74	34.28	1.26	128								
	411	7.00	34.32	0.91	115								
	487	6.54	34.38a)	0.58	105								
	567	6.07	34.45a)	0.45	94								

90.28	BLACK DOUGLAS; February 26, 1960; 0323 GCT; 33°28.5'N, 117°46.5'W; sounding, 250 fm; wind, direction missing, force 1; weather, partly cloudy; sea, smooth; wire angle, 00°.												
	0	12.90	33.65	7.73b)	260		0	12.90	33.65	7.73	25.39	260	0.00
	10	12.74	33.68	7.04b)	254		10	12.74	33.68	7.04	25.45	254	0.03
	30	11.85	33.68	4.61	238		20	12.40	33.68	6.18	25.50	248	0.05
	50	10.75	33.69	3.88	218		30	11.85	33.68	4.61	25.62	238	0.08
	74	10.06	33.80	3.44	199		50	10.75	33.69	3.88	25.82	218	0.12
	100	9.43	33.94	2.95	179		75	10.03	33.80	3.43	26.03	199	0.17
	125	9.12	34.02	2.49	168		100	9.43	33.94	2.95	26.24	179	0.22
	165	8.72	34.13	2.07	154		125	9.12	34.02	2.49	26.35	168	0.26
	204	8.51	34.16	1.82	149		150	8.86	34.09	2.23	26.45	159	0.31
	256	8.17	34.20	1.51	141		200	8.53	34.16	1.83	26.56	149	0.38
	306	7.72	34.24	1.15	131		250	8.22	34.19	1.58	26.63	142	0.46
	411	6.94	34.29	0.68	117		300	7.77	34.23	1.20	26.73	132	0.53
							400	7.02	34.28	0.68	26.87	119	0.66

- a) Salinity samples at 487 and 567 meters appear to have been reversed; they are assumed to be listed in correct order.
- b) These unusually high oxygen values in the upper levels have been carefully verified.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S %	O ₂ ml/L	δ _T cl/ton	Z m	T °C	S %	O ₂ ml/L	σ _t g/L	δ _T cl/ton	ΔD dyn m

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BLACK DOUGLAS; February 26, 1960; 0547 GCT; 33°20.5'N, 118°03'W; sounding, 610 fm; wind, direction missing, force 1; weather, partly cloudy; sea, missing; wire angle, 00°.

0	12.52	33.69	8.54a)	249	0	12.52	33.69	8.54	25.49	249	0.00
10	12.08	33.69	7.54a)	242	10	12.08	33.69	7.54	25.58	242	0.02
31	10.54	33.75	3.85	211	20	11.22	33.71	5.49	25.75	225	0.05
41	10.06	33.80	3.55	199	30	10.57	33.75	3.86	25.90	211	0.07
51	9.86	33.83	3.33	194	50	9.88	33.83	3.34	26.08	194	0.11
65	9.70	33.86	3.22	189	75	9.57	33.88	3.10	26.17	185	0.16
80	9.48	33.89	3.05	183	100	9.26	34.04	2.77	26.34	169	0.20
100	9.26	34.04	2.77	169	125	8.99	34.04	2.43	26.39	164	0.24
124	9.00	34.04	2.44	165	150	8.75	34.09	2.22	26.47	157	0.29
144	8.82	34.07	2.32	160	200	8.37	34.19	1.78	26.60	145	0.36
175	8.55	34.14	1.94	150	250	7.93	34.21	1.42	26.68	137	0.43
204	8.34	34.19	1.75	144	300	7.53	34.25	1.16	26.77	129	0.50
234	8.07	34.20	1.51	139	400	6.77	34.27	0.65	26.89	117	0.63
274	7.76	34.23	1.30	132	500	6.23	34.36	0.40	27.04	103	0.74
333	7.24	34.26	0.96	123							
407	6.73	34.27	0.62	116							
482	6.33	34.34	0.43	106							
562	5.90	34.41	0.36	95							

BLACK DOUGLAS; February 26, 1960; 0822 GCT; 33°11'N, 118°23.5'W; sounding, 600 fm; wind, 280°, force 2; weather, partly cloudy; sea, slight; wire angle, 08°.

0	13.84	33.56	5.94	284	0	13.84	33.56	5.94	25.13	284	0.00
10	13.85	33.55	5.97	285	10	13.85	33.55	5.97	25.12	285	0.03
30	13.80	33.56	5.93	284	20	13.83	33.55	5.95	25.12	285	0.06
40	13.66	33.60	5.77	278	30	13.80	33.56	5.93	25.13	284	0.09
49	13.14	33.66	5.21	263	50	13.13	33.66	5.18	25.35	263	0.14
64	11.36	33.60	4.21	236	75	10.96	33.65	4.04	25.76	225	0.20
81	10.80	33.68	3.98	220	100	10.22	33.74	3.66	25.95	206	0.26
98	10.28	33.73	3.69	208	125	9.37	33.91	3.17	26.23	180	0.30
124	9.38	33.91	3.18	180	150	9.11	34.02	2.59	26.36	167	0.35
144	9.16	34.00	2.72	170	200	8.67	34.18	1.71	26.55	149	0.43
173	8.89	34.09	2.06	159	250	8.29	34.23	1.42	26.64	140	0.50
202	8.66	34.18	1.70	149	300	7.81	34.26	1.12	26.74	131	0.57
232	8.45	34.21	1.53	144	400	6.89	34.29	0.72	26.89	117	0.70
273	8.08	34.25	1.24	135	500	6.10	34.36	0.47	27.06	101	0.81
332	7.52	34.27	1.00	126							
407	6.84	34.29	0.70	116							
481	6.23	34.35	0.52	104							
561	5.87	34.40	0.35	95							

BLACK DOUGLAS; February 26, 1960; 1308 GCT; 32°54.5'N, 118°56'W; sounding, 900 fm; wind, 270°, force 2; weather, overcast; sea, slight; wire angle, 00°.

1	14.08	33.57	6.06	288	0	(14.08)	(33.57)	(6.06)	(25.09)	(288)	(0.00)
11	14.07	33.57	5.88	288	10	14.07	33.57	5.89	25.09	288	0.03
31	14.04	33.57	5.89	287	20	14.07	33.57	5.88	25.09	288	0.06
41	14.02	33.57	5.84	287	30	14.05	33.57	5.89	25.10	287	0.09
51	13.83	33.55	5.72	285	50	13.85	33.55	5.73	25.12	285	0.14
65	12.70	33.57	5.07	261	75	12.18	33.57	4.75	25.47	252	0.21
81	11.90	33.58	4.54	246	100	11.17	33.66	4.21	25.72	228	0.27
101	11.14	33.66	4.19	227	125	9.97	33.74	4.10	26.00	202	0.33
126	9.93	33.74	4.09	201	150	9.32	33.86	3.17	26.20	183	0.37
145	9.40	33.84	3.26	186	200	8.62	34.04	2.47	26.45	159	0.46
175	8.95	33.95	2.94	171	250	8.16	34.14	1.83	26.59	145	0.54
205	8.54	34.06	2.34	157	300	7.66	34.23	1.27	26.74	131	0.61
236	8.28	34.10	2.00	150	400	6.97	34.25	0.86	26.85	121	0.74
277	7.87	34.22	1.45	135	500	6.33	34.33	0.48	27.00	107	0.86
337	7.34	34.23	1.02	127							
411	6.91	34.25	0.82	119							
486	6.42	34.31	0.51	109							
566	5.97	34.43	0.38	94							

a) These unusually high oxygen values in the upper levels have been carefully verified.

SIO	OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
CCOFI 6002	Z m	T °C	S %	O ₂ ml/L	δ _T cl/ton	Z m	T °C	S %	O ₂ ml/L	σ _t g/L	δ _T cl/ton	ΔD dyn m

9050	BLACK DOUGLAS; February 26, 1960; 1548 GCT; 32°46.5'N, 119°16'W; sounding, 240 fm; wind, 270°, force 3; weather, overcast; sea, moderate; wire angle, 05°.	0	13.78	33.53	5.85	285	0	13.78	33.53	5.85	25.12	285	0.00
		10	13.81	33.51	5.92	287	10	13.81	33.51	5.92	25.09	287	0.03
		30	13.56	33.53	5.91	281	20	13.74	33.52	5.91	25.11	286	0.06
		50	12.66	33.49	5.21	267	30	13.56	33.53	5.91	25.17	281	0.09
		75	10.29	33.55	4.12	221	50	12.66	33.49	5.21	25.31	267	0.14
		100	9.82	33.71	3.73	202	75	10.29	33.55	4.12	25.80	221	0.20
		125	9.35	33.91	3.37	179	100	9.82	33.71	3.73	25.99	202	0.26
		165	8.66	33.97	2.92	165	125	9.35	33.91	3.37	26.24	179	0.30
		206	8.34	34.06	2.30	154	150	8.92	33.95	3.10	26.33	170	0.35
						200	8.39	34.04	2.40	26.49	155	0.43	

9055	BLACK DOUGLAS; February 26, 1960; 1910 GCT; 32°35.5'N, 119°37'W; sounding, 550 fm; wind, 270°, force 3; weather, overcast; sea, moderate; wire angle, 18°.	0	14.20	33.58	5.88	290	0	14.20	33.58	5.88	25.07	290	0.00
		9	14.18	33.57	5.89	290	10	14.18	33.57	5.89	25.07	290	0.03
		28	13.85	33.55	5.91	285	20	14.04	33.56	5.90	25.09	288	0.06
		38	13.76	33.58	5.91	281	30	13.84	33.55	5.91	25.12	285	0.09
		47	13.53	33.57	5.98	277	50	13.51	33.57	5.96	25.21	277	0.14
		60	13.49	33.58	5.94	276	75	13.42	33.57	5.91	25.22	275	0.21
		75	13.42	33.57	5.91	275	100	10.88	33.73	4.02	25.83	218	0.27
		93	11.90	33.62	4.81	243	125	9.68	33.83	3.27	26.11	191	0.33
		116	9.88	33.80	3.42	196	150	9.19	33.95	2.90	26.28	174	0.37
		133	9.54	33.86	3.14	186	200	8.26	34.06	2.34	26.52	152	0.46
		161	8.92	34.00	2.75	166	250	7.66	34.15	1.75	26.68	137	0.53
		188	8.44	34.04	2.47	157	300	7.26	34.30	1.27	26.85	121	0.60
		215	8.06	34.10	2.15	147	400	6.70	34.29	0.70	26.93	114	0.72
		252	7.64	34.16	1.70	136	500	6.03	34.32	0.54	27.04	103	0.83
		308	7.21	34.32	1.19	118							
		378	6.85	34.29	0.87	116							
		449	6.32	34.29	0.61	109							
		529	5.90	34.34	0.51	100							

9060	BLACK DOUGLAS; February 26, 1960; 2214 GCT; 32°25'N, 119°57.5'W; sounding, 480 fm; wind, 270°, force 3; weather, overcast; sea, moderate; wire angle, 07°.	0	14.46	33.58	5.72	295	0	14.46	33.58	5.72	25.02	295	0.00
		10	14.42	33.57	5.78	295	10	14.42	33.57	5.78	25.02	295	0.03
		30	14.41	33.57	5.78	295	20	14.41	33.57	5.78	25.02	295	0.06
		55	14.37	33.60	5.75	292	30	14.41	33.57	5.78	25.02	295	0.09
		64	14.34	33.57	5.68	293	50	14.39	33.60	5.75	25.05	292	0.15
		75	14.07	33.55	5.59	289	75	14.07	33.55	5.59	25.07	289	0.22
		89	13.11	33.48	5.14	276	100	12.10	33.51	4.71	25.44	255	0.29
		104	11.54	33.51	4.53	245	125	10.39	33.63	3.94	25.84	217	0.35
		129	10.20	33.66	3.82	211	150	9.44	33.81	3.14	26.14	188	0.40
		148	9.48	33.80	3.19	190	200	8.45	34.01	2.25	26.45	159	0.49
		173	8.94	33.96	2.59	169	250	7.80	34.12	1.70	26.64	141	0.57
		202	8.42	34.02	2.21	158	300	7.44	34.18	1.25	26.72	133	0.64
		231	7.98	34.10	1.93	145	400	6.63	34.23	0.77	26.89	118	0.77
		272	7.60	34.14	1.47	137	500	6.02	34.28	0.49	27.01	106	0.88
		331	7.26	34.21	1.06	127							
		405	6.58	34.23	0.75	117							
		480	6.12	34.27	0.52	108							
		560	5.71	34.31	0.38	100							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O ₂ ml/L	δT cl/ton	Z m	T °C	S ‰	O ₂ ml/L	σ _t g/L	δT cl/ton	ΔD dyn m

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BLACK DOUGLAS; February 27, 1960; 0257 GCT; 32°04.5'N, 120°38.5'W; sounding, 2100 fm; wind, 270°, force 2; weather, overcast; sea, moderate; wire angle, 02°.

0	14.50	33.58	5.81	296	0	14.50	33.58	5.81	25.01	296	0.00
10	14.49	33.58	5.81	296	10	14.49	33.58	5.81	25.01	296	0.03
30	14.26	33.58	5.77	291	20	14.42	33.58	5.78	25.03	294	0.06
55	13.56	33.48	5.89	285	30	14.26	33.58	5.77	25.06	291	0.09
65	12.35	33.52	4.72	259	50	13.72	33.49	5.87	25.11	287	0.15
76	11.58	33.57	4.35	242	75	11.63	33.57	4.36	25.57	242	0.21
91	10.39	33.60	3.94	219	100	10.00	33.73	3.67	25.98	204	0.27
105	9.82	33.77	3.54	197	125	9.36	33.81	3.41	26.15	187	0.32
130	9.28	33.82	3.39	185	150	8.94	34.02	3.00	26.38	165	0.36
150	8.94	34.02	3.00	165	200	8.30	34.11	2.02	26.55	150	0.44
176	8.73	34.05	2.30	160	250	7.68	34.14	1.71	26.66	138	0.52
206	8.20	34.11	1.98	148	300	7.38	34.22	1.20	26.77	128	0.58
236	7.75	34.11	1.84	141	400	6.52	34.26	0.71	26.92	114	0.71
277	7.60	34.21	1.35	132	500	5.92	34.33	0.42	27.06	101	0.82
336	7.01	34.22	1.05	123							
411	6.46	34.27	0.64	113							
487	6.00	34.33	0.44	102							
567	5.60	34.34	0.39	97							

90.70

BLACK DOUGLAS; February 27, 1960; 0739 GCT; 31°44.5'N, 121°19.5'W; sounding, 1950 fm; wind, 270°, force 2; weather, cloudy; sea, moderate; wire angle, 02°.

0	13.84	33.44	5.84	293	0	13.84	33.44	5.84	25.04	293	0.00
10	13.84	33.44	6.01	293	10	13.84	33.44	6.01	25.04	293	0.03
30	13.75	33.42	5.97	293	20	13.80	33.43	6.00	25.04	293	0.06
55	13.64	33.42	5.81	291	30	13.75	33.42	5.97	25.04	293	0.09
65	13.46	33.41	5.78	288	50	13.67	33.42	5.89	25.05	291	0.15
75	13.34	33.40	5.58	286	75	13.34	33.40	5.58	25.11	286	0.22
91	12.48	33.43	5.18	268	100	11.27	33.44	4.68	25.53	246	0.29
105	10.98	33.44	4.54	240	125	10.09	33.58	4.16	25.85	216	0.34
130	9.88	33.62	4.09	210	150	9.33	33.77	3.87	26.13	190	0.40
151	9.32	33.77	3.86	189	200	8.56	33.94	3.00	26.38	165	0.49
176	8.86	33.86	3.34	176	250	8.00	34.13	1.90	26.61	144	0.57
205	8.52	33.96	2.93	163	300	7.33	34.17	1.38	26.74	131	0.64
235	8.20	34.09	2.15	149	400	6.21	34.28	0.59	26.98	109	0.76
276	7.63	34.16	1.57	136	500	5.88	34.33	0.41	27.07	101	0.87
336	6.96	34.20	1.09	124							
412	6.10	34.30	0.50	106							
486	5.91	34.33	0.43	101							
567	5.72	34.36	0.37	97							

90.80

BLACK DOUGLAS; February 27, 1960; 1226 GCT; 31°24'N, 121°59'W; sounding, 2000+ fm; wind, 270°, force 1; weather, partly cloudy; sea, smooth; wire angle, 02°.

0	14.36	33.44	5.67	303	0	14.36	33.44	5.67	24.93	303	0.00
10	14.34	33.48	5.93	300	10	14.34	33.48	5.93	24.96	300	0.03
30	14.30	33.48	5.89	299	20	14.32	33.48	5.91	24.97	299	0.06
55	14.27	33.48	5.85	298	30	14.30	33.48	5.89	24.98	299	0.09
65	14.26	33.46	5.81	300	50	14.28	33.48	5.86	24.98	299	0.15
76	14.25	33.47	5.79	299	75	14.25	33.47	5.79	24.97	299	0.22
90	13.62	33.48	5.59	286	100	13.13	33.49	5.42	25.22	276	0.30
105	12.90	33.49	5.33	271	125	11.03	33.48	4.63	25.61	239	0.36
130	10.96	33.49	4.58	237	150	9.87	33.68	4.08	25.96	205	0.42
151	9.79	33.69	4.05	203	200	8.60	33.93	3.32	26.37	167	0.51
175	9.04	33.83	3.73	181	250	7.85	34.05	2.66	26.57	147	0.59
206	8.53	33.96	3.24	163	300	7.27	34.11	2.06	26.70	135	0.67
235	8.06	34.02	2.87	153	400	6.48	34.18	1.14	26.87	119	0.80
276	7.52	34.08	2.33	140	500	5.73	34.25	0.60	27.02	105	0.92
336	6.95	34.13	1.68	129							
411	6.42	34.19	1.06	118							
486	5.82	34.23	0.66	107							
567	5.38	34.33	0.40	95							

90.90

SIO	OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
CCOFI 6002	Z m	T °C	S %	O ₂ ml/L	δ _T cl/ton	Z m	T °C	S %	O ₂ ml/L	σ _t g/L	δ _T cl/ton	ΔD dyn m

90.100	BLACK DOUGLAS; February 27, 1960; 1652 GCT; 31°05'N, 122°39'W; sounding, 2200 fm; wind, direction missing, force 1; weather, cloudy; sea, slight; wire angle, 03°.											
	0	14.61	33.35	5.81	315	0	14.61	33.35	5.81	24.81	315	0.00
	10	14.60	33.33	5.82	316	10	14.60	33.33	5.82	24.79	316	0.03
	30	14.33	33.31	6.08	313	20	14.57	33.32	5.87	24.80	316	0.06
	56	13.63	33.33	5.64	297	30	14.33	33.31	6.08	24.83	313	0.09
	66	13.20	33.35	5.61	287	50	14.18	33.31	6.04	24.87	309	0.16
	76	12.92	33.34	5.51	283	75	12.93	33.34	5.51	25.14	283	0.23
	90	12.22	33.40	5.57	266	100	11.60	33.40	5.34	25.44	255	0.30
	105	10.91	33.39	4.97	243	125	10.28	33.50	4.55	25.75	225	0.36
	130	10.14	33.53	4.44	220	150	9.48	33.68	3.80	26.03	199	0.41
	149	9.51	33.68	3.81	199	200	8.52	33.94	3.14	26.39	165	0.51
	175	8.94	33.83	3.50	179	250	7.70	34.05	2.38	26.59	145	0.58
	205	8.44	33.96	3.06	163	300	7.03	34.12	1.99	26.74	131	0.66
	235	7.90	34.02	2.47	150	400	6.12	34.19	1.00	26.93	113	0.78
	275	7.38	34.08	2.26	139	500	5.72	34.31	0.64	27.07	100	0.90
	335	6.55	34.16	1.60	122							
	409	6.06	34.20	0.97	113							
	485	5.78	34.30	0.70	102							
	565	5.40	34.36	0.37	93							

93.28	BLACK DOUGLAS; February 29, 1960; 1207 GCT; 32°54.5'N, 117°22'W; sounding, 280 fm; wind, 120°, force 4; weather, rain; sea, missing; wire angle, 15°.											
	1	13.12	33.58	6.27	269	0	(13.12)	(33.58)	(6.27)	(25.29)	(269)	(0.00)
	11	13.14	33.58	6.24	269	10	13.14	33.58	6.25	25.29	269	0.03
	30	12.46	33.62	5.58	254	20	13.14	33.58	6.24	25.29	269	0.05
	49	11.18	33.68	4.08	227	30	12.46	33.62	5.58	25.45	254	0.08
	74	10.58	33.72	3.82	214	50	11.17	33.68	4.06	25.74	226	0.13
	97	9.78	33.80	3.40	194	75	10.54	33.72	3.80	25.88	213	0.18
	120	9.44	33.94	3.04	179	100	9.73	33.81	3.36	26.09	193	0.23
	160	9.02	34.10	2.24	161	125	9.39	33.96	2.95	26.26	177	0.28
	198	9.14	34.23	1.71	153	150	9.08	34.07	2.38	26.40	164	0.32
	247	8.50	34.23	1.53	143	200	9.12	34.23	1.68	26.52	152	0.40
	296	8.07	34.28	1.22	133	250	8.47	34.23	1.51	26.62	143	0.48
	399	7.06	34.31	0.78	117	300	8.02	34.28	1.20	26.72	133	0.55
						400	(7.05)	(34.31)	(0.77)	(26.89)	(117)	(0.68)

93.30	BLACK DOUGLAS; February 29, 1960; 1022 GCT; 32°50.5'N, 117°31'W; sounding, 420 fm; wind, 120°, force 5; weather, rain; sea, moderate; wire angle, 08°.											
	1	13.94	33.60	6.12	283	0	(13.94)	(33.60)	(6.12)	(25.14)	(283)	(0.00)
	11	13.89	33.57	6.20	284	10	13.90	33.57	6.19	25.13	284	0.03
	32	13.36	33.59	6.11	273	20	13.40	33.55	6.14	25.21	277	0.06
	41	12.68	33.59	5.37	260	30	13.37	33.58	6.12	25.25	273	0.08
	51	11.64	33.59	4.51	241	50	11.72	33.59	4.54	25.57	242	0.14
	66	10.48	33.70	3.81	213	75	10.21	33.75	3.60	25.96	205	0.19
	80	10.09	33.77	3.53	201	100	9.62	33.85	3.33	26.14	188	0.24
	100	9.62	33.85	3.33	188	125	9.24	33.96	2.85	26.28	174	0.29
	125	9.24	33.96	2.85	174	150	9.18	34.08	2.12	26.39	164	0.33
	145	9.18	34.06	2.22	166	200	8.79	34.24	1.54	26.58	147	0.41
	174	9.02	34.16	1.81	156	250	8.32	34.24	1.35	26.65	140	0.48
	205	8.74	34.25	1.49	145	300	8.03	34.27	1.17	26.71	134	0.55
	234	8.43	34.24	1.41	142	400	7.02	34.33	0.75	26.91	116	0.68
	275	8.19	34.25	1.26	137	500	6.24	34.35	0.47	27.03	104	0.80
	335	7.76	34.29	1.05	128							
	409	6.92	34.33	0.68	113							
	484	6.36	34.34	0.48	105							
	565	5.88	34.37	0.37	98							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O ₂ ml/L	δT cl/ton	Z m	T °C	S ‰	O ₂ ml/L	σ _t g/L	δT cl/ton	ΔD dyn m

SIO
CCOFI
6002

BLACK DOUGLAS; February 29, 1960; 0700 GCT; 32°40'N, 117°51.5'W; sounding, 300 fm; wind, 090°, force 3;
weather, rain; sea, moderate; wire angle, 10°.

0	14.14	33.57	5.83	289	0	14.14	33.57	5.83	25.08	289	0.00
10	14.18	33.58	6.08	290	10	14.18	33.58	6.08	25.07	290	0.03
29	13.49	33.56	5.77	278	20	14.17	33.58	6.08	25.08	289	0.06
49	13.22	33.55	5.54	273	30	13.47	33.56	5.76	25.21	277	0.09
74	12.92	33.57	5.59	266	50	13.20	33.55	5.55	25.25	273	0.14
98	12.34	33.60	5.25	253	75	12.90	33.57	5.58	25.33	265	0.21
123	10.61	33.68	3.74	217	100	12.20	33.60	5.20	25.48	251	0.27
164	9.20	33.96	2.77	174	125	10.53	33.69	3.69	25.86	215	0.33
203	8.68	34.09	2.09	156	150	9.64	33.88	3.00	26.16	187	0.38
254	8.20	34.20	1.54	141	200	8.73	34.08	2.15	26.47	157	0.47
304	7.69	34.25	1.14	130	250	8.24	34.19	1.60	26.62	142	0.55
409	6.87	34.27	0.68	118	300	7.73	34.25	1.18	26.74	131	0.62
					400	6.95	34.27	0.71	26.88	118	0.75

BLACK DOUGLAS; February 29, 1960; 0410 GCT; 32°30'N, 118°12.5'W; sounding, 900 fm; wind, 090°, force 4;
weather, rain; sea, rough; wire angle, 07°.

0	14.12	33.60	6.07	287	0	14.12	33.60	6.07	25.10	287	0.00
10	14.10	33.60	6.07	286	10	14.10	33.60	6.07	25.11	286	0.03
30	14.08	33.64	5.99	283	20	14.09	33.62	6.05	25.12	285	0.06
40	13.90	33.71	5.68	274	30	14.08	33.64	5.99	25.14	283	0.09
51	12.92	33.55	4.94	267	50	12.93	33.55	4.95	25.31	267	0.14
66	12.24	33.58	4.63	253	75	11.70	33.61	4.37	25.59	241	0.20
81	11.36	33.64	4.20	232	100	10.72	33.71	3.97	25.85	216	0.26
101	10.70	33.71	3.96	216	125	9.84	33.78	3.52	26.05	197	0.32
125	9.84	33.78	3.52	197	150	9.39	33.92	2.89	26.23	179	0.36
145	9.46	33.89	2.99	183	200	8.82	34.10	2.06	26.47	157	0.45
175	9.06	34.04	2.48	165	250	8.37	34.17	1.57	26.59	145	0.52
205	8.78	34.11	1.97	156	300	7.92	34.23	1.25	26.70	135	0.60
234	8.51	34.14	1.68	150	400	7.00	34.26	0.79	26.86	120	0.73
274	8.16	34.22	1.39	139	500	6.32	34.35	0.49	27.02	105	0.85
333	7.59	34.25	1.03	129							
409	6.94	34.27	0.76	119							
482	6.44	34.34	0.54	107							
561	5.86	34.36	0.38	99							

BLACK DOUGLAS; February 28, 1960; 2255 GCT; 32°10.5'N, 118°56'W; sounding, 750 fm; wind, 060°, force 1;
weather, rain; sea, smooth; wire angle, 01°.

1	14.62	33.58	5.74	298	0	(14.62)	(33.58)	(5.74)	(24.98)	(298)	(0.00)
11	14.59	-	5.78	-	10	14.60	33.58	5.77	24.99	298	0.03
31	14.44	33.56	5.74	297	20	14.52	33.56	5.76	25.00	297	0.06
55	13.67	33.55	5.31	282	30	14.45	33.56	5.74	25.00	297	0.09
65	12.84	33.51	4.93	269	50	14.18	33.56	5.58	25.05	291	0.15
75	12.10	33.53	4.63	254	75	12.10	33.53	4.63	25.45	254	0.22
90	10.85	33.68	4.13	221	100	10.68	33.70	3.90	25.85	216	0.28
105	10.63	33.71	3.81	215	125	9.78	33.79	3.44	26.07	195	0.33
130	9.56	33.82	3.36	189	150	9.24	33.84	3.25	26.19	183	0.38
150	9.24	33.84	3.25	183	200	8.66	34.01	2.65	26.41	162	0.46
175	8.86	33.93	2.89	171	250	8.29	34.14	1.84	26.58	147	0.54
206	8.62	34.02	2.59	161	300	7.72	34.21	1.28	26.72	133	0.62
236	8.44	34.12	2.03	151	400	6.91	34.31	0.82	26.91	115	0.74
276	8.00	34.18	1.53	140	500	6.32	34.33	0.47	27.01	105	0.86
336	7.36	34.28	0.99	123							
411	6.85	34.31	0.79	114							
486	6.40	34.33	0.50	107							
567	5.92	34.34	0.43	100							

SIO CCOFI 6002	OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
	Z m	T °C	S %	O ₂ ml/L		Z m	T °C	S %	O ₂ ml/L	σ _t g/L	δ _T cl/ton	ΔD dyn m

93.60 BLACK DOUGLAS; February 28, 1960; 1626 GCT; 31°50'N, 119°34'W; sounding, 1200 fm; wind, direction missing, force 1; weather, rain; sea, smooth; wire angle, 00°.

0	14.74	33.57	5.75	302	0	14.74	33.57	5.75	24.95	302	0.00
10	14.72	33.53	5.75	304	10	14.72	33.53	5.75	24.93	304	0.03
29	14.78	33.58	5.72	302	20	14.74	33.55	5.73	24.94	303	0.06
55	14.77	33.58	5.73	302	30	14.78	33.57	5.72	24.95	302	0.09
66	14.78	33.58	5.72	302	50	14.78	33.57	5.73	24.95	302	0.15
76	14.46	33.58	5.51	295	75	14.80	33.61	5.66	24.97	300	0.23
91	12.26	33.41	4.99	265	100	11.71	33.42	4.77	25.44	255	0.30
106	11.41	33.44	4.65	248	125	10.34	33.64	4.15	25.86	215	0.36
130	10.18a)	33.66	4.11	211	150	9.74	33.68	4.02	25.99	203	0.41
150	9.74	33.68	4.02	203	200	8.60	33.93	3.01	26.37	167	0.50
176	9.23	33.77	3.63	188	250	7.79	34.08	2.07	26.60	144	0.58
206	8.46	33.96	2.89	163	300	7.34	34.13	1.54	26.71	135	0.66
236	7.96	34.05	2.26	149	400	6.68	34.19	0.90	26.85	121	0.79
277	7.53	34.12	1.73	137	500	6.02	34.28	0.53	27.01	106	0.91
336	7.09	34.14	1.26	130							
411	6.62	34.20	0.85	120							
486	6.09	34.27	0.58	108							
567	5.83	34.31	0.37	102							

93.70 BLACK DOUGLAS; February 28, 1960; 1148 GCT; 31°30'N, 120°14'W; sounding, 2000 fm; wind, direction missing, force 1; weather, rain; sea, smooth; wire angle, 01°.

0	14.98	33.66	5.73	300	0	14.98	33.66	5.73	24.97	300	0.00
10	14.90	33.63	5.75	301	10	14.90	33.63	5.75	24.96	301	0.03
30	14.86	33.60	5.71	302	20	14.88	33.61	5.73	24.96	301	0.06
55	14.85	33.60	5.67	302	30	14.86	33.60	5.71	24.95	302	0.09
66	14.84	33.61	5.74	301	50	14.85	33.60	5.68	24.95	302	0.15
76	14.46	33.58	5.65	295	75	14.50	33.58	5.66	25.01	296	0.23
90	12.40	33.44	5.01	266	100	11.90	33.49	4.78	25.46	253	0.30
105	11.25	33.53	4.60	239	125	10.18	33.61	4.15	25.86	215	0.35
130	9.97	33.63	4.02	210	150	9.44	33.78	3.49	26.11	191	0.41
149	9.46	33.78	3.50	191	200	8.54	34.01	2.50	26.43	160	0.50
174	9.05	33.87	3.04	178	250	7.80	34.09	2.06	26.61	143	0.57
204	8.44	34.03	2.43	157	300	7.32	34.15	1.51	26.73	133	0.64
234	7.98	34.06	2.22	148	400	6.54	34.19	0.80	26.87	119	0.78
276	7.55	34.14	1.75	136	500	6.02	34.34	0.46	27.06	101	0.89
336	7.02	34.16	1.22	128							
410	6.48	34.20	0.77	118							
485	6.10	34.33	0.49	103							
565	5.64	34.36	0.35	96							

93.80 BLACK DOUGLAS; February 28, 1960; 0655 GCT; 31°10'N, 120°54.5'W; sounding, 2000 fm; wind, direction missing, force 1; weather, partly cloudy; sea, slight; wire angle, 04°.

0	14.66	33.48	5.81	307	0	14.66	33.48	5.81	24.89	307	0.00
10	14.66	33.48	5.78	307	10	14.66	33.48	5.78	24.89	307	0.03
30	14.50	33.50	5.85	302	20	14.59	33.49	5.83	24.91	305	0.06
55	14.17	33.47	5.83	297	30	14.50	33.50	5.85	24.95	302	0.09
64	14.06	33.50	5.73	293	50	14.25	33.48	5.84	24.98	299	0.15
75	13.61	33.49	5.60	285	75	13.61	33.49	5.60	25.12	285	0.22
90	12.42	33.37	5.16	272	100	11.53	33.44	4.83	25.49	250	0.29
105	11.10	33.48	4.72	240	125	10.04	33.59	4.21	25.87	214	0.35
129	9.87	33.62	4.09	209	150	9.33	33.78	3.88	26.14	188	0.40
149	9.34	33.78	3.89	189	200	8.42	33.97	3.10	26.42	162	0.49
175	8.82	33.86	3.59	175	250	7.77	34.07	2.23	26.60	144	0.57
205	8.34	33.98	3.02	159	300	7.35	34.15	1.55	26.72	133	0.64
235	7.94	34.06	2.44	148	400	6.52	34.27	0.70	26.93	113	0.77
274	7.50	34.09	1.89	139	500	5.91	34.31	0.51	27.04	103	0.88
334	7.16	34.22	1.11	125							
410	6.43	34.27	0.67	112							
484	5.98	34.29	0.55	105							
564	5.66	34.38	0.36	95							

a) Alternate value, 9.99°C, not used in interpolation.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O ₂ ml/L	δ _T cl/ton	Z m	T °C	S ‰	O ₂ ml/L	σ _t g/L	δ _T cl/ton	ΔD dyn m

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6002

BLACK DOUGLAS; February 28, 1960; 0215 GCT; 30°51'N, 121°34.5'W; sounding, 2250 fm; wind, direction missing, force 1; weather, cloudy; sea, slight; wire angle, 00°.

0	14.58	33.48	5.74	305	0	14.58	33.48	5.74	24.91	305	0.00
10	14.36	33.49	5.82	300	10	14.36	33.49	5.82	24.97	300	0.03
30	14.31	33.48	5.92	300	20	14.32	33.48	5.87	24.97	299	0.06
54	14.22	33.55	5.81	293	30	14.31	33.48	5.92	24.97	299	0.09
64	14.34	33.61	5.72	291	50	14.22	33.53	5.84	25.02	294	0.15
75	14.17	33.62	5.62	286	75	14.17	33.62	5.62	25.11	286	0.22
90	12.58	33.47	5.12	267	100	11.72	33.48	4.83	25.49	250	0.29
105	11.49	33.48	4.76	247	125	10.10	33.66	4.19	25.91	210	0.35
129	9.86	33.70	4.11	203	150	9.29	33.84	3.85	26.19	184	0.40
149	9.32	33.84	3.86	184	200	8.40	34.01	3.10	26.47	158	0.48
175	8.82	33.96	3.63	168	250	7.61	34.07	2.28	26.63	142	0.56
205	8.32	34.02	3.00	156	300	7.03	34.14	1.75	26.76	129	0.63
235	7.82	34.05	2.48	147	400	6.39	34.23	0.80	26.92	114	0.76
276	7.28	34.12	1.96	134	500	5.76	34.32	0.47	27.07	100	0.87
335	6.72	34.16	1.46	124							
411	6.36	34.25	0.70	113							
485	5.85	34.31	0.51	102							
565	5.50	34.34	0.36	95							

BLACK DOUGLAS; February 27, 1960; 2202 GCT; 30°30.5'N, 122°14'W; sounding, 2200 fm; wind, direction missing, force 1; weather, cloudy; sea, slight; wire angle, 03°.

1	14.74	33.31	5.65	321	0	14.74	33.31	5.65	(24.75)	(321)	
11	14.40	33.33	5.71	312	10	14.43	33.33	5.70	24.83	313	
31	14.41	-	5.82	-	20	14.20		5.78			
56	14.46	-	5.71	-	30	14.39		5.82			
66	14.44	-	5.68	-	50	14.44		5.74			
76	14.10	-	5.60	-	75	14.12		5.61			
91	13.49	-	5.58	-	100	12.82		5.30			
106	12.35	-	5.05	-	125	10.99		4.66			
130	10.72	-	4.58	-	150	10.01		4.36			
150	10.01	-	4.36	-	200	8.83	33.95	3.44	26.34	169	0.00a)
176	9.46	33.87	4.11	184	250	7.93	34.05	2.99	26.56	148	0.08a)
206	8.68	33.97	3.31	165	300	7.18	34.09	2.13	26.70	135	0.15a)
236	8.19	34.04	3.21	153	400	6.38	34.21	1.09	26.90	116	0.28a)
276	7.46	34.07	2.50	140	500	5.73	34.30	0.58	27.06	101	0.40a)
335	6.80	34.11	1.65	129							
410	6.30	34.22	1.00	114							
486	5.80	34.29	0.62	103							
565	5.48	34.34	0.38	95							

BLACK DOUGLAS; February 18, 1960; 0426 GCT; 32°49'N, 117°28.5'W; sounding, 200 fm; wind, direction missing, force 1; weather, partly cloudy; sea, slight; wire angle, 00°.

93.296
30

0	14.35	33.60	5.88	291
10	13.61	33.55	5.56	281
20	12.68	33.55	4.49	263
30	11.58	33.60	3.88	239
40	11.24	33.58	3.66	235
50	10.72	33.64	3.61	222
60	10.44	33.69	3.54	213
70	10.20	33.72	3.34	207
80	9.90	33.80	3.25	197
90	9.70	33.83	3.17	191
100	9.46	33.94	2.90	179
110	9.35	33.96	2.69	176
120	9.32	33.98	2.55	174
130	9.16	34.05	2.42	166
140	9.02	34.07	2.37	163
150	8.94	34.05	2.27	163
160	8.85	34.09	2.22	159
170	8.80	34.13	2.02	155

a) No density values available above 200 meters. The tabulated geopotential anomaly is at 200 decibars with respect to Z.

b) Shakedown station.

SIO CCOFI 6002	OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
	Z m	T °C	S %	O ₂ ml/L	δ _T cl/ton	Z m	T °C	S %	O ₂ ml/L	σ _t g/L	δ _T cl/ton	ΔD dyn m

938.30
4

HUGH M. SMITH; February 11, 1960; 2125, 2144 GCT; 32°43'N, 117°25.5'W; sounding, 275 fm; wind, 290°, force 3; weather, clear; sea, very rough; wire angle, 17°, 20°.a)

72	10.62	33.71	3.59	215
81	10.36	33.80	3.47	204
91	9.94	33.79	3.10	198
101	9.73	33.82	2.91	193
111	9.44	33.90	2.67	182
120	9.22	33.96	2.43	174
130	9.18	34.05	2.11	167
140	9.07	34.03	2.18	167
149	8.90	34.05	2.16	162
157	8.80	34.05	2.02	161
166	8.72	34.09	1.93	157
176	8.66	34.14	1.73	152
187	8.60	34.15	1.71	150
197	8.60	34.17	1.98	149
207	8.52	34.18	1.75	147
217	8.41	34.16	1.61	147
227	8.32	34.16	1.50	146
237	8.31	34.17	1.52	145

97.32

BLACK DOUGLAS; February 29, 1960; 1947 GCT; 32°12'N, 117°16'W; sounding, 750 fm; wind, direction missing, force 1; weather, rain; sea, rough; wire angle, 15°.

0	13.62	33.61	6.10	276	0	13.62	33.61	6.10	25.21	276	0.00
11	13.59	-	6.15	-	10	13.59	33.61	6.09	25.22	276	0.03
30	13.43	33.60	5.78	273	20	13.53	33.61	5.96	25.23	275	0.06
40	12.51	33.60	4.71	256	30	13.43	33.60	5.78	25.25	273	0.08
54	11.48	33.68	4.06	232	50	12.00	33.65	4.37	25.56	243	0.13
69	10.85	33.77	3.80	214	75	10.50	33.79	3.63	25.94	207	0.19
92	10.10	33.80	3.41	200	100	9.89	33.82	3.33	26.07	195	0.24
112	9.56	33.87	3.22	186	125	9.32	33.95	2.95	26.27	176	0.29
131	9.24	33.98	2.85	173	150	9.02	34.06	2.42	26.40	164	0.33
150	9.02	34.06	2.42	164	200	8.59	34.20	1.76	26.58	146	0.41
178	8.76	34.14	2.10	154	250	8.55	34.31	1.15	26.67	138	0.48
211	8.52	34.23	1.56	143	300	8.12	34.33	0.98	26.75	130	0.55
239	8.63	34.31	1.21	139	400	7.12	34.34	0.67	26.91	115	0.68
288	8.22	34.33	1.00	132	500	6.26	34.39	0.44	27.06	101	0.79
340	7.79	34.34	0.88	125	600	(5.68)	(34.38)		(27.12)	(95)	(0.89)
419	6.84	34.34	0.58	112							
503	6.23	34.39	0.43	101							
587	5.75	34.38	0.35	95							

97.60

BLACK DOUGLAS; March 1, 1960; 1048 GCT; 31°12'N, 119°07'W; sounding, 1850 fm; wind, 270°, force 3; weather, partly cloudy; sea, missing; wire angle, 20°.

1	15.48	33.60	5.54	315	0	(15.48)	(33.60)	(5.54)	(24.81)	(315)	(0.00)
10	15.44	33.61	5.55	313	10	15.44	33.61	5.55	24.83	313	0.03
29	15.36	33.60	5.50	312	20	15.40	33.61	5.53	24.83	313	0.06
53	15.35	33.62	5.50	311	30	15.37	33.60	5.50	24.84	312	0.09
62	15.34	33.60	5.57	311	50	15.35	33.59	5.50	24.85	311	0.16
71	14.91	33.57	5.51	305	75	14.08	33.57	5.35	25.08	289	0.23
85	13.32	33.56	5.17	274	100	11.99	33.51	4.87	25.45	253	0.30
98	12.13	33.51	4.91	256	125	10.37	33.61	4.30	25.82	218	0.36
122	10.46	33.59	4.35	221	150	9.88	33.71	4.07	25.98	203	0.41
141	10.08	33.66	4.18	210	200	8.67	33.93	3.19	26.35	168	0.51
163	9.49	33.87	3.73	185	250	7.87	34.03	2.49	26.56	148	0.59
191	8.80	33.90	3.29	172	300	7.58	34.20	1.54	26.73	133	0.66
219	8.44	34.00	2.96	159	400	6.99	34.30	0.70	26.89	117	0.79
256	7.80	34.05	2.41	146	500	6.18	(34.36)	(0.48)	(27.05)	(102)	(0.90)
311	7.52	34.23	1.29	129							
381	7.17	34.29	0.81	120							
453	6.50	34.34	0.53	108							
532	5.99	34.55u	0.43	-							

106

a) Shakedown station.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S %	O ₂ ml/L	δT cl/ton	Z m	T °C	S %	O ₂ ml/L	σ _t g/L	δT cl/ton	ΔD dyn m

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6002

BLACK DOUGLAS; March 2, 1960; 2245 GCT; 30°41'N, 118°48'W; sounding, 1400 fm; wind, 330°, force 5;
weather, partly cloudy; sea, rough; wire angle, 20°.

1	15.01	33.60	5.65	305	0	(15.01)	(33.60)	(5.65)	(24.91)	(305)	(0.00)
10	15.08	33.62	5.70	305	10	15.08	33.62	5.70	24.91	305	0.03
29	14.98	33.64	5.70	302	20	15.04	33.63	5.70	24.92	304	0.06
58	15.02	33.69	5.64	299	30	14.98	33.64	5.70	24.95	301	0.09
66	14.73	33.64	5.50	296	50	15.00	33.67	5.67	24.97	299	0.15
80	13.42	33.48	5.29	282	75	14.55	33.64	5.44	25.04	293	0.23
93	12.32	33.51	4.95	259	100	11.96	33.51	4.83	25.46	253	0.30
107	11.63	33.51	4.71	247	125	10.64	33.65	4.40	25.81	219	0.36
129	10.46	33.69	4.37	214	150	9.63	33.77	4.00	26.07	194	0.41
147	9.73	33.76	4.04	197	200	8.48	33.95	3.40	26.39	164	0.50
173	9.11	33.86	3.81	180	250	7.86	34.09	2.37	26.60	144	0.58
200	8.48	33.95	3.40	164	300	7.53	34.17	1.66	26.71	134	0.65
228	8.06	34.04	2.84	151	400	6.78	34.33	0.60	26.95	111	0.78
325	7.42	34.22	1.29	129	500	5.99	34.36	0.44	27.07	100	0.89
404	6.73	34.34	0.58	111							
485	6.08	34.36	0.46	101							
568	5.60	34.38	0.35	94							

BLACK DOUGLAS; March 2, 1960; 0730 GCT; 29°40.5'N, 120°47'W; sounding, 1950 fm; wind, 320°, force 5;
weather, cloudy; sea, very rough; wire angle, 19°.

1	15.58	33.62	5.64	316	0	(15.58)	(33.62)	(5.64)	(24.80)	(316)	(0.00)
10	15.56	33.60	5.65	317	10	15.56	33.60	5.65	24.79	317	0.03
29	15.61	33.65	5.57	314	20	15.58	33.62	5.61	24.81	315	0.06
59	15.02	33.71u	5.67	-	30	15.60	33.65	5.57	24.82	314	0.09
68	15.00	33.55	5.58	309	50	15.53	33.59	5.62	24.84	312	0.16
82	14.87	33.53	5.62	307	75	14.93	33.54	5.60	24.88	308	0.23
96	15.02	33.73	5.35	296	100	14.84	33.73	5.34	25.04	293	0.31
110	13.94	33.68	5.26	277	125	13.11	33.75	5.04	25.43	256	0.38
133	12.70	33.77	4.92	247	150	11.32	33.68	4.73	25.71	229	0.44
152	11.18	33.68	4.70	227	200	9.10	33.87	3.72	26.24	179	0.55
180	9.66	33.75	4.25	197	250	8.17	34.00	3.04	26.49	155	0.63
208	8.92	33.91	3.53	173	300	7.58	34.07	2.20	26.63	142	0.71
235	8.38	33.98	3.29	160	400	6.44	34.18	1.04	26.87	119	0.84
281	7.79	34.04	2.50	147	500	5.72	34.29	0.52	27.05	102	0.96
333	7.26	34.13	1.74	133							
414	6.28	34.18	0.93	117							
495	5.76	34.28	0.53	103							
579	5.42	34.38	0.45	92							

HUGH M. SMITH; February 27, 1960; 1011 GCT; 30°07.5'N, 118°21'W; sounding, 1900 fm; wind, 330°, force 2;
weather, clear; sea, moderate; wire angle, 05°.

0	15.20	33.68	5.50	303	0	15.20	33.68	5.50	24.94	303	0.00
10	15.20	33.66	5.60	305	10	15.20	33.66	5.60	24.92	305	0.03
30	15.20	33.68	5.70	303	20	15.20	33.67	5.65	24.93	304	0.06
55	15.14	33.66	5.62	303	30	15.20	33.68	5.70	24.94	303	0.09
65	14.69	33.62	5.35	297	50	15.15	33.66	5.63	24.93	303	0.15
75	13.64	33.54	5.30	282	75	13.64	33.54	5.30	25.16	282	0.22
90	12.64	33.57	4.80	261	100	11.89	33.59	4.55	25.54	246	0.29
106	11.53	33.60	4.43	239	125	10.67	33.68	4.10	25.82	218	0.35
130	10.46	33.70	4.03	213	150	9.64	33.80	3.55	26.09	192	0.40
150	9.64	33.80	3.55	192	200	8.53	34.00	2.77	26.43	161	0.49
174	9.10	33.89	3.40	178	250	7.97	34.13	1.71	26.62	143	0.57
204	8.43	34.02	2.65	158	300	7.59	34.23	1.17	26.75	131	0.64
232	8.10	34.07	2.07	149	400	6.58	34.22	0.82	26.89	118	0.77
272	7.80	34.20	1.33	135	500	5.84	34.32	0.49	27.06	101	0.88
330	7.36	34.24	1.04	127							
404	6.52	34.22	0.81	117							
479	5.96	34.31	0.52	103							
559	5.56	34.33	0.43	97							

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	OBSERVED				COMPUTED		INTERPOLATED				COMPUTED		
	Z m	T °C	S ‰	O ₂ ml/L	δT cl/ton	Z m	T °C	S ‰	O ₂ ml/L	σ _t g/L	δT cl/ton	ΔD dyn m	

I07.60

HUGH M. SMITH; February 26, 1960; 1105 GCT; 29°29'N, 118°13'W; sounding, 1800 fm; wind, 240°, force 3; weather, overcast; sea, rough; wire angle, 07°.

0	15.40	33.60	4.92	313	0	15.40	33.60	4.92	24.83	313	0.00
10	15.41	33.57	4.92	316	10	15.41	33.57	4.92	24.80	316	0.03
29	15.43	33.60	4.92	314	20	15.42	33.60	4.92	24.82	314	0.06
39	15.42	33.58	4.89	315	30	15.43	33.60	4.91	24.82	314	0.09
49	15.40	33.57	4.94	316	50	15.40	33.57	4.94	24.81	316	0.16
64	15.18	33.51	4.91	315	75	15.10	33.50	4.92	24.81	315	0.24
79	15.09	33.50	4.92	315	100	14.34	33.50	4.70	24.98	299	0.31
100	14.34	33.50	4.70	299	125	12.32	33.48	4.31	25.37	262	0.38
125	12.32	33.48	4.31	262	150	11.28	33.67	4.06	25.71	229	0.45
144	11.54	33.64	4.06	236	200	9.10	33.83	3.50	26.21	182	0.55
174	9.94	33.75	4.04	201	250	8.22	34.00	2.81	26.47	157	0.64
203	9.04	33.85	3.44	180	300	7.49	34.09	1.86	26.66	140	0.72
232	8.53	33.95	3.19	164	400	6.39	34.17	1.01	26.87	119	0.85
270	7.92	34.05	2.29	148	500	5.77	(34.30)	0.51	(27.06)	(102)	(0.96)
330	7.10	34.12	1.48	132							
403	6.36	34.17	1.00	119							
478	5.90	34.28	0.58	105							
558	5.39	34.53u	0.38	-							

I07.70

HUGH M. SMITH; February 26, 1960; 1537 GCT; 29°12'N, 118°40'W; sounding, 2000+ fm; wind, 280°, force 2; weather, overcast; sea, rough; wire angle, 02°.

1	15.61	33.59	5.80	318	0	(15.61)	(33.59)	(5.80)	(24.78)	(318)	(0.00)
11	15.60	33.58	5.56	319	10	15.60	33.58	5.57	24.77	319	0.03
31	15.62	33.71u	5.64	-	20	15.61	33.59	5.60	24.77	318	0.06
41	15.62	33.60	5.52	318	30	15.62	33.60	5.64	24.78	318	0.10
51	15.61	33.60	5.48	318	50	15.61	33.60	5.49	24.78	318	0.16
66	15.58	33.58	5.65	318	75	15.54	33.56	5.56	24.77	319	0.24
81	15.48	33.55	5.48	319	100	14.70	33.75	5.57	25.10	287	0.32
102	14.60	33.77	5.57	284	125	12.68	33.78	4.14	25.53	246	0.38
126	12.66	33.78	4.12	246	150	11.03	33.84	3.56	25.89	213	0.44
145	11.24	33.80	3.56	219	200	9.41	33.98	3.08	26.28	175	0.54
176	10.08	33.98	3.61	186	250	8.52	34.12	2.02	26.53	151	0.62
205	9.26	33.98	2.97	173	300	8.23	34.25	1.40	26.67	138	0.70
236	8.60	34.08	2.20	156	400	7.53	34.35	0.66	26.85	121	0.83
275	8.40	34.20	1.72	144	500	6.60	34.36	0.38	26.99	107	0.95
334	8.00	34.31	0.98	130							
409	7.47	34.35	0.62	120							
484	6.73	34.35	0.42	110							
565	6.01	34.37	0.31	100							

I10.60

HUGH M. SMITH; February 25, 1960; 0140 GCT; 28°55'N, 117°32'W; sounding, 2000 fm; wind, 270°, force 3; weather, partly cloudy; sea, rough; wire angle, 03°.

3	15.60	33.62	5.78	316	0	(15.60)	(33.62)	(5.78)	(24.80)	(316)	(0.00)
13	15.61	33.64	5.70	315	10	15.61	33.63	5.72	24.81	315	0.03
33	15.62	33.68	5.70	312	20	15.61	33.65	5.70	24.82	314	0.06
58	15.54	33.71	5.63	308	30	15.62	33.68	5.70	24.84	312	0.09
68	15.58	33.75	5.56	306	50	15.55	33.70	5.65	24.87	309	0.16
78	15.52	33.73	5.53	306	75	15.54	33.74	5.54	24.90	306	0.23
92	13.76	33.56	4.99	283	100	13.00	33.55	4.81	25.30	269	0.31
107	12.62	33.58	4.68	260	125	11.76	33.65	3.76	25.61	239	0.37
132	11.70	33.74	3.52	231	150	10.60	33.70	3.98	25.86	215	0.43
152	10.51	33.70	4.02	214	200	8.97	33.98	2.95	26.35	168	0.52
177	9.59	33.80	4.02	192	250	8.72	34.25	1.58	26.60	145	0.60
206	8.86	34.03	2.66	163	300	8.32	34.31	1.09	26.70	135	0.68
235	8.82	34.22	1.76	149	400	7.15	34.38	0.56	26.93	113	0.81
277	8.50	34.27	1.30	140	500	6.41	34.41	0.42	27.06	101	0.92
336	8.01	34.36	0.84	126							
411	7.02	34.38	0.52	112							
487	6.52	34.41	0.44	103							
572	5.94	34.42	0.32	95							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S %	O ₂ ml/L	δT cl/ton	Z m	T °C	S %	O ₂ ml/L	σ _t g/L	δT cl/ton	ΔD dyn m

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6002

HUGH M. SMITH; February 24, 1960; 1252 GCT; 28°37'N, 118°17.5'W; sounding, 1600 fm; wind, 270°, force 5;
weather, partly cloudy; sea, very rough; wire angle, 10°.

3	15.82	33.75	5.64	311	0	(15.82)	(33.75)	(5.64)	(24.85)	(311)	(0.00)
13	15.82	33.73	5.46	313	10	15.82	33.74	5.50	24.84	312	0.03
32	15.84	33.71	5.67	314	20	15.83	33.72	5.57	24.83	313	0.06
42	15.84	33.68	5.48	317	30	15.84	33.71	5.65	24.82	314	0.09
57	15.84	33.70	5.44	315	50	15.84	33.69	5.47	24.80	316	0.16
71	15.77	33.71	5.36	313	75	15.68	33.71	5.34	24.85	311	0.24
95	14.16	33.66	5.13	283	100	14.15	33.70	5.09	25.17	280	0.31
115	12.86	33.67	4.76	257	125	11.83	33.66	4.70	25.60	240	0.38
134	11.47	33.72	4.67	229	150	10.63	33.76	4.36	25.90	211	0.43
153	10.47	33.77	4.27	208	200	9.57	34.02	2.79	26.28	175	0.53
182	9.80	33.91	3.37	187	250	8.96	34.15	2.01	26.49	156	0.62
216	9.38	34.11	2.34	166	300	8.43	34.28	1.29	26.66	139	0.69
245	9.00	34.14	2.10	157	400	7.62	34.34	0.65	26.83	123	0.83
294	8.50	34.27	1.33	140	500	6.79	34.37	0.38	26.98	109	0.95
349	8.03	34.33	0.94	129	600	5.95	34.41	0.22	27.12	95	1.06
436	7.37	34.35	0.50	118							
522	6.58	34.38	0.34	106							
609	5.87	34.42	0.21	94							

HUGH M. SMITH; February 23, 1960; 0132 GCT; 28°46'N, 116°37'W; sounding, 2000 fm; wind, 300°, force 5;
weather, cloudy; sea, very rough; wire angle, 18°.

2	16.16	33.88	5.64	309	0	(16.16)	(33.88)	(5.64)	(24.87)	(309)	(0.00)
11	16.16	33.85	5.32	311	10	16.16	33.85	5.33	24.85	311	0.03
30	16.16	33.89	5.49	308	20	16.16	33.87	5.40	24.87	309	0.06
40	16.10	33.87	5.48	308	30	16.16	33.89	5.49	24.88	308	0.09
54	16.10	33.89	5.41	307	50	16.10	33.88	5.43	24.89	307	0.15
68	15.91	33.84	5.38	306	75	15.32	33.75	5.20	24.97	300	0.23
92	15.01	33.77	5.01	293	100	14.31	33.84	4.17	25.25	273	0.30
111	13.46	33.91	3.21	251	125	13.07	34.04	2.46	25.65	235	0.37
129	13.01	34.09	2.25	230	150	12.73	34.21	1.79	25.86	215	0.42
147	12.78	34.20	1.79	217	200	9.98	34.07	2.18	26.25	178	0.52
174	11.74	34.22	1.80	196	250	9.65	34.35	1.20	26.52	152	0.61
206	9.78	34.07	2.22	174	300	9.15	34.44	0.73	26.68	138	0.68
234	9.72	34.27	1.48	159	400	7.90	34.43	0.47	26.85	120	0.82
281	9.44	34.44	0.79	142	500	6.85	34.37	0.25	26.96	111	0.94
331	8.68	34.42	0.63	132							
411	7.80	34.42	0.45	119							
495	6.90	34.36	0.26	111							
578	6.14	34.38	0.22	100							

HUGH M. SMITH; February 24, 1960; 0803 GCT; 28°30.5'N, 117°16.5'W; sounding, 2000+ fm; wind, 340°, force 6;
weather, partly cloudy; sea, very rough; wire angle, 18°.a)

2	15.69	33.65	5.60	316	0	(15.69)	(33.65)	(5.60)	(24.80)	(316)	(0.00)
12	15.70	33.63	5.50	317	10	15.70	33.63	5.51	24.79	317	0.03
32	15.70	33.61	5.54	319	20	15.70	33.62	5.51	24.78	318	0.06
41	15.64	33.60	5.64	318	30	15.70	33.61	5.53	24.77	319	0.10
56	15.70	33.62	5.68	318	50	15.69	33.61	5.67	24.78	318	0.16
71	15.92	33.72	5.48	315	75	15.83	33.73	5.43	24.83	313	0.24
96	13.69	33.54	5.32	283	100	13.22	33.54	5.21	25.24	274	0.31
117	12.28	33.59	4.86	253	125	11.82	33.63	4.64	25.58	242	0.38
136	11.32	33.69	4.37	228	150	10.54	33.75	3.98	25.91	210	0.44
155	10.26	33.77	3.85	205	200	9.14	33.97	2.83	26.31	172	0.53
183	9.50	33.91	3.02	182	250	8.23	34.06	2.18	26.52	152	0.62
217	8.80	34.01	2.66	164	300	7.64	34.13	1.81	26.67	138	0.69
246	8.30	34.05	2.22	154	400	6.65	34.19	1.00	26.85	121	0.82
294	7.72	34.13	1.85	139	500	6.08	34.32	0.54	27.03	104	0.94
349	7.06	34.16	1.43	129	600	5.44	34.33	0.40	27.11	96	1.05
432	6.41	34.22	0.77	116							
517	5.98	34.34	0.48	101							
603	5.42	34.33	0.38	96							

a) An assumed wire angle of 28° was used in depth determination.

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	OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
	Z m	T °C	S %	O ₂ ml/L		Z m	T °C	S %	O ₂ ml/L	σ _t g/L	δ _T cl/ton	ΔD dyn m

117.50	HUGH M. SMITH; February 20, 1960; 2340 GCT; 28°07.5'N, 116°15'W; sounding, 2000 fm; wind, 010°, force 4; weather, partly cloudy; sea, very rough; wire angle, 15°.											
	2	15.68	33.77	4.58	307	0	(15.68)	(33.77)	(4.58)	(24.89)	(307)	(0.00)
	11	15.68	33.77	4.50	307	10	15.68	33.77	4.51	24.89	307	0.03
	31	15.45	33.75	4.49	303	20	15.59	33.76	4.50	24.91	305	0.06
	40	15.38	33.76	4.49	301	30	15.47	33.75	4.49	24.93	304	0.09
	55	14.98	33.77	4.44	292	50	15.18	33.77	4.46	25.00	296	0.15
	69	14.20	33.73	4.09	279							
117.80	HUGH M. SMITH; February 20, 1960; 0830 GCT; a) 27°08'N, 118°10.5'W; sounding, 2000 fm; wind, 330°, force 5; weather, cloudy; sea, very rough; wire angle, 08°.											
	423	6.96	34.30	0.39	117							
	434	6.89	34.30	0.35	116							
	443	6.76	34.30	0.35	114							
	453	6.68	34.34	0.32	110							
	463	6.63	34.31	0.29	111							
	473	6.54	34.34	0.29	108							
	483	6.38	34.31	0.28	108							
	493	6.28	34.27u	0.27	-							
	504	6.27	34.35	0.23	104							
	513	6.19	34.34	0.19	104							
	523	6.14	34.36	0.19	102							
	533	6.04	34.34	0.19	102							
	542	5.99	34.39	0.19	98							
	553	5.96	34.38	0.19	98							
	562	5.83	34.39	0.18	96							
	572	5.79	34.39	0.19	96							
	581	5.69	34.38	0.17	95							
	591	5.64	34.42	0.17	92							
120.50	HUGH M. SMITH; February 19, 1960; 0402 GCT; 27°34'N, 115°53'W; sounding, 2000+ fm; wind, 290°, force 4; weather, partly cloudy; sea, rough; wire angle, 15°.											
	0	16.52	33.98	4.56	309	0	16.52	33.98	4.56	24.87	309	0.00
	9	16.54	34.00	4.96	309	10	16.53	34.00	4.98	24.87	309	0.03
	29	16.18	33.95	5.11	304	20	16.52	34.01	5.03	24.89	307	0.06
	58	15.88	33.96	4.99	297	30	16.12	33.94	5.10	24.93	304	0.09
	68	15.59	34.00	-	288	50	15.85	33.93	5.03	24.99	298	0.15
120.80	HUGH M. SMITH; February 19, 1960; 1933 GCT; 26°35'N, 117°48'W; sounding, 2000+ fm; wind, 010°, force 5; weather, cloudy; sea, very rough; wire angle, 15°.											
	0	16.85	33.87	5.20	325	0	16.85	33.87	5.20	24.70	325	0.00
	10	16.86	33.88	5.24	325	10	16.86	33.88	5.24	24.70	325	0.03
	30	16.86	33.87	5.21	325	20	16.86	33.87	5.22	24.70	325	0.06
	39	16.84	33.87	5.09	325	30	16.86	33.87	5.21	24.70	325	0.10
	54	16.86	33.86	5.21	326	50	16.86	33.86	5.16	24.70	326	0.16
	68	16.84	33.89	5.18	324	75	16.83	33.88	5.26	24.71	324	0.24
	92	16.83	33.87	5.35	325	100	16.82	33.90	5.33	24.73	323	0.33
	112	16.46	34.07	5.06	301	125	15.69	34.11	4.97	25.15	282	0.40
	131	15.56	34.11	4.96	279	150	13.45	33.95	4.77	25.51	248	0.47
	150	13.45	33.95	4.77	248	200	10.16	33.84	3.95	26.04	198	0.58
	177	11.18	33.78	4.53	219	250	8.78	33.99	2.93	26.39	165	0.68
	210	9.76	33.87	-	189	300	8.18	34.16	2.20	26.61	144	0.76
	238	8.96	33.95	3.09	171	400	7.28	34.28	0.74	26.83	123	0.90
	287	8.30	34.13	2.43	148	500	6.55	34.36	0.44	27.00	107	1.02
	339	7.84	34.24	1.38	133	600	(5.88)	(34.39)		(27.11)	(96)	(1.12)
	419	7.10	34.29	0.59	119							
	504	6.53	34.36	0.43	107							
	588	5.94	34.39	0.45	97							

a) Test cast.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O ₂ ml/L	δ _T cl/ton	Z m	T °C	S ‰	O ₂ ml/L	σ _t g/L	δ _T cl/ton	ΔD dyn m

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HUGH M. SMITH; February 17, 1960; 1550 GCT; 27°20.5'N, 114°56'W; sounding, 800 fm; wind, 330°, force 2;
weather, partly cloudy; sea, rough; wire angle, 08°. 123.42

1	15.47	33.98	4.29	287	0	(15.47)	(33.98)	(4.29)	(25.11)	(287)	(0.00)
11	15.46	33.98	4.21	287	10	15.46	33.98	4.22	25.11	287	0.03
30	15.46	33.97	4.12	287	20	15.46	33.97	4.14	25.10	287	0.06
55	14.68	33.97	3.04	271	30	15.46	33.97	4.12	25.10	287	0.09
65	13.50	33.97	2.25	247	50	15.44	33.99	3.95	25.12	285	0.14
75	12.55	33.96	2.02	231	75	12.55	33.96	2.02	25.69	231	0.21
91	11.80	34.13	1.56	204	100	11.80	34.30	1.23	26.11	191	0.26
105	11.54	34.38	0.94	181	125	11.42	34.46	0.60	26.30	173	0.31
130	11.38	34.47	0.54	172	150	10.90	34.51	0.52	26.43	161	0.35
150	10.90	34.51	0.52	161	200	10.49	34.54	0.36	26.53	152	0.43
175	10.70	34.52	0.39	157	250	9.58	34.55	0.33	26.69	136	0.50
204	10.45	34.54	0.35	151	300	9.13	34.54	0.28	26.75	130	0.57
233	9.74	34.52	0.35	141	400	8.09	34.46	0.22	26.87	120	0.70
272	9.38	34.56	0.32	132	500	6.92	34.45	0.20	27.02	105	0.82
330	8.84	34.50	0.25	128							
410	7.98	34.46	0.22	118							
484	7.06	34.44	0.20	107							
565	6.34	34.45	0.18	97							

HUGH M. SMITH; February 16, 1960; 0255 GCT; 26°10'N, 114°05'W; sounding, 1900 fm; wind, 280°, force 3;
weather, partly cloudy; sea, rough; wire angle, 10°. 130.40

2	17.17	34.18	4.40	310	0	(17.17)	(34.18)	(4.40)	(24.87)	(310)	(0.00)
12	17.18	34.18	4.17	310	10	17.18	34.18	4.25	24.87	310	0.03
31	17.10	34.16	4.06	309	20	17.15	34.17	4.10	24.87	310	0.06
61	17.04	34.16	4.08	308	30	17.11	34.16	4.07	24.87	310	0.09
71	16.82	34.14	3.87	305	50	17.07	34.16	4.08	24.88	309	0.15
86	12.82	33.75	3.27	251	75	16.50	34.13	3.77	24.98	298	0.23
100	11.60	33.73	3.24	230	100	11.60	33.73	3.24	25.70	230	0.30
116	11.02	33.93	2.43	206	125	11.01	34.03	2.02	26.04	198	0.35
140	11.04	34.19	1.43	187	150	10.91	34.23	1.28	26.21	181	0.40
160	10.75	34.26	1.17	176	200	10.53	34.43	0.67	26.44	160	0.49
188	10.49	34.37	0.87	164	250	10.08	34.51	0.25	26.58	147	0.57
217	10.58	34.52	0.38	154	300	9.53	34.52	0.20	26.68	137	0.64
247	10.12	34.51	0.24	148	400	8.22	34.45	0.20	26.84	123	0.77
295	9.58	34.52	0.20	138	500	6.94	34.41	0.19	26.98	108	0.89
350	8.75	34.48	0.20	128	600	6.12	34.42	0.18	27.09	98	1.00
432	7.87	34.44	0.20	119							
518	6.70	34.40	0.19	106							
619	6.02	34.42	0.18	96							

HUGH M. SMITH; February 14, 1960; 0550, 0615 GCT; 24°59'N, 113°23'W; sounding, 1600 fm; wind, 300°,
force 5; weather, clear; sea, very rough; wire angle, 18°, 18°. 137.40

1	18.49	34.35	4.99	328	0	(18.49)	(34.35)	(4.99)	(24.67)	(328)	(0.00)
10	18.48	34.34	4.91	328	10	18.48	34.34	4.91	24.67	328	0.03
29	18.50	34.37	4.82	326	20	18.50	34.36	4.86	24.68	327	0.07
58	17.94	34.29	4.71	319	30	18.48	34.37	4.80	24.69	326	0.10
68	17.40	34.19	4.60	314	50	18.17	34.33	4.75	24.74	322	0.16
83	15.14	34.00	3.39	279	75	16.91	34.16	4.32	24.92	305	0.24
					100	13.67	34.06	2.66	25.55	245	0.31
98	13.82	34.05	2.73	248	125	11.96	34.19	1.74	25.99	203	0.37
111	12.62	34.11	2.20	221	150	11.70	34.37	1.26	26.18	185	0.42
133	11.78	34.24	1.57	196	200	10.82	34.51	1.32	26.45	159	0.50
153	11.68	34.40	1.20	183	250	10.19	34.54	0.52	26.58	147	0.58
182	11.08	34.47	1.04	167	300	9.74	34.57	0.32	26.68	137	0.66
208	10.71	34.52	1.37	157	400	8.42	34.49	0.23	26.83	123	0.79
237	10.30	34.52	0.64	150	500	7.29	34.49	0.16	27.00	107	0.91
285	9.95	34.58	0.34	139	600	6.24	34.47	0.21	27.12	95	1.02
341	9.14	34.52	0.30	131							
428	8.07	34.47	0.21	119							
521	7.05	34.49	0.14	104							
605	6.18	34.46	0.22	95							

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

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
77.50-B	II-20	1835	35° 04.5'	120° 52.0'	72	270°	3	clear	high	10.75	33.75
80.52-B	22	1835	34° 24.5'	120° 36.0'	100	300°	4	clear	very rough	10.93	33.73
83.40-B	23	0155	34° 14.0'	119° 22.0'	10	300°	2	clear	moderate	11.92	33.62
83.51-B	23	0900	33° 52.0'	120° 07.5'	70	280°	3	clear	rough	12.79a)	33.62
83.55-B	23	1125	33° 44.0'	120° 24.5'	650	320°	7	clear	very rough	13.43	33.62
83.70-B	23	1910	33° 17.0'	121° 24.5'	1950	320°	5	partly cloudy	high	13.34	33.58
83.80-B	24	0000	32° 54.0'	122° 08.0'	2100	320°	5	partly cloudy	very rough	13.50	33.53
87.35-B	25	1253	33° 50.0'	118° 37.5'	200	040°	2	clear	smooth	12.66	33.61
87.45-B	25	0700	33° 30.0'	119° 19.0'	900	-	1	clear	slight	12.92	33.62
87.50-B	25	0440	33° 20.0'	119° 39.5'	110	-	1	clear	slight	13.01	33.58
87.55-B	25	0215	33° 10.0'	120° 00.5'	650	070°	1	clear	moderate	13.48	33.52
87.70-B	24	1910	32° 39.5'	121° 02.0'	2000	060°	2	clear	rough	13.32	33.60
87.80-B	24	1445	32° 20.5'	121° 41.5'	2200	320°	3	cloudy	rough	14.22	33.48
87.90-B	24	0949	31° 59.0'	122° 24.0'	2400	310°	4	cloudy	rough	14.12	33.29
93.45-B	29	0130	32° 20.0'	118° 32.0'	-	060°	2	rain	smooth	14.58	33.68
93.55-B	28	2025	32° 00.0'	119° 13.5'	830	060°	3	rain	slight	14.44	33.72
97.30-B	29	1820	32° 16.0'	117° 08.5'	32	200°	6	showers	very rough	13.54	33.58

a) Alternate value, 12.94°C.

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

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
97.35-B	II-29	2150	32° 05.5'	117° 28.5'	650	-	1	cloudy	rough	14.08	33.60
97.40-B	III-1	0035	31° 56.0'	117° 49.0'	900	-	1	partly cloudy	moderate	14.24	33.62
97.45-B	1	0320	31° 45.0'	118° 09.5'	750	190°	2	partly cloudy	moderate	14.58	33.64
97.50-B	1	0540	31° 35.0'	118° 30.0'	1250	190°	3	partly cloudy	moderate	15.12	33.68
97.55-B	1	0759	31° 24.0'	118° 49.0'	260	190°	2	partly cloudy	moderate	15.00	33.68
97.70-B	1	1540	30° 49.0'	119° 44.0'	1950	280°	7	cloudy	high	15.27	33.55
97.80-B	1	2220	30° 35.0'	120° 31.0'	2000	300°	6	cloudy	very rough	14.84	33.47
97.90-B	2	0300	30° 15.5'	121° 10.5'	1900	320°	6	overcast	very rough	14.80	33.48
100.29-B	3	1600	31° 42.0'	116° 43.0'	70	-	1	clear	slight	12.62	33.66
100.30-B	3	1518	31° 40.5'	116° 46.5'	220	300°	2	clear	moderate	14.11	33.62
100.35-B	3	1214	31° 36.0'	117° 09.0'	550	300°	2	clear	moderate	14.18	33.60
100.40-B	3	0950	31° 25.0'	117° 27.5'	1100	300°	2	clear	moderate	14.90	33.66
100.45-B	3	0645	31° 14.0'	117° 48.5'	800	330°	4	clear	rough	14.87	33.60
100.50-B	3	0415	31° 04.0'	118° 10.0'	950	330°	5	partly cloudy	very rough	15.20	33.60
100.55-B	3	0140	30° 53.0'	118° 30.0'	1300	300°	5	partly cloudy	very rough	15.04	33.64
100.70-B	2	1810	30° 29.0'	119° 30.0'	2000	300°	4	partly cloudy	very rough	15.42	33.58
100.80-B	2	1245	30° 05.0'	120° 10.0'	1900	320°	4	overcast	rough	15.25	33.50
103.30-M	II-28	0030	31° 05.0'	116° 25.0'	36	300°	2	partly cloudy	moderate	12.80	33.65
103.35-M	27	2230	30° 55.5'	116° 45.0'	200	300°	2	partly cloudy	moderate	14.57	33.63

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Force	Weather	Sea	10 Meters T	10 Meters S
103.40-M	II-27	2000	30° 47.0'	117° 03.0'	900	330°	2	partly cloudy	moderate	14.91	33.64
103.45-M	27	1750	30° 38.0'	117° 21.5'	1300	270°	2	cloudy	moderate	15.08	33.65
103.50-M	27	1517	30° 26.5'	117° 45.0'	1000	270°	2	cloudy	moderate	15.16	33.59
103.55-M	27	1302	30° 17.5'	118° 01.0'	1000+	320°	2	partly cloudy	moderate	15.17	33.63
103.70-M	27	0500	29° 45.0'	119° 02.5'	1900	330°	2	cloudy	moderate	15.78	33.58
103.80-M	27	0045	29° 29.0'	119° 38.0'	1900	340°	2	overcast	rough	16.11	33.62
107.32-M	25	1930	30° 26.0'	116° 11.5'	360	320°	2	partly cloudy	moderate	13.04	33.65
107.35-M	25	2130	30° 20.0'	116° 23.0'	900	320°	2	partly cloudy	moderate	14.46	33.62
107.40-M	25	2350	30° 10.0'	116° 43.5'	1600	330°	3	cloudy	rough	15.08	33.64
107.45-M	26	0230	30° 00.5'	117° 02.0'	1000+	260°	3	partly cloudy	moderate	15.45	33.68
107.50-M	26	0517	29° 50.0'	117° 25.5'	1500	270°	4	overcast	moderate	15.24	33.58
107.55-M	26	0755	29° 40.0'	117° 48.0'	1800	270°	3	overcast	moderate	15.21	33.51
107.80-M	26	2010	28° 51.5'	119° 20.5'	2000	270°	2	overcast	rough	16.24	33.75
110.33-M	25	1506	29° 50.0'	115° 52.0'	40	-	1	partly cloudy	moderate	13.41	33.68
110.35-M	25	1358	29° 45.5'	116° 00.5'	700	290°	5	partly cloudy	moderate	13.66	33.58
110.40-M	25	1123	29° 35.5'	116° 20.0'	1100	340°	5	missing	rough	15.28	33.69
110.45-M	25	0845	29° 26.5'	116° 39.5'	2000	330°	3	missing	rough	15.76	33.68
110.50-M	25	0630	29° 16.0'	116° 59.0'	2000	320°	3	partly cloudy	rough	15.84	33.71
110.55-M	25	0405	29° 06.0'	117° 19.0'	1941	320°	3	partly cloudy	rough	15.62	33.65

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

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

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
110.80-M	II-24	0709	28° 16.0'	118° 58.0'	2000	320°	5	cloudy	very rough	15.66	33.56
110.90-M	24	0205	27° 56.0'	119° 36.0'	2000+	300°	5	cloudy	very rough	16.10	33.71
113.30-M	22	1415	29° 21.0'	115° 18.5'	40	280°	5	partly cloudy	very rough	14.20	33.84
113.35-M	22	1640	29° 11.5'	115° 38.0'	600	290°	4	cloudy	rough	13.98	33.60
113.40-M	22	1918	29° 03.0'	115° 57.5'	1000	250°	4	partly cloudy	rough	15.36	33.69
113.45-M	22	2210	28° 53.0'	116° 20.0'	1200	350°	4	cloudy	very rough	16.08	33.80
113.55-M	23	0450	28° 38.5'	116° 57.0'	2000	350°	5	partly cloudy	very rough	15.74	33.66
113.70-M	23	1305	28° 17.0'	117° 51.5'	2000+	330°	5	partly cloudy	very rough	15.40	33.51
113.80-M	23	1716	28° 04.0'	118° 25.0'	2000+	360°	5	cloudy	very rough	15.90	33.63
117.26-M	22	0940	28° 56.0'	114° 41.5'	40	280°	5	partly cloudy	very rough	14.82	33.82
117.30-M	22	0740	28° 48.0'	114° 56.5'	57	280°	5	missing	very rough	14.34	33.69
117.35-M	22	0520	28° 38.0'	115° 16.0'	120	290°	5	missing	very rough	14.93	33.73
117.40-M	21	0512	28° 28.0'	115° 35.5'	350	300°	5	missing	high	15.51	33.74
117.45-M	21	0212	28° 16.0'	115° 59.5'	2000	270°	5	missing	high	15.78	33.73
117.55-M	20	2030	27° 56.5'	116° 38.0'	2000	320°	4	partly cloudy	rough	15.32	33.69
117.60-M	20	1830	27° 46.0'	116° 56.0'	2000	320°	5	overcast	very rough	15.73	33.80
117.70-M	20	1345	27° 28.0'	117° 33.0'	2000+	320°	5	cloudy	very rough	15.91	33.62
118.39-M	21	0702	28° 18.5'	115° 24.0'	140	290°	5	missing	high	15.56	33.91
119.33-M	18	0915	28° 19.0'	114° 53.0'	60	240°	3	missing	rough	14.98	33.71

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

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Force	Weather	Sea	10 Meters T	10 Meters S
120.25-M	II-18	0435	28°20.5'	114°15.0'	30	330°	3	missing	moderate	15.02	33.89
120.30-M	18	0700	28°13.0'	114°34.0'	50	300°	4	missing	rough	15.20	33.84
120.35-M	18	1117	28°03.5'	114°53.5'	47	260°	3	partly cloudy	rough	15.50	33.84
120.40-M	18	2010	27°56.5'	115°14.0'	26	300°	2	partly cloudy	moderate	15.66	33.95
120.45-M	19	0100	27°43.5'	115°33.5'	1180	030°	3	partly cloudy	rough	16.28	33.98
120.55-M	19	0700	27°24.0'	116°12.0'	2000	340°	4	partly cloudy	rough	16.14	33.90
120.60-M	19	0933	27°13.5'	116°32.0'	2000	300°	4	partly cloudy	rough	16.01	33.82
120.70-M	19	1418	26°53.0'	117°08.0'	2000	320°	5	cloudy	very rough	16.25	33.77
120.90-M	20	0040	26°13.0'	118°27.0'	2000+	300°	5	cloudy	very rough	17.50	34.04
123.37-M	17	1730	27°24.0'	114°39.5'	37	-	1	partly cloudy	moderate	14.16	-
123.45-M	17	1350	27°15.5'	115°05.0'	2000+	340°	4	partly cloudy	rough	15.92	34.00
123.50-M	17	1122	27°04.0'	115°26.0'	2000	270°	5	missing	rough	16.19	34.00
123.55-M	17	0849	26°50.5'	115°47.5'	2000+	290°	5	missing	rough	16.60	33.98
123.60-M	17	0610	26°38.0'	116°09.5'	2000	300°	4	missing	rough	16.69	34.10
127.34-M	16	1233	26°53.5'	114°05.5'	35	080°	2	partly cloudy	moderate	16.10	34.11
127.40-M	16	1530	26°41.0'	114°28.0'	1650	-	1	partly cloudy	moderate	15.44	34.04
127.45-M	16	1755	26°32.5'	114°52.0'	1800	-	1	missing	moderate	16.62	34.11
127.50-M	16	2030	26°24.0'	115°16.0'	2000	010°	1	clear	moderate	16.80	34.09
127.55-M	16	2230	26°13.0'	115°28.0'	2000	010°	1	partly cloudy	rough	17.10	33.96

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

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Force	Weather	Sea	10 Meters	T	S
127.60-M	II-17	0100	26° 01.0'	115° 41.0'	2000	320°	3	partly cloudy	rough	18.39	34.16	
130.30-M	16	0730	26° 29.0'	113° 29.0'	44	320°	3	missing	moderate	16.10	34.09	
130.35-M	16	0520	26° 18.5'	113° 48.0'	260	320°	3	partly cloudy	rough	16.85	34.18	
130.45-M	16	0015	26° 01.0'	114° 27.0'	2000	300°	3	partly cloudy	rough	17.22	34.02	
130.50-M	15	2150	25° 51.5'	114° 47.5'	-	300°	3	partly cloudy	rough	17.08	34.08	
130.55-M	15	1925	25° 39.5'	115° 03.0'	1900	300°	3	partly cloudy	rough	17.36	34.00	
130.60-M	15	1633	25° 28.5'	115° 23.5'	2000+	360°	5	partly cloudy	rough	17.42	34.02	
133.25-M	14	1945	26° 03.0'	112° 50.5'	50	330°	2	partly cloudy	rough	16.89	34.22	
133.30-M	14	2205	25° 55.0'	113° 08.0'	95	320°	2	cloudy	moderate	16.86	34.10	
133.35-M	15	0058	25° 47.0'	113° 27.5'	600	290°	2	cloudy	moderate	17.60	34.18	
133.40-M	15	0520	25° 32.0'	113° 47.5'	1700	360°	2	partly cloudy	moderate	17.61	34.20	
133.45-M	15	0745	25° 22.0'	114° 08.5'	1650	340°	4	partly cloudy	rough	18.00	34.26	
133.50-M	15	1030	25° 12.0'	114° 29.0'	1700	340°	4	partly cloudy	rough	17.40	34.14	
134.36-M	15	0242	25° 40.5'	113° 26.0'	120	300°	3	cloudy	moderate	17.58	34.20	
137.23-M	14	1430	25° 30.0'	112° 15.0'	30	090°	2	partly cloudy	moderate	17.30	34.42	
137.30-M	14	1130	25° 15.5'	112° 43.0'	160	300°	5	partly cloudy	very rough	17.82	34.30	
137.35-M	14	0900	25° 06.5'	113° 02.5'	660	300°	5	partly cloudy	very rough	17.92	34.32	
137.45-M	14	0220	24° 52.0'	113° 44.5'	2000+	320°	5	partly cloudy	very rough	18.60	34.35	
137.50-M	13	2352	24° 40.0'	114° 02.0'	2000+	330°	4	partly cloudy	very rough	18.88	34.34	

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