

UNIVERSITY OF CALIFORNIA    SCRIPPS INSTITUTION OF OCEANOGRAPHY

# data report

PHYSICAL AND CHEMICAL DATA

CCOFI Cruise 5605  
4-22 May 1956

and

CCOFI Cruise 5606  
26 May - 25 June 1956

SIO Reference 60-34  
20 April 1960

UNIVERSITY OF CALIFORNIA  
SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

CCOFI CRUISE 5605  
4-22 May 1956

and

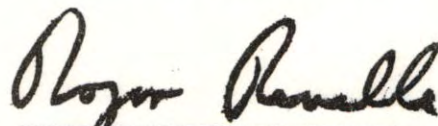
CCOFI CRUISE 5606  
26 May - 25 June 1956

Sponsored by

Marine Research Committee

SIO Reference 60-34  
20 April 1960

Approved for distribution:

  
Roger Revelle, Director



## CONTENTS

INTRODUCTION . . . . .	iii
------------------------	-----

### CRUISE 5605

List of Figures . . . . .	v
Personnel . . . . .	vii
Tabulated Data . . . . .	130
Observations at 10 Meters (Net-Tow Stations) . . . . .	130

### CRUISE 5606

List of Figures . . . . .	viii
Personnel . . . . .	ix
Tabulated Data . . . . .	143
Hydrographic Casts . . . . .	143
Observations at 10 Meters (Net-Tow Stations) . . . . .	188

DISTRIBUTION LIST . . . . .	193
-----------------------------	-----

## INTRODUCTION

The data presented in this report were collected on the eighty-fourth and eighty-fifth consecutive cruises of the California Cooperative Oceanic Fisheries Investigations program. The R/V Black Douglas of the U. S. Fish and Wildlife Service, the R/V Spencer F. Baird and the R/V Stranger of the Scripps Institution participated in the eighty-fourth cruise and the R/V Black Douglas, the R/V Paolina-T and the R/V Spencer F. Baird participated in the eighty-fifth 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.

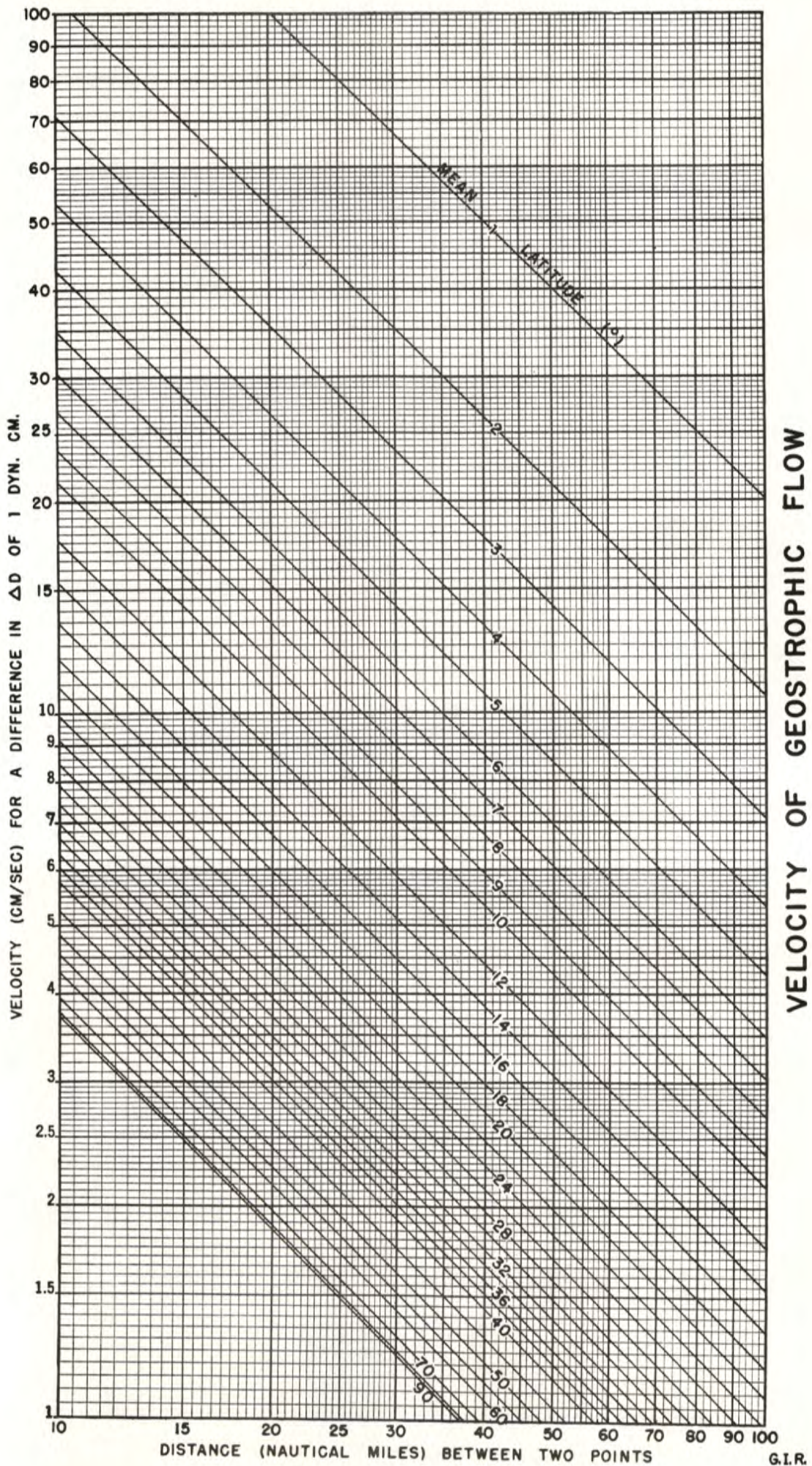
r: rejected value (value seems to be definitely wrong),

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 1956 volume, the first page of the Cruise 5605 data is numbered 130; the Cruise 5606 data, 143.







## FIGURES

1. CCOFI Cruise 5605, station positions
2. Surface currents measured by geomagnetic electrokinetograph (GEK)
3. Horizontal distribution of temperature at 10 meters
4. Horizontal distribution of salinity at 10 meters

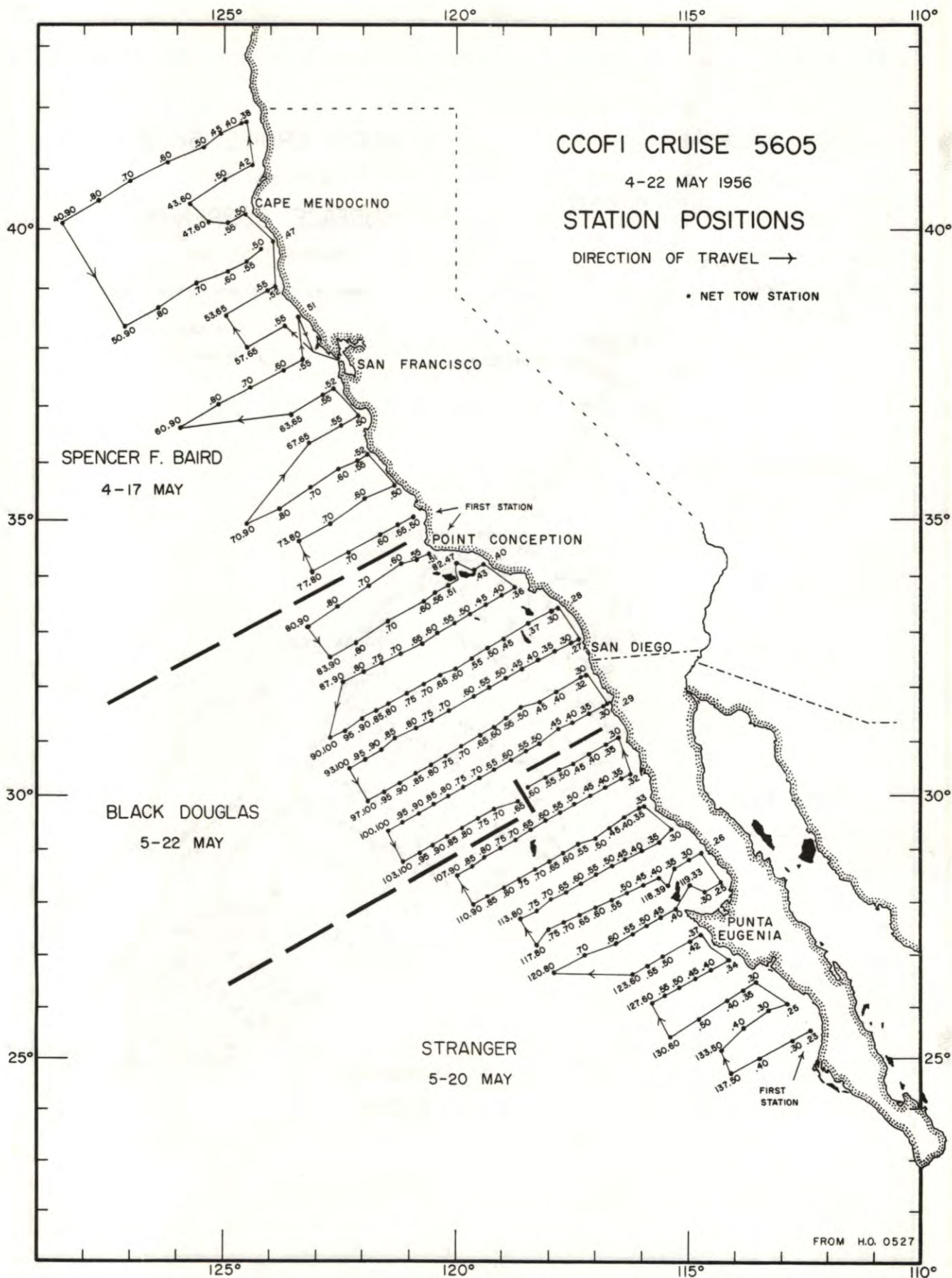


FIGURE 1



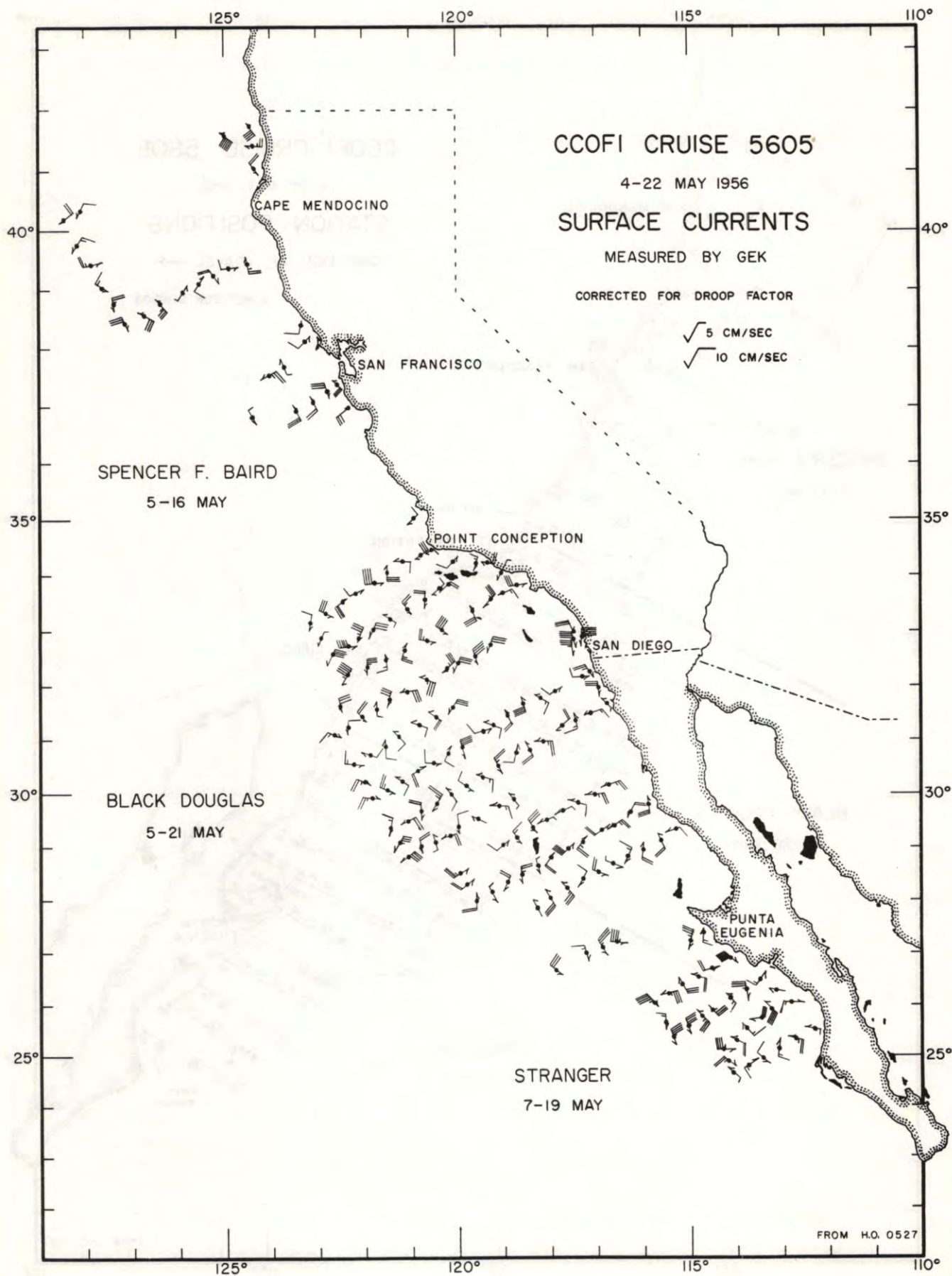


FIGURE 2



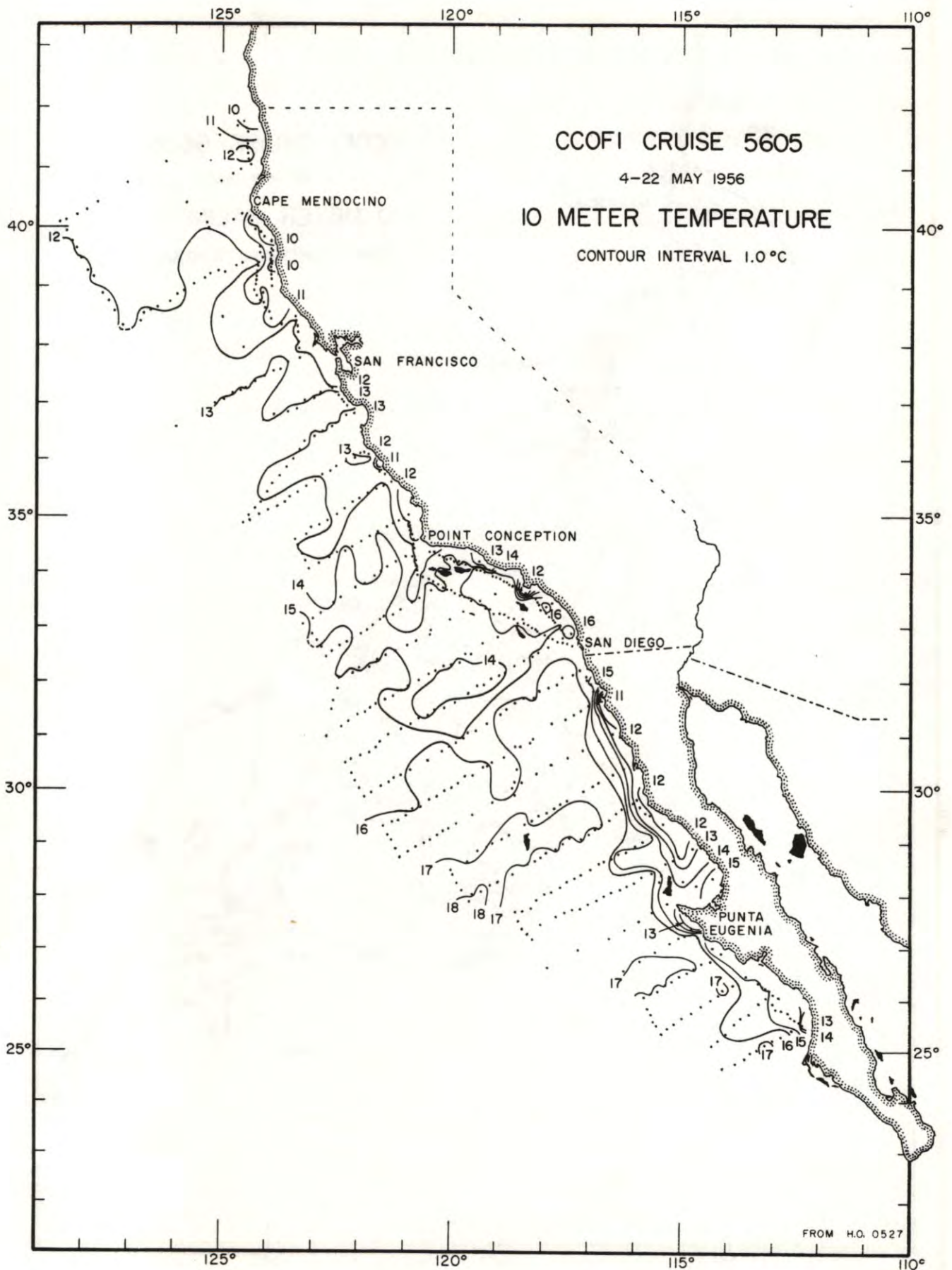


FIGURE 3



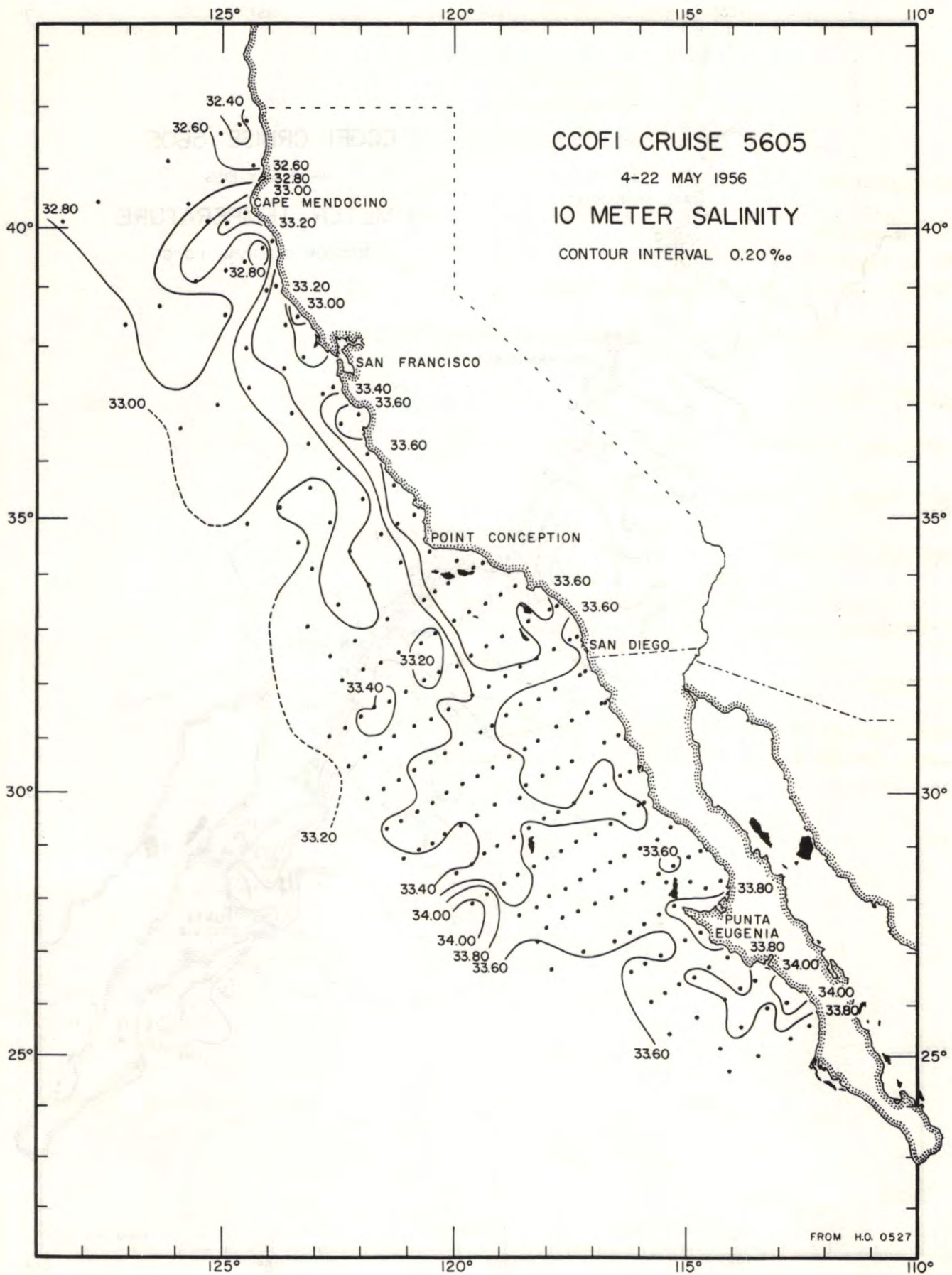


FIGURE 4



PERSONNEL  
CRUISE 5605

SHIPS' CAPTAINS

Cole, Walter C., R/V Spencer F. Baird  
Davis, Laurence E., R/V Stranger  
Forster, Charles W., R/V Black Douglas

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

R/V Black Douglas

Vroomann, Andrew M., Fishery Research Biologist, U. S. Fish and Wildlife  
Service  
Kaye, Hugh R., Marine Technician

R/V Spencer F. Baird

Vorobiov, Alexander V., Fishery Aid, U. S. Fish and Wildlife Service  
Christiansen, Neils B., Marine Technician

R/V Stranger

Gilkey, Robert W., Senior Marine Technician  
Bower, Donald R., Fishery Aid, U. S. Fish and Wildlife Service

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
40.38-F	V-14	0740	41°46.5'	124°30.5'	200	360°	4	clear	rough	9.96	32.56
40.40-F	14	0835	41°43.0'	124°38.0'	400	360°	4	clear	rough	10.46	32.34
40.45-F	14	1100	41°35.0'	125°02.0'	1000	340°	6	clear	high	11.20	32.53
40.50-F	14	1340	41°21.0'	125°24.0'	1700	360°	5	cloudy	high	11.46	-
40.60-F	14	1655	41°07.0'	126°10.5'	1800	320°	5	partly cloudy	very rough	11.68	32.75
40.70-F	14	2110	40°47.0'	127°01.0'	1700	320°	5	partly cloudy	very rough	11.61	-
40.80-F	15	0055	40°26.0'	127°41.0'	1700	360°	5	partly cloudy	very rough	11.88	32.70
40.90-F	15	0540	40°06.0'	128°29.0'	2500	360°	4	missing	very rough	11.68	32.79
43.42-F	14	0205	41°03.5'	124°21.5'	80	350°	4	clear	very rough	11.90	32.57
43.50-F	13	2220	40°47.0'	125°00.0'	1600	340°	5	clear	very rough	11.65	32.72
43.60-F	13	1755	40°24.0'	125°44.0'	1100	320°	5	clear	very rough	11.49	32.74
47.50-F	13	0840	40°14.0'	124°32.0'	145	320°	4	missing	very rough	11.30	33.22
47.55-F	13	1120	40°04.5'	124°55.0'	650	320°	4	missing	very rough	11.44	33.22
47.60-F	13	1400	40°06.0'	125°18.0'	1000	320°	5	clear	very rough	11.41	32.93
50.47-F	13	0215	39°46.0'	123°54.0'	45	320°	5	clear	very rough	9.75	33.15
50.50-F	16	1335	39°40.0'	124°08.0'	600	320°	1	fog	moderate	11.70	32.74
50.55-F	16	1035	39°25.0'	124°31.0'	1500	320°	1	fog	moderate	12.34	32.90
50.60-F	16	0755	39°16.5'	124°54.0'	1600	320°	2	clear	rough	12.48	32.95
50.70-F	16	0350	39°04.0'	125°34.0'	2100	320°	3	clear	rough	12.66	33.01

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
50.80-F	V-15	2315	38°40.0'	126°21.5'	2500	320°	3	missing	very rough	11.78	32.74
50.90-F	15	1815	38°21.0'	127°07.0'	2500	360°	4	missing	very rough	11.61	32.86
53.52-F	12	1905	39°01.0'	123°52.0'	60	320°	5	partly cloudy	very rough	10.07	33.24
53.55-F	12	1735	38°57.0'	124°03.5'	320	270°	6	overcast	very high	11.56	33.04
53.65-F	12	1150	38°32.0'	124°58.0'	2180	270°	6	cloudy	high	11.55	32.71
57.51-F	10	1340	38°30.0'	123°22.0'	50	290°	2	missing	moderate	11.98	32.95
57.55-F	12	0225	38°22.0'	123°39.5'	280	320°	6	partly cloudy	high	11.11	33.35
57.65-F	12	0650	37°59.0'	124°29.0'	2200	320°	6	missing	very rough	11.70	33.19
60.55-F	10	0840	37°47.0'	123°17.5'	250	320°	2	overcast	moderate	12.92	33.17
60.60-F	10	0630	37°37.0'	123°42.5'	1800	320°	3	missing	moderate	13.11	33.22
60.70-F	10	0140	37°17.0'	124°26.5'	2250	320°	4	cloudy	rough	12.58	33.02
60.80-F	9	2100	37°01.0'	125°07.0'	2400	300°	4	cloudy	very rough	12.54	32.92
60.90-F	9	1625	36°36.0'	125°56.0'	2400	320°	4	rain	rough	12.56	32.97
63.52-F	8	2320	37°18.5'	122°37.0'	50	250°	1	missing	slight	11.72	33.33
63.55-F	9	0110	37°12.5'	122°49.5'	200	var.	-	rain	slight	12.64	33.30
63.65-F	9	0516	36°52.0'	123°31.0'	2000	360°	4	rain	moderate	13.28	33.19
67.50-F	8	1835	36°49.0'	122°04.5'	50	180°	1	missing	smooth	12.68	33.71
67.55-F	8	1615	36°39.0'	122°28.0'	1100	090°	1	cloudy	slight	13.00	33.68
67.65-F	8	1155	36°19.0'	123°09.0'	1900	040°	1	partly cloudy	moderate	13.46	33.09

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

SIO  
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5605

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
70.52-F	V-7	0915	36°08.5'	121°50.0'	450	270°	1	missing	moderate	12.50	33.45
70.55-F	7	1048	36°03.5'	122°03.0'	800	270°	1	rain	slight	13.20	-
70.60-F	7	1250	35°54.0'	122°29.5'	1800	-	-	cloudy	slight	12.75	33.13
70.70-F	7	1705	35°33.5'	123°06.0'	2100	140°	-	partly cloudy	slight	13.59	33.28
70.80-F	7	2120	35°12.0'	123°47.0'	2250	110°	2	partly cloudy	moderate	13.65	33.22
70.90-F	8	0125	34°54.0'	124°30.0'	2400	110°	2	cloudy	moderate	13.56	33.08
73.50-F	7	0445	35°37.0'	121°17.0'	100	320°	2	missing	moderate	12.16	33.67
73.60-F	7	0000	35°21.0'	121°58.5'	1200	280°	2	cloudy	moderate	12.98	33.08
73.70-F	6	2013	34°56.5'	122°41.0'	2400	250°	1	overcast	moderate	13.76	33.36
73.80-F	6	1605	34°37.5'	123°21.5'	2400	250°	2	overcast	moderate	13.13	33.12
77.50-F	5	2233	35°04.0'	120°52.0'	60	220°	1	missing	moderate	11.61	33.77
77.55-F	6	0104	34°54.0'	121°13.5'	340	270°	2	partly cloudy	moderate	13.27	33.71
77.60-F	6	0302	34°44.5'	121°34.0'	515	270°	2	overcast	moderate	13.98	33.29
77.70-F	6	0725	34°25.0'	122°17.0'	2000	270°	1	overcast	slight	14.22	33.20
77.80-F	6	1150	34°05.0'	123°03.0'	2100	320°	1	cloudy	slight	13.59	33.28
80.51-B	6	1300	34°26.5'	120°32.5'	60	320°	2	partly cloudy	slight	12.36	33.75
80.55-B	6	1520	34°19.0'	120°48.0'	430	320°	2	cloudy	slight	13.40	-
80.60-B	6	1728	34°13.0'	121°10.5'	1300	300°	2	partly cloudy	slight	14.06	33.26
80.70-B	6	2235	33°49.0'	121°51.0'	2000	320°	2	cloudy	slight	13.54	33.20



Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
80. 80-B	V-7	0340	33°28.5'	122°31.0'	2300	270°	2	cloudy	moderate	13.96	33.04
80. 90-B	7	0829	33°05.5'	123°10.0'	2300	270°	3	cloudy	moderate	15.22	33.33
82. 47-B	8	1215	34°15.0'	119°58.0'	310	180°	1	partly cloudy	slight	14.10	33.72
83. 40-B	8	1630	34°13.5'	119°22.0'	12	090°	3	partly cloudy	slight	12.30	33.70
83. 43-B	8	1505	34°07.5'	119°34.5'	130	090°	2	partly cloudy	slight	13.71	33.75
83. 51-B	8	0840	33°51.5'	120°08.0'	130	210°	2	clear	slight	14.81	33.68
83. 55-B	8	0625	33°43.5'	120°24.0'	450	210°	2	partly cloudy	slight	15.13	33.70
83. 60-B	8	0348	33°33.0'	120°39.5'	900	180°	2	partly cloudy	slight	13.08	33.56
83. 70-B	7	2300	33°13.5'	121°26.0'	2100	180°	2	partly cloudy	slight	14.58a)	33.21
83. 80-B	7	1750	32°48.0'	122°07.5'	2250	270°	2	partly cloudy	moderate	15.25	33.30
83. 90-B	7	1335	32°32.0'	122°40.0'	2300	270°	2	cloudy	moderate	15.18	33.30
87. 36-B	8	2140	33°48.0'	118°42.0'	460	140°	3	partly cloudy	slight	15.30	33.65
87. 40-B	9	1335	33°39.0'	118°59.0'	490	190°	4	cloudy	moderate	15.50	33.68
87. 45-B	9	1630	33°30.0'	119°19.0'	920	220°	4	cloudy	moderate	15.06	33.72
87. 50-B	9	1935	33°20.0'	119°40.0'	40	230°	4	cloudy	moderate	14.48	33.69
87. 55-B	9	2240	33°10.0'	120°00.5'	680	270°	5	cloudy	rough	14.74	33.69
87. 60-B	10	0205	32°59.0'	120°22.0'	410	270°	5	cloudy	very rough	14.13	33.19

a) Alternate value, 14.78°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
87.65-B	V-10	0530	32°47.0'	120°42.0'	2200	270°	4	cloudy	very rough	14.53	33.17
87.70-B	10	0830	32°36.0'	121°09.0'	2100	270°	4	cloudy	very rough	14.79	33.32
87.75-B	10	1130	32°26.0'	121°34.5'	2100	300°	5	cloudy	very rough	14.42	33.27
87.80-B	10	1430	32°16.0'	121°58.0'	2200	300°	4	cloudy	rough	14.73	33.27
87.90-B	10	1710	32°06.0'	122°23.5'	2350	300°	3	cloudy	very rough	15.00	33.30
90.28-B	12	1745	33°28.5'	117°45.5'	25	300°	1	partly cloudy	moderate	15.62	33.58
90.30-B	12	1630	33°24.0'	117°54.5'	340	300°	1	partly cloudy	moderate	16.54	33.67
90.37-B	12	1250	33°11.0'	118°23.5'	690	320°	3	partly cloudy	moderate	15.28	33.59
90.45-B	12	0920	32°54.5'	118°56.0'	900	-	-	partly cloudy	missing	14.92	33.70
90.50-B	12	0600	32°44.5'	119°16.5'	130	280°	6	partly cloudy	high	14.60	33.68
90.55-B	12	0225	32°31.0'	119°38.0'	600	320°	5	partly cloudy	rough	14.32	33.64
90.60-B	11	2330	32°21.0'	119°56.0'	600	320°	4	partly cloudy	rough	13.89	33.37
90.65-B	11	2029	32°14.0'	120°18.0'	2050	300°	4	partly cloudy	rough	14.32	33.17
90.70-B	11	1800	32°04.0'	120°39.0'	2100	320°	3	partly cloudy	rough	14.29	33.15
90.75-B	11	1430	31°52.5'	121°02.5'	2000	340°	4	partly cloudy	rough	15.06	33.36
90.80-B	11	1200	31°42.5'	121°23.0'	2300	320°	4	partly cloudy	rough	14.59	33.44
90.85-B	11	0925	31°33.5'	121°42.0'	2200	300°	2	cloudy	rough	15.28	33.40
90.90-B	11	0640	31°25.0'	121°59.0'	2300	300°	3	cloudy	rough	15.71	33.42
90.95-B	11	0350	31°12.0'	122°21.0'	2200	320°	3	cloudy	rough	15.35	33.34

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
90.100-B	V-11	0106	31°03.5'	122°40.0'	2200	300°	3	overcast	rough	15.44	33.35
93.27-B	13	0308	32°55.5'	117°19.0'	50	290°	2	partly cloudy	moderate	16.18	33.61
93.30-B	13	0517	32°50.0'	117°31.5'	450	300°	3	partly cloudy	moderate	15.66	33.62
93.35-B	13	0750	32°40.0'	117°51.5'	350	280°	1	partly cloudy	rough	15.24	33.58
93.40-B	13	1030	32°30.0'	118°12.0'	450	300°	3	partly cloudy	rough	15.06	33.60
93.45-B	13	1305	32°19.0'	118°33.0'	700	290°	3	clear	very rough	14.76	33.58
93.50-B	13	1530	32°09.0'	118°53.0'	800	290°	3	clear	very rough	13.52	33.54
93.55-B	13	1805	31°59.0'	119°14.5'	550	310°	4	clear	very rough	13.16	33.47
93.60-B	13	2110	31°49.5'	119°34.0'	1250	310°	5	clear	very rough	13.96	33.40
93.70-B	16	1050	31°34.0'	120°07.0'	2100	280°	2	clear	moderate	14.38	33.53
93.75-B	16	1325	31°24.0'	120°28.0'	2300	280°	2	fog	moderate	13.74	33.30
93.80-B	16	1610	31°15.0'	120°51.0'	2100	280°	3	fog	moderate	14.54	33.31
93.85-B	16	1857	31°03.0'	121°17.0'	2200	320°	2	cloudy	moderate	15.41	33.30
93.90-B	16	2138	30°50.0'	121°34.5'	2250	320°	2	partly cloudy	moderate	15.52	33.30
93.95-B	17	0020	30°40.5'	121°55.0'	2450	320°	3	partly cloudy	moderate	15.60	33.37
93.100-B	17	0315	30°30.0'	122°14.5'	2250	320°	2	partly cloudy	moderate	15.10	33.21
97.30-B	18	2310	32°15.5'	117°09.0'	30	320°	3	partly cloudy	slight	15.86	33.68
97.32-B	18	2200	32°11.5'	117°17.0'	700	320°	4	partly cloudy	moderate	16.51	33.69
97.40-B	18	1744	31°55.5'	117°50.0'	800	320°	4	partly cloudy	moderate	16.30	33.65

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

SIO  
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Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
97.45-B	V-18	1500	31°43.0'	118°10.0'	800	320°	4	partly cloudy	moderate	15.81	33.64
97.50-B	18	1120	31°38.0'	118°33.0'	1300	330°	3	partly cloudy	moderate	16.43a)	33.68
97.55-B	18	0822	31°26.0'	118°53.0'	360	330°	3	partly cloudy	moderate	16.22	33.68
97.60-B	18	0548	31°15.5'	119°10.5'	2000	320°	3	partly cloudy	moderate	15.20	33.58
97.65-B	18	0348	31°08.0'	119°25.0'	1930	290°	2	cloudy	moderate	15.18b)	33.58
97.70-B	18	0020	30°55.0'	119°51.0'	1900	270°	2	cloudy	moderate	15.54	33.41
97.75-B	17	2150	30°45.0'	120°11.0'	2100	340°	4	cloudy	moderate	16.31	33.48
97.80-B	17	1900	30°34.5'	120°30.0'	2000	340°	3	cloudy	moderate	16.22	33.52
97.85-B	17	1635	30°25.0'	120°51.0'	2250	320°	3	cloudy	moderate	16.20	33.42
97.90-B	17	1320	30°15.0'	121°11.0'	2250	320°	2	cloudy	moderate	15.56	33.31
97.95-B	17	1040	30°05.0'	121°30.5'	2200	320°	2	partly cloudy	moderate	15.40	33.24
97.100-B	17	0805	29°54.5'	121°51.0'	2300	320°	2	partly cloudy	moderate	15.57	33.28
100.29-B	19	0335	31°42.0'	116°43.5'	80	320°	2	partly cloudy	moderate	10.86	33.77
100.30-B	19	0420	31°40.5'	116°46.5'	220	320°	3	partly cloudy	moderate	13.55	33.69
100.35-B	19	0650	31°30.0'	117°07.0'	700	320°	4	partly cloudy	moderate	16.44	33.68
100.40-B	19	0935	31°22.0'	117°27.0'	1000	320°	5	partly cloudy	rough	16.56	33.67

a) Mean value of 16.35 and 16.51°C.

b) Mean value of 15.11 and 15.25°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
100.45-B	V-19	1208	31°15.0'	117°46.0'	1100	320°	5	partly cloudy	rough	16.40	33.64
100.50-B	19	1517	30°58.5'	118°11.5'	1060	320°	5	partly cloudy	rough	16.55	33.65
100.55-B	19	1740	30°49.5'	118°27.5'	1200	320°	5	partly cloudy	very rough	16.16	33.65
100.60-B	19	2105	30°40.5'	118°48.0'	1300	320°	5	cloudy	very rough	15.74	33.53
100.65-B	20	0015	30°30.0'	119°08.0'	2000	320°	5	cloudy	very rough	16.02	33.47
100.70-B	20	0313	30°20.0'	119°28.0'	2100	320°	5	cloudy	very rough	16.10	33.45
100.75-B	20	0748	30°10.0'	119°48.0'	2000	320°	4	cloudy	very rough	16.67	33.53
100.80-B	20	1035	30°00.0'	120°08.0'	1950	320°	4	cloudy	rough	16.40	33.49
100.85-B	20	1320	29°49.0'	120°26.5'	1980	320°	4	overcast	rough	16.50	33.47
100.90-B	20	1610	29°39.0'	120°46.5'	2100	320°	4	overcast	rough	15.58	33.48
100.95-B	20	1851	29°28.0'	121°07.0'	2200	340°	4	overcast	rough	16.11	33.43
100.100-B	20	2117	29°20.0'	121°26.5'	2260	330°	4	overcast	rough	16.26	33.44
103.65-B	21	2140	29°56.0'	118°34.0'	2000	320°	3	overcast	rough	16.00	33.45
103.70-B	21	1900	29°47.0'	119°05.0'	2000	340°	3	cloudy	rough	16.28	33.47
103.75-B	21	1531	29°34.0'	119°31.0'	2200	340°	3	cloudy	rough	16.20	33.50
103.80-B	21	1242	29°24.0'	119°51.0'	2240	330°	3	overcast	rough	16.43	33.39
103.85-B	21	1001	29°14.0'	120°10.0'	2075	330°	4	overcast	rough	16.46	33.42
103.90-B	21	0725	29°04.5'	120°27.0'	2200	330°	4	overcast	rough	16.68	33.41
103.95-B	21	0455	28°57.0'	120°44.0'	2150	330°	4	overcast	rough	16.78	33.51

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
103.100-B	V-21	0210	28°46.0'	121°03.0'	2300	330°	4	overcast	rough	16.20	33.35
103.30-S	19	2025	31°05.0'	116°26.0'	40	320°	5	overcast	very rough	12.22	33.75
103.35-S	19	2240	30°57.0'	116°45.0'	900+	320°	8	partly cloudy	very rough	15.40	33.62
103.40-S	20	0050	30°47.0'	117°05.5'	1500+	320°	7	partly cloudy	high	16.52	-
103.45-S	20	0315	30°37.5'	117°26.0'	1000+	320°	7	cloudy	high	16.64	33.69
103.50-S	20	0535	30°29.0'	117°45.0'	1000+	320°	7	cloudy	high	16.56	33.71
103.55-S	20	0759	30°19.0'	118°06.5'	1000+	320°	7	overcast	high	16.24	33.64
103.60-S	20	1005	30°10.5'	118°25.0'	1000+	320°	7	overcast	high	16.36	33.68
107.32-S	19	1618	30°26.0'	116°11.0'	365	340°	5	overcast	very rough	13.60	33.73
107.35-S	19	1445	30°20.0'	116°23.0'	970	330°	6	overcast	very rough	15.77	33.62
107.40-S	19	1150	30°10.0'	116°43.0'	1500+	320°	7	partly cloudy	very rough	16.50	33.56
107.45-S	19	0925	30°00.0'	117°03.5'	1500+	320°	7	partly cloudy	very rough	16.44	33.58
107.50-S	19	0655	29°50.0'	117°23.5'	1500	330°	6	partly cloudy	very rough	16.90	33.60
107.55-S	19	0425	29°41.0'	117°42.0'	2000+	320°	5	partly cloudy	very rough	16.34	33.46
107.60-S	19	0155	29°32.0'	118°02.0'	2000+	330°	6	partly cloudy	rough	16.65	33.46
107.65-S	18	2310	29°22.0'	118°21.5'	2000+	320°	5	partly cloudy	rough	17.68	33.66
107.70-S	18	2050	29°11.5'	118°41.0'	2000+	330°	5	partly cloudy	rough	17.17	33.55
107.75-S	18	1835	29°02.5'	119°01.0'	2000+	350°	5	partly cloudy	rough	17.05	33.45
107.80-S	18	1615	28°52.0'	119°20.0'	2000+	360°	4	clear	rough	16.91	33.42

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
107.85-S	V-18	1340	28°39.0'	119°37.5'	2000+	350°	4	partly cloudy	rough	16.83	33.40
107.90-S	18	1130	28°30.0'	119°57.0'	2000+	320°	3	partly cloudy	rough	17.26	33.44
110.33-S	17	0335	29°50.0'	115°53.5'	66	340°	5	partly cloudy	moderate	12.16	33.75
110.35-S	17	0435	29°47.0'	116°00.0'	750	330°	4	partly cloudy	moderate	13.79	33.53
110.40-S	17	0705	29°37.0'	116°19.5'	1000+	330°	3	clear	moderate	16.68	33.58
110.45-S	17	0925	29°24.0'	116°38.0'	1000+	320°	3	partly cloudy	moderate	16.90	33.64
110.50-S	17	1145	29°13.5'	116°56.0'	1500+	320°	3	partly cloudy	moderate	16.78	33.66
110.55-S	17	1405	29°07.0'	117°20.0'	2000+	320°	3	partly cloudy	moderate	16.97	33.66
110.60-S	17	1630	28°56.0'	117°39.0'	1000+	340°	4	partly cloudy	moderate	17.10	33.68
110.65-S	17	1845	28°46.0'	117°58.0'	1000+	330°	4	partly cloudy	moderate	16.50	33.64
110.70-S	17	2115	28°38.0'	118°15.0'	2000+	300°	4	partly cloudy	moderate	17.02	33.75
110.75-S	17	2355	28°27.0'	118°37.5'	2000+	340°	4	partly cloudy	moderate	16.56	33.50
110.80-S	18	0225	28°17.0'	118°56.0'	2000+	320°	2	partly cloudy	moderate	17.34	33.51
110.85-S	18	0445	28°07.0'	119°16.0'	2000+	320°	3	partly cloudy	rough	18.05	33.90
110.90-S	18	0700	27°56.0'	119°35.0'	2000+	350°	3	partly cloudy	rough	18.28	34.01
113.30-S	16	2245	29°23.0'	115°18.0'	27	310°	3	partly cloudy	moderate	12.00	33.70
113.35-S	16	2030	29°08.0'	115°35.0'	±550	310°	3	partly cloudy	moderate	15.40	33.67
113.40-S	16	1800	28°58.0'	115°57.5'	±800	310°	3	clear	moderate	15.28	33.66
113.45-S	16	1525	28°49.0'	116°18.0'	2000+	310°	3	clear	moderate	14.98	33.66

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

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Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
113.50-S	V-16	1250	28°42.0'	116°37.0'	2000+	320°	3	clear	moderate	16.62	33.68
113.55-S	16	1015	28°32.0'	116°57.0'	2000+	320°	3	clear	moderate	16.39	33.66
113.60-S	16	0752	28°22.0'	117°16.0'	2000+	320°	3	clear	rough	16.49	33.69
113.65-S	16	0520	28°12.0'	117°35.0'	2000+	320°	3	clear	rough	16.42	33.69
113.70-S	16	0240	28°02.0'	117°56.0'	2000+	330°	3	clear	rough	16.42	33.68
113.75-S	16	0010	27°50.0'	118°12.5'	2000+	020°	3	clear	very rough	16.28	33.66
113.80-S	15	2155	27°42.5'	118°34.0'	2000+	330°	3	clear	very rough	16.58	33.62
117.26-S	14	1335	28°56.0'	114°41.0'	40	var.	1	clear	moderate	12.83	33.70
117.30-S	14	1525	28°48.0'	114°58.0'	53	var.	1	clear	moderate	11.54	33.75
117.35-S	14	1740	28°38.0'	115°16.0'	112	300°	2	clear	very rough	14.83	33.58
117.40-S	14	2140	28°28.0'	115°35.5'	450	350°	4	clear	very rough	16.92	33.62
117.45-S	14	2350	28°18.0'	115°55.0'	1000+	010°	4	clear	very rough	17.47	33.71
117.50-S	15	0200	28°10.0'	116°16.0'	2000+	020°	4	clear	very rough	16.54	33.66
117.55-S	15	0420	28°02.0'	116°37.0'	2000+	020°	4	clear	very rough	16.21	33.68
117.60-S	15	0640	27°54.0'	116°57.0'	2000+	020°	5	clear	very rough	16.46	33.68
117.65-S	15	0930	27°46.0'	117°18.0'	2000+	010°	5	clear	very rough	16.48	33.69
117.70-S	15	1140	27°38.0'	117°38.5'	2000+	030°	5	clear	very rough	16.34	33.75
117.75-S	15	1355	27°28.0'	117°59.0'	2000+	320°	5	clear	very rough	16.30	33.67
117.80-S	15	1605	27°12.0'	118°12.0'	2000+	020°	4	clear	very rough	16.39	33.60

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
118.39-S	V-14	1955	28°18.5'	115°24.0'	147	030°	4	clear	very rough	15.51	33.69
119.33-S	14	0515	28°19.0'	114°53.0'	60	290°	5	clear	very rough	13.79	33.62
120.25-S	14	0940	28°22.5'	114°14.0'	30	290°	3	clear	very rough	15.12	33.68
120.30-S	14	0705	28°13.0'	114°34.0'	50	290°	4	clear	very rough	14.98	33.75
120.40-S	12	1250	27°53.0'	115°13.5'	18	340°	8	partly cloudy	very rough	-	33.95
120.45-S	12	1020	27°43.0'	115°33.0'	1500	360°	7	overcast	high	16.00	33.65
120.50-S	12	0745	27°33.0'	115°52.5'	950	340°	7	overcast	high	16.08	33.65
120.55-S	12	0440	27°23.0'	116°11.5'	1500	340°	7	partly cloudy	high	16.20	33.68
120.60-S	12	0150	27°13.0'	116°31.5'	1800	320°	7	cloudy	very rough	16.21	33.68
120.70-S	11	2055	27°00.0'	117°11.0'	2050	340°	6	cloudy	very rough	16.28	33.62
120.80-S	11	1610	26°39.0'	117°52.0'	1850	350°	6	cloudy	very rough	16.63	33.48
123.37-S	10	1625	27°24.0'	114°40.0'	35	340°	4	partly cloudy	rough	12.96	33.84
123.42-S	10	1855	27°14.0'	114°59.5'	1100	340°	7	clear	very rough	16.15	33.66
123.50-S	10	2220	26°57.0'	115°31.0'	1800	330°	6	partly cloudy	very rough	16.42	33.54
123.55-S	11	0045	26°47.0'	115°51.5'	1800	320°	7	partly cloudy	very rough	17.02	33.70
123.60-S	11	0400	26°37.0'	116°09.5'	2000	340°	7	partly cloudy	high	16.92	33.64
127.34-S	10	1150	26°55.5'	114°05.0'	40	340°	2	partly cloudy	slight	14.59	33.69
127.40-S	10	0910	26°43.5'	114°29.0'	1900	320°	6	partly cloudy	rough	16.72	33.75
127.45-S	10	0630	26°33.5'	114°48.5'	1850	340°	6	clear	rough	16.78	33.91

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

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Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
127.50-S	V-10	0350	26°23.5'	115°08.0'	1000+	320°	6	partly cloudy	moderate	16.77	33.76
127.55-S	10	0105	26°13.5'	115°27.0'	1900	320°	3	partly cloudy	moderate	16.80	33.72
127.60-S	9	2255	26°04.5'	115°44.5'	2000	320°	3	partly cloudy	moderate	16.44	33.66
130.30-S	9	0355	26°29.0'	113°29.0'	35	300°	5	clear	rough	14.48	33.86
130.35-S	9	0630	26°18.5'	113°48.0'	290	300°	5	clear	rough	16.73	33.75
130.40-S	9	0855	26°07.0'	114°07.0'	1100	310°	5	partly cloudy	moderate	16.92	33.80
130.50-S	9	1305	25°45.5'	114°44.0'	1200	320°	4	partly cloudy	moderate	16.43	33.73
130.60-S	9	1730	25°23.0'	115°21.0'	1800	320°	4	partly cloudy	moderate	16.42	33.64
133.25-S	8	2340	26°04.5'	112°48.0'	43	280°	3	partly cloudy	moderate	14.63	34.14
133.30-S	8	2055	25°57.5'	113°13.0'	115	320°	3	partly cloudy	moderate	15.06	33.75
133.40-S	8	1650	25°34.0'	113°47.0'	1000+	320°	5	overcast	moderate	15.38	33.93
133.50-S	8	1235	25°08.5'	114°15.0'	1800	340°	5	partly cloudy	moderate	16.28	33.72
137.23-S	7	1925	25°34.0'	112°19.0'	35	320°	4	partly cloudy	moderate	12.94	33.75
137.30-S	7	2220	25°20.5'	112°44.0'	195	310°	3	partly cloudy	moderate	16.15	33.75
137.40-S	8	0252	24°59.0'	113°26.0'	1000+	300°	6	partly cloudy	rough	16.22	33.67
137.50-S	8	0700	24°41.0'	114°02.0'	1950	320°	5	clear	rough	16.77	33.77



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Honolulu 12, Hawaii

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U. S. Department of Commerce  
Coast and Geodetic Survey  
417 South Hill Street, Room 535  
Los Angeles 13, California

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Instituto de Geofísica  
Torre de Ciencias, 3er piso  
Universidad Nacional Autónoma de  
México  
Villa Obregón, D. F., México

Mr. Alphonse Kemmerich  
Executive Director  
Pacific Marine Fisheries Commission  
741 State Office Building  
1400 S. W. Fifth Avenue  
Portland 1, Oregon

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Institute of Fisheries  
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Hakodate, Japan

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Mr. John C. Marr  
Bureau of Commercial Fisheries  
Biological Laboratory  
P. O. Box 3830  
Honolulu 12, Hawaii

Mr. Jotaro Masuzuwa  
Japan Meteorological Agency  
Oceanographical Section  
Tokyo, Japan

Dr. Hugh J. McLellan  
Department of Oceanography  
Texas A. and M. College  
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Office of Naval Research  
Geophysics Branch, Code 416  
Washington 25, D. C.

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Institute of Oceanography  
University of British Columbia  
Vancouver, B. C.  
Canada

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Division of Biological Research  
Bureau of Commercial Fisheries  
Washington 25, D. C.

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San Francisco 11, California

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and Food  
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National Marine Consultants, Inc.  
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Santa Barbara, California  
Attn: Dr. Richard Kent

Mr. Kenneth S. Norris  
University of California  
Department of Zoology  
Los Angeles 24, California

Director  
Norwegian Polar Institute  
Observatorieggt 1  
Oslo, Norway

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New Haven, Connecticut

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California Department of Fish and Game  
California State Fisheries Laboratory  
Terminal Island, California

Mr. Don T. Saxby  
California Division  
California Packing Corporation  
2600 Seventh Street  
Berkeley 10, California

Mr. W. T. Shannon, Director  
California Department of Fish and Game  
926 J Street  
Sacramento 14, California

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c/o California State Chamber of  
Commerce  
350 Bush Street  
San Francisco 4, California

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Annelida Section  
British Museum (Natural History)  
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London SW7, England

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Chesapeake Bay Institute  
The Johns Hopkins University  
121 Maryland Hall  
Baltimore 18, Maryland

Pusan Fisheries College  
Pusan  
Korea

Dr. Gordon A. Riley  
Bingham Oceanographic Foundation  
Yale University  
New Haven, Connecticut

Dr. O. E. Sette, Chief  
Bureau of Commercial Fisheries  
Biological Laboratory  
450-B Jordan Hall  
Stanford, California

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Japanese Hydrographic Office  
Tsukiji  
Tokyo, Japan

Mr. Henry M. Stommel  
Woods Hole Oceanographic Institution  
Woods Hole, Massachusetts

Dr. Y. Takenouti  
Oceanographical Section  
Japan Meteorological Agency  
Chuo-ku  
Tokyo, Japan

Dr. R. B. Tibby  
Hancock Foundation  
University of Southern California  
University Park  
Los Angeles 7, California



Department of Oceanography  
Texas A. and M. College  
College Station, Texas

U. S. Hydrographic Office (2)  
Navy Department  
Washington 25, D. C.  
Attn: Dr. Boyd E. Olson  
Division of Oceanography

University of California  
Department of Zoology  
Berkeley 4, California

Director  
University of Miami  
Marine Laboratory  
Coral Gables, Florida

Librarian (2)  
University of Washington  
Oceanographic Laboratories  
Seattle 5, Washington

Mr. Gilbert C. Van Camp, Sr.  
772 Tuna Street  
Terminal Island, California

Dr. Boyd W. Walker  
University of California  
Department of Zoology  
Los Angeles 24, California

Dr. M. Pat Wennekens  
Oceanic Research Division  
(Code 508)  
Naval Ordnance Test Station  
China Lake, California

Dr. M. Uda  
Tokyo University of Fisheries  
Minato-ku  
Tokyo, Japan

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Friday Harbor, Washington

Director  
University of Washington  
School of Fisheries  
Seattle 4, Washington

Mr. Richard C. Vetter  
Secretary to the Committee on  
Oceanography  
National Academy of Sciences  
2101 Constitution Avenue  
Washington 25, D. C.

Director  
Washington Biological Laboratory  
Bureau of Commercial Fisheries  
U. S. Fish and Wildlife Service  
Washington 25, D. C.

Dr. Warren S. Wooster  
Office of Oceanography  
UNESCO  
Place de Fontenoy  
Paris 7<sup>e</sup>, France



Dr. Kozo Yoshida  
Geophysical Institute  
Tokyo University  
Bunkyo-ku  
Tokyo, Japan

Inter-American Tropical Tuna Commission  
(c/o Scripps Institution of Oceanography)

Dr. M. B. Schaefer  
Mr. Edward B. Bennett

U. S. Bureau of Commercial Fisheries  
(c/o Scripps Institution of Oceanography)

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