

CORRECTIONS MADE :

STATION POSITIONS YB

UNIVERSITY OF CALIFORNIA | SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL AND CHEMICAL DATA

CCOFI Cruise 5603
4-19 March 1956

and

CCOFI Cruise 5604
5-27 April 1956

SIO Reference 60-6
10 November 1959

UNIVERSITY OF CALIFORNIA
SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

CCOFI CRUISE 5603
4-19 March 1956

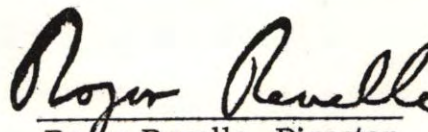
and

CCOFI CRUISE 5604
5-27 April 1956

Sponsored by
Marine Research Committee

SIO Reference 60-6
28 March 1960

Approved for distribution:


Roger Revelle, Director

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INTRODUCTION

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

The stations occupied in the Gulf of California are based on a special grid; therefore, they appear following the data obtained in the normal station pattern. In each group stations are listed in numerical order. The designation "G" in the station number is used to denote Gulf of California stations.

STANDARD PROCEDURES

Processing of the Cruise 5604 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 . 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.

^{1/} 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.

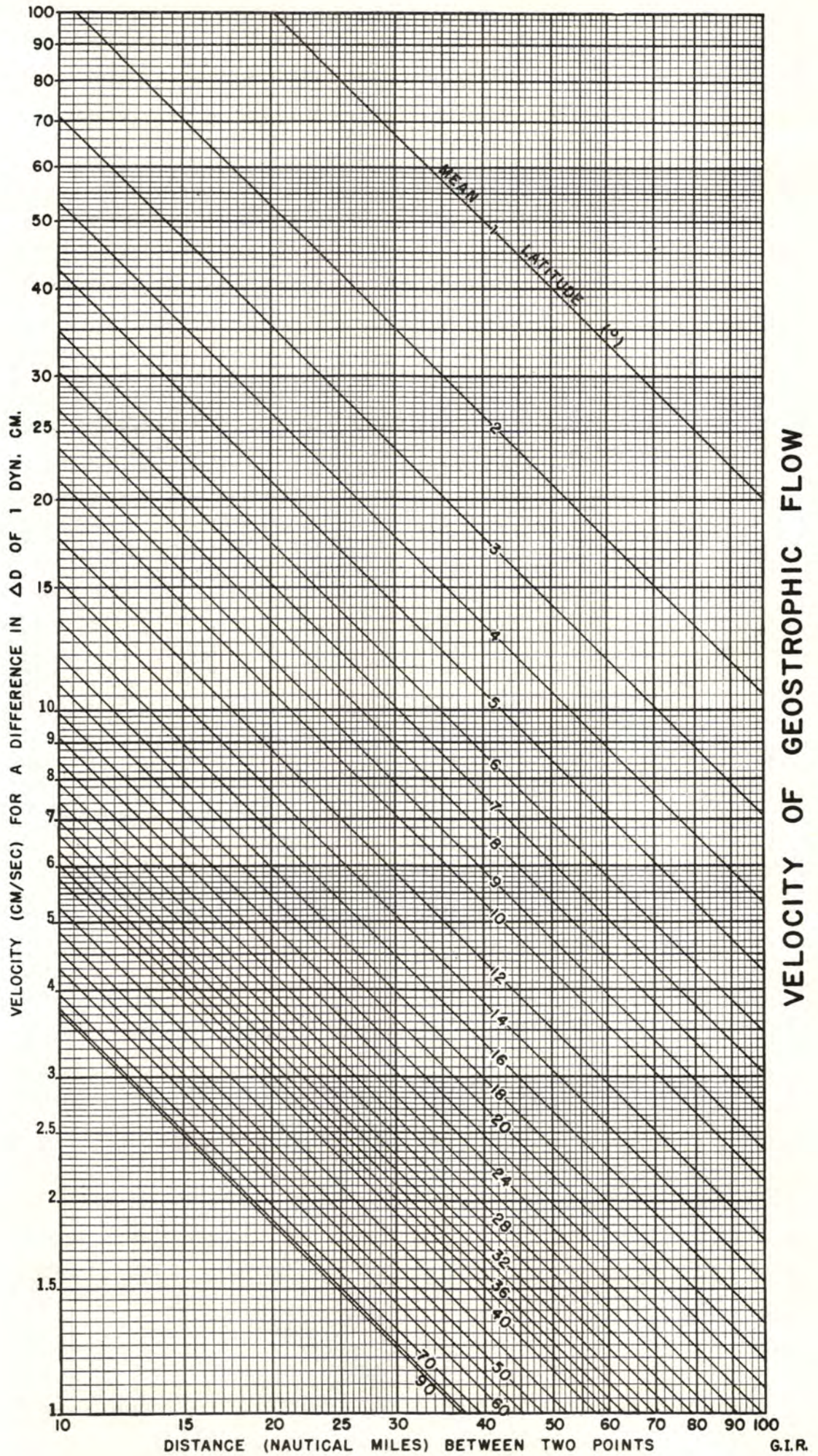
Values which are not drawn through because they seem to be in error without apparent reason are indicated by one of the following notations.

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 5603 data is numbered 56.



FIGURES

1. CCOFI Cruise 5603, 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

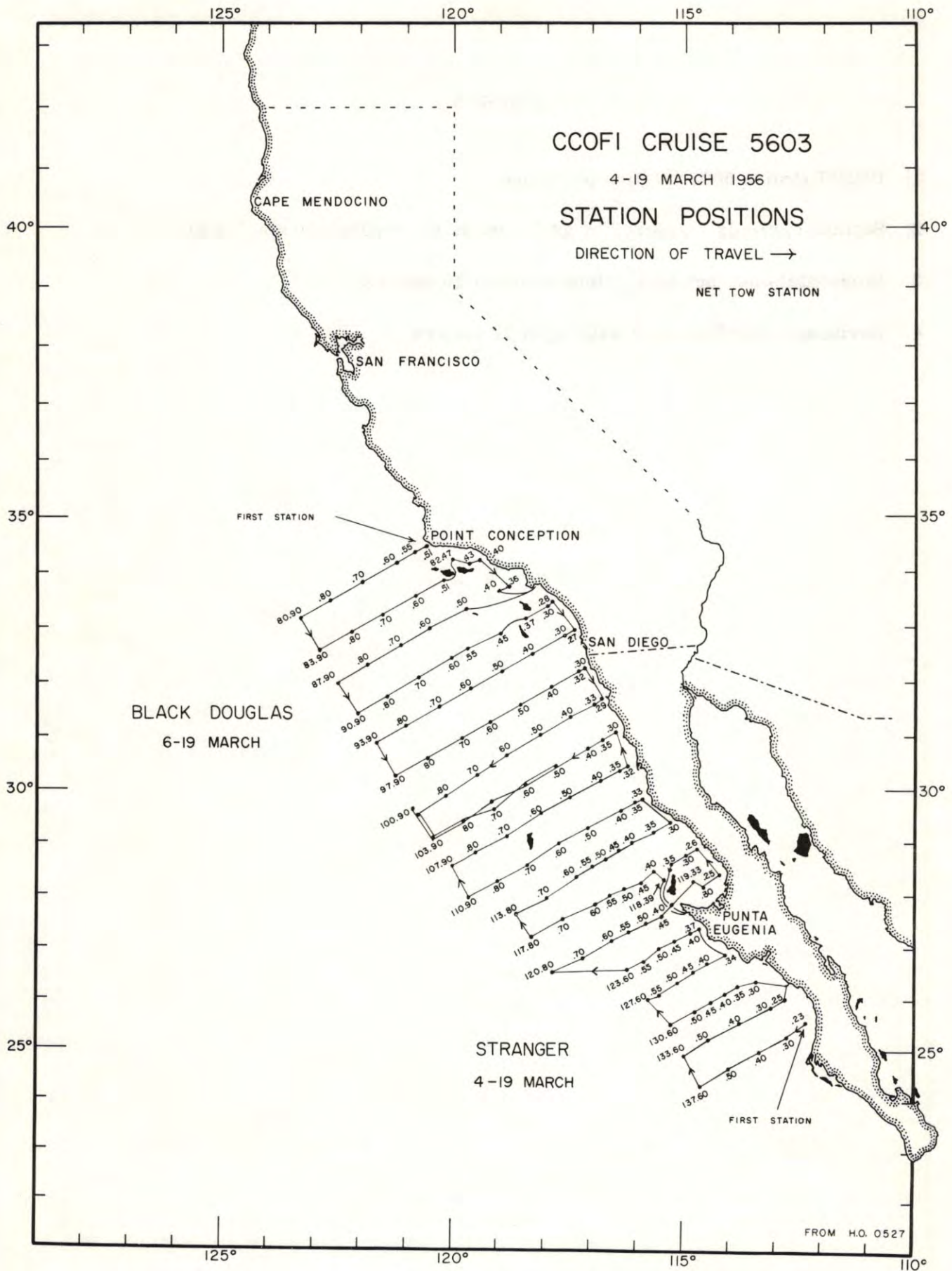


FIGURE 1

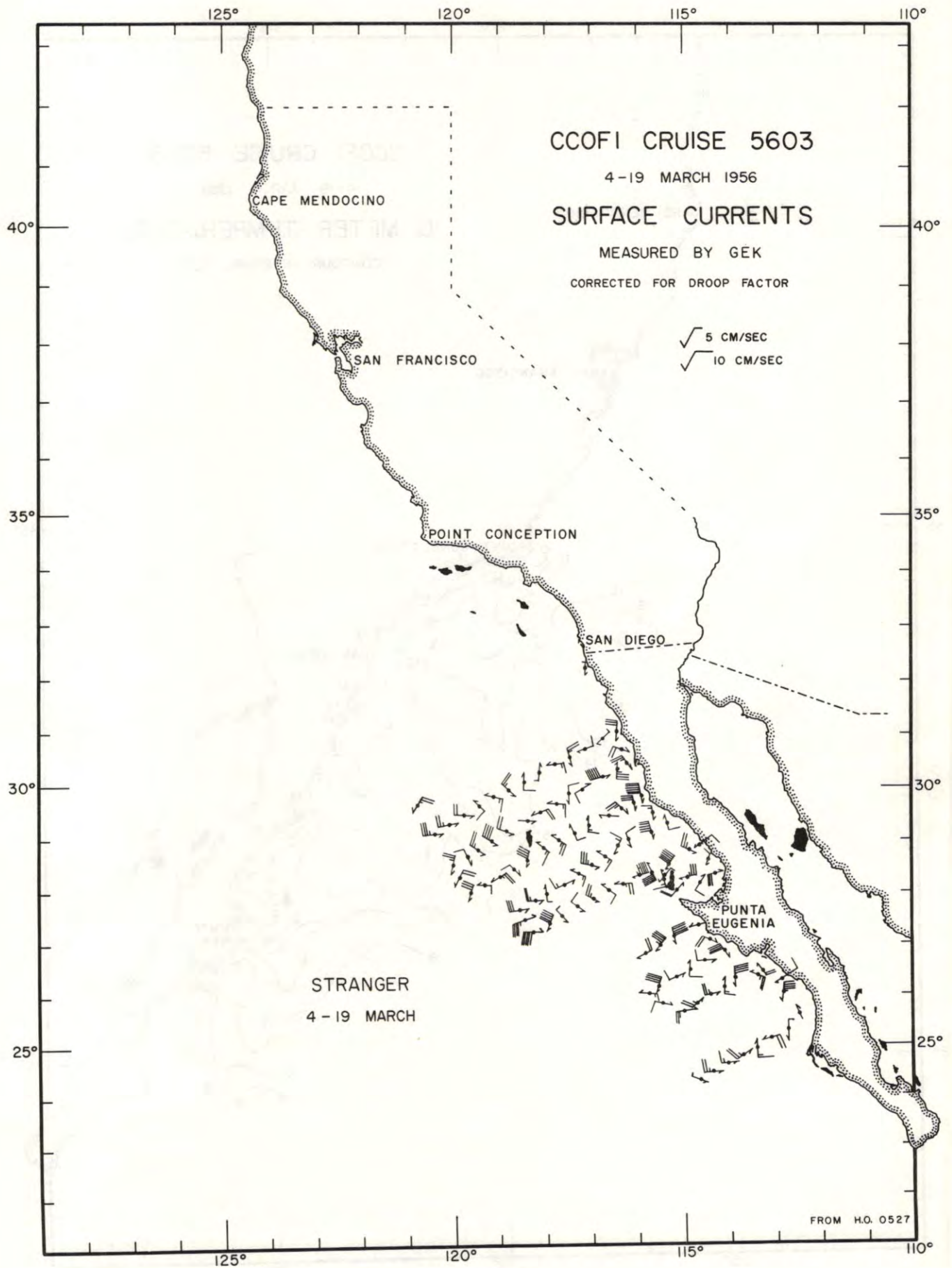


FIGURE 2

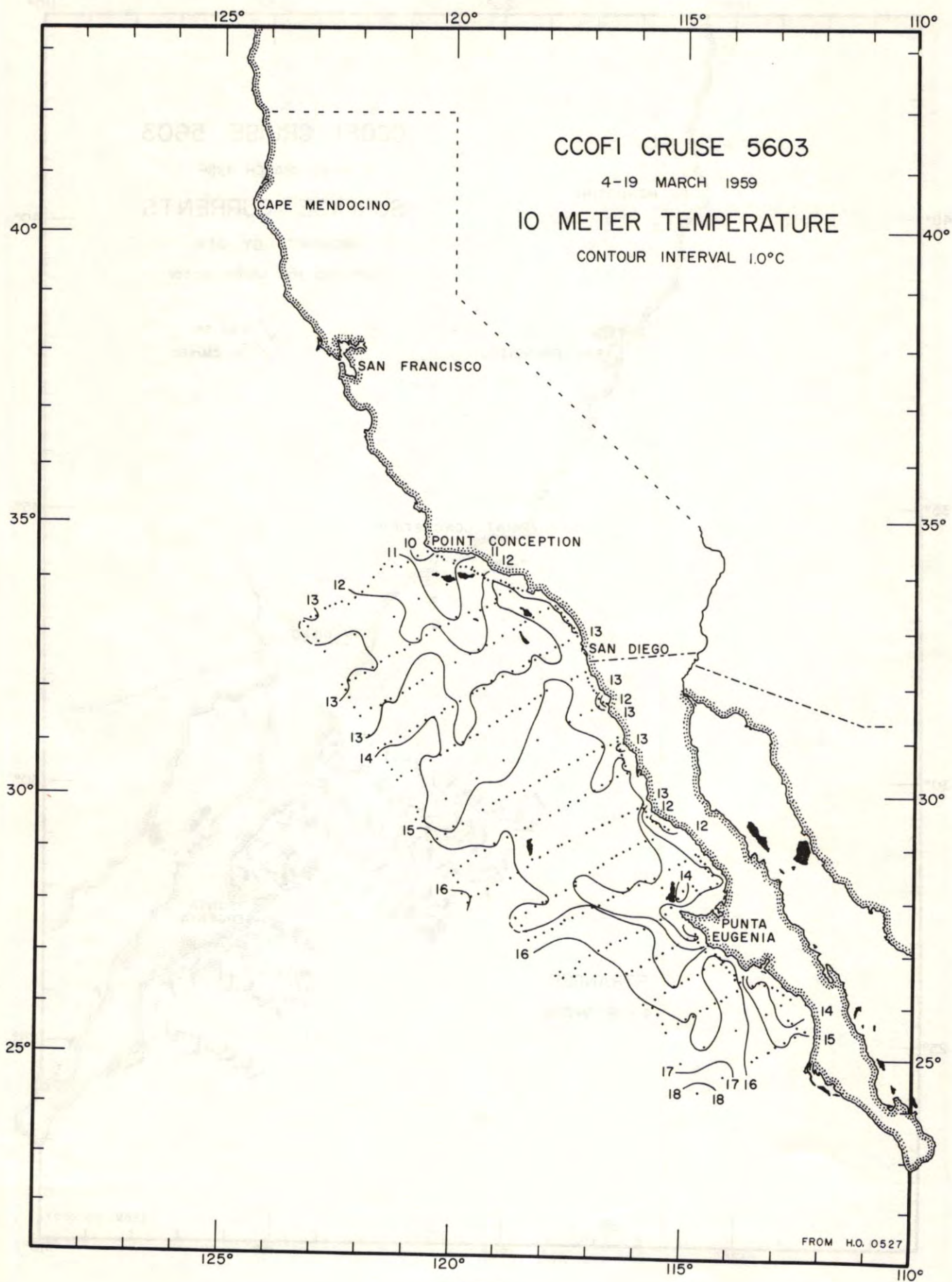


FIGURE 3

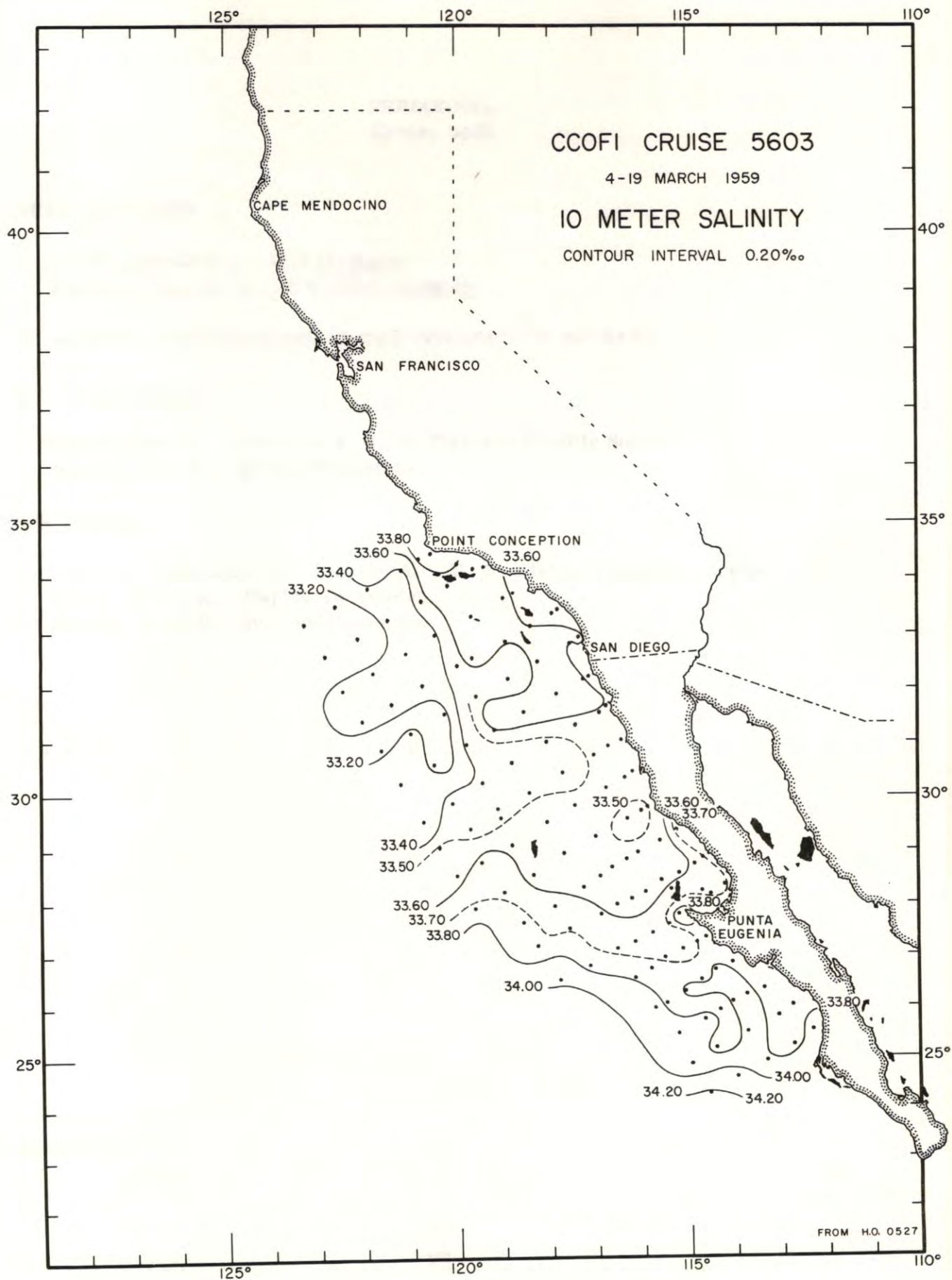


FIGURE 4

PERSONNEL
Cruise 5603

SHIPS' CAPTAINS

Davis, Laurence E. , R/V Stranger
Forster, Charles W. , R/V Black Douglas

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

R/V Black Douglas

Casey, Harold. , Fishery Aid, U. S. Fish and Wildlife Service
Jaynes, John M. , Marine Technician

R/V Stranger

Vorobiov, Alexander V. , Fishery Aid, U. S. Fish and Wildlife Service
Bryer, Bruce A. , Marine Technician
Henson, Fred D. , Marine Technician

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
80.51-B	III-8	0615	34°26.5'	120°32.5'	80	300°	4	partly cloudy	moderate	9.45	33.88
80.55-B	8	0825	34°19.0'	120°48.0'	420	320°	4	partly cloudy	moderate	9.87	33.80
80.60-B	8	1115	34°09.0'	121°09.0'	1280	-	6	partly cloudy	rough	11.02	33.39
80.70-B	8	1700	33°47.0'	121°51.0'	1880	320°	4	partly cloudy	rough	11.53	33.39
80.80-B	8	2140	33°29.0'	122°32.0'	2100	330°	6	partly cloudy	high	12.54	33.04
80.90-B	9	0300	33°09.0'	123°13.0'	2200	340°	4	partly cloudy	very rough	12.99	33.12
82.47-B	10	1315	34°15.0'	119°58.0'	315	320°	4	clear	rough	10.47	33.78
83.40-B	10	1645	34°13.5'	119°21.5'	12	270°	1	clear	slight	11.31	33.66
83.43-B	10	1820	34°08.0'	119°34.0'	135	140°	1	clear	slight	11.61	33.64
83.51-B	10	0900	33°52.0'	120°08.5'	100	320°	6	missing	very rough	10.36	33.77
83.60-B	10	0220	33°34.0'	120°45.0'	900	330°	7	missing	high	11.31	33.44
83.70-B	9	2010	33°14.5'	121°26.0'	2260	340°	7	partly cloudy	very rough	12.95	33.21
83.80-B	9	1330	32°54.5'	122°07.0'	2200	320°	6	partly cloudy	very rough	13.18	33.08
83.90-B	9	0730	32°34.0'	122°48.0'	2400	320°	5	missing	rough	13.87	33.13
87.36-B	10	2320	33°47.5'	118°43.0'	490	270°	2	cloudy	slight	13.00	33.58
87.40-B	11	0130	33°40.0'	118°58.5'	450	210°	2	cloudy	moderate	13.25	33.64
87.50-B	12	1130	33°20.0'	119°39.5'	40	270°	2	missing	rough	11.41	33.71
87.60-B	12	1610	33°00.0'	120°25.0'	400	320°	3	clear	moderate	12.23	33.39
87.70-B	12	2050	32°39.5'	121°02.0'	2300	320°	3	clear	rough	12.08	33.32

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. 80-B	III-13	0130	32°19.5'	121°43.0'	1900	280°	3	clear	rough	13.19	33.26
87. 90-B	13	0615	31°59.0'	122°24.0'	2350	300°	2	missing	slight	13.07	33.26
90. 28-B	14	1530	33°28.5'	117°46.5'	33	130°	3	overcast	slight	12.84	33.58
90. 30-B	14	1420	33°24.5'	117°55.0'	340	230°	2	clear	slight	13.35	33.57
90. 37-B	14	1100	33°11.0'	118°23.5'	640	290°	4	clear	moderate	12.41	33.60
90. 45-B	14	0730	32°54.5'	118°55.5'	960	310°	2	clear	moderate	12.28	33.60
90. 55-B	14	0230	32°35.0'	119°37.0'	580	310°	3	clear	moderate	12.03	33.66
90. 60-B	14	0015	32°25.0'	119°57.5'	500	290°	3	partly cloudy	moderate	12.54	33.46
90. 70-B	13	1945	32°05.0'	120°39.0'	2200	310°	3	partly cloudy	slight	13.51	33.30
90. 80-B	13	1515	31°45.0'	121°19.0'	2100	340°	2	partly cloudy	moderate	12.73	33.53
90. 90-B	13	1030	31°25.0'	121°59.0'	2400	320°	3	missing	rough	12.56	33.24
93. 27-B	14	1950	32°56.0'	117°19.0'	55	240°	2	partly cloudy	moderate	13.05	33.61
93. 30-B	14	2115	32°50.0'	117°31.5'	450	240°	2	clear	moderate	13.62	33.60
93. 40-B	15	0200	32°30.0'	118°12.5'	950	270°	2	cloudy	slight	12.47	33.63
93. 50-B	15	0630	32°10.0'	118°53.5'	760	310°	1	missing	slight	12.60	33.42
93. 60-B	15	1115	31°50.0'	119°34.0'	1580	270°	1	partly cloudy	rough	13.05	33.58
93. 70-B	15	1600	31°29.0'	120°14.0'	2240	360°	2	overcast	moderate	13.90	33.19
93. 80-B	15	2020	31°10.0'	120°55.0'	2320	060°	1	overcast	rough	13.76	33.23
93. 90-B	16	0030	30°50.0'	121°35.0'	2400	100°	1	overcast	moderate	13.38	33.19

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
97.30-B	III-17	0810	32°15.0'	117°09.0'	33	320°	1	overcast	moderate	13.56	33.58
97.32-B	17	0705	32°11.5'	117°17.0'	720	350°	3	clear	slight	13.89	33.62
97.40-B	17	0315	31°55.5'	117°50.0'	400	280°	3	overcast	moderate	14.06	33.61
97.50-B	16	2215	31°35.5'	118°30.5'	1440	330°	3	cloudy	moderate	13.58	33.62
97.60-B	16	1800	31°15.5'	119°10.5'	2050	010°	2	partly cloudy	slight	13.45	33.60
97.70-B	16	1420	30°58.0'	119°45.0'	2000	020°	2	cloudy	slight	12.94	33.42
97.80-B	16	0915	30°37.0'	120°28.0'	2280	090°	1	clear	moderate	13.79	33.19
97.90-B	16	0500	30°15.0'	121°11.0'	2300	090°	1	cloudy	smooth	14.33	33.37
100.29-B	17	1220	31°42.0'	116°43.5'	60	260°	2	overcast	slight	11.20	33.60
100.33-B	17	1415	31°34.5'	116°59.0'	700	310°	3	overcast	moderate	13.36	33.58
100.40-B	17	1715	31°21.0'	117°27.0'	1050	300°	3	overcast	moderate	13.95	33.57
100.50-B	17	2140	31°01.0'	118°07.0'	980	300°	3	cloudy	moderate	14.46	33.48
100.60-B	18	0215	30°39.0'	118°50.0'	1780	280°	3	cloudy	moderate	13.34	33.44
100.70-B	18	0620	30°18.0'	119°26.0'	2050	300°	3	cloudy	slight	13.85	33.42
100.80-B	18	1045	29°54.0'	120°05.0'	2280	320°	4	overcast	moderate	13.77	33.49
100.90-B	18	1505	29°31.0'	120°44.0'	2200	340°	3	cloudy	moderate	14.60	33.37
100.90-S	19	1605	29°41.5'	120°44.0'	2000+	330°	5	partly cloudy	very rough	14.10	33.20
103.30-S	18	0950	31°05.5'	116°25.0'	35	290°	3	cloudy	moderate	13.32	33.58
103.35-S	18	1220	30°55.5'	116°44.0'	1000	320°	4	partly cloudy	moderate	14.03	33.57

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
103.40-S	III-18	1430	30°46.0'	117°04.0'	1040	320°	5	cloudy	rough	14.06	33.56
103.50-S	18	1825	30°27.0'	117°44.5'	2000	320°	5	cloudy	rough	14.20	33.42
103.50-B	19	1335	30°25.5'	117°45.5'	1615	340°	6	overcast	rough	14.06	33.46
103.60-S	18	2250	30°07.0'	118°25.0'	2000+	320°	5	cloudy	rough	14.66	33.48
103.60-B	19	0850	30°06.0'	118°25.5'	2000	320°	6	clear	very rough	13.97	33.42
103.70-B	19	0220	29°37.0'	119°05.0'	2120	350°	4	partly cloudy	moderate	14.97	33.54
103.70-S	19	0300	29°49.5'	119°05.0'	2000	320°	5	clear	very rough	14.62	33.49
103.80-B	18	2245	29°26.0'	119°45.5'	2100	330°	3	cloudy	moderate	14.26	33.46
103.80-S	19	0725	29°28.0'	119°44.0'	2000+	320°	4	clear	rough	14.10	33.47
103.90-B	18	1815	29°06.0'	120°25.0'	2100	360°	3	cloudy	moderate	15.41	33.53
103.90-S	19	1140	29°07.0'	120°23.0'	2000+	330°	4	clear	rough	15.32	33.53
107.32-S	18	0515	30°27.0'	116°12.0'	412	320°	3	cloudy	rough	14.30	33.53
107.35-S	18	0340	30°21.5'	116°24.0'	900	320°	3	cloudy	rough	14.20	33.57
107.40-S	18	0120	30°12.0'	116°45.0'	1500	320°	2	cloudy	rough	13.66	33.58
107.50-S	17	2035	29°51.5'	117°25.0'	1500	320°	4	cloudy	rough	14.88	33.54
107.60-S	17	1700	29°33.0'	118°01.5'	2000+	320°	5	cloudy	rough	14.90	33.55
107.70-S	17	1150	29°10.5'	118°45.0'	2000+	360°	3	partly cloudy	rough	15.32	33.58
107.80-S	17	0735	28°50.0'	119°25.0'	2000+	320°	3	partly cloudy	rough	15.80	33.69
107.90-S	17	0400	28°31.0'	119°58.5'	2000+	220°	4	partly cloudy	rough	15.72	33.58

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
110.33-S	III-15	2300	29°50.5'	115°52.0'	50	320°	5	partly cloudy	rough	14.11	33.53
110.35-S	15	2345	29°47.0'	116°00.0'	750	320°	5	cloudy	rough	14.36	33.46
110.40-S	16	0220	29°38.0'	116°19.0'	1100	330°	5	cloudy	rough	14.62	33.46
110.50-S	16	0630	29°18.5'	117°01.5'	1800	360°	4	cloudy	rough	14.58	33.58
110.60-S	16	1040	29°00.5'	117°40.5'	2000	220°	4	partly cloudy	moderate	14.58	33.58
110.70-S	16	1515	28°37.0'	118°19.0'	2000	220°	3	cloudy	rough	14.81	33.56
110.80-S	16	1925	28°16.5'	118°59.0'	2000	270°	3	cloudy	rough	15.54	33.64
110.90-S	16	2330	27°58.0'	119°35.5'	2000+	320°	3	overcast	moderate	16.00	33.76
113.30-S	15	1830	29°23.0'	115°19.0'	24	270°	2	clear	moderate	11.34	33.79
113.35-S	15	1555	29°13.0'	115°39.0'	600	330°	5	clear	rough	13.80	33.54
113.40-S	15	1255	29°01.5'	116°08.5'	1000	330°	3	clear	moderate	14.88	33.53
113.45-S	15	1035	28°52.0'	116°23.5'	1200+	320°	2	clear	moderate	14.83	33.55
113.50-S	15	0815	28°42.0'	116°40.5'	2000+	320°	4	overcast	rough	14.72	33.52
113.55-S	15	0600	28°32.0'	116°57.5'	2000+	320°	5	overcast	rough	14.56	33.53
113.60-S	15	0350	28°21.0'	117°15.0'	2000+	300°	3	cloudy	rough	13.88	33.57
113.70-S	14	2330	27°58.5'	117°53.0'	2000+	320°	3	cloudy	rough	15.34	33.64
113.80-S	14	1935	27°40.0'	118°32.0'	2000+	320°	3	cloudy	rough	14.98	33.71
117.26-S	12	1040	28°55.5'	114°41.0'	40	270°	3	overcast	rough	12.70	33.71
117.30-S	12	1235	28°48.0'	114°56.0'	35	330°	3	overcast	rough	13.51	33.68

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
117.35-S	III-12	1520	28°38.0'	115°16.0'	105	320°	4	overcast	rough	13.54	33.53
117.40-S	13	2150	28°28.0'	115°35.5'	350	340°	5	clear	moderate	14.39	33.53
117.45-S	14	0010	28°19.0'	115°56.0'	1700	320°	5	clear	rough	13.48	33.58
117.50-S	14	0230	28°10.0'	116°17.0'	2500	310°	5	clear	very rough	14.08	33.53
117.55-S	14	0435	28°01.0'	116°35.5'	2500	280°	5	partly cloudy	high	13.91	33.58
117.60-S	14	0705	27°51.5'	116°56.0'	2000	320°	5	partly cloudy	high	15.11	33.67
117.70-S	14	1140	27°32.5'	117°36.5'	2000+	320°	4	clear	very rough	15.02	33.68
117.80-S	14	1600	27°13.5'	118°15.5'	2000+	320°	5	partly cloudy	rough	15.68	33.71
118.39-S	13	2000	28°18.5'	115°24.0'	150	360°	5	clear	moderate	13.73	33.69
119.33-S	12	0200	28°19.0'	114°48.0'	59	300°	4	partly cloudy	rough	13.98	33.69
120.25-S	12	0620	28°23.0'	114°14.5'	39	300°	4	overcast	rough	13.40	33.69
120.30-S	12	0410	28°11.0'	114°36.0'	50	320°	4	partly cloudy	moderate	13.00	33.68
120.40-S	11	2155	27°52.5'	115°14.0'	25	270°	2	partly cloudy	moderate	12.21	33.84
120.45-S	11	1950	27°39.0'	115°28.5'	1150	270	2	cloudy	moderate	13.78	33.71
120.50-S	11	1740	27°28.5'	115°49.5'	2200	270°	3	overcast	very rough	15.22	33.66
120.55-S	11	1545	27°19.0'	116°10.0'	2000	300°	3	overcast	rough	15.32	33.68
120.60-S	11	1330	27°10.0'	116°30.0'	2000	320°	3	overcast	rough	15.22	33.67
120.70-S	11	0900	26°50.5'	117°09.5'	2000	320°	3	overcast	rough	16.04	33.77
120.80-S	11	0500	26°32.0'	117°49.5'	2000	270°	4	cloudy	rough	16.86	33.98

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
123.37-S	III-10	1020	27°24.0'	114°40.0'	38	340°	3	partly cloudy	moderate	13.29	33.73
123.40-S	10	1155	27°18.0'	114°51.5'	310	270°	4	partly cloudy	moderate	12.38	33.73
123.45-S	10	1430	27°08.0'	115°11.0'	2100	270°	4	cloudy	rough	14.02	33.68
123.50-S	10	1655	26°58.0'	115°30.5'	2000	300°	3	overcast	rough	14.86	33.68
123.55-S	10	1915	26°47.5'	115°50.0'	2050	300°	3	overcast	rough	15.82	33.76
123.60-S	10	2110	26°38.5'	116°10.0'	2100	270°	3	cloudy	rough	15.90	33.76
127.34-S	10	0550	26°55.5'	114°06.0'	44	350°	3	clear	moderate	15.66	33.76
127.40-S	10	0315	26°43.5'	114°29.0'	1600	300°	5	partly cloudy	very rough	16.23	33.84
127.45-S	10	0045	26°33.0'	114°49.0'	1800	320°	5	partly cloudy	rough	15.20	33.79
127.50-S	9	2200	26°23.0'	115°07.0'	2000	280°	5	partly cloudy	moderate	14.97	33.82
127.55-S	9	1910	26°08.0'	115°30.5'	2000	320°	6	partly cloudy	rough	15.70	33.76
127.60-S	9	1645	26°01.5'	115°45.0'	2000	320°	5	partly cloudy	rough	16.01	33.83
130.30-S	8	2145	26°25.5'	113°26.5'	45	270°	1	clear	slight	13.55	33.75
130.35-S	9	0025	26°19.0'	113°48.0'	200	320°	4	clear	rough	16.28	33.82
130.40-S	9	0305	26°09.0'	114°06.5'	1200	320°	5	clear	rough	16.32	33.87
130.45-S	9	0515	25°59.5'	114°23.5'	2000	320°	5	clear	rough	15.08	33.78
130.50-S	9	0740	25°50.0'	114°41.5'	2000	320°	5	clear	rough	16.20	33.85
130.60-S	9	1215	25°31.5'	115°17.0'	280	320°	5	partly cloudy	rough	16.38	33.85
133.25-S	7	1640	26°04.5'	112°48.0'	44	010°	1	clear	slight	13.44	33.75

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
133.30-S	III-7	1425	25°53.5'	113°07.0'	95	040°	7	partly cloudy	high	14.54	33.75
133.40-S	7	0750	25°35.0'	113°46.0'	1000	340°	7	cloudy	high	16.40	33.84
133.50-S	7	0035	25°15.0'	114°27.0'	2000	340°	7	partly cloudy	high	15.84	33.78
133.60-S	6	1900	24°55.5'	114°58.0'	2000	330°	7	cloudy	high	16.02	33.82
137.23-S	5	2035	25°33.5'	112°20.0'	40	320°	4	overcast	moderate	14.73	33.91
137.30-S	5	2330	25°20.5'	112°45.0'	130	320°	4	cloudy	moderate	14.64	33.78
137.40-S	6	0335	25°00.0'	113°24.0'	1200	320°	6	partly cloudy	rough	15.25	33.81
137.50-S	6	0835	24°39.5'	114°01.5'	2000	340°	6	overcast	very rough	17.61	34.07
137.60-S	6	1310	24°20.0'	114°38.5'	2000	320°	7	overcast	high	18.58	34.22

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Mr. R. S. Croker, Director
California Department of Fish and Game
Marine Fisheries Laboratory Branch
772 Capitol Avenue
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Deutsches Hydrographisches Institut
Bernhard-Nocht-Str. 78
Hamburg 4, Germany

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University of Washington
Oceanographic Laboratories
Seattle 5, Washington

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Department of Biology
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Mr. Joseph Mardesich
1513 West Fifteenth Street
San Pedro, California

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Oceanographical Section
Tokyo, Japan

Dr. Hugh J. McLellan
Department of Oceanography
Texas A. and M. College
College Station, Texas

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Mr. Milton C. James
Pacific Marine Fishery Commission
340 State Office Building
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Dr. E. C. LaFond
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Department of Oceanography
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U. S. Hydrographic Office (2)
Navy Department
Washington 25, D. C.
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734 Jackson Place, N. W.
Washington 25, D. C.

Mr. William E. Warne
California Department of Fish and Game
926 J Street
Sacramento 14, California

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