

UNIVERSITY OF CALIFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

# data report

PHYSICAL AND CHEMICAL DATA

CCOFI Cruise 5501  
(MLR 68)  
13-29 January 1955

and

CCOFI Cruise 5502  
(MLR 69)  
9-23 February 1955

SIO Reference 59-36  
1 October 1958

UNIVERSITY OF CALIFORNIA  
SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

CCOFI CRUISE 5501  
(MLR 68)  
13-29 January 1955

and

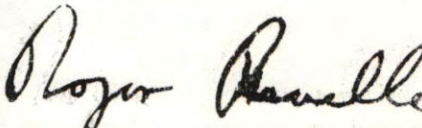
CCOFI CRUISE 5502  
(MLR 69)  
9-23 February 1955

Sponsored by

Marine Research Committee

SIO Reference 59-36  
15 October 1958

Approved for distribution:



Roger Revelle, Director

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## INTRODUCTION

The data presented in this report were collected on the sixty-eighth and sixty-ninth consecutive cruises of the California Cooperative Oceanic Fisheries Investigations program. The R/V Paolina-T and the R/V Crest of the Scripps Institution participated in the sixty-eighth cruise and the R/V Crest, the R/V Paolina-T and the R/V Spencer F. Baird participated in the sixty-ninth cruise.

The data are tabulated at observed depths; the interpolated and computed values are tabulated at standard depths 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.

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

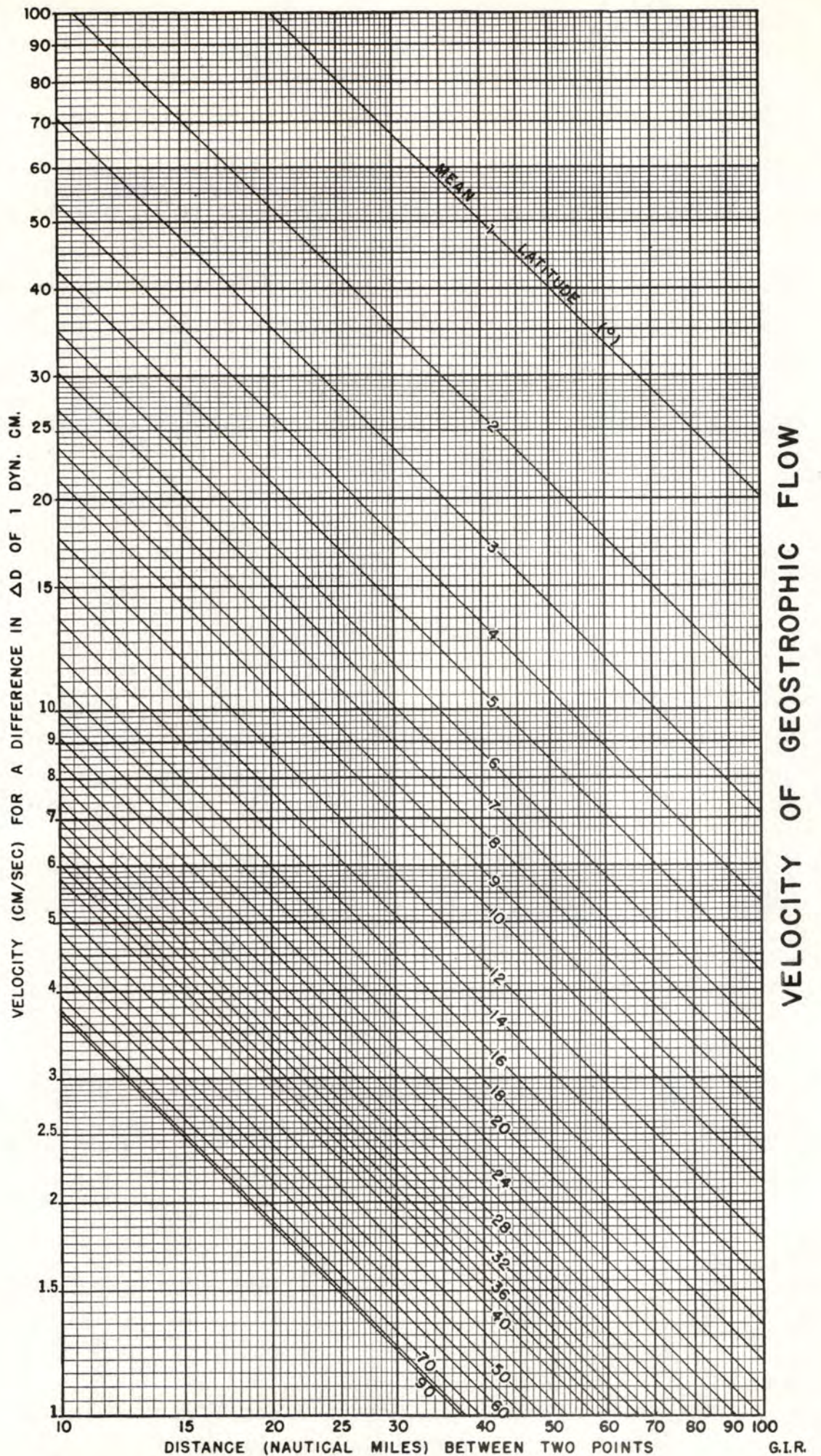
To indicate a premature or a delayed reversal of the water-sampling device which results in certain depth and property errors, the following notation is used.

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.

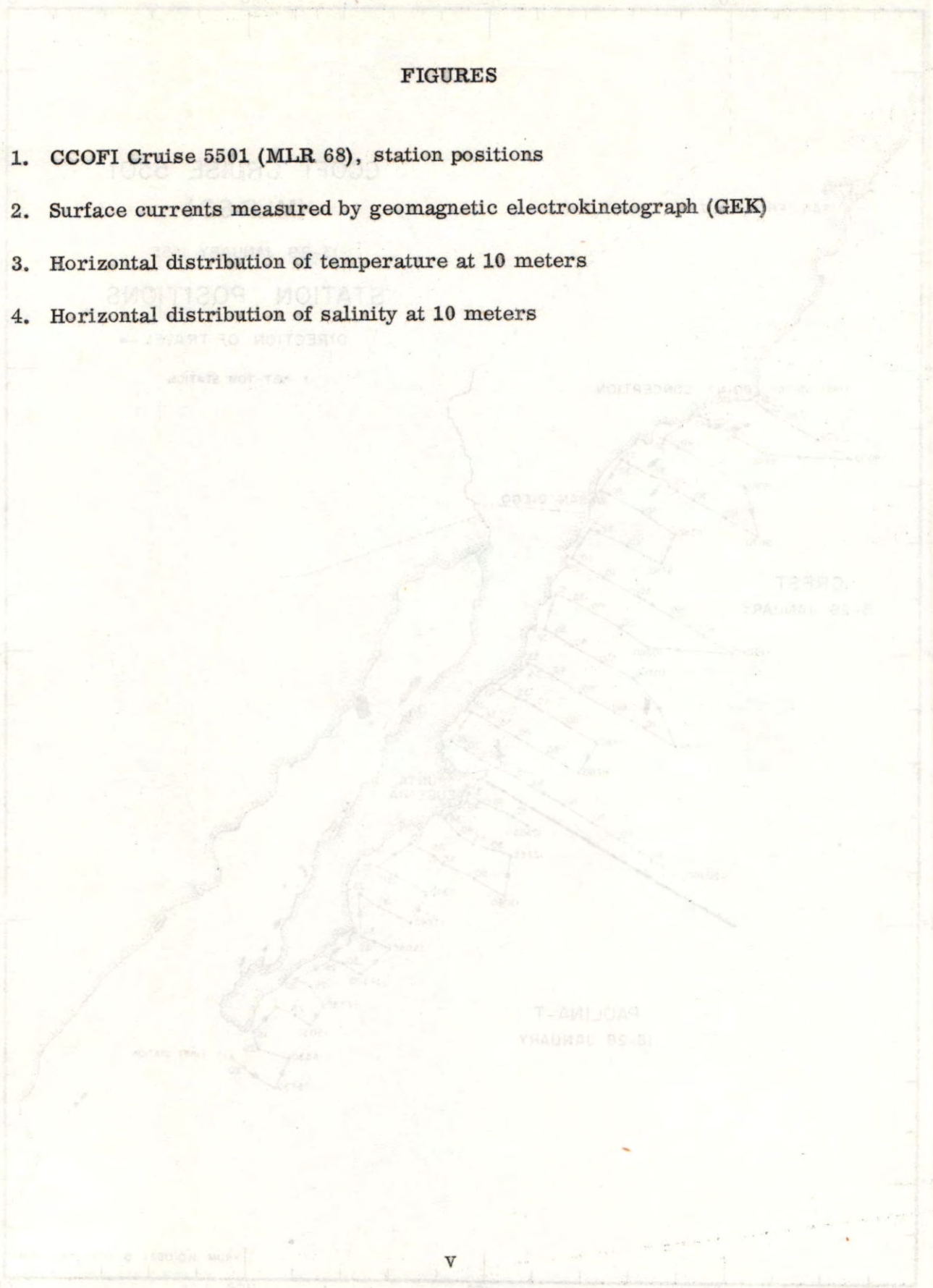
r: rejected value (value seems to be definitely wrong),

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



## FIGURES

1. CCOFI Cruise 5501 (MLR 68), 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



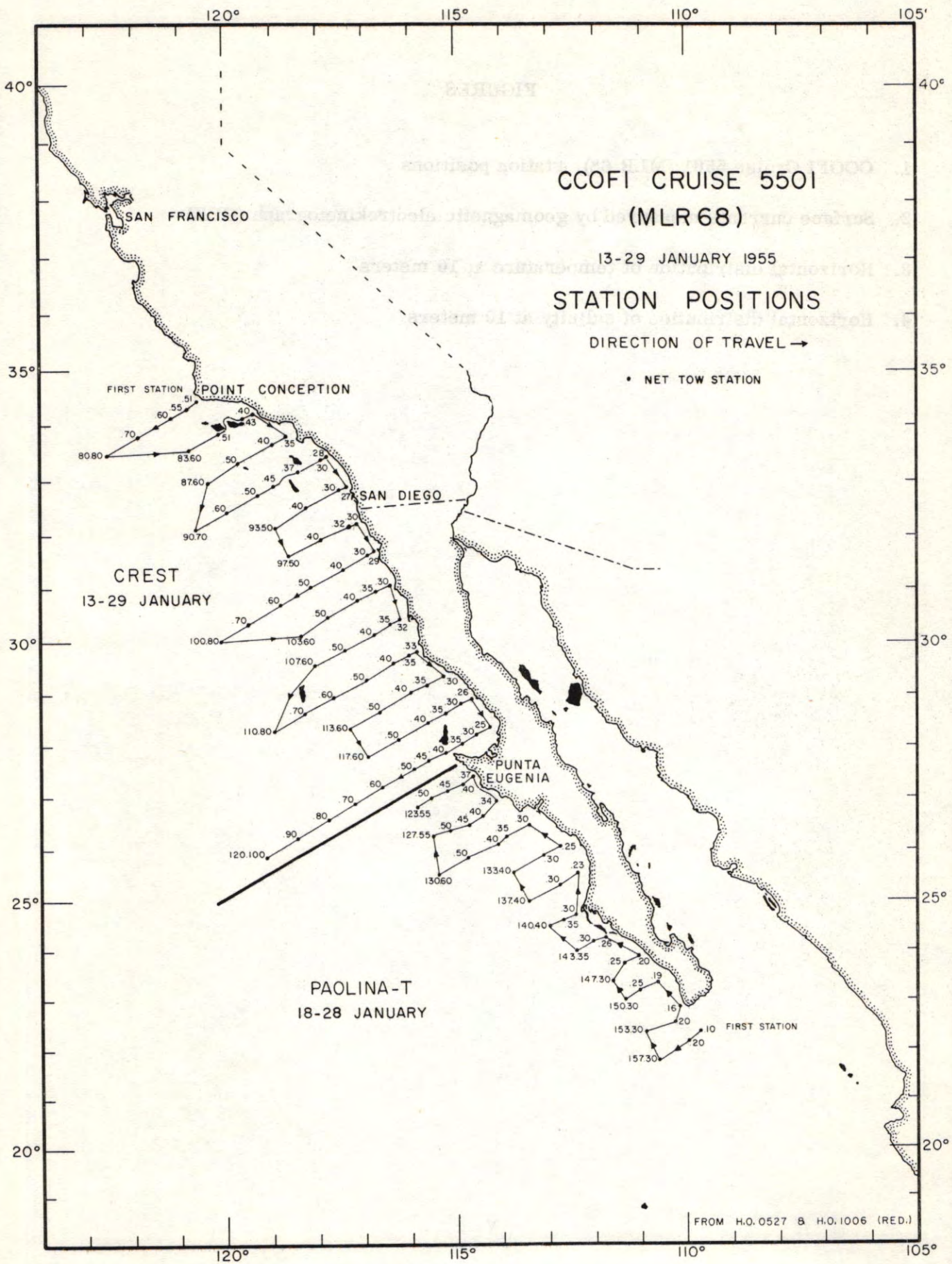


FIGURE 1



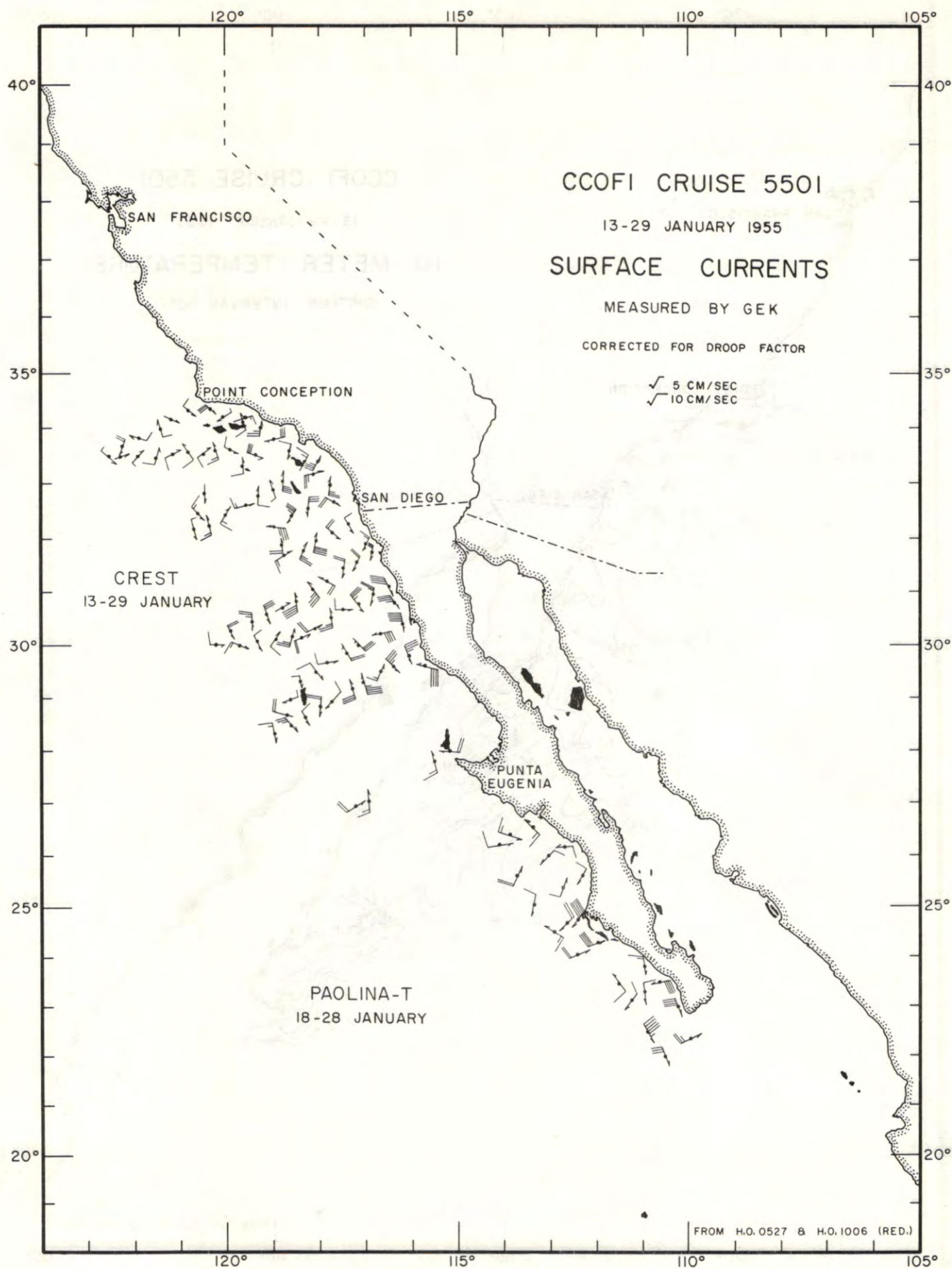


FIGURE 2

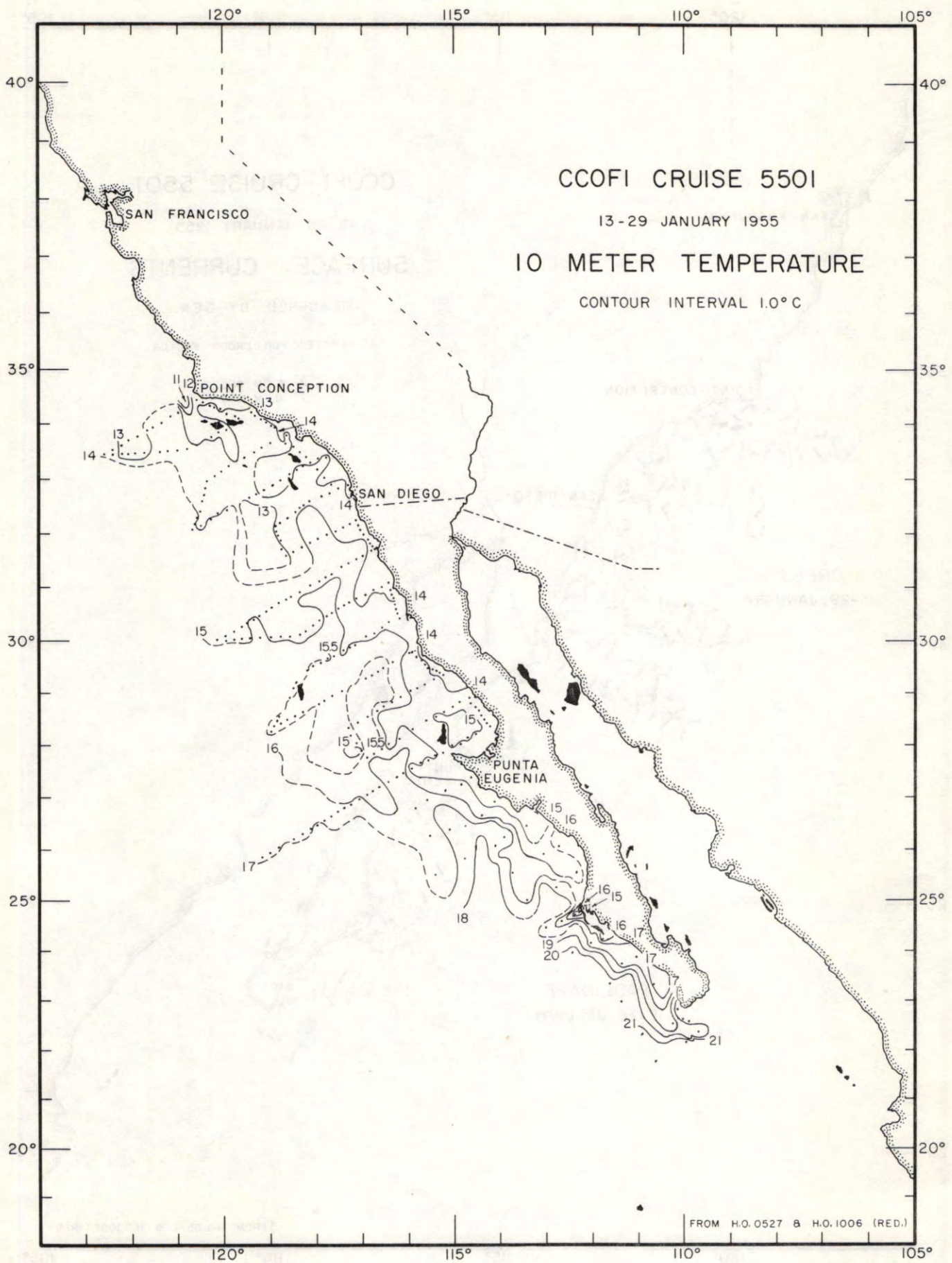


FIGURE 3

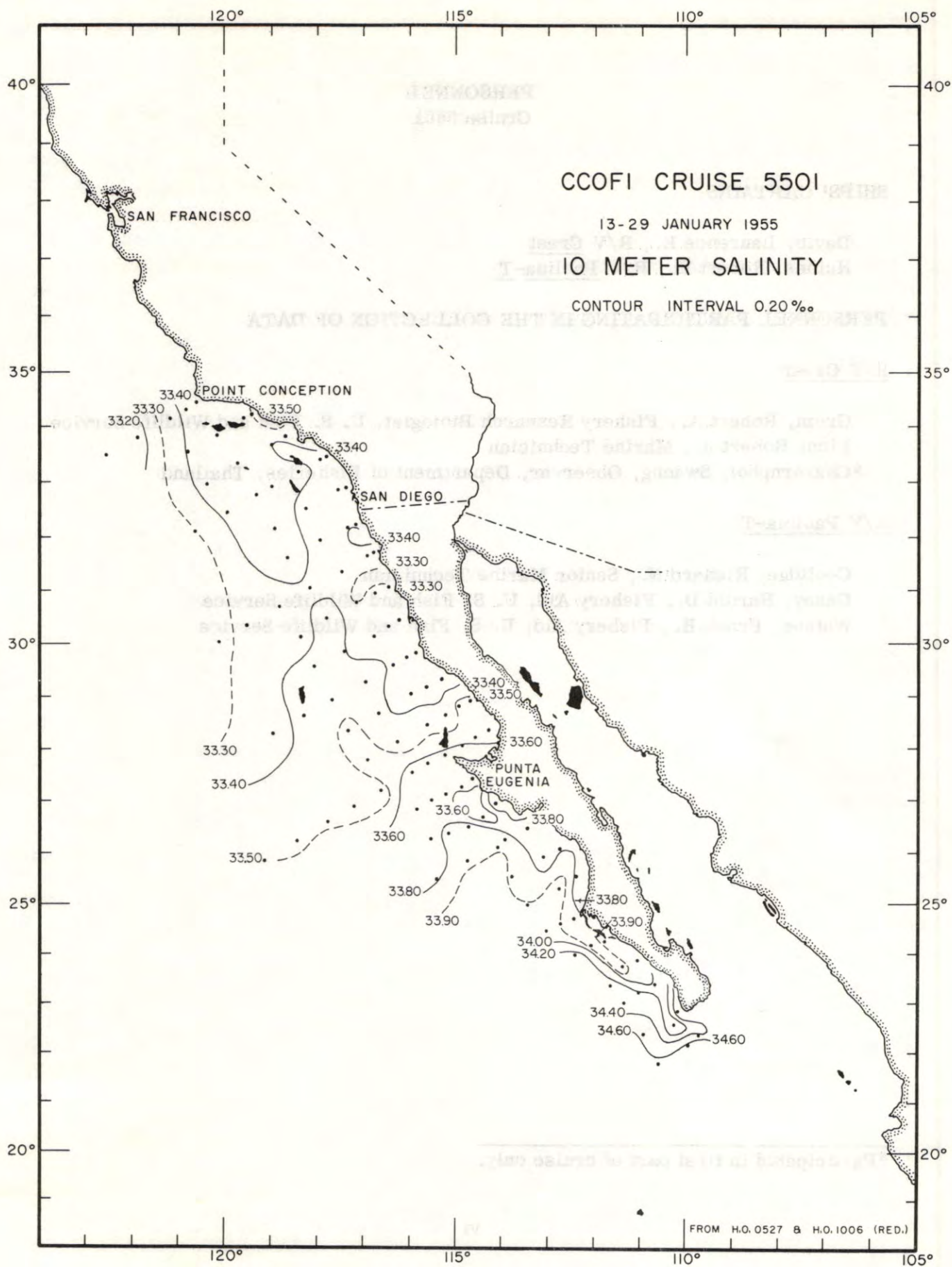


FIGURE 4

**PERSONNEL**  
**Cruise 5501**

**SHIPS' CAPTAINS**

Davis, Laurence E. , R/V Crest  
Haines, Robert B. , R/V Paolina-T

**PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA**

R/V Crest

Grom, Robert A. , Fishery Research Biologist, U. S. Fish and Wildlife Service  
Linn, Robert J. , Marine Technician  
\*Charernphol, Swaong, Observer, Department of Fisheries, Thailand

R/V Paolina-T

Coolidge, Richard N. , Senior Marine Technician  
Casey, Harold D. , Fishery Aid, U. S. Fish and Wildlife Service  
Watson, Frank H. , Fishery Aid, U. S. Fish and Wildlife Service

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\*Participated in first part of cruise only.

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
80.51-C	I-13	1902	34°26.5'	120°32.5'	90	360°	3	cloudy	slight	12.85	33.44
80.55-C	13	2055	34°19.0'	120°48.0'	420	360°	3	overcast	moderate	11.05	33.45
80.60-C	13	2320	34°08.5'	121°08.5'	1200	300°	4	cloudy	moderate	13.17	33.36
80.70-C	14	0400	33°48.5'	121°50.5'	2000+	340°	4	partly cloudy	rough	12.63	33.21
80.80-C	14	0845	33°28.5'	122°32.0'	2100	330°	5	cloudy	rough	13.94	33.05
83.40-C	15	0545	34°13.5'	119°22.5'	12	060°	2	clear	slight	13.22	33.50
83.43-C	15	0410	34°09.0'	119°35.5'	136	290°	2	clear	slight	13.35	33.45
83.51-C	14	2255	33°51.5'	120°08.0'	120	330°	3	partly cloudy	moderate	12.83	33.48
83.60-C	14	1840	33°33.5'	120°45.0'	900	320°	3	cloudy	rough	-	33.41
87.35-C	15	1045	33°50.0'	118°38.0'	350	040°	1	clear	slight	13.83	33.45
87.40-C	15	1315	33°40.0'	118°59.0'	480	250°	1	fog	smooth	13.12	33.40
87.50-C	15	1750	33°20.0'	119°41.0'	44	330°	1	partly cloudy	slight	13.03	33.44
87.60-C	15	2205	32°59.0'	120°21.0'	420	310°	3	overcast	rough	13.34	33.48
90.28-C	17	0145	33°28.5'	117°45.5'	37	330°	3	partly cloudy	rough	13.96	33.37
90.37-C	16	2030	33°10.0'	118°23.0'	650	300°	4	drizzle	moderate	13.90	33.45
90.45-C	16	1630	32°54.5'	118°56.0'	900	270°	4	drizzle	rough	14.24	33.41
90.50-C	16	1400	32°46.0'	119°14.0'	170	340°	4	rain	moderate	14.01	33.41
90.60-C	16	0922	32°24.5'	119°56.0'	500	240°	4	overcast	rough	14.01	33.43
90.70-C	16	0445	32°04.0'	120°38.0'	2100	270°	2	overcast	moderate	14.17	33.29

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
93.27-C	I-17	0620	32°55.0'	117°19.5'	109	330°	6	partly cloudy	very rough	14.01	33.40
93.30-C	19	2040	32°50.0'	117°31.0'	400	330°	3	partly cloudy	very rough	13.82	33.37
93.40-C	20	0236	32°30.5'	118°11.0'	980	320°	5	cloudy	rough	14.03	33.33
93.50-C	20	0730	32.09.0'	118°54.0'	840	310°	3	cloudy	rough	13.03	33.44
97.30-C	20	2245	32°15.0'	117°08.0'	27	320°	2	partly cloudy	moderate	13.44	33.37
97.32-C	20	2135	32°11.5'	117°17.0'	790	340°	3	cloudy	very rough	13.60	33.41
97.40-C	20	1645	31°56.0'	117°55.5'	1050	330°	4	partly cloudy	rough	14.51	33.33
97.50-C	20	1205	31°36.0'	118°36.0'	1300	330°	3	clear	rough	12.93	33.48
100.29-C	21	0315	31°42.0'	116°43.5'	80	310°	2	clear	slight	13.40	33.37
100.30-C	21	0415	31°40.0'	116°49.0'	280	320°	2	clear	slight	13.81	33.34
100.40-C	21	0855	31°21.0'	117°27.0'	1150	340°	3	clear	slight	14.55	33.39a)
100.50-C	21	1340	31°00.0'	118°06.0'	950	320°	3	clear	slight	14.72	33.38b)
100.60-C	21	1833	30°41.0'	118°47.0'	1550	340°	3	cloudy	rough	14.45	33.34
100.70-C	21	2350	30°20.0'	119°27.0'	2200	330°	4	partly cloudy	very rough	15.03	33.37
100.80-C	22	0425	30°01.0'	120°06.5'	2200	340°	4	partly cloudy	very rough	14.69	33.25
103.30-C	23	0530	31°03.5'	116°25.5'	40	350°	2	clear	smooth	13.40	33.30

a) Alternate value, 33.34%.

b) Alternate value, 33.33%.

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
103.35-C	I-23	0310	30°55.0'	116°45.0'	930	350°	5	clear	rough	13.84	33.35
103.40-C	23	0020	30°45.0'	117°08.0'	830	020°	3	clear	rough	13.80	33.30
103.50-C	22	1925	30°28.5'	117°44.5'	1550	060°	2	clear	moderate	15.41	33.47
103.60-C	22	1455	30°08.0'	118°19.0'	1700	020°	3	partly cloudy	rough	14.06	33.34
107.32-C	23	0950	30°26.0'	116°11.0'	370	090°	2	clear	slight	14.10	33.33
107.35-C	23	1125	30°20.0'	116°23.0'	1000	060°	2	clear	slight	14.10	33.34
107.40-C	23	1405	30°10.0'	116°45.0'	1500	080°	3	clear	moderate	14.77	33.34
107.50-C	23	1830	29°51.5'	117°22.0'	1350	360°	4	clear	rough	14.73	33.40
107.60-C	23	2310	29°31.5'	118°02.0'	2000	030°	3	clear	moderate	15.39	33.45
110.33-C	25	0730	29°48.0'	115°52.0'	50	340°	2	clear	slight	14.16	33.33
110.35-C	25	0605	29°46.5'	116°00.0'	600	320°	2	clear	slight	14.63	33.36
110.40-C	25	0305	29°36.5'	116°19.5'	1350	330°	4	clear	missing	15.20	33.39
110.50-C	24	2210	29°17.0'	116°58.5'	1950	340°	3	clear	rough	15.57	33.43
110.60-C	24	1733	28°56.5'	117°38.5'	2010	360°	4	clear	moderate	15.29	33.39a)
110.70-C	24	1310	28°37.5'	118°16.0'	2000	010°	2	clear	moderate	15.45	33.46
110.80-C	24	0822	28°17.0'	118°56.0'	2200	360°	3	clear	moderate	15.45	33.36
113.30-C	25	1210	29°22.5'	115°17.5'	30	320°	3	clear	slight	13.80	33.35

a) Alternate value, 33.33%.

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
113.35-C	I-25	1435	29°12.0'	115°39.0'	650	340°	3	partly cloudy	rough	14.68	33.38
113.40-C	25	1700	29°02.0'	115°58.5'	1040	340°	2	partly cloudy	moderate	15.05	33.37
113.50-C	25	2130	28°41.0'	116°39.0'	2000	330°	3	partly cloudy	rough	15.00	33.41
113.60-C	26	0120	28°21.0'	117°18.0'	2000	340°	3	partly cloudy	moderate	15.24	33.54
117.26-C	27	1005	28°56.0'	114°41.0'	42	330°	2	clear	smooth	14.81	33.58
117.30-C	27	0815	28°50.5'	114°58.0'	55	360°	2	clear	slight	14.50	33.56
117.35-C	27	0535	28°39.0'	115°17.0'	143	360°	2	clear	moderate	14.33	33.43
117.40-C	27	0310	28°28.0'	115°35.5'	500	360°	3	clear	moderate	14.89	33.45
117.50-C	26	1000	28°08.0'	116°15.0'	2500	350°	4	clear	rough	15.01	33.45
117.60-C	26	0525	27°47.5'	116°54.0'	2050	350°	3	clear	moderate	15.81	33.54
120.25-C	27	1410	28°23.0'	114°14.5'	32	060°	3	clear	slight	14.62	33.54
120.30-C	27	1625	28°13.0'	114°35.0'	52	030°	3	cloudy	moderate	14.86	33.58
120.35-C	27	1840	28°03.0'	114°54.0'	45	320°	2	partly cloudy	slight	14.81	33.61
120.40-C	28	0317	27°53.0'	115°14.0'	27	360°	3	partly cloudy	slight	14.04	-
120.45-C	28	0550	27°43.0'	115°33.5'	1300	360°	3	clear	moderate	14.77	33.63
120.50-C	28	0815	27°32.5'	115°53.5'	2000	360°	3	clear	moderate	14.77	33.69
120.60-C	28	1240	27°13.0'	116°34.0'	2000+	360°	3	clear	moderate	15.66	33.48
120.70-C	28	1650	26°54.0'	117°11.0'	2050	010°	3	clear	moderate	16.01	33.48
120.80-C	28	2110	26°34.0'	117°44.0'	2200	020°	3	clear	moderate	16.42	33.49

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
120.90-C	I-29	0135	26°12.0'	118°24.0'	2100	360°	3	clear	moderate	16.83	33.48
120.100-C	29	0540	25°53.0'	119°06.0'	2200	340°	2	clear	moderate	16.71	33.50
123.37-P	28	0840	27°24.5'	114°40.5'	40a)	040°	3	clear	slight	14.34	33.63
123.40-P	28	1332	27°17.5'	114°52.5'	320a)	360°	5	clear	moderate	15.40	33.62
123.45-P	28	1620	27°09.5'	115°13.0'	2250a)	330°	5	clear	moderate	15.71	33.61
123.50-P	28	1920	26°59.0'	115°31.5'	2200a)	320°	4	clear	moderate	16.56	33.74
123.55-P	28	2212	26°50.0'	115°50.0'	2200+a)	320°	5	clear	moderate	16.32	33.74
127.34-P	28	0255	26°58.0'	114°05.0'	45a)	310°	2	partly cloudy	slight	14.76	-
127.40-P	27	2328	26°41.0'	114°24.5'	1400a)	310°	3	cloudy	slight	15.23	33.58
127.45-P	27	2023	26°31.0'	114°45.0'	1200+a)	320°	3	partly cloudy	moderate	17.20	33.84
127.50-P	27	1725	26°23.0'	115°07.0'	-	330°	3	partly cloudy	moderate	17.09	33.84
127.55-P	27	1435	26°19.0'	115°29.0'	1800a)	320°	4	partly cloudy	moderate	16.28	33.77
130.30-P	26	1445	26°30.0'	113°25.5'	40a)	360°	3	partly cloudy	slight	14.53	33.66
130.35-P	26	1833	26°17.5'	113°54.0'	150+a)	050°	3	cloudy	moderate	17.38	33.86
130.40-P	26	2105	26°09.5'	114°04.0'	1000+a)	280°	1	cloudy	slight	17.31	33.89
130.50-P	27	0242	25°52.0'	114°47.0'	1200+a)	300°	2	partly cloudy	slight	17.54	33.89

a) Fathometer inoperative; sounding read from chart.

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
130.60-P	I-27	0824	25°31.5'	115°23.0'	-	320°	4	clear	moderate	16.72	33.83a)
133.25-P	26	0824	26°06.0'	112°45.5'	40	calm		clear	smooth	16.24	33.80
133.30-P	26	0506	25°55.5'	113°06.0'	100+	calm		clear	smooth	15.89	33.76
133.40-P	25	2320	25°35.0'	113°46.0'	-	calm		clear	slight	16.87	33.84
137.23-P	25	0752	25°33.0'	112°20.0'	45	calm		clear	moderate	15.90	33.78
137.30-P	25	1158	25°18.5'	112°46.5'	100	300°	1	clear	slight	17.54	33.92
137.40-P	25	1738	25°01.5'	113°24.0'	1200	300°	1	partly cloudy	slight	16.91	33.91
140.30-P	25	0039	24°43.5'	112°23.5'	60	350°	5	clear	moderate	14.84	33.82
140.35-P	24	2135	24°37.0'	112°41.0'	2000	330°	3	clear	rough	16.68	33.88
140.40-P	24	1900	24°29.0'	113°00.0'	1200	340°	3	clear	rough	17.73	33.93
143.26-P	24	0645	24°18.5'	111°48.5'	28	360°	4	clear	slight	15.19	33.99
143.30-P	24	0900	24°11.5'	112°03.5'	125	020°	4	clear	moderate	17.36	33.88
143.35-P	24	1234	24°02.5'	112°23.5'	600	330°	4	clear	moderate	20.15	34.34
147.20-P	23	2315	23°57.0'	111°02.5'	65	330°	5	partly cloudy	rough	17.75	33.96
147.25-P	23	2008	23°47.5'	111°22.0'	180	350°	5	partly cloudy	rough	17.61	33.91
147.30-P	23	1342	23°26.0'	111°35.0'	14	340°	6	partly cloudy	very rough	20.31	34.34
150.19-P	23	0030	23°25.5'	110°39.5'	100	330°	5	partly cloudy	rough	16.94	34.09

a) Alternate value, 33.78%.

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
150.25-P	I-23	0415	23°13.5'	111°02.0'	500	360°	5	clear	rough	19.98	34.28
150.30-P	23	0745	23°02.0'	111°20.0'	1500	330°	6	partly cloudy	rough	20.34	34.33
153.16-P	22	1740	22°54.0'	110°07.5'	200	340°	4	partly cloudy	rough	20.65	34.58
153.20-P	22	1300	22°35.0'	110°15.0'	600	360°	4	cloudy	very rough	18.71	34.08
153.30-P	22	0627	22°23.0'	110°56.0'	-	330°	6	clear	very rough	21.45	34.58
157.10-P	21	1422	22°27.5'	109°42.5'	800	040°	6	clear	very rough	19.94	34.41
157.20-P	21	1758	22°15.5'	109°59.0'	-	020°	3	partly cloudy	rough	21.68	34.63
157.30-P	22	0011	21°52.0'	110°37.0'	-	270°	4	partly cloudy	rough	22.37	34.76

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

## DISTRIBUTION LIST

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