

5507

SEP 11 1934

Acc. No. _____

Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: California

11-5813

DESCRIPTIVE REPORT.

Hydrographic Sheet No. 44 5507

LOCALITY:

Santa Monica Bay

Malibu Pt. to Mugu

19133-34

CHIEF OF PARTY:

U. S. Swainson

5507

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET FIELD NO. 44

AUTHORITY

The hydrography of field sheet 44 was done in accordance with instructions dated November 18, 1932, for Project No. 120.

LOCALITY

The sheet extends off-shore of the 1933 work of Lt. Robert W. Knox, between Santa Monica Bay and Pt. Mugu. At the latter place a junction is made with the 1933 work of Lt. C. K. Green. Instructions dated June 23, 1934, for Project No. 187, call for extending the hydrography from this sheet across Santa Barbara Channel to a junction with Sheet 4559.

CONTROL

The control was visual fixes on recovered triangulation stations located by Lt. F. G. Johnson in 1932-33, and the topographic survey of Lt. Robert W. Knox of 1932-33.

SURVEY METHODS

The work was done on a scale of 1:40,000 as this was the best scale to bring the signals within reach of the protractor and yet allow close spacing of the lines. All the work was done by the PIONEER using the fathometer with frequent vertical casts. The lines were run parallel to the beach to allow a gradual increase in the spacing of the lines as the depth increased.

CURRENTS

No current observations were made, nor were any decided currents observed in the course of the hydrography.

TIDES

Tidal data from the automatic tide gage maintained by the Los Angeles Harbor Department at Los Angeles Harbor were used for the reduction of the soundings. No time or height correction was made to these data in referring them to the locality of the sheet.

MAGNETICS

No magnetic observations were made.

FATHOMETER CORRECTIONS

Fathometer corrections were computed for sheets 43 and 44. The description of the method is attached to report for field sheet 43 (Santa Monica Bay). As the fathometer was altered on November 21, new corrections were computed for the soundings taken after that date.

SLOPE CORRECTIONS

No slope corrections were applied. The slopes on the sides of the submarine valleys off Pt. Dume and Pt. Mugu are sufficiently steep to require corrections in accordance with the instructions. However, it was uncertain as to what part of the bottom reflected the echo, as the bottom was so irregular. Slope corrections would cause as many errors as they would correct. ✓

DANGERS

There are no dangers to navigation on this sheet.

JUNCTION WITH OTHER SHEETS

This hydrography makes a satisfactory junction with that of Lt. C. K. Green, 1933, to the westward and with field sheet No. 43 of this party to the eastward. Later instructions call for extending this survey farther offshore. The inshore junction with the 1933 work of Lt. Robert W. Knox checks nicely. Where there are discrepancies with Lt. Knox's work, use his soundings. The fathometer may not have been accurate in the real shoal areas.

COMPARISON WITH PREVIOUS SURVEYS

This survey checks well with that of H 1403 except soundings of 23, 30, 33, and 80 at Lat. 34° 04' and Long. 109° 04', on 1403. These soundings appear to be about 10 fathoms in error. Use the new survey. ✓

H 4559 - The soundings on the 50 fathom bank check. There are quite a few soundings on 4559 off Pt. Dume that do not check the new survey. Reject them and use the new survey. ✓

The differences in depths are probably due to steep slopes, however, as the new survey is on larger scale and in greater detail, it should be used for charting purposes.

*J. W. Swainson
Chief of Party.
Comdg. "Pioneer"*

33 in read,

STATISTICS FOR SHEET NO. 44

Date	Day Letter	No. of Positions	No. of Fath. Sdgs.	No. of V. C.	Total No. of Sdgs.	Statute Miles of Sdgs.
June 22, '33	A	69	436		436	45.0
June 23, '33	B	92	486	4	490	48.4
July 25, '33	C	189	935	11	946	111.1
July 26, '33	D	203	1159	3	1162	107.5
July 27, '33	E	40	186	(9)*	186	22.5
July 31, '33	F	63	269		269	38.4
Jan. 22, '34	G	66	258	16	274	14.3
Totals		722	3729	34	3763	387.2

* For comparison only.

CHIEF OF PARTY'S REPORT ON INSPECTION OF RECORDS AND SHEET

I examined most of the soundings myself then turned the sheet over to Lt. H. J. Healy for verifying. He checked the plotting by placing a tracing of the smooth sheet over the boat sheet. He examined the sounding records to see that they were complete and that all vertical casts, notes, etc., were plotted on the smooth sheet. He compared the junction of sheets and the new with the old work. Wherever there was any doubt he called the matter to my attention for action.

Dr. Shepard made a trip on the PIONEER to Pt. Dume, where we took many vertical casts and made a close development of the submarine valley under his direction. A tracing of the soundings taken in the valley was made ~~made~~ on a large scale for him.

I wrote the descriptive report for the sheet.



O. W. Swainson,
H. & C. Engineer,
Commanding PIONEER.

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FINAL FATHOMETER CORRECTIONS
Field sheets 43 and 44, Project No.120.

The method of computing the fathometer corrections for this area differed from the manual in that the British Admiralty Tables were used for the theoretical velocity of sound through sea water.

In Table A is shown the computation of the theoretical corrections to the fathometer. Column 1 is true depth of water. Column 2 is temperature scaled from the temperature curve (see blueprint). Column 3 is salinity scaled from curve plotted from data furnished by the Scripps Institute of Oceanography at La Jolla California(see blueprint). These salinities were taken west of San Miguel Island, but are believed to be accurate for this area. In column 4 will be found theoretical velocities from the British Admiralty Tables for each depth. Column 5 is the mean of the velocities from the surface to each succeeding depth. Column 6 is one-half the distance the sound travels from the Large oscillator to the bottom and back to the Number 3 (Navy rat) hydrophone (D). This computation was necessary as there is a 93 foot base between the oscillator and hydrophone. For the Small oscillator and Number 2 (tuned) hydrophone there is a base of 24 feet - the computation for the D value for this combination will be found in column 10.

In column 7 the computation of the reading on a uniform scale of a fathometer is made for the number 3 hydrophone-large oscillator combination, and in column 11 for the number 2 hydrophone-small oscillator combination. The speed of the fathometer was 248 r.p.m., corresponding to a theoretical velocity of 826.6 fathoms per second. The reading on a uniform scale is $\frac{826.6}{\text{mean velocity}} \times D$.

In column 8 the uniform scale reading was corrected to the reading on the existing non-uniform scale of the fathometer, for the number 3 hydrophone-large oscillator combination. The same computation for the number 2 hydrophone-small oscillator combination is made in column 12. These corrections are carried out in more detail on table D.

Column 9 is the theoretical fathometer correction for the number 3 hydrophone-large oscillator, which is column 1 minus column 8. Column 13 is the theoretical fathometer corrections for the number 2 hydrophone-small oscillator, which is column 1 minus column 12.

Table B is the comparison of the number 3 hydrophone-large oscillator fathometer readings with the corresponding vertical casts for obtaining index corrections (I.C.).

Table C is the comparison of the number 2 hydrophone-small oscillator fathometer readings with the corresponding vertical casts for obtaining index corrections.

Table D is the computation of the final fathometer corrections. The reducers pasted in the first volumes of the sounding records for each sheet were derived from this table, the points being plotted on a curve and the reducers taken therefrom, in units corresponding to that in which the fathometer was read.

All depths and corrections are in fathoms.
For a general description of method see season's report, Project 120. (1932)

TABLE A - SANTA MONICA BAY ONLY

True Depth	Temp. °C.	Salinity	Velocity fms./sec	Mean Veloc. #5 Dig	D scale #5 Dig	Uniform Non-unif. scale #5 Dig	Theor. Corr. #2 Small	D scale #2 Small	Uniform Non-unif. scale #2 Small	Theor. Corr. #2 Small
0	15.0	33.60	821.5	818.5	11.1	11.8	11.1	8.2	8.3	+1.9
10	12.3	.74	816.5	818.0	12.6	12.8	-0.7	10.2	10.3	+1.9
12	12.0	.75		818.0	14.3	14.5	-0.4	12.2	12.3	+1.9
14	11.6	.77		817.5	16.0	16.2	-0.1	14.1	14.3	+1.8
16	11.3	.78		817.0	17.8	18.0	+0.1	16.1	16.3	+1.8
18	11.1	.80		817.0	19.6	19.8	+0.2	18.1	18.3	+1.7
20	10.9	.82	814.0	816.4	29.0	29.3	+0.7	28.1	28.5	+1.5
30	10.3	.87	813.5	815.7	38.7	39.2	+0.8	38.1	38.6	+1.4
40	10.1	.91	813.0	815.2	48.6	49.3	+0.7	48.1	48.8	+1.2
50	9.8	.95	812.5	814.8	58.5	59.4	+0.6	58.1	58.9	+1.1
60	9.6	.98	812.5	814.5	68.4	69.4	+0.6	68.1	69.0	+1.0
70	9.5	34.01	812.0	814.2	78.4	79.6	+0.4	78.1	79.1	+0.9
80	9.3	.04	812.0	814.0	88.4	89.7	+0.3	88.0	89.3	+0.7
90	9.2	.06	812.0	813.7	98.3	99.8	+0.2	98.0	99.5	+0.5
100	9.1	.09	812.5	813.6	108.3	110.0	+0.2	108	109.6	+0.6
110	9.1	.10	812.5	813.5	118.2	120.1	-0.1	118	119.8	+0.2
120	9.0	.12	812.5	813.4	138.2	140.5	-0.5	138	140.2	-0.2
140	8.9	.16	813.0	813.3	158.2	160.7	-0.7	158	160.5	-0.5
160	8.7	.19	812.5	813.2	178.2	181.0	-1.0	178	180.9	-0.9
180	8.4	.21	812.5	813.2	198.2	201.3	-1.0	198	201.3	-1.1
200	8.2	.24	812.0	813.0	218.2	221.7	-1.7	218		
220	7.9	.26	811.5	812.8	238.2	242.0	-2.0	238		
240	7.5	.28	811.0	812.7	258.2	262.2	-2.2	258		
260	7.1	.30	810.5	812.5	278.2	282.6	-2.6	278		
280	6.7	.32	810.0	812.4	298.2	302.7	-2.7	298		
300	6.3	.33	810.0	812.2	318.2	323.3	-3.3	318		
320	5.9	.35	809.5	812.2	338.2	345.8	-3.8	338		
340	5.6	.36	809.0	812.0	358.2	364.2	-4.2	358		
360	5.3	.37	809.0	811.9	378.2	384.7	-4.7	378		
380	5.1	.38	809.0	811.7	398.2	405.1	-4.5	398		
400	4.9	.39	809.0	811.6	418.1	426.0	-6.0	418		
420	4.7	.40	809.0	811.5	438.1	446.3	-6.3	438		
440	4.6	.41	809.0	811.4	458.1	466.8	-6.8	458		
460	4.4	.42	809.0	811.3	478.1	487.1	-7.1	478		
480	4.3	.43	809.0	811.2	498.1	507.5	-6.9	498		
500	4.2	.44	809.0	811.2	507.5	506.9	-6.9	498		

Speed of Disc - 248 r.p.m. Corresponding to Vel. of 826.6 fms./sec.

Same as Column 7

Same as Column 8

Same as Column 9

TABLE B SANTA MONICA BAY No. 3 Hyd. Big Oscillator

FATH. SOUNDING	THEOR. CORR.	CORR. FATH.	V. C.	I. C.
20.5	+0.3	20.8	19.6	-1.2
19.7	+0.3	20.0	19.3	-0.7
14.9	-0.3	14.6	13.2	-1.4
14.5	-0.3	14.2	13.2	-1.0
14.0	-0.4	13.6	12.9	-0.7
24.8	+0.5	25.3	24.3	-1.0
24.7	+0.5	25.2	24.5	-0.7
22.0	+0.3	22.3	21.1	-1.2
22.0	+0.3	22.3	21.3	-1.0
24.8	+0.5	25.3	23.8	-1.5
24.9	+0.5	25.4	23.9	-1.5
41.5	+0.8	42.3	41.0	-1.3
41.1	+0.8	41.9	41.5	-0.4
41.0	+0.8	41.8	41.5	-0.3
66.2	+0.6	66.8	66.0	-0.8
65.5	+0.6	66.1	65.1	-1.0
29.8	+0.7	30.5	29.3	-1.2
43.0	+0.8	43.8	43.1	-0.7
43.0	+0.8	43.8	42.8	-1.0
15.5	-0.3	15.2	14.1	-1.1
15.2	-0.3	14.9	13.9	-1.0
29.5	+0.7	30.2	28.5	-1.7
18.6	+0.1	18.7	18.4	-0.3
44.8	+0.7	45.5	44.4	-1.1
29.3	+0.7	30.0	29.0	-1.0
60.0	+0.6	60.6	62.0	(+1.4)
42.0	+0.8	42.8	42.6	-0.2
32.6	+0.7	33.3	32.1	-1.2
36.2	+0.8	37.0	35.7	-1.3
27.7	+0.7	28.4	27.2	-1.2
20.0	+0.3	20.3	19.7	-0.6
21.7	+0.3	22.0	21.3	-0.7
21.8	+0.3	22.1	21.6	-0.5
22.3	+0.3	22.6	21.9	-0.7
23.0	+0.4	23.4	22.5	-0.9
37.2	+0.8	38.0	36.7	-1.3
39.0	+0.8	39.8	38.0	-1.8
11.6	-0.9	10.7	11.3	(+0.6)
17.8	+0.1	17.9	17.3	-0.6
17.8	+0.1	17.9	17.2	-0.7
17.0	0.0	17.0	17.5	(+0.5)
18.4	+0.1	18.5	17.7	-0.8
14.8	-0.3	14.5	16.0	(+1.5)
15.0	-0.3	14.7	15.2	(+0.5)
106.0	+0.2	106.2	98.6	(-7.6)
168.0	-0.8	167.2	170.5	(+3.3)
125.0	-0.2	124.8	124.2	-0.6
153.0	-0.6	152.4	151.0	-1.4

Mean Index Correction

41) 39.3
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TABLE C SANTA MONICA BAY No. 2 Hyd. Small Oscillator

FATH. SOUNDING	THEOR. CORR.	CORR. FATH.	V. C.	I. C.
66.5	+1.1	67.6	66.0	-1.6
29.0	+1.5	30.5	29.3	-1.2
43.5	+1.3	44.8	43.1	-1.7
29.8	+1.5	31.3	29.6	-1.7
29.5	+1.5	31.0	29.2	-1.8
17.3	+1.8	19.1	18.4	-0.7
44.8	+1.3	46.1	44.5	-1.6
28.7	+1.5	30.2	29.0	-1.2
62.0	+1.1	63.1	62.0	-1.1
43.0	+1.3	44.3	42.6	-1.7
35.3	35.3 +1.3	36.6	34.9	-1.7
27.5	+1.5	29.0	27.2	-1.8
22.5	+1.7	24.2	22.5	-1.7
37.5	+1.4	38.9	37.0	-1.9
38.5	+1.4	39.9	38.0	-1.9
				15) <u>233.3</u>
			Mean index correction	-1.55

Over 100 fathoms, (Not used for index correction)

348.0	-4.0	344.0	338.8	-5.2
132.0	0.0	132.0	128.8	-3.2
154.5	-0.4	154.1	151.0	-3.1
177.0	-0.8	176.2	171.3	-4.9
171.5	-0.7	170.8	170.5	-0.3

TABLE D *Final Corrections.*

No. 3 Hydrophone - Big Oscillator							
Ind.	Theor. Corr.	Index Corr.	Final Corr.	Ind.	Theor. Corr.	Index Corr.	Final Corr.
10	-1.5	-1.0	-2.5	300	-2.9	-1.0	-3.9
11	-1.1		-2.1	301	-2.7		-3.7
12	-0.8		-2.0 1.8	302	-2.7		-3.7
13	-0.6		-1.86	303	-2.6		-3.6
14	-0.4		-1.84	304	-2.4		-3.4
15	-0.3		-1.53	305	-2.3		-3.3
16	-0.1		-1.51	306	-2.4		-3.4
17	0		-1.20	308	-2.7		-3.7
18	+0.1		-1.19	310	-2.9		-3.9
19	+0.2		-1.0 0.8	314	-3.1		-4.1
20	+0.3		-0.9 0.7	316	-3.2		-4.2
22	+0.3		-0.87	320	-3.3		-4.3
24	+0.4		-0.86	340	-3.8		-4.8
26	+0.5		-0.75	360	-4.2		-5.2
30	+0.7		-0.3	380	-4.7		-5.7
40	+0.8		-0.2	400	-5.1		-6.1
50	+0.7		-0.3	401	-4.9		-5.9
60	+0.6		-0.4	402	-4.8		-5.8
70	+0.6		-0.4	403	-4.6		-5.6
80	+0.4		-0.6	404	-4.5		-5.5
90	+0.3		-0.7	405	-4.4		-5.4
100	+0.2		-0.8	406	-4.5		-5.5
101	+0.3		-0.7	408	-4.9		-5.9
102	+0.3		-0.7	410	-5.0		-6.0
103	+0.5		-0.5	412	-5.1		-6.1
104	+0.7		-0.3	414	-5.3		-6.3
105	+0.8		-0.2	416	-5.3		-6.3
106	+0.9		-0.1	418	-5.4		-6.4
107	+0.7		-0.3	420	-6.0		-7.0
108	+0.3		-0.7	440	-6.3		-7.3
110	+0.2		-0.8	460	-6.8		-7.8
112	+0.2		-0.8	480	-7.1		-8.1
114	0		-1.0	500	-7.5		-8.5
116	0		-1.0				
118	-0.1		-1.1				
120	-0.1		-1.1				
140	-0.5		-1.5				
160	-0.7		-1.7				
180	-1.0		-2.0				
200	-1.3		-2.3				
201	-1.1		-2.1				
202	-1.0		-2.0				
203	-0.9		-1.9				
204	-0.8		-1.8				
205	-0.7		-1.7				
206	-0.8		-1.8				
208	-1.1		-2.1				
210	-1.3		-2.3				
212	-1.4		-2.4				
214	-1.5		-2.5				
216	-1.6		-2.6				
218	-1.6		-2.6				
219	-1.6		-2.6				
220	-1.7		-2.7				
240	-2.0		-3.0				
260	-2.2		-3.2				
280	-2.6		-3.6				

TABLE D (Continued) *Final Corrections*

No. 2 Hydrophone - Small Oscillator

Depth (Ind.)	Theor. Corr.	Index Corr.	Final Corr. Fathoms	Depth (Ind.)	Theor. Corr.	Index Corr.	Final Corr. Fathoms
8	+2.0	-1.6	+0.4	400	-5.0	-1.6	-6.6
10	+1.9		+0.3	401	-4.9		-6.5
12	+1.8		+0.2	402	-4.8		-6.4
14	+1.8		+0.2	403	-4.6		-6.2
16	+1.8		+0.2	404	-4.5		-6.1
18	+1.8		+0.2	405	-4.4		-6.0
20	+1.7		+0.1	406	-4.5		-6.1
22	+1.7		+0.1	408	-4.9		-6.5
24	+1.6		0	410	-5.0		-6.6
26	+1.5		-0.1	412	-5.1		-6.7
30	+1.5		-0.1	414	-5.3		-6.9
40	+1.4		-0.2	416	-5.3		-6.9
50	+1.2		-0.4	418	-5.4		-7.0
60	+1.1		-0.5	420	-6.0		-7.6
70	+1.0		-0.6	440	-6.3		-7.9
80	+0.9		-0.7	460	-6.8		-8.4
90	+0.7		-0.9	480	-7.1		-8.7
100	+0.5		-1.1	500	-7.5		-9.1
101	+0.7		-0.9				
102	+0.8		-0.8				
103	+0.9		-0.7				
104	+1.0		-0.6				
105	+1.1		-0.5				
106	+1.2		-0.4				
107	+1.0		-0.6				
108	+0.9		-0.7				
110	+0.7		-0.9				
112	+0.5		-1.1				
114	+0.4		-1.2				
116	+0.3		-1.3				
118	+0.2		-1.4				
120	+0.2		-1.4				
140	-0.2		-1.8				
160	-0.5		-2.1				
180	-0.9		-2.5				
200	-1.3		-2.9				
220	-1.7		-3.3				
240	-2.0		-3.6				
260	-2.2		-3.8				
280	-2.6		-4.2				
300	-2.9		-4.5				
301	-2.7		-4.3				
302	-2.7		-4.3				
303	-2.6		-4.2				
304	-2.4		-4.0				
305	-2.3		-3.9				
306	-2.4		-4.0				
308	-2.7		-4.3				
310	-2.9		-4.5				
314	-3.1		-4.7				
316	-3.2		-4.8				
320	-3.3		-4.9				
340	-3.8		-5.4				
360	-4.2		-5.8				
380	-4.7		-6.3				
				201	-1.1	-1.6	-2.7
				202	-1.0		-2.6
				203	-0.9		-2.5
				204	-0.8		-2.4
				205	-0.7		-2.3
				206	-0.8		-2.4
				208	-1.1		-2.7
				210	-1.3		-3.0
				212	-1.4		-3.1
				214	-1.5		-3.2
				216	-1.6		-3.3
				218	-1.6		-3.3

FATHOMETER CORRECTIONS

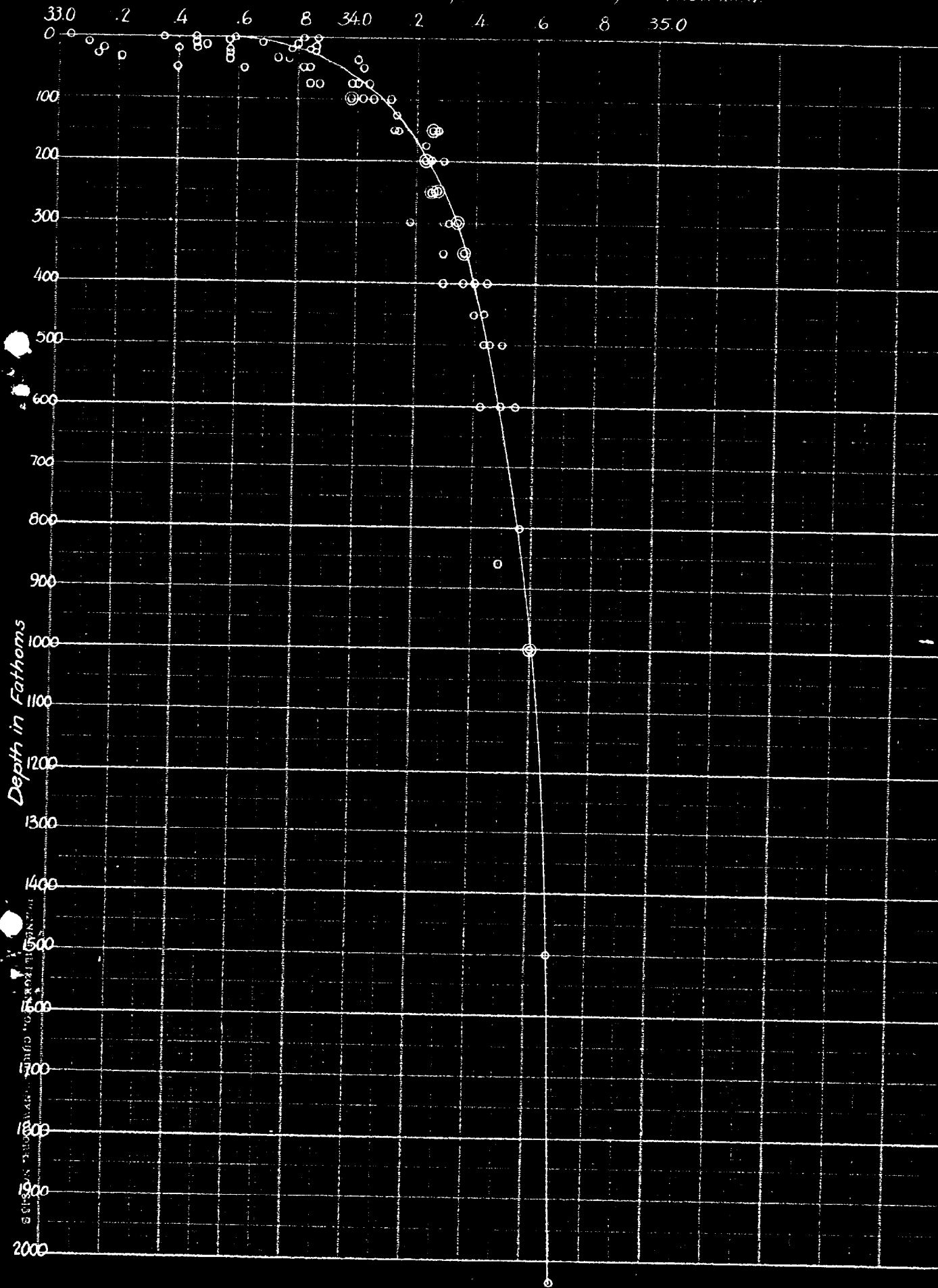
SHEET 44

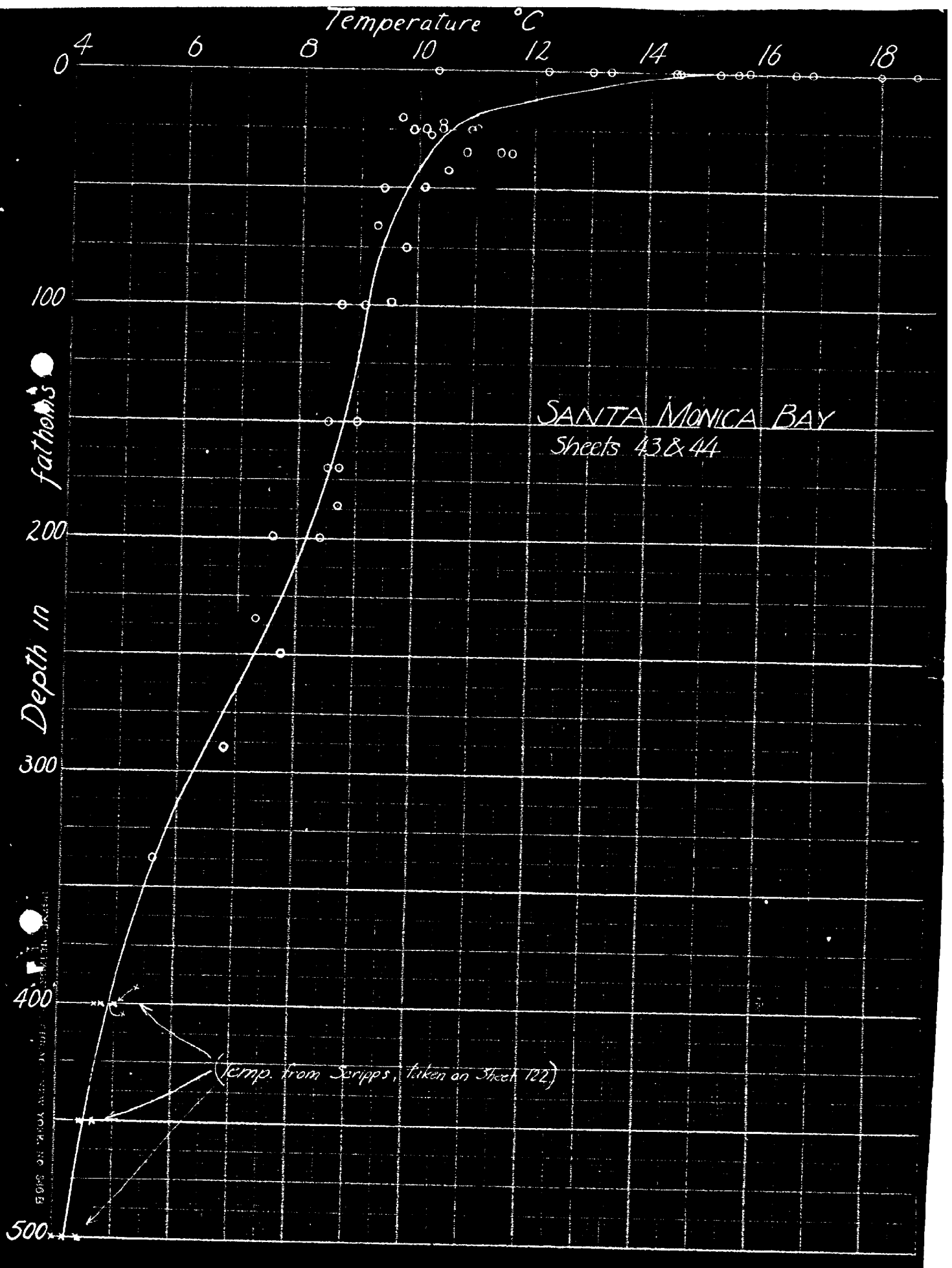
AFTER NOVEMBER 21, 1933

No. 2 Hydro. - Small Osc.			No. 3 Hydro. - Big Osc.				
Short Dash		Long Dash	Short Dash		Long Dash		
11 - 39	+ 2	10 - 12	- 1	10 - 12	- $\frac{1}{2}$	10 - 12	- 3
39.5 - 70	+ $1\frac{1}{2}$	12.5 - 40	- $1\frac{1}{2}$	12.5 - 15	0	12.5 - 15	- $2\frac{1}{2}$
70.5 - 97	+ 1	40.5 - 78	- 2	15.5 - 19	+ $\frac{1}{2}$	15.5 - 19	- 2
97.5 - 100	+ $\frac{1}{2}$	78.5 - 102	- $2\frac{1}{2}$	19.5 - 32	+ 1	19.5 - 32	- $1\frac{1}{2}$
100.5 - 103	+ 1	102.5 - 106	- 2	32.5 - 63	+ $1\frac{1}{2}$	32.5 - 63	- 1
103.5 - 106	+ $1\frac{1}{2}$	106.5 - 110	- $2\frac{1}{2}$	63.5 - 100	+ 1	63.5 - 100	- $1\frac{1}{2}$
106.5 - 109	+ 1	110.5 - 164	- $3\frac{1}{2}$	100.5 - 101	+ $\frac{1}{2}$	100.5 - 101	- 2
109.5 - 126	+ $\frac{1}{2}$	164.5 - 215	- $4\frac{1}{2}$	101.5 - 103	0	101.5 - 103	- $2\frac{1}{2}$
126.5 - 183	- $\frac{1}{2}$	215.5 - 260	- $5\frac{1}{2}$	103.5 - 106	- $\frac{1}{2}$	103.5 - 106	- 3
183.5 - 233	- $1\frac{1}{2}$	260.5 - 305	- $6\frac{1}{2}$	106.5 - 158	0	106.5 - 158	- $2\frac{1}{2}$
233.5 - 279	- $2\frac{1}{2}$			158.5 - 209	- 1	158.5 - 209	- $3\frac{1}{2}$
279.5 - 323	- $3\frac{1}{2}$			209.5 - 257	- 2	209.5 - 257	- $4\frac{1}{2}$
				257.5 - 306	- 3	257.5 - 306	- $5\frac{1}{2}$

F R x 6 - Add 7 fms to F R

Salinities from Scripps in parts per thousand.





DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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REG. NO.
5507

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 44

REGISTER NO. 5507

State California

General locality Southern California Bay Santa Monica Bay

Locality Malibu Pt. to Pt. Mugu *Large*

Scale 1:40,000 Date of survey June 22, 1933 to January 22, 19 34

Vessel PIONEER

Chief of Party O. W. Swainson

Surveyed by O. W. Swainson

Protracted by Henry J. Pulskamp (Draftsman)

Soundings penciled by Henry J. Pulskamp (Draftsman)

Soundings in fathoms ~~2000~~

Plane of reference M. L. L. W.

Subdivision of wire dragged areas by _____

Inked by James M. M. Green

Verified by James M. M. Green

Instructions dated November 18, 19 32

Remarks: _____

Field Records Section (Charts)

HYDROGRAPHIC SHEET No.

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	375 722
Number of positions checked	31
Number of positions revised	1
Number of soundings recorded	3763
Number of soundings revised	6
Number of signals erroneously plotted or transferred	0

Date:..... *November 9, 1934*

Cartographer:..... *James M. Mc. Luegh*

Verification of projecting
Verification & inking of rocks & shoals) by *J. M. Luegh* Time: 32 hrs. } 72
Verification ^{and} of inking by *J. M. Luegh* Time: 40 hrs.
Review by *R. J. Christman* Time: 20 hrs

200

October 1, 1934.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
3 volumes of sounding records for

HYDROGRAPHIC SHEET 5507

Locality Kellers Shelter to Point Mugu, Coast of Southern Calif.

Chief of Party: O. W. Swainson in 1933-34
Plane of reference is mean lower low water, reading
3.6 ft. on tide staff at Los Angeles Harbor
14.0 ft. below B.M. 8

Height of mean higher high water above plane of reference is 5.4 ft.

Condition of records satisfactory except as noted below:

H. Hammer
Acting Chief, Division of Tides and Currents.

Verification Report of H-5507.

Report on - H-5507.

Chief of Party - O. W. Swainson.

Protracted by - Henry J. Pulskamp.

Verified and inked by - J. M. McQueen, Jr.

Surveyed in - June-July 1933 and January 1934.

Surveyed by - O. W. Swainson.

Soundings plotted in fathoms.

1. The soundings recorded were neat and legible and conformed to the general instructions given in the Hydrographic Manual. ✓

2. The sheet was an off shore sheet from which it was possible to draw the fifty, one hundred and two hundred fathom curves, but the twenty fathom curve was broken in places by a submarine valley. ✓

3. Shore line was in pencil and had to be inked. Bottom characteristics were not taken in numerous places where vertical castings were made. ✓

All soundings between 45 and 46c, Vol. 1, Page 49, 34°00' - 118°49' were rejected as impossible to locate due to change in direction of line. ✓

118 fathom sounding between 16 and 17c was moved slightly to conform better with contour of bottom in that locality. ✓

Boat was stopped at 189c. Vol. 2, Page 7 latitude 34°58', longitude 118°48' for vertical casting but it was not taken. No reason. ✓

4. The sheet was compared with the boat sheet and checked very closely. A number of positions were reprotracted and only one, 21E, Vol. 2, Page 54, lat. 33°58', long. 118°45', was found to be incorrectly located. ✓

5. An enlargement 4 to 1 was made of H-5507 and soundings transferred to the following adjoining sheets H-5330, H-5391, H-5392, H-5364, and in each case a satisfactory overlap was made. ✓

6. Good crossings were obtained in all instances. ✓

James M. McQueen, Jr.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5507 (1933-34)

Malibu Point to Mugu Point, Santa Monica Bay, California.

Instructions dated November 18, 1932. (PIONEER)

Surveyed June 22, 1933-Jan.22,1934.

Fathometer soundings -----3-point fixes on shore objects.

Chief of Party -O.W.Swainson

Surveyed by - O.W.S.

Protracted and soundings penciled by H.J.Pulpskamp

Verified and inked by - J.M.McQueen

1. Condition of Records

The records conform to the requirements of the Hydrographic Manual except that only a few bottom characteristics were recorded although some 20 or more vertical wire soundings were taken within the area of this survey.

(a) Circular holes at signals were cut out of the protective velum while the velum was over the smooth sheet, causing deep cuts into the smooth sheet. This practice is entirely unnecessary and should be discontinued for obvious reasons.

The reference station note was inked in red on the smooth sheet by the field party. The office considers it better practice to ink such notes in the same color as the projection to which it refers. The note has been changed to black in the office.

2. Compliance with Instructions for the Project.

The survey is complete and very satisfactory except for the scarcity of bottom characteristics.

3. Sounding Line Crossings.

Depths on cross lines are in good agreement with the depths on the regular system of lines. In the submarine valley off Point Dume, some soundings in close proximity to each other show great differences in depth but this is due to irregularities and slopes encountered in such valleys.

4. Depth Curves.

Within the limits of the survey the usual depth curves may be satisfactorily drawn.

5. Junction with Adjacent Surveys.

(a) H. 5364, H. 5390, H. 5392, H. 5425 (survey of 1933).

1. Junction with these inshore surveys is adequate, the difference in depth being generally less than 1 fathom. The overlapping soundings from H. 5507 (1933-34) have been transferred to the inshore sheets. They are fathometer soundings, whereas the soundings on the larger scale sheet are hand lead or machine soundings and should be given preference for charting purposes. (See Descriptive Report P. 2.). Two soundings, a 9 and a 10, that would affect the 10 fathom curve as drawn on the larger scale sheets, have been omitted from H. 5507, 1933-34.

2. Referring to paragraphs 5 of the Reviews of H. 5390 (1933) and H. 5391 (1933), the 38 fathom sounding in lat. $33^{\circ}59'.5$, long. $118^{\circ}48'.3$ originating with H. 5390 (1934) was not corroborated by the work on H. 5507 (1933) and the sounding therefore has been rejected.

(b) H. 5446 (1933-34)

This survey joins to the west and the junction is satisfactory.

(c) H. 4559 (1926 and 1928)

The work done in 1928 is overlapped by H. 5507 (1933-34) to the southeast of Point Dume and also shows a survey of the 45 fathom bank in lat. $34^{\circ}00'$, long. $119^{\circ}02'$. The survey is on a small scale (1:120,000) but the agreement in depth is good. No complete junction with modern surveys is shown at the eastern edge of H. 5507 (1933-34) but this seems to be effected by a field sheet not yet forwarded to the office and by subsequent instructions which also provide for surveys to the southwest of Point Dume. See Descriptive Report Page 2.

6. Comparison with Prior Surveys.

(a) H. 1341a (1875-6), H. 1405, H. 1404 and H. 1403 (1878).

These surveys embrace the entire area of H. 5507 (1933-34). The agreement in depths is good. A somewhat greater detail in curves on the steeper slopes might be obtained by combining the soundings on these sheets with those of H. 5507 (1933-34) but this seems hardly necessary for present charting purposes. Except for bottom characteristics which have been transferred to the new survey in color, these surveys should be generally superseded by H. 5507 (1933-34). However because of their good agreement the prior work may be used to supplement the new work wherever necessary for charting purposes.

(b) H-554 (1856)

Only a small area of this survey at Point Mugu is covered by H-5507 (1933-34). An examination of the records of the 1856 survey shows that the charted 23 in lat.34°-03'.8 long.119°-03', should be 33 which is in fair agreement with the present survey. A 30 fathom sounding about 3/10 mile further south falls in about 38 fathoms. On H-5507 (1933-34) otherwise the agreement in depth is fair but none of the information on H-554 (1856) should be used in future charting of this area.

(c) H-289 (1851)

This is a reconnaissance survey on very small scale and shows no information of charting value in the area under consideration.

7. Comparison with Chart No.5202.

Within the area of the present survey the chart is based on surveys discussed in the foregoing paragraphs and contains no additional information that needs consideration in this review.

8. Field Plotting.

Protracting of positions and penciling of soundings were excellent.

9. Additional Field Work Recommended.

The survey is satisfactory and no additional field work is deemed necessary in this area.

10. Superseding Old Surveys.

Within the area covered the present survey supersedes the following surveys for charting purposes.

- H-1341a (1875-6) In part)
- H-1405 (1878) " ") Except as noted in paragraph 6,a
- H-1404 (1878) " ")
- H-1403 (1878) " ")
- H- 554 (1856) " "
- H- 289 (1851) " "

11. Reviewed by - R.J.Christman Nov. 1934.

Inspected by- A.L.Shalowitz

Examined and approved:

C.K.Green, *C.K. Green*
Chief, Section of Field Records.

A.L. Shalowitz
Chief, Section of Field Work.

R. O. Pollock
Chief, Division of Charts

G. H. Hulse
Chief, Division of H. and T

Applied to drawing of Chart 5202 - Mar 1936 - C.M.J.

25 for 13, 1936
Camp

applied to Chart 5101 - May 1936

R-M.3

