4366

See also 4367, 4368

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

State: California

11—6613

DESCRIPTIVE REPORT.

Hydrog. *Sheet No.* 4366

LOCALITY:

Santa Barbara Channel

San Clemente I. to Mainland

1924

CHIEF OF PARTY:

R.F. Luce

4366

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SHEET No. 4366

Santa Barbara Channel, San Clemente Island to mainland, California.

A General Description of the coast is not given as no topography was executed this season and there is no evidence of marked physical changes in the shore line since previous surveys.

A non-tidal current running northwesterly was noticed while sounding the area about ten miles east of San Clemente Island. This current was apparently a weak one. On the nights that the ship lay hove to, in the area from 10 to 20 miles east of San Clemente Island, the drift was generally in a southeasterly direction. On practically all of these occasions there was a strong northwesterly breeze, which would overcome an adverse current.

A bank, with a least depth of 138 fathoms was found about 25 miles east of the south end of San Clemente Island. This bank is a ridge running in a North Northeasterly and South Southwesterly direction, about twelve miles long, with nearly 600 fathoms immediately to the eastward and deepening gradually to the westward.

Satisfactory Anchorage was found, with fair holding ground, in Pyramid Cove on the south end of San Clemente Island, affording fair shelter from north to northwesterly winds.

The method used in the survey of this sheet was to control the positions by fixes with angles on mountain peaks on Catalina, San Clemente and the mainland, by radio acoustic ranging and a small amount of dead reckoning. All sounding was by use of the sonic apparatus with vertical casts of the wire taken hourly for checks. The ship was run at a speed of eight knots and the soundings taken every three minutes. The sonic soundings and wire soundings agreed, on the average, within two percent.

R F Luce

R. F. Luce,
Commanding Str. GUIDE.

San Clemente Island to mainland, Calif.

STATISTICS SHEET No.

OFF SHORE HYDROGRAPHY. 1924. SANTA BARBARA CHANNEL.

U S Coast and Geodetic Survey Ship GUIDE, R.F.Luce, Commanding.

Date. 1924.	Letter.	Vol.	Positions.	Soundings. Wire.	Sonic.	Miles. Statute.	Vessel.	Remarks.
Feb. 18.	A	1	80	5	119	52.9	GUIDE	
" 24	B	1	36	4	76	37.1	"	
" 28	C	1	39	3	65	30.5	"	
Mar. 5	D	1	1	1	1	0.0	"	
" 14	E	1	46	4	90	40.8	"	
" 14	E	2	31	3	65	26.6	"	
" 19	F	2	9	1	16	6.4	"	
" 27	G	2	44	4	79	32.5	"	
Apr. 3	H	2	6	1	1	0.0	"	Test.Bombs.
" 4	J	2	4	4	68	27.1	"	
" 9	K	2	65	7	157	75.9	"	
" 9	K	3	4	1	14	6.4	"	
" 10	L	3	10	1	24	10.1	"	
" 14	M	3	32	4	86	42.0	"	
" 16	N	3	64	8	191	90.5	"	
" 17	P	3	33	4	105	49.6	"	
" 17	P	4	37	5	106	50.5	"	
" 18	Q	4	48	6	142	74.0	"	
TOTAL		4	589	66	1471	652.9	GUIDE.	

Unit of Soundings..... FATHOMS,
Plane of Reference..... Mean Lower Low Water.
Tide Gauge located at Quarrantine Wharf, San Diego, Calif.

Plane of Reference, reading on gauge.....
Lowest tide observed,..".....".....".....
Highest tide observed,..".....".....".....

C. & G.

Field Records

Oct. 18, 1924.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
8 volumes of sounding records for

HYDROGRAPHIC SHEET 4566

Locality: Santa Barbara Channel, Calif.

Chief of Party: R. F. Luce in 1924.

~~Plane of reference is~~
~~to on tide staff at~~ Because of great depths no tidal reduction was applied.

For reduction of soundings, condition of records satisfactory
except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginnding of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered wrong column.
7. Field reductions entered in "Office"column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tubeused not stated.
11. Sounding tube No. entered in column of"Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks

G Rude

Chief, Division of Tides and Currents.

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. 4-DRM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

October 24, 1925.

Report on Inking and Verifying H. 4366

When this sheet was received in the Section of Field Records the Assistant Chief noted a few large discrepancies where sounding lines crossed. Due to this fact and also to the fact that many positions were located by the radio acoustic method of position finding as recently developed, a thorough check of the plotting was ordered by the Assistant Chief of Field Records.

The positions were located by

1. Usual three point fix, or
2. Two distances to shore hydrophones, or
3. One angle, and a distance to hydrophone, or
4. Log distances between fixed positions, or
5. Course and log distances, or
6. Modifications and combinations of the above.

Sometimes two methods were used in fixing a position and the one which agreed with time and course was used.

In some parts of the work the 3 point fixes were quite weak, and the office replotting showed a little shift. This may have been due to distortion in the paper. The protractor used in the office was put in adjustment before doing the replotting.

For plotting log distances a log factor was determined in a rather rough and ready manner. As the lines were in a NE-SW or NW-SE direction, a number of distances between fixed positions were scaled and the corresponding log distances noted, and from this a factor, which made no allowance for current or leeway, was found. The factors for each of the above directions were then used for other lines running in the same directions.

A similar process was used in finding the differences between courses made good and compass courses.

A sufficient number of cases were used in obtaining the above log factors and compass course corrections to give reliable results.

A drawback to the radio acoustic method of position finding is the long wait needed to complete the operation. Some of the stops to secure positions were as long as an hour and while the ship would drift some in this time, no information as to the amount is given in the records.

GPO

Some of the work was quite difficult to plot, especially 21 - 42 E day and 53 - 70 P, due to doubtful or questioned angles and weak fixes. The positions finally adopted are based on available data, combining angles with log distances, time and courses.

The tabulations for getting the approximate log factor follow:

Positions	Approximate Direction	Log Distance	Actual Distance
1 - 6 M	NW	5.80	6.00
6 - 10 M	NW	5.16	5.30
19 - 27 M	SW	10.87	10.40
2 - 9 N	NE	8.23	8.00
16 - 23 N	NE	9.62	10.00
25 - 30 N	SW	6.25	5.70
39 - 43 N	SW	5.58	5.30
43 - 46 N	SW	3.57	3.35
46 - 54 N	NE	9.83	10.15
54 - 64 N	NE	12.16	12.70
1 - 9 P	SW	10.44	10.00
9 - 19 P	SW	13.74	13.35
1 - 19 P	SW	24.18	23.35
19 - 21 P	SE	1.9	2.30
21 - 26 P	NE	7.31	7.85
26 - 29 P	NW	4.07	4.05

The tabulations for getting approximate courses follow:

Course P S C	Course Made Good	Correction (Course made good - P S C)
230	247	+17
287	308	+21
49	64	+15
233	247	+14
48	65	+17
49	66	+16
122	130	+ 8
153	159	+ 6
51	68	+17
232	247	+15
120	133	+13
227	246	+19
50	65	+15
55	69	+14

The field protracting and plotting, in general, was very well done. The field drafting was completed as prescribed in the General Instructions. The records were excellent and ample notes were given. The notes of courses and changes in courses were especially complete, and when fixes were not obtainable, the courses and log readings furnished a means of plotting the line until the next position could be obtained.

The positions obtained by the radio acoustic method of range finding agreed very well with other methods of locating positions, usually within a couple tenths of a mile. The radio acoustic method was based on distances to two hydrophones and in future a check on a third hydrophone should be taken where practicable. In its present state, the radio acoustic method is very good, and if it should be somewhat improved in the future, it will probably prove equal to 3 point fixes.

The sonic soundings, in general, agreed well with check casts by wire and crossings were good. The junctions with adjacent sheets are satisfactory.

Oct. 24, 1925

F. M. albert Draftsman,
Section of Field Records.

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. 4-DRM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

October 30, 1925.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4366.

San Clemente Island to Mainland, Calif.

Surveyed in 1924

Instructions dated January 12, 1924 and November 21, 1924.

Chief of Party, R. F. Luce.

Surveyed by R. F. L. and K. T. Adams.

Protracted by F. D. Porcher.

Soundings plotted by F. D. P. and G. D. Cowie.

Verified and inked by F. M. Albert.

1. The records are unusually complete and conform to the requirements of the General Instructions.

2. The plan and character of development conform to the requirements of the General Instructions.

3. The plan and extent of development satisfy the specific instructions.

4. The sounding line crossings are adequate considering the uneven character of the bottom and the depths.

5. The information is sufficient for drawing the usual depth curves.

6. The usual field plotting was done by the field party. It was a difficult piece of drafting and, in general, was found to be correctly plotted. Some adjustments of the dead reckoning lines were made in the office, and the shifting found necessary in some of the 3 point fixes indicated that a protractor out of adjustment was used.

0 P O

7. The junctions with the adjoining sheets are satisfactory.

8. No further surveying is required within the limits of the sheet.

9. The character and scope of the surveying are excellent and the field drafting is good.

10. Reviewed by E. P. Ellis, October, 1925.

Copy for Section of Field Records files May 26, 1928.

(11)

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
1 volumes of sounding records for

HYDROGRAPHIC SHEET 4566 add'l.

Locality: SOUTHERN CALIFORNIA.

Chief of Party: F. G. Engle, 1928.
Plane of reference is M L L W
3.5 ft. on tide staff at Los Angeles Harbor.

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

Chief, Division of Tides and Currents.

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 11-DPM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4366 (Additional Work)

Gulf of Santa Catalina

Surveyed in 1928

Instructions dated December 16, 1927

Chief of Party, F. G. Engle.

Surveyed by F. G. E.

Protracted and soundings plotted by T. B. Reed.

Verified and inked by F. B. Kelly.

1. The records conform to the requirements of the General Instructions.

2. The plan and character of development is peculiar to this one job.

3. No curves were drawn by the field party but the soundings are adequate to complete the curves on the original sheet.

4. Crossing lines, considering that this was entirely a dead reckoning sheet, showed excellent agreement.

5. The shoal developed at Lat. 32° 40', Long. 118° 00' is also shown on H. 4265a and both sheets check each other well.

6. Upon recommendation of Capt. Borden the whole of the work was accepted as correct.

7. Field plotting of positions - excellent.
Field plotting of soundings - good.

8. Report by F. B. Kelly, December 1, 1928.

Inspected and found adequate. The specific instructions have been complied with.

E. P. Ellis - January, 1929.

Approved:

Chief, Section of Field Records (Charts)

Chief, Section of Field Work (H. & T.)

4366

Form 537
11—6812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4366

State . . . . C A L I F O R N I A . . . . . .

General locality ~~Santa Barbara Channel~~ Gulf of Santa Catalina . . . . . .

Locality . San Clemente Island to Mainland . . . . . .

Chief of party . Lt. Com'dr. R. F. Luce . . . . . .

Surveyed by Str. GUIDE- R. F. Luce in charge . . . .

Date of survey February 18th to April 18th, 1924 . .

Scale . . . . 1 : 160,000 . . . . . .

Soundings in . Fathoms . . . . . .

Plane of reference Mean Lower Low Water . . . . . .

Protracted by F.D.P. . Soundings in pencil by F.D.P.-G.D.C.

Inked by . J.H.S. F.M.A. Verified by . G.W.T. F.M.A. . .

Records accompanying sheet (check those forwarded):

Des. report, ... Tide books, ... Marigrams, 1 Boat sheets,
Bombing record
4 Sounding books, 1 ~~XXXXXXX~~ books, ... Photographs.

Data from other sources affecting sheet Triangulation points taken from Superintendents Report for 1904. Hydrophone locations from sextant angles.

Remarks: Some locations determined by Radio Acoustic Ranging.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 4366 addl work

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

Number of positions on sheet	50
Number of positions checked	2
Number of positions revised	0
Number of soundings recorded	246
Number of soundings revised	50
Number of signals erroneously plotted or transferred	0

Date: Dec. 1, 1928.

Cartographer: Francis B. Kelly