

5425

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Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R.S. Patton, Director

State: California

DESCRIPTIVE REPORT

~~Hydrographic~~ } Sheet No. 101 5425
Hydrographic

LOCALITY

Santa Barbara Channel

Vicinity of Mugu Lagoon.

19 33

CHIEF OF PARTY

C. K. Green.

U. S. COAST & GEODETIC SURVEY
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DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SHEET - FIELD NO. 101
CALIFORNIA COAST, VENTURA COUNTY
VICINITY OF MUGU LAGOON

INSTRUCTIONS

The work on this sheet was under instructions dated October 31, 1932.

LIMITS

The sheet embraces the inshore hydrography of the coast in the vicinity of Mugu Lagoon. The sheet joins with surveys of Lieut. Knox and the Steamer PIONEER (1933) on the east, with sheet 41 on the south, and with sheet 102 on the west.

GENERAL DESCRIPTION

The coast eastward of point Mugu is rocky, with the slopes of the mountains terminating at the beach. Point Mugu is a marked dividing line between the mountainous coast to the eastward and the low flat coast of the Santa Clara Valley to the westward. The shore eastward of Point Mugu is rocky with stretches of sand beach. Westward of the point, the shore is sandy with a narrow strip of low sand dunes, in back of which is a large area of marsh land, broken only with a scattering of clumps of trees.

Mugu Fish Camp, a small dock and 5 or 6 shacks, is the only development along the shore of this sheet.

Except at Mugu, the swells break on the flat sand bottom from 200 to 400 meters offshore. The prevailing winds are westerly and blow nearly everyday in the afternoon. South-east storms occur only during the winter months. With the exception of the mud found in the submarine valley, the bottom is gray sand. There is no kelp in the area. There is no steamer traffic within the limits of the sheet. The region of Mugu Lagoon is a good fishing ground.

Mugu Lagoon, some three miles in length and paralleling the shore, is shallow, with a maximum depth of 6 feet at the bridge leading to the camp. The lagoon is valueless as a harbor, there being no more than a foot of water at the entrance at times, and even at high tides, the sand bar and breakers make the passage impossible to strangers. One or two small locally owned launches

of 3 foot draft occasionally enter the lagoon at high tide to be hauled out, but the greater part of the lagoon is dry at low water.

An irregular shaped submarine valley extends in to the beach at the Fish Camp. The 20-fathom curve being only 250 meters offshore at its greatest shoreward approach and the 100-fathom curve being only 3/4 mile offshore. The bottom of the valley is a sticky greenish mud.

SURVEY METHODS

The hydrography, up to approximately 12-fathoms, is hand lead soundings, fixed by sextant angles with ample topographic control. Wire soundings with gas engine hoist were used on the remainder of the sheet. The inshore line of soundings were taken on the best available days, and are just outside the breaker line. A line of skiff soundings were taken at the entrance to Mugu Lagoon. An attempt was made to obtain more soundings off the Lagoon, but the entrance was constantly breaking even on smooth days and at high water.

DISCREPANCIES

There are no discrepancies of note on the sheet. The cross lines check very well, considering the steep slopes of the valley.

DANGERS

There are no dangers in the area. Because of the flatness of the coast line west of point Mugu, the shore is difficult to make out at night, but point Hueneme Light, to the westward, fixes the extreme southwesterly point of this low land.

ANCHORAGES

Anchorage, in open water, can be had anywhere along the coast outside of the valleys. Small boats anchorage, with some protection from west winds, may be had in about 8 fathoms 200 meters southeast of the fish wharf at Mugu. The lead must be used in coming to anchor because of the steep slopes.

COMPARISON WITH PREVIOUS SURVEYS

Aside from the submarine valley, the curves agree favorably with the curves of the survey of 1856 (Reg. No. 554). The present 50-fathom curve approaches to within 1/2 mile of the shore, while the 1856 survey shows the 50-fathom curve nearly 1 mile from the same point of the shore. The spacing

of soundings on the old survey and the number of "no bottom" soundings do not permit an accurate delineation of the depth curves. ✓
If the "no bottom" symbol were added to one* certain 20 fathom sounding on the old work, the 50-fathom curve could be shown as at present. * May be the one in lat. $34^{\circ}05'1$, long. $119^{\circ}5'4$. - *Turn*

A sand shoal, about 300 meters in diameter is now located about 1-1/3 miles west by south of Triangulation station Mugu Point. The least depth on this shoal is 18 fathoms. The old survey indicates that this shoal has moved some 300 to 400 meters westward. The present deeper curves of the valley (Sheet 41 - 1933-34) compare more favorably with the curves of the 1878 survey, Register No. 1403.
H-554+1403 contain no development of this shoal - *Turn*

See
note
below

GEOGRAPHIC NAMES

No new names are used.

CURRENTS

No current measurements were made. Conflicting currents, at times quite strong, are present around the slopes of the valleys. The general set is easterly.

Approved by

Chas. K. Green
Chas. K. Green,
Chief of Party.

Submitted by

Chas. K. Green
Chas. K. Green,
Chief of Party.

Note

The shoal referred to here on the old survey is the group of shoal soundings mentioned in paragraph 6, b of the review. Several of these soundings were marked "not so good" in the original sounding record. Furthermore, the area of the 18 fm. shoal on the new survey is practically blank on the old survey, hence it is hardly justifiable to say the shoal has actually moved. a. P. Shalant

STATISTICS SHEET No. 101

DATE, 1933	LETTER	VOLUME	POSITIONS	SOUNDINGS	MILES STATUTE	VESSEL
May 23	A	1	37	87	6.0	VIRGINIA I
24	B	1	67	149	12.0	"
25	C	1	63	111	9.0	"
31	D	1	76	178	13.8	"
June 2	E	1	37	83	7.4	"
6	F	1	88	130	12.3	"
7	G	1	55	112	9.1	"
8	H	2	165	513	28.0	"
9	J	2	38	58	2.4	"
12	K	2	49	120	6.5	"
13	L	2	35	77	3.2	"
14	M	2	69	184	9.4	"
16	N	2	5	9	0.3	"
21	P	2 & 3	102	117	12.5	"
22	Q	3	57	99	9.5	"
23	R	3	35	49	3.0	"
Sept. 12	S	3	24	27	2.8	"
13	T	3	108	163	14.3	"
14	U	3	11	39	0.8	"
18	V	3	12	12	0.6	"
26	W	3	22	44	3.5	"
28	X	3	8	8	0.8	"
TOTAL-----			1,163	2,360	167.2	

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY
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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. 101

REGISTER NO.

State California

General locality Santa Barbara Channel

Locality Vicinity of Mugu Lagoon

Scale 1:10,000 Date of survey May - September, 1933

Vessel Chartered Launch VIRGINIA I

Chief of Party Chas. K. Green

Surveyed by Chas. K. Green - Harry T. Kelsh

Protracted by Samuel L. Ullman

Soundings penciled by John W. Parsons

Soundings in fathoms fms

Plane of reference M. L. L. W. - Hueneme

Subdivision of wire dragged areas by

Inked by W. L. Mullen

Verified by John G. Ladd and W. L. M.

Instructions dated October 31, 1932

Remarks:

LCC

April 24, 1934

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
3 volumes of sounding records for

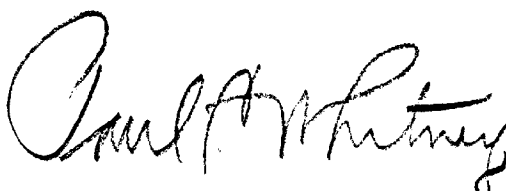
HYDROGRAPHIC SHEET 5425

Locality Vicinity of Mugu Lagoon, Santa Barbara Channel, Calif.

Chief of Party: Chas. K. Green in 1933
Plane of reference is mean lower low water, reading
2.9 ft. on tide staff at Hueneme
12.7 ft. below B. M. 1

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

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents

Partial Verification
Verifiers, Report on H 5425

Chief of Party - Chas. K. Green
Surveyally - " " " & H.T. Kelsh
Soundings penciled by John W. Parsons
Protracted by - Samuel L. Ullman
Verified by - John G. Reed,

- ~~The position numbers on this sheet are entirely too large. In most cases they are nearly as large as the soundings themselves.~~
- A careful visual inspection of the protracting has been made in comparison with the last sheet and all variations that seemed doubtful have been verified.
- There are no dangers or shoals (except one 18 fath. shoal south of Mugu Lagoon) on this sheet and therefore no soundings have been inked by the verifier.
- There is a very pronounced submarine valley extending toward the shore of Mugu Lagoon. Very steep slopes exist in this valley which are well defined by the sounding lines. There are no discrepancies in the cross lines in the vicinity of this valley.

2.

5. The sheet has been carefully checked with the topography of this area (T 4816) and all rocks around it made to agree. The numerous smaller rock symbols shown along the edge of the shoreline from Mugu Pt. east was intended to be a generalization of the very rocky shore as shown on T 4816. ~~The rocks out farther from shore are accurately transferred.~~

Respectfully submitted
John G. Ladd
May 9, 1934

Report of W. L. Muller on H-5425. June 6, 1934

The writer concurs in the report of Mr. Radd and has little to add.

There were a few places where the soundings were not properly spaced, and two or three places where positions were improperly plotted. Aside from this the sheet was excellently plotted and penciled. The time spent by me in making and doing the necessary checking was $53\frac{1}{2}$ hrs.

Respectfully submitted
W. L. Muller

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. *5425*

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

Number of positions on sheet	<i>1163</i>
Number of positions checked	<i>40</i>
Number of positions revised	<i>10</i>
Number of soundings recorded	<i>2360</i>
Number of soundings revised	<i>25</i>
Number of signals erroneously plotted or transferred	<i>0</i>

Date: *JUNE 6, 1934*

Cartographer: *W. L. Mullen*

Verification of protracting
Verification & inking of rocks & Shoals } by *J. G. Ladd*

Time: *16 hr* ✓

Verification of inking by *W. L. Mullen*

Time: *5 3/4 hr*

Review by *Harold W. Murray*

Time: *5* ✓

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5425 (1933)

Mugu
Vicinity of Mugu Lagoon, Santa Barbara Channel, Calif.

Surveyed May - Sept. 1933.

Instructions dated Oct. 31, 1932 (Chas. K. Green).

Hand Lead and Machine Soundings - 3 Point Control on Shore Signals.

Chief of Party - C. K. Green.

Surveyed by - C. K. Green and H. T. Welsh.

Protracted and soundings plotted by - S. L. Ullman; J. W. Parsons.

Verified and inked by - J. G. Ladd and W. L. Mullen.

1. Condition of Records.

The records are neat, legible and conform to the requirements of the Hydrographic Manual.

2. Compliance with Instructions for the Project.

The plan, character and extent of the survey comply with the instructions for the Project.

3. Sounding Line Crossings.

Sounding line crossings are satisfactory.

4. Depth Curves.

Depth curves may be satisfactorily drawn with the exception of the 1 fathom and ^{positions} of the 2 and 3 fathom curves.

5. Junctions with Contemporary Surveys.

The junction on the NW with H. 5426, south and SW with H. 5446 and east with H. 5392 is satisfactory. The junction on the southeast with the work of the Pioneer (1933) will be made when the work has been received in the office.

6. Comparison with Prior Surveys.

a. H. 289 (Survey of 1851).

This is a "track" survey on a very small scale and contains no information which would conflict with the new survey.

b. H. 554 (Survey of 1856).

This survey, although on a scale of 1-10,000 is a very open and sparsely developed one. In the light of our modern surveys this would be classed as reconnaissance only. A comparison with the present surveys reveals many inconsistencies such for example as a group of 15, 16, 20, and 21 fathom soundings (near pos. 3b)

in lat. $34^{\circ}05'$, long. $119^{\circ}05'$ (forming a ridge across the head of the valley) and two $19\frac{1}{4}$ fathom soundings (near pos. 26b) in lat. $34^{\circ}04'.7$, long. $119^{\circ}06'.7$ though correctly plotted from the records fall in depths of 40 to 60 fathoms and 50 to 150 fathoms, respectively, on the present survey (H. 5425). In areas where no discrepancies are apparent, soundings are generally in good agreement with the new survey.

This sheet (H. 554) has been investigated by A. L. Shalowitz in connection with an inquiry from Professor Shepard of the University of Illinois and the substance of his report on the unreliable character of the survey is embodied in a letter to him dated Nov. 16, 1933 (Chart Division File). The new survey should within its limits supersede the 1856 survey for charting purposes.

c. H. 1403 (Survey of 1878).

This survey (scale 1-40,000) covers a small portion of the southern limits of the new survey. Soundings on this survey are generally in good agreement with those of the new survey (H. 5425).

7. Comparison with Chart No. 5202.

Aside from matters discussed in the foregoing paragraph there are no other matters of importance needing consideration in this review.

8. Field Plotting.

Field protracting and plotting were accurate and conform to the requirements of the Hydrographic Manual.

9. Additional Field Work Recommended.

This survey is complete, no additional work is necessary.

10. Superseding Old Surveys.

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

H. 289	(Survey of 1851)	In part.
H. 1403	(" " 1878)	" "
H. 554	(" " 1856)	" "

11. Note to Compiler.

The numerous sunken rock symbols shown on the new survey between Pt. Mugu and signal Lik in long. $119^{\circ}2'.2$ are a generalized representation of the rocks shown on T. 4816 (survey of 1932).

H. 5425 - 3

12. Reviewed by - Harold W. Murray - July 9, 1934.

Inspected by - A. L. Shalowitz.

K.T. Adams

K. T. Adams,
Chief, Section of Field Records.

Examined and approved:

L.O. Polbat

Chief, Division of Charts.

B. Borden

Chief, Section of Field Work.

G. W. H. H.

Chief, Division of H. & T.

C O P Y

80-DRM

November 16, 1933.

Prof. Francis P. Shepard,
458 Sycamore Road,
Santa Monica, California.

My dear Professor Shepard:

I have been interested in reading your letter of November 1st to Captain G. T. Rude in regard to your recent visit to the PIONEER and your investigation of certain submarine valleys in the area in which that vessel is working. You state that you find differences in depths in one valley which might mean a change in the bottom in that vicinity. I am pleased to note that you have not used these differences without reference to the original records, as I believe that a careful investigation of the early surveys should be made in all cases before reaching a conclusion in the matter of natural changes in depths between the dates of the surveys.

The line of soundings referred to in your letter was transferred to the survey of 1879 from an earlier survey, H 554, made in 1856. I am forwarding herewith a photostat copy of a section of H. 554. A review of this survey has been made and there are encircled in yellow on the photostat certain soundings which in a modern hydrographic survey would be considered as doubtful until verified by additional soundings over the same ground.

The locations of the soundings along the line referred to in your letter depend upon one position only. This is noted on the sheet as 3b. This position has been checked against the original records and no error can be found in its plotting. I am inclined to believe the position is correct, but that in this case and in certain others the bottom was not actually reached.

The records show that the soundings from the ship were obtained with the deep sea lead. We have had numerous instances where no bottom soundings were recorded as if the lead had reached bottom. This usually occurred where the bottom drops off rather rapidly and in depths beyond 18 to 20 fathoms. The sounding record contains the note "Not very good" opposite four soundings which are crossed out on the photostat.

In regard to the bottom characteristic it is noted that the word "hard" is shown in the record opposite position 3b. If the leadsman had obtained bottom on this sounding it is reasonable to suppose that the material would also have been noted.

In a comparison with a modern survey the work done in 1856 would be considered as reconnaissance only. When the early survey was made there was necessity for covering considerable ground. The hydrographer did not have the equipment nor were conditions such that it was possible to obtain a close check on the accuracy of the work without expenditure of considerable time.

I believe that you will agree with me that it would not be safe to use these doubtful soundings as a basis for a comparison with a modern hydrographic survey in considering whether or not there has been an actual change in the bottom.

Very truly yours,

(Signed) J. H. Hawley

Acting Director.

Inclosure.

