

5665

Form 504
Rev. Dec. 1933
DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
R. S. PATTON, Director

DESCRIPTIVE REPORT

~~Topographic~~
Hydrographic } Sheet No. ... 25

State ... California

LOCALITY

Southern California Coast

Mission Bay

1934

CHIEF OF PARTY

R. W. Knox

5665

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. 25 5665

REGISTER NO.

State CALIFORNIA

General locality SOUTHERN CALIFORNIA COAST

Locality MISSION BAY

Scale 1:10000 Date of survey Oct. 29-Nov. 12, 19 34

Vessel Whaleboat

Chief of Party ROBERT W. KNOX

Surveyed by K. McBEAN

Protracted by G.L. BLAIR

Soundings penciled by R.A. PHILLEO

Soundings in ~~XXXXXX~~ feet

Plane of reference M. L. L. W.

Subdivision of wire dragged areas by None

Inked by E. R. Cotton

Verified by " " "

Instructions dated April 14, 19 32

Remarks: _____

DESCRIPTIVE REPORT

To Accompany

SHEET (field) NO. 25

MISSION BAY

SOUTHERN CALIFORNIA

Scale 1:10000

1934

INSTRUCTIONS:

The authority for the execution of this survey was contained in the Director's Instructions dated April 14, 1932, Supplemental Instructions dated September 13, 1933, Supplemental Instructions dated March 9, 1934, and Telegraphic Instructions directed to Lieut.(j.g.) R.J. Sipe under date of December 22, 1933.

SURVEY METHODS:

This survey was made with a whaleboat powered by an outboard motor, the prevailing shallow depths prohibiting the use of a larger vessel.

Soundings were taken with a hand lead line graduated to fathoms and feet. Positions were obtained by the usual 3-point sextant fixes, or, in a few cases, by a distance and bearing from a single signal closeby.

Difficulty was encountered in taking the soundings due to the strong tidal current which runs in the entrance channel and along the south side of the bay to the causeway. This current was estimated to have a maximum velocity of 3-4 knots. Sounding was also rendered difficult by the

extremely narrow channels and sharply defined shoals causing sudden variation in the soundings.

DISCREPANCIES:

No discrepancies of a serious character are apparent. Such as they are consist principally of two differing soundings falling in nearly the same position. The bottom of the bay has been observed during minus tides to comprise a group of narrow, sharply cut channels, and to be covered by a series of irregular holes and ridges. It is believed that such discrepancies can be attributed to these features

(Note: Soundings for "f" day have not been plotted on the smooth sheet as the tides for this day will have to be interpolated from La Jolla tides, the simultaneous comparison with which has been forwarded to the Washington Office.)

DANGERS:

This entire bay is full of unmarked shoals which make navigation practically impossible without local knowledge. It should be noted, however, that this waterway is of no importance to either commercial or pleasure craft plying the coast, inasmuch as there are breakers on the entrance bar at all times, and the clearance of the bridge over the entrance is only 7 feet at HW. A few local fishermen use the entrance and berth their boats at the numerous small piers on the west shore of the bay, but these are mainly used by pulling boats and small sailing craft operated in connection with the shore resorts along this coast.

The unsounded areas on this sheet are all above Mean Lower Low Water, and consist of marsh grass and mud.

A 2 inch diameter pipe projecting about 5 feet out of the water is noted on the second sounding after Pos. 45b, pg. 47, Vol. 1, in Lat. 32-47.3, Long. 117-14.9. This is believed to be a marker for a race course sometimes used by small speed boats and outboard motored craft.

CHANNELS:

As noted above, the sea breaks on the entrance bar at all times. The entrance channel appears to be of a changeable character, shifting with the littoral drift and the action of the tidal current in and out of the bay.

From the bridge over the entrance there is a channel following the western shore of the bay to a point at Lat. 32-45.9, Long. 117-14.9, with depths varying from 7 to 36 feet. At this point the channel forks, the left branch continuing on up the western shore and around the northern end of the bay to a point near Signal "Dra" in Lat. 32-47.2, Long. 117-14.4. This channel averages only about 10 meters in width, so that for the most part only one line of soundings was possible. There are several shoal spots with depths of 1 ft. at MLLW in this portion, although the general depth averages 4-5 feet.

The right branch of the channel follows along the south shore of the bay to a point at Lat. 32-46.7, Long. 117-13.5, where it narrows and bears NE to a point near the center of this arm of the bay. This shows a least depth of 7 feet to

the first point mentioned, and thence 4 feet to the end.

A narrow channel branches off from this just west of the causeway in Long. 117-14.1 and follows along the west side of the causeway fill. It is thought that this channel was probably dredged to accommodate gravel barges when the causeway fill was placed. 4 feet may be carried at MLLW.

In Lat. 32-46.6, Long. 117-13.7, two more small channels branch off. One, trending NNW to the northern shore in the vicinity of Signal "Or" carries 3 feet at MLLW; the other trends WNW to a point near the northern end of the causeway also carrying 3 feet at MLLW.

None of these channels are buoyed or otherwise defined.

COMPARISON WITH PREVIOUS SURVEYS:

No soundings are shown in Mission Bay on present editions of charts. The only previous survey is Sheet 567 (1856) 1:10000. Because of its age and the many changes that have taken place, comparison with this sheet is of little value. The existence of the large shoal areas, and the channel along the south shore of the bay is confirmed.

The course of the San Diego River which enters the bay through the delta on the southern side has been changed considerably by subsequent works ashore. The causeway, in approximate Long. 117-14.1, has been constructed, for the greater part of its length, on fill thrown across the bay. These changes have naturally affected the original tidal

flow, and have produced scour and shoaling at various places. The development of the resorts of Mission Beach and Pacific Beach north of Point Medanos has led to the construction of the numerous piers and small boat landings on the western shore.

GEOGRAPHIC NAMES:

In the survey of 1856 and subsequent topographic surveys, as well as in present editions of the Coast Pilot, this body of water is shown as "False Bay" instead of "Mission Bay". The latter is the only designation used locally, and is also used by all other mapping agencies which have been investigated. Chart 5101 also shows the name "Mission Bay" and it has therefore been adopted for this sheet.

The point on the northern side of the bay at the northern end of the causeway (Lat. 32-46.9, Long. 117-14.1) is shown on the U.S. Geological Survey maps as "Bay Point". This is known locally as "Crown Point" only. See Descriptive Report for Air-Photo compilation Sheet T 5374, submitted by this party.

PLOTTING NOTE:

This sheet was plotted in San Diego after the departure of the hydrographic party, and it was not possible

to consult with the hydrographer. This report has been compiled from notes left by the hydrographer.

Some of the topographic signals on this sheet are shown outside of the High Water Line. This has been verified in the field and is actually the case. *

Respectfully submitted,

R. A. Philleo

R. A. Philleo,
Surveyor, C. & G. S.

Forwarded, approved,

Robert W. Knox.
Robert W. Knox,
H. & G. E., Chief of Party
by John B. Mathison.

* No descriptions of any of these stations were submitted by the field party.
E. Philleo

Statistics

Sheet (field)No. 25

<u>Day</u>	<u>Date</u>	<u>Volume</u>	<u>Soundings</u>	<u>Sta.Miles</u>	<u>Positions</u>
			<u>H.L.</u>	<u>H.L.</u>	
a	Oct.29	1	727	15.2	153
b	" 30	1	387	11.3	117
c	Nov. 5	1-2	304	08.3	76
d	" 6	2	673	16.8	151
e	" 7	2	230	06.8	79
f	# 12	2	165	03.4	54
Totals			2486	61.8	630

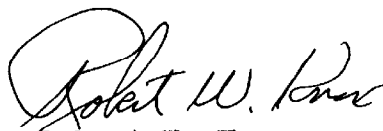
VERIFICATION REPORT
To Accompany
HYDROGRAPHIC SHEET NO. 25
CALIFORNIA COAST

Hydrographic Sheet 25, and accompanying records, ✓
have been inspected and approved by me.

The field work was done by K. McBean, Surveyor,
under the supervision of Lieut. (j.g.) John C. Mathisson. ✓

The office work was done by civilian draftsmen
also under the supervision of Lieut. Mathisson.

No additional work is considered necessary. ✓



Robert W. Knox
H. & G. Engineer
Chief of Party

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. .5665

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

Number of positions on sheet	.630.
Number of positions checked90.
Number of positions revised5.
Number of soundings recorded	248.6
Number of soundings revised	...23
Number of signals erroneously plotted or transferred	None

Date: May 10, 1935

Verification by G.R. Cotton

Review by *[Signature]*

Time:

~~13 days~~

Time:

7 1/2 hr.

LAC

April 16, 1935.

FE

Division of Hydrography and Topography:

✓ Division of Charts: Attention Mr. E. P. Ellis

Tide Reducers are approved in
2 volumes of sounding records for

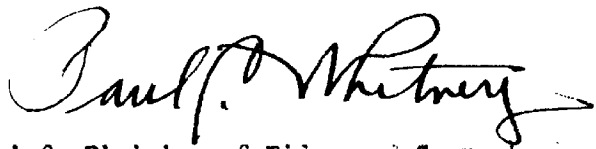
HYDROGRAPHIC SHEET 5665

Locality Mission Bay, California

Chief of Party: R. W. Knox in 1934
Plane of reference is mean lower low water reading
1.5 ft. on tide staff at Mission Bay
9.7 ft. below B.M. 1

Height of mean higher high water above plane of reference is 3.0 ft

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.

Verification of Sheet H. 5665.

1. The records conform to the requirements of the General Instructions, except for the following:

a. In a few cases it was difficult to find a position because the preceeding position had not been clearly indicated as the point where "Line Ends", and the position in question as to the point where another "Line Begins", and the omission of the approximate geographic positions at these points.

b. It is possible that a few more notations regarding increases or decreases in speed might have been recorded. However a complete record in this respect could hardly be expected in an area with such shoals and abrupt changes in depth; and "strong tidal currents" as mentioned in the descriptive report.

c. A more complete record of "Compass Headings" would have made it possible to plot bends in course between positions with a little more certainty. The notation "Turn Left" or "Turn Right" is recorded in many instances, between positions, without compass headings. So it is a question whether a straight line might be as nearly correct as an attempt to guess at the amount of the Right or Left turns. However an attempt to show the bend was usually made in plotting.

d. One "no bottom" sounding was recorded.

2. The usual depth curves can be drawn in the deeper areas, except where an abrupt change in depth makes it impossible to show all the curves in the limited space.

In the shoal areas which constitute a large portion of the upper part of the Bay, it was impossible to draw the low water curve in many instances. Some of the dashed line low water curves, as drawn, are doubtful.

3. The field plotting was complete, except for the omission of all soundings for "f" day. The descriptive report explains that the simultaneous comparison of tides for this day had been forwarded to the Washington office.

4. In addition to the soundings shifted either side of the five revised positions, quite a number of soundings were shifted where bends were recorded between positions. The bends were usually made to conform to the boat sheet.

5. The junction at the entrance to Mission Bay with Sheet H. 5676 is not complete. This is the only point of junction with contemporary sheets.
Will be considered in the review of H-5676

6. While most of the crossings were satisfactory, a few were not so good. The following are the worst:

a. Sounding at pos. 109a is 5) - These positions being practically
Sounding at pos. 50b is 0) the same spot. The 0 was inked.

- b. Sounding at pos. 9f is -1.
Third sounding between pos. 45c and 46c is 8.

These points being practically the same spot. The -1 was inked. Record notes "Boat aground".

- c. 2nd Sounding between 64a and 65a is 6.
Sounding at pos. 74 c is 0.
2nd Sounding between 75c and 76c is 7.

These three being practically the same spot. The 0 was inked. (But may be wrong).

- d. 3rd Sounding between 147d and 148d is 9.
2nd Sounding between 45c and 46c is 5.

These being practically the same spot. The 5 was inked.

The above are probably explained by the following statement in the descriptive report:

"The bottom of the bay has been observed during minus tides to comprise a group of narrow, sharply cut channels, and to be covered by a series of irregular holes and ridges".

E. R. Cotton

Submitted by - E. R. Cotton.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5665 (1934)

Mission Bay, Southern California Coast, California
Surveyed in 1934

Instructions dated April 14, 1932 (R. W. Knox)

Hand Lead Soundings.

3 Point fixes on Shore Signals.

Chief of Party - R. W. Knox.
Surveyed by - K. McBean.
Protracted by - G. L. Blair.
Soundings penciled by - R. A. Philleo.
Verified and Inked by - E. R. Cotton.

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual, except as follows:

- a. The tide reducers were not entered for "f" day, hence the soundings were not plotted on the smooth sheet. (See D. R. page 2). This has been accomplished in the office.
- b. No copy of landmarks for charts on form 567 accompanied this particular sheet. Landmarks for area submitted.
- c. Some of the topographic signals fall outside of the high water line. They have been verified in the field, (see D. R. page 6), and since no descriptions of them were received and no topographic features shown on the sheet, it is assumed that they are of a temporary nature and need no further consideration.
- d. The Descriptive Report is clear and comprehensive and fully covers all matters of importance.

2. Compliance with Instructions for the Project.

The survey complies with the instructions.

3. Sounding Line Crossings.

Few cross lines were run. Differences of two to three feet are noted at line crossings, as well as on adjacent parallel lines. Because of the difficulties experienced in surveying this area due to strong currents in narrow channels through shoal areas, containing numerous deep holes, and because of the irregularity of the bottom, these differences are not considered excessive.

4. Depth Curves.

The depth curves can be satisfactorily drawn, with the exception of the low water curve which was not well defined in some areas.

5. Junctions with Contemporary Surveys.

The junction at the entrance to Mission Bay with H-5676 (1934) will be considered in the review of that survey.

6. Comparison with Prior Surveys.

a. H-567 (1856).

A study of the above survey in connection with the present survey shows numerous natural and artificial changes in depths and topography and does not warrant a detailed comparison. The present survey, within the area covered, should supersede H-567 (1856) for charting purposes.

7. Comparison with Chart 5101.

The chart shows no hydrography within the limits of the present survey.

8. Field Plotting.

The field protracting and plotting of soundings was well done.

9. Additional Field Work Recommended.

The entrance channel south of Pt. Medanos was not well developed, however no additional work is believed to be necessary because of the changeable character of the area.

10. Superseding Old Surveys.

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

H-567 (1856) In Part.

11. Reviewed by - Leo S. Straw, May, 1935.

Inspected by - R. L. Johnston.

Examined and approved:

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

F. S. Bond
Chief, Section of Field Work

L. O. Collett
Chief, Division of Charts.

G. H. de
Chief, Division of H. & T.

25 Jan 7, 1936

Chas.

Applied to Chart 5101 - May 1936 R.M.Z.