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4464A

4464

Form 504	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
State: <u>California</u>	
11-5613	
DESCRIPTIVE REPORT.	
<u>Hydrographic</u>	Sheet No. <u>4464</u>
LOCALITY:	
<u>Gulf of the Farallones</u>	
<u>South Channel</u>	
1925	
CHIEF OF PARTY:	
<u>H.B. Campbell</u>	

South Channel, San Francisco Entrance.

Explanation: The work on this sheet is a resurvey of the South Channel of San Francisco entrance, and includes an area from 1/4 mile north of Buoy N 4 to 1 mile south of Buoy N 2 S, and from 3/8 mile off the beach to 1-1/2 mile off the beach approximately.

General South Channel is not a true channel but is a
Description: slight depression at the southeast end of San Francisco Bar. The bar is also narrower here than farther to the west. The general depth on the bar is 34 to 35 feet. The general depth in the channel is 36 to 37 feet with a few 35 foot spots. The greatest depth that can be carried through on one course is 35 feet.

A detached shoal with least depth of 34 feet, and about 1/4 mile long, east and west, lies 200 meters south Buoy N 4, and a small detached shoal with least depth of 35 feet is 1/2 mile 260° true from Buoy N 2 S. The bottom is fine hard sand.

Changes: There is considerable change in the depth curves, as determined by this survey, compared with the depth curves shown on the latest edition of Chart No. 5530, although the actual change in depth is slight.

The indication from this work is that the water may be deepening offshore and it would appear that there might be a better channel than the one in use at present near the outside limit of this work.

The least depth found at the position where the Str. "D. H. Schofield" touched bottom on December 4th, 1924, was 37 feet, as on the chart. 36 feet was found 100 meters to the west of this position and 35 feet, 400 meters to westward.

Survey Methods: A twelve pound lead with bronze wire center lead line was used. Lines spaced approximately 100 meters were run normal to the beach and four lines parallel to the beach, with closer development of shoals and critical places in the channels. Wherever serious discrepancies in the crossings were found, additional lines were run. It is almost certain that most of the discrepancies in crossings were caused by swell. The five days in which sounding was done were the only days in the month of April in which it was possible to work on the bar with any possibility of accurate soundings on account of a heavy swell, and there was a three to six foot swell on the days when the work was done.

Currents: The current in the South Channel is of considerable strength and it was feared that it might affect the accuracy of the soundings when running lines at right angles to its direction. The leadline was watched for indications of this and it is felt that there is no error in soundings due to this cause.

Two experienced leadsmen were used for this work; one had been chief quartermaster on the "Pioneer" for two years and the other had been a quartermaster on the "Lydonia".

There are several and considerable discrepancies in the crossings. These were investigated and the correct depths were checked where there was doubt. One line was re-run.

This work was done in conjunction with other field work inside the Bay. The weather and the bar were watched closely and only the best weather occurring during the period we were working was used for this sounding.

It is felt that at all critical places the errors are on the side of safety for the leadsmen had a tendency to read the leadline at the bottom of the swell especially when the water shoaled.

Tides: It was found to be impracticable to put a tide gauge on the outer coast on account of surf, so the automatic tide gauge at the Presidio was used for the reduction of soundings. A time correction of minus fifteen minutes was applied to the observed tides, in accordance with information given in the Tide Tables. That is, high and low water were assumed to occur fifteen minutes earlier in the South Channel than at the Presidio tide gauge.

Respectfully submitted,

H B Campbell

H. B. Campbell, H.&G.E., U.S.C.&G. Survey
Commanding NATOMA.

13

Total

Area 4.3 square statute miles

Section of Field Records.

July 21, 1925.

~~Division of Hydrography and Topography~~

Division of Charts:

Tide reducers are approved in
volumes of sounding records for

4

HYDROGRAPHIC SHEET 4464

Locality: South Channel, Nat. San Francisco Bay, Calif.

Chief of Party: H. B. Campbell in 1925.

Plane of reference is mean lower low water and is
5.6 ft. on tide staff at Presidio, San Francisco, Calif.

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 beginning 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 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.

Hydrographic Sheet No. 4464

Gulf of the Farallones. California.
South Channel.

The area covered by this survey is well sounded and appears to develop the Channel satisfactorily.

The crossings do not always coincide but appears satisfactory for an open ocean survey.

The plotting and pencil plotting nearly perfect and the records clear and well kept.

No additional work is necessary.

John D. Torrey
August 21, 1925

E.P.

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No.

4-VEC

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

September 15, 1925.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4464

South Chamel entrance to San Francisco Bay, California

Surveyed in 1925

Instructions dated January 17, 1925 (Natoma)

Chief of Party, H. B. Campbell.

Surveyed by H. B. Campbell.

Protracted and Plotted by M. O. Witherbee.

Verified and inked by J. D. Torrey.

1. The records conform to the requirements of the General Instructions except that ship's headings by compass were given in points instead of degrees.
2. The plan of development satisfy the specific instructions.

The extent of development was outlined on a chart that was sent to the Chief of Party and it is assumed that the survey conforms to that.

The examination of the area where the Standard Oil Steamer reported to have touched bottom when drawing approximately 30 feet disclosed no such depths nor was there any indication of such shoaling on the regular system of lines.

3. The sounding line crossings are adequate.

There are numerous discrepancies of two and three feet in depths of 36 to 40 feet which may be attributed to the fact that practically all the work was done in a 3 to 6 foot swell. (See Descriptive Report of this Sheet).

4. The usual depth curves could be drawn.

5. The field plotting was completed as prescribed by the General Instructions and none of the work had to be done over.
6. There are no contemporary surveys that adjoin this sheet.
7. There are no indications of dangers and no additional work will be required within the survey limits of this sheet.
8. Rating of work (Surveying-excellent
(Field drafting - excellent
9. Reviewed by A. L. Shalowitz, September, 1925.

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. 4464 Sheet B

State California

General locality Gulf of the Farallones
~~Entrance to San Francisco Bay~~

Locality South Channel

Chief of party H.B. Campbell

Surveyed by H.B. Campbell

Date of survey April, 1925

Scale 1:10000

Soundings in feet

Plane of reference Mean lower low water

Protracted by M.O. Witherbee Soundings in pencil by M.O.W.

Inked by J. D. Torrey Verified by J. D. Torrey

Records accompanying sheet (check those forwarded):

Des. report, ☒ Tide books, ☐ Marigrams, ☒ Boat sheets,

☒ Sounding books, ☐ Wire-drag books, ☐ Photographs.

Data from other sources affecting sheet Triangulation 1899 to 1916.

Remarks:

4464a

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Form 504 DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY
State: <u>California</u>
11-5613
DESCRIPTIVE REPORT.
Hydrographic Sheet No. <u>4464a</u>
LOCALITY:
<u>Gulf of the Farallones</u>
<u>South Channel</u>
<u>1926</u>
CHIEF OF PARTY:
<u>P. C. Whitney</u>

(11)

wwB

June 28, 1926.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
2 volumes of sounding records for

HYDROGRAPHIC SHEET NO. 4464A

Locality: South Channel Entrance - San Francisco Bay.

Chief of Party: P. C. Whitney in 1926.

Plane of reference is MLLW
5.55 ft. on tide staff at Presidio

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 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.

E. Ward

Chief, Division of Tides and Currents.

DESCRIPTIVE REPORT.

TO ACCOMPANY WIRE DRAG SHEET OF SOUTH CHANNEL,

SAN FRANCISCO, CALIFORNIA.

Telegraphic Instructions of March 8, 1926.

GENERAL:

Upon investigation, the most probable location of the engines and boilers of the wrecked Steamer "Yosemite" was believed to be at the breakers edge, - some half of a mile southeast of Channel Buoy #4. The channel was therefore dragged as it was thought impracticable to find the boilers in the surf.

EQUIPMENT:

The drag used was equipment sent from the Steamer "Guide", and consisted of 1200 feet of 3/16 inch bottom wire; copper center sounding cord uprights; canvas middle buoys; 15 gallon drum end buoys.

CURRENT:

There is considerable current in the channel and the drag was operated as fair as possible with the current. On account of the current and crab pots, the drag strips are quite irregular. The strips were run around buoy #4, but later the buoy was lifted and the area covered by the drag. Many strips were required to cover the Channel as 1200 feet was the maximum ground wire available.

Plotting:

The following positions were not inked as they were subsequently covered at greater depths:-

A day	9 to 16 inclusive.	
C day	<i>inked in office</i> 6 to 13 inclusive.	
D day	11 to 22 inclusive...	{ End launch working poorly
E day	<i>inked in office</i> 45 to 57 inclusive.	

The amount of lift was determined from the tests shown on page 62, volume 1.

The soundings at grounding (position 33 H) were recorded in the guide launch record. There was no tender available and the soundings were taken from the guide launch. These soundings show shoaler depths than the chart, on the sand shoal extending out toward buoy #4 from the beach.

Triangulation stations only were used for the Control. These were established by previous surveys. The Standard Gauge #88 at the Presidio was used.

Approved
Paul P. Whitney
Chief of Party

Submitted by
Chas. K. Green,
H. & L. Engr.

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS OFFICE:

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TABLE OF STATISTICS

Wire drag South Channel San Francisco Entrance

Date	Letter	Volume	Drag Length	Pos.	Miles sta.	Sdgs.
April 2	A	1	900	16	2.9	0
3	B	1	1200	7	1.0	0
13	C	1	1200	13	1.8	0
14	D	1	1200	39	4.3	0
15	E	1	1200	57	7.2	0
16	F	1	1200	72	8.5	0
17	G	1	1200	37	4.7	0
24	H	1	1200	8	0.5	0
24	H	2	1200	42	2.7	60
May 11	J.	2	900	9	0.5	0
Totals				300	34.1	6

Note. Soundings and depths are in feet at Mean Lower Low Water.

Tide guage used was the automatic tide guage # 88 at the
Presidio Tide station San Francisco Bay.

Plane of reference, reading on the guage 5.55 ft.

Lowest tide observed reading on guage 5.1 ft April 14-15
Highest tide observed " " 11.9 ft. April 7

E. R.

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO NO. 11-DEM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON September 27, 1926.

SECTION OF FIELD RECORDS

Report on Wire Drag Sheet No. 4464^a

South Channel Entrance to San Francisco Bay, Calif.

Surveyed in 1926

Telegraphic Instructions dated March 8, 1926 (San Francisco Field Station)

Chief of Party, P. C. Whitney.

Surveyed by C. K. Green.

Protracted and inked by I. Rittenberg.

Verified and Area and Depth Sheet by F. M. Albert.

1. The records conform to the general requirements for drag work except that drag soundings should have been recorded in a separate sounding volume instead of in the guide launch record.
2. The methods and character of operations fulfill the requirements of the General Instructions.
3. The only instructions issued for this work were sent by telegraph. A copy of these is not available at present. The extent of dragging is probably sufficient for the main channel westward of buoys N-4 and N-2. Eastward of the buoys the drag should have been carried to the 5 fathom curve. The depth of dragging westward of the buoys is generally about 30 ft. There are a few small areas that have been dragged to 27 and 29 ft. Eastward of the buoys effective depths range from 24 to 31 ft. While these depths may be sufficient to insure safety to navigation in South Channel, it must be borne in mind that only areas dragged to 31 ft. or over, or to within 2 or 3 ft. of the bottom, can be shown on the tinted wire drag charts. This should be constantly kept in mind by all parties engaged in drag work. It is usually just as easy to lower the drag an additional foot or two in depth without any increase in operating expense. In important localities, such as this, and in depths varying between 35 and 40 feet, an attempt should always be made to drag as close to the bottom as practicable.

4. The least water was found over all shoals discovered except the 33 ft. grounding depth (allowance made for height of swell) which was cleared by a 29 ft. drag.
5. The overlaps are sufficient.
6. There are two splits on this sheet - a small one on the sand spit making out toward buoy N-4 and a fair size split around buoy N-2.
7. This survey can probably be considered as sufficient for insuring navigation in South Chammel westward of buoys N-2 and N-4 to a depth of about 30 ft., although there are several small areas of less effective depth.

The machinery from the wrecked steam schooner "YOSEMITE" (see letter 90 - 1926) was not found within the limits of the drag work. The area surrounding buoy N-4, the possible place where the machinery was sunk, should be dragged much closer to the bottom as it is just as important to know the actual location of the wreckage as it is to know that the channel is clear of it.

8. The field plotting was completed to the extent prescribed in the General Instructions. Some additional strips were plotted in the office which were omitted by the field party because of having been covered by other strips. The Area and Depth Sheet submitted by the field party was not used on account of the many changes in depth occasioned by the changed tide reducer. There was no boat sheet submitted with this sheet.
9. Attention is called to the 33 ft. grounding in lat. 37° 45' 1400 meters, long. 122° 31' 1170 meters. The large guide launch buoy touched here during a 4 ft. swell at an effective depth of 31 ft. (see Vol. 1, page 7). Allowing 2 ft. for half the height of swell, it was decided to show a 33 ft. sounding here. This was concurred in by the Chief of Field Work. A 29 ft. drag subsequently cleared this spot.
10. Character and scope of drag operations - very good.
Field drafting - excellent.
11. Reviewed by A. L. Shalowitz, August, 1926.

Report on Verification and Inking H. 4464^a Wire Drag.

In general the protracting was well done. The records and notes were good.

The guide launch record states the towline length is 70 or 100 meters as the case may be while the corresponding note for the end launch is 200 or 300 feet. This makes about nine meters difference and is but little noticed on the scale of the sheet.

The position dashes were not ~~connected~~^{drawn} opposite the corresponding times for guide and ^{end} launch. This does not matter on this sheet.

Practically all the effective depths had to be changed due to a change of reducers in the office.

No boat sheet had been received when the sheet was verified.

Position 15-18 D is not inked. The line is erratic and this area has been covered by a deeper drag.

An "Area & Depth Tracing" was submitted by the field party and the office intended to use it for a smooth copy but so many depth changes and some line changes would have been required so a new tracing was made.

J. M. Allett, Cartographer
Section of Field Records.

Aug. 18, 1926

HYDROGRAPHIC TITLE SHEET

44642

44642

Field No. Wire drag of South Channel S. F.

State California

General Locality ~~Pacific Coast~~ Gulf of the Farallones

Locality South Channel ~~San Francisco~~ bay Entrance

Scale 1 : 10000 Date of Survey April, May 1926

Vessel Chartered Launches

Chief of Party P.C. Whitney

Surveyed By C.K. Green

Soundings and Depths in Feet above Mean Lower Low Water

Projection by G.E. Boothe Protracted by I. Rittenburg

Inked by Rittenburg Soundings plotted by Rittenburg

Instructions dated March 8 1926 1926

Remarks _____