

7620

Diag. Cht. No. 5530-A

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. BC-1247 Office No. H-7620

LOCALITY

State CALIFORNIA

General locality SAN FRANCISCO BAY

Locality ANGEL ISLAND TO PT. SAN PABLO

194 7

CHIEF OF PARTY

W. M. Gibson

LIBRARY & ARCHIVES

DATE JULY 22, 1949

7620

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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. BO-1247

REGISTER NO. H-7620

State CALIFORNIA ✓

General locality SAN FRANCISCO BAY ✓

Locality ANGEL ISLAND TO PT. SAN PABLO ✓

Scale 1:10,000 ✓ Date of survey 7 July to 25 Nov., 1947 ✓

Vessel BOWIE

Chief of Party W.M. GIBSON ✓

Surveyed by W.M. GIBSON ✓

Protracted by ANDREW ANNINOS

Soundings penciled by A.G. ATWILL

Soundings in ~~fathoms~~ feet at MLLW ✓
(and are true depths)

Plane of reference MLLW

Subdivision of wire dragged areas by _____

Inked by E. Yearly

Verified by " " _____

Instructions dated 16 Nov. 1940 and 24 April 1947, 19____

Remarks: _____

Note: For Descriptive Report To Accompany
Hydrographic Survey, Field No. BO-1247
DEPARTMENT OF COMMERCE
HYDROGRAPHIC SURVEY

Original Instructions- H.T. 256, dated 16 November 1940.

Supplemental Instructions- Project CS-256, dated 24 April 1947.

The general locality of this sheet is in the Red Rock area, between a line from Point San Quentin and Pt. San Pablo on the north, to an approximate line between the center of Angel Island and Southhampton shoals light, on the south.

The date of beginning field work was 7 July 1947 and ended on 25 November 1947. This is a basic hydrographic survey and covered the areas previously surveyed in sheets H-3929, H-5808, H-5248 and H-6523. A junction was made with the present Hydrographic sheet (Field Number BO-05347) H-7623 (1947)

Due to a prevailing westerly wind in this area of frequent intensities of Force 3 or higher, launch work was prevented on several occasions, especially on the east shore.

The vessels used were the ship Bowie, the army mine yawl, launch 113; On a few occasions, the Navy Plane Personnel launch 133 was used.

In general, the ship Bowie operated in waters of about 18 feet or deeper and launch 113 operated in the inshore areas, and around Red Rock, Castro Rocks, Whiting and Invincible Rocks, all the development on the sheet was accomplished by launch.

The ship Bowie either based out of 9th Ave, Pier Oakland, or the Naval Net Depot, California City. The launch either based out of Kelleys Yacht Harbor, in the Sante Fe Channel, Richmond Harbor, or at San Pablo Yacht Harbor, at Pt. San Pablo.

The turning radius of the ship Bowie at sounding speed, is approximately 100 meters. The turning radius of the launch 113 is approximately 10 meters.

The echo-sounding instruments used were portable 808 J Fathometers, numbered S 111, and S 112. For the entire ship work Fathometer S111 was used. The launch used S 111 and S 112 about equally.

The tide gage used was on the Standard Oil Pier in Lat. 37° - 55.7', Long. 122° - 24.0'. This gage was used for the entire sheet with no range or time variations applied to the reductions of soundings. The MLLW datum is minus 2.9 feet from the staff reading. On a few occasions, when the Richmond Standard Oil gage was inoperative, it was necessary to reduce soundings on this sheet, from a comparison, using Richmond Inner Harbor gage.

There were no current stations occupied.

Control Stations

Five new triangulation stations were established.

They are as follows;

- High Hill 3, 1947 (Hill)
- Radio Tower, 1947 (Mast)
- California Pt. 3, 1947 (Cal)
- Pt Pt. San Quentin 2, 1947 (Sad)
- Naval Net Depot Stand Pipe, 1947 (Net)

The above control was established under W.M. Gibson, Chief of Party.

RADIO TOWER, 1947 is the same as topographic station "Mast". The topography was established before the triangulation was computed.

Additional triangulation control used is shown on the boat sheet, and in the first Volume of the sounding Record.

The topographic stations were transferred from the following:

Plane Table Sheets

BO- B - 47 (Revised 1948)

Note: For Descriptive Report to Accompany Hydrographic Survey, Field No. H-3375 DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

Original Instructions--H-1, 250, dated 7 November 1947. Supplemental Instructions--Project 02-150, dated 25 April 1947.

TELEGRAPH ADDRESS: The general locality of this sheet is in the San Pedro Channel, a line from Point San Quentin and Pt. San Pablo on the north, to an approximate line between the center of Angel Island and...
EXPRESS ADDRESS:

The date of beginning field work was 7 July 1947...
November 1947. This is a basic hydrographic survey...
Previously surveys in sheets H-1359, H-1360, H-1361...
was made with the present Hydrographic Survey...
Due to a prevailing westerly wind in this area of...
of Force 3 or higher, launch work was...
essentially on the east shore.
The vessels used were the ship Bowler, the...
ship; on a few occasions, the Navy...
In general, the ship Bowler operated...
of depth and bottom 1/2 operated in the...
and, Castro rocks, Whiting and...
to the chart was...
The ship Bowler either passed out of...
Naval Wet Depot, California City. The...
Point Harbor, in the Santa Fe Channel, Richmond...
Point Harbor, at Pt. San Pablo.

The turning radius of the ship Bowler at...
rately 100 meters. The turning radius of the...
10 meters.
The echo-sounding instruments used...
Numbered 2 III, and 2 IIS. For the...
needed. The launch used 2 III and 2 IIS...
The tide gage used was on the...
No. 122-2. This gage was used for...
range or time variations applied to...
this datum is minus 2.9 feet from...
when the Richmond Standard Oil gage...
to reduce soundings on this sheet...
Inner Harbor gage.

There were no current stations occupied. Control Stations

- Five new triangulation stations were established. They are as follows: High Hill 3, 1947 (111); Radio Tower, 1947 (142); California Pt. 3, 1947 (151); Pt. San Quentin 3, 1947 (152); Naval Wet Depot Stand Pipe, 1947 (153).

The above control was established under...
Point Tower, 1947 is the same as...
topography was established before...
Additional triangulation control...
and in the first volume of the...
The topographic stations were...
Plane Table Sheets

BO- C - 47 (Revised 1948)
 BO- D - 47 (Revised 1948)
 Planimetric Maps
 T - 5929 }
 T - 5930 } 1941-45

Shoreline & Topography

Except for the location of the new Ferry slip at Castro Pt. and the Oil dock at Molate Pt., taken from plane table sheet BO- B - 47, ^{F-7066a Rev. 1948} all shoreline and topographic features were traced from planimetric maps T - 5928, T - 5929, and T - 5930. (1941-45)

Wherever possible, low water line was obtained by hydrography. The shoreline in the area, (in most cases where zero soundings couldn't be obtained) rises sharply to above high water, and is, for all purposes, within a few meters of MLLW line.

Depths were measured with two 808 J Fathometers, S111 and S112. Both fathometers gave very good service. It is noted in the echo correction to the soundings that each fathometer has its characteristic correction. The corrections were fairly consistent throughout the season.

Over 90% of the control was established either by triangulation or plane table survey. Of 65 hydrographic control stations used, 5 were located by sextant cuts. The control was sufficient and no horizontal adjustment had to be made.

Adequacy of Survey

Within the limits of the survey, the hydrographers consider the hydrography adequate to supersede prior surveys for charting. In the area around the end of the Standard Oil dock in approximately Lat. 37°-55.5' Long. 122°-24.5' there is construction now in progress. A new end pier is being built and dredging around the pier is underway. Construction plans showing new dredged area and new pier ^{is} enclosed with these notes. Plans are Standard Oil Co. of California A - 52601 and A - 52571-1

Satisfactory junction was made with sheet BO-05347, at the entrance to Richmond Harbor. No other sheet joined this survey. Review, par. 4.

Crosslines

In the areas of the launchwork, the crosslines, considering the overlapping of the system of lines, would probably run better than 10% on the average. To the nearest foot, there was practically no discrepancy. Three foot crossings were considered large, and occurred only on a few occasions. *Discrepancies eliminated*

Comparison With Prior Surveys

Comparison with Hydrographic Survey H - 3929, dated 1916, Scale 1:20,000.

In general the contours agree favorably with the present survey. There are no outstanding changes in the bottom, of shoaling or deepening. The present survey covers the area with considerably more soundings, giving a slightly different configuration of contours. Southampton shoal is from one to three feet lower now. ✓

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

This could probably be due to a wearing away of the shoal or a difference of datum.

Comparison with Hydrographic Survey H - 5807 dated 1934, Scale 1:10,000.

Both sheets are generally, in very close agreement; there appears to be a slight filling in, east and northeast of Southampton Shoal, and southwest of Red Rock.

Comparison With Hydrographic Survey H - 6523, dated Nov. 1939, Scale 1:10,000.

The general configuration and extent of Southampton Shoal is about the same along its main axis. The shoal around its southern limits, appear to have built up slightly. Southampton lighthouse is the same as outlined in Sub-Plan on H - 6523. No soundings were obtained around the Lighthouse.

Comparison With Hydrographic Survey H - 2513 dated 1900-1, Scale 1:10,000

Westward from a line half mile east of Pt. San Quentin Ferry slip, going south about 1 1/2 miles, and then ^{once} on a line to California Pt. there is a definite shoaling up in this area. There are in areas as much as twelve feet shoaling, ^{shown by} between the comparison of the two surveys. It is entirely possible in ^{opinion} of the hydrographer, that silt coming out of the ^{of the} Madera Creek, when confronted with a fast ^{moving} ebb current out of San Pablo Bay, is being deposited and shoaling this area. As has been noted by the hydrographer there is a hole about 0.3 miles northeast of California Point. In executing the survey, the currents are strongest on the east shore, when the tide is flooding and strongest on the west shore, when the tide is ebbing.

Investigations

It was requested by Washington office, that investigations be made on certain features and depths as noted and referenced by numbers on a photostatic copy of chart 5532. The investigations are as follows.

- 1. Reference No.9- Position: Vicinity of Lat. 37°-57.45'; Long. 122°-26.3' - Source: # ~~5807~~ H-3929 (Add'l wk. 1931)

A very thorough and close developement was made in this area. From the results of the survey, the shoalest sounding found on Invisible Rock is 8 feet. The shoalest sounding found on Whiting Rock is 15 feet. An attempt was made to check the shoals with leadline, but due to excessive ^{strong} currents in this area, and the abruptness of the shoal, the attempt failed. The above ^{shoal} soundings were checked on crosslines. It is the ^{opinion} of the hydrographer, that they should be charted. An enlargement of the area (not to any scale) is shown in red in the vicinity of the shoals.

Review, par. 5.

on the boat sheet

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

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

- 2. Reference No. 10, Pile and Rock Awash - Vicinity of Lat. $37^{\circ}-57.40'$, Long. $122^{\circ}-25.40'$; Source H - 5807 (1934)

The Rock was located by time and estimated distance off the sounding line. Due to weather conditions and the close proximity of shore it was not considered advisable by the hydrographer to approach the rock any closer for a detached position location.

The rock appeared about one meter in diameter above the water at high tide. It is close in shore, and in a locality where even small boats would not normally cruise. The rock should be charted. *RK. uncovers 7 ft. MLLW shown on pres. survey*

Both Piles were located as shown on H - 5807 and should be shown on the chart. *(Piles shown on pres. survey)*

- 3. Reference No. 11, Castro Rocks -- Lat. $37^{\circ}-55.95'$; Long. $122^{\circ}-25.0'$; Source: H-5807 (1934)

T-7066 a.
(Rev. 1948)

The two largest rocks were located on the Topographic sheet BO- B- 47. No heights of rocks were obtained on hydro survey; There was a stake located by sextant cuts, which is considered to be the westerly limits of the rocks. This area is foul with numerous rocks, some of which are bare and awash at MLLW. It was not considered advisable by the hydrographer to approach this area too closely on the south: due to the danger of underwater rocks. The two large rocks show well above the water at any stage of tide.

Rock detail carried fwd. from T-6301(1934) (also elevations of bare rocks)

- 4. Reference No. 12 -- 6 ft. soundings & Rocks Awash; In vicinity of Lat. $37^{\circ}-55.75'$. Long. $122^{\circ}-25.85'$ Source H-5807 (1934)

Red Rock

A development was made on the 6 ft. soundings just north of Red Rock and were located on those lines. The six foot shoal still exists as shown on H-5807 and should be charted.

On the southwest side of Red Rock, 3° meters from shore a rock was located by sextant fixes, at the start of a hydrographic line. It was bare 3.5 ft. at MLLW.

On the west side of Red Rock, about 10 meters off shore, a rock was located by time and estimated distance off hydrographic line. It was bare 3.5 ft. at MLLW.

On the northwest side of Red Rock about 15 meters off shore, a rock was located by time and estimated distance off hydrographic line. It was bare 3.5 ft. at MLLW.

It was considered too dangerous by the hydrographer, to locate the above mentioned rocks, in the manner recommended in the hydrographic manual; due to winds, and currents.

- 5. Reference No. 13, 6 ft. soundings. Lat. $37^{\circ}-55.36'$, Long. $122^{\circ}-24.41'$; Source H - 5807 (1934).

Disregard prior 6-ft. sdgs.

Dredging is now going on in the vicinity of the 6 ft. soundings as shown on H-5807, on the south side of the Standard Oil Dock. When construction and dredging plans, are obtained from the Standard Oil Co. of Richmond, the depths around the dock will be entirely changed.

- 6. Reference No. 14 - Rock Awash, Lat. $37^{\circ}-55.58'$ Long. $122^{\circ}-23.48'$ Source T - 6301 (1934).

Rock shown on pres. survey

Rock was hit by 'fish' on position 65 d (launch day) The rock is covered by about 0.1 ft. at MLLW. It should be charted.

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

- 7. Reference No. 7 - Sunken Wreck, Lat 37°- 54.66' Long. 122°- 28.41'

Remarks: Piles shown in this area on T-5929 (1941-45)
Source: Not readily ascertainable.

There are no piling or sunken wreck evident in this area at the present time. The water in this area is all one foot or less at MLLW. The sunken wreck and piles should be removed from the chart. It is thought by the hydrographer that the sunken wreck could have reference to an old barge, just one mile north of the present location of "Sunken Wreck".

Disregard sunken wreck and piles

This could have been an error of some one reporting a wreck and scaling one mile out in Latitude. * in ϕ 37°55.68', λ 122°28.36'

The barge located,* is 30 ft. by 60 ft., just afloat and moored. It appears in very poor condition, and is probably abandoned. Could have been in this position for some time.

- 8. Reference No. 16 - 22 ft. Sounding - Lat. 37°- 54.65' Long. 122°-25.70'; Source H - 5248 (1933)

A development was made in this vicinity and it was found that there is a definite shoal. After soundings were plotted, there was found a 21 foot sounding in the immediate vicinity and a 20 foot sounding about 0.2 miles southeast of the investigated sounding. Further development was made in this area to determine the thirty foot contour around this shoal.

chart 21-ft. sdg. from pres. survey

- 9. Reference No. 6 - 34 ft. sounding, Lat. 37°-54.35' Long. 122°- 27.25'; Source Bp. 38642 (1944).
Remarks: Shoal depth from U.S.E. Survey.

In the regular system of lines through this area, they were run about 30 meters apart. There are 34 ft. soundings and less in this area. In the opinion of the hydrographer, no further development was necessary in this vicinity.

34ft. depth verified on present survey

- 10. Reference No. 22 - 15 ft. Sounding, Lat. 37°-53.36', Long. 122°- 24.48'; Source H- 6523 (1939)

Review, par. 5 (1)

An intensive investigation and development was made in this vicinity, but no 15 foot sounding was found. This area apparently has deepened when ~~was~~ compared with H - 6523. The 15 foot sounding should be removed from the chart.

On the shoal, there is a 15 ft. sounding $\frac{1}{2}$ mile to the north, and another 15 ft. sounding $\frac{1}{2}$ mile to the south east of the investigated position.

- 11. Reference No. 15 - Piling, Lat. 37°- 54.7', Long. 122°- 23.3'; Source T - 6301 (1934)

Chart corrected accordingly

H-7623 (1947)
This investigation has been reported on BO-05347.

- 12. On planimetric map T - 5928, there is located a ship moored and aground in Lat. 37°- 55.8', Long. 122°-24.35'

This ship is still existing, and should be shown on the chart. The location from topography, would be the better position, since the hydrographic location was made only as a check.

location from T-5928 (1941-45)

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

Comparison With Chart

Comparison was made with chart 5532, corrected to August 11, 1947.

See Review, par. 6.

All investigations and changes have been discussed under Investigations

Fathometer Corrections

A tabulation for ship and launch echo corrections (bar checks) was made for the various scales, and each fathometer. In general, the daily correction applied to the soundings, did not vary more than 0.4 ft. for the average of the tabulated results for the particular fathometer. Due to the failure to obtain a good bar check for a particular day, because of seas and currents, an average from several bar checks, on different sheets, was applied, these corrections did not vary more than about 0.2 ft., from the average for the sheet when totaled, for the particular fathometer in question.

Fath. corr. shown without sign are minus corr.

In general throughout the season the fathometer corrections, for each fathometer, was fairly constant.

Boat Sheet

The large red numerals on the boat sheet were transferred from the latest chart 5532. The soundings and notations in green ink, were for investigations.

Soundings Around Docks

Soundings were obtained around all piers on this sheet, except, on the end of Standard Oil Dock, (now under construction), the abandoned pier north of Pt. Molate, the Ferry pier and slips at Pt. San Quentin, and the Sante Fe car ferry slip in Lat. 37°-54,5', Long. 122°-23.5'. Information is in Vol. 33. Soundings were taken 36 ft. apart along the faces of piers and docks, unless otherwise noted in the records. Each sounding was given a position number. Soundings were not plotted on sheet due to lack of time.

W.C. RUSSELL

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

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

SOUTHEASTERN DISTRICT HEADQUARTERS

ROOM 418, U. S. POST OFFICE BLDG.

NORFOLK 10, VIRGINIA

C
O
P
Y

Ship BOWIE
P.O. Box 328
Oakland 4, Calif.

C
O
P
Y

29 June 1948

TO: Supervisor, Southeastern District,
U.S. Coast and Geodetic Survey,
Norfolk, Va.

SUBJECT: Field Examination

The records pertaining to hydrography between Point Molate and Point San Quentin, San Francisco Bay, are being forwarded to your office in as much as they represent additional development on Sheet BC-1247.

The subject survey was made at the request of the Supervisor, Western District, to provide information needed by the Pacific Telephone and Telegraph Co. in laying a new communication cable.

The soundings were reduced to M.L.L.W. (2.9 feet) on the same staff at the Standard Oil Dock, Richmond, as was used for BC-1247.

This sheet may be of use in charting the cable area when it is determined that the cables have been installed.

(s) W.M. GIBSON

W. M. Gibson
Commander, C&G Survey
Commanding Ship BOWIE

C
O
P
Y

C
O
P
Y

C
O
P
Y

16 August 1948

C
O
P
Y

To: Commanding Officer
U.S. Coast & Geodetic Survey
Ship Bowie
P.O. Box 328
Oakland, Calif.

Subject: Control

There is some confusion in the sounding records and on boat sheet Bo-1247 about the identification of triangulation stations, High Hill 2, High Hill 3, and hydrographic signal Cross. The signals are all within a few meters of each other on the boat sheet and while hydro names High, Hill, and Cross are used in the records, these names are not identified clearly with the plotted stations. It is improbable that three stations so close together would all be used and it would be greatly appreciated if this situation could be clarified.

It is felt that a relocation of hydro signal Cross would greatly increase the accuracy of the hydrography on this sheet. The original cuts, taken from a drifting launch, do not check very well.

(s)

Earl O. Heaton
Captain, USC&GS
Sup. S.E. District

C
O
P
Y

*Signal Cross was used exclusively. It was assumed the
Δ stations were not dressed since a natural object was cut in
so close by.*

C
O
P
Y

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

SOUTHEASTERN DISTRICT HEADQUARTERS

ROOM 418, U. S. POST OFFICE BLDG.

NORFOLK 10, VIRGINIA

C
O
P
Y

Box 328, Oakland, California
1 September 1948
SHIP BOWIE

C
O
P
Y

To: The Supervisor,
U.S. Coast & Geodetic Survey
Room 418, U.S. Postoffice Bldg.
Norfolk 10, Virginia

Subject: Hydrographic signal "Cross".

The party that located and used the subject signal is no longer on board, but it is believed that the recovery is correct. Its location by sextant angle and measured distance follows:

At HIGH HILL 3:

checks boat sheet position.

CROSS - RED ROCK
~~RED ROCK~~-Cross 58-52-30 (32.66 meters) (107.1 feet)

At Cross:

RED ROCK	45-33
North end Molate Pt., Navy Fuel Dock	
North end Standard Oil Co. Dock	23-00

Thank you for calling this to my attention.

(s) W. M. Gibson

W. M. Gibson, Comdr. U.S.C.&G.S.
Commanding Ship BOWIE

C
O
P
Y

C
O
P
Y

LIST OF BUOYS - H-7620

S.S. Designation	NAME ON LIGHT LIST	LAT.	LONG.	POS. NO.	DEPTH	DATE		
RBN	WHITTING ROCK BUOY	37-57	902 meters	122-26	378 meters	58q	-	10/3/47
FLR#4	INVINCIBLE ROCK LIGHTED BUOY 4	37-57	530	122-26	625	59q	-	10/3/47
RN#8	RICHMOND HARBOR BUOY 8	37-57	80	122-25	887	35r	26.0	10/13/47
RN#6	RICHMOND HARBOR BUOY 6	37-56	1725	122-25	754	34r	12.5	"
RS#4	RICHMOND HARBOR BUOY 4	37-56	1186	122-25	535	117t	17.0	10/17/47
FLR#2CR	CASTRO ROCKS LIGHTED BUOY 2CR	37-55	1654	122-25	330	16da	55.5	11/24/47
10K FL R	SOUTHAMPTON SHOAL NORTH END LIGHTED BUOY	37-55	570	122-25	528	14C	-	7/31/47
BS"1"	RICHMOND HARBOR ENTRANCE BUOY 1	37-54	870	122-23	1300	2y	18.5	11/5/47
FLR#2	RICHMOND HARBOR ENTRANCE LIGHTED BELL BUOY 2	37-54	708	122-23	1355	1y	24.2	11/5/47
FLR#2A	SOUTHAMPTON SHOAL CHANNEL LIGHTED BUOY 2A	37-54	805	122-25	165	17da	33.0	11/24/47
FLW#1	RED ROCK BANK SOUTH END LIGHTED BELL BUOY #1	37-54	712	122-25	789	18da	24.5	"
FLR"2RRB"	RED ROCK BANK LIGHTED BUOY	37-54	1400	122-26	604	19da	34.2	"
FLG#3	CALIFORNIA CITY LIGHTED HORN BUOY 3	37-54	43	122-26	394	8da	47.5	"
WN	not on chart	37-54	1804	122-27	520	15da	33.5	"
FLG#1	CALIFORNIA CITY LIGHTED HORN BUOY 1	37-53	553	122-25	833	1 da	62.5	"

STATISTICS

(1947)
H-7620 (Bo 1247)

LAUNCH 113 and 133

<u>Day letter</u>	<u>Date</u>	<u>Volume</u>	<u>No. of Pos.</u>	<u>Stat. Mi. Sounding</u>
a (red)	7 July 1947	15	88	15.0
b	8 July 1947	16	82	15.4
c	9 July 1947	17	109	19.4
d	10 July 1947	18	133	19.4
e	11 July 1947	19	126	16.0
f	23 July 1947	15	5	-
g	24 July 1947	15	38	5.0
		20	62	8.1
h	25 July 1947	21	38	6.8
j	24 Sept. 1947	22	68	10.8
k	25 Sept. 1947	22	65	8.1
		23	43	4.9
l	29 Sept. 1947	23	94	15.9
		24	6	1.2
m	30 Sept. 1947	24	73	12.2
n	1 Oct. 1947	24	50	7.4
		25	49	7.1
p	2 Oct. 1947	25	84	12.3
		26	25	3.7
q	3 Oct. 1947	26	59	8.5
r	13 Oct. 1947	26	46	5.1
		27	35	4.0
s	14 Oct. 1947	27	13	2.0
t	17 Oct. 1947	27	86	14.4
		28	31	5.2
u	20 Oct. 1947	29	61	10.3
v	21 Oct. 1947	29	74	13.2
		30	24	4.3
w	22 Oct. 1947	30	112	19.5
		31	6	0.2
x	23 Oct. 1947	32	63	8.5
y	5 Nov. 1947	32	43	5.1
z	24 Sept. 1947	33	288	-
aa	25 Sept. 1947	33	67	-
ba	30 Sept. 1947	33	136	-
ca	24 Nov. 1947	33	226	-
da	24 Nov. 1947	35	45	3.3
ea	25 Nov. 1947	34	58	-
fa	26 Nov. 1947	33	74	-
a (blue)	6 April 1948	36	133	23.3
TOTALS			2918	315.6

H-7620 (1447)

STATISTICS (CONT.)

SHIP BOWIE

<u>Day letter</u>	<u>Date</u>	<u>Vols.</u>	<u>No. of Pos.</u>	<u>Stat. Mi. Sounding</u>
A	28 July 1947	1	138	43.7
		2	40	12.7
B	29 July 1947	2	50	14.3
		3	124	35.5
		4	137	37.2
C	31 July 1947	5	164	48.6
		6	66	19.5
D	14 Aug. 1947	7	135	38.4
		8	10	2.7
E	8 Sept. 1947	8	124	31.2
		9	137	40.0
		10	49	13.4
F	9 Sept. 1947	10	86	17.5
		11	137	27.7
		12	105	28.8
G	10 Sept. 1947	13	137	24.7
		14	115	21.0
TOTALS			1794	456.9

LIST OF SIGNALS

H-7620 (1947)

TRIANGULATION

BLUFF POINT 2, 1897-1932
BRICK, 1916-17
BROOKS ID. 2, 1905-47
CALIFORNIA POINT 3, 1947
E. BROTHERS ISLAND L.H., 1932
HIGH HILL 3, 1947
MARIN ISLAND, FLAGPOLE, 1941
POINT SAN PABLO 2, 1897-1921
(SAD) POINT SAN QUENTIN 2, 1947
POW, 1916-17
(MAST) RADIO TOWER, 1947
RED ROCK, 1851-1900
RICHARD, 1932-47
RICHMOND PIER BLDG., 1916-17
RING, 1932
SAN FRANCISCO BAY, NORTH END LIGHT, 1941
SAN PABLO RIDGE, 1897-1947
SOUTHAMPTON SHOALS, L.H., 1932
STANDPIPE, NAVAL NET DEPOT, 1947

TOPOGRAPHIC

Ant	BO-B-47 revised 1948	Low	BO-D-47 revised 1948
Arm	" "	Mal	BO-B-47 "
Axe	T-5928	Mol	" "
Boom	BO-D-47	Oil	" "
Bush	BO-D-47 NOT revised	Pit	BO-D-47 "
Cas	BO-B-47 revised 1948	Rat	T-5928
Chim	T-5930	Red	BO-D-47 "
Cow	BO-B-47 "	Sal	BO-C-47(1:5,000) revised 48
Cross	Vol. 21, page 12	Saw	BO-D-47 revised 1948
Cue	BO-C-47 (1:5,000) revised 48	Shed	" "
Cup	BO-B-47 revised 1948	Stay-	BO-B-47 "
Dive	BO-D-47 "	Tall	T-5929
Dix	T-5928	Tan	BO-B-47 "
Ebb	BO-C-47 (1:5,000) revised 48	Tip	BO-D-47 "
End	" " "	Top	BO-B-47 "
Fly	BO-B-47 revised 1948	Tower	T-5929
Gal	BO-D-47 "	Tr ⁶ y	BO-B-47 "
Gas	BO-B-47 "	Tub	" "
Hex	" "	Val	BO-C-47(1:5,000) revised 48
Ice	" "	Was	BO-D-47 revised 1948
Jaw	T-5929	Water	" "
Jug	BO-B-47 "	Zak	BO-B-47 "
Lag	" "	Zoo	" "
Lift	" "		

HYDROGRAPHIC

Bal	Vol. 22, page 3
Bun	Vol. 22, page 4
Gab	Vol. 15, page 50,51
Lam	Vol 22, page 3
Nut	Vol 22, page 4 .
Pile	Vol. 15, page 50,51
Ran	Vol. 9, page 2
Rit	Vol. 15, page 2
Try	Vol. 9, page 2

ADDENDUM

To Accompany

HYDROGRAPHIC SURVEY H-7620 ⁽¹⁹⁴⁷⁾ (Field No. Bo-1247)

CABLE AREA

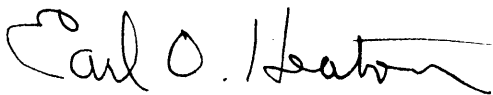
Hydrography done in the cable area between Pt. Molate and Pt. San Quentin in 1948, was made a part of Survey H-7620. The positions for this work were plotted on the smooth sheet and distinguished by a blue day letter. Some of this work agrees very well with previous hydrography, however, it appears that soundings taken on the fathom scale average 1 to 3 ft. deep. There are many instances of disagreement in time between fathogram and record book, apparently being caused by erratic fix marking rather than incorrect fathometer timing. Soundings on this day were not plotted on the smooth sheet but are being submitted on an overlay. (inshore sdgs. plotted & inked; deeper sdgs. rejected) (vellum overlay destroyed) Review, par. 7.
Respectfully submitted,



Hugh L. Proffitt
Cartographer

Norfolk, Virginia
July 15, 1949

Approved and forwarded.



Earl O. Heaton
Supervisor, SE Dist.

Desc. Report

670

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. June 1937

TIDE NOTE FOR HYDROGRAPHIC SHEET

August 8, 1949

~~Division of Hydrography and Topography~~

Division of Charts: R. H. Carstens

Plane of reference approved in
36 volumes of sounding records for

HYDROGRAPHIC SHEET 7620

Locality Vicinity of Richmond, San Francisco Bay

Chief of Party: W. M. Gibson in 1947-48
Plane of reference is mean lower low water, reading
2.9 ft. on tide staff at Point Richmond
15.7 ft. below B. M. 1 (1917)

2.2 ft. on tide staff at Richmond (Inner Harbor)
17.3 ft. below B. M. 1 (1932)

Heights of mean high water above plane of reference is 5.3 feet.

Condition of records satisfactory except as noted below:

E. C. McKay
Section

Chief, ~~Division of Tides and Currents.~~

GEOGRAPHIC NAMES

Survey No. H-7620

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
	On Chart No.	On previous survey No.	On U. S. Quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List			
<u>California</u>									USGB	1	
<u>San Francisco Bay</u>									"	2	
										3	
<u>Angel Island</u>										4	
<u>Bluff Point</u>										5	
<u>Point Chauncey</u>										6	
<u>California Point</u>									USGB	7	
<u>Point San Quentin</u>										8	
<u>Point San Pablo</u>										9	
<u>Whiting Rock</u>	⊙									10	
<u>Invincible Rock</u>	⊙									11	
<u>Molate Point</u>										12	
<u>Castro Point</u>										13	
<u>Castro Rocks</u>	⊙									14	
<u>Red Rock</u>	⊙									15	
<u>Point Richmond</u>				(location of one tide gage)							16
<u>Southampton Shoal</u>										17	
<u>Richmond Standard Oil Dock</u>										18	
<u>Point San Pablo Pacific Molasses Co. Dock</u>										19	
<u>Richmond-San Rafael Ferry</u>										20	
										21	
										22	
										23	
<u>Richmond Inner Harbor</u>				(location of one tide gage)							24
										25	
										26	
⊙: names not indicated because sheet is not inked: see chart 5532 for placement.										27	

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7620

Records accompanying survey:

Boat sheets ..2..; sounding vols. 36...; wire drag vols. 0...; bomb vols. 0...; graphic recorder rolls 20 envel.; special reports, etc.

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

Table with 3 columns: Description, Time, and Value. Rows include: Number of positions on sheet (4712), Number of positions checked (86), Number of positions revised (5), Number of soundings revised (refers to depth only) (11), Number of soundings erroneously spaced (32), Number of signals erroneously plotted or transferred (0), Topographic details (Time 20), Junctions (Time 22), Verification of soundings from graphic record (Time 12).

Verification by E. Healey (Stirnil) Total time 476/10 Date 9 Aug 1951

Reviewed by J. A. Dinsmore Time 48 hrs. Date 10 Sept 1951

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7620

FIELD NO. BO-1247

California, San Francisco Bay, Angel Island to
Point San Pablo

Project No. CS-256

Surveyed in July - November 1947

Scale 1:10,000

Soundings:

Control:

808 Fathometer

Sextant fixes on shore signals

Chief of Party - W. M. Gibson
Surveyed by - W. M. Gibson
Protracted by - A. Anninos
Soundings plotted by - A. G. Atwill
Verified and inked by - E. Yearley
Reviewed by: - T. A. Dinsmore, 10 September 1951
Inspected by - R. H. Carstens

1. Shoreline and Signals

The origin of the shoreline and signals is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated. The low-water line was determined by the regular system of sounding lines where practicable.

Except over the inshore mud flats, the bottom is generally irregular. Southampton Shoal, the southern extremity of which is marked by the lighthouse in lat. $37^{\circ} 52.92'$, long. $122^{\circ} 23.96'$, is probably the most important submarine feature in the area. Numerous submerged knolls, rocks, deeps and sand ridges contribute to the unevenness of the bottom.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7623 (1947) on the east, H-7705 (1948) on the southeast and H-7704 (1948) on the southwest. Project surveys on the north and northwest have not yet been received in this office.

5. Comparison with Prior Surveys

a. H-464	(1855)	1:20,000	H-2513	(1900-01)	1:10,000
H-465	(1855)	1:10,000	H-3928	(1916)	1:20,000
H-466	(1855)	1:10,000	H-3929	(1916-21)	1:20,000
H-2340	(1895-97)	1:10,000	H-5248	(1933)	1:10,000
H-2509	(1899-01)	1:10,000	H-5807	(1934)	1:10,000
H-2510	(1899-01)	1:10,000	H-6523	(1940)	1:10,000

These prior surveys cover the area of the present survey during the periods indicated. The surveys of the period 1895-1901 furnish the most complete prior coverage. A comparison between the prior and present surveys reveals numerous bottom changes. The construction of several deep-water docks and piers along the eastern shore together with the dredging of the water approaches thereto have created radical bottom changes in that inshore portion of the bay extending from Point Richmond to Point San Pablo.

Notable changes in bottom have also occurred in the western part of the bay. In the area southeast of San Quentin prior depths of 30 ft. (in 1900) are now superseded by depths of 12-18 feet. In this vicinity the 30-ft. depth curve has moved out as much as three-fourths of a mile from its prior position. This major shoaling is believed to have resulted from silt deposits from Corte Madera Creek on the west.

The extent of Southampton Shoal as delineated by the 18-ft. depth curve has diminished appreciably throughout the years. A comparison between the prior and present surveys clearly indicates a progressive increase in depths over the shoal of as much as 11 feet since 1855.

Many other changes of lesser importance than those mentioned above are noted throughout the area.

Specific mention is made of the following differences between prior and present depths:

- (1) The 15-ft. sounding charted in lat. 37° 53.36', long. 122° 24.48', from H-6523 should be disregarded. A comparison of prior and present depths clearly indicates that the locality has deepened. A least depth of 17 ft. in the vicinity on the present sur-

vey is adequate for charting.

- (2) The 79-ft. sounding charted in lat. $37^{\circ} 52.88'$, long. $122^{\circ} 26.05'$, from H-3929 should be disregarded. Falling in present depths of 100 ft., the prior sounding was found to be erroneously positioned due to improper spacing. In its corrected position 120 meters westward, the 79 falls in comparable depths on the present survey.
- (3) The 38-and 39-ft. soundings charted in the vicinity of lat. $37^{\circ} 53.10'$, long. $122^{\circ} 25.10'$, from H-3929 (1916) should be disregarded. This area has obviously deepened as present development which is adequate, shows depths ranging from 42 to 46 ft.
- (4) Considerable development has been accomplished over Invincible Rock and Whiting Rock throughout the years. At the present time, the charted least depths of 7 and 13 feet, respectively, on the adjacent shoals originate with H-3929 (Ad.Wk. 1931). The least depths obtained during the past sixteen years are shown in the following tabulation:

<u>Invincible Rock</u>	<u>Whiting Rock</u>	<u>Survey of origin</u>
7.5	13	H-3929 (1931)
8.7	16.5	H-5807 (1934)
8.5	15.5	present survey (1947)

The development of these rocky shoals was intensive on all of the above surveys. The 1934 survey included some wire-drag work which, however, did not furnish maximum effective clearance depths. The hydrographer on the 1934 survey recommended the retention of the lesser depths obtained in 1931. He also described the shoals as being rocky with numerous sharp pinnacles.

Inasmuch as the close development on the present survey did not include drift sounding, it is deemed advisable to retain the charted depths of 1931 as was done in 1934. The 1931 depths have been carried forward to the present survey.

- (5) Because of the incomplete investigation on the present survey of the Castro Rocks locality, supplementary rock detail has been carried forward to the present survey from T-6301 (1934).

With the additions indicated in paragraphs (4) and (5) above, the present survey is adequate to supersede the prior surveys within the common area.

b. H-3967 W.D. (1917) 1:20,000 H-3968 W.D. (1917-36) 1:20,000

The major shoaling that has occurred in the western part of the surveyed area together with other radical bottom changes has been mentioned in the preceding paragraph. Because of the many bottom changes and the widespread conflicts found between the prior effective drag depths and present depths, these prior wire-drag surveys are considered to have no further charting value within the common area.

6. Comparison with Chart 5532 (Latest print date 4/16/51)A. Hydrography

Charted hydrography originates with the previously discussed surveys, Corps of Engineers surveys to 1950, various chart letters and partial application of the present survey prior to verification and review. Attention is directed to the following charted information:

- (1) The 5-ft. sounding charted in lat. $37^{\circ} 53.77'$, long. $122^{\circ} 27.40'$, from the present survey prior to verification and review should be disregarded. The charted sounding originated with a fathogram stray which has been subsequently revised to 9 feet.
- (2) The 31-ft. sounding charted in lat. $37^{\circ} 56.17'$, long. $122^{\circ} 27.30'$, from the present survey prior to verification and review should be disregarded. The 31 was erroneously reduced in the sounding records and has been subsequently corrected to 36 feet.
- (3) The origin of the wreck charted in lat. $37^{\circ} 54.66'$, long. $122^{\circ} 28.41'$, is not readily ascertainable. The wreck which falls near the low-water line was found to be nonexistent at the time of the present survey and should, therefore, be deleted from the chart.

The present survey supersedes all charted information except that originating with subsequent surveys by the Corps of Engineers.

B. Aids to Navigation

The aids to navigation located on the present survey are in substantial agreement with the charted aids and adequately mark the features intended. The horns and lighted buoys located in lat. $37^{\circ} 53.30'$, long. $122^{\circ} 25.57'$,

and lat. 37° 54.02', long. 122° 26.27', on the present survey have been subsequently replaced by bells (H.O. N. to M. 51, 1949).

C. Dredged Channels

The charted controlling depth of 28 feet (April 1950) in the marked channel leading to Richmond Inner Harbor originates with Chart Letter 425 (1950). No conflicts are noted between the charted controlling depth and depths on the present survey.

7. Condition of Survey


- a. The condition of the sounding records was satisfactory except for the omission of the arithmetic sign in the echo-correction column of the ship BOWIE's work. The Descriptive Report covers all matters of importance.
- b. The smooth plotting was accurately done.
- c. As noted in the Processing Office Addendum, the supplementary work of "a" day (blue), April 6, 1948 covering the cable area from Point San Quentin eastward across the bay was plotted on the present survey. Most of the soundings of this days work, particularly in the deeper depths ranged from 1-3 ft. deeper than the depths obtained on the present survey in 1947. A thorough examination of the fathograms and records in this office produced no conclusive solution to the cause of the discrepancies. Inasmuch as the area involved was adequately covered by the 1947 work, most of "a" days work of 1948 was rejected.

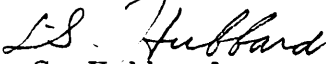
8. Compliance with Project Instructions


The survey adequately complies with the Project Instructions.


9. Additional Field Work

This is a basic survey and no additional field work is recommended. Because the area is subject to silting, considerable dredging is required in the eastern part of the area and frequent surveys are accomplished by the U. S. Corps of Engineers and other agencies.


H. R. Edmonston
Chief, Nautical Chart Branch


L. S. Hubbard
Chief, Section of Hydrography

Examined and approved:

H. Arnold Karo
Chief, Division of Charts


W. M. Scaife
Chief, Division of Coastal Surveys

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7620

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
7-29-49	5532	<i>P. Madros</i>	Before After Verification and Review <i>Partially Applied</i>
8-9-49	5533	G.H.E.	Before After Verification and Review <i>partially applied.</i>
10-27-53	5533	<i>R. K. Richardson</i>	<i>Completely applied</i> Before After Verification and Review <i>To new edition</i>
2/7/54	5532	<i>ME</i>	<i>North of 37°57' min' Reconstr. 5533</i> Before After Verification and Review <i>Reconstruction</i>
11-16-55	5532	<i>Stegman</i> ^{CRW}	Before After Verification and Review <i>Fill in sdgs in shore of Molate Pier vicinity</i>
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.