7619

Diag. Cht. No. 5530-4

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. BO-1147 *Office No.* H-7619

LOCALITY

State CALIFORNIA

General locality SAN FRANCISCO BAY

Locality VICINITY OF TREASURE ISLAND

194 7

CHIEF OF PARTY

W.M.GIBSON

LIBRARY & ARCHIVES

DATE 25 MAY 1949

8-1870-1 (1)

7619

Form 537
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO. H-7619

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-7619

Field No. BO-1147

State California

General locality San Francisco Bay

Locality Vicinity of Treasure Island

Scale 1:10,000 Date of survey 24 Apr. to 30 Oct. 1947

Instructions dated 16 Nov. 1940 and 24 Apr. 1947

Vessel Bowie

Chief of party W.M. Gibson

Surveyed by W.M. Gibson

Soundings taken by fathometer, ~~graphicrecorder~~, hand lead, ~~wire~~

Fathograms scaled by Ship Personel

Fathograms checked by

Protracted by T.H. Yoe and Andrew Anninos

Soundings penciled by A.G. Atwell

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW

REMARKS:

U. S. GOVERNMENT PRINTING OFFICE 693019

Notes For Descriptive Report To Accompany

Hydrgraphic Survey, Field No. BO- 1147

Project

Instructions for this hydrographic survey are as follows:

Instructions H.T. 256, November 16,1940

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

Survey Limits and Dates.

The general locality of the survey is, around Treasure Island, San Francisco Bay, East to Berkeley. It is bounded on the north by Latitude 37°-52'; on the east by Berkeley; on the south by an approximate line of the approach and San Francisco Bay Bridge to Yerba Buena Island; south to about Lat. 37°-48'; and on the west by an approximate line, from Lat. 37°-47.5', Long. 122°-22.8' to Lat. 37°-52', Long. 122°-25'.

Field work began on this sheet on the 24 April 1947 and completed on 30 October 1947.

This sheet is joined on the west by H-7621(1947) BO-1347, and on the south, east of Yerba Buena Island by sheets H-7622(1947) BO-05147, and H-7622 BO-05247. Sheet H-7622 BO-05447 is around Treasure Island.

Junction was made, south of Yerba Buena Island, with prior survey H-6794 dated 1942, Scale 1:10,000.

Launch hydrography in the Berkeley Flats, between Treasure Island and Berkeley, was greatly handicapped due to weather and seas. Usually about mid morning, the wind would increase from the west through the Golden Gate. The seas of course would build up and pile in over the flats.

It was not uncommon to be surveying in a relative calm and within a half hour, encounter seas dangerous to the launch, and too rough for good hydrographic surveying. It was found after a few days, that east and west lines were the only solution for obtaining hydrography.

Vessel and Equipment

The Ship Bowie and the Army Mine Yawl, Launch 113 worked on this sheet. The launch worked from approximately Longitude 122°-21' east; a few lines around Treasure Island; all of the developments; and south of the San Francisco Bay Bridge, between Yerba Buena Island and San Francisco. The ship completed the remainder of the hydrographic survey on this sheet.

The launch operated from the ship, based at 9th Ave, Pier, and the foot of Franklin St. Oakland. For the period of one week the ship based at Treasure Island.

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

The sounding instruments consisted of two 808 J Fathometers numbered S111 and S112. They both sounded in depths from 3 feet to about 130 feet.

Tide and Current Stations

The tide station for the entire sheet was located on the Army dock, at the northeast corner of Yerba Buena Island in Lat. 37°-48.8', Long. 122°-21.5'.

There were no range or time corrections applied to the soundings. Mean low water corresponded to a staff reading of 1.2 feet.

There were no current stations occupied.

Control Stations

Except for three hydrographic stations, Auto, Berk, and Cross, located by sextant fixes, all other control stations are either Triangulation or plane table topographic locations. The list of control stations used, and their origin, are found on page 2, Vol.1, of the hydrographic records for this sheet. The plane table sheet for Treasure Island is BO-E-47, executed by W.M. Gibson.

Due to fog, and early morning haze, at various times during the survey, some of the close control stations were obscured, and it became necessary to pick up distant stations. Fortunately the distant control was usually triangulation stations, and any discrepancy which might arise at position locations of soundings would probably come from the distortion of the chart. This condition was encountered usually on the launch survey, east of Treasure Island.

Shoreline and Topography

The shoreline around Berkeley and the mole, was transfered from west half of planimetric map T-5925.

The shoreline for Treasure Island and Yerba Buena Island was transferred from the north half of planimetric map T-5923.

On the southeast corner of the sheet, on the north side of the causeway approach to the Bridge, there is at

present, December 1947, construction going on, and an area being filled (noted on smooth sheet) with mud from dredging in Oakland Outer Harbor. Upon completion of the project, the shoreline will probably be changed considerably, and also resulting in a change of soundings in this area.

Berkeley Pier is still in existence as shown on sheet T-5925, (1941-45) (not plotted on the boat sheet), but is abandoned as an auto ferry causeway. No public traffic is allowed on the pier, at the present time.

In Lat. 37°-50.3', Long. 122°-17.8', there is a dump used, and the outline is constantly being changed. The high water line was roughly sketched on the boat sheet, by the hydrographer. | Shown by dashed red line on smooth sheet

The shoreline at Berkeley, on the east side of the sheet is built up with a rock forcing facing. The rock forcing is sloping and comes to approximately the level of U.S. Highway No. 40.

Several attempts were made to obtain the low-water line by sounding on the east and southeast shoals. Either due to low tides or rough seas, the ideal hydrographic condition in this area was an exception to the rule. Where zero soundings were not obtained, it was considered by the hydrographer that the MLLW line might be very close to the shoreline. The entire area between the Berkeley Pier and the Southeastenly shoreline is flat and consists for the most part of oozy mud. It appears that this area is slowly filling in, especially near the shoreline. | Review, par. 5

Soundings

Soundings were obtained with an 808 J Fathometer, no unusual methods, and no unusual corrections were applied to the recorded depths.

Adequacy of Survey

This survey is considered adequate to supersede prior surveys for charting.

Satisfactory junction was made with sheet B0-1347 H-7621 (1947) and B0-05247 H-7622 (1947). On the junction with sheet H-6794 (1941-42) there was considerable difference (differences adjusted) in small local areas. The differences are not consistant. The horzontal positions of soundings in the above mentioned areas might be considered the weakest in the survey, due to strong currents near the Bay Bridge; east and west of Yerba Buena Island. Junction is adequate

There is considerable overlap between this sheet and sheet B0-05447 H-7622 (1947) around Treasure Island. No overlap (transfer) was made to closely scrutinize the junctions of the two sheets. A visual comparison was made, and did not seem to indicate any great differences in the junctions (See notes on B0-05447 H-7622) Review, par. 4.

Crosslines

Over the area of the launch hydrography, there is considered to be about 10% crosslines, exclusive of development. In the Berkeley flats, east of Treasure Island, crosslines were run previously to check the tidal datum.

The discrepancies at the crossing, especially on the flat bottom, did not vary more than one foot.

Comparison With Prior Surveys (See Review, par. 5)

There were no prior surveys, submitted with the instructions, for a comparison on this sheet.

Comparison With Chart

Comparison is made with chart 5535, corrected to 9 June 1947.

Southwest of Treasure Island, there has been a filling in, as noted from the contours. This change is due to the U.S. Army Engineers dredges, dumping in this area.

It is also noted, by comparison, that a large area northwest of Treasure Island is filling in. The thirty foot contour on the present survey is much nearer the Island.

On the southeast corner of the survey, on the flats, there is a constant filling in. This, it is understood, is caused by dumping sewerage in the area.

The two Islands in Lat. 37°-49.5', Long. 122°-19.6', and Lat. 37°-49.7', Long. 122°-18.8', have changed considerably in the high waterline. The easterly Island is low, probably about 2 feet above high water. There are several duck hunters' shacks on the Island. The Westerly of the two Islands is actually a sand and shell bar, covered at high water, and should not be indicated by a high water line. It is bare, in spots at MLLW.

but cannot be ~~sure~~ seen from the water, unless close upon the bar. Just east of Treasure Island, there does not indicate any major change.

Investigations

On a photostatic copy of chart 5535, there ~~was~~ were requested investigations of certain physical features and soundings, from Washington Office. These investigations were referenced, on this copy of chart. They are as follows.

1. Reference No.33 - Submerged Pile; position Lat. 37°-50.3~~4~~3', Long. 122°~~-22.8~~18.31'; Source: H-3928 (1916)

While running hydrographic lines, a search was made, by three men on board the launch, for the pile, there was no visible evidence that the submerged pile still exists. It is believed that it should be removed from the chart. Only navigation carried on in this area is by duck hunters, in small boats.

Review, par. 5a.

2. Reference No. 34 - Remains of Beacons; Lat. 37°-50.4', Long. 122°-18.0'; Source T-4671 (1933)

Extensive dredging operations were carried on in deepening the channel in August 1947. After the dredging soundings were taken in the channel, and outside of the channel line. There was no evidence of remains of beacons. The dredging would probaly remove any beacons if they had existed. It is recommended that they should be removed from the chart.

Review, par. 6A.(1)

3.

3. Reference No.35-Piles, Lat. 37°-49.6'; Long. 122°-19.2': Source T-6666 (1936-38) Disregard piles Review, par. 6 A.(3)

A thorough search was made for the above referenced piles. There was no evidence of ~~them~~ their still being in existence. This area has filled in considerably from soundings on the chart, and is now undergoing change by construction. It is recommended that these piles be removed from the chart.

4. Reference 30-- 15 foot sounding, Lat. 37°-49.96', Long. 122°-22.66': Source PP 38308 (1944); ~~superseded by~~ 15.3 ft. obtained on present survey

Remarks: Least depth from U.S.E. Survey.

An enlargement of this area developed, but not to scale is shown on the boat sheet. Only the shoalest soundings were plotted on the developement. ~~Thirteen~~ Fifteen feet was found to be the shoalest sounding, in the investigation, and it is recommended that this sounding be charted. (13 now charted) (Delete 13 & chart 15 ft. 60 meters S.E.) ϕ 37°49.93, λ 122°22.73' See Review, par. 6A.(6)

5. Reference 31- 20 foot sounding; Lat. 37°-49.66', Long. 122°-22.8'; Source Chart Letter 367 (1946) (Field Exam. by this Bureau)

Remarks: Least depth from investigation by U.S.C. & G. Survey. 20 ft. carried fwd. to pres. survey

An enlargement of this area developed, but not to scale is shown on the boat sheet. Only the shoalest soundings were plotted. Twenty one feet was found to be the shoalest sounding. From the fathograms there was indications of a smooth mound, not a pinnacle.

6. Reference 32- 30 Foot Sounding; Lat. 37°-49.39', Long. 122°-21.54'; BP 30892 (1937);

Remarks: Least depth from U.S.E. Survey.

An enlargement of this area developed, but not to scale is shown on the boat sheet. As in the other two investigations, only the shoalest soundings were plotted. Drifting around in this area did not indicate any sounding less than thirty one feet. Review, par. 6 A.(2)

Miscellaneous

The buoy locations, as shown on the boat sheet for positions 10j-13j, do not exist now. They were temporary buoys, established for dredging purposes, and were later removed.

The navy mooring buoys, located by sextant fixes are found in Vol 23 pos. 1L-11L, and are located east of Treasure Island. They are large black can buoys with no numbers on them. They were not plotted on the boat sheet. (plotted on smooth sheet)

Written information from the Supervisor Western District states " The Pacific Gas & Electric has no map showing its cable crossing. However, the company reports all of its cables are in the charted cable areas."

There were no newly found dangers or shoals on this sheet. See C.L. 386 (1949) copy attached to Desc. Report

C
O
P
Y

DEPARTMENT OF COMMERCE
U. S. Coast and Geodetic Survey

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

8 June 1948

To: The Supervisor, Southeastern District.

Subject: ANGEL ISLAND, POINT BLUNT LIGHT, 1916-17.

Difficulty in tying out a recent topographic survey resulted in a re-determination of the position of the subject station by third order triangulation. The computations are being sent by registered mail. The new position is considerably different from the old. The Coast Guard states that the light structure was moved northward in 1930 or 1935, which tends to confirm the new position. The new position is:

Revised from Cal. A^n IV p.414 3.m.a.

Latitude - 37-51-11.~~218~~ 05 ✓ 345.5m. Longitude - 122-25-03.~~865~~ 48 ✓ 94.1 m.

It is requested that the Norfolk Processing Office correct the position on the Bowie smooth sheets involved, and process the data in accordance with paragraphs 9233 and 9243 of the Hydrographic Manual. OK

Station shown as Pt Blunt Lt. 1948

/S/

W. M. Gibson, Lieut. Cmdr.
U.S.C.&G.S. Commanding

C/C The Director
The Supervisor, Western District

Form 786
DEPARTMENT OF C[illegible]MERCE
U. S. COAST AND GEODE[illegible] SURVEY
(Ed. 1943)

ADVANCE REPORT OF DANGERS TO BE CHARTED

Survey (Sheet) No. H-7619 Datum 1927 Locality San Francisco Bay State California Date May 19, 1948

I recommend that the following dangers to navigation be charted. The positions given have been checked after listing. Checked by A.C. Atvell

Earl C. Keaton
Captain
Chief of Party.

TYPE OF DANGER	DEPTH (FEET) *		LATITUDE AND LONGITUDE		FROM CHARTED OBJECT OR NATURAL FEATURE †			CHART USED ‡		DATE OF LOCATION	REMARKS
	FATHOMETER	LEAD-LINE	° ′	SECONDS (IN METERS)	TRUE BEARING	DISTANCE (METERS)	OBJECT OR FEATURE	NO.	PRINT DATE		
Shoal	22	-	37-49	1344.0	324.5	3902.0	Oakland Hbr. L.H.	5535	4/5/48	5/14/47	Probably a pinnacle rock
			122-21	562.0							
~~Shoal~~	~~23~~	~~-~~	~~37-49~~ ~~122-21~~	~~1348.0~~ ~~1135.0~~	~~318.0~~	~~4267.0~~	~~" " "~~	~~"~~	~~4/5/48~~	~~5/14/47~~	~~Probably a pinnacle rock~~
											Not identified as rocks by field party. this item evidently originated in processing office. S.M.A. T.A.D.
					Chart letter 386 (1949)						

* Record least depth over danger reduced to plane of reference of charted soundings, using observed tides, if available.
† Record location both by geographic position and by true bearing with distance from object or natural feature shown on chart.
‡ Use largest-scale chart and note print date given in lower left corner of chart.

NOTE.—This form to be used during the season for prompt reports of uncharted dangers. If reports have been sent by wire, fill out this form and mail with confirmations. Enter dates of wires under "Remarks." Copies of reports on this form should be retained and submitted with the descriptive report.

554171 U. S. GOVERNMENT PRINTING OFFICE

BUOY LIST H-7619

	Designation on SS	Designation on Chart 5535 corrected to May 1949	Name on Light List 1949	Lat.	Long.	Date	Pos. No.
	FL W BELL	Not shown	Not shown	37°-49' 70 m.	122°-24' 140 m.	June 6, 1947 Moved - N.M. 16 - 1949	1z
	QK FL G "1"	QK FL G "1"	Treasure Island West Obstruction Lighted Buoy No. 1	37°-49' 730 m.	122°-22' 1440 m.	" Dist. N.M. 19 - 1949	2z
	BN	BS	Not shown	37°-49' 784 m.	122°-22' 1340 m.	" Dist N.M. 19 - 1949	3z
	FL R "2" BELL	In different location	Treasure Island North End Lighted Bell Buoy No. 2	37°-49' 1838 m.	122°-22' 1255 m.	" Moved N.M. 16 - 1949	4z
✓	RW S	RN "2A" REF	Not shown	37°-49' 1687 m.	122°-22' 968 m.	" Estab. N.M. 16 - 1949	5z
✓	FL R "2B" BELL	FL R "2B" GONG	Berkeley Shoal Lighted Gong Buoy 2B	37°-51' 350 m.	122°-23' 695 m.	" Charted.	6z
	No data in Records	FL W HORN W	Not shown	37°-49'.0	122°-23.45' charted N.M. 16 - 1949	None	None

Buoys 1z - 4z not charted.
D.A.B.

Statistics for Hydrographic Survey BO-1147, Ship BOWIE, CS-256

Ship BOWIE

Day Letter	Date	Vols.	No. of Pos.	Stat. Miles Sounding
A	13 May 1947	1	138	32.9
		2	42	10.1
B	14 May 1947	3	124	33.6
C	16 May 1947	4	130	36.3
D	19 May 1947	5	54	13.9
E	21 May 1947	6	121	36.1
F	26 May 1947	7	134	40.0
G	27 May 1947	5	72	21.9
		8	65	13.9
H	28 May 1947	9	134	29.1
		10	16	3.5
J	2 June 1947	11	137	37.8
		12	52	10.3
K	3 June 1947	8	65	16.6
		13	50	12.7
L	30 Oct. 1947	13	64	6.0
		14	98	15.0
	Totals		1,496	369.7

Launches 113 and 133

a	4 April 1947	15	43	8.7
b	25 April 1947	16	83	13.5
c	1 May 1947	15	75	14.6
d	2 May 1947	16	51	9.9
e	9 May 1947	17	56	11.3
f	29 May 1947	18	147	16.0
g	6 June 1947	17	68	11.4
		19	74	12.6
h	10 June 1947	20	124	19.3
j	12 June 1947	21	13	1.2
k	13 June 1947	22	73	8.0
l	23 June 1947	23	11	—
m	1 July 1947	23	105	13.3
n	3 July 1947	24	9	1.4
p	15 July 1947	25	114	12.0
q	16 July 1947	26	79	13.9
r	17 July 1947	27	77	14.3
s	21 July 1947	24	47	8.8
t	11 Sept. 1947	28	113	13.8
u	12 Sept. 1947	29	90	11.5
v	16 Sept. 1947	30	42	4.1
w	17 Sept. 1947	30	4	—
x	18 Sept. 1947	30	84	12.1
		31	10	1.6
y	19 Sept. 1947	31	119	21.8
		32	33	4.8
z	6 June 1947	33	8	—
	Totals		1,752	259.9

1496
3248

Area - 24.3 sq. statute miles

LIST OF SIGNALS H-7619

TRIANGULATION STATIONS

ALCATRAZ L.H., 1910-32 1948
~~ANGEL ISLAND~~, PT. BLUNT LIGHT, ~~1916-17~~
ARMY 2, 1947
BERKELEY, DURKEE FAMOUS FOOD CO., TANK, 1947
BERKELEY, PABCO CO. TANK, 1947
BERKELEY, WESTERN WAXED PAPER CO., TANK, 1947
BOOSTER STATION, (BELL), 1947
COIT MONUMENT, 1933
EL DORADO OIL CO., W.T. 1932
EMERYVILLE JUDSON IRON WKS., CENTER ONE OF 3 STACKS, 1925-32
FERRY BUILDING TOWER, 1932
GOAT, 1916-25
MOLE, 1947
NAVY, 1932-47
REAR (N. RANGE, E. POLE, 1947
NORTH RANGE, W. POLE, 1947
OAKLAND HARBOR L. H., 1919-27
OAKLAND MOLE, HIGH TANK, 1909-10
OAKLAND NAVAL SUPPLY DEPOT, CHECKERED TANK, 1947
OAKLAND PEET BROS. STACK, 1916-20
OAKLAND SHREDDED WHEAT BLDG. TOWER, 1925-32
PORT OF OAKLAND TANK, 1947
MAST (RADIO TOWER KRE, 1938
SOUTH RANGE, WEST POLE, 1947
YACHT, 1947
RAY (YERBA, 1938)
YERBA BUENA L. H., 1919
YERBA BUENA POWER CO., CONCRETE CHY., 1916-32

T-7065b (1947-48)

TOPOGRAPHIC STATIONS - BO-E-47 (1948 REVISION)

Chim
Dome
Spit
Stack

HYDROGRAPHIC STATIONS

Auto	Vol. 16, p. 71
Berk	Vol. 16, p. 46
Cross	Vol. 17, p. 35

ADDENDUM

To Accompany

HYDROGRAPHIC SMOOTH SHEET H-7619 (Field No. BO-1147)

All positions between 1 and 52 "q" day (Launch), using signal NAVY, were plotted on an overlay as poor visibility caused some doubt as to the identity of the object used. Some jumps in time were noted on these positions, however, due to the smoothness of the bottom, slight displacement of soundings was difficult to determine. sdgs. plotted on smooth sheet; agreement of depths is acceptable

Shoal Soundings

Attention is directed to the following uncharted shoal soundings:

	26' ✓	Lat. 37°-50.02 ✓ Long. 122°-22.44	43 to 44 "p" day (Lch.)	now charted
Review, par. 6 A (5)	23' ✓	Lat. 37°-49.73 ✓ Long. 122°-21.78 see later blueprints	34 to 35 "B" day (Bowie)	now charted
	22' ✓	Lat. 37°-49.73 ✓ Long. 122°-21.39	Review, 81 to 82 "B" day (Bowie) par. 7 C. & 9	now charted

Respectfully submitted,

Hugh L. Proffitt

Hugh L. Proffitt
Cartographer

Norfolk, Virginia
May 9, 1949

Approved and forwarded.

Earl O. Heaton

Earl O. Heaton
Supervisor, SE Dist.

GEOGRAPHIC NAMES

Survey No. H-7619

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
California									USGB	1
San Francisco Bay									"	2
Treasure Island										3
Yerba Buena Island									USGB	4
Berkeley Yacht Harbor										5
Angel Island										6
Pt. Blunt										7
San Francisco - Oakland Bay Bridge										8
										9
					Names underlined in red are					10
					approved. 6-13-49 L. Heck					11
										12
										13
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										27

M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7619

Records accompanying survey:

Boat sheets 1; sounding vols. 33; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 21 envel.

special reports, etc. .....

.....

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

Number of positions on sheet		3248
Number of positions checked		191
Number of positions revised		12
Number of soundings revised (refers to depth only)		66
Number of soundings erroneously spaced		10
Number of signals erroneously plotted or transferred		0
Topographic details	Time	4 hrs
Junctions	Time	0
Verification of soundings from graphic record	Time	3

Verification by J.H. Eaton D.A. Buzzell Pos. 10J-83 Robert C. Richard pos 11A-120A Total time 12 216 HR 47 HR 225 hrs Date 11/3/49 8/18/49

Reviewed by J.A. Dinsmore Time 45 hrs Date 10 May 1950

M-2232-1

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY — REGISTRY NO. H-7619

FIELD NO. BO-1147

California, San Francisco Bay, Treasure Island
Surveyed in April - October, 1947 — Scale 1:10,000
Project No. CS-256

Soundings:

808 Fathometer
Hand lead

Control:

Sextant fixes on shore signals

Chief of Party - W. M. Gibson
Surveyed by - W. M. Gibson
Protracted by - T. H. Yoe and A. Anninos
Soundings plotted by - A. G. Atwill
Verified and inked by - D. A. Buzzell and R. C. Richard
Reviewed by - T. A. Dinsmore, 10 May 1950
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline and signals originate with air photographic surveys T-5923, T-5925, T-5926 (1941-45) and topographic survey T-7065b (1947-48). The shoreline revision shown in red is from the present survey.

The fixes for supplementary hydrographic signals are recorded in the sounding volumes of the present survey.

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 bottom is generally smooth except near Yerba Buena and Treasure Islands where the bottom is somewhat irregular. In this vicinity several prominent shoals and pinnacles are revealed on the survey.

Depths over the flats in the eastern portion of the survey range from 5-10 feet and in the deep, in lat. 37° 50.88', long. 122° 24.81', they are as great as 153 feet.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7705 (1948) on the north, H-6421 (1938) on the northeast and H-6794 (1941-42) on the extreme south.

The junctions with H-7622 (1947) around Treasure Island and on the southeast, H-7716 (1948) on the southwest, H-7621 (1947) on the west and H-7704 (1947) on the northwest will be considered in the reviews of those surveys.

5. Comparison with Prior Surveys

a.

H-347 (1853) 1:10,000	H-2244 (1895) 1:10,000
H-464 (1855) 1:20,000	H-2246 (1895-96) 1:10,000
H-1214 (1871-74) 1:20,000	H-2301 (1895-97) 1:10,000
	H-3928 (1916) 1:20,000

These surveys comprise previous coverage over the area of the present survey during the periods 1853-55, 1871-74, 1895-97 and 1916. The construction of Treasure Island, San Francisco - Oakland Bay Bridge and other cultural improvements have taken place in this area since the time of the prior surveys. These improvements have resulted in radical bottom changes in and adjacent to their locations.

A comparison between the prior and present surveys indicates that filling-in has been progressively taking place along the eastern and southeastern shore. In this area, shoreline accretion which amounts to several hundred meters is attributed to a combination of sewerage and spoil disposal. Inshore depths have correspondingly decreased in this part of the bay.

Another noticeable inshore change has occurred in the vicinity of lat. 37° 50.45', long. 122° 18.00', where an anchorage was dredged in August 1947 to present depths of 10-15 ft. These depths supersede prior depths of 0-6 ft. in the subject area.

Pronounced changes in offshore depths are indicated in the following localities:

East of Treasure Island, there is evidence that considerable dredging has been done. In the vicinity of lat. 37° 50.1', long. 122° 21.0' prior depths of 13 ft. (1916) have since been dredged to 30-40 ft.

Evidence of shoaling is indicated in the vicinity of lat. 37° 51.65', long. 122° 23.10', where prior depths of 30 ft. (1895-97) are now superseded by depths of 23 ft. In this vicinity, the 30-ft. depth curve has moved about one-third mile further offshore.

The deep delineated by the 120-ft. depth curve immediately west of Yerba Buena Island has decreased appreciably in both area and depth. Prior maximum depths of 143 ft. (1897) are now superseded by maximum depths of 127 ft. It is reported that Corps of Engineers dredges have been dumping spoil in this area.

The submerged pile charted in lat. 37° 50.33', long. 122° 18.31', from H-3928 should be disregarded. An investigation on the present survey disclosed no evidence of this feature which is considered to be now nonexistant.

b. H-4596a (1926) 1:20,000 H-4785a (1928) 1:5,000

These prior surveys cover a small strip around Yerba Buena Island except on the north. Noticeable filling-in has occurred in the deep west and southwest of the island. In this deep, prior maximum depths of 147 ft. have since decreased to present maximum depths of 127 ft. Southeast of the island, the shoal area delineated by the 18-ft. depth curve has become appreciably extended since the time of the prior surveys. In this vicinity, prior depths of 18-23 ft. are now superseded by depths of 14-18 ft.

The present survey is adequate to supersede the prior surveys within the common area.

c. H-3967 W.D. (1917) 1:20,000 H-4785b W.D. (1928) 1:5,000
H-4463 W.D. (1925) 1:10,000

These wire-drag surveys cover a portion of the present survey on the south and west. In the vicinity of lat. 37° 52.0', long. 122° 23.5', present depths of 23-35 ft. were previously cleared by an effective drag depth of 35 ft. (1917) and in lat. 37° 48.38', long. 122° 21.48', present depths of 18 ft. were previously cleared by an effective depth of 20 ft. (1928). These conflicts confirm the shoaling in these two areas described in the preceding paragraphs. The prior clearance depths should be disregarded where they conflict with the shoaler depths on the present survey. Except as noted, present depths are in harmony with the effective drag depths.

6. Comparison with Chart 5532 (Latest print date 9/26/49)
Chart 5535 (Latest print date 3/27/50)

A. Hydrography

Charted hydrography originates principally with the pre-

viously discussed surveys, Corps of Engineers survey of 1937 (Bp. 30892) and various chart letters. Critical information only has been applied to the charts from the present survey prior to verification and review.

Attention is directed to the following charted items:

(1) The remains of beacons charted in lat. 37° 50.4' long. 122° 18.0' from T-4671 (1933) should be disregarded. No evidence of their existence was found on the present survey. They were probably removed during recent dredging operations in this area as mentioned on page 7 of the Descriptive Report.

(2) The 30-ft. sounding charted in lat. 37° 49.39', long. 122° 21.54', from Corps of Engineers survey (Bp. 30892, 1937) should be disregarded. In this location a depth of 31 ft. obtained on the present survey is considered adequate for charting.

(3) The piles charted in lat. 37° 49.33', long. 122° 19.70'; lat. 37° 49.60', long. 122° 19.20'; lat. 37° 49.74', long. 122° 19.38'; and lat. 37° 49.80', long. 122° 19.03', from T-6666 (1936-38) should be disregarded. A thorough search on the present survey failed to reveal their present existence as noted in the Descriptive Report.

(4) The 20-ft. sounding charted in lat. 37° 49.66', long. 122° 22.80', from a field examination by this Bureau (Chart Letter 367, 1946) has been carried forward to supplement a 21-ft. depth obtained in this vicinity on the present survey.

(5) The RK appended to the 22-and 23-ft. soundings charted from the present survey in lat. 37° 49.73', long. 122° 21.39', and lat. 37° 49.73', long. 122° 21.78', respectively, originates with the comment "probably pinnacle rocks" by the Processing Office in Chart Letter 386 (1949) and not from the sounding records of the present survey. "RK" omitted. Concurred in by reviewer. JMA. 9-8-55

(6) The 13-ft. sounding charted in lat. 37° 49.93', long. 122° 22.73', from the present survey prior to verification and review has been revised in depth to 17 ft. The 13 should, therefore, be deleted from the chart and the 15-ft. sounding about 60 meters southeast be charted as the least depth on this shoal.

(7) The island charted in lat. 37° 49.55', long. 122° 19.60', from blueprints 25554-55 (1932) has since eroded to a sand and shell bar which covers at M.H.W. Noticeable changes have also taken place in the high-

water line of the island to the eastward.

In connection with the above changes, it should be mentioned that this area is undergoing further change as spoil is being pumped from the outer harbor on the south and being deposited in the subject area.

Except as noted in paragraphs (4) and (5) above, the present survey supersedes the charted information.

B. Aids to Navigation

Inasmuch as most of the aids to navigation located on the present survey have been subsequently changed in character or position, a comparison with the present chart would serve no useful purpose.

7. Condition of Survey

a. The sounding records and Descriptive Report are complete.

b. The smooth plotting was very good.

c. Detached investigation for least depth was not made on the 22-ft. shoal sounding obtained in general depths of 36 ft. in lat. 37° 49.73', long. 122° 21.39'.

d. A few shoal indications falling close to Treasure Island on the north and east are covered by overlapping hydrography on H-7622 (1947) and will be considered in the verification and review of that larger-scale survey.

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 required. It is, however, recommended that any future work in this area include an investigation of the 22-ft. sounding mentioned in paragraph 7c above.

H. R. Edmonston
Chief, Nautical Chart Branch

Examined and approved:

R. W. Knox
Chief, Division of Charts

L. S. Hubbard
Chief, Section of Hydrography

W. M. Scaife
Chief, Division of Coastal Surveys

RHC

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

June 14, 1949

~~Division of Hydrography and Topography~~:

Division of Charts: R. H. Carstens

Plane of reference approved in
33 volumes of sounding records for

HYDROGRAPHIC SHEET 7619

Locality San Francisco Bay, California

Chief of Party: W. M. Gibson in 1947
Plane of reference is Mean lower low water, reading
1.2 ft. on tide staff at Yerba Buena
7.6 ft. below B. M. 5=YB16 (1920)

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

Condition of records satisfactory except as noted below:

E. C. McKay
Section
Chief, ~~Division~~ of Tides ~~and Currents.~~

U. S. GOVERNMENT PRINTING OFFICE 154227

NAUTICAL CHARTS BRANCH

SURVEY NO. H 7619

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
6/1/49	5535	Ris & JJW	Before ~~After~~ Verification and Review Partially
8-8-49	5532	[illegible]	Before ~~After~~ Verification and Review Partially applied.
9/15/54	5532	W Evans III	~~Before~~ After Verification and Review Reconstruction
8/30/57	Recomta. 5535	SG McGann	~~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

M-2168-1

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.

7619

Additional work

Diag. Cht. No. 5530

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Additional Work 1950

Field No. ..... *Office No.* H - 7619 Ad. Wk. (1950)

LOCALITY

State California

General locality San Francisco Bay

Locality East of Treasure Island

1950

CHIEF OF PARTY

R. C. Bolstad

LIBRARY & ARCHIVES

DATE Jan. 10 1951

B-1870-1 (1)

7619 Additional work

Form 537
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

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 INVESTIGATION OF

REGISTER No. H-7619

Field No. .....

State CALIFORNIA

General locality SAN FRANCISCO BAY

Locality EAST OF TREASURE ISLAND

Scale 1 : 10 000 Date of survey 27 DECEMBER 1950

Instructions dated 7 SEPTEMBER 1950

Vessel USC & GSS BOWIE

Chief of party R. C. Bolstad

Surveyed by R. C. BOLSTAD

Soundings taken by fathometer, graphic recorder, hand lead, wire FATHOMETER

Fathograms scaled by F.W.L.

Fathograms checked by H.C.A.

Protracted by M. Rogers

Soundings penciled by M. Rogers

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW

REMARKS: Field investigation for development of shoal soundings on H-7619

U. S. GOVERNMENT PRINTING OFFICE 777032

DESCRIPTIVE NOTES TO ACCOMPANY FIELD INVESTIGATION OF SHOAL SOUNDINGS HYDROGRAPHIC SURVEY H-7619 (1947)

Field investigation east of Treasure Island, San Francisco Bay, for the development of shoal soundings on Hydrographic Survey H-7619 (1947).

INSTRUCTIONS:

Instructions for this investigation are contained in the Director's letter dated 7 September 1950.

LOCALITY:

The shoal soundings investigated are 600 meters east of the ferry slip on the east side of Treasure Island and also just off the end of the ferry slip.

CONTROL:

Control was furnished by adjusted triangulation and by described topographic stations located in 1947 (Topographic Sheet BO-E-47). T-7065 b. (rev. 1948)

EQUIPMENT:

Launch No. 113 operating from the Ship BOWIE, with Type 808 J Fathometer No. S-111 was used for this survey.

SURVEY METHODS:

A series of closely spaced lines were run normal to the 1947 lines. Very sensitive ranges were used. The lines were all run in a southwesterly direction. The run from the end of one line back to the beginning of the next was kept on a range but no fixes were taken. The fathometer operator kept close watch during this dead run for shoal indications. In effect this gave almost twice as many lines as are shown on the sheet.

Descriptive Notes to Accompany Field Investigation of Shoal Soundings
Hydrographic Survey H-7619 (1947) - continued

RESULTS:

Shoaler soundings were recorded on the outer shoal than were originally obtained. The original sounding was 22 feet and 20.4 feet were obtained on this survey at this same point. The remainder of the soundings in this area checked very well.

Published on p. 34 of M (1951) by Wash. Office

In the area close in the the ferry slip there appears to have been some change. The bottom appears more uniform than indicated on the original survey. On the northerly of the two shoals 25 feet was obtained as compared to the original 23 feet. On the southerly of the shoals 28 feet was obtained where the original survey showed 23 feet. No indication of this shoal was obtained on the fathogram. Three lines were run directly over this sounding.

See Review of Ad. wk.

TIDE AND VELOCITY CORRECTIONS:

Tides corrections were obtained from staff readings at the U. S. Army Dock on Yerba Buena Island. Levels were run to existing bench marks. The tides were recorded in Form 277, which accompanies the records for this survey, MLLW corresponds to a staff reading of 1.2 feet (Director's letter dated 22 November 1950, 36-rcb). The tides were plotted on coordinate paper and corrections taken directly from the curve. This sheet of coordinate paper is a part of this report and contains all the tidal data for this survey.

The velocity corrections were obtained from bar check. The bar check was abstracted and plotted on the reverse side of the coordinate paper containing the tidal data. This contains all the velocity data and no separate report will be made.

H.C. Applequist
H. C. Applequist,
Lt. Comdr., C&GS

Approved :

Roswell C. Bolstad,
Commander, C&GS,
Chief of Party

STATISTICS

Field Examinations Survey H-7619 (1947)

DAY	VOL. NO.	DATE	NO. POSITIONS	STATUE MILES
a (red)	1	27 December 1950	53	3.8

LIST OF SIGNALS

Name used in Hydrographic Survey	Origin of Station	Geographic Position (As listed on Form 524)
BELL	BOOSTER STATION BELL 1947	
LOOK	YERBA BUENA LOOKOUT TOWER 1947	
STACK	TOPO SHEET FIELD BO-E-47 (rev. 1948) T-7065b (1947-48) T-7065b	37° 49' 865 meters 122° 21' 1253 meters
END	TOPO SHEET FIELD BO-E-47 (rev. 1948) T-7065b	37° 49' 1578 meters 122° 21' 1360 meters
TON	TOPO SHEET FIELD BO-E-47 (rev. 1948) T-7065b	37° 49' 1254 meters 122° 21' 1354 meters
CHIM	TOPO SHEET FIELD BO-E-47 (rev. 1948) T-7065b	37° 49' ~~1615~~ 1618 meters 122° 22' ~~126~~ 125 meters revised GPS

TIDES

YERBA BUENA ISLAND

FIELD EXAMINATION

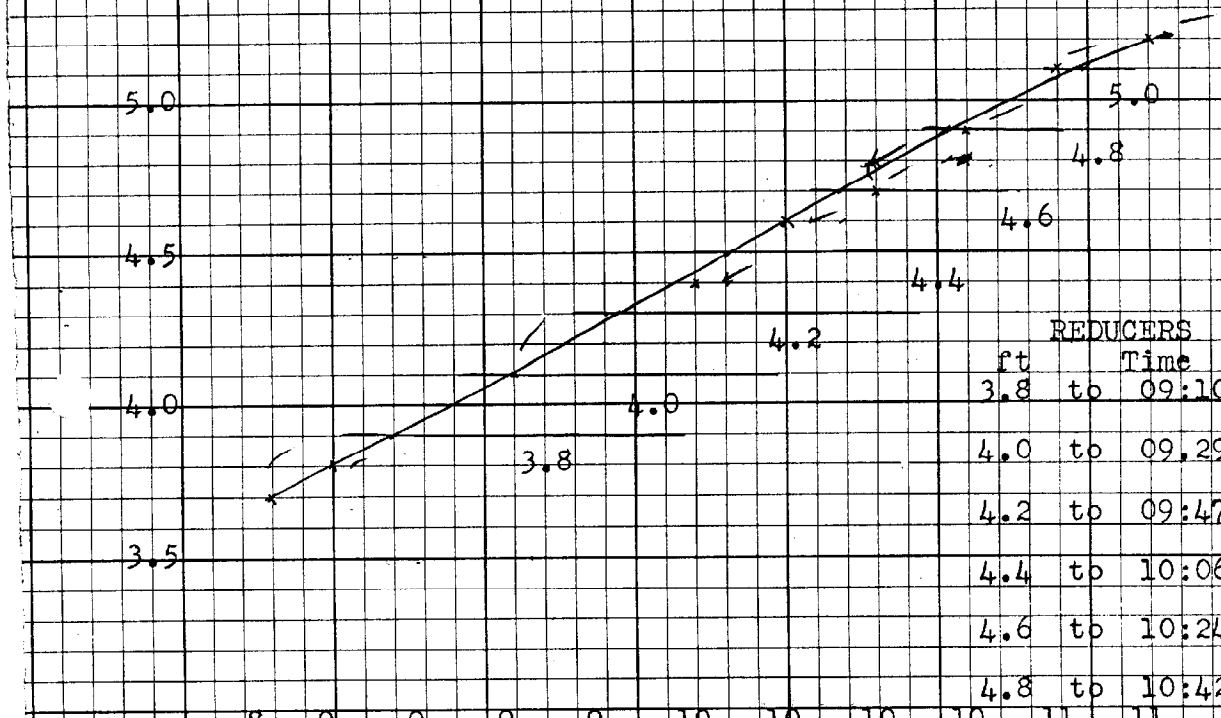
EAST OF TREASURE ISLAND

SAN FRANCISCO BAY

CALIFORNIA

27 December 1950

USC&GSS BOWIE



REDUCERS

ft		Time
3.8	to	09:10
4.0	to	09.29
4.2	to	09:47
4.4	to	10:06
4.6	to	10:24
4.8	to	10:42
5.0	to	11:03

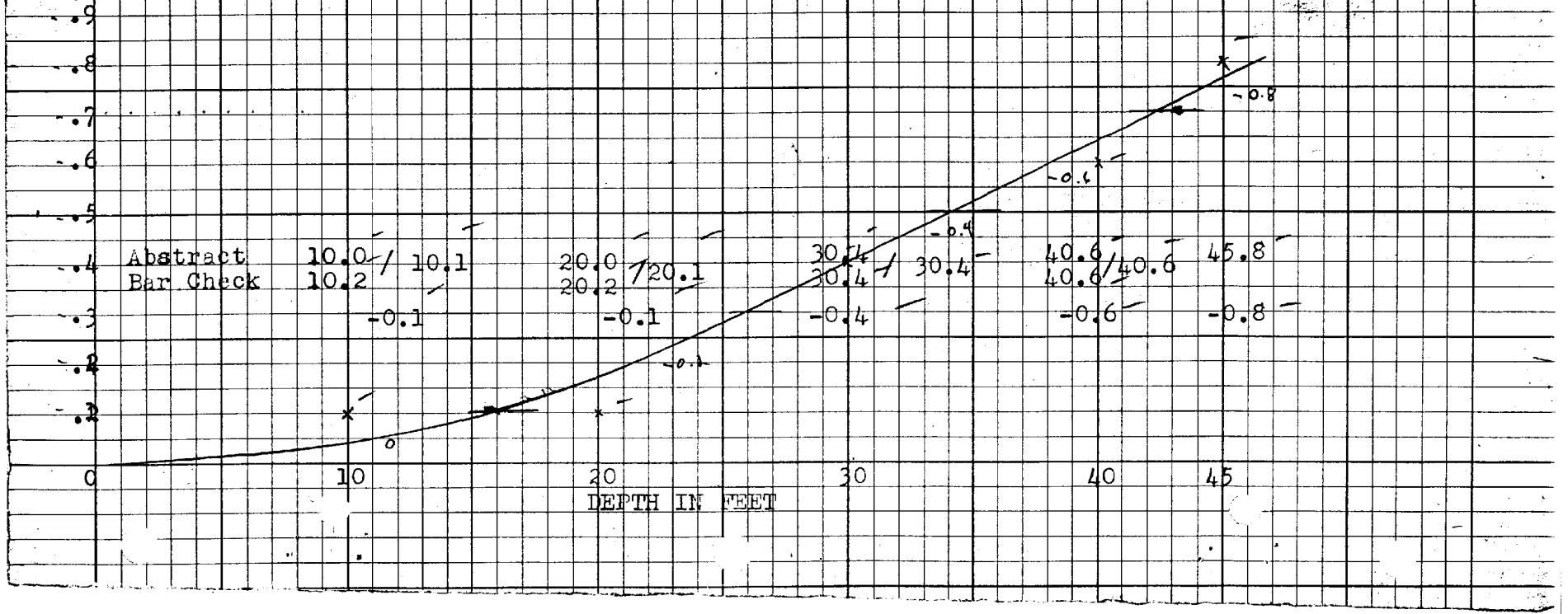
Time	Staff Reading	Height above MLLW (MLLW 1.2 on staff) (Director's letter 11/22/50)
08 50	4.9	3.7
09 00	5.0	3.8
09 30	5.3	4.1
10 00	5.6	4.4
10 15	5.8	4.6
10 30	5.9	4.7
10 45	6.1	4.9
11 00	6.3	5.1
11 15	6.4	5.2

VELOCITY CORRECTIONS

FROM BAR CHECK

Initial 2.6

Depth		Corrections
0	-16.0	0
16.2	-26.0	-0.2
26.2	-34.0	-0.4
34.2	-42.6	-0.6
42.8-up		-0.8



GEOGRAPHIC NAMES

Survey No.
H-7619 Ad. Wk.(1950)

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
										1
										2
										3
										4
										5
										6
										7
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										27
										M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7619 Ad. Wk. (1950)

Records accompanying survey:

Boat sheets .1...; sounding vols. 1....; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls .1 envel.

special reports, etc. .....

.....

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

Number of positions on sheet		53
Number of positions checked		3
Number of positions revised		1
Number of soundings revised (refers to depth only)		2
Number of soundings erroneously spaced		0
Number of signals erroneously plotted or transferred		0
Topographic details	Time	0
Junctions	Time	0
Verification of soundings from graphic record	Time	3 hrs.

Verification by M. M. Rogers .....Total time .15... Date June 21, 1950

Reviewed by J. A. Dinsmore ..... Time .3 hrs. Date 24 Sept. 1951

M-2232-1

RHC

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~ 23 January 1951

Division of Charts: R. H. Carstens

Plane of reference approved in 1
volumes of sounding records for

HYDROGRAPHIC SHEET 7619 Additional Work

Locality San Francisco Bay, California

Chief of Party: R. C. Bolstad in 1950
Plane of reference is mean lower low water, reading
1.2 ft. on tide staff at Yerba Buena
7.6 ft. below B. M. 5 = YB 16 (1920)

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

Condition of records satisfactory except as noted below:

E. C. McKay
Section
Chief, ~~Division~~ of Tides and Currents.

U. S. GOVERNMENT PRINTING OFFICE 756675

REVIEW OF H-7619 AD. WK. 1950

A formal review is considered unnecessary for the small amount of additional hydrography done on this survey. The control was that used on the original survey.

The least depth on the shoal in lat. 37° 49.73', long. 122° 21.39', has been decreased from 22 ft. (previously charted) to 20 ft. by the present development.

The 23-ft. sounding charted in lat. 37° 49.73', long. 122° 21.78', from the original work on the present survey was substantiated by a 25-ft. sounding on this additional development. The 23-ft. sounding should be retained on the chart.

A 23-ft. sounding (not charted) previously located in lat. 37° 49.70', long. 122° 21.80', from the original work on the present survey was investigated by additional development which obtained a least depth of 28 ft. in the vicinity. The 23-ft. sounding was subsequently found to be misplotted and actually fell in the same locality as the 23-ft. sounding discussed in the preceding paragraph.

This additional work was plotted in the Washington Office. Hydrography for this area is now considered to be complete.

Chart 5535 has been corrected accordingly.

Reviewed: 24 Sept. 1951
T.A. Dinsmore

Inspected by: R. H. Carstens

NAUTICAL CHARTS BRANCH

SURVEY NO. H - 7619 Ad. Wk. (1950)

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
7/6/51	5535	N.W. Burgoyne	~~Before~~ After Verification and before Review - Added 20 ft sheet & changed 30 ft curve on most westerly sheet
4/1/52	5532	G. Risegari	~~Before~~ After Verification and Review Examined - no correction.
9/15/54	5532	W. Evans III	~~Before~~ After Verification and Review Reconstr.
8/30/57	Recompiled 5535	J.G. McGann	~~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

M-2168-1

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.