

8088

Diag. Cht. No. 5530-5.

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. B0-1154 Office No. H-8088

LOCALITY

State California

General locality Suisun Bay

Locality Suisun Cutoff

194 54

CHIEF OF PARTY

H. A. Applequist

LIBRARY & ARCHIVES

DATE March 7, 1955

B-1870-1 (1)

8088

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.

REGISTER No. H-8088

Field No. BQ - 1454

State California

General locality Suisun Bay

Locality Suisun Cutoff

Scale 1 : 10,000 Date of survey October 1954

Instructions dated 1 October 1954

Vessel Ship BOWIE (Launch No. 122)

Chief of party H. C. Applequist

Surveyed by A. L. Powell

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

Fathograms scaled by F. W. Lingenfelter

Fathograms checked by Ens. G. E. Cook

Protracted by A. L. Powell

Soundings penciled by A. L. Powell

Soundings in ~~UNKNOWN~~ feet at ~~MLW~~ MLLW

REMARKS:
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.....
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DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SHEET

FIELD NO. BO - 1454

SPECIAL HYDROGRAPHIC SURVEY, SUISUN BAY, CALIFORNIA

PROJECT:

This survey was executed in accordance with Special Instructions dated 1 October 1954. The purpose of the survey was to furnish the Maritime Commission with the depths in the Suisun Cutoff and the connections with the natural channels. ✓

SURVEY LIMITS AND DATES:

This survey covers Suisun Cutoff and part of Grizzly Bay and Suisun Bay. ✓

The survey joins sheet H-4283, Scale 1:10,000, H-4282, Scale 1:10,000 and H-6735, Scale 1:10,000. ✓
(1923) (1922-23)
(1942)

Field work began on 12 October 1954 and ended on 26 October 1954.

VESSELS AND EQUIPMENT:

All hydrography was done with Launch No. 122. ✓

808 Fathometers Nos. 66S and 144SP were used. ✓

TIDE AND CURRENT STATIONS:

Two portable tide gages were operated during the period of the survey. ✓

One gage was maintained at Suisun Slough Echoboard, Latitude 38° 06.8; Longitude 122° 03.8. The other at Mallard Ferry Wharf, Latitude 38° 02.6; Longitude 121° 55.2. (Falls East of H-808E) ✓

The TIDE NOTE appended to this report covers the division of the area for application of reducers from the gages. ✓

No current stations were occupied. ✓

SMOOTH SHEET:

The smooth sheet projection was made by hand by personnel of Ship BOWIE. The shoreline and topographic details were transferred from the 1941 planimetric maps and has been verified. (See PI REVIEW) ✓

The triangulation stations were plotted in the conventional method. ✓

CONTROL STATIONS:

Triangulation control was furnished by previously established triangulation. 5 topographic stations were located by this party by means of theodolite cuts. (See report submitted with this report). Several hydrographic signals were located by sextant angles taken at the signals.

A "List of Stations" is appended to this report.

SHORELINE AND TOPOGRAPHY:

The shoreline was transferred from Planimetric sheet T-5943, 1941, T-5944, 1941 and T-5947, 1941. ⁽¹⁹⁴³⁾
(Photos) (1943) (Photos) (1943) (Photos)

The low water line was not defined by soundings.

SOUNDINGS:

Soundings were measured by 808 Fathometers, Nos. 66S and 144SP. # 5111 fath. # 665 calibrated velocity 820 f/m per. ^{see reference report to # 2228 (1954)}

An abstract of bar check comparisons and velocity corrections is appended to this report.

CONTROL OF HYDROGRAPHY:

Hydrography on this survey was controlled by sextant angles taken between shore objects.

ADEQUACY OF SURVEY:

This survey is believed to be complete and adequate to supersede prior surveys.

The junctions and overlap of prior surveys is satisfactory.

The depth curves can be adequately drawn at the junctions. ^{The bottom is changeable and no junctions with prior surveys are shown.}

CROSSLINES:

Crosslines consist of approximately 9% of the lines run. The crossline soundings checked satisfactorily.

COMPARISON WITH PRIOR SURVEYS:

Comparison made with prior surveys indicates fair agreement. There has been some shoaling in Grizzly Bay and also in the area just South of Snag Island. ^{see TP 5 Review}

COMPARISON WITH CHARTS:

The note under the previous paragraph also applies to comparison with charts. ^{see TP 6 Review}

DANGERS AND SHOALS:

No new dangers or shoals were found. ✓

COAST PILOT INFORMATION:

No changes or additions are recommended. ✓

AIDS TO NAVIGATION:

One fixed aid to navigation was located by sextant angles, it is reported on Form 567. All floating aids were located. See Vol. No. 7, K-day for Sextant angles.

Latitude	Longitude	Depth	Launch #	Floating aid
38 03.46✓	121 57.93✓	31.0	122	Channel Lighted Buoy 18. ✓
38 06. ⁸⁰ 79 ✓	122 03.50✓	10.0	122	Suisun Slough Entrance Buoy 3 ✓
38 06.20✓	122 03. 78 ⁴ ✓	18.0	122	Suisun Slough Entrance Buoy 1 ✓

LANDMARKS FOR CHARTS:

No additional landmarks for charts are recommended. ✓

GEOGRAPHIC NAMES:

No changes or additions are recommended. ✓

MISCELLANEOUS:

The obstruction indicated on the chart in Lat. 38 05.⁸~~48~~ Long. 122 04.02 was searched for but not found. In addition to the sounding lines shown on the sheet, four hours were spent in search of the obstruction by a launch party. Approximately 40 lines were run using hydro station Mar as a front range. At the indicated positions of the obstruction, the spacing would be less than 5 meters. Insufficient personnel was available for taking and recording angles during this search. It is recommended that it be deleted from the chart.

See
TPC of
Review

Allen L. Powell
Allen L. Powell
Lt. Comdr., USC&GS

APPROVED:

H.C. Applequist
H.C. Applequist
Chief of Party

TIDE NOTE

Soundings were reduced using data from portable gages maintained ✓
at Mallard Ferry Wharf and at Suisun Slough Echoboard.

The Mallard Ferry Wharf gage was used, uncorrected for time ✓
and range, for the area East of the line between signals RUE and WHITE. ✓
The Suisun Slough Echoboard gage was used, uncorrected for time and ✓
range, for the area west of a line between signals WEST and HAM. ✓ For
the area between these two lines, the mean of the two curves was used. ✓

Mean Lower Low Water on Staffs:

Mallard Ferry Wharf	4.6 ft. ✓
Suisun Slough Echoboard	4.2 ft. ✓

(Director's letter, 36-42-982b, dated 9 November 1954)

STATISTICS
FOR
HYDROGRAPHIC SURVEY, BO-1454

SPECIAL PROJECT
SUISUN BAY

Year 1954
SHIP BOWIE

VOL. NO.	DAY LETTER	NO. OF POS.	STAT. MILES OF SDGS.	LAUNCH NO.
1	a	167	27.6	122
2	b	205	32.8	122
3	c	92	14.9	122
4	d	196	31.0	122
5	e	158	22.8	122
6	f	190	28.7	122
6	g	137	22.8	122
7	h	227	39.6	122
6	j	23	3.2	122

TOTAL 1395 223.4

TOTAL AREA - 4.5 Square Statute Miles

Bar checks for

VELOCITY CORRECTIONS
FATHOMETER 808 J No. 66S

Day	10	20	30	40	40	50	50	60
				A Scale	B Scale	A Scale	B Scale	B Scale
a	10.2	20.8	31.0	41.5	40.0	51.5	50.2	60.4
b	(10.6)R	21.0						
	10.1	20.6	31.0					
TOTAL	20.3	62.4	62.0					
Mean	10.15	20.8	31.0	41.5	40.0	51.5	50.2	60.4
Cor- rection	-0.15	-0.8	-1.0	-1.5	0.00	-1.5	-0.2	-0.4
f								
g								
h								
j								

FATHOMETER 808 No. 144 SP

e	10.1	20.5	30.8	41.0	41.0			
d	(9.5)	(20.0)R	(30.0)R					
	10.2	20.4	30.9	(40.0)	41.0		51.0	
	(9.9)	(20.1)R						
f	10.4	20.6	31.0	41.0	41.0	51.0	51.0	
g	10.1	20.2	30.7					
h	10.2							
TOTAL	51.0	81.7	123.4	82.0	123.0		102.0	
Mean	10.2	20.4	30.8	41.0	41.0	51.0	51.0	
Cor- rection	-0.2	-0.4	-0.8	-1.0	-1.0	-1.0	-1.0	

ABSTRACT OF VELOCITY CORRECTIONS
 SHEET BO-1454 (4-8088)

FATHOMETER 808 No. 66S

Initial - - 2.0 ft.

<u>Day</u>	<u>Depth</u>	<u>Correction</u>		
a thru c	"A" Scale			
	0.0 to 9.5 ft.	0.0		
	9.6	12.2	-0.2	
	12.3	15.2	-0.4	
	15.3	18.5	-0.6	
	18.6	22.5	-0.8	
	22.6	28.0	-1.0	
	28.1	34.5	-1.2	
	34.6	55.0	-1.4	
		"B" Scale		
		to 46.8 ft.	0.00	
		46.9	54.8	-0.2
		54.9	66.2	-0.4
		66.3	76.0	-0.6
	76.1	90.0	-0.8	
FATHOMETER 808, No. 144SP				
d, e, f, g, h & j	"A" Scale			
	0.0 to 8.8 ft.	0.0		
	8.9	13.6	-0.2	
	13.7	19.5	-0.4	
	19.6	26.5	-0.6	
	26.6	36.5	-0.8	
	36.6	55.0	-1.0	
		"B" Scale		
		35.0 to 90.0	-1.5	

LIST OF STATIONS
ON
BO-1454

Name used in	Origin of Station
<u>Hydrographic Survey</u>	<u>Origin of Station</u>
STAKE	Topographic (See accompanying report on location) STAKE POINT ECHO BOARD
USE	Tripod (USE) 1940-1
Chem	Topographic (See accompanying report on location) Nichols General Chemical Co., Tank
Flash	Aviation Beacon Flashing "U" 1932
Front	Hydro
Light	Pt. Edith Crossing Range Rear Light, 1939
Roe	Roe Island, PRESTON PT. Tripod, 1939
Echo	Echo Island, Navigation Beacon 1932
Egg	Ryer Island Grounded Ship Stack 1949
White	Topographic (See accompanying report on location)
Rue	Hydro
Was	Hydro
Bam	Hydro
Rich	Hydro
Ben	Hydro
East	RYER ISLAND EAST TREE, 1939
West	RYER ISLAND WEST TREE, 1939
Bar	Hydro
Ham	Hydro
Out	Hydro
Ton	Hydro
Mid	Topographic (See accompanying report on location) Middle Ground Echo Board
Poi	Topographic (See accompanying report on location) Middle Point Echo Board
Mar	Hydro

APPROVAL SHEET TO ACCOMPANY SURVEY FIELD NO. BO-1454

The field work on this sheet has been given personal supervision by me, and the boat sheet was examined daily during the progress of the work. The records for this survey have been examined and found complete.

It is considered that the survey is complete and adequate, and no additional field work is required.

Attention is called to the fact that it is the practice of the U.S. Engineers, while dredging the main channel, to dump in the area just east of Middle Ground Light.

H. C. Applequist
H.C. Applequist
Commander, USC&GS
Chief of Party

GEOGRAPHIC NAMES

Survey No. 8088 (Hydro)

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			
Chippis Island											1
Dutton Island											2
Freeman Island											3
Garnet Point								BGN			4
Gillespie Point											5
Grizzly Bay											6
Hastings Creek											7
Honker Bay											8
Middle Ground											9
Middle Ground Island											10
Middle Point											11
Nichols											12
Point Buckler											13
Point Palo Alto											14
Port Chicago								BGN			15
Preston Point											16
Roe Island											17
Ryer Island								BGN			18
Seal Islands											19
Seabluff Landing											20
Simmons Island								BGN			21
Simmons Point											22
Snag Island											23
Stake Point											24
Suisun Bay										Names approved	25
Suisun Cutoff										J-29-55 A. J. W.	26
Wheeler Island											27

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-8088...

Records accompanying survey:

Boat sheets .1...; sounding vols. .7...; wire drag vols.;
bomb vols.; graphic recorder rolls 7.90V;

special reports, etc. 1. Smooth Sheet 1. Cahier, Computation of Positions
of Recoverable Topographic Stations with 2 Volumes of Horizontal Directions &
5 cards of Description of Recoverable Topographic Station also included as
part of the Cahier

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

Number of positions on sheet	.....	1412
Number of positions checked	.....	91
Number of positions revised	.....	0
Number of soundings revised (refers to depth only)	.....	0
Number of soundings erroneously spaced	.....	0
Number of signals erroneously plotted or transferred	.....	0
Topographic details	Time	5 hrs
Junctions	Time	1 hr
Verification of soundings from graphic record	Time	3 hrs

Spacing was very poorly done especially toward the east end of Suisun. but felt where deep water and steep gradients exist.

Verification by *Kennon, D. J.* Total time *128 hrs* Date *2/10/58*

Reviewed by *Luzeckind* Time *50* Date *3/7/58*

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO H-8088

FIELD NO. BO-1454

California, Suisun Bay, Suisun Cutoff

Surveyed October 1954

Scale 1:10,000

Project No. Spec. Inst. dated 1 Oct., 1954

Soundings:

Control:

808 Fathometer

Sextant fixes on shore
signals

Chief of Party - H. C. Applequist
Surveyed by - A. L. Powell
Protracted by - A. L. Powell
Soundings plotted by - A. L. Powell
Verified and inked by - D. J. Kennon
Reviewed by - I. M. Zeskind
Inspected by - R. H. Carstens

Date: 3-7-58

1. Shoreline and Control

The shoreline originates with reviewed air-photographic surveys T-5943 (1941-45), T-5944 (1941) and T-5947 (1941), except Middle Ground Island and the 2 adjacent islands to the westward whose shoreline was transferred from Chart 5575 dated 5-20-57. These islands which were charted from air photographs of 1956, are shown in brown color.

The source of the control 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 were adequately delineated in the channel area covered by this special survey.

The bottom is fairly irregular and generally drops abruptly from shore to depths of 25-30 ft. Submarine features such as shoals, flats and deeps contribute to the bottom irregularity.

4. Junctions with Contemporary Surveys

The present survey does not make junctions with any contemporary surveys by this Bureau. Depths of the present survey are in adequate agreement with the charted depths at the limits of the survey.

5. Comparison with Prior Surveys

A. H-905 (1866-67), 1-20,000; H-1781 (1886) , 1-10,000
 H-1438 (1878) , 1-20,000; H-1785 (1886-87), 1-20,000
 H-1780 (1886-87), 1-10,000; H-2023 (1890) , 1-10,000

These prior surveys cover the area of the present survey. A comparison between the prior and present surveys reveals radical changes in bottom configuration have taken place. These changes in depths are attributed to the action of the current on the bottom, the dumping of the spoil and the depositing of sediment. Present depths throughout the area are generally from 2 to 5 ft. deeper, except in Suisun Cutoff where the present depths are as much as 28 ft. deeper than prior depths. In several areas the bottom has shoaled, as for example, in the vicinity of lat. $38^{\circ}04.15'$, long. $121^{\circ}58.6'$, where the bottom has shoaled as much as 13 ft. where spoil is dumped.

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

B. H-4282 (1922-23), 1-10,000
 H-4283 (1923) , 1-10,000
 H-4284 (1923) , 1-10,000

These prior surveys cover the area of the present survey. A comparison between the prior and present surveys reveals radical changes in bottom configuration which are attributed to causes similar to those stated in the preceding paragraph. In the area which lies east of the east end of Ryer Island, the bottom has shoaled as much as 10 ft., except in the area which lies south-east of Middle Ground Island where it has deepened as much as 10 ft. In Suisun Cutoff present depths are generally 2-4 ft. deeper than prior depths, except in the deep in the vicinity of lat. $38^{\circ}05.0'$, long $121^{\circ}59.9'$ where present depths are as much as 20 ft. deeper than prior depths. In that area which lies about 1 mile northwestward of Garnet Point, Ryer Island, the bottom as shoaled from 2-6 ft.

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

6. Comparison with Chart 5534 (Latest print date 8-5-57)
Chart 5575 (Latest print date 5-20-57)

A. Hydrography

The charted hydrography originates with the U. S. Corps of Engineers' surveys of 1926, 1944 and 1951, and soundings from the present survey prior to verification and review. Only minor 2-3 ft. differences in depths between the charted and present survey depths were noted. The reported obstruction charted in lat. 38°05.80', long. 122°04.02', originates with chart letter 914 (1950), which states that an aeroplane was reported to have crashed here and was not recovered. The field party spent 4 hours searching for the obstruction without success. (See page 3 of the Descriptive Report.) The field party's recommendation that the reported obstruction be deleted from the charts is concurred in.

The present survey is adequate to supersede the charted hydrography within the common area.

B. Dredged Channels

The charted information for East Reach Channel is from the U. S. Corps of Engineers' survey of 1955 (BP 53081), which was accomplished subsequent to and supersedes the present survey.

C. Aids to Navigation

The present survey location of lighted buoy R-18, in lat. 38°03.46', long. 121°57.94', is in agreement with the charted position and adequately marks the feature intended.

Buoy C-1, which is located on the present survey in lat. 38°06.20', long. 122°03.75', was deleted from the chart subsequent to the present survey in accordance with information contained in HON to M 45, 1957.

Buoy C-3, which is located on the present survey in lat. 38°06.80', long. 122°03.51', was replaced by lighted buoy Fl "3" subsequent to the present survey (HON to M 25, 1957). Its designation was then subsequently changed from Fl "3" to Fl "1" (HON to M 45, 1957). The survey position of buoy C-3 is off station about 330 meters to the north north-westward. In its charted position, lighted buoy Fl "1" marks the southeastern side of the southern end of the

dredged channel which leads to Suisun Slough.

7. Condition of Survey

- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The smooth plotting was accurately done.
- c. Hydrographic signal MAR falling offshore in lat. $38^{\circ}09.95'$, long. $122^{\circ}04.08'$ was not described on the survey and is assumed to be of a temporary nature.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work Recommended

This survey is considered basic and no additional field work is recommended.

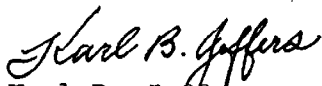
Examined and approved:


Max G. Ricketts


Chief, Nautical Chart Branch



Charles A. Schanck
Chief, Division of Charts



Karl B. Jeffers
Chief, Hydrography Branch



Samuel B. Grenell
Chief, Division of Coastal Surveys

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

1 April 1955

Division of Charts: R. H. Carstens

Plane of reference approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET

8088

Locality Suisun Bay, California

Chief of Party: H. C. Applequist in 1954
Plane of reference is mean lower low water, reading
4.6 ft. on tide staff at Mallard Ferry Wharf
9.9 ft. below B. M. 1 (1932)
4.2 ft. on tide staff at Suisun Echo Board
9.0 ft. below B.M. 2 (1932)

Height of mean high water above plane of reference is as follows:

Mallard Ferry Wharf = 4.2 feet

Suisun Echo Board = 5.1 feet

Condition of records satisfactory except as noted below:

E. C. McKay

Chief, Division of Tides and Currents.

