

6753

6753

Form 504
Rev. April 1935
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

~~TOPOGRAPHIC~~ Sheet No. **H6753**
Hydrographic Field No. 11-42

J.S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

● SEP 23 1942

Acc. No. _____

State CALIFORNIA

LOCALITY

SUISUN BAY

PITTSBURG to ANTIOCH

1942

CHIEF OF PARTY

G. L. Bean

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO. H6753

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. 11-42

REGISTER NO. H6753

State California

General locality Suisun Bay

Locality Pittsburg to Antioch

Scale 1:10,000 Date of survey January - February 42

Vessel U. S. C. & G. S. Ship GUIDE

Chief of Party G. L. Bean

Surveyed by M. A. Hecht and M. T. Paulson

Protracted by R. W. Lowe

Soundings penciled by R. W. Lowe

Soundings in ~~Fathoms~~ feet

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by

Inked by L. L. King July 6, 1943

Verified by " " " "

Instructions dated Sept. 26, 19³⁹~~42~~

Remarks:

H6753

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET NO. 11-42

PROJECT NO. H.T. 239

PITTSBURG to ANTIOCH

SUISUN BAY, CALIFORNIA

U.S.C. & G.S. Ship GUIDE

1942

INSTRUCTIONS:

This survey was executed in accordance with the Director's Instructions No. HT-239, dated Sept. 26, 1939, with a modification being made in Paragraph 15 under date of October 6, 1939. Reference is also made to 22 R.s

1995 PI 1

CHRONOLOGY AND PARTY:

This survey was begun on January 5, 1942, and completed on February 20, 1942. The motor launch was docked at the Pittsburg Boat Club, Pittsburg, Calif., at the beginning of this work. On February 15th it was moved to the Antioch Yacht Club and docked there until the survey was completed. The hydrographic party traveled from the ship, docked at Oakland, each working day to the boat harbor by the ship's truck, returning at night after the end of the day's sounding. Arrangements were made to store the instruments near the launch, and they were taken out and returned each day.

The hydrographic party consisted of Lieutenant M. A. Hecht in charge, Deck Officer Marvin T. Paulson left angle and assistant, and four men whose duties were coxswain, recorder, fathometer operator and engineer. The entire personnel of the party were experienced and the party operated efficiently and with no difficulty except that experienced by motor trouble and bad weather.

Some delay was experienced due to motor breakdown caused partially by the launch being away from the ship where systematic overhaul could not be accomplished. Bad weather hindered the party at various times but it appears that the weather was about the average for this area during this time of the year.

LIMITS:

H-6735 (1941-42)

From a junction with Sheet No. 1141 (Longitude $121^{\circ}-53'$) the survey extends eastward to the limits of Chart No. 5534 (Longitude $121^{\circ}-47.5'$). The hydrography includes portions of Suisun Bay, New York Slough and Sacramento and San Joaquin Rivers between the above longitude limits, and from latitude $38^{\circ}-01'$ to latitude $38^{\circ}-05'$. The hydrography was executed on a scale of 1:10,000.

SURVEY METHODS:

All of the depths on this survey were obtained by the Ship GUIDE's motorsailer using the No. 808 Submarine Signal Fathometer. Bar checks were taken in nearly all cases at the beginning and end of each day for each fathom over the range sounded during the day.

The sounding lines were controlled by three point fixes, plotted by three arm protractor. The in-shore lines were run mainly at high tide and as near to the grass line, docks, piling or dikes as was possible. These lines should conform in general to the shoreline.

The general system of lines varied with the direction of the channels and the lines were run so as to complete a survey as efficiently as possible. Numerous crosslines were run.

CONTROL:

The control consisted of recovered triangulation stations and graphically located signals. The locations of all natural objects used for control were checked by sextant cuts by the topography party. The delineation of the shoreline on the boatsheet was taken from the 1932

air photo compilation. A new air photo compilation was in progress at this time and when available will denote a number of changes which have occurred. A number of these important changes are denoted on the boat sheet or in the records.

SHORELINES, CHANNELS, DANGERS, ETC.:

The shoreline is characterized by low marshy areas (tall grass and tullies extending out into deep water) and by dikes of earth or stone built to reclaim a large portion of the farmland in this area. The building of these dikes has resulted in a great number of dredged ditches, some quite deep. The dredged ditches have no navigational importance and in general were not sounded, which enabled the party to complete this sheet in the limited time available. Considerable dredging has been done, also, to increase the depth of navigable waters and the bottom is quite irregular where this has been done.

Two channels lead from the western limit of the sheet. The northerly one leads to the mouth of the Sacramento River and has a controlling depth of 20 feet to the easterly limit of the sheet. The southerly one leads past Pittsburg through New York Slough which is dredged to 30 feet and which is the controlling depth past Antioch on the San Joaquin River to the easterly limit of the sheet.

No dangers, not already charted, were found and the navigable channels are well marked by buoys, beacons and lights.

DISCREPANCIES, COMPARISON WITH PREVIOUS SURVEYS:

The crossings on the boat sheet appear to be excellent. There are no discrepancies which have not been corrected by re-examination of fixes and records or the rejection of doubtful data and the resurvey of these areas.

The junction of this sheet with the easterly limit of Sheet No. 11-41 compares very well with the soundings on this sheet. ^{H-6725 (1941-42)}

A comparison of the depths obtained on this sheet with the old surveys in this area reveal so many changes in depth, islands, shoreline, etc., that a detailed list appears unwarranted.

FATHOMETER CORRECTIONS:

The 808 Fathometer appeared to operate excellently throughout the entire survey. Fathometer corrections should be made by drawing curves of the bar checks taken at the beginning and end of each day, assuming that the correction changes at a uniform rate during the day. On "f" day the fathometer fish was badly bent during the afternoon's sounding, but a check revealed that the soundings recorded were all right. However, it was not possible to obtain a good bar check at the end of the day due to the fact that the bar could not be hung directly beneath the fish. It is recommended that for this day the fathometer corrections be made by using the bar check at the beginning of the day.

The initial setting is noted at the beginning and end of each day and was not changed during the day. The corrections necessary are due to the initial error of the fathometer and to the fact that the instrument's speed is designed for water of a different temperature and salinity than that encountered in this area. Naturally these corrections increase with the depth.

TIDAL DATA:

Soundings were reduced on the log sheet by using tide data at Mallard Slough, at Antioch and by applying time and range differences to tides at these stations.

The portable gage at Mallard Slough was kept in operation from January 5th to February 1st, 1942, for this survey with the exception of the sounding day of January 14th when the clock stopped.

The portable gage at Antioch was in operation from January 21st to February 20th continuously.

New bench marks were established and old marks connected to the tide staffs at both the above gages.

In addition, automatic gages operated by the State of California were kept in operation at Army Point, (Benicia) and Collinsville for most of the period of this survey. These records are to be furnished the Coast Survey by the State and will be kept as a permanent record. The state authorities wish only an abstract of these records for their files.

Respectfully submitted,

M. A. Hecht

M. A. Hecht,
Lieut.(j.g.), C. & G. Survey.

Approved and forwarded:

Geo. L. Bean

Geo. L. Bean,
Lt. Comdr., C. & G. Survey,
Commanding Ship GUIDE.

LIST OF SIGNALS
used on
HYDROGRAPHIC SHEET NO.11-42

TRIANGULATION:

Sheet F

1. Pitt 1922
2. Johns Manville Tank 1932
3. Pioneer Tank 1932
4. Columbia Tank 1922
5. Pt. Sacramento Nav. Bn. 1932
6. Collinsville Church Spire 1922
7. Vansickle Is. Beacon 1922

Sheet G

1. Mayberry Slough North Trans. Tower 1931
2. Mayberry Slough South Trans. Tower 1931
3. Antioch Fiber Co. Tank 1932
4. Antioch Municipal Water Tank 1932
5. Middle Trans. Tower 1922
6. South Trans. Tower 1922

TOPOGRAPHIC:

Sheet F T-6899a(1941)

Sheet G T-6899b(1941-42)

York
Mad
Em
Cat
Lum
Pipe
Slo
Win
Blue
Dow
Rust
Camp
Pat
Echo
Ner
Wet
Gun
Rip
Ant

Tan
Tall
Punt
Sap
Gin
Green
Dol
Tide
Not
Cain
Quin
Gap
Draw
Mill
Ban
Off
Hal
Wise
Top

She
Ment
Bo
Who
Lot
Barh
Yank
May
Stem
Con
Mam
Hard
Corn
Dor
Berry
Antioch Paper Mill Tank

Jo
Nick
White
Kim
Illo
Old
Ball
Cupola
Chimney
Den
Pap
Tino
Ram

TABLE OF STATISTICS
to accompany
HYDROGRAPHIC SHEET NO.11-42

Date 1942	Vol.	Day Letter	Positions	Soundings	Miles
Jan. 6	1	a red	43	139	6.9
" 7	1	b "	58	192	8.6
" 8	1	c "	91	301	15.2
" 12	1	d "	74	235	9.7
" 13	1	e "	124	391	15.7
" 14	1 & 2	f "	108	302	12.6
" 19	2	g "	86	278	14.9
" 20	2	h "	101	319	17.1
" 21	2	j "	86	259	13.5
" 26	2	k "	77	237	7.7
" 27	2	l "	67	238	13.7
" 28	3	m "	127	386	22.5
" 29	3	n "	72	228	10.7
Feb. 3	3	p "	71	231	12.7
" 6	3	q "	134	410	20.2
" 10	3	r "	32	102	5.3
" 11	4	s "	132	383	17.8
" 12	4	t "	89	256	12.2
" 16	4	u "	124	353	18.0
" 17	4	v "	106	282	10.7
" 18	4 & 5	w "	95	238	9.4
" 20	5	x "	81	201	8.6
TOTALS			1978	5961	283.7

The area of this sheet is approximately 16.6⁷ sq. stat. mi.

STATEMENT

H6753

to accompany

HYDROGRAPHIC SHEET FIELD NO. 11-42

The smooth plotting of this sheet was done by Robert W. Lowe, Senior Engineering Draftsman. The penciling of the soundings and the drawing of the depth curves was done by Mr. Lowe.


Soundings were reduced in the Oakland Processing Office. Reducers were entered to the nearest 2/10ths of a foot for both the tides and the fathometer corrections. The area of the sheet was divided into five zones based on tides observed at Mallard Ferry Wharf and Antioch. The tide records of the State of California at Collinsville are available but could not be readily used at this office because of uncertainties of the time on the records. The Collinsville records have been sent to the Washington Office.

All sounding lines running parallel to the shoreline should be re-sketched in the Washington Office when the air-photo compilation for this area is available.

There is a serious discrepancy at Latitude $38^{\circ} 01.7'$ Longitude $121^{\circ} 50.1'$. The soundings obtained on the cross line from position 98u to 100u appear to be out of position. *Spacing corrected. Line now in agreement* However the plotting of these positions was checked and found to be correct. There is a strong indication of shoaling on both sides of the main ship channel at this point.

The processing of this sheet was under the direct supervision of Lieutenant Commander E. H. Bernstein in the Oakland Processing Office and later under the supervision of Captain E. H. Pagenhart, Supervisor, Western District, at the San Francisco Field Station.

This sheet has been inspected and is approved.


E. H. Pagenhart, Supervisor

Surveys Section (Chart Division)

HYDROGRAPHIC SURVEY NO. **H6753**

Records accompanying survey:

Boat sheets 94%; sounding vols. ⁽⁵⁾...; wire drag vols.;
 bomb vols.; graphic recorder rolls (12)..;
 special reports, etc.

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

Number of positions on sheet	.197.8	
Number of positions checked	..48.	
Number of positions revised	..8.	
Number of soundings recorded	7000 5964	Approx
Number of soundings revised (refers to depth only)	..59..	
Number of soundings erroneously spaced	..29..	
Number of signals erroneously plotted or transferred	..0..	
Topographic details	Time ..24.	
Junctions	Time ..4.4 ^{rs}	
Verification of soundings from graphic record	Time	
Verification [^] by <i>additional sdgs. L. King</i>	Total time 243 ¹ / ₄	Date July 6, 1943
Review by <i>R.H. Carstens</i>	Time 35.4 ^{rs}	Date July 12, 1943

GEOGRAPHIC NAMES

Survey No.
H6753

Name on Survey

	A, On Chart No.	B, On previous survey No.	C, On U. S. quadrangle Maps	D, From local information	E	F On local Maps	G P. O. Guide or Map	H Rand McNally Atlas	K U. S. Light List	
<u>Antioch</u>										1
<u>Pittsburg</u>										2
<u>Suisun Bay</u>										3
<u>New York slough</u>										4
<u>Sacramento River</u>										5
<u>San Joaquin River.</u>										6
<u>Browns Island</u>										7
<u>Middle Slough</u>										8
<u>Winter Island</u>										9
<u>Pt. San Joaquin</u>										10
<u>Pt. Sacramento</u>										11
<u>Van sickle Island</u>										12
<u>Montezuma slough</u>										13
<u>Collinsville</u>										14
<u>Chain Island</u>										15
<u>Montezuma Island</u>										16
<u>Kimball Island</u>										17
<u>Marshall Cut</u>										18
<u>Fraser Shoal</u>										19
										20
										21
<u>Mallard Ferry Wharf</u>										22
										23
										24
										25
										26
										27

See Ch. 8534 for location of names.

	Remarks.	Decisions
1		380 218
2		380 218
3		380 220
4		380 218
5		" U.S.G.B
6		" "
7		"
8		"
9		"
10		"
11		380 218
12		"
13		" U.S.G.B
14		"
15		"
16		"
17		"
18		"
19		"
20		"
21		
22	location of eye tide staff.	380 219
23		
24		
25		
26		
27		

Names underlined in red approved
by Lofteck 01/01/42

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
 DESCRIPTIVE REPORT
~~PHOTOSTATIC~~

No. H **H6753**
~~None~~

{ received **Sept. 23, 1942**
 registered **Oct. 6, 1942**
 verified *July 6, 1943*
 reviewed
 approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25			
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	R. W. Knox
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TIDE NOTE FOR HYDROGRAPHIC SHEET

October 13, 1942

~~Division of Hydrography and Topography:~~

✓ Division of Charts: Attention: Mr. H. R. Edmonston

Plane of reference approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 6753

Locality Pittsburg to Antioch, Suisun Bay, California.

Chief of Party: G. L. Bean in 1942

Plane of reference is mean lower low water reading

5.9 ft. on tide staff at Mallard Ferry Wharf

8.2 ft. below B. M. 1 (1941)

4.6 ft. on tide staff at Antioch

10.8 ft. below B. M. 1

Height of mean high water above plane of reference is 4.1 feet
at Mallard Ferry Wharf; 3.7 feet at Antioch.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.

DIVISION OF CHARTS

REVIEW SECTION - SURVEYS BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. 6753

Field No. 11-42

California; Suisun Bay; Pittsburg to Antioch
Surveyed in Jan. - Feb. 1942, Scale 1:10,000
Instructions dated Sept. 26, 1939.

Soundings:

Control:

808 Fathometer

Three-point fix on shore signals

Chief of Party - G. L. Bean
Surveyed by - M. A. Hecht - M.T. Paulson
Protracted by - R. W. Lowe
Soundings plotted by - R. W. Lowe
Verified and inked by - L. L. King
Reviewed by - R. H. Carstens
Inspected by - H. R. Edmonston Date - July 13, 1943

1. Shoreline and Signals

The shoreline and signals originate with graphic control survey T-6899 (1941-42) and air photographic surveys T-4685 (1931-32) and T-5945 (1941).

2. Sounding Line Crossings

Satisfactory.

3. Depth Curves

Satisfactory.

4. Junctions with Contemporary Surveys

The junction with H-6735 (1941-42) on the west is satisfactory. On the east the present survey is the eastern limit of the bureau's surveys.

5. Comparison with Prior Surveys

A.	H- 905 (1866-67)	1:20,000
	H- 935 (1867)	1:10,000
	H- 1438 (1878)	1:10,000
	H- 1784 (1886)	1:10,000
	H- 2024 (1890)	1:10,000

Dredging operations and natural causes have changed the bottom extensively since these prior surveys were accomplished. The shoal area extending north-west of Browns Island and Winter Island has cut back as much as 200 m. in places and as a result depths have changed as much as 45 ft. as for example in lat. $38^{\circ} 03.7'$ long. $121^{\circ} 51.55'$ where former depths of 10 ft. on H-935 fall in present depths of 55 ft. To the north of Sherman Island the Sacramento River has been widened from a previous width of about 440 m. to the present width of about 1000 m. Depths have been dredged to a minimum of 23 ft. over most of the area, and to 11 ft. in lat. $38^{\circ} 04.0'$ long $121^{\circ} 50.9'$. The middle ground in San Joaquin River has washed considerably deeper on the northern end and has extended southeastward 1.7 miles, shoaling to 4 ft. in former depths of 12-23 ft. New York Slough and the channel in lat. $38^{\circ} 01.3'$ long. $121^{\circ} 48.5'$ have been dredged to present depths of 30-33 ft. from former depths of 9-17 ft. Because of the extensive changes in the bottom the present survey should supersede these earlier surveys within the common area.

- B. H- 3657 (1914) 1:10,000
 H- 4285 (1923) 1:10,000
 H- 6014a.(1933) 1:10,000

Because of dredging and natural changes in the bottom there are considerable differences in depth in certain areas. Dredging has been accomplished in New York Slough which now provides a minimum depth of 30 ft. in a channel where former depths were as shoal as 18 ft. A 32 ft. channel has also been dredged in lat. $38^{\circ} 01.3'$ long $121^{\circ} 48.5'$ and the island in lat. $38^{\circ} 03.8'$ long $121^{\circ} 49.0'$ has been dredged to a minimum depth of 23 ft. South of Chain Island in lat. $38^{\circ} 04.0'$ long $121^{\circ} 51.0'$ depths have changed from a former depth of 4 ft. to the present depth of 24 ft. The present survey adequately reveals the configuration of the bottom and should supersede these prior surveys within the common area.

6. Comparison with Chart 5534 (Latest Print Date 6/9/43)

A. Hydrography

The charted hydrography within the limits of the present survey originates with the previously mentioned surveys which need no further consideration, and with U. S. Engineer's surveys of 1931 to 1938. The present survey is adequate to supersede the latter surveys except for the wreck in lat. $38^{\circ} 01.52'$

long. $121^{\circ} 49.9'$ which should be retained from blueprint 33890.

B. Controlling Depths

The depths of the present survey are in harmony with the charted depths in the dredged channels.

C. Aids to Navigation

The present survey position of floating aids to navigation are in agreement with their charted position except that buoy N-12 in lat. $38^{\circ} 03.55'$ long. $121^{\circ} 51.9'$ was located 125 m. southwest of its charted position. However, it still satisfactorily marks the features intended. A number of the buoys were not adequately described in the sounding records and consequently lack complete notations as to their characteristics. The present survey position of the light in lat. $38^{\circ} 03.8'$ long. $121^{\circ} 47.95'$ is 300 meters east of the charted position. The charted light in lat. $38^{\circ} 02.1'$ long $121^{\circ} 52.65'$ was established subsequent to the present survey and is not shown thereon.

7. Condition of Survey

Satisfactory except that a list of fathometer corrections was not included in the records. Numerous additional soundings were scaled from the fathograms and added to the sheet.

8. Compliance with Instructions for the Project

Satisfactory except that few bottom characteristics were taken.

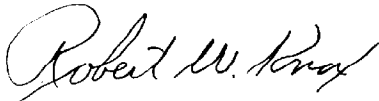
9. Additional Field Work Recommended

None.

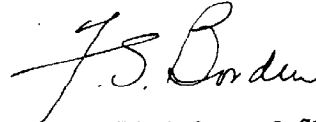
10. Superseded Surveys

H- 905 (1866-67)
 H- 935 (1867)
 H- 1438 (1878)
 H- 1784 (1886)
 H- 2024 (1890)
 H- 3657 (1914)
 H- 4285 (1923)
 H- 6014a (1933)

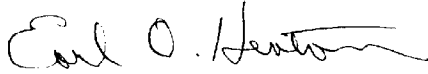
Examined and approved



Chief, Surveys Branch



Chief, Division of Charts



Chief, Section of Hydrography



Chief, Division of Coastal
Surveys

Partially applied to Chart 5534 - Apr 1943. J.F.B.
Completely applied to Chart 5527 Sept 23 1944 J.F.A.
" " " " 5534 " " " J.F.A.
Completely applied to det 5576 then #7797 - EMS 12-5-52

1945

LH No 1

No. 489

(T-5070 1941

3803

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47

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Photo-2011

1941
LH No 1

1433

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