6010b

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Form 504 Rev. Dec. 1933 DEPARTMENT OF COMMERCE U.S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

R. S. PATTON, DIRECTOR

Hydrographic Sheet No. 160 (3)

State CALIFORNIA
LOCALITY
SACRAMENTO RIVER VALLEY
GEORGIANA SLOUGH TO HOG SLOUGH
a = North Fork Mokelumne River
b = South Fork Mokelumne River
1000 1

193 4

CHIEF OF PARTY

LIEUT. L. P. RAYMOR

DEPARTMENT OF COMMERCE

U. S, COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY LIBRARY AND ARCHIVES

SEP 4 1934

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. M (T-5013)

REGISTER NO. 6010a§ b.

State CALIFORNIA
General locality SACRAMENTO RIVER VALLEY 3: North Fork Mokelumne River
Locality GEORGIANA SLOUGH TO HOG SLOUGH b = South
Scale 1:10,000 Date of survey3/6/34 to 4/4/34 , 19
Vessel Launch "Helen F"
Chief of Party Lieut. L. P. Raynor
Surveyed by N. G. Korneeff
Protracted by K. L. DeBlois K. L. Slan AHY.
Soundings penciled by K. L. DeBlois Pales AHY
Soundings in fathous feet
Plane of reference MLW
Subdivision of wire dragged areas by
Inked by A.H.YEOMANS
Verified by A.H.Y. 22 LE 1990 3/17/33: 26 RS 1990.11/9/33:
Verified by A.H.L. 22 LE 1990,3/17/33; 26 RS 1990,11/9/33; Instructions dated 22 AHH 1990, 8/12/33; 22 AHH 1990, 11/9/53; 22 RS 1990, 9/2/33; 22 MEN 1990,12/2/33.
Remarks:

HYDROGRAPHIC TITLE SHEET Field No. M (T-5013)

State: CALIFORNIA

General locality: Sacramento River Delta

Locality: Georgianna Slough to Hog Slough

Scale: 1:10,000 Date of survey: 3/6/34 to 4/4/34

Vessel: Helen F (Leased Launch)

Chief of Party: L. P. Raynor

Surveyed by: N. G. Korneeff

Protracted by: K. L. DeBlois

Soundings penciled by: K. L. DeBlois

Soundings in FEET

Plane of reference: M.L.L.W.

Instructions dated: September 2, 1933 et.al.

The depths were obtained by the standard method using either leadline or sounding pole. Soundings were read to the nearest tenth of a foot. On the smooth sheets the soundings were plotted to the nearest one-half foot up to 10 feet and to the nearest foot for depths over 10 feet as authorized by the instructions of December 2, 1933. Never a feet med only for entire depths any

The smooth sheet is aluminum coated with tanned gum arabic. is free from the distortion that is troublesome with the Whatman's sheets.

ANCHORAGES AND LANDINGS

There are very few wharves on these sloughs. The boats and barges using the channels make fast alongside the levee at nearly any place desired. Usually landings are made at the various sheds shown on the levee.

SHOALS

The following shoals are all in the South Fork of the Mokelumme

- There is a 13 ft. shoal between SE 7 and SW 7.
- There is a 10 ft. shoal between SE 27 and SW 27.9 ft. There is a 6 ft. shoal between SW 8 and SE 11.
- There is a 9 ft. shoal between SW 9 and SE 12.
- 5. There is a 6 ft. shoal south of the tule island at SM 1.
 6. There is a 7 ft. shoal south of SW 30.

CHANNELS

Practically all of the waterways are used for navigation, either by pleasure craft or by commercial vessels. The pleasure craft draw from 12 up to 4 feet, while tugs and barges draw from 4 to 9 feet, the greater depths being that of some of the deeper tugs. The channels depths vary and are indicated by the depth curves as drawn on the boat sheet. Thus far the U. S. Engineer's projects in most sloughs have called for a depth of 9 feet at MLIW.

DEPTH DISCREPANCIES

The following discrepancies in depths at various places were noted but it was not considered necessary to make a field correct tion for the reasons given below:

Depth between positions 43 and 44 E near SM 6 is 12 ft. Depth between positions 65 and 66 E near SM 6 is 7 ft. Apparently the 43-44 E line must have been bent out toward the center of the channel. Both depths are shown.

Depth between positions 82 and 83 F near AM 28 is 13 ft. N.P. Depth between positions 34 and 35 F near AM 28 is 8 ft. Plotted Positions 35 F is located by range finder and compass bearing. A difference of only 2 or 3 degrees in bearing would bring the position out from shore. This would put the 8 ft. depth nearer the tule islands and away from the 14 ft. channel. The depth at position 35 F is 15 ft which would indicate that this position should be moved out from the shore. The 82 & 83 F line is not well controlled from the port shere and the 13 ft. depth may be closer to that shore than shown. Both depths are shown. Plattel & lecause of letter control.

- Depth between positions 106 and 107 F near SE 26 is 11 ft.

 Depth between positions 74 and 75 B near SE 26 is 21 ft.

 The "B" line is a shore line 20 meters off. Position 107 C is a three-point fix. Position 106 C is a long range finder and bearing shot. Either the 11 ft. depth is due to the "F" line being further inshore at this point or the "B" line is further from shore. The sounding chair being off center of the boat may account for this variation since these lines were run in opposite directions. Both depths are shown.
- Depth between positions 107 & 108 F near SE 26 is 14 ft. Plant Depth at positions 32 and 33 C near SE 26 is 26 & 30 ft. The line between positions 32 & 33 C may have swung out further. The sounding chair being off center of the boat may account for this variation since these lines were run in opposite directions Allodepths are shown.
- Depth between positions 30 and 31 C near SW 28 is 20 ft. Plots pth at position 113 F near SW 28 is 12 ft. Plots The sounding chair being off center of the boat probably caccounts for this variation since these lines were run in Sdss-

JUNCTION

The junction with sheet T-5001 is shown on tracing paper accompanying the smooth sheet. Soundings were not carried into sheet T-5026, Tance there are no junctions with this sheet. No junctions are shown with sheets T-5010, 5002, and 5018 as they will be sent with their respective smooth sheets.

The soundings check reasonably well except that there is an ll ft. depth beyond position 6 J from sheet T-500l near MN l.N.P. There is no control on the extension of this line so it is evident that the ll ft. depth is further inshore than shown.

TIDAL DATA

The tide reducers were obtained from the records of the State of California automatic gage located on Georgiana Slough, opposite the Golden State Asparagus Cannery, located on Georgiana Slough, sheet T-5001; from the standard automatic tide gage at Terminous, sheet T-5010; and from the portable automatic tide gage at the New Hope Bridge, sheet T-5018. The areas and times for which each gage are to be used are indicated on the boat sheet by appropriate notes. The tide tabulations, records, comparisons, marigrams, data sheets, and level records of the Terminous and New Hope gages have been sent you. Those of the Georgiana Slough gage will be sent in with sheet T-5001.

The plane of reference for reduction of soundings is MLLW and is 2.5 on the tide staff at Georgiana. The highest tide observed at this gage was 6.4 on the staff and occurred on March 9 and 19, 1934; the lowest tide was 1.8 on the staff and occurred on March 10, 1934. MLLW on the Terminous staff is 3.6. The highest tide observed at this gage was 8.2 and occurred on April 2, 1934, the lowest tide was 3.4 and occurred on March 8 and 10, 1934. MLLW on the staff at New Hope is 2.0. The highest tide observed at

this gage was 6.1 and occurred on April 2, 1934. The lowest tide was 1.8 and occurred on March 8, 9, and 10, and April 3, 1934.

Tables used for reduction of soundings using these gages follow:

TIDE REDUCERS

Georgiana Gage MLIW is 2.5 on staff		Hew Hope Gage MLLW is 2.0 on staff.
Staff reads	Staff reads	Staff reads:
	3.8 to 4.3 4.3 to 4.8 4.8 to 5.3 5.3 to 5.8 5.8 to 6.3 6.3 to 6.8 6.8 to 7.3	Add 1 ft. 1.2 to 1.7 1.7 to 2.2 Zero Correction 2.2 to 2.7 Subtract 1 ft. 2.7 to 3.2
		8.2 to 8.7 " 61 ft.

CLEARANCES

The clearance of the overhead cable at Brack Tract is 110 ft. at H.W. as shown on the smooth sheet. This was taken from data furnished by the U.S. Engineers and gives the minimum clearance allowed by the permit for this crossing. The clearance as determined by range finders No. 7277 and No. HE on March 15, 1934 was 105 ft. and 109 ft. respectively. This was deemed to be a close enough check for practical purposes. The official height of 110 ft. is correctly shown on the smooth sheet. This statement given prefer

CHANGES AND ADDITIONS TO T-5013

The following changes or additions resulting from the field inspection during the progress of the hydrographic work are shown on the smooth sheet.

- 1. The shoreline was changed between SE 89 and SE 92 to conform with a planetable survey made by this party on aluminum and sub- mitted as a separate topographic report for sheet T-5010.
- 2. Tule island south of NW 8 was relocated and corrected from field data on p.2. Vol. 3 of the sounding records.
- 3. Shoreline between NW 23 and NW 24 was relocated and corrected from field data on p.2. Vol. 3 of the sounding records.
- 4. The shoreline was changed between SE 13 and SW 20 to conform with a planetable survey made by this party and submitted on Whatman's Paper.

monum - No Whatinan Med, allem mum (5/4-100 glay)

5. The shorelines were changed between SE 30 to SM 73 to conform with a planetable survey made by this party and submitted on What man's Paper.

He are assure as we changed not feel to asser with photo compilation

6. The "5118" at the top of the sheet has been corrected to \checkmark "5018". We

The following corrections are noted on the boat sheet but not on the smooth sheet:

- 7. West of AS 5 there is a note, "Shoal, not island, 2 ft. of water at 1:05 p.m., 1/23/24." With a tide reducer of 3.5 ft. this would be a 1.5 ft. high island at MLW. This should be corrected to indicate a tidal flat on the smooth sheet.
- 8. There are notes indicating weeds in channels between (AM 25, not phorum matter AM 26) (AM 29, and AM 30)
- 3. There are weeds indicated at the head of Hog Slough.
- . The shed northeast of SW 7 is gone.
- 3. Signal MN 2 should be marked "Windmill."

GEOGRAPHICAL NAMES

On a separate T-5013 sheet the camp numbers or names which should be added to this sheet are shown in red. The names were obtained locally and were checked by Captain Lent, who is one of the relief pilots for the Port of Stockton, and has had many years of tugboat experience on the Sacramento-San Joaquin Delta.

LANDMARKS

Copy of List of Landmarks on form 567 is attached to this report. The objects with (3) are useful in local navigation only, ies for help in determining the camp near which one is passing or the exact location in the adjacent slough. The objects with (2)(3) are wood power line poles and can be seen for a considerable distance. They should prove of much help in the general navigation of the Delta. As they are located by third order triangulation their positions are well determined. They could, therefore, be used as ranges for the determination of compass deviations, if so desired. It is suggested that both classes of landmarks be placed on the chart (new) of the Delta if space permits. At any rate, those in class (2)(3) should appear on the chart.

No comparisons were made with the U.S. Engineers Surveys.

N. L. Dellas

SHEET M (T-5013)

The sounding records were inspected by the Chief of Party when opportunity arose, and the dates of inspection are noted in the sounding records. Supervision of the hydrographic and signal building parties was made until it seemed certain that methods of doing the work were understood. Plotting of the smooth sheet was inspected for gross errors and all discrepancies in depths due to line crossings were inspected and notes for correction made.

Depth curves were drawn in ink on the boat sheet. They were not drawn with pencil on the smooth sheet because of the confusion that would result. They can better be drawn after the soundings have been inked.

In Sycamore Slough there are several openings between the North and South channels. Some are full of weeds and it was not considered worth the time to run lines in all of them. There is a small portion of Georgiana Slough on the upper left hand corner of this sheet that was not plotted. This part will be included on sheets 5001 and 5002.

ADDITIONAL NOTES:

Since the above report was written it was decided that the Whatman print was so distorted that the planetable revision work was not sufficiently accurate. A projection was made on an aluminum plate coated with tanned gum arabic, and most of Hog Slough as well as its junction with the Mokelumme River was revised. The revised location of signals and shoreline at the entrance was placed on the smooth sheet and the hydrography west of HM 3 only was replotted. Completely revised and reported to office from an interior completely and all the hydrography west of HM 3 only was replotted.

The adjacent signals in Hog Slough with the exception of HS 6 agreed well enough with each other so that the hydrography as originally plotted was not disturbed. HS 6 was replotted and all hydrography located from this signal replotted.

The topography in the bight Northwest of the entrance to Sycamore Slough was also revised on the aluminum sheet. Discrepancies in the location of the signals was not large enough to warrant a replot of this area.

The Whatman sheet mentioned in the report is not being submitted.

L. P. Raynor Chief of Party.

HYDROGRAPHIC SHEET M (T-5013)

AUTHORITY, DATES, & LIMITS The INSTRUCTIONS for this work are contained in the following letters:

- 1. 22 LE 1990, March 17, 1933.
- 2. 22 AHH 1990, August 12, 1933.
- 3. SUPPLEMENTAL INSTRUCTIONS, Project 98 HT Sept. 2, 1933.
- 4. 26 RS 1990, November 9, 1933.
- 5. 22 AHH 1990, November 16, 1933. 6. 22 MEN 1990, December 2, 1933.

This sheet covers parts of the North and South Forks of the Mokelumne River; Sycamore and Hog Sloughs, in the Sacramento River Valley. The work was done from March 6, to April 4, 1934.

GENERAL NOTES

The waterways are either old slough beds which have been deepened by dredging to erect the levees, which are necessary to reclaim the land or are new cuts made for the same purpose. The dredging was done in the interests of the reclamation of the lands for cultivation rather than for navigation. This in part accounts for the general unevenness of the bottom, but where the bottom is particularly hard, the dredger leaves the material provided softer spoil can be found in the same general vicinity.

SURVEY PARTY

Most of the work was done under direct supervision of the Chief of Party. The other members were N. G. Korneeff, Observer, right angle and compass bearings, or plotting; C. M. Anstead, Mechanic, Observer, left angle or range finder, No. 7277; C. A. Kester, Recorder; John M. Logan and Myron Bear alternating as Leadsman and Coxwain.

SURVEY METHODS

When feasible, the usual method of sextant three-point fix was used for determining the boat's position. Otherwise, the 40 meter range finder No. 7277 was used with compass No. 24874 and pelorus No. 24874 for finding the distance and bearing of the boat from the nearby hydrographic signals. The range finder was calibrated frequently for the observer. It was found quite reliable for distances under 55 meters and was only infrequently used in measuring greater distances when this could not be avoided.

Some of the hydrographic signals were located by planetable using a print of the photo-compilation as a planetable sheet. These are shown on photo-lithographic sheet printed on Whatman's paper. Most of the signals were located by spotting from topographic detail shown on the sheets; such as, tule points and islands, intersection of ditch lines with high water line, gables of buildings, sheds, etc. A few signals were located by sextant.

SHEET M (T-5013)
TABLE OF STATISTICS

Date		Day	Vol.	Miles	Soundings	Positions
March	6	A	1	7.1	504	105
11	7	В	1	13.3	772	115
11	8	C	1	7.2	422	71
11	9	D	1	2.3	153	22
11	9	D	2	17.5	8 3 5	178
n	13	E	2	13.0	1127	193
11	14	F	3	16.1	961	184
11	15	G	3	6.2	480	8 7
11	20	Н	3	5.1	286	73
April	3	J	4	4.0	380	70
11	4	K	4	1.4	157	20
July	20	L L	4	2.0	205	53
		TOTALS		95.2	6282	1171

HYDROGRAPHIC SIGNALS: 263

LANDMARKS FOR CHARTS

H- 6010

Stockton, California

August 20, 1934

L. P. Raynor

WINDWILL			•	(-)			(-)	N.A.	Photo-	New San Tanania
Tyler Island	(3)	38	80	158	121	34	169	1927	plot	San Joaquin
	• •			(1375)			(770)			
WINDMILL	(3)	38	80	475	121	33	691	#	Ħ	**
A STATE STATE	, , ,	•	•	(116)			(525)			
TANK & WINDMILL	(3)	7 8	10	1734	121	31	935	-	#	11
IAM G HILLDELLES	(0)	-		(426)		•	(530)			
MANUEL & METATOGETT T	(3)	38	07	(300)	121	29	1131	**	**	•
TANK & WINDMILL	(0)	30	01	(1483)	-		(1271)			
	/m\		30		121	27	190	**	11	R
TANK & WINDWILL	(3)	3 8	10		16.1	61			Mand and man	
(Wood, power	line[2]			(1570)			(1159)	#	Triangu-	*
POLE Staten Id. 1	933)\3)	38	09	280	121	30	302		lation	
(Wood, power	line(2)			(1579)			(1321)	_		
POLE Brack Tract)	(2)(3)	38	09	271	121	20	140	₩	**	•
	, ,,			(634)			(411)		Photo-	
TANK & WINDMILL	(3)	38	10		121	29	1049	Ħ	plot	# ,
IAM G HANDELLE	(-,	•		(108)			(1095)		_	
	/«\	38	10	1742	121	29	365	#	#	u
TANK & WINDMILL	(0)	5 0					(295)			
	/m \	20	11	(-) 892	121	28	1165	. ***	**	***
TANK & WINDMILL	(3)	38	11	092	TCT	20	****			

HYDROGRAPHIC SHEET No. 6010

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

Number of positions on sheet	.117./.
Number of positions checked	19
Number of positions revised	α
Number of soundings recorded	.62.82
Number of soundings revised	11.
Number of signals erroneously	
plotted or transferred	3.1

Date: March 28.1935 Cartographer: A.H. YEOMAN 5

Plotted 241 positions 31 signals by AHY Verification of protracting

Verification & inking of rocks and absolute by AHY

Verification of inking by

Borden by Hany 1. Call

29 hrs

Times 48 34 h.

Time 13hrs

October 1, 1934.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in 4 volumes of sounding records for

HYDROGRAPHIC SHEET 6010

Locality Georgiana Slough to Hog Slough, Sacramento River Valley, Calif.

Chief of Party: L. P. Raymor in 1934
Plane of reference is mean lower low water, reading

3.6 ft. on tide staff at Terminous

7.7 ft. below B.M. 1

2.5 ft. on tide staff at Georgiana Slough

10.6 ft. below B.M. 1

2.0 ft. on tide staff at New Hope Bridge

11.2 ft. below B.M. 1

Height of mean higher high water above plane of reference is approximately 3.8 ft.

Condition of records satisfactory except as noted below:

Acting Chief, Division of Tides and Currents.

Survey	No	H-	6	٥	1	0
				_	_	_

GEOGRAPHIC NAMES

Date. Dec. 21, 1934

Names approved Dec. 21, 1934. Harlow Bacon

Survey No	H-6010	
	T-5013	
Chart No.		

								Clause	VO P
*	Approved	bν	the	Division	of	Geographic	Names,	Department of	Interior.

- $\rlap/{c}$, Not Approved by the Division of Geographic Names, Department of Interior.
- R, Referred to the Division of Geographic Names, Department of Interior.

itatus ′-	Name on Survey	Name on Chart	New Names in local use	Names assigned by Field	Location
	For list of geographic Names of Tracts,	names and correct spell Rivers, Sloughs and L	lings se DR fo	T-5013.	d
	on this sheet f	from T5013 HB.			
ć					

Surveyed in 3/6/34-4/4/34 Report on H-6010 Surveyed by n.G. Korneeff chief of Party Lt. LP Raynor Soundings plotted by K. L.D. , A. H.Y. Protracted by K.L. De Blois, A.H.Y. Derified and inkel by UH yeomans 1. The records conform to the Hydrographic Manual 2. The usual depth curves were completely drawn ? The field plotting was completed to the extent prescribed in the Hydrographic manual. 4. The office draftsman revised Hog Slough as shown on this skeet for reasons given below. 5. The junctions with adjacent sheets H-6007 (1934) and H.6006 were completed and found to be satisfactory; other adjoining sheets 146011 and 146009 have not been completed. 6. a recent revision of the air photo compilation for the topography of this sheet showed that the portion of Hoy Slough as shown on this sheet was moved to such an extent (about 40 meters) that the Rychography had to be completely revised. Most of the signals in this slough were located by planetable survey which was also found to to be in error and these were revised to agree with the air photo compilation.

> Submitted by, a. H. Youmana

Section of Field Records

as b

REVIEW OF HYDROGRAPHIC SURVEY NO. 6010 (1934)

Georgiana Slough to Hog Slough, Sacramento River Valley, California Surveyed - March-April 1934

Instructions dated March 17, 1933 and September 2, 1933 (L.P.Raynor)

Hand Lead and Pole Soundings - Control: (3 Point Control on Shore Signals)
(Range Finder Distances)
(CompassBearings Using Pelorus)

Chief of Party - L. P. Raynor. Surveyed by - N. G. Korneeff. Protracted and Soundings Penciled by - K. L. DeBlois. Verified and inked by - A. H. Yeomans.

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual except the following:

a. Position numbers and letters on cover and title page should be colored to conform with the records. This was accomplished in the office.

2. Compliance with Instructions for the Project.

The plan, character and extent of the survey satisfy the instructions for the project.

3. Sounding Line Crossings.

The creeks are, in many places too narrow to allow a regular system of cross lines but crossings and agreement of adjacent soundings are satisfactory for winding creeks of this character.

4. Depth Curves.

The usual depth curves may be satisfactorily drawn.

5. Junctions with Contemporary Surveys.

Junctions with H-6007 (1934) on the north, and H-6006 (1934) on the west desatisfactory.

The junctions with H-6009 on the north and H-6011 on the south will be considered in the reviews of those sheets.

6. Comparison with Prior Surveys.

There are no prior surveys in the area covered by the present survey.

7. Comparison with Chart.

There is no published chart covering the area of this survey.

8. Field Plotting.

Field protracting and plotting were accurage and conform to the requirements of the Hydrographic Manual.

9. Additional Field Work Recommended.

The survey is complete, and no additional field work is required.

10. Overhead Cable Crossing.

At the overhead cable crossing (lat. 38°09.1', long. 121°30.1') the field party determined a clearance of 105 and 109 feet respectively from two range finder readings, (See Sounding Volume 3, page 2) whereas the U. S. Engineers permit calls for a clearance of 110 ft. The descriptive report recommends the retention of the latter figure.

11. Superseding Old Surveys.

There are no previous surveys by this Bureau within the limits of the present work.

12. Reviewed by - Harry T. Kelsh and R. L. Johnston, March 1935.

Inspected by - A. L. Shalowitz.

Examined and approved:

C. K. Green,

Chief, Section of Field Records.

Chief, Section of Field Work.

Chief. Division of Charts.

Chief. Division of H. & T.

applied to drawing of Chart 5527 up7.10, 1935 - J.W.