10421

Diagram No. 5527

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. PHP-10-2-92

Registry No. H-10421

LOCALITY

State California

General Locality San Joaquin River

Sublocality Middle River

1992

CHIEF OF PARTY
LT G.F. Glang

LIBRARY & ARCHIVES

DATE May 31, 1994

☆U.S. GOV. PRINTING OFFICE: 1987—756-980

10421

NOAA FORM 77-28 (11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTER NO.
H-10421

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS - 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.
PHP-10-2-92

State: California

General locality: San Joaquin River

Locality: Middle River to San Andreas Point

Scale: 1:10,000 Date of survey: April 10 to June 26, 1992

Instructions dated: June 17, 1991 Project No.: OPR-L208-PHP

Vessel: Jensen Launch 1101 (0651), MonArk Launch 1102 (0652)

Chief of party: LT Gerd F. Glang, NOAA

Surveyed by: LT Glang, LT J. Verlaque, ET E. Wernicke, ST R. Baker

Soundings taken by ~~echo sounder~~, ~~hand lead~~, ~~pole~~ Raytheon DE-719CM Echosounder

Graphic record scaled by: PHP Personnel

Graphic record checked by: PHP Personnel

Verification by: L.T. Deodato Automated plot by: PHS Xynetics Plotter

~~Protracted by~~

Evaluation by: J.S. Green

~~Verification by~~

Soundings in meters and decimeters at ~~MLW~~ MLLW

REMARKS: All times UTC. Revisions and marginal notes in black were generated during office processing. Separates are filed with the hydrographic data.

AWOIS + Surf ✓ RWD 6/94

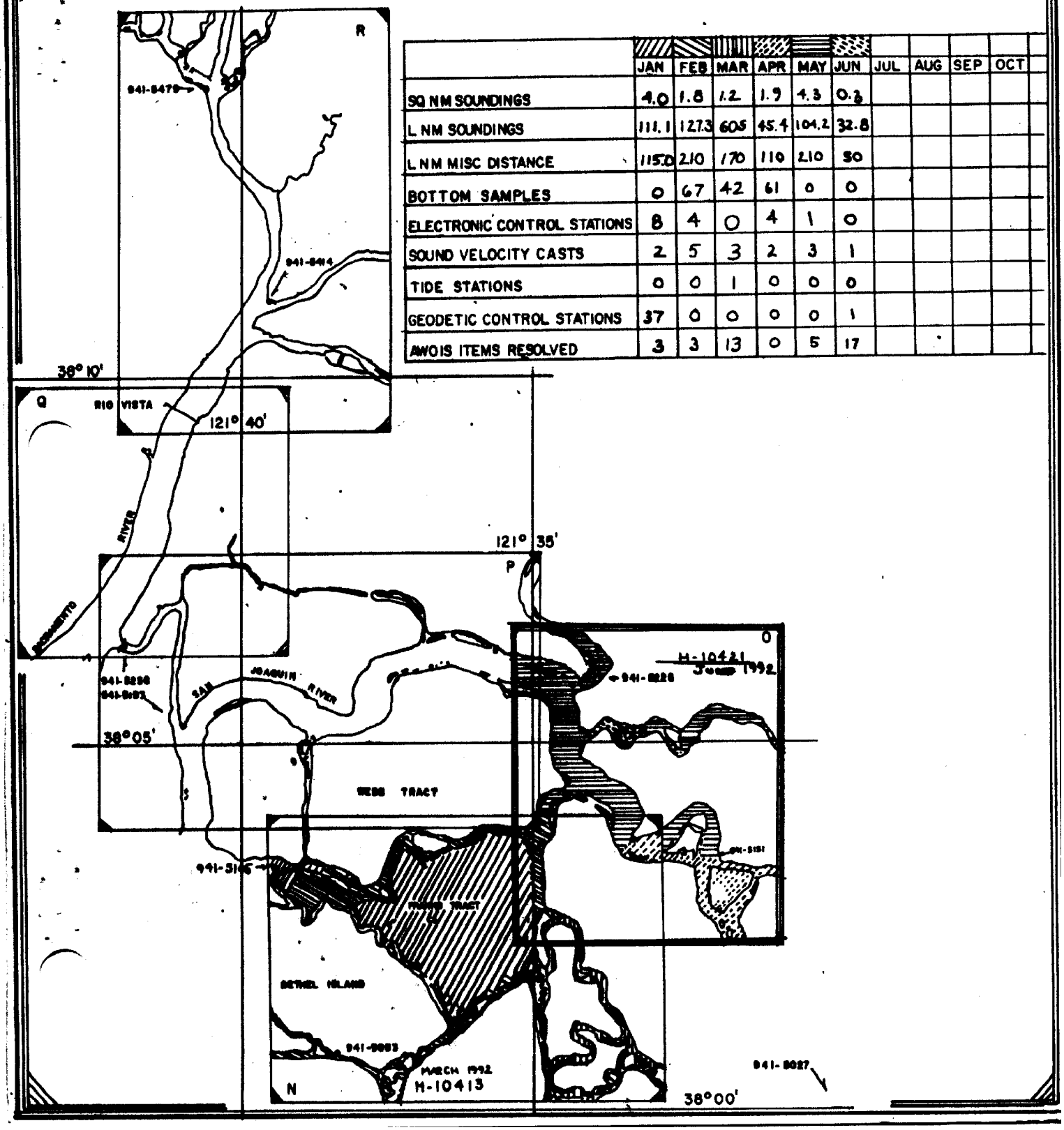
XWW 7/19/94

U.S. GOVERNMENT PRINTING OFFICE: 1986 - 652-007/41215

PROGRESS SKETCH
OPR-L208-PHP

SACRAMENTO RIVER, CA. SHEETS N,O,P,Q,R
JANUARY - 1992
HYDROGRAPHIC SURVEY
PACIFIC HYDROGRAPHIC PARTY
LT GERD F. GLANG, CHIEF

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
SQ NM SOUNDINGS	4.0	1.8	1.2	1.9	4.3	0.3				
L NM SOUNDINGS	111.1	127.3	60.5	45.4	104.2	32.8				
L NM MISC DISTANCE	115.0	2.10	170	110	2.10	80				
BOTTOM SAMPLES	0	67	42	61	0	0				
ELECTRONIC CONTROL STATIONS	8	4	0	4	1	0				
SOUND VELOCITY CASTS	2	5	3	2	3	1				
TIDE STATIONS	0	0	1	0	0	0				
GEODETIC CONTROL STATIONS	37	0	0	0	0	1				
AWOIS ITEMS RESOLVED	3	3	13	0	5	17				



Descriptive Report to Accompany Hydrographic Survey H-10421

Field Number PHP-10-2-92
Scale 1:10,000
1992

Pacific Hydrographic Party
Chief of Party: LT Gerd F. Glang

A. PROJECT

This survey was conducted in accordance with Hydrographic Project Instructions OPR-L208-PHP, Sacramento River, California, dated June 17, 1991.

Hydrographic survey H-10421 was conducted to obtain data for maintenance of existing nautical charts, and for a new series of 1:12,500-scale charts. This project also responds to the San Francisco Pilots Association and the US Army Corps of Engineers (COE), Bay Model Engineering Office, by aiding the update of the Bay model.

This survey's sheet letter is "O", as specified by the project instructions. To meet limits of the field processing system, sheet "O" was divided into O-North (HDAPS Sheet 17) and O-South (HDAPS Sheet 18) sheets.

B. AREA SURVEYED

See Evel Rpt, sect I

The area surveyed for H-10421 includes: The San Joaquin River, from Burns Reach to Webb Reach, and includes a portion of the Stockton Deep Water Channel, Middle River, Old River, Potato Slough, and the Mokelumne River. The east and west limits of hydrography are longitudes 121°30'45"W and 121°35'41"W, respectively. The north limit of hydrography is latitude 38°06'34"N (Mokelumne River). The south limits of hydrography are latitudes 38°03'55"N (Old River) and 38°02'17"N (Middle River).

This survey is centered in the delta of the Sacramento and San Joaquin Rivers, in central California. The Delta is a region of rivers and sloughs which meet and interconnect the Sacramento and San Joaquin Rivers. Tracts of agricultural land are separated by these sloughs and rivers, and are protected by dirt levees, sometimes reinforced with riprap. Unprotected shoreline of islets and old levees consist of mud and tule grass, which easily change in configuration with seasonal flooding and erosion.

Data acquisition was conducted from April 10 through June 26, 1992.

C. SOUNDING VESSELS

NOAA Launch 1101 (EDP No. 0651), a 29-foot Jensen, and NOAA Launch 1102 (EDP No. 0652), a 22-foot SeaArk, were used to collect sounding data, bottom samples, velocity casts, and to conduct shoreline verification. Bottom drags were conducted from VN 0651 exclusively. No changes to the standard vessel sounding configurations were necessary.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

This survey was completed with the following HDAPS Programs:

Program Name	Program Version	Installation Date
DISC_UTIL	1.00	04/01/92
MB	1.00	04/01/92
HJ	1.00	04/01/92
AUTOST	2.00	06/26/91
SURVEY	6.11	04/14/92
POINT	2.04	04/24/92
PLOTALL	2.02	04/28/92
PRINTOUT	3.00	04/28/92
CARTO	2.02	05/06/92
BASELINE	1.12	04/01/92
QUICK	1.20	04/29/92
CONVERT	3.02	05/14/92
INVERSE	1.51	04/01/92
LOADNEW	1.50	04/01/92
GLOBAL	1.12	04/01/92
REJECT	1.05	04/01/92
MAKEFIX	1.02	04/29/92
BIGABST	2.00	04/14/92
REAPPLY	1.33	04/01/92
DIAGNOSTIC	3.00	04/01/92
FILESYS	2.16	04/01/92
BACKUP	2.00	04/01/92
LISTAWOIS	2.01	04/01/92
PREDICT	1.11	04/01/92
POSTSUR	5.21	04/01/92
READPROJS	1.08	04/01/92
SOFTCHECK	1.13	04/01/92
DP	2.11	07/06/92
EXCESS	3.04	04/01/92
ZOOMEDIT	1.10	04/01/92
INSTALL	3.00	04/01/92

Program Name	Program Version	Installation Date
CARTOTRANS	1.00	04/01/92
RECOMP	2.00	04/01/92
COPRINTOUT	2.00	04/01/92

The PC-DAS SURVEY Program, version 4.0, was used for all data acquisition. The following non-HDAPS computer programs were used:

Program Name		Program Version	Version Date
VELOCITY	(IBM PC)	1.11	03/09/90
NADCON	(IBM PC)	1.01	09/89
DDPROC	(IBM PC)	4.03	01/25/92
MTEN 3	(IBM PC)	18	03/22/88

Significant software problems encountered include errors in BIGABST Program, version 1.13, and PC-DAS SURVEY Program, version 3.7.

BIGABST does not correctly compute mileage when a hydrographic line has recomputed positions, nor does it properly count DP's when several have been rejected on a particular DN.

The PC-DAS SURVEY Program occasionally failed to send an event marker to the echosounder, and no visual record of a selected sounding appeared on the echogram. The RMPO was annotated to show where the selected sounding occurred.

The RMPO* was annotated whenever software problems affected the data.

* Raw Master Printout

E. SONAR EQUIPMENT

Not applicable.

F. SOUNDING EQUIPMENT

The following Raytheon DE-719CM echosounders, modified with an Odom Hydrographic Systems, Inc. Digitrace, were used:

Vessel EDP No.	Serial No.	DN Used
0651	10278	101-164
0652	10280	114-178

Soundings were recorded in meters, with an assumed speed-of-sound through water of 1500 m/sec. Depths encountered in the survey area ranged from ~~awash~~ 6.0 to ~~22.0~~ 21.3 meters.

The digitized soundings from the echosounder were compared in real time with the analog trace to ensure reasonable agreement. Adjustments to the zero calibration, speed of sound, and tide and draft were noted on the echogram, if not obvious. Because of the poor reliability of the DE-719CM echosounders, these adjustments were required almost continuously.

Survey records were scanned by PHP employees in accordance with the Hydrographic Manual and FPM Section 2.3.3, with the digital sounding taking precedence over the analog trace. In depths greater than approximately 10 meters, an error up to 0.3 meters is apparent when the digital sounding is compared to the analog trace. In certain instances, the analog-to-digital difference was applied to a scanned insert. This error is not an uncommon characteristic of the Raytheon DE-719C/Odom Digitrace combination. This characteristic was also considered during office processing. Sounding data appears consistent throughout the survey area.
Sounding poles were made by PHP using commercial surveyor's level-rod tape. These self-adhesive, pre-printed tapes are calibrated in centimeter intervals. They were laminated with clear epoxy to two-inch diameter wooden rods finished with white marine epoxy paint. The sounding poles are 3.3 meters long. No further calibrations are required. The sounding poles were used for measuring least depths on shallow AWOIS investigations.

Metric leadlines were made by PHP in accordance with HSG 69. Each leadline is 7/16-inch double-braided dacron line. Markings are at one-meter intervals from 0 to 19, and are shrink-tubing secured with epoxy glue. This deviation from HSG 69 makes for a more rugged leadline. Markings were calibrated during fabrication with a steel surveyor's tape while the line was under six pounds of constant tension. The throwing end is a standard six-pound lead shackled to a stainless steel thimble bent to the bitter end. Leadlines were used for depth comparisons with the echosounders and for measuring least depths on AWOIS investigations. Calibration forms are included in Separate IV (Sounding Equipment Calibration and Corrections). *

* Filed with the hydrographic records.

G. CORRECTIONS TO SOUNDINGS

Velocity of Sound

Corrections for the speed of sound through the water column were computed from data obtained with an Applied Microsystems Laboratories (AML) Velocity of Sound Profiler (S/N 03004). The VELOCITY Program was used to determine the speed of sound correctors.

The following casts were taken:

Cast	DN	Depth*	DN Range	HDAPS Tables 0651	HDAPS Tables 0652	Cast Position Latitude	Cast Position Longitude
1	113	25.9	101 - 117	1	2	38°03'35"N	121°33'26"W
2	120	21.3	118 - 124	3	4	38°02'35"N	121°31'45"W
3	127	24.7	125 - 131	5	6	38°04'03"N	121°32'03"W
4	134	23.5	132 - 138	7	8	38°03'40"N	121°33'26"W
5	142	22.2	139 - 143	9	10	38°05'47"N	121°34'46"W
6	154	27.8	144 - 178	11	12	38°03'34"N	121°33'24"W

*Extrapolated depth.

Velocity corrector tables were created for both vessels from each cast due to their different drafts. The static draft for VN 0651 was rounded up to 0.5 meters for computing velocity correctors to accommodate processing by N/CG245. Copies of all velocity cast data and HDAPS Velocity Corrector Tables are included in Separate IV.* A floppy disk copy of the VELOCITY Program data files is provided with the data.

The DN range for Cast 6 was extended due to failure of the AML battery cage. The unit's reliability became worse throughout the survey period because of the loose batteries, until it was finally sent to Seattle for repairs on DN 177. Hydrography collected on DN 178 consisted of only a few minor splits which had been previously overlooked. The hydrographer determined it was not efficient or economical to request a replacement unit for this small amount of data. Concur. max. depth on DN178 is 7.8 m (0.0 velocity correction)

The AML instrument was calibrated by Northwest Regional Calibration Center on January 7, 1992. A copy of the calibration report is included in Separate IV. *

Leadline Comparisons

Leadline comparisons were taken almost daily to determine instrument error and to verify static draft. The instrument errors computed varied from -0.29 to +0.21 meters (overall mean = +0.08). This instrument correction was not applied to final field sheet soundings as it was not constant and may have been due to bottom type or individual operators. Leadline comparisons Concur

* Filed with the hydrographic records.

were annotated on the echograms and a leadline log is included in Separate IV. ✱

Static Draft

A static draft for VN 0651 was determined on October 22, 1991 in two steps. The first step determined the depth of the transducer face from a reference mark on the hull. The second step involved measuring the depth from this reference mark to the launch's waterline with the launch in water (fuel tanks half full and two crew aboard). A static draft of 0.46 meters was determined. This draft agrees with historical data. ✓

A static draft for VN 0652 was determined on October 15, 1991 using a similar method as above. A static draft of 0.4 meters was determined. This static draft differs by 0.12 meters from the static draft measurement obtained in June, 1989. This change in static draft is likely due to an addition of 100 pounds of ballast and the gradual deterioration of the launch's flotation. ✓

Dynamic Draft

Settlement and squat measurements for VN 0651 were conducted on October 22, 1991, on the San Joaquin River, north of Antioch, CA. Settlement and squat measurements for VN 0652 were conducted on October 18, 1991, on the Sacramento River, in the vicinity of Rio Vista, CA. ✓

Draft and settlement and squat correctors are applied online to all survey data via the HDAPS Offset Tables. Offset Table 1 corresponds to VN 0651 and Offset Table 2 corresponds to VN 0652. Field records are included in Separate IV. ✱ ✓

Tide Correctors

The Final Field Sheets were plotted using predicted tides based on San Francisco, California. Three tidal corrector zones from the Tide Zone Chart are within this survey's limits. Only correctors from the most easterly zone (+6.00 HR HW, +6.45 HR LW, x 0.63 height ratio) were applied to all sounding data. ✓

Approved water levels were requested from the Sea and Lake Levels Branch (N/OES2) in a letter dated July 07, 1992. A copy of this letter is included in Appendix V (Tides and Water Levels). ✱ Approved Tide Note dated September 9, 1992 is attached. ✓
No irregular depth curves were noted which could be attributed to the tide correctors. The hydrographer made a concerted effort to block portions of the survey and collect all data within a particular block in the shortest amount of time possible.

✱ Filed with the hydrographic data.

H. CONTROL STATIONS See Final Rpt, sect 2

Horizontal Datum

The horizontal control datum for this project is North American Datum (NAD) 1983. A copy of the HDAPS Control Station Table is ~~included in Appendix III~~ attached (List of Horizontal Control Stations).

Station 701 (KIRKER, 1946), Station 753 (CONN, 1992), Station 754 (FEAR, 1992) Station 755 (RIOS, 1992), Station 757 (MOLE, 1992), Station 765 (Mile, 1992), and Station 767 (TERM, 1992) do not plot within the limits of the FFS.

Station MILE 1992 and Station MOLE 1992 are considered non-recoverable. Station MILE 1992 is located on the north tower (fixed) of the Threemile Slough Bridge. Station MOLE 1992 was located on the center catwalk of the Mokelumne River Swing Bridge (permission obtained from N/CG24 per telecon in January, 1992). By continuously monitoring VHF channel 9 and the PC-DAS SURVEY Program ECRs and maximum residuals, launch OIC's could instantly determine if position quality was affected by a bridge opening. Tests conducted on DN 101 (VN 0651, Pos. No's. 6015-6020), while the launch was in a static location (bow on riprap shoreline), showed the GP of the launch changed by not more than 3 meters and all quality indicators remained well within acceptable limits during a bridge opening. This test also verified the bridge returned to its previous position after opening, with no detectable difference in position. Nevertheless, no data was collected using Station MOLE 1992 while the bridge was opening.

Survey Methods

Geodetic positions used for establishing horizontal control on this survey were obtained from either the NGS CONUS database or from the Pacific Photogrammetric Party's (N/CG2333) Global Positioning System (GPS) receivers, with the exception of Station TERM 1992. All stations meet Third Order, Class I, accuracy standards.

Station TERM 1992 is an eccentric position of TERMINOUS WATER TANK (unknown year). TERMINOUS WATER TANK, the top center of a water tank on a tower structure, could not be reached to install a miniranger. As an alternative, the hydrographer installed the miniranger below the tank top, on a floodlight support arm which could be reached from a catwalk surrounding the tank perimeter. A field position for TERM 1992 was computed using an offset of 3.65 meters and an azimuth of 270°T from the tank center (the TERMINOUS WATER TANK GP published by NGS). This field position was used in the HDAPS Control Station Table, and for all data acquisition. Horizontal, vertical, and distance observations to position TERM 1992 were conducted on May 29 and on June 29. The resulting Third Order, Class I position, computed with the MTEN programs, was found to close to better than 1:160,000. Field

records for these observations are included in the data files. The HDAPS field position computation, the MTEN LSTGPN listing, and comparative inverse computations, are included in Appendix III.* Inverse comparison between the field position and the Third Order, Class I position of TERM 1992 showed a difference of only 1.28 meters. The position computed for TERM 1992 is considered non-recoverable and no data is scheduled for submission to N/CG2333 (per telecon with N/CG2333).

The 1991 OPR-L208-PHP Horizontal Control Report was submitted by N/CG2333 in October, 1991. The 1992 OPR-L208-PHP Horizontal Control Report was submitted by N/CG2333 in July, 1992. Adjusted positions for all GPS-positioned stations were forwarded by N/CG2333 and are provided in Appendix III.* The applicable NGS CONUS data for non-GPS-positioned stations is also included in Appendix III.*

I. HYDROGRAPHIC POSITION CONTROL

Position Control

Hydrographic position control was accomplished using the Motorola Mini-Ranger (MR) Falcon 484 positioning system which provided accuracy to meet the 1:10,000-scale survey requirements. Range/Range positioning and See-Field-Sheet (SFS, on DN 157, VN 0652, only) methods were used for all hydrography during this survey.

Per FPM Section 3.1.3.3, when using three or four lines-of-position (LOPs), a critical system check is continuously obtained by observing the error circle radii (ECR) and the maximum residual values on the Navitronics PC-DAS screen in the survey launch. Positions which had erratic lines-of-position, indicated by high residuals or high ECRs on the RMPO (Raw Master Printout), were recomputed or smoothed during processing. If, after position recomputation, acceptable ECR and maximum residual values were indicated, the data were saved. The RMPO was annotated to reflect these edits.

SFS hydrography was the only positioning method available for surveying in the marinas along the west shore of the Mokelumne River. Copies of plans were obtained from each marina and used to annotate the echograms. MTM Positions for selected soundings were estimated by transferring the survey vessel's track to a paper plot. These positions were then used to edit the HDAPS data. SFS soundings are plotted in blue on the FFS. Shoreline verification inside these marinas was accomplished by referencing changes on the echogram or the marina plans, during hydrography. No DPs were taken inside the marinas as sufficient control was not available. SFS soundings were automated in the field and are shown in black on the smoothsheet.

* Filed with the hydrographic records

Critical System Checks

In addition to the daily critical system checks described above, fixed-point calibrations were conducted on DN 101, DN 104, and DN 105, to ensure no blunders occurred in the HDAPS and PC-DAS Project Tables, and to confirm C-O values. Field records of the fixed-point calibrations are included in Separate III (Horizontal Position Control And Corrections To Position Data). *

Mini-Ranger Falcon Calibrations

Baseline calibrations were performed on December 18, 1991 in accordance with FPM Section 3.1.2.1. The baseline correctors were incorporated into the PC-DAS C-O Tables and applied on-line. C-O Table 1 is for VN 0651 and C-O Table 2 is for VN 0652. All records of these calibrations are included in Separate III. *

Positioning Equipment

The following RPU-R/T combinations were used:

Vessel EDP No.	RPU-R/T Serial No.
0651	F0243/H3705
0652	F0259/C1680

The following MR transponders were used:

MR Transponder Serial No.	Code
911711	1
G3510	2
911059	3
F3047	4/D*
C1789	5
B1412	7
B1413	8
911632	9
B1411	A
911723	B

All equipment serial numbers are annotated on the daily RMPO.

*On DN 111, miniranger transponder serial no. F3047 was changed from Code 4 to Code D. This was done to avoid interfering with the US Army COE, which was engaged in a survey of the Stockton Deep Water Channel simultaneous to PHP's survey.

* Filed with the hydrographic data.

J. SHORELINE See Eval Rpt, sect 2

Sources

Shoreline detail shown on the final field sheets was transferred by hand from stable-based 1:10,000-scale enlargements of the following T-sheets:

TP-01055 (1:20,000-scale, NAD 27, ~~March 1988~~) April 1983)
TP-01056 (1:20,000-scale, NAD 27, ~~March 1988~~) April 1983)
TP-01060 (1:20,000-scale, NAD 27, April 1983)
TP-01061 (1:20,000-scale, NAD 27, ~~March 1988~~) April 1983)

NAD 27 datum ticks were applied to the NAD 83 field sheets and are shown ~~in green on FFS 17 and 18~~. Datum transformation from NAD 83 to NAD 27 was in accordance with FPM Section 7.4. A printout of the NADCON Program datum transformation is included in Separate I (Hydrographic Sheets and Parameters).*

Verification

Field notes from shoreline verification can be found on the echograms, in the sounding volumes, on the paper plots, the FFS, and the FFS Overlay. Detached Position Listings created by the HDAPS DP Program are included in the O-North and O-South data files.*

Charted Shoreline Agreement

Charted shoreline was verified by its junction with the hydrographic data and by visual inspection. Shoreline from the chart enlargement was severely distorted and did not correspond to the hydrographic field notes. This distortion is likely due to the very old shoreline manuscripts used on Chart 18661 and the enlargement process. Shoreline along the sloughs is mostly levee, often reinforced with riprap, while the small islets are marsh (tule). Many of the old levees, charted as berms or long islets, are now submerged. New islets, or islets with significantly changed configurations, are shown in red on the FFS. Increased cultural development along the south shore of Andrus Island has resulted in many new private piers, docks, and boathouses. To streamline data acquisition, only limits of these structures were positioned.

TP-Sheet Shoreline Agreement See Eval Rpt., sect 2

TP-sheet shoreline was verified by its junction with the hydrographic data or by visual inspection. The TP-sheet shoreline agreed well with the hydrographic data, although some distortion was apparent while aligning the TP-sheets with the NAD 27 datum ticks on the FFS.

* Filed with the hydrographic records

Shoreline Changes

Exceptions to TP-sheet agreement occur ~~mostly~~ often around marsh islets and are shown in red on ~~FFS 17 and 18.~~ the smooth sheet. There are numerous other revisions to the mean high water line throughout the survey area. These revisions are also shown in dashed red on the smooth sheet.

K. CROSSLINES

A total of 38.5 nautical miles of crosslines and channel lines, representing 17.9% of the hydrography on H-10421, were used for crossline comparisons. The crossline soundings agree to within 0.4 meters of the mainscheme soundings. Any differences in the crossline to mainscheme hydrography may be due to predicted tides. Where crosslines ran along steep sloping areas (i.e. channel lines) some differences were observed also. The same vessels were not always used for both mainscheme hydrography and crosslines.

L. JUNCTIONS See Eval Rpt, sect 5

Hydrography on this sheet junctions to the south, at Old River, with H-10413 (Franks Tract, San Joaquin River, 1:10,000, March 1992). There are no contemporary surveys which junction to the north (Mokelumne River), south (Middle River), east (San Joaquin River and Potato Slough), or west (San Joaquin River) of this sheet. A paper copy of the H-10413 FFS was used to compare junction soundings. Soundings agree to within 0.5 meters and depth curves match well. Differences in junction soundings are likely due to predicted tides and the irregular, sometimes steep, contours found in Old River.

Overlapping junction soundings were obtained per section 4.3.2 of the Hydrographic Manual.

M. COMPARISON WITH PRIOR SURVEYS See Eval Rpt, sect 6

This survey was compared to the following prior surveys:

Survey No.	Scale	Year
H-6003	1:10,000	1934
H-6005b	1:10,000	1934
H-6011a	1:10,000	1934

No AWOIS Items originated with any of these prior surveys.

H-6003

Comparison with a stable-based copy of this prior survey was made in areas common to survey H-10421, specifically Middle River.

One sounding line from this prior survey extended across Mandeville Cut, north, through a narrow cut south of the island which includes Mandeville Point. Soundings in the east and west cuts were found to be generally shallower, by up to 3 meters, whereas soundings in the north cut were up to 5 meters shallower. The island which includes Mandeville Point, south of this cut, is no longer bare at MLLW. This former spoil area is now filled in with tule grass and other vegetation. Three naturally-occurring cuts are navigable and were sounded by VN 0652.

The configuration of the berm along the west shore of Mandeville Reach has changed significantly. The berm has now eroded and disappeared mostly, leaving a long shoal. Soundings in the area where Middle River and Threeriver Reach meet were found to be generally shallower, by up to 3 meters. In particular, Threeriver Reach is now shoal at its southern end. See Section N, Comparison with the Chart (AWOIS No. 51576), for details. Islands and berms shown on the prior survey in this area have also eroded or disappeared, leaving several shoals.

Data from H-10421 should supersede this prior survey in their common areas. Concur

H-6005b

Comparison with a stable-based copy of this prior survey was made in the western portion of Potato Slough and the southern portion of the Mokelumne River common to survey H-10421.

Depths in Potato Slough were found to be generally shallower by 1 to 2 meters. Configurations of the numerous islets have changed greatly. In general, these islets have eroded, decreased in dimension, and a few islets, which have completely subsided, pose shoal hazards to the mariner.

Depths in the Mokelumne River are generally shoaler by 1 to 2 meters. The navigable areas of this river were found to be generally narrower on survey H-10421. The old levee, which was shown as a long berm in the center of the Mokelumne River, has now eroded significantly, leaving a chain of broken tule islets. In a few areas, this old berm was found to be shoal enough to pose a hazard to the mariner. The crescent-shaped tule islet shown on this prior survey, centered approximately at 38°05'45"N, 121°34'25", is now mostly shoal with depths less then 2 meters. In general, the entrance to the Mokelumne River from the San Joaquin River, was found to be shallower on survey H-10421, probably from accumulations of silt and sediment.

Data from H-10421 should supersede this prior survey in their common areas. Concur.

Comparison with a stable-based copy of this prior survey was made in the eastern portion of Potato Slough common to survey H-10421. ✓

Depths in Potato Slough compared well, agreeing to within ±2 meters. The numerous islets shown along shore have eroded or disappeared, creating shoal areas of less than 1 meter depth. In some cases, tule grass was found to exist on these shoals. ✓

Data from H-10421 should supersede this prior survey in their common areas. Concur

N. COMPARISON WITH THE CHART See Evol Rpt, Sect 7

This survey was compared to the following charts in areas common with this survey:

Chart No.	Scale	Edition	Date
18661 SC	1:40,000	20th	June 9, 1990
18661 SC	1:40,000	21st	May 9, 1992
18663 ~~SC~~	1:20,000	1st	Nov 4, 1989

✓

A stable-based 1:10,000-scale enlargement of Chart No. 18661 SC, 20th edition, was used for comparison with survey H-10421.

The 21st edition of Chart No. 18661 SC was issued in May, 1992, after field work commenced. This new edition was compared to the 20th edition and any differences are discussed in this section. ✓

There were 29 AWOIS items within the limits of the H-10421 plotter sheets (HDAPS Plotter Sheets 17 and 18). Of these, six were resolved on survey H-10413 (Franks Tract, March 1992), and one is reassigned to Sheet "P" (PHP-10-3-92). The 22 remaining AWOIS items originate from miscellaneous sources and are discussed here. ✓

AWOIS Item No. 51598 originates from Chart Letter CL710/64 (USPS) and is described as piles in position 38°05'09.71"N, 121°34'11.83"W. On DN 170, a visual search confirmed a continuous row of piles, from position 38°05'09.10"N, 121°34'00.72"W (Pos. No. 1891, VN 0652), north to 38°05'36.65"N, 121°34'16.63"W (Pos. No. 1897, VN 0652), between 5 and 10 meters offshore from the HWL. Heights vary from awash to baring 1.~~0~~ meters @ ~~MLLW.~~ MHW. The hydrographer recommends charting a continuous row of piles as shown on ~~FFS 17.~~ the smooth sheet. Concur. Delete the subm piles and subm pile PA presently charted.

AWOIS Item No. 51599 originates from Chart Letter CL584/85 (USPS) and is described as a dangerous submerged wreck in position 38°05'11.71"N, 121°33'22.82"W. On DN 168, a 50-meter radius bottom drag was conducted in position 38°05'11.76"N,

121°33'22.84"W (Pos. No. 7629, VN 0651). A visual search along the shore of the small islet 40-60 meters south of the search center was negative. Although the buoy line did hang on a snag,* no evidence of a submerged wreck was located. As the reported position of the wreck lies almost in the center of the north portion of Potato Slough in depths of 15 meters, the hydrographer considers the reported position dubious at best. The islet to the south of this position has 5 meters to 20 meters of heavy tule grass extending offshore. A complete search through the tule grass was not possible. It is not probable that this wreck exists in an area where it may pose a hazard to navigation. The hydrographer recommends removing the charted wreck. Concur

*The snag has been removed

AWOIS Item No. 51612 originates from Chart Letter CL1269/73 (USPS) and is described as snags in position 38°05'12.71"N, 121°33'04.82"W. On DN 168, a 100-meter radius bottom drag was conducted in position 38°05'12.69"N, 121°33'04.84"W (Pos No. 7630, VN 0651) with negative contact. The hydrographer recommends not charting snags at the reported position. Concur. See Eval Rpt, sect 7.b.

AWOIS Item No. 51613 originates from Chart Letter CL552/78 (CAS 18661, 1977) and is described as two piles, uncovering 2-2.5 feet, as observed, in position 38°05'27.31"N, 121°31'55.32"W. On DN 145, a single pile, ~~baring~~ uncovers 0.7 meters at MLLW, was positioned at 38°05'27.28"N, 121°31'54.55"W (Pos. No. 1162, VN 0652). No other piles were located after conducting a 25-meter echosounder search and further visual search at low tide. The hydrographer recommends charting a pile at the surveyed position. Concur. This feature is presently not charted.

AWOIS Item No. 51614 originates from Chart Letter CL552/78 (CAS 18661, 1977) and is described as a pile in position 38°05'20.71"N, 121°31'19.82"W. On DN 169, a 25-meter radius bottom drag in position 38°05'20.73"N, 121°31'20.05"W (Pos. No. 7642, VN 0651) was completed without locating a pile. The drag line wrapped around a mud feature and the diver found the drag weights jammed into the mud slope of the tule islet. The hydrographer recommends not charting a pile at the reported position. Concur. This feature is presently not charted.

AWOIS Item No. 51615 originates from Chart Letter CL1269/73 (USPS) and is described as submerged piles in approximate position 38°05'23.71"N, 121°31'24.82"W. On DN 145, a visual search located a pile, ~~baring~~ uncovers 0.7 meters at MLLW, in position 38°05'23.39"N, 121°31'21.40"W (Pos No. 1157, VN 0652). A position taken at 38°05'23.71"N, 121°31'24.77"W (Pos. No. 7641, VN 0651) verified that the pile was within the 100-meter search radius. No other piles were found after further visual search at low tide. The hydrographer recommends charting a pile at the surveyed position. Concur. This feature is presently not charted

AWOIS Item No. 51623 originates from Chart Letter CL1758/73 (USPS) and is reported as shoaling to 4 feet within Korth's

Harbor Marina in position 38°05'48.20"N, 121°34'06.83"W. Korth's Harbor manager (Kandice Korth, 916-777-6464) stated the marina had been dredged to "six or seven feet" in 1991. Hydrographic centerlines indicate a ~~controlling~~ minimum depth of at least ~~2.2~~ 1.6 meters at MLLW, in position 38°05'~~50.94~~ 48.14"N, 121°34'04.~~56~~ 16"W (Pos. No. ~~7098~~ 7096 ~~7099~~, VN 0651, DN 139). The hydrographer recommends the "Shoaling rep" notation (beneath the geographic name for Korth's Harbor) be removed and the surveyed soundings be used ~~as controlling depths on the chart~~ for charting as required. Concur

AWOIS Item No. 51624 originates from Chart Letter CL1419/74 (USPS) and is described as an obstruction, perhaps a concrete or rock wall, covering 3 feet at low water as observed, in position 38°05'49.70"N, 121°34'25.83"W. On DN 169, a 100-meter radius bottom drag was conducted in position 38°05'49.72"N, 121°34'25.93"W (Pos. No. 7633, VN 0651). No hangs were observed. An additional 50-meter radius drag was conducted in position 38°05'46.13"N, 121°34'18.76"W (Pos. No. 7636, VN 0651). This second position was determined by plotting the reported obstruction at 100 feet and 290°T from the tule islet shown on the T-sheet (per AWOIS text). Again, no hangs were observed. Personnel at Korth's Harbor marina report the obstructions (possibly rocks) were previously removed (unk. date). The hydrographer recommends removing the charted obstruction. Concur

AWOIS Item No. 51625 originates from Chart Letter CL1762/73 (USPS) and is described as a row of pilings, covered at HW, in position 38°06'03.20"N, 121°33'47.83"W. On DN 163, a 75-meter radius bottom drag in position 38°06'03.26"N, 121°33'47.87"W (Pos. No. 7601, VN 0651) found no pilings. The hydrographer recommends removing the charted pilings. Concur

AWOIS Item No. 51628 originates from Chart Letter CL848/81 (USPS) and is described as six piles, uncovering 15 feet as observed, in position 38°06'06.20"N, 121°34'45.83"W. On DN 164, a 75-meter radius bottom drag was conducted in position 38°06'05.93"N, 121°34'43.13"W (Pos. No. 7606, VN 0651). The area was found to be extremely shoal with heavy sea grass and 75 meter coverage was not possible. A bottom drag centered at the NE tip of the tule islet was completed and several drags to the opposite shore (riprap) and around to the tule islet were also completed. Some stakes were observed in the middle of the tule islet, but are not considered a hazard to navigation (see sketch in field report for this DN). The hydrographer recommends removing the charted pilings. Chart the tule islet as shown on ~~FFS 17~~ the smooth sheet. Concur

AWOIS Item No. 51629 originates from Chart Letter CL1257/82 (USPS) and is described as a visible barge in approximate position 38°06'06.70"N, 121°33'47.83"W. On DN 164, a visual search in position 38°06'06.57"N, 121°33'47.47"W (Pos. No. 7610, VN 0651) and position 38°06'05.28"N, 121°33'48.26"W (Pos. No. 7611, VN 0651) located ruins of a floating dock and piles (~~baring~~ uncovers

0.1
~~1.9~~ meters at MLLW ~~and awash, respectively~~) which extend south of the tule islet. These ruins are part of a dock which served originally as a landing for Bouldin Island (per Korth's Harbor manager). Pos. No. 7610 is the east offshore limit, and Pos. No. 7611 is the south limit, of these ruins. Ruins of a barge, uncovers 1.1 ~~baring 0.9~~ meters at MLLW, were located in position 38°06'09.39"N, 121°33'46.84"W (Pos. No. 7609, VN 0651), approximately 100 meters north of the reported position. The hydrographer recommends charting ruins and the wrecked barge as shown on ~~FFS 17.~~ the smoothsheet. Concur

AWOIS Item No. 51630 originates from Chart Letter CL844/71 (12th CGD) and is described as a piling, (PA) uncovering at LW, as observed, in approximate position 38°06'08.20"N, 121°35'19.83"W. On DN 164, a 75 meters radius bottom drag in position 38°06'08.18"N, 121°35'19.93"W (Pos. No. 7605, VN 0651) found no hangs. The hydrographer recommends removing the charted piling. Concur

AWOIS Item No. 51631 originates from Chart Letter CL844/71 (12th CGD) and is described as piling, (PA) 25-30 feet tall, as observed, in approximate position 38°06'08.70"N, 121°35'21.83"W. On DN 164, a 75-meter radius bottom drag in position 38°06'08.72"N, 121°35'21.82"W (Pos. No. 7604, VN 0651) found no hangs. The hydrographer recommends removing the charted piling. Concur

AWOIS Item No. 51635 originates from Chart Letter CL848/81 (USPS) and is described as an obstruction, possibly a submerged fence, in position 38°06'23.70"N, 121°34'00.83"W. On DN 174, a visual search located a row of closely spaced piles in ruins, from position 38°06'28.82"N, 121°34'08.23"W (Pos. No. 7618, Vn 0651) and continuing south to 38°06'23.40"N, 121°33'58.85"W (Pos. No. 7619, uncovers 1.0 ~~baring 0.9~~ meters @ MLLW), parallel to the riprap shoreline, approximately 3 meters from the HWL. This row of piles may have served as a bulkhead, to reinforce the levee, or as a landing, before the riprap was installed. The row may appear as a fence to the casual observer. The hydrographer recommends charting a row of piles between the surveyed positions, as shown on ~~FFS 17.~~ the smoothsheet. Concur. This feature is not presently charted.

AWOIS Item No. 51575 originates from Chart Letter CL2175/75 (USPS) and is described as piling, ~~submerged~~ which cover at HW, in approximate position 38°02'30.71"N, 121°31'29.82"W. On DN 142, a visual search located a double row of piles, spaced 1 meter apart, and 5 meters from the HWL, parallel to shore, between positions 38°02'27.35"N, 121°31'25.96"W (Pos. No. 902, VN 0652) and 38°02'29.08"N, 121°31'27.17"W (Pos. No. 903, VN 0652). The piles were found to typically uncover ~~bare~~ 1 meter @ MLLW. Pos. No. 902 is at a siphon extending offshore, and marks the south end of the row of piles. Pos. No. 903 is the north end of the pile row. On DN 161, a single bottom drag was conducted at 38°02'30.89"N, 121°31'29.84"W (Pos. No. 7592) to confirm no other piles exist. The hydrographer recommends charting a row of piles between the

surveyed positions. Concur. See Eval Rpt, reach 7.b.

AWOIS Item No. 51576 originates from Chart Letter CL1431/82 (USPS) and is described as a shoal reported in position 38°02'41.71"N, 121°31'39.82"W. Hydrographic sounding lines spaced 50 meters apart were run in Threeriver Reach, with line spacing increased to 25 meters over the shoalest areas. A shoal with least depths of ~~0.8~~ 1.0 meters @ MLLW was located at 38°02'39.68"N, 121°31'40.46"W (Pos. No. 6130+5, and Pos. No. 6131, DN 118, VN 0651). The hydrographer recommends charting these shoal depths at the surveyed positions. Concur. See Eval Rpt, reach 7.b.

AWOIS Item No. 51586 originates from Chart Letter CL552/78 (CAS 18661) and is described as a submerged pile, uncovering 1 foot as observed, in position 38°03'32.21"N, 121°33'27.62"W. On DN 162, a 75 meters radius bottom drag centered at position 38°03'32.26"N, 121°33'27.66"W (Pos. No. 7588, VN 0651) located a pile at 38°03'32.34"N, 121°33'27.74"W (Pos. No. 7589, VN 0651) which covers 0.~~2~~1 meters at MLLW (per sounding pole). The hydrographer recommends charting pile awash at the surveyed position. Concur. Delete charted submerged pile.

AWOIS Item No. 51587 originates from Chart Letter CL1542/68 (USPS) and is described as a piling in approximate position 38°03'45.71"N, 121°33'34.82"W. On DN 161, 75-meter radius bottom drags were conducted resolve this item. The area around position 38°03'45.74"N, 121°33'34.81"W (Pos. No. 7582, VN 0651) was investigated and the hydrographer determined the AWOIS search would have to be moved 25 meters further west, to avoid dragging in the deep water channel. This also brought the search area closer to the tule islets along shore, a more likely location for these pilings. It was also unclear from the AWOIS description how many pilings were reported. Three 75-meter radius drags were conducted to cover the 100 meters by 300 meters search area, centered at the following positions: 38°03'45.77"N, 121°33'35.83"W (Pos. No. 7583); 38°03'48.95"N, 121°33'35.80"W (Pos. No. 7584, VN 0651); and 38°03'42.40"N, 121°33'35.91"W (Pos. No. 7586, VN 0651). A ~~submerged~~ pile, ~~covering~~ Submerged 4.~~3~~2 meters at MLLW (per leadline), was located in position 38°03'48.39"N, 121°33'37.35"W (Pos. No. 7585, VN 0651). Diver investigation found a single pile, approximately 10 feet tall, upright, in 26 feet of water, ~~covering~~ Submerged 16 feet (4.8 meters) per diver depth gauge. No further piles were found by the diver or during the remaining drags. The hydrographer recommends charting a submerged pile at the surveyed position. Delete charted Piling PA. concur

AWOIS Item No. 51588 originates from Chart Letter CL1269/73 (USPS) and is described as a dolphin in approximate position 38°03'24.71"N, 121°32'11.82"W. On DN 143, a visual search located two piles, 4 meters apart, in position 38°03'26.71"N, 121°32'13.06"W (Pos. No. 1078, VN 0652). The inshore pile ~~bares~~ uncovers 2.2 meters at MLLW, 25 meters from the tule along shore, and 35

meters from the HWL. The position was taken at the offshore pile which ~~bares~~ uncovers 0.2 meters at MLLW. No other piles were visible. The hydrographer recommends charting piles at surveyed position. Concur. Delete note "Del PA".

AWOIS Item No. 51589 originates from Chart Letter CL1691/78 (USPS) and is described as submerged piles, 25 feet from shore, in position 38°04'07.71"N, 121°33'10.82"W. On DN 143, a visual search located a row of piles, each spaced 1.5 meters apart, ~~baring~~ uncovers typically 1.1 meters @ MLLW, its south end at 38°04'08.77"N, 121°33'08.81"W (Pos. No. 1089, VN 0652) and its north end at 38°04'11.64"N, 121°33'10.16"W (Pos. No. 1090). The row is 3 meters from HWL, and could be interpreted as 6 meters from shore at high water. Further visual search at low tide showed no other piles in area. On DN 163, a 75-meter radius bottom drag centered at 38°04'07.72"N, 121°33'10.83"W (Pos. No. 7593, VN 0651) located a submerged pile, laying mostly on its side, covering 1.~~2~~ 0 meters at MLLW at its shallowest point, at 38°04'08.41"N, 121°33'12.02"W (Pos. No. 7594, VN 0651). The hydrographer recommends charting a row of piles between the surveyed positions (1089 and 1090) and charting a submerged pile at the surveyed position (7594). Concur. Delete charted subm piling. Chart submerged pile or 1 m. Obstr.

AWOIS Item 51590 originates from an unknown source, first appearing on the 1966 edition of this chart, and is described as a snag in position 38°04'19.71"N, 121°34'21.32"W. On DN 161, a 50-meter radius bottom drag, centered at 38°04'19.82"N, 121°34'21.30"W (Pos. No. 7581, VN 0651), did not locate any hangs. The hydrographer recommends not charting this snag. Concur. See Eval Rpt, sect 7.b.

AWOIS Item 51591 originates from Chart Letter CL552/78 (CAS18661, 1977), and is described as a sign, labelled "Old River", in position 38°04'24.51"N, 121°34'19.62"W. On DN 161, a 25-meter radius bottom drag centered in position 38°04'24.48"N, 121°34'19.58"W (Pos. No. 7580, VN 0651) did not locate any hangs. The hydrographer recommends not charting a sign at the reported position. Concur. See Eval Rpt, sect 7.b.

Dangers to Navigation

One danger to navigation was reported to the Eleventh Coast Guard District in correspondence dated July 29, 1992. A copy of this report is ~~in Appendix I~~ attached (Danger to Navigation Reports).

AWOIS Item No. 51576, a shoal covering ~~2~~ 3 feet (~~0.6~~ 1.0 meters) at MLLW, was located and centered in position 38°02'~~41.71~~ 41.68"N, 121°31'~~39.82~~ 39.42"W (Pos. No. 6130+5, and Pos. No. 6131, DN 118, VN 0651). The shoal is approximately 100 meters long in an east-west orientation at the south end of Threeriver Reach.

Sounding Comparisons

Sounding comparison was made between a stable-based 1:10,000-

scale enlargement of Chart No. 18661 SC (20th edition) and the H-10421 final field sheets. Agreement is generally good; charted soundings, when shifted 60-70 meters east or southeast, compared within 1 meter. Charted soundings on the San Joaquin River originate from US Army Corps of Engineer surveys. All other charted soundings originate from C&GS prior surveys, as discussed in Section M. ✓

Sounding Comparisons - Tabulated Depths

Tabulated soundings from the 21st edition of Chart 18661 were used for comparison with survey H-10421. Tabulated soundings were found to be generally 2 to 4 meters shallower than the surveyed depths, throughout the areas common to this survey. The hydrographer has no explanation for this. However, since the tabulated depths are less than the surveyed depths, the difference is not considered to be a hazard to navigation. See Eval Rept sect 7.c.

Non-Sounding Features Comparison

Comparison was made between all non-sounding features and the hydrographic records. In accordance with Project Instruction paragraph 6.12.2, most features near the HWL were judged not to be dangers to navigation and, unless noted otherwise below, were searched for by visual methods only. Several non-sounding features were previously discussed as AWOIS items. ✓

Numerous islets and berms (old levees) were found to have eroded and submerged. Changes to islet or berm configurations are shown in red on the ~~FFS~~ smooth sheet. Islets which are now submerged and appear shoal were developed with sounding lines. Because of the quantity of these islets and berms, only the more significant changes are discussed here. ✓

The following charted features were not found:

The charted islet, centered on San Andreas Shoal, approximately 350 meters long, lying in an east-west direction, in approximate position 38°06'05"N, 121°34'55"W, is now submerged, covering at least 0.~~1~~2 meters at MLLW (Pos. No. 677+1, VN 0652, DN 141). The hydrographer recommends charting the shoal soundings from this survey. Concur. Delete charted islet

The charted islet, immediately north of San Joaquin River Light 47, approximately 100 meters long, lying in a northwest-southeast direction, in approximate position 38°05'47"N, 121°34'31"W, does not exist. Soundings in this area show a shoal covering at least ~~2.0~~ 1.8 meters at MLLW (Pos. No. ~~748~~ 1808/4, VN 0652, DN 14~~1~~3). The hydrographer recommends charting the shoal soundings from this survey. Concur. Delete charted islet

The charted islet, 350 meters southeast of San Joaquin River

Light 47, approximately 50 meters in diameter, in approximate position 38°05'40"N, 121°34'20"W, does not exist. Soundings in this area show a least depth of 1.4 meters (Pos. No. 629, VN 0652, DN 141). The hydrographer recommends charting the shoal soundings from this survey. Concur. Delete charted islet.

A U.S. Coast Guard Mooring Buoy, charted in approximate position 38°04'45"N, 121°34'~~12~~25"W was not found. Per USCG message (202102Z MAR 90), no USCG mooring buoys exist within the limits of Chart 18661 (see ~~Appendix VI~~ Appendix II, Supplemental Correspondence). This information was again confirmed per telecon by Ms. Helen Denny, Eleventh Coast Guard District Long Beach (310-980-4300, ext. 501) on July 9, 1992. Remove mooring buoy from the chart.

A charted pile in position 38°03'40.97"N, 121°33'21.78"W, was disproved after a 75-meter radius bottom drag (Pos. No. 7587, VN 0651, DN 162). A diver investigation on two hangs found a steep, narrow, mud feature, probably the south end of the mud shoal delineated by hydrography. The bottom rose steeply from 26 feet to 6 feet. Drag line and weights impacted into the vertical mud wall of this shoal and caused the hangs. The hydrographer recommends removing this pile from the chart. See Eval Rpt, sect 7.a.

A charted, L-shaped, row of six piles* extending offshore in position 38°03'20.26"N, 121°32'09.71"W, was disproved after three 75-meter radius bottom drags (Pos. No. 7590, DN 162, Pos. No. 7595, and Pos. No. 7596, VN 0651, DN 163). Because of the large area covered by these piles, the hydrographer selected three drag locations, each 75 meters in radius. The first drag, at Pos. No. 7590, found one hang on a snag. On the second drag, at Pos. No. 7595, the diver found the line and weights buried in a steep mud slope. The third drag, at Pos. No. 7596, the line and weights again were buried in a steep mud slope. Diver investigations on DN 162 found a snag caught in 35 feet of water (not significant). Steep mud slopes and the irregular bottom caused the drag weights and line to become buried in the vertical slopes of features on DN 163. No piles or ruins were found. The hydrographer recommends removing these piles from the chart. Concur.
* These charted features are most likely marsh islets and not pile features.

A charted pile in position 38°06'07.64"N, 121°33'42.85"W, was disproved after a 75-meter radius bottom drag (Pos. No. 7608, VN 0651, DN 164). The hydrographer recommends removing this pile from the chart. Concur

A charted pile in position 38°06'05.52"N, 121°33'38.96"W, was disproved after a 75-meter radius bottom drag (Pos. No. 7607, VN 0651, DN 164). The hydrographer recommends removing this pile from the chart. Concur

The charted items, possibly islets or snags, in position 38°05'14.24"N, 121°32'45.52"W were disproved after a 75-meter radius bottom drag (Pos. No. 7631, VN 0651, DN 168). The

hydrographer recommends removing the islets or snags from chart. Recommend soundings from this survey be used to update the chart. Concur.

A T-sheet pile found on TP-01056, in position 38°05'07.00"N, 121°32'19.71"W, was disproved after a 50-meter radius bottom drag (Po.s No. 7637, VN 0651, DN 169). The search center was inadvertently selected 50 meters too far north. However, the hydrographer moved the search center south by 20 meters prior to the drag to avoid the deep channel in the north portion of Potato Slough. Due to the shallow water, the center weight of the drag moved, and as documented on the echogram, an area substantially larger than 50 meters in radius was dragged. The hydrographer recommends not charting this T-sheet pile. Concur.

A charted item, possibly an islet, pile or snag, in position 38°05'25.51"N, 121°31'44.71"W, was disproved after a 50-meter radius bottom drag (Pos. No. 7640, VN 0651, DN 169). The drag line brought up a snag, 12-meter long, 0.3 meters in diameter. The snag was dragged into the tule of an islet immediately east of the search area. No other items found. The hydrographer recommends removing these features from the chart. Concur

Two charted piles in position 38°06'01.97"N, 121°33'43.50"W, were disproved after a 75-meter radius bottom drag (Pos. No. 7603, VN 0651, DN 163). The hydrographer recommends removing these piles from the chart. Concur.

A charted pile in position 38°02'31.77"N, 121°31'29.83"W was disproved after a visual search on DN 161 and DN 164 (Pos. No. 7597, VN 0651). The charted location of the pile was found to be within 3 meters of the HWL. This item should be covered under the general "Note B", caution to mariners. The hydrographer recommends removing this pile from the chart. Concur

A charted pile in position 38°02'33.39"N, 121°31'29.41"W, was disproved after a visual search on DN 163 (Pos. No. 7599). With the bow of the launch on the riprap shoreline, the apparent position of the pile was observed as 10 meters further inshore. Further visual search of the along shore area was negative. This item should be covered under the general "Note B", caution to mariners. The hydrographer recommends removing this pile from the chart. Concur.

The charted ruins in position 38°02'~~34.38~~ 33.09"N, 121°31'~~32.68~~ 32.06"W, were disproved after a visual and echosounder search on DN 163 (Pos. No. 7600, VN 0651). Sea grass and tule exist from 5 meters to 20 meters offshore. The bottom slopes, sometimes steeply, to the deep water channel. Some pile ruins were observed at the HWL, but not considered significant by the hydrographer. This item should be covered under the general "Note B", caution to mariners. The hydrographer recommends removing these ruins from the chart. Concur

The charted ruins in position 38°06"26"N, 121°34'26"W, were inadvertently omitted from the boatsheets, and were therefore, not verified. A ~~1.0~~ 0.7 meter sounding (Pos. No. 7189, VN 0651, DN 139) plots directly over this ruin. No evidence of this ruin was observed during shoreline verification. This item should be covered under the general "Note B", caution to mariners. The hydrographer recommends removing these ruins from the chart. Concur (latitude 38°04'00"N, longitude 121°32'00"W)

The charted explosive anchorage area in Mandeville Reach, off Mandeville Point, is still considered active per Eleventh Coast Guard District Marine Safety Office San Francisco (telecon July 16, LT O'Connor, 510-437-3081). The hydrographer recommends retaining the chart notation for this explosive anchorage. Concur See Eval Rpt, sect 7.a.

Recommendations

The hydrographer recommends the two new geographic names proposed for the islets in Potato Slough, and described on the Forms 9-1343, ~~in Appendix IV (Geographic Names)~~ attached, be added to the chart. See Eval Rpt, sect 7.e.

O. ADEQUACY OF SURVEY

This survey is a complete basic hydrographic survey and is adequate to supersede all prior surveys within their common areas. Concur

P. AIDS TO NAVIGATION

USCG Correspondence

The adjusted positions for aids to navigation provided by N/CG2333 (Pacific Photogrammetry Party) for aids positioned by GPS in January, 1992, will be forwarded to the Eleventh Coast Guard District, Long Beach, CA in August, 1992. Copy attached. ✓

Position Comparisons

Table P-1 lists all aids to navigation and landmarks which fall within the H-10421 survey limits. This table was used to compare the charted positions, aerotriangulated positions, GPS (adjusted) positions, and field (hydrographic) positions of all aids to navigation. An inverse distance and bearing was computed using the HDAPS Geodetic Utility Program between the charted positions and the hydrographic positions. Where available, the GPS position, vice the field position, was used for comparison with the chart. Printouts from coastal mapping project CM-8400 and CM 8304, which list the aerotriangulated positions (in NAD 27) for most of these aids and landmarks, were provided for this project (copies ~~in Appendix II, Non Floating Aids and Landmarks for Charts).~~ attached). ✓

TABLE P-1

Floating/Non-Floating Aids and Landmarks
Comparison of Charted Positions to Field Positions for H-10421

DESCRIPTION	LL POS.	CHARTED POS.	AERO POS.	GPS POS.	FIELD POS.	DP	DN	DIST.	∢
Chart 18661									
San Joaquin River (SJR)									
1.									
SJR LT 44		38°05'48.5"N	38°05'49.747"N		38°05'49.772"N	6091	118	39.3	176
LLN 6850		121°35'14.0"W	121°35'13.817"W		121°35'13.896"W				
2.						6090			
SJR LT 45		38°05'57.1"N			38°05'56.408"N	~~6072~~	113	29.3	316
LLN 6853		121°34'59.1"W			121°34'59.928"W				
3.									
SJR LT 46		38°05'45.5"N	38°05'46.572"N		38°05'46.299"N	6089	118	26.1	199
LLN 6855		121°34'52.5"W	121°34'52.404"W		121°34'52.861"W				
4.									
SJR LT 47		38°05'44.5"N	38°05'44.198"N		38°05'44.420"N	6088	118	16.0	081
LLN 6865		121°34'35.0"W	121°34'34.503"W		121°34'34.350"W				
5.									
SJR LT 48		38°05'33.5"N		38°05'34.466"N	38°05'34.699"N	6087	118	30.9	164
LLN 6857		121°34'37.5"W		121°34'37.151"W	121°34'37.020"W				
6.									
SJR LT 49		38°05'30.5"N	38°05'29.540"N		38°05'30.782"N	6086	118	10.8	142
LLN 6860		121°34'25.0"W	121°34'26.578"W		121°34'24.731"W				
7.									
SJR LT 51		38°05'03.5"N	38°05'03.535"N		38°05'03.503"N	6084	118	13.1	090
LLN 6870		121°34'20.0"W	121°34'15.806"W		121°34'19.461"W				
8.									
SJR LT 52		38°05'02.5"N			38°05'02.180"N	6085	118	10.0	349
LLN 6872		121°34'28.5"W			121°34'28.574"W				
9.									
SJR LT 53	38°04.8"N	38°04'48.5"N	38°04'48.381"N		38°04'48.632"N	6083	118	4.5	206
LLN 6875	121°34.2"W	121°34'09.5"W	121°34'09.768"W		121°34'09.585"W				
10.									
SJR BUOY 54	38°04.6"N	38°04'35.5"N			38°04'35.409"N	6082	113	37.5	085
LLN 6880	121°34.1"W	121°34'08.5"W			121°34'06.962				

TABLE P-1

Floating/Non-Floating Aids and Landmarks
Comparison of Charted Positions to Field Positions for H-10421

DESCRIPTION	LL POS.	CHARTED POS.	AERO POS.	GPS POS.	FIELD POS.	DP	DN	DIST.	ø
11. SJR LT 55 LLN 6885	38°04.6"N 121°33.8"W	38°04'33.5"N 121°33'48.5"W			38°04'33.517"N 121°33'48.309"W	6081	113	4.6	096
12. SJR LT 56 LLN 6890	38°04.1"N 121°33.7"W	38°04'06.5"N 121°33'40.5"W	38°04'05.976"N 121°33'40.336"W		38°04'06.042"N 121°33'40.218"W	6080	113	15.7	025
13. SJR LT 57 LLN 6895		38°03'39.0"N 121°33'20.0"W	38°03'38.705"N 121°33'19.877"W	38°03'38.725"N 121°33'19.852"W	38°03'38.880"N 121°33'19.828"W	6079	113	9.2	023
14. SJR LT 58 LLN 6900	38°03.5"N 121°33.4"W	38°03'31.0"N 121°33'25.0"W	38°03'30.703"N 121°33'24.566"W		38°03'30.783"N 121°33'24.492"W	6078	113	14.0	061
Chart 18661 **Stockton Channel (SC)** 15. SC LT 1 LLN 6913	38°03.5"N 121°32.8"W	38°03'30.0"N 121°32'48.0"W			38°03'29.934"N 121°32'47.468"W	6077	113	13.1	081
16. SC LT 2 LLN 6915		38°03'24.5"N 121°32'48.5"W	38°03'24.812"N 121°32'48.488"W		38°03'24.903"N 121°32'48.172"W	6076	113	14.7	147
17. SC LT 3 LLN 6920		38°03'23.0"N 121°31'50.0"W	38°03'22.306"N 121°31'50.349"W		38°03'22.182"N 121°31'50.315"W	6075	113	26.3	343
18. SC LT 4 LLN 6925		38°03'18.0"N 121°31'46.0"W	38°03'16.857"N 121°31'46.317"W		38°03'17.027"N 121°31'465.951"W	6074	113	30.0	002
19. SC LT 5 LLN 6930		38°03'17.5"N 121°30'55.5"W	38°03'17.145"N 121°30'56.136"W		38°03'17.187"N 121°30'55.908"W	6073	113	13.8	314
20. SC LT 6 LLN 6935		38°03'12.0"N 121°30'57.5"W	38°03'11.608"N 121°30'57.383"W		38°03'11.721"N 121°30'57.228"W	6072	113	10.8	037

TABLE P-1

Floating/Non-Floating Aids and Landmarks
Comparison of Charted Positions to Field Positions for H-10421

DESCRIPTION	LL POS.	CHARTED POS.	AERO POS.	GPS POS.	FIELD POS.	DP	DN	DIST.	∅
Chart 18661									
21. Tower (at Lighthouse Harbor)			38°05'41.356"N 121°34'03.161"W		Remarks: Good Landmark. Visually Located and Verified.				
22. Tower (at Lighthouse Harbor)			38°05'53.216"N 121°34'06.677"W		Remarks: Good Landmark. Visually Located and Verified.				
23. Tower (NW Mandeville I)			38°04'09.382"N 121°34'28.570"W		Remarks: Good Landmark. Visually Located and Verified.			See Pos. No. 1124.	
24. Tower (SE Webb Tract)			38°04'23.322"N 121°34'33.250"W		Remarks: Good Landmark. Visually Located and Verified.			See Pos. No. 1119.	

Several fixed aids to navigation were positioned which do not appear on Chart 18661 SC, 20th edition. However, they are correctly shown on the 21st edition. The hydrographer found all aids to navigation, when compared to their charted position shown on the 21st edition of Chart 18661, differed by less than 40 meters. Because the 40 meters maximum difference is 1 millimeter at the scale of the chart, the hydrographer believes no revisions to the location of these aids on Chart 18661 are required. All fixed aids to navigation within the limits of H-10421 adequately serve their established purpose. Concur

See EvalRpt, rects 7.c. & 7.d.

All floating aids to navigation within the limits of H-10421 were positioned by hydrographic methods. Descriptions and characteristics of these aids are provided in the field records. ✓

The NADCON computations which convert NAD 27 positions to NAD 83 for all aids to navigation, and the inverse computations discussed above, are included in the data files. ✓

Q. STATISTICS

Description	Quantities
Total Positions:	3579
VN 0651 (1101)	1643
VN 0652 (1102)	1936
Total Detached Positions:	413
VN 0651 (1101)	168
VN 0652 (1102)	245
Total Nautical Miles of Hydrography	214
Sq. Nautical Miles of Hydrography	6.5
Bottom Samples	61
Velocity Casts	6
Days of Production	40

✓

R. MISCELLANEOUS

Bottom samples were taken in accordance with Hydrographic Manual Section 1.6.3. Samples were not submitted to the Smithsonian Institution. Bottom sample positions are plotted on the overlays for FFS 17 and 18. Bottom sample descriptions are noted on FFS 17 and 18. Oceanographic Log Sheet-M, NOAA Forms 75-44, are provided in Separate II (Bottom Samples). ✓ The bottom samples are plotted on the smooth sheet.

No further anomalous tidal conditions were observed.

Per Project Instructions, no current observations were conducted in the survey area.

No magnetic anomalies were observed.

S. RECOMMENDATIONS

None.

T. REFERRAL TO REPORTS

TITLE	DATE	TO
1992 Horizontal Control Report, OPR-L208-PHP (by N/CG2333)	July, 1992	N/CG245

No separate Electronic Control Report or Corrections to Echo Soundings Report is scheduled for submittal.

Respectfully Submitted,

Gerd F. Glang

for James S. Verlaque
Lieutenant, NOAA
Assistant Chief of Party

Approved and Forwarded,

Gerd F. Glang

Gerd F. Glang
Lieutenant, NOAA
Chief of Party

CONTROL STATIONS as of 7 Jul 1992

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY	Station Name
701	F	037:58:27.108	121:55:48.811	394	250	0.0	0.0	3	05/28/92	KIRKER 1946
~~713~~	~~F~~	~~038:07:07.203~~	~~121:42:30.435~~	~~38~~	~~250~~	~~0.0~~	~~0.0~~		~~01/15/92~~	~~NO 8 USE 1931~~
~~726~~	~~F~~	~~038:03:14.161~~	~~121:41:07.670~~	~~2~~	~~250~~	~~0.0~~	~~0.0~~		~~01/15/92~~	~~FALSE 1931~~
~~739~~	~~F~~	~~037:58:24.774~~	~~121:44:46.762~~	~~74~~	~~250~~	~~0.0~~	~~0.0~~		~~01/15/92~~	~~SAND CREEK 1946~~
~~740~~	~~F~~	~~038:05:02.570~~	~~121:41:09.592~~	~~4~~	~~250~~	~~0.0~~	~~0.0~~		~~01/15/92~~	~~SHERMAN 1931~~
753	F	038:00:18.515	121:31:54.650	10	254	0.0	0.0		01/15/92	CONN 1992
754	F	038:03:06.891	121:29:55.488	18	250	0.0	0.0	2	04/10/92	FEAR 1992
755	F	038:09:31.464	121:41:00.943	64	250	0.0	0.0	8	04/10/92	RIOS 1992
756	F	038:03:38.725	121:33:19.852	10	250	0.0	0.0	7	04/10/92	SJ RIVER LT 57 1992
757	F	038:07:32.205	121:34:45.566	19	254	0.0	0.0	D	04/22/92	MOLE 1992
~~758~~	~~F~~	~~037:57:19.892~~	~~121:31:35.857~~	~~20~~	~~254~~	~~0.0~~	~~0.0~~		~~01/15/92~~	~~MIDD 1992~~
~~759~~	~~F~~	~~038:01:16.172~~	~~121:35:56.919~~	~~4~~	~~250~~	~~0.0~~	~~0.0~~		~~02/20/92~~	~~MOND 1992~~
~~760~~	~~F~~	~~038:00:40.742~~	~~121:36:54.372~~	~~5~~	~~250~~	~~0.0~~	~~0.0~~		~~01/15/92~~	~~E404 1951~~
~~761~~	~~F~~	~~038:00:30.457~~	~~121:37:00.591~~	~~5~~	~~250~~	~~0.0~~	~~0.0~~		~~01/15/92~~	~~SANDY 1992~~
~~762~~	~~F~~	~~038:00:19.250~~	~~121:37:16.460~~	~~8~~	~~254~~	~~0.0~~	~~0.0~~		~~01/15/92~~	~~SKIS 1992~~
~~763~~	~~F~~	~~038:10:07.987~~	~~121:35:41.340~~	~~36~~	~~250~~	~~0.0~~	~~0.0~~		~~01/15/92~~	~~GRAN 1992~~
~~764~~	~~F~~	~~038:00:44.047~~	~~121:38:17.035~~	~~11~~	~~250~~	~~0.0~~	~~0.0~~		~~01/15/92~~	~~SJVC 1992~~
765	F	038:06:22.732	121:42:02.399	46	254	0.0	0.0	B	04/10/92	MILE 1992
~~766~~	~~F~~	~~038:00:45.031~~	~~121:39:39.500~~	~~8~~	~~250~~	~~0.0~~	~~0.0~~		~~01/15/92~~	~~JURY 1992~~
767	F	038:06:47.793	121:29:51.039	20	254	0.0	0.0	9	01/15/92	TERM 1992 ← FIELD POS.
768	F	038:05:34.467	121:34:37.151	6	250	0.0	0.0		04/13/92	SJ48 1992
769	F	038:05:09.585	121:32:52.800	3	250	0.0	0.0		04/10/92	PATO 1992
770	F	038:06:07.829	121:33:37.779	3	250	0.0	0.0	5	06/04/92	HARB 1992

8-3-57

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Coast and Geodetic Survey
Seattle, Washington 98115-0070
Pacific Hydrographic Party
USATF 801 Beach Drive
Rio Vista, CA 94571-2003
(707) 374-5642

July 31, 1992

Commander
Eleventh Coast Guard District (oan)
Federal Building
501 W. Ocean Blvd.
Long Beach, CA. 90822-5399

Dear Sir:

The NOAA Pacific Hydrographic Party is continuing Project OPR-L208, basic hydrographic surveys of the Sacramento and San Joaquin Rivers, and adjoining sloughs and rivers. The remaining surveys in this project will affect NOS Charts 18661 and 18662.

To complete the geodetic control for our hydrographic project, a GPS survey was conducted by the NOAA/NOS Pacific Photogrammetric Party between January 8 and January 13, 1992. These geodetic control stations are used for our electronic positioning system and include several non-floating aids to navigation. Positions provided below are from the January, 1992 GPS survey, NAD 83, and meet third order class I accuracy.

NON-FLOATING AID	ADJUSTED POSITION	LIGHT LIST POSITION
SACRAMENTO AND SAN JOAQUIN RIVERS (CHART 18661)		
San Joaquin River		
THREEMILE SLOUGH LIGHT 1 LLN 6775 (10435)	38°05'08.25665"N 122°41'10.57430"W	38°05.1'N 121°41.2'W
LIGHT 37 LLN 6820 (10435)	38°05'24.13381"N 121°38'09.55857"W	38°05.4'N 121°38.2'W
LIGHT 41 LLN 6835 (10435)	38°06'19.49654"N 121°36'57.66853"W	No Published Position.
LIGHT 48 LLN 6857 (10421)	38°05'34.46764"N 121°34'37.15036"W	No Published Position.
LIGHT 57 LLN 6895 (10421)	38°03'38.72588"N 121°33'19.85161"W	38°03.6'N 121°33.3'W

NON-FLOATING AID	ADJUSTED POSITION	LIGHT LIST POSITION

SACRAMENTO AND SAN JOAQUIN RIVERS
(Chart 18661)

Sacramento River Deep Water Ship Channel

10447	LIGHT 42 LLN 7370	38°11'52.90804"N 121°39'20.53260"W	No Published Position.
10447	LIGHT 48 LLN 7400	38°13'24.17663"N 121°40'20.59930"W	No Published Position.

SACRAMENTO RIVER
(Chart 18662)

Sacramento River Deep Water Ship Channel

OFF The limit of L208	LIGHT 53 LLN 7430	38°15'23.15270"N 121°40'05.25140"W	No Published Position.

SACRAMENTO AND SAN JOAQUIN RIVERS
(Chart 18661)

Sacramento River

10447	LIGHT 4 LLN 7630	38°10'21.86987"N 121°39'08.55034"W	No Published Position.

Contact Pacific Hydrographic Party at (707) 374-5642 or Pacific Photogrammetric Party at (206) 526-6842 for additional information on these positions.

Sincerely,

Gerd F. Glang
Lieutenant, NOAA
Chief, Pacific Hydrographic Party

cc: N/CG2333-Pacific Photo Party
N/CG245-CDR Hennick

II. DISCREPANCIES / DISCREPANCIES CORRECTED

DISCREPANCIES: *BOLD ITALIC CAPS* indicates discrepancies since last LNM.

	NAME OF AID	STATUS	CHARTS AFFECTED	BNM REF.	LNM REF.
	Long Beach Radiobeacon	Inoperative.	18740		25/92
	Point Arguello Radiobeacon	Inoperative.	18720		21/92
350	San Francisco West Traffic Lane Lighted Gong Buoy W	Missing.	18680	0715/92	31/92
421	Point Arena Radiobeacon	Reduced intensity.	18640	0262/92	11/92
1580	Zuniga Point Degaussing Range West Buoy (Navy aid)	Missing.	18773	1348/91	01/92
3335	*REDONDO BEACH EAST JETTY LIGHT 2*	*FOG SIGNAL INOPERATIVE.*	*18744*	*0858/92*	*37/92*
3630	Channel Islands Harbor Breakwater South Light 1	Burning dim.	18725	0695/92	30/92
4690	Brooklyn Basin North Channel Daybeacon 2	Leaning.	18649	0515/92	22/92
5515	*SAN FRANCISCO BAY NORTH CHANNEL LIGHTED BUOY 14*	*OFF STATTION.*	*18649*	*0849/92*	*37/92*
5730	*RICHMOND HARBOR CHANNEL LIGHT 10*	*IMPROPER CHARACTERISTICS.*	*18649*	*0849/92*	*37/92*
5885	San Pablo Bay Channel Light 5	Leaning.	18654		25/92
6170	Napa River Light 9	Leaning.	18654		34/92

DISCREPANCIES CORRECTED: *BOLD ITALIC CAPS* indicates discrepancies found and corrected since last LNM.

40	*CARLSBAD LIGHTED BELL BUOY C*	*RELIGHTED.*	*18740*	*0853/92*	*37/92*
170	*POINT VICENTE LIGHT*	*LEFT WATCHING PROPERLY.*	*18740*		*37/92*
280	*POINT SUR LIGHT*	*LEFT WATCHING PROPERLY.*	*18680*	*0854/92*	*37/92*
485	*BLUNTS REEF LIGHTED HORN BUOY 2B (ELB)*	*RELIGHTED.*	*18620*		*37/92*
2890	Downtown Marina Breakwater Light East	Left watching properly.	18751	0831/92	36/92
3445	*MARINA DEL REY BREAKWATER SOUTH LIGHT 1*	*LEFT WATCHING PROPERLY.*	*18744*		*37/92*
4145	*PILLAR POINT HARBOR ENTRANCE LIGHT*	*LEFT WATCHING PROPERLY.*	*18682*	*0848/92*	*37/92*
4525	Pier 39 Breakwater Center Light C	Relighted.	18649	0818/92	35/92
5515	San Francisco Bay North Channel Lighted Buoy 14	Left watching properly.	18649	0840/92	36/92
5640	*SOUTHAMPTON SHOAL CHANNEL LIGHTED BUOY 1*	*LEFT WATCHING PROPERLY.*	*18649*	*0857/92*	*37/92*
8120	*NOYO RIVER RANGE REAR LIGHT 10*	*RELIGHTED.*	*18626*	*0842/92*	*37/92*

III. TEMPORARY CHANGES / TEMPORARY CHANGES CORRECTED

TRUB = Temporarily Replaced by Unlighted Buoy
TRLB = Temporarily Replaced by Lighted Buoy
TUB = Temporary Unlighted Buoy
TLB = Temporary Lighted Buoy
TDBN = Temporary Daybeacon
TLT = Temporary Light

TEMPORARY CHANGES: *BOLD ITALIC CAPS* indicates new temporary changes since last LNM.

	NAME OF AID	STATUS	CHARTS AFFECTED	BNM REF.	LNM REF.
	San Francisco Approach Lighted Horn Buoy SF (LNB)	Horn: 3 second blast vice 2	18680		31/92
3835	Morro Bay West Breakwater Light	Nominal range reduced to 9NM.	18700	0211/92	08/92
3190	Fish Harbor Channel Approach Lighted Buoy 2	TRLT.	18751		26/92
3225	Fish Harbor Channel Light 3	Fog signal inoperative.	18751	0589/92	26/92
3420	El Segunda Lighted Gong Buoy 10	TRLB.	18744		08/92
3850	Morro Bay Channel Lighted Buoy 3	Missing / TRUB.	18703	1355/91	01/92
5730	Richmond Harbor Channel Light 10	Destroyed / TRLB.	18649	0503/92	22/92
5936	San Pablo Bay Channel Light 14	Destroyed / TRLB.	18654	0720/92	31/92
6820	*SAN JOAQUIN RIVER LIGHT 37*	*MISSING / TRLB.*	*18661*		*37/92*
7830	Bodega Bay Channel Daybeacon 10	Destroyed / TRUB.	18643		25/88
7855	Bodega Harbor Channel Daybeacon 15	Destroyed / TRUB.	18643	1046/91	46/91
7900	Bodega Bay Channel Daybeacon 25	Destroyed / TRUB.	18643	0668/89	24/89
7946	Spud Point Marina Daybeacon 1	Destroyed / TRUB.	18643		48/87
7947	Spud Point Marina Daybeacon 2	Destroyed / TRUB.	18643		48/87
7948	Spud Point Marina Daybeacon 3	Destroyed / TRUB.	18643		48/87
7950	Spud Point Marina Daybeacon 5	Destroyed / TRUB.	18643		27/87
8310	Hoskton Channel Light 9	DESTROYED / TRLB.	18622	1099/91	44/91

TEMPORARY CHANGES CORRECTED:

3845	Morro Bay Channel Lighted Buoy 2	Reset on station.	18703	0012/92	02/92

IV. INDEX OF WATERWAYS

The following waterways are affected by Section V. Chart Corrections (C), Section VI Advance Notice of Changes to Aids to Navigation (A), or Section VII Proposed Notice of Changes to Aids to Navigation (P) in this LNM.

Waterway	Charts Affected
San Francisco Bay (P)	18649, 18650, 18652
Morro Bay (A)	18703
Long Beach Harbor (P)	18740, 18746, 18749, 18751
San Diego Bay (C)	18773

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Coast and Geodetic Survey
Seattle, Washington 98115-0070
Pacific Hydrographic Party
USATF 801 Beach Drive
Rio Vista, CA 94571-2003
(707) 374-5642

August 4, 1992

Commander
Eleventh Coast Guard District (oan)
Federal Building
501 W. Ocean Blvd.
Long Beach, CA. 90822-5399

Dear Sir:

Reference our letter to you, dated July 31, 1992, providing positions for aids to navigation on the Sacramento and San Joaquin Rivers.

The adjusted position for Threemile Slough Light 1 (LLN 6775) listed an incorrect longitude. The following position is provided:

NON-FLOATING AID	ADJUSTED POSITION	LIGHT LIST POSITION
SACRAMENTO AND SAN JOAQUIN RIVERS (CHART 18661)		
San Joaquin River		
THREEMILE SLOUGH		
LIGHT 1	38°05'08.25665"N	38°05.1'N
LLN 6775	121°41'10.57430"W	121°41.2'W

10435

I regret the oversight. Contact Pacific Hydrographic Party at (707) 374-5642 or Pacific Photogrammetric Party at (206) 526-6842 for additional information.

Sincerely,

Gerd F. Glang

Gerd F. Glang
Lieutenant, NOAA
Chief, Pacific Hydrographic Party

cc: N/CG2333-Pacific Photo Party
N/CG245-CDR Hennick

E. of 121°-42'-00"

CM-8400

30

CARTOGRAPHIC FEATURES OF CHARTING INTEREST

COASTAL MAPPING PROJECT: CM-8400; Sacramento and San Joaquin Rivers, Sacramento to Stockton, California

NOS Nautical Charts Affected: 18661, 18662, 18664

GEODETIC DATUM: North American Datum of 1927

8304.

The following charted landmarks have been identified and measured during photogrammetric operations. Fixed aids to navigation coincident with this project have been reported under project CM-~~8403~~. Refer to Nautical Charting Division Standard Digital Data Exchange Format documentation for quality code (QC) criteria and clarification of cartographic codes (CC). Descriptions in upper and lower case are for internal use.

FEATURE DESCRIPTION	NCD CC	GEOGRAPHIC POSITION(°-'-") LATITUDE	LONGITUDE	NCD* QC	DATE OF LOCATION
Map TP-01050:					
STANDPIPE (at Bryte)	086	38-35-55.42	121-32-21.53	6	103/1983
ELEVATOR (West Sacramento)	086	38-33-45.50	121-32-28.13	6	103/1983
ELEVATOR (West Sacramneto)	086	38-33-51.63	121-32-23.30	6	103/1983
ELEVATOR (West Sacramento)	086	38-33-53.58	121-32-47.09	6	103/1983
TANK (Most Southern of 3)	086	38-33-29.87	121-34-24.33	6	103/1983
TANK (Center of 3)	086	38-33-31.90	121-34-25.81	6	103/1983
TANK (N of Freeport)	086	38-28-30.88	121-30-16.58	6	103/1983
TOWER (Freeport W Trans)	086	38-28-00.663	121-30-17.169	3	001/1931
TOWER (Freeport E Trans)	086	38-28-03.149	121-30-07.176	3	001/1931
ELEVATOR (N OF TWO)	086	38-25-31.33	121-31-48.85	6	103/1983
Map TP-01051:					
TOWER (Elk Slough)	086	38-22-26.95	121-33-03.13	6	103/1983
TOWER (Elk Slough)	086	38-22-24.03	121-32-57.96	6	103/1983
STEEL POLE (at Randall)	086	38-20-49.561	121-32-56.660	3	001/1954
STEEL POLE (at Randall)	086	38-20-40.900	121-32-48.696	3	001/1954
TOWER (at Liberty Farms)	086	38-18-54.78	121-41-36.31	6	104/1983
TOWER (at Liberty Farms)	086	38-18-52.22	121-41-26.67	6	104/1983
TOWER (NE at N Grand I)	086	38-17-37.325	121-33-39.241	3	001/1931
TOWER (SW at N Grand I)	086	38-17-31.281	121-33-44.714	3	001/1931
STEEL TOWER (Prospect Slu)	086	38-16-04.48	121-40-12.01	6	104/1983
STEEL TOWER (Prospect Slu)	086	38-15-59.00	121-40-04.48	6	104/1983
WOODEN POLE (Miner Slu)	086	38-15-57.37	121-38-34.50	3	001/1933
WOODEN POLE (Miner Slu)	086	38-15-53.92	121-38-31.78	3	001/1933
Map TP-01052:					
TOWER (South of Hood)	086	38-21-14.87	121-30-22.97	3	001/1933
TOWER (South of Hood)	086	38-21-09.86	121-30-27.39	3	001/1933
TOWER (Snodgrass Slu)	086	38-20-12.05	121-31-19.53	3	001/1933
TOWER (Snodgrass Slu)	086	38-20-06.13	121-31-24.87	3	001/1933
TV TOWER	086	38-16-25.56	121-30-11.68	6	103/1983
Map TP-01055:					
TOWER (at Lighthouse Harbor)	086	38-05-41.647	121-33-59.331	3	001/1932
TOWER (at Lighthouse Harbor)	086	38-05-53.507	121-34-02.847	3	001/1932

(Continued on Page 2)

* 3- GEODETIC NET. ADJUSTED (AEROTRIANGULATED)
6- MAP-DIG. FROM GRAPHIC

CARTOGRAPHIC FEATURES OF CHARTING INTEREST

COASTAL MAPPING PROJECT: CM-8400; Sacramento and San Joaquin Rivers, Sacramento to Stockton, California

NOS Nautical Charts Affected: 18661, 18662, 18664

GEODETIC DATUM: North American Datum of 1927

FEATURE DESCRIPTION	NCD CC	GEOGRAPHIC POSITION(°-'-") LATITUDE	LONGITUDE	NCD QC	DATE OF LOCATION
Map TP-01055 (continued):					
TANK (Isleton Mun Water Tk)	086	38-09-43.399	121-36-25.639	3	001/1931
TOWER (Three Mile Slu)	086	38-06-25.230	121-41-54.410	3	001/1931
TOWER (Three Mile Slu)	086	38-06-16.485	121-41-56.588	3	001/1931
TWIN TANKS (at RIO VISTA)	086	38-09-47.469	121-41-01.261	3	001/1931
TOWER (SW Trans at Isleton)	086	38-09-58.530	121-37-41.251	3	001/1931
TOWER (NE Trans at Isleton)	086	38-10-10.100	121-37-36.118	3	001/1931
STEEL POLE (W at Howard Ldg)	086	38-13-49.331	121-36-11.316	3	001/1932
STEEL POLE (E at Howard Ldg)	086	38-13-49.255	121-35-59.791	3	001/1932
WATER TANK (at Ryde)	086	38-14-15.270	121-33-31.736	3	001/1931
Map TP-01056:					
TANK (Terminous Water Tk)	086	38-06-48.086	121-29-47.061	3	001/1931
TOWER (N Staten I)	086	38-13-33.70	121-29-30.88	6	103/1983
TV TOWER (Walnut Grove)	086	38-14-49.80	121-30-02.17	6	103/1983
Map TP-01060:					
TOWER (N Jersey I)	086	38-03-05.81	121-41-15.26	6	104/1983
TOWER (SE Sherman I)	086	38-03-22.57	121-41-34.95	6	104/1983
> TOWER (NW Mandeville I)	086	38-04-09.67	121-34-24.74	6	104/1983
> TOWER (SE Webb Tract)	086	38-04-23.61	121-34-29.42	6	104/1983
Map TP-01061:					
TOWER (Bishop Cut)	086	38-03-32.14	121-25-05.66	6	103/1983
TOWER (Bishop Cut)	086	38-03-31.91	121-24-59.19	6	103/1983
TOWER (N Bacon I)	086	38-00-14.85	121-31-51.65	6	103/1983
TOWER (SW Wright Tract)	086	37-59-15.66	121-23-29.58	6	103/1983
TOWER (NE Roberts I)	086	37-59-07.46	121-23-32.28	6	103/1983
TOWER (Empire Cut)	086	37-58-21.96	121-30-19.78	6	104/1983
TOWER (Empire Cut)	086	37-58-14.19	121-30-19.15	6	104/1983
TOWER (N Whiskey Slu)	086	37-58-13.25	121-28-32.03	6	104/1983
TOWER (N Whiskey Slu)	086	37-58-10.10	121-28-24.75	6	104/1983
Map TP-01062:					
TANK (N of Port - E Tank)	086	37-57-24.699	121-19-02.768	3	001/1954
TANK (N of Port - W Tank)	086	37-57-19.294	121-17-59.423	3	001/1954
TANK (Stockton Port E Tank)	086	37-57-01.452	121-19-00.383	3	001/1932
TANK (Stockton Port W Tank)	086	37-56-59.479	121-19-20.511	3	001/1932
TANK (ESE of Port-Fiber Prod)	086	37-56-41.383	121-18-09.038	3	001/1932
TANK (E of Moss Tract)	086	37-55-23.234	121-16-34.199	3	001/1959

- end -

Listing approved by: Robert W Ladley Jr — Final Reviewer — 3/28/88 — Date

LIGHT LIST #	NAME AND GEOGRAPHIC POSITION NAD 27 CH-8304 Aerotriangulated Positions Indicated	AERO #
FROM VOL. 3 1982 CG-162 PACIFIC COAST AND PACIFIC ISLANDS	LATITUDE DEG. MIN. SEC. — LONGITUDE DEG. MIN. SEC.	
~~888~~	~~SAN JOAQUIN RIVER LIGHT 8~~	
	~~NO PHOTO COVERAGE~~	
~~889~~	~~SAN JOAQUIN RIVER LIGHT 7~~	
	~~NO PHOTO COVERAGE~~	
~~890~~	~~SAN JOAQUIN RIVER LIGHT 9~~	
	~~NO PHOTO COVERAGE~~	
~~891~~	~~SAN JOAQUIN RIVER LIGHT 11~~	
	~~NO PHOTO COVERAGE~~	
~~892~~	~~SAN JOAQUIN RIVER LIGHT 10~~	
	~~NO PHOTO COVERAGE~~	
~~895.10~~	~~SAN JOAQUIN RIVER LIGHT 14~~	
	~~NO PHOTO COVERAGE~~	
~~896~~	~~SAN JOAQUIN RIVER LIGHT 18~~ REPLACED BY BUOY	792701
	~~38 1 56.173~~ — ~~121 43 8.54~~	792701
~~897.10~~	~~SAN JOAQUIN RIVER LIGHT 19~~	792702
	~~38 2 7.212~~ — ~~121 42 29.590~~	792702
~~898.10~~	~~SAN JOAQUIN RIVER LIGHT 21~~	
	~~REPLACED BY A BUOY~~	
~~899.10~~	~~SAN JOAQUIN RIVER LIGHT 23~~	792703
	~~38 2 45.426~~ — ~~121 41 41.924~~	792703
~~900~~	~~SAN JOAQUIN RIVER LIGHT 24~~	792704
	~~38 3 7.538~~ — ~~121 41 15.938~~	792704
~~901.10~~	~~SAN JOAQUIN RIVER LIGHT 25~~	792705

919.10	SAN JOAQUIN RIVER LIGHT 44		734702
>			
	38 5 50.038	121 35 9.986	734702
920.10	SAN JOAQUIN RIVER LIGHT 46		734701
>			
	38 5 46.863	121 34 48.573	734701
922	SAN JOAQUIN RIVER LIGHT 49		733704
>			
	38 5 29.830	121 34 22.748	733704
922.10	SAN JOAQUIN RIVER LIGHT 47		733705
>			
	38 5 44.489	121 34 30.672	733705
923.20	SAN JOAQUIN RIVER LIGHT 51		733703
>			
	38 5 3.535	121 34 15.806	733703
924	SAN JOAQUIN RIVER LIGHT 53		733702
>			
	38 4 48.670	121 34 5.938	733702
925	SAN JOAQUIN RIVER LIGHT 55 Replaced By Light.		
>			
	REPLACED BY A BUOY		
926	SAN JOAQUIN RIVER LIGHT 56		733701
>			
	38 4 6.263	121 33 36.507	733701
927	SAN JOAQUIN RIVER LIGHT 57		732708
>			
	38 3 38.992	121 33 16.048	732708
928	SAN JOAQUIN RIVER LIGHT 58		732707
>			
	38 3 30.989	121 33 20.737	732707
~~929~~	~~STOCKTON CHANNEL RANGE B FRONT LIGHT~~		732710
	~~38 3 11.437~~	~~121 30 28.805~~	732710
~~930~~	~~STOCKTON CHANNEL RANGE B REAR LIGHT~~		732709
	~~38 3 10.265~~	~~121 30 18.604~~	732709
931	STOCKTON CHANNEL LIGHT 2		732706
>			
	38 3 25.098	121 32 44.660	732706
932	STOCKTON CHANNEL LIGHT 3		732705
>			
	38 3 22.592	121 31 46.521	732705
933	STOCKTON CHANNEL LIGHT 4		732704
>			
	38 3 17.143	121 31 42.489	732704
934	STOCKTON CHANNEL LIGHT 5		732703
>			
	38 3 17.430	121 30 52.309	732703
935	STOCKTON CHANNEL LIGHT 6		732702

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Coast and Geodetic Survey
Seattle, Washington 98115-0070
Pacific Hydrographic Party
USATF 801 Beach Drive
Rio Vista, CA 94571-2003
(707) 374-5642

July 29, 1992

Director
DMAHTC
Attn:MCNA
6500 Brooks Lane
Washington, D.C. 20315-0030

Dear Sir:

While conducting hydrographic survey operations along the San Joaquin River, California, the NOAA Pacific Hydrographic Party discovered one danger to navigation within the survey limits of H-10421. They were reported to the Eleventh Coast Guard District. A copy of correspondence describing the dangers is enclosed.

Sincerely,

Gerd F. Glang

Gerd F. Glang
Lieutenant, NOAA
Chief, Pacific Hydrographic Party

Attachments

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Coast and Geodetic Survey
Seattle, Washington 98115-0070
Pacific Hydrographic Party
USATF 801 Beach Drive
Rio Vista, CA 94571-2003
(707) 374-5642

July 29, 1992

Commander
Eleventh Coast Guard District (oan)
Federal Building
501 W. Ocean Blvd.
Long Beach, CA 90822-5399

Dear Sir:

While conducting hydrographic survey operations along the San Joaquin River, California, the NOAA Pacific Hydrographic Party discovered one danger to navigation within the survey limits of H-10421. I recommend this danger for inclusion in the Local Notice to Mariners. This danger has been reported to DMAHTC. A brief description, and a copy of the chartlet showing the area in which the danger exists, are attached.

Sincerely,

Gerd F. Glang

Gerd F. Glang
Lieutenant, NOAA
Chief, Pacific Hydrographic Party

Attachments

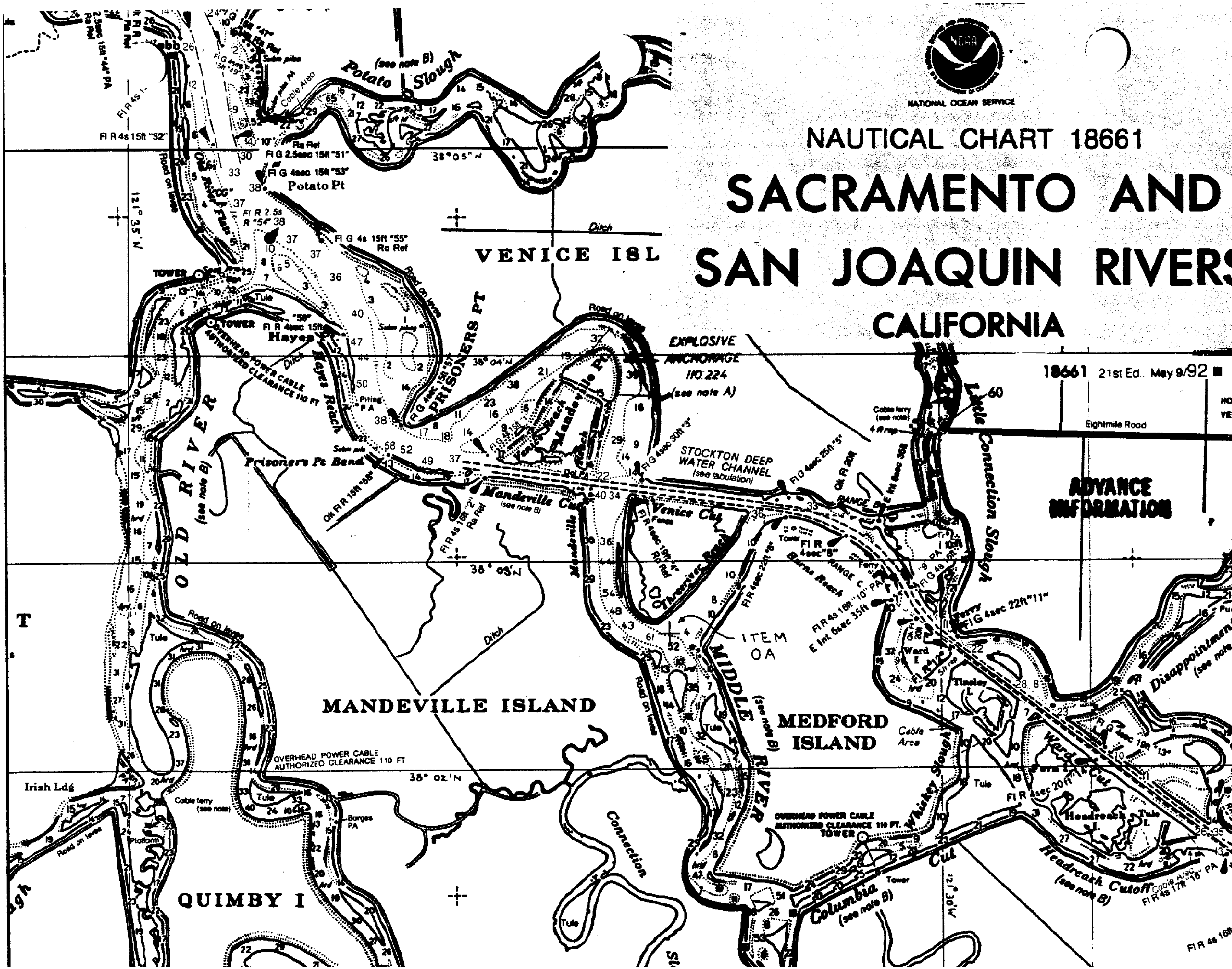
cc: DMAHTC
N/CG221
N/CG245

US Department of Commerce
Pacific Hydrographic Party

Dangers to Navigation
Project OPR-L208
Survey H-10421
San Joaquin River, Burns Reach to Webb Reach
PHP-10-2-92
Sheet O

ADVANCE INFORMATION

ITEM	DANGER	CHART NUMBER	EDITION DATUM	REPORTED DEPTH	GEOGRAPHIC POSITION LATITUDE	LONGITUDE
OA. (Threeriver Reach)	SHOAL	18661	21/May 92 NAD 83	2 feet at MLLW	38°02'39.68"N	121°31'40.46"W


NATIONAL OCEAN SERVICE
NAUTICAL CHART 18661
SACRAMENTO AND
SAN JOAQUIN RIVERS
CALIFORNIA
18661 21st Ed. May 9/92
ADVANCE INFORMATION
Eightmile Road
Potato Slough
Potato Pt
VENICE ISL
PRISONERS PT
Hayes Pt
Hayes Reach
Prisoners Pt Bend
Mandeville Cut
EXPLOSIVE ANCHORAGE 110.224 (see note A)
STOCKTON DEEP WATER CHANNEL (see tabulation)
Venice Cut
Little Connection Slough
Disappointment
Ward Cut
Headreach Cutoff
Columbia Cut
Whiskey Slough
MIDDLE RIVER
MEDFORD ISLAND
MANDEVILLE ISLAND
OLD RIVER
QUIMBY I
Irish Ldg
Connection
ITEM OA
OVERHEAD POWER CABLE AUTHORIZED CLEARANCE 110 FT
Road on levee
Ditch
TOWER
38° 05' N
38° 04' N
38° 03' N
38° 02' N
121° 35' N
121° 30' W

CORRECTED COPY
DESTROY ALL
PREVIOUS COPIES

COGARDGRU SFRAN MSG ROUTING

OPCEN 4	ALOPS	BASE
CO BD	ADMIN	SUPPLY
OP BD	GRU ENG	NODI
DEPGRU	MEDICAL	NMEX
OPS	PAO	NIOO
AOPS/ATON 1	ANT 1	AUX
SR CONT	STA	FILE
RMIC	STA ENG	OTHER

NC MS RV DE GS

021022 MAR 90
FM COGARD ANT SAN FRANCISCO CA
TO CCGDELEVEN LONG BEACH CA//OAN//
INFO ZEN/COMCOGARDGRU SAN FRANSICO CA
COGARD STA RIO VISTA CA
BT
UNCLAS //N16511//
SUBJ: REMOVAL OF COAST GUARD MOORING BUOYS ON SAN JOAQUIN RIVER AND OLD RIVER
A. YOUR 122235Z JAN 90
1. BUOY CHARTED AS CG MOORING BUOY ON CHART 18661, POSITION 38-01-46N, 121-34-50W FOUND MISSING. WIRE SWEPT AREA FOR 2.5 HOURS WITH NEG RESULTS. THIS IS A SMALL AREA WHERE OLD RIVER MEETS SAND MOUND SLOUGH
2. BUOY CHARTED AS CG MOORING BUOY ON CHART 18661, POSITION 38-04-02N, 121-40-41.5W LOCATED AND REMOVED, AID HAS BEEN DISCONTINUED.
3. ACCORDING TO OUR RECORDS THERE SHOULDBE NO CG MOORING BALLS CHARTED ON 18661 OR 18662
4. REQUEST CHART CORRECTIONS AND LNM
BT
NNNN
-d(31r
TOD-03:20:21:18:37

CORRECTED COPY
DESTROY ALL
PREVIOUS COPIES

APPROVAL SHEET

for

SURVEY H-10421

I have reviewed the Descriptive Report, Final Field Sheets, and accompanying records for accuracy, completeness, compliance with project instructions, and adherence to required standards and procedures. I have supervised all field work on a daily basis to ensure a quality survey is forwarded for verification. I have personally examined the Final Field Sheets and all records of this survey during field processing. The data are forwarded for final review and processing to N/CG245, Pacific Hydrographic Section.

Approved and Forwarded,

Gerd F. Glang

Gerd F. Glang
Lieutenant, NOAA
Chief, Pacific Hydrographic Party

DATE 7-30-92

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Rockville, Maryland 20852

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: September 9, 1992

ORIGINAL

MARINE CENTER: Pacific

OPR: L208

HYDROGRAPHIC SHEET: H-10421

LOCALITY: Burns Reach to Webb Reach, San Joaquin River, Ca.

TIME PERIOD: April 10 - June 26, 1992

TIDE STATION USED: 941-5151 Venice Island, Venice Cut, Ca.
Lat. 38° 3.4'N Lon. 121° 31.8'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 941-5151 = 13.82 ft.
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 941-5151 = 3.1 ft.

TIDE STATION USED: 941-5229 Korth's Harbor, San Joaquin R. Ca.
Lat. 38° 5.8'N Lon. 121° 34.1'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 941-5229 = 14.97 ft.
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 941-5229 = 2.9 ft.

REMARKS: RECOMMENDED ZONING

1. South of 38° 4.3'N, zone direct on 941-5151.
2. North of 38° 4.3'N, zone direct on 941-5229.

Franks Tract was surveyed on sheet H-10413. Therefore, zoning is not provided for that area on H-10421.

NOTE: Hourly heights are tabulated on Pacific Standard Time.

CHIEF, DATUMS SECTION

NOAA FORM 76-155
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

SURVEY NUMBER

H-10421

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 18661	B USGS TOPO	C TP-01055	D TP-01056	E TP-01060	F TP-01061	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ANDRUS ISLAND	X	X	X							1
BOULDIN ISLAND	X	X	X	X		X				2
BURNS REACH	X	X								3
CALIFORNIA (title)	X	X								4
HAYES POINT	X	X			X					5
HAYES REACH	X	X								6
MANDEVILLE CUT	X	X			X					7
MANDEVILLE ISLAND	X	X			X	X				8
MANDEVILLE POINT	X	X			X	X				9
MANDEVILLE REACH	X	X								10
MEDFORD ISLAND	X	X				X				11
MIDDLE RIVER	X	X				X				12
MOKELUMNE RIVER	X	X	X							13
OLD RIVER	X	X			X					14
POTATO POINT	X	X								15
POTATO SLOUGH	X	X	X	X		X				16
PRISONERS POINT	X	X			X					17
PRISONERS POINT BEND	X				X					18
SAN ANDREAS POINT	X		X							19
SAN ANDREAS SHOAL	X	X	X							20
SAN JOAQUIN RIVER	X	X	X		X	X				21
THREERIVER REACH	X	X								22
VENICE CUT	X					X				23
VENICE ISLAND	X	X	X	X	X	X				24
VENICE REACH	X	X								25

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 76-155
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10421

Name on Survey	A ON CHART NO. 18661	B USGS TOPO	C TP-01055	D TP-01056	E TP-01060	F TP-01061	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
WEBB POINT	X	X	X							1
WEBB REACH	X	X								2
WEBB TRACT	X	X	X		X					3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
				Approved:						16
										17
				Charles E. Harrington						18
				Chief Geographer - N/CG2x5						19
				JAN 13 1993						20
										21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

Attachment 1

Form 9-1343

UNITED STATES BOARD ON GEOGRAPHIC NAMES DOMESTIC GEOGRAPHIC NAMES REPORT

	Controversial name
X	Name change
	Changed application
	Other

Recommended name: BEDROOM ONE

State: California

County: San Joaquin

Lat. 38 ° 05 ' 05.5" N. Long. 121 ° 33 ' 28.5" W. Mouth End Center (Circle one)

Lat. ° ' " N. Long. ° ' " W. Heading End (Circle one)

Description of feature: where appropriate, give shape, length, width, direction of flow or trend, direction and distance of extremities from points with established names, and section, township, range, meridian where useful, also elevation if known.

Recommend the name BEDROOM ONE be added to NOS Chart 18661 SC. BEDROOM ONE is an island, approximately 0.25NM in length and width, in a roughly triangular shape, with a slightly crescent-shaped eastern shore, and is located in the western section of Potato Slough, approximately 0.5NM east of Potato Slough's confluence with the San Joaquin River. BEDROOM ONE is approximately 7.8NM SE of Rio Vista, CA. Vegetation on this island is primarily tule (marsh grass), with heavy brush and some trees growing close to the eastern and southern shores. A small cottage with a floating dock exists on the southern tip of this island.

Published Maps Using Recommended Name (Map name, date, agency, & scale)	Variant Name or Application	Map or Source Using Variant (Map name, date, agency, & scale)
NONE.		

Available information as to origin, spelling, and meaning of the recommended name and/or statement concerning nature of difference in usage or application

The name BEDROOM ONE is a common reference to the west-most of the two largest islands in Potato Slough. This island is currently not named on Chart 18661 (21st edition). During the period of this survey, the hydrographer heard repeated references on marine VHF to the "Bedrooms", "Bedroom One", or "Bedroom Two", from other mariners operating recreational boats, and from USCG Station Rio Vista. Local marina operators confirmed BEDROOM ONE is a common reference to this island. The origin of this name appears to come from the many recreational boaters who anchor or beach their vessels along the 0.25NM shore which exists on this island's east side. The island's heavy vegetation and trees provide an excellent lee from the prevailing west winds. The hydrographer confirmed BEDROOM ONE as a common name for this island with USCG Station Rio Vista (707-374-2871). Coast Guard personnel were emphatic that this name should appear on future editions of Chart 18661 and serves as an excellent reference for all boat operators in Potato Slough. Any additional geographic names on NOS Chart 18661 will greatly aid chart users.

AUTHORITY FOR RECOMMENDED NAME	MAILING ADDRESS	OCCUPATION
NOAA Pacific Hydrographic Party	USATF 801 Beach Drive Rio Vista, CA 94571-2003	

Submitted by:

Name: Gerd F. Glang, LT, NOAA Title: Chief Date: 07/22/92

Agency: NOAA/NOS/C&GS/PHP Address: Same as above.

Attachment 1

Form 9-1343

UNITED STATES
BOARD ON GEOGRAPHIC NAMES
DOMESTIC GEOGRAPHIC NAMES
REPORT

	Controversial name
X	Name change
	Changed application
	Other

Recommended name: BEDROOM TWO

State: California

County: San Joaquin

Lat. 38 • 05 • 03.5 N. Long. 121 • 32 • 32.5 W. Mouth End Center (Circle one)

Lat. ___ • ___ • ___ N. Long. ___ • ___ • ___ W. Heading End (Circle one)

Description of feature: where appropriate, give shape, length, width, direction of flow or trend, direction and distance of extremities from points with established names, and section, township, range, meridian where useful, also elevation if known.

Recommend the name BEDROOM TWO be added to NOS Chart 18661 SC. BEDROOM TWO is the largest island in Potato Slough; approximately 0.5NM in length and 0.2NM in width, lying in a northwest-southeast direction, with a slightly crescent-shaped eastern shore. BEDROOM TWO is located in the center section of Potato Slough, approximately 1.5NM east of Potato Slough's confluence with the San Joaquin River. BEDROOM TWO is approximately 8.5NM SE of Rio Vista, CA. Vegetation on this island is primarily tule (marsh grass), with heavy brush and some trees growing over much of the island. A house with a 30-meter long floating dock is centered on the eastern side of this island.

Published Maps Using Recommended Name (Map name, date, agency, & scale)	Variant Name or Application	Map or Source Using Variant (Map name, date, agency, & scale)
NONE.		

Available information as to origin, spelling, and meaning of the recommended name and/or statement concerning nature of difference in usage or application

The name BEDROOM TWO is a common reference to the east-most of the two largest islands in Potato Slough. This island is currently not named on Chart 18661 (21st edition). During the period of this survey, the hydrographer heard repeated references on marine VHF to the "Bedrooms", "Bedroom One", or "Bedroom Two", from other mariners operating recreational boats, and from USCG Station Rio Vista. Local marina operators confirmed BEDROOM TWO is a common reference to this island. The origin of this name appears to come from the many recreational boaters who anchor or beach their vessels along the 0.25NM shore on this island's east side. The island's heavy vegetation and trees provide an excellent lee from the prevailing west winds. During the period of this survey (April to July), the hydrographer observed many sailboats and power boats, sometimes dozens, moored along this island's east shore. The hydrographer confirmed BEDROOM TWO as a common name for this island with USCG Station Rio Vista (707-374-2871). Coast Guard personnel were emphatic that this name should appear on future editions of Chart 18661 and serves as an excellent reference for all boat operators in Potato Slough. Any additional geographic names on NOS Chart 18661 will greatly aid chart users.

AUTHORITY FOR RECOMMENDED NAME	MAILING ADDRESS	OCCUPATION
NOAA Pacific Hydrographic Party	USATF 801 Beach Drive Rio Vista, CA 94571-2003	

Submitted by:

Name: Gerd F. Glang, LT, NOAA Title: Chief Date: 07/22/92

Agency: NOAA/NOS/C&GS/PHP Address: Same as above.

NOAA FORM 77-27(H)
(9-83)

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER
H-10421

RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	4					
ENVELOPES						
VOLUMES	4					
CAHIERS						
BOXES				1		

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS VERIFICATION	AMOUNTS EVALUATION	AMOUNTS TOTALS
POSITIONS ON SHEET			2955
OSITIONS REVISED	8		8
SOUNDINGS REVISED	13		13
CONTROL STATIONS REVISED			
	TIME-HOURS VERIFICATION	TIME-HOURS EVALUATION	TIME-HOURS TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	79		79
VERIFICATION OF SOUNDINGS	175		175
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	231		231
COMPARISON WITH PRIOR SURVEYS AND CHARTS		26	26
EVALUATION OF SIDE SCAN SONAR RECORDS			
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Pre-processing Examination by LT J. Griffin	*Beginning Date* 8/4/92	*Ending Date* 8/27/92
Verification of Field Data by L. Deodato	*Time (Hours)* 485	*Ending Date* 1/12/94
Verification Check by J. Stringham, J. Green	*Time (Hours)* 27	*Ending Date* 4/5/94
Evaluation and Analysis by J. Green	*Time (Hours)* 61	*Ending Date* 4/5/94
Inspection by B. Olmstead	*Time (Hours)* 50	*Ending Date* 4/29/94

EVALUATION REPORT

H-10421

1. INTRODUCTION

Survey H-10421 is a basic hydrographic survey accomplished by the Pacific Hydrographic Party under the following Project Instructions.

OPR-L208-PHP, dated June 17, 1991

This survey occurred in California and covers an area in the delta of the Sacramento and San Joaquin Rivers, a region of rivers and navigable sloughs which are extensively used by small boats. The surveyed area includes the San Joaquin River from Burns Reach to Webb Reach and portions of the Stockton Deep Water Channel, Middle River, Old River, Potato Slough and Mokelumne River. The surveyed area extends from latitude 38/02/17N on the south, north to latitude 38/06/34N, longitude 121/30/45W on the east, west to longitude 121/35/41W. The bottom consists primarily of gray and brown mud. Depths range from 0 to 21.3 meters.

Predicted tides for San Francisco, California, zoned for the survey area, were used for the reduction of soundings during field processing. Approved hourly heights zoned from Venice Island and Korth's Harbor Island, California, gage numbers 941-5151 and 941-5229, were used during office processing.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The electronic control correctors were adequate. The sound velocity and offset correctors are adequate. An accompanying computer printout contains the parameters and the correctors.

A digital file has been generated for this survey that includes categories of information required to comply with Hydrographic Survey Guideline No. 52, Standard Digital Exchange Format, April 15, 1986. Certain descriptive information, however, may not be in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete information.

2. CONTROL AND SHORELINE

Sections H and I of the hydrographer's report and the Horizontal Control Reports for OPR L208-PHP, October 1991 and July 1992, contain adequate discussions of horizontal control and hydrographic positioning.

Positions of horizontal control stations used during hydrography are 1992 field and published values based on NAD 83.

The smooth sheet and accompanying overlays are annotated with NAD 27 adjustment ticks based on values determined with NGS program NADCON. Geographic positions based on

NAD 27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude:	-0.289 seconds (-8.916 meters)
Longitude:	3.830 seconds (93.339 meters)

The year of establishment of control stations shown on the smooth sheet originates with the previously mentioned horizontal control reports and the NGS published data.

The quality of 45 positions exceeds limits in terms of error circle radius and residual, or have angles of intersection less than 30 degrees or more than 150 degrees. There are no significant plotting differences between the soundings located by these positions and those in adjacent areas. Also, none of these positions are used to locate dangers to navigation or significant features. They have been accepted.

The shoreline detail shown on the smooth sheet was transferred from stable base 1:10,000 enlargements of the following registered shoreline maps.

Number	Scale	Datum	Date of Photography
TP-01055	1:20,000	NAD 27	April 1983
TP-01056	1:20,000	NAD 27	April 1983
TP-01060	1:20,000	NAD 27	April 1983
TP-01061	1:20,000	NAD 27	April 1983

There are many changes to the shoreline from these maps throughout the survey area. They are primarily changes to marsh islet configurations, offshore berms that have eroded and are now submerged and the high water line, positioned from lines of delimiting hydrography. These changes are depicted on the smooth sheet from the field sheet without supporting positional information. This shoreline is shown on the smooth sheet in dashed red and is adequate to supersede the charted mean high water line.

3. HYDROGRAPHY

With the exceptions noted in this report, hydrography is adequate to:

a. delineate the bottom configuration, determine least depths, and draw the standard depth curves;

b. reveal there are no significant discrepancies or anomalies requiring further investigation; and

c. show the survey was properly controlled and soundings are correctly plotted.

The zero depth curve was not delineated, because of a combination of significant cultural development, numerous foul areas (grass, piling) or the steeply sloping bottom just offshore of the mean high water line.

4. CONDITION OF SURVEY

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3; the Hydrographic Survey Guidelines; and the Field Procedures Manual, March 1992 Edition.

5. JUNCTIONS

Survey H-10421 junctions with the following surveys.

Survey	Year	Scale	Area
H-10413	1992	1:10,000	southwest
H-10435	1992	1:10,000	northwest

These junctions are complete. Some soundings have been transferred to this survey from each of these surveys to better portray the bottom in the common area.

There are no junction surveys to the north, south and east. A comparison with the charted soundings indicates good agreement.

6. COMPARISON WITH PRIOR SURVEYS

H-6003 (1934) 1:10,000
H-6005b (1934) 1:10,000
H-6011a (1934) 1:10,000

Survey H-6003 covers the southeastern quarter of this survey area, which includes the area north and east of Mandeville Island. Except for a small area in Middle River, the sounding data on the prior is limited to one or two lines of hydrography between one of the river banks and a spoil bank. Generally the depths on this survey are shallower in this channel with the spoil banks having been eroded to where only scattered shoals remain. The depths in the area of Middle River are also shallower, up to 3 meters. Refer to section K of the hydrographer's report for additional information.

Survey H-6005b covers the Mokelumne River and Potato Slough areas common to this survey. The present survey depths are generally shallower than found on the prior survey. The spoil banks in Potato Slough have eroded to where little trace remains. See section K of the hydrographer's report for additional information.

Survey H-6011a covers the eastern portion of Potato Slough. The depths on the present survey generally agree with the prior by plus or minus 2 meters. Refer to section K of the hydrographer's report for additional information.

There are no AWOIS items originating from prior surveys applicable to this survey.

Survey H-10421 is adequate to supersede the above prior surveys for the area of common coverage.

7. COMPARISON WITH CHART

Chart 18663, 2nd Edition, dated February 22, 1992, scale 1:20,000
Chart 18661SC, 22nd Edition, dated January 9, 1993; scale 1:40,000

Chart 18663 provides the largest scale coverage of the small area on this survey east of longitude 121/31/15W. Chart 18661SC provides the largest scale coverage of the remainder of the survey area. The hydrographer compared with the 21st edition, dated May 9, 1992, of chart 18661. The 22nd edition is identical with the 21st, except that the depths have been converted to meters, some depth curves have be revised, the danger reported during this survey is now charted and a few other miscellaneous revisions accomplished.

a. Hydrography

Charted hydrography originates with surveys H-6003, H-6005b, H-6011a and miscellaneous sources. Many features, including some AWOIS items, are not charted by the authority of Note B "CAUTION". Refer to section N of the hydrographer's report for additional discussion on the comparison with this chart.

A charted pile-like feature at latitude 38/03/40.97N, longitude 121/33/21.78, was investigated by the hydrographer. This feature is an eight foot depth partially obscured by the symbology for Light 57. It is shown on the 22nd edition of Chart 18661SC as a 2.4 meter depth. This depth is superseded by depths from the current survey.

The charted explosive ordinance area No. 224, at latitude 38/04/00N, longitude 121/32/00W, was confirmed to be active. The plotted area and applicable notes should be retained as charted.

Except for the explosive ordinance area discussed previously in this section, survey H-10421 is adequate to supersede charted hydrography within the common area.

b. AWOIS

All AWOIS items originate from miscellaneous sources. The dispositions of these items are contained in section N of the hydrographer's report, supplemented as follows:

AWOIS Item 51612, snags reported by the US Power Squadron at latitude 38/05/12.71N, longitude 121/33/04.82W, is presently not charted. These snags have been disproved at this position. This survey shows snags 130 meters southwest of the reported position. Chart this area as found on this survey.

AWOIS Item 51575, submerged piling (PA) reported at latitude 38/02/30.71N, longitude 121/31/29.82W, presently not charted, was investigated by the hydrographer and disproved at the above position. A row of piling was found 70 meters to the southeast. Three charted

features, 60 to 150 meters to the north, were also investigated by the hydrographer, refer to page 21 of his report for the disposition of these features.

AWOIS Item 51576, shoaling reported at latitude 38/02/41.71N, longitude 121/31/39.82W, was investigated and a shoal covered 1.0 meters at MLLW at latitude 38/02/39.68N, longitude 121/31/40.46W, found. This feature was reported as a danger to navigation as a 2-foot shoal at MLLW (based on predicted tides). It is charted on the current edition of chart 18661 as a 0.6 meter depth. The 0.6 meter depth should be deleted from the chart and the 1 meter depth found during this survey charted.

AWOIS Item 51590, a snag at latitude 38/04/19.71N, longitude 121/34/21.32W, has been disproved by bottom drag at this position. However, a snag is charted 200 meters to the north, at latitude 38/04/27N, longitude 121/34/21W, which is identified on the PSR plot as AWOIS Item 51590. An area foul with snags was found on this survey 20 meters northeast of the charted snag. The charted snag should be removed from the chart and the area foul with snags as found on the smooth sheet charted.

AWOIS Item 51591, a sign labeled "Old River" charted at latitude 38/04/24/51N, longitude 121/34/19.62W, was disproved by bottom drag at this position. A sign labeled "Old River" was found during this survey 75 meters west of the charted position. Delete the charted sign and chart the sign as found on this survey.

c. Controlling Depths

The San Joaquin River-Stockton Deep Water Channel traverses this survey area. Controlling depths are published for two areas within the survey area, from San Joaquin River Lights 43 to 51 and from Stockton Channel Light 2 to the eastern limit of this survey (nearly to Stockton Channel Light 8). Survey depths are all deeper than tabulated for the channel between San Joaquin River Lights 43 and 51. The channel between Stockton Channel Lights 2 and 8 is presently charted approximately 30 meters north of the channel as surveyed. This area of the channel is adequately marked by aids, which also tend to be displaced to the north. The surveyed channel depths are all deeper than tabulated. If the aids are moved to the new geographic positions as found during this survey, the charted channel should also be moved to the south.

d. Aids to Navigation

The aids to navigation located within the survey area have been positioned by aerotriangulation, GPS or hydrographic methods. A list containing these positions is included in section P of the hydrographer's report. These aids are adequate to serve their intended purpose.

San Joaquin River Buoy 54 is the only floating aid to navigation within this survey area. It has been located, the surveyed position may be found in section P of the hydrographer's report. The aid adequately serves its intended purpose.

The hydrographer recommends four landmarks for charting. See table attached to the hydrographer's report, CARTOGRAPHIC FEATURES OF CHARTING INTEREST,

COASTAL MAPPING PROJECT: CM-8400; Sacramento and San Joaquin Rivers, Sacramento to Stockton, California. Note that the coordinates provided for these features are on the North American Datum of 1927. The positions of these features, updated to NAD 83, may also be found in section P of the hydrographer's report.

e. Geographic Names

Names appearing on the smooth sheet and in the survey title have been approved by the Chief Geographer. Note that two additional names for islets in Potato Slough have been proposed by the hydrographer for Board of Geographic Names approval. The NOAA Forms 9-1343, UNITED STATES BOARD OF GEOGRAPHIC NAMES DOMESTIC GEOGRAPHIC NAMES REPORT, submitted by the hydrographer are attached.

f. Dangers to Navigation

The hydrographer reported one danger to the USCG , DMAHTC and N/CG221. Refer to the discussion of AWOIS Item 51576 in section N of the hydrographer's report and section 7.b of this report for additional information. A copy of the report is attached. No additional dangers were discovered during office processing.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10421 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is an excellent hydrographic survey. No additional field work is recommended.

James S. Green
Supervisory Cartographer

APPROVAL SHEET
H-10421

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, comparison with prior surveys and verification or disproval of charted data. The digital data have been completed and all revisions and processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts have been made and are included with the survey records. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Bruce A. Olmstead for Date: 4/29/94
Dennis J. Hill
Chief, Hydrographic Processing Unit
Pacific Hydrographic Section

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Douglas G. Hennick Date: 5/17/94
Commander Douglas G. Hennick, NOAA
Chief, Pacific Hydrographic Section

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Final Approval

Approved:

J. Austin Yeager Date: 7/18/94
J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey

NOAA FORM 75-96
(10-83)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10421

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
		See next	Full Part Before After Marine Center Approval Signed Via
		Page	Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
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SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED

NOAA FORM 75-96
(10-83)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

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CHART	DATE	CARTOGRAPHER	REMARKS
18661	9-1-94	Russ Davies	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Full application of
			Drawing No. Sndgs from smooth sheet
18663	6-7-96	William J. Olmo	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Superseded by
			Drawing No. 4 BP 154022 (5/94 Hydro)
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
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SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.