

10342

Diagram No. 5534-2

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-10-1-90
Registry No. H-10342

LOCALITY

State California
General Locality Suisun Bay
Sublocality New York Point to
..... Sherman Point
..... 1990-91
CHIEF OF PARTY
..... LT D. Nodine

LIBRARY & ARCHIVES

DATE March 22, 1993

☆U.S. GOV. PRINTING OFFICE: 1985-566-054

CP-7
18667
18659
18656
18652 E + F (inset) Applied cm

HYDROGRAPHIC TITLE SHEET

H-10342

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 10-1-90

State California

General locality Suisun Bay

Locality New York Point to Sherman Island

Scale 1:10,000 Date of survey May 17 (DN137), 1990 to Feb. 25 (DN056), 1991

Instructions dated May 1, 1989 and June 5, 1990, respectively Project No. OPR-L208-PHP

Vessel Launch 1101 (EDP 0651), 1102 (EDP 0652)

Chief of party LT DeWayne J. Nodine

Surveyed by LT DeWayne Nodine, ST Lowell J. Lindly, ST Michael E. Bigelow, ET Edmund O. Wernicke, ST Ralph F. Baker, Jr., and Charles R. Davies

Soundings taken by echo sounder, hand lead, ~~and~~ pneumatic depth gage

Graphic record scaled by PHP Personnel

Graphic record checked by PHP Personnel

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

~~Reviewed by:~~
Evaluation by: C.R. Davies
~~Verification by:~~

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

REMARKS: Time in UTC. Revisions and marginal notes in black were generated during office processing. Some separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

AWOIS and SURF RWD 7/93

SP 1-30-97

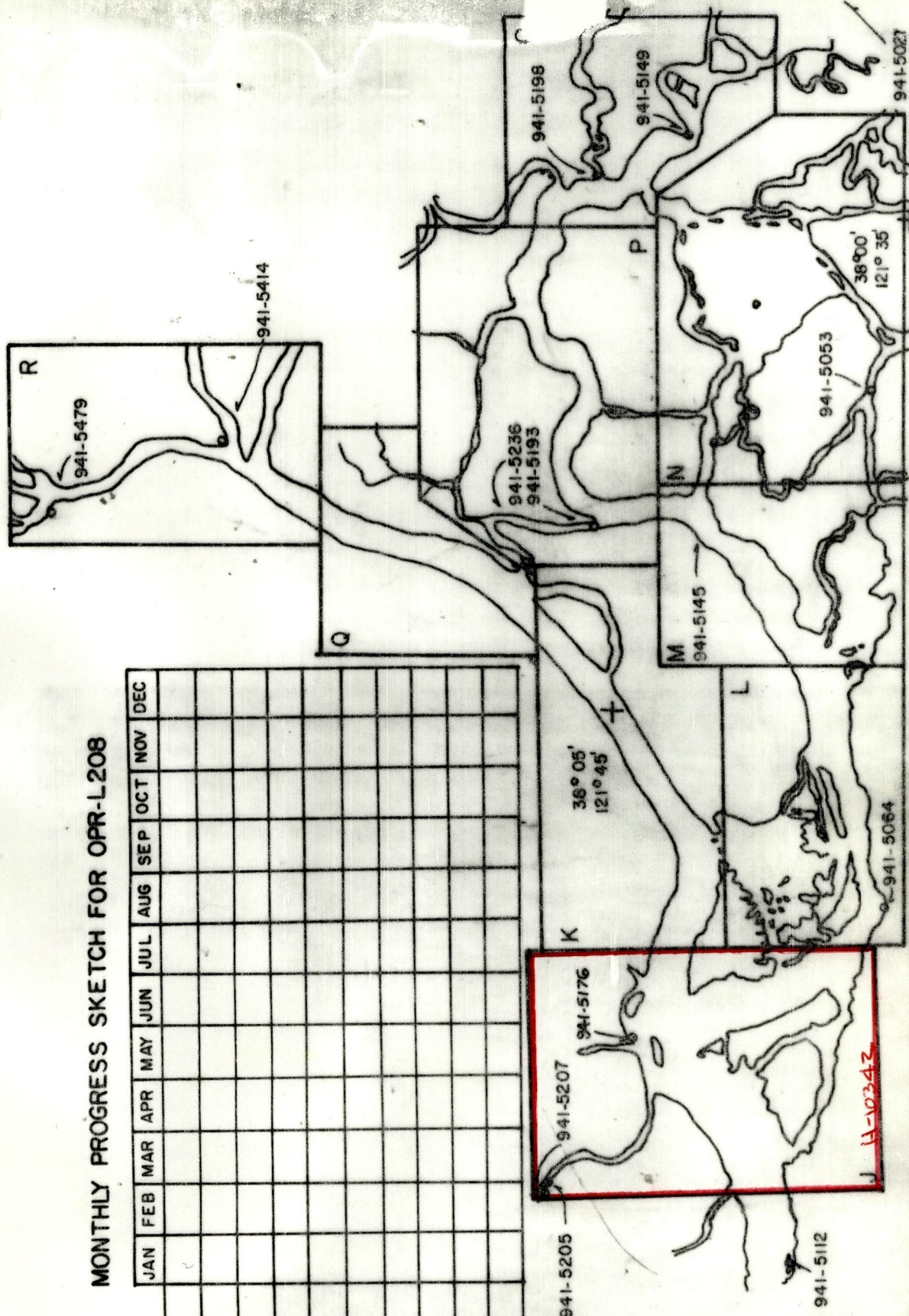
XWW 3/22/93

PACIFIC HYDROGRAPHIC PARTY LT DEWAYNE J. NODINE, NOAA, Chief of Party

OPR-L208
 SACRAMENTO RIVER, CA. SHEETS J, K, L, M, N, O, P, Q, R
 JAN. - 1991

MONTHLY PROGRESS SKETCH FOR OPR-L208

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SQ.N.M. Sdgs.												
L.N.M. Misc Dist												
L.N.M. Dist To & Fr												
L.N.M. Sdg. Line												
Bottom Samples												
Control Stations												
Tide Gages												
Wire Drag S.N.M.												
AWOIS Items												
Shoreline Ver.												



Descriptive Report to Accompany Hydrographic Survey H-10342

PHP-10-1-90

Scale: 1:10,000

1990

PACIFIC HYDROGRAPHIC PARTY (PHP)

Chief of Party: LT DeWayne J. Nodine

A. PROJECT ✓

This basic hydrographic survey was conducted as specified by Project Instructions OPR-L208-PHP, dated June 5, 1990.* The Hydrographic Manual, Fourth Edition, through Change No. 3, the Field Procedures Manual, April 1990 edition, and the Hydrographic Survey Guidelines are also applicable. The survey covers Sheet "J" on the Sheet Layout for the project dated November 24, 1987. The following NOAA nautical charts cover the survey area: Chart 18656, Scale 1:40,000, 48th edition, dated May 27, 1989, Chart 18659, Scale 1:10,000, 10th edition, dated July 7, 1990, and Chart 18652 SC, Scale 1:80,000, 26th edition, dated December 3, 1988. *See EVAL Report, section 7 for additional editions of charts.* * This survey was started according to Project Inst. OPR-L208-PHP, dated MAY 3, 1989.

This survey is one in a series of surveys which will provide contemporary hydrographic data for existing nautical charts and the new 1:12,500-scale charts. - CANCELED per ENABNIT

B. AREA SURVEYED ✓

The survey is located in the extreme eastern area of Suisun Bay, and also extends into the Sacramento and San Joaquin Rivers, respectively. The survey area is bounded by Van Sickle Island to the northwest, Sherman Island to the east, and the mainland to the north and south. The survey limits of this sheet are at longitude 121/53/43W to the west and longitude 121/49/43W to the east. The southern portion of the survey area is a deep, steep walled shipping channel separated from the remainder of the survey area by Brown's Island and Winter Island. The northern portion of this survey is a broad flat shallow area on the immediate northwest sides of Brown Island and Winter Island which drops off into a deep shipping channel. The area to the east of Winter Island (San Joaquin River) is a moderately deep channel which rises up to become broad flat shallow area on the east side. This survey also covers the most southerly portion of Montezuma Slough up to approximately latitude 38/05/55N

Data acquisition was conducted from May 17, 1990 through February 25 1991 (DN 137-90 through DN 056-91), inclusive.

C. SURVEY VESSELS ✓

All data were acquired by the Pacific Hydrographic Party automated survey launches, each equipped with the Personal Computer-Data Acquisition System (PC-DAS). These vessels are Launch 1101 (0651) and Launch 1102 (0652). Both launches were used for all aspects of data collection. No unusual vessel configurations were used during this survey.

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

Data acquisition was accomplished using a Navitronic Comflex-1030NX computer with PC-DAS software, version 3.55.

Data processing was accomplished using a Hewlett-Packard 9000 model 340 Computer with the following software:

PROGRAM	VERSION	DATE
Survey	4.51	07/31/90
Postsur	4.15	"
Convert	2.35	"
Conplot	1.01	03/05/90
Compute	2.02	"
Constat	2.05	07/31/90
Printout	2.23	03/05/90
Abst	3.00	"
Inverse	1.21	07/31/90
Diagnostic	2.15	03/05/90
Filesys	1.69	07/31/90
Backup	1.02	03/05/90
Plotall	1.71	07/31/90
Baseline	1.02	"
Point	1.20	"
Loadnew	1.00	"
Quick	1.02	"
AWOIS List	1.00	"

HDAPS Users' Manual, January 1990 Edition
AML Sound Velocity Profiler: Velocity, version 1.10.

There were no nonstandard automated acquisition or processing methods used.

E. SONAR EQUIPMENT ✓

Side scan sonar operations were not applicable to this survey. *concur*

F. SOUNDING EQUIPMENT ✓

Echosounders

Both sounding vessels were equipped with Raytheon DE-719B (serial number 6241) or DE-719C (serial number 10280) echosounders. The echosounders were operated on the High+Low Digitized Frequency, Paper Speed 3, using Manual Gain and Intensity controls to obtain the best analog trace. Soundings were recorded in feet, and both scales (0-55 ft and 50-150 ft) were used. The echosounders were continually monitored during data acquisition. All the sounding data was scanned to verify digitized depths and all peaks and deeps were inserted. The echosounder initial, cal 0, 100 ft cal, belt tension, and the speed of sound on both vessels were constantly monitored and adjusted during hydrographic data collection. The digitized depth, analog depth and lead line depth were compared and noted at the beginning of every data collection day, with the exception of DN's 228, 229, 232, and 233 of 1990, 016 and 039 of 1991 for vessel 0651; and DN's 141 and 290 of 1990 for vessel 0652. A narrow beam, high frequency transducer was used on both survey vessels.

It should be noted that due to ongoing echo sounder problems, unit 10280 was switched between vessels 0651 and 0652 as needed for collecting sounding data. No discrepancies in data quality were noted, nor should any have been expected. *Concur*

Pneumatic Depth Gage and Lead Lines ✓

Diver-obtained least depths were determined by Pneumatic depth gage, Model IIID Instruments Inc., (S/N 8604205N). The gage was operated in accordance with Hydrographic Survey Guideline No. 55 and was last calibrated on 6/25/86. In addition, field system checks were performed each day the pneumatic gage was used, and can be found with the survey data. Occasionally divers determined least depths with a weighted tape measure or a lead line. The tape measure was plastic and not calibrated. The lead line used is a white and blue Dacron Sta-Set braid which was calibrated on 10-26-89 (see Separate IV.)*

G. CORRECTIONS TO SOUNDINGS ✓

Static Transducer Draft ✓

The static transducer draft values for the hull mounted transducer on Launch 1101 was physically measured in two parts. The first part was done while the launch was out of the water. The distance between the transducer face and the bottom of a black line painted on the hull above the water

* Filed with the hydrographic data.

line was measured on 5/9/89 using a surveying level (Lietz B-1, S/N 214303) and rod. The second part was done on 5/23/89 with the launch in the water with fuel tanks at 1/2 full, HDAPS equipment installed and two crewmen on board. The distance between the bottom of the painted black line and the actual water line was measured with a steel tape.

The actual static transducer depth is the distance obtained in part 1 minus the distance measured in part 2. The actual static draft was measured at 1.51 feet. A copy of the measurements and calculations is enclosed in Separate IV.*

The static transducer draft for the hull mounted transducer on Launch 1102 was performed in much the same way except the distance between the transducer face and the top of a painted blue line on the hull above the water line was measured with a calibrated steel tape on 6/30/89. On the same day, with the boat in the water with fuel tanks at 1/2 full, all survey equipment installed and two crewmen on board, the distance between the top of the painted blue line and the actual water line was measured again with a calibrated steel tape.

The actual static transducer depth is the difference between parts 1 and 2. The actual static draft was measured at 0.91 feet.

Sound Velocity Correctors ✓

Velocity correctors were determined by using an Advanced Microsystems Limited (AML) Velocity of Sound Profiler. The days on which each table applies is listed below. The same profiler (serial no. 03004) was used for all velocity tables. The data for each cast can be found in Separate IV.*

The AML cast data was transferred to an IBM personal computer via a Radio Shack TRS-80 computer. Velocity of sound corrector tables were generated using the NOS program "Velocity" version 1.11.

* Filed with the hydrographic data.

Analysis of Sound Velocity Data

TABLE	DAYS
1	¹³⁷ 141 -145 of 1990
2	149-152
3	155-159
4	17 ⁰ 8 -18 ⁰ 6
5	228-243
6	247-250
7	253-257
8	26 ⁰ 7 -271
9	274-278
10	282-285
11	288-292 ⁷
12	²⁸⁶ 302 -306
13	317-320
14	323-334
15	351-355
16	358-362
17	14-18 of 1991
18	22-25
19	28-32
20	35-39
21	42-46
22	56 only

Note: No hydrographic data was collected during the periods covered by Tables 2, 3, 6, and 12, and are included for convenience.

Settlement and Squat Corrections✓

A digital speed log for Launch 1101 was acquired in April, 1984 to correct for ground effect, which is the change in speed when moving to and from shallow water (see Ground Effect Report, May, 1984). One method, determined to help reduce the need for ground effect correctors, was to operate the launch with constant speed through the water instead of fixed rpm. This decision was cleared through PMC and the speed log was permanently mounted in the hull of Launch 1101. Speed through the water was used during the settlement and squat measurements.

Settlement and squat measurements were observed for Launch 1101 on 5/23/89, in accordance with the applicable standards. The settlement and squat correctors apply to all data acquired with Launch 1101 on this survey. The test was conducted on the south end of First Street in the vicinity of Benicia Pt. near the city wharf and nearby islets off Benicia.

Settlement and squat correctors are entered in the HDAPS "Presurvey" Offset Tables in meters/second and get applied during the "Post "Survey" process. The correctors were determined as a function of speed through water, however HDAPS applies the correctors according to the computed "Speed Made Good", a true speed. The corrector data can be found in Separate IV^{*} Sounding Equipment Calibrations and Corrections.

Settlement and squat measurements for Launch 1102 were observed in the same way and at the same location as for Launch 1101 on 7/10/89, in accordance with the applicable standards. *Concur*

Launch 1102 operates with fixed RPM settings as opposed to constant speed through the water (Knots). RPM settings were used during settlement and squat measurements. The operating RPM settings and settlement and squat correctors were converted to meters/second and entered into the HDAPS "Presurvey" Offset Tables^{*} for Launch 1102. Several test survey lines, with the PC-DAS system on line, were performed at increasing RPM settings to determine "speed made good" in meters per second.

Tide Correctors✓

All data were processed using predicted tides with time and height correctors applied to the primary station at Fort Point, San Francisco, California. These correctors were supplied by the Office of Oceanography and Marine Assessment, Sea and Lake Levels Branch (N/OMA12), Rockville, Maryland. Predicted tides were also used to reduce the heights of detached positions in the sounding volumes to MLLW in order to determine the proper cartographic codes. Information as to how the correctors were applied in various areas can be found in Appendix V^{*}, Field Tide Note.

Approved tides were used to reduce survey data on the smooth sheet, see attached Tide note

Miscellaneous Corrections✓

It should be noted that while performing lead line checks against the echo sounder, attempts were made to compensate for the lead line sinking into the mud by subtracting 0.1 to 0.2 foot from the reading before recording the lead line value.

In some instances the echo sounder did not digitize properly due to sea grass or boat wakes. In these instances, the echogram was noted and the correct depth was entered in the data from the echogram.

** Filed with the hydrographic data.*

H. CONTROL STATIONS ✓

Horizontal control datum for this survey is NAD 27.

For station names and positions, refer to Appendix III, "List of Horizontal Control Stations". *Attached to this report.*

Hydro control stations were verified and/or established by the Pacific Photogrammetric Field Party, N/CG2333. Stations were verified by the following methods: measuring distances to reference marks, by observing horizontal directions and/or distances to other existing stations, and by GPS (Global Positioning System) observations. New stations were established to Third-order, Class I accuracy. All existing stations used were previously located to the same accuracy, or better. Station 625, Suisun Bay Light 33, was not accepted into the NGS database and has been shown on the smooth sheet as an electronic control site symbolized by a double concentric circle. The following fixed aids to navigation were used as horizontal control stations, and are plotted on the final field sheet as aids:

AID	LATITUDE	LONGITUDE
Suisun Bay Lt 33	38/03/40.232	121/52/15.881
Point Beenar Lt <i>Day Beacon</i>	38/01/51	121/50/12
Sac River Deep Water (<i>Sacramento River Deep Water</i>)	50.767	11.529
Ship Channel Lt 6 (<i>Ship Channel Light 6</i>)	38/03/51.447	121/50/02.693
New York Slough Lt 2	38/02/29.290	121/53/04.379

I. HYDROGRAPHIC POSITION CONTROL ✓

Sounding position control, for Range-Range operations, was accomplished with a Navitronic Comflex-1030NX computer with PC-DAS HDAPS software interfaced with a Motorola Mini-Ranger Falcon 484 system using three or more lines of position (LOP's). All detached positions (DP's) were obtained with a minimum of 3 LOP's. When using three or more LOP's, the accuracy requirements stated in Section 3.1.3.1 of the Field Procedures Manual were adhered to. In accordance with section 3.1.3.3 of the Field Procedures Manual, critical systems checks were automatically obtained when operating in the multiple LOP mode while collecting data.

Due to an error caused by an unknown source, settlement and squat correctors were not applied properly during processing at PHP. Since this error was not discovered until the final review stage at PHP, all data collected must have the proper values reapplied as given in the enclosed "Offset Tables" (See Separates III. and IV.)* *Data was run through the Rapply program during office processing.*

* Filled with the hydrographic data.

The electronic positioning equipment used on this survey and the base line correctors (BLC's) applied to Mini-Ranger data collected are contained in Tables 1 through 4*as listed in Separate III. The dates for which each set of correctors applies is contained in each respective table.

Two base-line calibrations cover this survey. Data from each of these calibrations is included in Separate III.* The second BLC (Tables 3 and 4) was performed at the City of Antioch, California, Marina (new location) over a distance of 1469.8 meters. A copy of the distance measurement is enclosed in Separate III.* The vessels and respective Console/RT pairs were located at the marina, (point marked by a nail in the east end of the wooden floating pier, and designated as CAL PT) while the remote units were located to the east at Roger's Point (NOS disk stamped "ROGERS POINT 1990) on the north side of a large abandoned house. A map showing the location is included in Separate III.* This BLC was the first to use the new software (Baseline, version 1.02) prepared by the HDAPS Project Office. The BLC was performed in accordance with the Field Procedures Manual.

This second base line was established using a K&E Ranger V-A EDM (serial number 07B6026). Prior to establishing this new base line, this instrument was calibrated July 18, 1990 at the NGS Silverado Base Line in Napa County, California. That report is on file at PHP.

The first BLC (Tables 1 and 2) was performed in Benicia, California, over a distance of 778.2 meters. A copy of the distance measurement is enclosed in ~~Appendix V~~ ^{Separate III}.* The south end of the base line is monumented by a standard NOS disk stamped "CITY WHARF 1988" and is located near the south end of First Street at Point Benicia. The north end is monumented by a nail and washer near a small city park, and is designated as BENICIA CAL PT 2. A map showing the location is enclosed in Separate III.* All BLC's were apparently performed in accordance with the applicable specifications in use at the time.

This first base line (distance of 778.2 meters) was established using a Kern EDM, model DM 102 (serial number 293684). The last calibration test of the DM 102 was in June 1987 over the NGS Silverado Base Line in Napa County, California. That report is on file at PHP.

It is recommended that base-line correctors be applied according to the above referenced tables with the respective dates given. *Canter*

* Filed with the hydrographic data.

J. SHORELINE See *Final Report*, section 2

The shoreline for H-10342 was taken from shoreline manuscript TP-1251 Scale = 1:10,000 and has been transferred onto the Final Field Sheet.* Shoreline details have all been verified, either by a D.P. or bottom drag^{if not readily visible} (see Sounding Volumes, NOAA Form 77-44), or, if no D.P. was taken the item was verified in the field and a check mark was made next to the item either on the chart or the copy of the T-Sheet.* All verified items have been drawn on the Final Field Sheet.* All depth soundings are in feet and are reduced to MLLW using ^{actual tides} ~~predicted tides~~ generated on HDAPS. ~~** Bottom drag data was not automated but rather used as an investigative tool to sweep the special limits of charted features as defined in the AWOIS file.~~ Cartographic codes for all features on H-10342 within the navigable area are noted on the Final Field Sheet D.P. Overlay and are labeled in red in the Sounding Volumes, Form 77-44. Features with negative (-) signs ^{uncover} ~~are~~ above MLLW and features assigned positive (+) signs are submerged below MLLW.

* Refer to smooth sheet.

K. CROSSLINES ✓

Crossline soundings were acquired on H-10342 to check main scheme sounding lines and comprised 10.3 percent of the total for main scheme per section 1.4.2 of the Hydrographic Manual. Crosslines were run at no less than a 45 degree angle to the main scheme; also as required. All crosslines agree with the main scheme hydrography, including those areas where a different vessel was used for main scheme.

L. JUNCTIONS See *Final Report*, section 5

Survey H-10342 junctions to the west with survey H-10317, scale 1:10,000, dated 1989-1990. Suisun Bay/Honker Bay. All depths agree within 1 foot. See *Final Report*, section 5 for additional junction surveys.

M. COMPARISON WITH PRIOR SURVEYS See *Final Report*, section 6

This survey was compared to prior surveys H-7797 and H-7798, scale 1:10,000, dated May through August 1950. In general, soundings from H-10342 compared quite well. Do not concur, See *Final Report* section 6.

All AWOIS items originating from a prior survey will be discussed here, and all those originating from miscellaneous sources will be discussed in section N, Comparison with the Chart.

AWOIS items were investigated using standard hydrographic procedures, i.e., either visible observation, bottom drag or diver circle search. To aid in locating the items to be investigated, "targets" were converted to plane coordinates with the HDAPS processing system in the office, then entered into the PC-DAS on the launch and steered to using the Navitronics PGU path guidance system.

All AWOIS Positions are in
NAD 27 coordinates

AWOIS 51418

Feature: Visible Wreck
Latitude: 38/01/30.40N
Longitude: 121/49/54.00W
Source: H7797

.29" S
3.84" W

Investigation: A 50 meter radius bottom drag was conducted on DN 296, Vessel 0651, center bouy at Position 8145, lat. 038/01/30.08N and long. 121/49/53.68W. The drag was performed in both directions, and nothing was found. A wreck, subm 4 ft at MLLW was found 30 meters north of charted position. See AWOIS item 51419, below. See Euc Repat, section 7.6.
Recommendation: Delete visible wreck. Chart 4 wk at post# 8142.
lat. 38/01/31.49 N, long. 121/49/54.68W

AWOIS 51419 - Reference Eval Rpt, Section 6.

Feature: Visible Wreck
Latitude: 38/01/32.50N
Longitude: 121/49/54.00W
Source: H7797

Investigation: A 75 meter bottom drag was performed on DN 295, Vessel 0651, center bouy at position 8141, lat. 038/01/32.86 and long. 121/49/53.62. Two submerged wrecks were found. At Position 8142, at lat. 038/01/31.49N and long. 121/49/54.67W. Diver investigation determined the the first wreck consisted of scattered metal remains with a 10 meter N-S and 5 meter E-W orientation and protruded 4 ft off the bottom. The wreck¹ submerges ~~4.4~~ 4.0 feet at MLLW. At position 8144, lat. 038/01/33.27N and long. 121/49/54.48W the second wreck² was found to be 10 meters overall orientated NE-SW and protruding 2 ft off the bottom. This wreck is submerged 10.7 feet at MLLW. On DN 46/91, Vessel 0651 a hydrographic development was conducted on a stray sounding found on a previous main scheme line. This item turned out to be the eastern most of two wrecks³ at the position for AWOIS 51419. This confirms the E-W orientation of the charted position. The high point of the wreck is at lat. 038/02/45.71 and long. 121/52/39.11W and is submerged 4.0 feet at MLLW.

Awois
51418

Awois
51419

Awois
51419

* Pos 8144 is wreckage, and likely associated with pos 9830/3. These two positions likely confirm the extent of wreck shown on Prior Survey H-1198 (1950).
Recommendation: Delete the charted visible wrecks and revise the submerged wrecks to the survey position. Retain the NE - SW orientation of the two wrecks.

Position # 8144 9, wreckage, lat. 38/01/33.27 N, long. 121/49/54.48W.
Position # 9830/3 7WK - lat. 38/01/32.82 N, long. 121/49/53.68W.

** Chart 18656 48th Ed.

*** Chart 18659 10th Ed.

AWOIS 51428

Feature: Submerged Wreck
Latitude: 38/02/23.50 N
Longitude: 121/53/01.40 W
Source: H7798

Investigation: A 25 meter bottom drag was conducted on Dn 36, Vessel 0651, center bouy at position 9637, lat. 038/02/23.55N and long. 121/53/01.32W. A semicircle drag was performed in both directions. Nothing was found.

Recommendation: Delete charted submerged wreck. *Concur*

AWOIS 51429

Feature: Submerged Wreck
Latitude: 38/02/27.30 N
Longitude: 121/53/03.30 W
Source: H7798

Investigation: This area has just undergone construction. This area also includes the positions of AWOIS 51430, 51431 and 51432. This entire area was dredged by Santina and Thompson Dredging Co. according to Mr. Mike Middleton at (415) 827-3200. The area dredged includes the mouth of the new entrance at lat. 038/02/26.60N and long. 121/53/04.16W to the west basin of Pittsburg Marina in a northwesterly direction for 400 feet and from shore out to the main channel of New York Slough which is maintained by the Army Corps of Engineers. During dredging operations some piles and debris were noted as having been removed. AWOIS 51430, 51431 and 51432 are clearly within the boundary of the new marina breakwater wall which has been dredged and is currently being fitted with piles for floating piers. Please see NOAA Nautical Chart 18659, 10th ed. July 7, 1990 for the configuration of the new marina breakwater and retaining walls. Piles and finger piers are still under construction at time of survey.

(Subm Wk. PA)

Recommendation: Delete item from the chart. *Concur*

AWOIS 51430

Feature: Wreck
Latitude: 38/02/28.50 N
Longitude: 121/53/13.00 W
Source: H7797

Investigation: Please see investigation of AWOIS 51429.

Recommendation: Delete item from the chart.

Concur

AWOIS 51438

Feature: Visible Wreck
Latitude: 38/03/16.50 N
Longitude: 121/51/16.3 W
Source: H7797

Investigation: A visual search was conducted at the AWOIS position on DN 143, Vessel 0652 and the wreck was found. Position 101 at lat. 038/03/16.77N and long 121/51/16.43W is the NE corner and position 103 at lat 038/03/16.31N and long 121/51/17.59W is the SW corner of the wreck. ⁴⁰The wreck appears to be a wooden barge which bares ~~-7.2~~ ft at MLLW. ^{mHW} The area between the barge and the shore is foul with debris.

Recommendation: Revise the chart to the survey position. *Concur*
Chart as shown on the smooth sheet.

AWOIS 51470

Feature: Visible Wreck
Latitude: 38/04/16.47 N
Longitude: 121/51/45.53 W
Source: H7797

Investigation: A 75 meter radius bottom drag was conducted on DN 261, Vessel 0651, center bouy at position 7991, lat 038/04/16.54N and long 121/51/45.55W. The drag was performed in both directions and nothing was found.

Recommendation: Delete the charted visible wreck. *Concur*

N. COMPARISON WITH THE CHART *See Final Report, section 7*

This survey was compared to NOAA Nautical Chart 18656, 48th Edition, scale 1:40,000, dated May 27, 1989, NOAA Nautical Chart 18659, 10th Edition, scale 1:10,000, dated July 7, 1990 and NOAA Nautical Chart 18652 SC, 27th edition, scale 1:40,000, dated August 18, 1990.

A danger to navigation letter (see Appendix I, Dangers to Navigation) was sent to the 11th Coast Guard District, Long Beach California, on 26 March 1991, describing three previously uncharted dangers to navigation. They are as follows:

Object Discovered: Submerged Dangerous Obstruction
Latitude: (NAD 27) 38/02/45.49 N (NAD 83) 38/02/45.2 N
Longitude: " 121/52/39.73 W " 121/52/43.5 W
Depth: ~~+8.0~~ 4.0 at MLLW *
Position No: 9872 + 1.4
9860 + 2.0

* This depth of 8.0 ft was repeated by mistake. The hydrographer picked the wrong depth off the bathogram.

Object Discovered: Shoaling Northwest of Chain Island
Latitude: (NAD 27) 38/04/10.0N (NAD 83) 38/04/09.7N
Longitude: " 121/51/33.0W " 121/51/36.8W
Depth: 10.0
Position No: *****

Object Discovered: Shoaling in Channel North of Montezuma Island

West Entrance:

Latitude: (NAD 27) 38/04/28.0N (NAD 83) 38/04/27.7N
Longitude: Shore to Shore (Long. 121° 50' 38" W to Long. 121° 50' 51" W)
Depths: 0 to 3.0 Ft.

East Entrance:

Latitude: (NAD 27) 38/04/19.0N (NAD 83) 38/04/18.7N
Longitude: Shore to Shore (Long. 121° 49' 55" W to Long. 121° 50' 06" W)
Depths: 0 to 3.0 Ft.

Comparison of Soundings

In general, the shoals on the channel edges tend to seasonally shift around, especially in the Suisun Bay approach to the mouths of the Sacramento and San Joaquin Rivers. Shoals occur in the same general areas, but their size and extent vary seasonally.

Survey depths agree with the controlling depths as determined by the latest data published by the U.S. Army Corps of Engineers in all maintained channels. *Concur*

The most significantly different change is to the waterway that goes north around Montezuma Island on the north end of the sheet. It appears that both the east and west ends of this waterway have shoaled in significantly, virtually choking off both ends of Montezuma Island. Please see the AWOIS investigations for AWOIS 51460, 51462 and 51465 for more detail on this item.

To a lesser extent the northern passage around Chain Island just west of Montezuma Island has also changed. The charted shallow areas that extend west of the west tip of Chain Island have deepened by 2.0 to 6.0 ft. around the edges leaving a diminished shoal area and the deeper channel section on the western approach has become narrower in extent. This has left the area northwest of the island very shoal with least depths of 10.0 ft from the shore outward for approximately 100 meters. See page 14 for additional changes that have occurred around Chain Island.

The shoal just west of Pt. San Joaquin at lat. 038/03/30.88N and long. 121/51/36.28W is depicted on the chart as orientated East-West and 620 meters long. The shoal is shown as 3 small separate systems. The shoal is now orientated the same, but is now one system and it has migrated to the Southeast 100 to 200 meters and has grown uniformly in width to 100 meters wide.

See smooth sheet for depiction of shoal areas after application of approved tides. There now exists a smaller detached shoal 400 meters to the S.W. at lat. 038/03/15.17N and long. 121/51/52.92W and is 0.0 ft. at MLLW. This shoal is orientated N-S and is 90 meters long and 50 meters wide.

Extending off the west tip of Chain Island is a charted shoal 250 meters long and 200 meters wide. The western extent of this shoal has shrunk from the western edge to 150 meters long and the width is now only 70 meters at the widest point. The surrounding area, previously charted shoal, now ^{generally} ranges from 2.0 to 10.0 ft.

A new shoal has been noted northwest of Chain Island having a least depth of ~~0.0 feet~~ ^{1.0 feet} at lat. 038/04/10.29N and long. 121/51/29.15W. The extent of this shoal, from the above given position, is as follows: south for approximately 200 meters, west for approximately 100 meters and east to the westerly shores of Chain Island. This could be just the migration of all the sand that existed in the aforementioned shoal.

The depth of the northeast passage around the north side of Chain Island is generally more shallow, from 2.0 to 3.0 ft. at MLLW. However, the navigable portion of the northeast passage in this area reveals channel depths of 14-18 feet.

There is an inner channel that circumferences Winter Island. The chart shows depths only on the north cut and along the east side part way down the island. The north cut shows depths between 2 and 9 feet. Now the depths are 20' to 30' feet at MLLW. The east side shows depths of between 5 and 11 feet. Now, the depths are between 14' and 19' feet and extend along the entire length of the east side and continue around the south side. This inner channel is now open all along the south end of Winter Island. The small islet charted at lat. 038/01/44.41N and long. 121/50/23.29W does not exist. The survey indicates depths of 35' to 36 feet in this area. (See the discussion for AWOIS 51425 concerning this islet.)

^{inner channel} The cut along the west side ^{of Winter Island} has few charted depths, however the survey indicates depths of between 8' and 12' feet along the entire length of the west side of Winter Island. The southeast edge of this inner channel is depicted on the chart as being blocked by a narrow strip of land* at lat. 038/01/45.22N and long. 121/50/22.55W. * This narrow strip of land no longer blocks the inner channel. Depths from this survey range 7 to 15 feet along the inner channel.

Within the sheet limits, the contours now drop off quicker along the south shore of Van Sickie Island. The 12 foot contour is now atop the charted 6 foot contour. The 18 foot contour is now atop the charted 12 foot contour. Revise this section of shoreline to the survey depths. *Concur*

It is recommended that the chart be revised to reflect the survey depths in the areas described above. *Concur*

AWOIS ITEM INVESTIGATIONS

AWOIS 51416

Feature: Obstruction

Latitude: 38/01/29.90^N

Longitude: 121/49/56.80^W

Source: CL279/78

Investigation: A 50 meter radius bottom drag was conducted on DN 296, Vessel 0651, center bouy at Position 8146, lat. 038/01/29.98^N and long 121/49/56.75^W. Metal debris, 4 ft long and 1 ft wide, protruding 3 ft off the bottom was found at the center bouy position. The obstruction ^{is covered} ~~submerges~~ +1.6 ft at MLLW. The other obstruction reported 15 meters to the SE was not found and is considered disproved.

Recommendation: Revise submerged obstruction to the survey position. *Concur*

AWOIS 51417

Feature: Submerged Pile

Latitude: 38/01/30.00^N

Longitude: 121/49/51.70^W

Source: CL279/78

Investigation: A 50 meter radius bottom drag was conducted on DN 296, Vessel 0651, the center bouy at position 8147, lat. 038/01/30.15^N and long. 121/49/51.67^W. The drag was performed in both directions and nothing was found.

Recommendation: Delete submerged pile. *Concur*

AWOIS 51421

Feature: ~~Visible Wreck~~ ^{Submerged Wreck PA}

Latitude: 38/01/27.00^N

Longitude: 121/50/12.00^W

Source: CL713/82 United States Power Squadron (USPS)

Investigation: The target for this AWOIS falls near the high water line deep in the tule grass. The shoreline hydrography confirms this. The wreck was not searched for.

Recommendation: Retain the charted ^{submerged} ~~visible~~ wreck. ^{PA}

Concur
See ERM Report, section 7.c.

AWOIS 51422

Feature: Submerged Obstruction PA
Latitude: 38/01/34.00N
Longitude: 121/50/18.00W
Source: CL1316/84 USPS

Investigation: A 100 meter bottom drag was conducted on DN 298, Vessel 0651, Center bouy at Position 8156, lat. 038/01/33.79N and long. 121/50/18.08W. The drag was performed in both directions and nothing was found.

Recommendation: Delete the charted submerged obstruction. *Concur*

AWOIS 51423

Feature: Sewerline
Latitude: 38/01/36.50N
Longitude: 121/50/35.20W
Source: CL1367/72 USPS

Investigation: After a consultation with Dow Chemical Co. Dock supervisor, Mr. Johnny J. Merrill (415-432-5557) and a site visit, the remains of an outfall from what is now the obsolete ethanol making plant was discovered at the AWOIS position. The remains are a cement 3 ft diameter outfall extending from the bank out only 2 to 3 feet and the rest is broke off. the burned remnants of short support piles is all that extends seaward of the outfall by only another foot. No D.P. was taken of this item. Shoreline hydrography on DN 361, Vessel 0651, revealed that the area of shoreline in question between position 8766 and the first out was very flat, signifying that remains of the outfall beyond what was found extending from the shore was not readily visible on the analog.

Recommendation: Retain the outfall at the charted position. *Concur*
See Encl Report, section 7.a.

AWOIS 51424

Feature: Piles
Latitude: 38/01/43.50 N
Longitude: 121/50/37.00 W
Source: CL948/86 USPS

Investigation: A visible search was conducted at the AWOIS position on DN 157, Vessel 0651. The eastern most of a row of 9 piles was at position 7278, lat. 038/01/44.35^{4.0}N and long. 121/50/37.15^{6.0}W being 15 meters long and baring ~~-8.2~~ at ~~MLLW~~^{MHW}. At Pos 7279 at lat. 038/01/45.43²N and long. 121/50/36.77⁵W the easternmost of a row of 5 piles, 10 meters long were found baring ~~-10.2~~ at ~~MLLW~~^{MHW}. *Piles are not charted on the 10th Ed. of chart 18659.*

Recommendation: ~~Revise these Charted~~^{AT} piles to the survey position^s.

AWOIS 51425

Feature: Piles
Latitude: 38/01/44.00 N
Longitude: 121/50/22.50 W
Source: CL948/86 USPS

Investigation: A visual search was conducted on DN 297, Vessel 0651. The AWOIS position is now in 35 feet of water. The chart shows an islet at the AWOIS position which does not exist; i.e., no evidence of an islet was found during data acquisition. This appears to be a charting error, and the position given in the AWOIS list for the piles, as reported, also appears to be an error. (See the copy of the report filed by the USPS enclosed in Appendix VI,* Supplemental Correspondence.) However, a pile was located 50 meters north of the AWOIS position, on the HWL, at lat. 038/01/45.45²N and long. 121/50/22.78²W (see position 7264, DN 157, Vessel 0651). A building, presently charted, still exists in this vicinity above the HWL which is referred to in the above referenced chart letter and in the AWOIS listing. *Pos # 7264 Pile 11.0 at MHW*

Recommendation: Delete the charted islet and chart a pile at the above described position. *Concur*

* Filed with the hydrographic data.

AWOIS 51426

Feature: Visible Wreck
Latitude: 38/01/56.40 N
Longitude: 121/50/53.60 W
Source: CL279/78

Investigation: A 50 meter radius bottom drag was conducted on DN 298, Vessel 0651, center bouy at position 8162, lat. 038/01/56.57^N and long. 121/50/53.59^W. A semicircle drag was performed in both directions and nothing was found.

Recommendation: Remove the charted visible wreck. *Consent*

AWOIS 51427

Feature: Visible Wreck
Latitude: 38/01/59.60 N
Longitude: 121/52/18.40 W
Source: CL75/83 USPS

Investigation: The target area for this AWOIS resides beneath the hull of the SS Quadra and SS Vancouver, two 400 foot long ships, each having a draft of 16 feet. The fleet owner Samuel E. McIntosh (305-871-2170) stated he had a hydrographic survey run, 800 ft by 150 ft, prior to mooring his ships there. Mr. McIntosh's survey found no evidence of a wreck. He also stated he was moving his ships for dredging in the near future.

Recommendation: Remove the charted visible wreck. *Consent*

AWOIS 51431

Feature: Obstruction Ruins.
Latitude: 38/02/28.80 N
Longitude: 121/53/10.00 W
Source: TPO1251/83-84

Investigation: Please see the investigation of AWOIS 51429 in Section M, Comparison with the prior surveys.

Recommendation: Delete item from the chart. *Consent*

AWOIS 51432

Feature: Obstruction
Latitude: 38/02/29.00N
Longitude: 121/53/14.20W
Source: TPO1251/83-84

Investigation: Please see the investigation of AWOIS 51429 in section M, Comparison with the prior surveys.

Recommendation: Delete item from the chart.

Concur

AWOIS 51434

Feature: Pile
Latitude: 38/02/59.00 N
Longitude: 121/51/25.30 W
Source: CL611/82 USPS

Investigation: A 50 meter radius bottom drag was conducted on DN 177, Vessel 0652, Center bouy at position 144, lat. 038/02/58.95N and long. 121/51/25.51W The drag was performed in both directions and nothing was found.

Recommendation: Delete charted pile from the chart.

Concur

AWOIS 51435

Feature: Pile
Latitude: 38/03/01.50 N
Longitude: 121/51/25.30 W
Source: CL611/82 USPS

Investigation: A 50 meter radius bottom drag was conducted on DN 177, Vessel 0652, center bouy at position 141, lat 038/03/01.56N and long 121/51/25.41W The drag was performed in both directions and nothing was found.

Recommendation: Delete the charted pile from the chart.

Concur

AWOIS 51436

Feature: Row of Piles
Latitude: 38/03/02.00 ^N
Longitude: 121/51/17.00 ^W
Source: CL611/82 USPS

Investigation: A visual search was conducted on DN 143, Vessel 0652 and the item in question was found. The item is a 250 meters long by 5 meters wide row of piles which parallel the west shoreline of Winter Island. The piles are 1 ft in diameter and are no more than 4 meters off the HWL. The south end of the row is position 89 at lat. 038/03/16.32 ^N and long. 121/51/18.92 ^W and runs through position 100 at the north end at lat. 038/03/03.77 ^N and long. 121/51/20.72 ^W.
Position 89-92 ^{uncover} bare -4.5' ^{4.0}, position 92-94 ^{uncover} cover +1.1' ^{4.0},
position 94-96 ^{uncover} bare -4.5' ^{4.0}, position 96-97 ^{uncover} cover +1.0' and
position 97-100 ^{uncover} bare -3.5' ^{4.0} at MLLW.

Recommendation: Revise the chart to the survey position. ^{cancel}
and chart row of piles as uncovering 4ft at MLLW.

AWOIS 51437

Feature: Visible Wreck
Latitude: 38/03/08.14 N
Longitude: 121/51/26.34 W
Source: CL811/82 USPS

Investigation: A visual search was conducted on DN 143, Vessel 0652 and the position of the AWOIS lead to a wrecked wooden dredge which is now 10 meters above the HWL and no longer a hazard.

Recommendation: Delete the charted visible wreck because it is no longer considered a navigational hazard due to its present location. *Concur*

AWOIS 51439

Feature: Obstruction
Latitude: 38/03/22.10 N
Longitude: 121/51/17.80 W
Source: CL611/82 USPS
279/78

Investigation: A 25 meter radius bottom drag was conducted on DN 177, Vessel 0652, center bouy at position 140 at lat. 038/03/22.05 N and long 121/51/17.84 W. The drag was performed in both directions and nothing was found.

Recommendation: Delete charted obstruction from the chart. *Concur*

AWOIS 51440

Feature: Obstruction
Latitude: 38/03/22.30 N
Longitude: 121/51/13.40 W
Source: CL279/78 USPS

Investigation: A 25 meter radius bottom drag was conducted on DN 177, Vessel 0652, center bouy at position 138 at lat. 038/03/22.18 N and long 121/51/13.42 W. An obstruction was found at position 139 at lat. 038/03/22.27 N and long. 121/51/13.73 W. The obstruction is orientated 7 meters E-W, 1 meter N-S and is 1 ft in diameter rising 2.5 ft off the bottom. The item ~~submerges~~ ^{covers} +0.9 at MLLW. _{1.0}

Recommendation: Revise the charted obstruction to the survey position. *chart snag as shown on the smooth sheet.* *Concur*

AWOIS 51441

Feature: Snag
Latitude: 38/03/29.40 N
Longitude: 121/51/16.50 W
Source: CL279/78 USPS

Investigation: A 25 meter radius bottom drag was conducted on DN 176, Vessel 0652, center bouy at position 136 at lat. 038/03/29.33 N and long. 121/51/16.36 W. The drag was performed in both directions and nothing was found.

Recommendation: Delete the charted snag from chart. *Concur*
A Snag was found 30 meters S.E. of charted position. Chart snag at lat. 38/03/28.24 N, long. 121/51/15.64 W.
AWOIS 51442

Feature: Obstruction
Latitude: 38/03/53.10 N
Longitude: 121/51/01.20 W
Source: Local Notice to Mariners (LNM) 20/86

Investigation: The area of the AWOIS in question was covered by conducting three 125 meter radius bottom drags on DN 297, Vessel 0651. The first and easternmost drag is position 8151 at lat. 038/03/54.06 N and long. 121/50/54.88 W. The westernmost at position 8152 is at lat. 038/03/51.99 N and long. 121/51/07.23 W. The middle drag which overlaps the other two is at position 8150 at lat. 038/03/53.10 N and long. 121/51/01.17 W. All drags were performed in both directions and nothing was found. Note: Sacramento River Deep Water Ship Channel Light "1" appears to be in the search radius of the drag at position 8152, when indeed NOAA Nautical Chart 18659, 9th edition, Sept. 13, 1986 does not represent the light's most current position. Also on the aforementioned chart is a green bouy "QG" which is no longer there. In fact Lt. "1" is almost at the position of the green bouy. The new position for Sacramento Deep Water Ship Channel Light "1" is lat. 038/03/54.34 N and long. 121/51/00.88 W. ** Please see detailed USCG history enclosed* with this day concerning the obstruction and the light.

** NAD 87

Recommendation: Delete the charted obstruction from the *Concur* chart.

* Filed with hydrographic data.

AWOIS 51443

Feature: Visible Wreck
Latitude: 38/03/31.60 N
Longitude: 121/52/32.50 W
Source: TP01058/79

Investigation: A visual search was conducted on DN 138, Vessel 0652 and the wrecked barges were found. The barges are together and are a total of ~~165 meters~~ long and 10 meters wide. The south most seaward corner of the barges are at position 10 at lat. ^{uncovered} 038/03/31.38^{4.D} and long. 121/52/33.14^W and ~~barges~~ ^{uncovered} -3.5 ft at MLLW. The north most seaward corner of the barges are at position 9 at lat. 038/03/32.11^N and long. 121/52/30.72^W and ~~barges~~ ^{uncovered} -0.5 ft at MLLW. The barges lie right up against the HWL. The D.P.'s represent the seawardmost edges.

Recommendation: Revise wreck to wrecks and chart them at the survey position. *Concur*

AWOIS 51444

Feature: Visible Wreck
Latitude: 38/03/42.20 N
Longitude: 121/52/12.50 W
Source: TP01251/83-84

Investigation: A visual search was conducted on DN 141, Vessel 0651 and the visible wreck was found. The wreck is 50 meters long and 10 meters wide. The southern most seaward corner is at position 28 at lat. 038/03/41.79^N and long. 121/52/12.69^W and ~~barges~~ ^{uncovered} -4.1 at MLLW. The northern most seaward corner is at position 29 at lat. 038/03/42.31^N and long. 121/52/11.54^W.

Recommendation: Revise the charted ^{Subm.} wreck to the survey position. *Change symbol to visible wreck, Concur*

AWOIS 51445

Feature: Visible Wreck
Latitude: 38/03/43.40 N
Longitude: 121/52/09.60 W
Source: TP01251/83-84

Investigation: A visual search was conducted on DN 141, Vessel 0652 and the visible wreck was found. The wreck is 35 meters long and 10 meters wide and lies at the HWL. The southern most seaward corner is at position 30 at lat. 038/03/42.86^N and long. 121/52/09.96^W and bares -4.2 at MLLW. The northern most seaward corner is at position 31 at lat. 038/03/43.56^N and long. 121/52/08.96^W.

Recommendation: Revise the charted ^{Subm.} wreck to the survey position. *Concur. change symbol to visible wreck.*

AWOIS 51446

Feature: Visible Wreck
Latitude: 38/03/44.50 N
Longitude: 121/52/08.00 W
Source: TP01251/83-84

Investigation: A visual search was conducted on DN 141, Vessel 0652 and the wreck was found. The wreck is 40 meters long and 10 meters wide and lies against the HWL. The southern most seaward corner is at position 32 at lat. 038/03/44.32^N and long. 121/52/07.97^W and bares -5.3 ft at MLLW. The northern most seaward corner is at position 33 at lat. 038/03/44.91^N and long. 121/52/07.05^W and bares -4.2 ft at MLLW.

Recommendation: Revise the charted ^{Subm.} visible wreck to the survey position. *Concur. Change symbol to visible wreck.*

AWOIS 51447

Feature: Submerged Wreck
Latitude: 38/03/46.60 N
Longitude: 121/52/02.40 W
Source: CL279/78

Investigation: A 25 meter radius bottom drag was conducted on DN 186, Vessel 0651, center bouy at position 7411 at lat. 038/03/46.74^N and long. 121/52/02.28^W. The wreck was found at position 7412 at lat. 038/03/47.51^N and long. 121/52/01.54^W and submerges + 12.7 ft at MLLW. The wreck was engulfed in fishing line and debris which made it impossible for divers to determine any dimensions.

Recommendation: Revise the charted submerged wreck to the survey position ~~and~~ with a least depth of 11 ft at MLLW.

AWOIS 51448

Feature: Obstruction
Latitude: 38/03/52.80N
Longitude: 121/51/57.60W
Source: unknown TP-01251/83-84

Investigation: A 25 meter radius bottom drag was conducted on DN 262, Vessel 0651, center bouy at position 7992 at lat. 038/03/52.77N and long. 121/51/57.52.W The drag was performed in both directions and nothing was found.

Recommendation: Delete the charted obstruction. *obstr. is not charted*
on chart 18659, 10th Ed. 9/7/90.

AWOIS 51449

Feature: Pier
Latitude: 38/03/14.70N
Longitude: 121/50/57.20W
Source: unknown

Investigation: A 25 meter radius bottom drag was conducted on DN 233, Vessel 0651, center bouy at position 7760 at lat. 038/03/14.62N and long. 121/50/57.09.W The drag was performed in both directions and only one insignificant hang was found.

Recommendation: Delete the charted pier. *Concur*

AWOIS 51450

Feature: Stump
Latitude: 38/03/08.19N
Longitude: 121/50/16.07W
Source: CL279/78

Investigation: A 25 meter radius bottom drag was conducted on DN 260, Vessel 0651, center bouy at position 7987 at lat. 038/03/08.22N and long. 121/50/15.93.W The ~~submerged~~ stump was found and is at position 7989 at lat. 038/03/08.14N and long. 121/50/15.48W. The stump was determined by divers to be 5 meters long orientated N-S and 1 ft in diameter. The D.P. is on the North end of the stump. *Stump covers 2 ft at max.*

Recommendation: Revise the stump to the survey position. *Concur.*

AWOIS 51457

Feature: Snag
Latitude: 38/04/20.00N
Longitude: 121/50/15.10W
Source: CL279/78

Investigation: A visual search was conducted on DN 235, Vessel 0651 and the snag was found. The ^{snag} ~~snag~~ is at position 7867⁸ at lat. 038/04/21.27^N and long 121/50/20.35^W and ^{uncovered} ~~bare~~ - 1.9^{ft} at MLLW. Please see the investigation of AWOIS 51468 concerning foul limits. A pile was found at pos. # 7869, lat. 38/04/20.01N, long 121/50/15.64W. This pile was shown on the smooth sheet instead of the snag at pos 7868. a pile at
Recommendation: Revise the charted item to the survey position. Delete charted snag.

AWOIS 51458

Feature: Snag
Latitude: 38/04/21.20N
Longitude: 121/50/20.80W
Source: CL279/78

Investigation: A visual search was conducted on DN 235, Vessel 0651 and the snag was found. The snag is a stump (see photo)* 7 meters below the HWL at position 7867, lat 038/04/21.27^N and long. 121/50/20.35^W and ^{uncovered} ~~bare~~ - 1.9^{ft} at MLLW. Please see the investigation of AWOIS 51468 concerning foul limits.

* Filed with the hydrographic data.

Recommendation: Delete charted snag. Revise to stump at the survey position.

Concur

AWOIS 51459

Feature: Snag
Latitude: 38/04/21.90N
Longitude: 121/50/24.20W
Source: CL279/78

Investigation: A 25 meter radius bottom drag was conducted on DN 262, Vessel 0651, center bouy at position 7994 at lat. 038/04/21.98^N and long. 121/50/24.31^W. The drag was performed in both directions and nothing was found. Please see the investigation of AWOIS 51468 about foul limits.

Recommendation: Delete the charted snag. Concur

Chart area as shown on the smooth sheet.

AWOIS 51460

Feature: Shoal
Latitude: 38/04/27.00 N
Longitude: 121/50/42.00 W
Source: CL611/82 USPS

Investigation: The entire North side of Montezuma Island was developed hydrographically from shore to shore at 25 meter line spacing to determine the extent of extreme shoaling at the West and East ends of the waterway that runs around the north end of the island. The area surveyed included all of AWOIS 51460, 51462 and 51465. The shoalest depth was + 1.0 ft at MLLW. This shoal goes from the East shore of the mainland at lat. 038/04/29.69 N and long. 121/50/48.57 W and goes east across to the west tip of Montezuma Island at lat. 038/04/28.38 N and long. 121/50/35.04 W, choking off the passage to the north side of Montezuma Island. Due to the extreme shoaling virtually choking off both ends of the north side of this island, there has been a Dangers to Navigation sent in on this item on March. 26, 1991.

Recommendation: Revise the charted shoal, reflecting the current extent of the shoal area using the soundings from this survey.

Concur

AWOIS 51461

Feature: Debris Aground
Latitude: 38/04/18.00 N
Longitude: 121/49/57.00 W
Source: CL611/82 USPS

Investigation: A 100 meter radius bottom drag was conducted on DN 299, Vessel 0652, center bouy at position 577 at lat. 038/04/18.01 N and long. 121/49/57.10 W. The drag was performed in both directions and nothing was found.

charted subm WK, PA,

Recommendation: Delete ~~the item~~ from the chart.

Concur.

AWOIS 51462

Feature: Shoaling
Latitude: 38/04/22.00 ^N
Longitude: 121/50/04.00 ^W
Source: CL1136/81 USPS

Investigation: Please see the investigation of AWOIS 51460. The shoalest depth for AWOIS 51462 was + 1.0 at MLLW. This shoal goes from the east side of Montezuma Island at lat. 038/04/21.53^N and long. 121/50/06.74^W and goes east across to the mainland at lat. 038/04/22.66^N and long. 121/50/01.41^W and virtually chokes off the passage to the north side of Montezuma Island from the eastern approach.

Recommendation: Revise the charted shoal, reflecting the current extent of the shoal area using the soundings from this survey. *Concur*

AWOIS 51463

Feature: ^{Submerged} ~~Visible~~ Wreck (Revision consistent w/ charted depiction)
Latitude: 38/04/22.69 ^N
Longitude: 121/50/01.28 ^W
Source: CL279/78

Investigation: A visual search was conducted on DN 299/90, Vessel 0652 and a wreck was found at position 578 at lat. 038/04/22.22^N and long. 121/49/58.42^W. The wreck ^{uncovered} ~~bare~~ - 4.1 at MLLW and was mistakenly identified as AWOIS 51463, but field office verification determined that the target for this AWOIS was to the NW 85 meters. On DN 36/91 the area was again visually searched and a disapproval D.P. was taken at position 9639 at lat. 038/04/22.74^N and long. 121/50/01.23^W, nothing was found. No drag was conducted due to the shallow depths present in this area.

Recommendation: Delete the ^{subm} ~~visible~~ wreck from the chart and chart the ^{visible} wreck found at position 578 described above. *Concur*

AWOIS 51464

Feature: Chippewa (Metal Ferry; Burned)
Latitude: 38/04/28.95 ^N
Longitude: 121/50/10.93 ^W
Source: CL279/78

Investigation: A 25 meter radius bottom drag was conducted on DN 235, Vessel 0651, center bouy at position 7870 at lat. 038/04/28.93^N and long. 121/50/10.96^W. The drag was performed in both directions and nothing was found.

Recommendation: Delete the wreck from the chart. *Concur*

AWOIS 51465

Feature: Shoaling
Latitude: 38/04/29.00^N
Longitude: 121/50/14.00^W
Source: CL1136/81 USPS

Investigation: Please see the investigation of AWOIS 51460.
The shoalest depth for AWOIS 51465 was ~~0.0~~^{1.0} at lat.
038/04/29.97^N and long. 121/50/14.31^W

Recommendation: Revise the charted shoal, reflecting the
current extent of the shoal area using the soundings from *Concur*
this survey. *Delete charted note, "shoaling rep 1981".*

AWOIS 51466

Feature: Visible Wreck
Latitude: 38/04/34.22^N
Longitude: 121/50/15.86^W
Source: CL279/78

Investigation: According to a conversation on DN 299 with
Dale Lockett, the land owner of the area of concern in
Collinsville; Mr. Lockett (707) 374-2972 stated that the
wooden landing craft in question was removed 7-9 years ago.

Recommendation: Remove the item from the chart. *Concur*

AWOIS 51467

Feature: Snag
Latitude: 38/04/28.00^N
Longitude: 121/50/45.00^W
Source: CL611/82

Investigation: A 100 meter radius bottom drag was conducted
on DN 260, Vessel 0651, center bouy at position DSN 11(7990)
at lat. 038/04/27.95^N and long. 121/50/44.95^W. The drag was
performed in both directions and nothing was found.

Recommendation: Remove the charted snag. *Concur*

AWOIS 51468

Feature: Submerged Piles
Latitude: 38/04/24.00 N
Longitude: 121/50/30.00 W
Source: CL279/78

Investigation: AWOIS 51468, 51457, 51458 and 51459 all fall within a newly delineated "foul limit" determined on DN 302, Vessel 0651. The "foul limit" is to encompass the entire south side of Montezuma Island from the SW tip at lat. 038/04/29.67^N and long. 121/50/29.70^W, out to the 6 ft depth contour and then east to the SE tip at lat. 038/04/19.55^N and long. 121/49/40.08^W following the contour.
_{50 39.0}

Recommendation: Revise the chart to show the new "foul limits" as shown on the smooth sheet. Return charted subm piles.

Coment

~~See Eval Rep 7-8~~

AWOIS 51469

Feature: Finger Piers
Latitude: 38/04/36.00 W
Longitude: 121/50/14.50 W
Source: Unknown

Investigation: A visual investigation was conducted on DN 299, Vessel 0652 and only a row of piles was found. The southern end of the row is at position 586 at lat. 038/04.34.57^W and long. 121/50/14.67^W and the northern end of the ruins is inaccessible due to the shoaling in of the inlet.

Recommendation: Delete pier fingers. Revise the chart to show a North to South row of piles, which bare, along the off shore extent. Also show the shoaling of the inlet from the most southern positioned pile all the way to the north end of the inlet.

Coment

AWOIS 51471

Feature: Pier
Latitude: 38/04/32.00 N
Longitude: 121/51/07.60 W
Source: Unknown

Investigation: A visual search was conducted on DN 232/90 and DN 30/91, Vessel 0651. The AWOIS target plots on the HWL of TP 1251/1984 and nothing was found below the HWL.

Recommendation: Delete pier from the chart.

Coment

AWOIS 51472

Feature: Pier
Latitude: 38/04/33.80 N
Longitude: 121/51/07.10 W
Source: Unknown

Investigation: A visual search at low water was conducted on DN 232, Vessel 0651 and only a singular pile was observed at a zero tide. The pile is at position 7730 at lat. 038/04/33.65 N and long. 121/51/06.96 W. The pile ^{uncovered} ~~bare~~ - ^{3.0} ~~2.8~~ ft at MLLW. No drag was conducted.

Recommendation: Delete the charted pier. Revise to a pile at the survey position. *Concur*

AWOIS 51473

Feature: Submerged Pile
Latitude: 38/04/17.70 N
Longitude: 121/52/07.50 W
Source: CL/279/78

Investigation: A 25 meter radius bottom drag was conducted on DN 302, Vessel 0651, center buoy at position 8198 at lat. 038/04/17.65 N and long. 121/52/07.42 W. An 18" diameter pile was found at position 8199 at lat. 038/04/17.82 N and long. 121/52/06.99 W and the pile ^{is} submerged + ^{7.0} ~~6.7~~ ft at MLLW as determined by divers.

Recommendation: ^{Delete} ~~Revise~~ the ^{charted} ~~submerged piles to the survey~~ position. *Chart submerged pile at the survey position.*

AWOIS 51474

Feature: Piles
Latitude: 38/04/18.10 N
Longitude: 121/52/08.10 W
Source: CL279/78

Investigation: A visual search was conducted on DN 302, Vessel 0651 at the AWOIS position and 6 of the 9 piles were found. The piles are at position 8200 at lat. 038/04/18.36 N and long. 121/52/08.02 W and the piles ^{uncovered} ~~bare~~ - ^{4.0 to 6.0} ~~3.7~~ ft at MLLW.

Recommendation: Retain the item at the charted position. *Do not concur*
Remove charted subm pile, chart ^{visible} piles at the above position.

AWOIS 51663

Feature: Row of Piles
Latitude: 38/01/33.00 N
Longitude: 121/50/05.50 W
Source: Unknown

Investigation: A 50 meter radius bottom drag was conducted on DN 296, Vessel 0651, center bouy at position 8149 at lat. 038/01/33.16 N and long. 121/50/05.13 W. A 18 inch diameter pile rising 1 ft off the bottom was found 25 meters to the SW of the bouy position, but no position on the pile was taken. The pile ~~bare~~^{is awash} 2.8 ft at MLLW.

Recommendation: ^{Delete} ~~Retain the charted row of piles.~~ Chart a pile (o) at latitude 38/01/32.5 N, longitude 121/50/06 W.

AWOIS 51664

Feature: Pile
Latitude: 38/01/50.70 N
Longitude: 121/51/46.20 W
Source: Unknown

Investigation: It was determined after a phone conversation with Mr. Whiley M. Gibbs of USS POSCO, the Project Manager of USS POSCO Pier reconstruction conducted in April of 1989, that the present pier configuration on the chart needs modification. According to Mr. Gibbs (415-439-6444) the piles in question on the west side of the pier (which are Dols) were removed by Mansen Construction company of Oakland, Ca. so the western edge of the pier could be extended 28 meters to the west. This is reflected by position 385, DN 291, Vessel 0652 showing the west extension at lat. 038/01/50.23 N and long. 121/51/46.12 W. The Dols on the eastern edge of the pier were also removed at that time, when the east side of the pier was extended along the railroad tressel 60 meters to the east. The NAD 83 chart 18659, 10th Ed., already reflects the eastern extension of the pier correctly, except for deleting the Dols on the east side of the pier.

Recommendation: Delete the dols on the east and west sides of the pier and show the western extension of the ^{chart} pier at the survey position. (on map)

Feature: Dolphin
Latitude: 38/02/01.90 N
Longitude: 121/52/28.20 W
Source: Unknown

Investigation: A visual search was conducted on DN 291, Vessel 0652 and the dolphin in question was found. The dolphin is at position 375, lat. 038/02/02.18^N and long. 121/52/28.53^W and bares - 11.3 ft at MLLW.

Recommendation: Revise the chart^{do} to the survey position.

Feature: Ruins
Latitude: 38/01/32.30^N
Longitude: 121/50/21.30^W
Source: Unknown

Investigation: A visual search was conducted on DN 144, Vessel 0652 at the AWOIS position and numerous piles and piers were found. The closest item to the AWOIS position is 9 meters away at position 128, pile, lat. 038/01/32.25^N and long. 121/50/20.93^W and is submerged + 0.9 ft at MLLW. Position 126 plots 25 meters SE of Pos #128 and defines pier runs extending perpendicular from the shoreline and uncovering 3 feet at MLLW.

Recommendation: Delete the charted ruins. ~~Revise submerged obstruction to the survey position.~~ Chart a pile, 2 wash, and pier run 25 found by this survey.

AWOIS 51789

Feature: Sunken Barge
Latitude: 38/01/51.11^N (NAD 83) 38/01/51.396^N (NAD 27)
Longitude: 121/50/15.35^W (NAD 83) 121/50/11.505^W (NAD 27)
Source: CL75/90 United States Coast Guard Auxiliary
(USCGAUX)

Investigation: A visual search was conducted on DN 156, Vessel 0651 and the barge was found. The NE corner of the wreck is at position 7260 at lat. 038/01/54.05^N and long. 121/50/12.63^W and bares - ~~8.9~~^{6.6} ft at ~~MLLW~~^{in 4W}. The SE and most seaward corner is at position 7259 at lat. 038/01/53.35^N and long. 121/50/11.47^W and also bares - ~~8.9~~^{6.6} ft at ~~MLLW~~^{in 4W}.

Recommendation: ^(PA) Revise the charted wreck to the survey position as a visible wreck at scale. *Concur*

Comparison of Non-Sounding Features

The following investigations were conducted on charted (non-AWOIS) and uncharted items:

Feature: Submerged Pile.

Latitude: 038/01/32.83^N

Longitude: 121/49/43.75^W

Investigation: On DN 42, Vessel 0651, a 25 meter radius bottom drag was conducted, center bouy at position 9724, lat. 038/01/32.91^N and long. 121/49/43.82^W. The drag was performed in both directions and there were no hangs on the pile.

Recommendation: Delete the submerged pile from the chart. *COMNAV*

Feature: Submerged Dolphin

Latitude: 038/02/56.62^N

Longitude: 121/53/07.48^W

Investigation: On DN 44, Vessel 0651, a 50 meter radius bottom drag was conducted, center bouy at position 9793, lat. 038/02/56.62^N and long. 121/53/07.48^W. The drag was performed in both directions and nothing was found.

Recommendation: Delete the submerged pile from the chart. *COMNAV*

Feature: Submerged Pile.

Latitude: 038/04/28.02^N

Longitude: 121/50/11.86^W
16.70

Investigation: On DN 44, Vessel 0651, a 25 meter radius bottom drag was conducted, center bouy at position 9794, lat. 038/04/28.39^N and long. 121/50/12.17^W. The drag was performed in both directions and nothing was found.

Recommendation: Delete the submerged pile from the chart. *COMNAV*

Feature: Submerged Pile.

Latitude: 038/03/49.41^N

Longitude: 121/49/59.84^W

Investigation: On DN 44, Vessel 0651, a 50 meter radius bottom drag was conducted, center bouy at position 9769, at lat. 038/03/49.48^N and long. 121/50/00.18^W. The drag was performed in both directions and nothing was found.

Recommendation: Delete the submerged pile from the chart. *COMNAV*

B
Feature: Submerged Pile.
Latitude: 038/01/58.57^N
Longitude: 121/51/06.07^W

Investigation: On DN 234, Vessel 0651, a 25 meter radius bottom drag was conducted, center bouy at position 7781, at lat. 038/01/58.79^N and long. 121/51/06.21^W. A submerged pile was found at position 7783 at lat. 038/01/59.29^N and long. 121/51/06.56^W. The pile is submerged + 1.7 feet at MLLW. ^{covered 1.0}

Recommendation: Revise the submerged pile to the survey position. *Concur*

Feature: Submerged Pier Ruins.
Latitude: 038/01/47.89^N
Longitude: 121/51/27.45^W

Investigation: On DN 42, Vessel 0651, a small sounding development was conducted to detect signs of the old pier. Evidence was found at position 9718 at lat. 038/01/47.83^N and long. 121/51/27.24^W. Please see analog trace at position 9718. No least depth*. This item originates from the prior survey and was brought around as subm ruins. *The present survey with the exception of pos 9718, did not investigate the extent of the ^{Charted Pier Ruins. See Eval Rpt, Section 6.}

Recommendation: Retain the charted symbol at the charted position. *Do not concur*
Return at charted position as submerged ruins.

Feature: Dolphin
Latitude: 038/01/47.56^N
Longitude: 121/51/22.74^W

Investigation: On DN 42, Vessel 0651, a 25 meter radius bottom drag was conducted, center bouy at position 9720, lat. 038/01/47.57^N and long. 121/51/27.24^W. The drag was performed in both directions and nothing was found.

Recommendation: Delete the Dolphin from the chart. *Concur*

Feature: Submerged Piles.
Latitude: 038/04/33.39^N
Longitude: 121/50/23.54^W

Investigation: On DN 299, Vessel 0652, a 50 meter radius bottom drag was conducted, center bouy at position 587, lat. 038/04/33.20^N and long. 121/50/23.82^W. The drag was performed in both directions and nothing was found.

Recommendations: Delete the submerged piles from the chart. *Concur*

Feature: Submerged Ruins.
Latitude: 038/04/31.80 ^N
Longitude: 121/50/46.11 ^W

Investigation: On DN 43, Vessel 0651, a 50 meter radius bottom drag was conducted, center bouy at position 9740, lat. 038/04/31.20^N and long. 121/50/46.32^W. The drag was performed in both directions and nothing was found.

Recommendations: Delete the charted submerged ruins. *comand*

Feature: Submerged Dolphins
Latitude: 038/04/25.18 ^N
Longitude: 121/51/13.40 ^W

Investigation: On DN 233, Vessel 0651, a 25 meter radius bottom drag was conducted, center bouy at position 7758, lat. 038/04/25.35^N and long. 121/51/13.41^W. The drag was performed in both directions and nothing was found.

Recommendations: Delete the charted submerged dolphins. *comand*

Feature: Submerged Obstruction. (UNCHARTED)
Latitude: 038/02/45.4 ^N
Longitude: 121/52/39.7 ^W

Investigation: A hydrographic development was conducted on a spike found on a previous main scheme line and the spike was again confirmed on DN 46, Vessel 0651, on RL 1435, between positions 9872⁹⁸ and 9873⁹³. This submerged obstruction was positioned at the lat. and long. above and was not investigated by divers. The obstruction is submerged + 8.0^{4.0} feet at MLLW. (This item was reported as a danger to navigation.)

Recommendation: Chart the submerged obstruction at the survey position. *comand*

Feature: Dashed Contour Line.
Latitude: 038/02/21.13
Longitude: 121/52/46.82

Investigation: On the west side of Browns Island, just 10 meters off and paralleling the shoreline at Pt. Emmet, is a dashed line. The dashed line is 127 meters long. This type of dashed line typically represents a row of piles or similar item. When a visual search and a hydrographic search of this item turned up nothing, a call was made to the Operations Section of the Hydrographic Surveys Branch, Rockville, Md. Their personnel looked into the matter and it was discovered that a cartographic error had been made where the three depth contour lines came together causing the thickened dashed line on the chart.

Recommendation: Remove the thick dashed line from the chart and correct the depth contour line at the charted position *CONCUR*
this survey

Feature: Ruins. (Two Rows)
Latitude: 038/02/17.93
Longitude: 121/52/58.84

Investigation: There are two separate rows of ruins charted at the above position. These ruins run across the entrance of the newly refurbished Pittsburg Municipal small boat launch ramps and down to the outer edge of the west breaker wall of the Pittsburg Municipal Marina, East basin. Hydrographic survey lines were run on DN 43, Vessel 0651, from the main channel of New York Slough directly into the launch ramp area crossing directly over the charted ruins. The analog trace revealed a flat, recently dredged bottom, showing no signs of ruins or debris at the charted position. No drags were conducted.

Recommendations: Delete the 2 rows of ruins from the chart. *CONCUR*

Feature: Ruins and Piles
Latitude: 038/02/08.74 N
Longitude: 121/52/46.76 W

Investigation: From the outermost eastern corner of the breakers wall of the Pittsburg Municipal Marina, at lat. 038/02/10.36 N and long. 121/52/49.02 W going southeast paralleling the 18 ft. contour to the west outermost corner of a ship pier at lat. 038/02/06.63 N and long. 121/52/42.05 W, there are numerous charted pier ruins extending out from the shore and a variably spaced row of 9 piles at the 18 ft. contour. Visual investigation of this area on DN 56, Vessel 0651, revealed no piles in this area and new rock rip-rap was noted along the shoreline. (No drags were conducted.) Conversations with the City Engineers Office, City of Pittsburg, indicate that this area was filled in several years ago when a housing development was being constructed south of the HWL. Shoreline hydrography found a flat bottom with no indication of ruins and debris. This area is now very shoal except for a narrow channel leading up to two small piers at position 373, DN 291, Vessel 0652, at lat. 038/02/06.85 N and long. 121/52/44.69 W.

Recommendations: 1.) Delete all ruins and all 9 piles that fall within the aforementioned limits. 2.) Chart the 2 small piers at the survey position. 3.) The ruins south of the ship pier mentioned above, and east of long. 121/52/42.05 W still exist.

1.) Do not concur
2.) Concur
3.) Concur

Feature: T-Shaped pier.
Latitude: 038/01/48.04 N
Longitude: 121/51/14.74 W

Investigation: T-Sheet 1251 depicts a T shaped pier with the most seaward end shown as 20 meters wide and 80 meters long. Nautical chart 18659, Sept. 13, 1986. depicts this T-pier as a singular line T-pier. A visual inspection of the pier revealed that the wider portion at the end of the pier was really two barges, probably seen on aerial photography, and that the depiction on the nautical chart is correct.

Recommendation: Please take note of the error on T-Sheet 1251 and leave the T-Pier as charted. Concur

Feature: Sewer Outfall (UNCHARTED)
Latitude: 038/01/37.57 N
Longitude: 121/50/23.41 W

Investigation: A new sewer outfall has been layed by Delta Diablo Sanitation (415-778-4040) extending 400 feet into New York and Broad Slough, with the most seaward end at the coordinates above. On DN 35, Vessel 0651, a D.P. was taken on a temporary bouy during repair to the pipe by a private contractor. The bouy was marking the outer end of a 42 inch diameter outfall at the diffuser. The engineering blueprints can be found in the file under DN 35, Vessel 0651. This outfall already falls within a charted pipeline crossing area that goes northeast from Pittsburg across to Sherman Island and Sherman Lake. This outfall lies parallel to and 67 ft east of an existing 8 inch high pressure gas line. *Gas pipeline is not depicted on the smooth sheet as it was not located during this survey.*

Chart the offshore end of this outfall at the survey position. *Concur*

Feature: New Catwalk on Charted Pier.
Latitude: 038/02/04.19 N
Longitude: 121/52/33.85 W

Investigation: An industrial ship pier which is located at the above coordinates, has added a catwalk extending to shore off the east tip of the pier. The catwalk goes from the east outside edge of the existing pier at lat. 038/02/02.24 N and long. 121/52/28.94 W on a heading of S-SE into shore at position 376, DN 291, Vessel 0652 at lat. 038/02/00.99 N and long. 121/52/28.10 W. Revise the catwalk to the survey position. *Shown in red on the smooth sheet.* *Concur*

Feature: Islets in Montezuma Slough.
Latitude: 038/04/26 N
Longitude: 121/52/44 W

Investigation: A visual inspection was conducted on DN 320, Vessel 0651, for 3 visible islets and no islets were found. This group of 3 islets are charted orientated N-S paralleling the west bank of Montezuma Slough. These islets are at the 12 foot contour. The northernmost being 45 meters long at lat. 038/04/26.91 N and long. 121/52/45.92 W. The middle islet is 20 meters long and is at lat. 038/04/26.10 N and long. 121/52/44.48 W and the southernmost is 15 meters long and is at lat. 038/04/24.31 N and long. 121/52/40.79 W. The tide was high, - 2.8 to - 3.5 during this investigation and due to an oversight, no hydrographic development was performed to completely disprove these islets.

Recommendations: Considering it was determined that these islets no longer exist and that shoal areas could still exist, it is recommended that these islets be deleted and the chart be revised to shoals at the charted position. *Concur*

See Final Report Section 7.a.

Feature: Pier.

Latitude: 038/01/46.27N

Longitude: 121/51/22.74W

Investigation: No formal investigation was done to determine the status of this pier. The charted offshore end of this pier is at the above position. Shoreline hydrography along this shore goes seaward of the offshore end of this pier. It was noted that the shoreline hydrography was run along the grassline. The area from the hydrography to the HWL is all grass. The charted pier position falls within the grass area.

Recommendation: Retain the pier at the charted position. *Concur*
See Eunc Report, section 7.a.

Feature: Submerged Cable Crossing in N.Y. Slough.

Latitude: 038/01/35.51N

Longitude: 121/50/40.89W

Investigation: During shoreline verification on DN 035, Vessel 0651, an uncharted cable crossing was discovered. The cable crossing sign on the south shore of New York Slough is at lat. 038/01/35.51N and long. 121/50/40.89W and the cable crossing sign on the north side on Winter island is at lat. 038/01/43.59N and long. 121/50/33.84W. This is a Pacific Gas and Electric cable crossing.

Recommendation: Revise the chart to show the submerged cable crossing at the survey position. *Concur*
See Eunc Report, section 6

O. ADEQUACY OF SURVEY

This survey is sufficiently complete and adequate to supersede prior surveys, *except where noted in this report and Eunc Report.*

P. AIDS TO NAVIGATION

Coast Guard Maintained Aids

There are ⁸17 fixed and 3 floating aids to navigation in the survey project area that are maintained by the U.S. Coast Guard (USCG). *There are an additional 5 private fixed aids which were located and serve their intended purpose. Two at West Basin and three at Pittsburg Marina Entrance.* The above number of floating aids includes the recently established New York Slough Lighted Buoy 13, Q G at lat. 38/01/43.5N, long. 121/49/57.2W (NAD 27), Pos. No. 9611, Vessel 0651, DN 035/91. See Appendix VI* for a copy of a portion of Local Notice to Mariners (LNM) 06/91 adding this buoy.
** attached to this report*

All presently charted aids were found to agree with their respectively charted positions, with the exception of ~~two~~ ^{four}; Sacramento River Deep Water Ship Channel Light 1 (LL No. 7170) and Bouy Q G (not in LL), *Sacramento River Deep Water Ship Channel Light 6 and Suisun Bay Light 34.*
See Eunc Report, section 7.d.

Buoy Q G is charted at lat. 38/03/52.9, long. 121/51/05.0 (NAD 83), but no longer exists. This buoy was removed when Light 1, above, was repositioned to mark the obstruction charted at this location.

The presently charted position of Light 1 is incorrect: It is actually 130 meters, approximately, to the east at lat. 38/03/54.053 long. 121/51/04.735 (NAD 83)*, as positioned by GPS observations. (See the copy of the correspondence received from the USCG enclosed with that day's data, and the text for AWOIS 51442 in Section N., Comparison with the Chart, for more information concerning this item.)

* NAD 27 latitude 38/03/54.342 N, longitude 121/51/0.888 W.

Point Beemar Light (LL No. 6660) at lat. 38/01/50.5, long. 121/50/15.4, (NAD 83) as positioned by GPS, has been converted to Point Beemar Day Beacon at the same position. See Appendix VI* for a copy of a portion of LNM 06/91 for information.

San Joaquin River Day Beacon 1 has been moved SE from its previous position (position by PHP not valid, aid moved after completion of work in this area) to the position given by the USCG in LNM 14/91. See ~~Appendix VI~~ ^{attached} for a copy of a portion of this LNM.

^{attached} See ~~Appendix VI~~ for a copy of a portion of LNM 16/91 for information on the USCG plans to move New York Slough Light 2 and New York Slough Light 3 to new positions during the month of May.

Aids Maintained by Other Organizations *See E.R, 7.d*

There are 8 red lights, 4 green lights and 29 yellow lights marking the flood water control structure* across Montezuma Slough at approximately lat. 38/05/30, long. 121/53/00. This structure and associated lights are maintained by the State of California Dept. of Water Resources. See Appendix VI** for a copy of the "Private Aids to Navigation Application" sent to the USCG by the state of California. This information was received from Mr. Joseph Serpa, who works for the state of California (phone 209-835-7106). See the final field sheet and sounding volumes for Vessel 0651 DN's 318 and 323 for the disposition of the various lights. Note: This structure is in operation for salinity control from November to April (exact dates depend on salinity conditions), during which time boats must use the lock to pass the structure. During this time, the following lights are illuminated at night or periods of reduced visibility:

* Recommend a note be placed on Chart 18656 reflecting the existence of a Flood water control structure across Montezuma Slough at latitude 38/05/30 N, longitude 121/53/07 W (NAD 27), with specified dates of operation.

** Attached to this report.

- 25 yellow obstruction lights across the structure.
- Yellow obstruction light, each, at positions 8261, 8262, 8322, and 8323, DN's 381 and 323, Vessel 0651.
- Red lights on the north and south sides of the boat lock to mark its limits (Items 1,2,3,4 in the Sounding Volume and Appendix VI).

From May to October, a section of the structure is removed, and vessels are allowed unrestricted passage. During this time the following lights are illuminated at night or periods of reduced visibility:

- Red light, each, at positions 8261 and 8323
- Green light, each, at positions 8262 and 8322.
- Red light, each, at items 5 and 7 in Sounding Volume.
- Green light, each, at items 6 and 8 in Sounding Volume.

All lights have a "fixed" characteristic when illuminated.

Q. STATISTICS ✓

Positions Acquired (0651): 2,⁵⁴⁵659
(0652): 591

Days of Production:	54.9
Square Nautical Miles of Hydrography:	4.96
Total Lineal Nautical Miles of Hydrography:	199.0
Bottom Samples:	58
Detached Positions:	435
Tide Stations:	5
Current Stations:	0
Velocity Casts	22
Magnetic Stations:	0

The following positions were duplicated:
8347-8362, 8520, 8645-8648.

Total omitted positions = 43

The following positions were omitted:
182,7249-7256, 7316, 7413-7531, 7995-8001, 8062-8062, 8201, 8946, 9039.

Due to the HDAPS processing system not being able to differentiate between years in the file system, in the section "SELECT DATA SET", you will find some confusion in the way the day numbers are listed. Day numbers from 1991 will be listed prior to day numbers from 1990 if the day number from 1991 is lower than the day number listed from 1990. Transformation of data to Harris system alleviates this problem in office listings as file is arranged in day/year format.

R. MISCELLANEOUS ✓

Silting.....See sections M. and N.

No unusual submarine features were noted.

No anomalous tidal conditions were noted.

No current measurements were required.

No magnetic anomalies were noted.

Bottom samples were taken in accordance with section 1.6.3 of the Hydrographic Manual. These samples confirm the charted characteristics. See Separate II,* Bottom Samples, for NOAA Form 75-44, Oceanographic Log Sheet "M" Bottom Sediment Data. In accordance with project instructions, samples were not kept for submission to the Smithsonian Institution.

S. RECOMMENDATIONS ✓

None

T. REFERRAL TO REPORTS ✓

A report updating the Coast Pilot will be submitted at a later date.

Position information concerning geodetic control stations can be obtained from Pacific Photogrammetric Field Party, N/CG2333. Stations descriptions for these stations will be submitted by PHP during the month of May. Preliminary adjusted Field positions affecting H-10342 were received during final office processing. Comparison of this data with the Field positions used to compute the survey data reveals good agreement.

* Filed with the hydrographic data

APPENDICES

- I. Danger to Navigation Reports
- II. Non floating Aids and Landmarks for Charts
- III. List of Horizontal Control Stations
- ~~IV. Geographic Names~~
- ~~V. Tides and Water Levels~~
- VI. Supplemental Correspondence
- VII. Approval Sheet



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
Seattle, Washington 98115-0070

Pacific Hydrographic Party
USATF, 801 Beach Drive
Rio Vista, California 94571

26 March 1991

Commander (oan)
Eleventh Coast Guard District
400 Oceangate Boulevard
Union Bank Building
Long Beach, California 90822-5399

**ADVANCE
INFORMATION**

Dear Sir:

During field review of hydrographic survey H-10342 located in Suisun Bay and the San Joaquin River/North of Pittsburg, California, three dangers to navigation affecting the following charts were observed: 18652SC, 18656, and 18659.

It is recommended that the enclosed Reports of Danger to Navigation be included in the Local Notice to Mariners.

Questions concerning these reports should be directed to the Pacific Hydrographic Party at (707)374-5642.

Respectfully,

Lieutenant DeWayne J. Nodine, NOAA
Chief, Pacific Hydrographic Party

cc: N/CG245
N/CG221
DMAHTC
Descriptive Report H-10342
Survey Correspondence File



**ADVANCE
INFORMATION**REPORT OF DANGER TO NAVIGATION

Survey Registry Number: H-10342
Survey Title: State: California
General Locality: Suisun Bay and San Joaquin River
Sublocality: North of Pittsburg
Project Number: OPR-L208-PHP-90
Field Party: Pacific Hydrographic Party

The following item was discovered during hydrographic survey operations:

Object Discovered: Dangerous Submerged Obstruction

Submerged 8.0 feet, corrected to MLLW using predicted tides.

<u>CHART</u>	<u>EDITION</u> (No.-Date)	<u>DEPTH</u> (feet)	<u>HORIZ</u> <u>DATUM</u>	<u>LATITUDE</u> (N)	<u>LONGITUDE</u> (W)
18652SC	27-08/18/90	8.0	NAD83	38/02/45.2	121/52/43.5
18656	48-05/27/89	8.0	NAD83	38/02/45.2	121/52/43.5
18659	10-07/07/90	8.0	NAD83	38/02/45.2	121/52/43.5

Questions concerning this report should be directed to the Pacific Hydrographic Party at (707)374-5642.

**ADVANCE
INFORMATION**REPORT OF DANGER TO NAVIGATION

Survey Registry Number: H-10317
Survey Title: State: California
General Locality: Suisun Bay and San Joaquin River
Sublocality: North of Pittsburg
Project Number: OPR-L208-PHP-90
Field Party: Pacific Hydrographic Party

The following item was discovered during hydrographic survey operations:

Object Discovered: Dangerous shoaling northwest of Chain Island.

A new shoal has been noted northwest of Chain Island having a least depth of 0.0 feet (corrected to MLLW using predicted tides) at latitude 38/04/10.0, longitude 121/51/33.0. The extent of this shoal, from the above given position, is as follows: south for approximately 200 meters, west for approximately 100 meters, north for approximately 100 meters, and east to the westerly shores of Chain Island.

<u>CHART</u>	<u>EDITION</u> (No.-Date)	<u>DEPTH</u> (feet)	<u>HORIZ</u> <u>DATUM</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
18652SC	27-08/18/90	0.0	NAD83	38/04/10.0	121/51/33.0
18656	48-05/27/89	0.0	NAD83	38/04/10.0	121/51/33.0
18659	10-07/07/90	0.0	NAD83	38/04/10.0	121/51/33.0

Questions concerning this report should be directed to the Pacific Hydrographic Party at (707)374-5642.

**ADVANCE
INFORMATION**REPORT OF DANGER TO NAVIGATION

Survey Registry Number: H-10342
Survey Title: State: California
General Locality: Suisun Bay and San Joaquin River
Sublocality: North of Pittsburg
Project Number: OPR-L208-PHP-90
Field Party: Pacific Hydrographic Party

The following item was discovered during hydrographic survey operations:

Object Discovered: Dangerous shoaling in the channel around the north side of Montezuma Island , and both approaches.

The shoaling at the westerly approach begins north of a line drawn along latitude 38/04/28.0, and extends from shore to shore. The shoaling at the easterly approach begins north of a line drawn along latitude 38/04/19.0, and extends from shore to shore.

Depths range from 0.0 to 3.0 feet, throughout the entire extent of the channel, corrected to MLLW using predicted tides.

<u>CHART</u>	<u>EDITION</u> (No.-Date)	<u>DEPTH</u> (feet)	<u>HORIZ</u> <u>DATUM</u>
18652SC	27-08/18/90	0.0 to 3.0	NAD83
18656	48-05/27/89	0.0 to 3.0	NAD83
18659	10-07/07/90	0.0 to 3.0	NAD83

Questions concerning this report should be directed to the Pacific Hydrographic Party at (707)374-5642.

Entire Channel is Shoal
with depths of 0 to 3.0 Feet

The Sacramento River Deep Water Ship
Channel lights are equipped with radar reflectors.

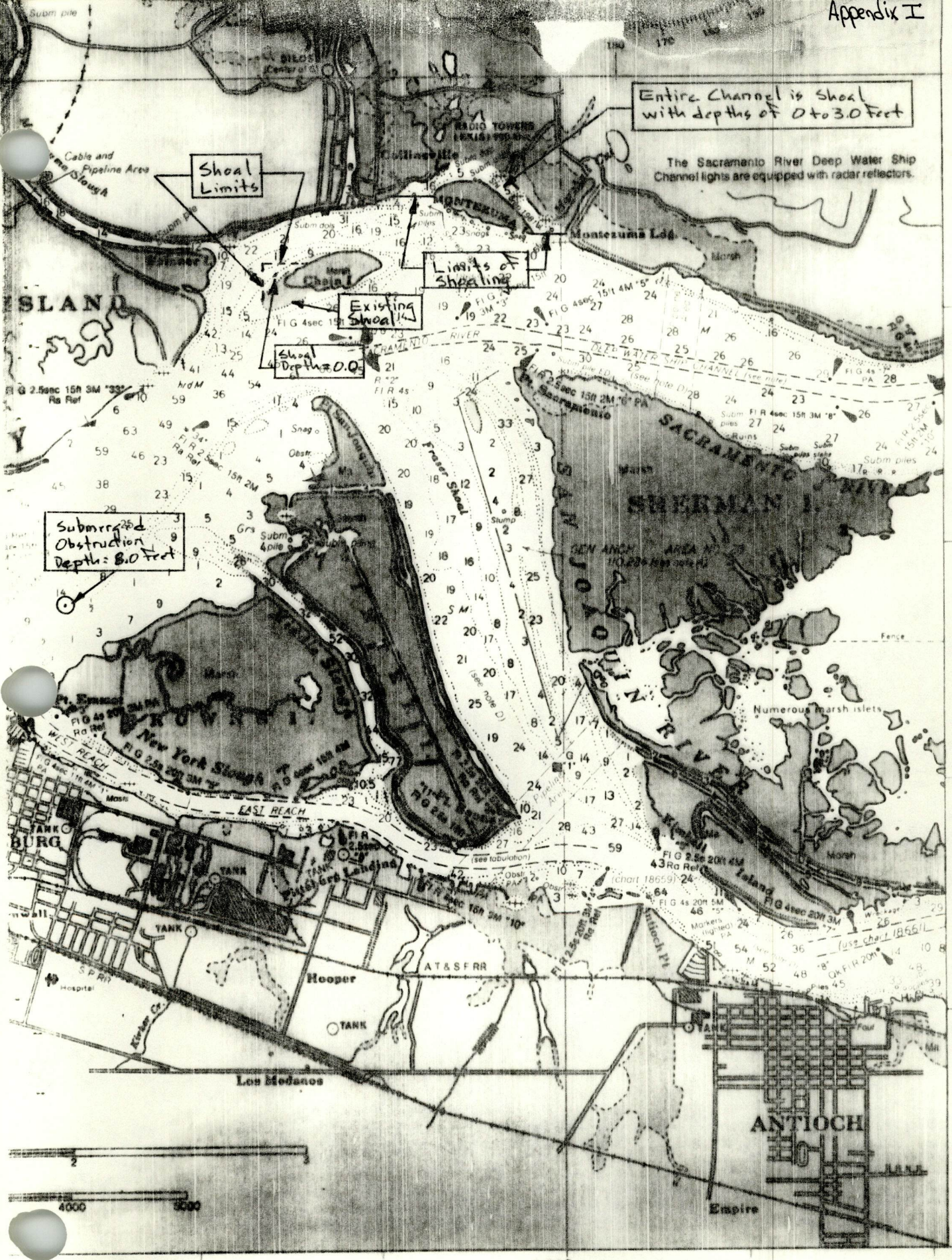
Shoal
Limits

Limits of
Shoaling

Existing
Shoal

Shoal
Depth = 0.0

Submerged
Obstruction
Depth = 8.0 Feet



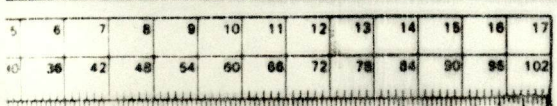
(JOINS CHART 18661)

(JOINS CHART 18661)

121° 50'

38°

(Inner neatline 69 38cm N.S. x 101 58cm E.W.)



(Suisun Bay)

18656

UNDINGS IN FEET - SCALE 1:40,000

48th Edition
Dated MAY 27, 1969

DMA STOCK NO 18A18656



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Coast and Geodetic Survey
Seattle, Washington 98115-0070

February 16, 1991

Commander (OAN)
Eleventh Coast Guard District
400 Oceangate Blvd.
Union Bank Building
Long Beach, CA. 90822-5399

Dear Sir:

During office review of hydrographic survey H-10342, California, Suisun Bay, New York Point to Sherman Island, one submerged obstruction was found and is considered a potential danger to navigation affecting the following charts.

<u>Chart</u>	<u>Edition/date</u>	<u>Datum</u>
18652	28th 07/25/92	1983
18656	50th 08/08/92	1983
18659	11th 06/13/92	1983

It is recommended that the enclosed Report of Dangers to Navigation be included in the Local Notice to Mariners.

Questions concerning this report should be directed to the Pacific Hydrographic Section at (206) 526-6853.

Sincerely,

Douglas G. Hennick
Commander, NOAA
Chief, Pacific Hydrographic Section

Enclosure

cc: DMA/TC
N/CG221



REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: H-10342
Survey Title: State: California
Locality: Suisun Bay
Sublocality: New York Point to Sherman Island
Project Number: OPR-L208-PHP, Pacific Hydrographic Party

The following item was discovered during office processing of hydrographic survey H-10342 and is an update to a report of a danger to navigation letter, dated March 26, 1991

Object discovered: One submerged obstruction corrected to MLLW.

Affected nautical charts

<u>CHART NUMBER</u>	<u>EDITION NO. DATE</u>	<u>REPORTED DEPTH</u>	<u>HORIZ DATUM</u>	<u>GEOGRAPHIC POSITION</u>	
				<u>LATITUDE(N)</u>	<u>LONGITUDE(W)</u>
18652	28th 07/25/92	4 Ft.	NAD 83	38/02/45.4	121/52/39.7
18656	50th 08/8/92	4 Ft.	NAD 83	38/02/45.4	121/52/39.7
18659	11th 06/13/92	4 Ft.	NAD 83	38/02/45.4	121/52/39.7

Questions concerning this report should be directed to the Pacific Hydrographic Section at (206) 526-6853.

Replaces C&GS Form 567.

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

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

ORIGINATING ACTIVITY

- ☒ HYDROGRAPHIC PARTY
☐ GEODETIC PARTY
☐ PHOTO FIELD PARTY
☐ COMPILATION ACTIVITY
☐ FINAL REVIEWER
☐ QUALITY CONTROL & REVIEW GRP
☐ COAST PILOT BRANCH

(See reverse for responsible personnel!)

W
T
4
Q

LOCALITY	DATE
Suisun Bay and San Joaquin River / North of Pittsburg	3/30/91

STATE

CA

REPORTING UNIT

(Field Party, Ship or Office)
Pacific Hydrographic

The following objects HAVE ☐ HAVE NOT ☐ been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.

JOB NUMBER

SURVEY NUMBER

DATUM

OPR-1208-PWP

APP-10-1-90

H-10347

NAD 27

POSITION

CHARTING
NAME

DESCRIPTION
(Record reason for deletion of landmark or aid to navigation.
Show triangulation station names, where applicable, in parenthesis.)

SACRAMENTO RIVER DEEP WATER
SHIP CHANNEL LIGHT 1

Light

LATITUDE	LONGITUDE
0° 0' N	180° 0' W
0° 0' N	179° 0' W
0° 0' N	178° 0' W
0° 0' N	177° 0' W
0° 0' N	176° 0' W
0° 0' N	175° 0' W
0° 0' N	174° 0' W
0° 0' N	173° 0' W
0° 0' N	172° 0' W
0° 0' N	171° 0' W
0° 0' N	170° 0' W
0° 0' N	169° 0' W
0° 0' N	168° 0' W
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0° 0' N	49° 0' W
0° 0' N	48° 0' W
0° 0' N	47° 0' W
0° 0' N	46° 0' W
0° 0' N	45° 0' W
0° 0' N	44° 0' W
0	

	.	"	.
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0 M Meters	0
D P M	0

[illegible]

NAS 27	54.24	121 51	00.887	0
38 03				
N10 63	54.052	121 51	04.736	5
38 03				

OFFICE

FIELD

METHOD AND DATE OF LOCATION
(See instructions on reverse side)

18656
18659

GPS satellites

CHARTS
AFFECTED

RESPONSIBLE PERSONNEL		NAME
TYPE OF ACTION		
OBJECTS INSPECTED FROM SEAWARD		
POSITIONS DETERMINED AND/OR VERIFIED	LT DeWayne J. Nodine, Chief of Party	
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	<div> <input type="checkbox"/> PHOTO FIELD PARTY <input type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify) </div> <div>FIELD ACTIVITY REPRESENTATIVE</div> <div>OFFICE ACTIVITY REPRESENTATIVE</div> <div> <input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE </div>	
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'		
(Consult Photogrammetric Instructions No. 64.)		
OFFICE	FIELD (Cont'd)	
I. OFFICE IDENTIFIED AND LOCATED OBJECTS Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75	B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982	
FIELD	II. TRIANGULATION STATION RECOVERED When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75	
I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection 5 - Field identified 6 - Theodolite 7 - Planetable 8 - Sextant	III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75	
A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.	
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.		

CONTROL STATIONS - APPENDIX III

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY
602	F	038:01:49.920	122:06:25.128	60	250	0.0	0.0	8	06/22/89
603	F	038:02:03.688	122:00:58.696	191	250	0.0	0.0	6	06/23/89
604	F	038:03:53.655	122:05:44.184	4	250	0.0	0.0		05/15/89
606	F	038:04:47.623	122:04:51.903	4	250	0.0	0.0		05/15/89
608	F	038:13:02.154	122:06:52.321	107	250	0.0	0.0	3	05/30/89
608	F	038:12:53.098	122:01:07.724	68	250	0.0	0.0	1	05/15/89
609	F	038:06:29.681	122:03:18.420	3	250	0.0	0.0		05/15/89
610	F	038:07:08.925	122:03:39.820	3	250	0.0	0.0		05/15/89
611	F	038:06:22.023	122:06:12.491	65	250	0.0	0.0	4	08/29/89
612	F	038:10:03.336	121:55:10.801	110	250	0.0	0.0	4	06/07/89
614	F	038:12:09.604	121:57:16.301	125	250	0.0	0.0	3	03/23/90
615	F	038:07:27.552	122:07:48.434	335	250	0.0	0.0	2	08/29/89
617	F	038:04:24.971	121:49:10.834	27	250	0.0	0.0	2	03/23/90
618	F	038:08:19.442	121:54:08.194	53	250	0.0	0.0	8	03/23/90
619	F	038:00:32.633	121:58:32.259	267	250	0.0	0.0	6	03/23/90
620	F	038:02:33.338	121:55:02.949	6	250	0.0	0.0	4	05/09/90
621	F	037:58:27.389	121:55:44.959	391	250	0.0	0.0	1	05/15/90
622	F	038:05:01.746	121:51:12.832	26	250	0.0	0.0	6	08/27/90
623	F	038:01:50.767	121:50:11.529	7	250	0.0	0.0	4	08/27/90
624	F	038:03:51.447	121:50:03.693	5	250	0.0	0.0	8	09/14/90
625	F	038:03:40.232	121:52:14.881	4	250	0.0	0.0	5	10/15/90
626	F	038:01:37.345	121:49:42.515	7	250	0.0	0.0	9	01/23/91
627	F	038:02:29.290	121:53:04.379	5	250	0.0	0.0	9	01/23/91
628	F	038:01:53.495	121:50:48.496	3	250	0.0	0.0	7	01/23/91
629	F	038:02:21.210	121:53:00.457	2	250	0.0	0.0		01/25/91
630	F	038:02:20.537	121:53:09.009	4	250	0.0	0.0		01/25/91
631	F	038:02:04.013	121:53:02.848	4	250	0.0	0.0		01/25/91
632	F	038:01:33.437	121:50:27.754	3	250	0.0	0.0		01/25/91

<u>No</u>	<u>NAME</u>	<u>YEAR ESTABLISHED</u>
617	BLACKJACK	1931
618	MEINS 2	1922
619	BAKER	1954
* 620	SUISUN BAY LT 28	1989 Field
621	KIRKER	1946
* 623	POINT BEENAR LIGHT	1990 Field
* 624	SAC RIVER DW CHANNEL LT 6	1990 Field
* 625	SUISUN BAY LT 33	1990 Field
* 626	SAN JOAQUIN RIVER LT 4	1990 Field
* 627	NEW YORK SLOUGH LT 2	1990 Field
628	WINTER ISLAND	1990 Field

* Denotes stations seaward of high water line.

✓ DLTN 3/19/91



Appendix VI

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Rockville, Maryland 20852
January 15, 1991

MEMORANDUM FOR: Lt. DeWayne J. Nodine, NOAA
Chief, Pacific Hydro Party

FROM: Briah K. Connor *Briah K. Connor*
Chief, Hydrographic and
Marine Boundary Unit

SUBJECT: Time and height correctors
for Montezuma Slough on north
side of state of California Dept. of
Water Resources flood control gate
(Project OPR-L208-PHP)

In response to your request and to confirm the correctors provided you via phone conversation with Mike Gibson on December 21, 1990, the following correctors shall be applied to the reference station at San Francisco, Ca. (941-4290). For field operations in Montezuma Slough, on the north side of the state of California Dept. of Water Resources flood control gate, apply a +4 hrs. 4 min. time correction and a x0.82 height ratio to San Francisco.

Please contact me if you have further questions concerning this project. I can be reached at (301) 443-8467.



APPENDIX VI

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

USPS-NOS COOPERATIVE CHARTING PROGRAM

AUG 5 1986

Please TYPE or PRINT with ballpoint to ensure 4th copy legibility. LEAVE SHADED AREAS BLANK.

This report is authorized by law (33 U.S.C. 883b. Reorg. Plan No. 2 of 1965, 79 Stat. 1318, Reorg. Plan No. 4 of 1974, 84 Stat. 2090). It is used to prepare uniform and accurate observed chart correction reports that help maintain up-to-date nautical charts. While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

DIST. SQR.		PRINCIPAL OBSERVER'S NAME																									ITEMS		CREDITS		DATE INVEST.			DATE REC'D.			DATE																	
		LAST, FIRST, MIDDLE INITIAL																													YEAR MTH. DAY			YEAR MTH. DAY			MTH.																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45										
25																																																						
STREET ADDRESS																									SQUADRON							D			U			F			C			N			A			R			S	
1050 W. Elm																																																						
CITY, STATE, ZIP CODE																																																						
Stockton, CA																																																						
TELEPHONE (Include area code.) BUSINESS <input type="checkbox"/> HOME <input checked="" type="checkbox"/>																																																						
(209) 462-8114																																																						
CHART NO./AERO CHT.																									EDITION AND DATE																													
18652																									24th																													
																									APR '85																													
																									LAT: AS PER COPY																													
																									POSITION DETERMINED BY (Place an 'X' in appropriate box and see NOTE.)																													
																									SCALED FROM CHART <input type="checkbox"/>		COMPASS BEARING <input type="checkbox"/>		ESTIMATED BEARING <input type="checkbox"/>																									
																									OTHER (Explain) <input type="checkbox"/>																													
																									NOTE: List any depths, angles or distances measured and include sketch on how position(s) were determined.																													
																									EXPLAIN CHANGE OR CORRECTION BEING REPORTED																													

(53) Numerous Piling's & shed

(54) Light 'H' leaning @ 15° to East

(55) Piling's with Bldg

(56) Abandoned Landing

(57) Sign

(58) Cable Crossing (PG & E & Tel) STD's is checking

(59) Piling's

#51425

KNOWLEDGE DESIRED NO <input type="checkbox"/> YES <input checked="" type="checkbox"/>		NEW CONTRIBUTOR YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
SIGNATURE		DATE SENT TO SQUAD. CHMN.	
Anne de Ojeda		7/22/86	
DATE REC'D. DISTRICT CHMN.		DATE FORWARDED TO	
30 July 86		31 Oct 86	
		COPY AUG 28	

APPENDIX VI

CAUTION

Station positions are shown thus:

⊙ (Accurate location) ○ (Approximate location)

BRIDGE AND OVERHEAD

Clearances are charted as
Engineers. Overhead cable &
high water. Bridge clearances &
(HW) and Low Water (LW).

18662

38° 04'

SHERMAN ISLAND
AWOIS 51425
North

The five
the south
submarine
projecting

APR 1966

DATE _____

DISCREPANCIES CORRECTED:

4145 Pillar Point Harbor Entrance Light
 4415 Blossom Rock Lighted Bell Buoy BR
 San Francisco Bay North Channel Buoy 18
 San Rafael Creek Range Rear Light
 New York Slough Light 8
 6685 San Joaquin River Light 8
 6755 San Joaquin River Light 24
 6955 Stockton Channel Light 11

Left watching properly.
 Left watching properly.
 Left watching properly.
 Relighted.
 Left watching properly.
 Relighted.
 Showing proper characteristics.
 Relighted.

18682 087/91 05/91
 18649 091/91 06/91*
 18649 092/91 06/91*
 18649 088/91 05/91
 18656 093/91 06/91*
 18659 094/91 06/91*
 18659 099/91 06/91*
 18661 100/91 06/91*

III. TEMPORARY CHANGES / TEMPORARY CHANGES CORRECTED

TEMPORARY CHANGES:

LLNR	NAME OF AID
1665	Commercial Basin South Channel Daybeacon 2 (Private aid)
1695	Commercial Basin South Channel Daybeacon 7 (Private aid)
3279	San Pedro West Channel Light 2
3279	San Pedro West Channel Light 2 TRLB
5210	Redwood Creek Light 7
5230	Redwood Creek Light 12
6465	Suisun Bay Channel Light 16
7830	Bodega Bay Channel Daybeacon 10
7900	Bodega Bay Channel Daybeacon 25
7946	Spud Point Marina Daybeacon 1
7947	Spud Point Marina Daybeacon 2
7948	Spud Point Marina Daybeacon 3
7950	Spud Point Marina Daybeacon 5
8216	Humboldt Bay Light 13
8240	Humboldt Bay Light 18
8245	Samoa Channel Light 2
8265	Humboldt Bay Light 19

STATUS

Destroyed / TRUB.
 Destroyed / TRUB.
 Destroyed / TRLB.
 Temporarily discontinued for dredging.
 Destroyed / TRLB.
 Destroyed / TRLB.
 Destroyed / TRLB.
 Destroyed / TRUB.
 Destroyed / TRUB.
 Destroyed / TRUB.
 Damaged / TRUB.
 Destroyed / TRUB.
 Destroyed / TRUB.
 Destroyed / TRUB.
 Relocated.
 Relocated.
 Destroyed / TRLB.
 Destroyed / TRLB.

CHARTS
AFFECTEDBNM
REF.LNM
REF.

18773 28/90
 18773 46/90
 18746 07/89
 18746 1232/90 47/90
 18651 701/90 27/90
 18650 709/90 28/90
 18656 022/91 03/91
 18643 25/88
 18643 668/89 24/89
 18643 27/87
 18643 48/87
 18643 929/90 36/90
 18643 27/87
 18622 38/90
 18622 40/88
 18622 11/89
 18622 049/90 03/90

TEMPORARY CHANGES CORRECTED
None.

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 (C)	18649, 18650
Suisun Bay (C)	18652, 18656, 18658, 18659
San Joaquin River (P)	18652, 18656, 18659
Santa Monica Bay (C)	18740, 18744
Newport Bay (P)	18754

V. CHART CORRECTIONS (C)

EXPLANATION OF FORMAT - Corrective action affecting charts is contained in this section. Chart corrections are listed numerically by chart number, beginning with the lowest and progressing through all charts affected. Each correction pertains to a particular chart and to that chart only. Related charts, if any, have their own corrections which in turn pertain to a single chart only. The following example explains the individual elements of a typical correction:

Chart number	Chart edition	Edition date	Reference datum	Last Local Notice to Mariners	Source of correction	Current Notice to Mariners
18649	53rd ed.	5/6/89	NAD 83	Last LNM 35/89	(CG11)	37/89
(Temp)	CA - San Francisco Bay - General location					37°48'00"N, 122°15'00"W
	Add		Embohee Channel Light 1 FIR 2.5s 7M			Position

(Temp) located below the chart number indicates that the chart correction action is temporary. Courses and bearings are given in degrees clockwise from 000° True. Bearings of light sectors are toward the light from seaward. The nominal range of lights is expressed in nautical miles. (e.g. 7M).

18652	27th ed.	8/18/90	NAD 83	Last LNM 03/91	(CG11)	06/91
Page E	CA - Suisun Bay					38°01'39.1"N, 121°50'15.0"W
	Change		Point Beemar Light FI W 2.5s 5M		to	38°01'43.8"N, 121°49'56.9"W
			Point Beemar Daybeacon			38°03'46.0"N, 122°03'14.0"W
	Add		New York Slough Lighted Buoy 13, Q G			38°03'37.0"N, 122°03'17.0"W
			Mooring Buoys (2) (PA) Vicinity of Roe Island			06/91
18656	48th ed.	5/27/89	NAD 83	Last LNM 52/90	(CG11)	06/91
	CA - Suisun Bay					38°01'39.1"N, 121°50'15.0"W
	Change		Point Beemar Light FI W 2.5s 5M		to	
			Point Beemar Daybeacon			

TEMPORARY CHANGES CORRECTED

None.

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
Farallon Islands (A).....	18007, 18020, 18022, 18640, 18645, 18680
Bodega Head (A).....	18640, 18643
Pillar Point (A).....	18644, 18680, 18682
San Joaquin River (C).....	18652, 18654, 18656, 18659
Mare Island Strait (C).....	18655
Port Hueneme (C).....	18720, 18725, 18740
Newport Bay (P).....	18754

V. CHART CORRECTIONS (C)

EXPLANATION OF FORMAT - Corrective action affecting charts is contained in this section. Chart corrections are listed numerically by chart number, beginning with the lowest and progressing through all charts affected. Each correction pertains to a particular chart and to that chart only. Related charts, if any, have their own corrections which in turn pertain to a single chart only. The following example explains the individual elements of a typical correction:

Chart number	Chart edition	Edition date	Reference datum	Last Local Notice to Mariners	Source of correction	Current Notice to Mariners
18649 (Temp)	53rd ed. CA - San Francisco Bay - General location Add	5/6/89	NAD 83	Last LNM 35/89	(CG11)	37/89
	Corrective action		Object of corrective action			Position

(Temp) located below the chart number indicates that the chart correction action is temporary. Courses and bearings are given in degrees clockwise from 000° True. Bearings of light sectors are toward the light from seaward. The nominal range of lights is expressed in nautical miles, (e.g. 7M).

18652 (Page E)	27th ed. Suisun Bay - San Joaquin River Relocate	8/18/90	NAD 83	Last LNM 11/91	(CG11)	14/91
					SE to	38°01'49.7"N, 121°49'47.3"W
18654	34th ed. CA - Mare Island Strait Channel Add	7/30/88	NAD 83	Last LNM 05/91	(BPS-141755-57)	14/91
					Tabulation of Controlling Depths from Enclosure (2)	
18655	53rd ed. CA - Mare Island Strait Channel Add	9/10/88	NAD 83	Last LNM 43/90	(BPS-141755-57)	14/91
					Tabulation of controlling depths from Enclosure (2)	
18656	48th ed. CA - Suisun Bay - San Joaquin River Relocate	5/27/89	NAD 83	Last LNM 07/91	(CG11)	14/91
					SE to	38°01'49.7"N, 121°49'47.3"W
18659	10th ed. CA - Suisun Bay - San Joaquin River Relocate	7/7/90	NAD 83	Last LNM 07/91	(CG11)	14/91
					SE to	38°01'49.7"N, 121°49'47.3"W
18661 (Side A)	20th ed. CA - Sacramento River - Cable Area Add	6/9/90	NAD 83	Last LNM 13/91	(NOS BP-141646; CL-188/91)	14/91
					dashed lines and label: Cable Area	
					joining	38°09'20.0"N, 121°40'48.0"W 38°09'33.0"N, 121°41'15.0"W 38°09'28.0"N, 121°40'41.0"W 38°09'41.0"N, 121°41'08.0"W
18720	27th ed. CA - Point Dume to Purisma Point - Port Hueneme Add	5/26/90	NAD 83	Last LNM 11/91	(CG11)	14/91
					Univ. of San Diego Wave Buoy, FI (5) Y 20s	34°05'09.6"N, 119°10'00.0"W
18725	22nd ed. CA - Port Hueneme to Santa Barbara - Port Hueneme Add	12/5/87	NAD 83	Last LNM 35/90	(CG11)	14/91
					Univ. of San Diego Wave Buoy, FI (5) Y 20s	34°05'09.6"N, 119°10'00.0"W
18740	31st ed. CA - San Diego to Santa Rosa Island - Port Hueneme Add	5/5/90	NAD 83	Last LNM 13/91	(CG11)	14/91
					Univ. of San Diego Wave Buoy, FI (5) Y 20s	34°05'09.6"N, 119°10'00.0"W

VI. ADVANCE NOTICE OF CHANGES IN AIDS TO NAVIGATION (A)

SOUTHERN CALIFORNIA - SEACOAST - CORTES BANK - AID CHANGE - During the month of June 1991, the Coast Guard will change Cortes Bank Lighted Whistle Buoy 2 (LLNR 2520) to a lighted bell buoy, renaming it Cortes Bank Lighted Bell Buoy 2. The flash characteristic of the light is unaffected by this change.
Charts: 18740 LNM 16/91 dated 15 April 1991.

NORTHERN CALIFORNIA - SEACOAST - FARALLON ISLANDS - AID CHANGE - During the month of June 1991, the Coast Guard will change Noonday Rock Lighted Whistle Buoy NR (LLNR 380) to a lighted bell buoy, renaming it Noonday Rock Lighted Bell Buoy NR. The flash characteristic of the light is unaffected by this change.
Charts: 18007, 18020, 18022, 18640, 18645, 18680 LNM 09/91 dated 25 February 1991.

NORTHERN CALIFORNIA - SEACOAST - BODEGA HEAD - AID RELOCATION - During the month of August 1991, the Coast Guard will relocate Bodega Head Lighted Whistle Buoy 12 (LLNR 395) approximately 500 yards to the NE to position 38°17'08.0"N, 123°04'13.0"W (NAD 83).
Charts: 18640, 18643 LNM 09/91 dated 25 February 1991.

NORTHERN CALIFORNIA - SEACOAST - PILLAR POINT - AID RELOCATION - During the month of September 1991, the Coast Guard will relocate Pillar Point Harbor Approach Lighted Whistle Buoy PP (LLNR 330) approximately 500 yards to the E to position 37°28'19.95"N, 122°30'57.00"W (NAD 83).
Charts: 18644, 18680, 18682 LNM 09/91 dated 25 February 1991.

NORTHERN CALIFORNIA - SUISUN BAY - SAN JOAQUIN RIVER - AID CHANGE - During the month of April 1991, the Coast Guard will renumber San Joaquin River Light 4 (LLNR 6670) as San Joaquin River Light 2 (LLNR 6670).
Charts: 18652, 18659 LNM 07/91 dated 11 February 1991.

NORTHERN CALIFORNIA - SUISUN BAY - NEW YORK SLOUGH - AID RELOCATION - During the month of May 1991, the Coast Guard will relocate New York Slough Light 2 (LLNR 6600) approximately 200 yards to the NW to position 38°02'34.05"N, 121°53'11.64"W (NAD 83) and relocate New York Slough Light 3 (LLNR 6620) approximately 50 yards to the SW to position 38°02'15.84"N, 121°52'47.71"W (NAD 83).
Charts: 18652, 18656, 18659 LNM 15/91 dated 08 April 1991.

VII. PROPOSED CHANGES IN AIDS TO NAVIGATION (P)

Periodically the Coast Guard evaluates the system of aids to navigation to determine whether the conditions for which the aids were established have changed. When changes occur, the feasibility of improving, relocating, replacing, or discontinuing the aid is considered. In this regard the Coast Guard is evaluating changes in aids to navigation as noted below. Comments are requested, and should be addressed to: Commander (oan), Eleventh Coast Guard District, 400 Oceangate, Long Beach, CA, 90822.

All comments submitted should include the following information:

- Quantity, type, capacity and value of vessels involved, and the extent that these vessels traverse the area under consideration seasonally, by day, and by night.
- Where practicable, the type of navigation devices, such as compasses, radio direction finder, radar, Loran, search lights, with which such vessels are equipped.
- The number of passengers and the type, quantity, and value of cargo involved.
- A chart section or sketch showing the action proposed when necessary to clearly describe the recommended improvement.

NORTHERN CALIFORNIA - SAN FRANCISCO BAY - HUNTERS POINT - AID CHANGE - The Coast Guard proposes to discontinue Hunters Point Light (LLNR 4940) in position 37°43.8'N, 122°21.4'W. This light is not considered necessary for the safe navigation of the bay. Comments are requested by 30 May 1991.
Chart: 18649, 18650 LNM 14/91 dated 01 April 1991.

VIII. GENERAL INFORMATION

SOUTHERN CALIFORNIA - SAN DIEGO BAY/MISSION BAY - WORLD CUP RACING VESSELS PRACTICING IN SAN DIEGO AREA - International America's Cup Class (IACC) sailing vessels and tenders will be frequently operating in the areas of San Diego Bay, Mission Bay and Point Loma until 31 May 1992 in preparation for the World's Cup Races 03 May thru 11 May 1991, and America's Cup races January 1992 through May 1992. Mariners are reminded that these vessels may have status under Rule 18 of the International-Inland Navigation Rules as sailing vessels or as vessels restricted in their ability to maneuver (when tenders are towing the IACC vessels). Mariners are reminded to keep well clear of these vessels.
LNM 13/91 dated 25 March 1991.

SOUTHERN CALIFORNIA - SAN DIEGO BAY/OCEANSIDE HARBOR - The U.S. Coast Guard is conducting a study of the aids to navigation located in Giorietta Bay, Oceanside Harbor and the Del Mar Boat Basin. Comments and recommendations are requested prior to 02 May 1991 and submitted to:

OFFICER-IN-CHARGE
USCG AIDS TO NAVIGATION TEAM
2710 N. HARBOR
SAN DIEGO, CA 92101-5075

Or call (619)557-5075
LNM 15/91 dated 08 April 1991.

SOUTHERN CALIFORNIA - HUNTINGTON BEACH - NATIONAL SAFE BOATING WEEK - The U.S. Coast Guard Auxiliary will help kick off National Safe Boating Week on 02 June 1991 by giving free Courtesy Examinations of your boat after 8:00 AM at the SUNSET AQUATIC PARK launch ramp at the west end of Edinger Avenue in Huntington Beach, right after Bolsa Chica Street. For further information contact Flotilla 15-1 at (714) 551-5096.
LNM 16/91 dated 15 April 1991.

SOUTHERN CALIFORNIA - NEWPORT HARBOR - PILE DRIVING - John L. Meek Construction Co., Inc. is conducting pile driving operations at the Newport Blvd. Bridge through 10 May 1991. A 40' X 50' flexi-float barge, moored by two 40' spuds will be on scene. Mariners should use caution when transiting the area.
Charts: 18746, 18754 LNM 16/91 dated 15 April 1991.

SOUTHERN CALIFORNIA - NEWPORT BEACH - SAFE BOATING COURSE - The BALBOA Power Squadron, a unit of the U.S. Power Squadrons will be conducting a free seven week public Safe Boating Course beginning 22 April 1991 at 7:00 PM. Registration will be held on the first night at 6:15 PM at the Newport Harbor Yacht Club, 720 W. Bay Avenue, Newport Beach, Ca. For further information call LT. Robert McLaughlin at (714) 642-1249.
LNM 10/91 dated 04 March 1991.

OMB-004-R5681

(See attached instructions and copy of Code of Fed. Reg., Title 33, Chap. 1, Part 66)

NO PRIVATE AID TO NAVIGATION MAY BE AUTHORIZED UNLESS A COMPLETED APPLICATION FORM HAS BEEN RECEIVED (14 U.S.C. 83; 33 C.F.R. 66.01-54)

1. ACTION REQUESTED FOR PRIVATE AIDS TO NAVIGATION:

☒ ESTABLISH AND MAINTAIN ☐ DISCONTINUE ☐ CHANGE ☐ TRANSFER OWNERSHIP

2. DATE ACTION TO START
3/15/97

3. AIDS WILL BE OPERATED: A. ☒ THROUGHOUT YEAR B. ☐ TEMPORARILY UNTIL _____ C. ☐ ANNUALLY FROM _____ TO _____

4. NECESSITY FOR AID (Continue in Block 8)
Mark lock and Dam

5. GENERAL LOCALITY

6. CORPS OF ENGINEERS AUTHORIZED THIS STRUCTURE OR BUOY BY
☒ PERMIT OR ☐ LETTER (file and date) #1622358

FOR DISTRICT COMMANDERS ONLY

LIGHT LIST NUMBER OR PAGE	NAME OF AID	NO. OR L.T.R. (7a)	LIGHT		POSITION (7a)	DEPTH OF WATER (7f)	CAN- DLE POWER (7g)	HT. ABOVE WATER (7h)	STRUCTURE TYPE, COLOR, AND HEIGHT ABOVE GROUND (7i)	REMARKS (See Instructions) (7j)
			PER. LGTH. (7b)	FLASH- LGTH. (7c)						
	Montezuma Slough Lock and Dam Lights	Items 1, 2, 3, 4, 4-02-51, DN's 318 4323			Top of Lock Wall	25	7	4 180° Lights marking the upstream downstream entrance to the lock.		
	Lat: 38° 5' 36"N Long: 121° 53' 07"W Per. 8262 & 8322	Don. 8261 & 8323			Top of fender system at maintenance channel (the "alternate lock")	25	7	2 180° Lights marking the upstream and downstream entrance to the maintenance channel and mark conventional direction of Buoyage these lights are only displayed when the flashboards are removed		
					Same as above	25	7	Same as above		
	Items 5, 7 as marked in Sudy. Vol. Not DP'd.				10 ft. above pier adjacent to the maintenance channel	25	17	2 180° Lights to indicate that the maintenance channel is open. These lights are displayed only when the flashboards are removed and mark conventional direction of buoyage.		
	Items 6, 8 as marked in Sudy. Vol. Not DP'd.				Same as above	25	17	Same as above		
	8269, 8263, 8321 Others Not DP'd				At walkway level	25	7	xx 29 180° Lights showing outline of lock and dam 4 lights replace the 2 red & 2 green lights on the maintenance channel when the flashboards are in place. 2 of the yellow lights are displayed on the flashboards when they are in place.		(2) 180° Lights - call behind light when flashboards are in place

3. ADDITIONAL COMMENTS

ADDITIONAL COMMENTS The "string-out" of yellow lights are x a combination of 2480° (uni-directional)lights to show the outline of the structure. These light may not be necessary if overhead walkway lighting is provided. All lights shall be visible for 1 mile on a clear, dark night. The 180° lights similar in design to the pier lights specified for bridges (33 CFR 118). The lock also has an operational signal light similar to a red, yellow, green traffic signal.

9a. NAME AND ADDRESS OF PERSON IN DIRECT CHARGE OF AID

18a. NAME AND ADDRESS OF PERSON OR CORPORATION AT WHOSE EXPENSE AID IS MAINTAINED

110b. THE APPLICANT AGREES TO SAVE THE COAST GUARD HARMLESS WITH RESPECT TO ANY CLAIM OR CLAIMS THAT MAY RESULT ARISING FROM THE ALLEGED NEGLIGENCE OF THE MAINTENANCE OR OPERATION OF THE APPROVED AIDS!

Joseph Serpa

90- TELEPHONE NO.

(209) 835-7106

FOR USE BY DISTRICT COMMANDER

RECO.
CHART
L. N. M.

DATE APPROVED _____

SIGNATURE (By direction)

SIGNATURE (By direction)

	Class	III
--	-------	-----

19 Jun 90 M. I. VAN HOUTEN

PREVIOUS EDITIONS ARE OBSOLETE

SN 7530-00-F01-1340

APPROVAL SHEET

for

Survey H-10342

The descriptive report, final field sheets and accompanying records have been reviewed for accuracy, completeness, compliance with project instructions, and adherence to required standards and procedures. The data are forwarded for final review and processing.

Submitted by:

Michael E. Bigelow

Michael E. Bigelow

Assistant Chief of Party, PHP

Approved by:

DeWayne J. Nodine

LT DeWayne J. Nodine, NOAA
Chief, PHP

ORIGINAL

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

REVISED TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: June 26, 1991

MARINE CENTER: Pacific

OPR: L-208

HYDROGRAPHIC SHEET: H-10342

LOCALITY: Suisun Bay/San Joaquin River North of Pittsburg, CA.

TIME PERIOD: May 17, 1990 - February 25, 1991

TIDE STATIONS USED: 941-5112 Mallard Island, CA.
Lat. 38 2.6'N Lon. 121 55.1'W

941-5176 Collinsville, CA.
Lat. 38 4.4'N Lon. 121 50.9'W

941-5205 Montezuma Slough, CA.
Lat. 38 5.3'N Lon. 121 53.0'W

941-5207 Montezuma Slough Flood Gate, CA.
Lat. 38 5.6'N Lon. 121 53.2'W

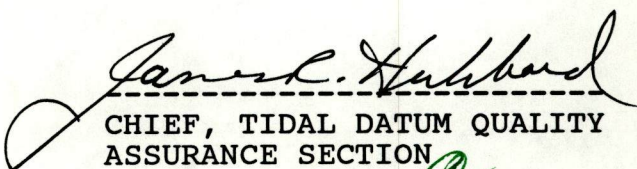

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 941-5112 = 3.06 ft.
941-5176 = 2.11 ft.
941-5205 = 8.04 ft.
941-5207 = 1.26 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 941-5112 = 3.9 ft.
941-5176 = 3.7 ft.
941-5205 = 3.8 ft.
941-5207 = 4.5 ft.

REMARKS: RECOMMENDED ZONING

1. In Montezuma Slough north of the flood gate zone direct on 941-5207.
2. In Montezuma Slough north of the floodgate, when data for station 941-5207 (Montezuma Slough, flood gate staff) is not available, tides can not be provided.

3. In Montezuma Slough south of the flood gate and north of 38 4.5'N zone direct on 941-5205.
4. In Montezuma Slough south of the flood gate and north of 38 4.5'N, when data for 941-5205 (Montezuma Slough) is not available, apply times direct and a X1.05 range ratio to station 941-5176 (Collinsville).
5. In Montezuma Slough south of 38 4.5'N apply a X0.98 range ratio to all heights and times direct on 941-5205.
6. In Montezuma Slough south of 38 4.5'N, when data for station 941-5205 (Montezuma Slough) is not available, apply times direct and a X1.02 range ratio to station 941-5176 (Collinsville).
7. In Suisun Bay north of 38 3.3'N zone direct on 941-5176.
8. South of 38 3.3'N and east of Winter Island excluding New York Slough, zone direct with a +00hr 10min time correction to 941-5176.
9. West of Winter Island and south of 38 3.3'N excluding New York Slough, zone direct with a +00hr 10min time correction to 941-5112.
10. In New York Slough between Point Emmet and Point Beemar, apply a X0.96 range ratio and a +00hr 15min time correction to 941-5112.


CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION 

ORIGINAL

Montezuma Slough Flood Gate Staff, CA. 941-5207
Lat. 38 5.6'N Lon. 121 53.2'W

Supplementary data for OPR L-208 sheet H-10342.

Note: This data is not on tape.

November 14, 1990 (DN 318)

Time (GMT)	Height in feet
1730	5.25
1736	5.30
1742	5.40
1748	(5.45)
1754	5.50
1800	5.60
1806	5.75
1812	5.80
1818	5.85
1824	5.90
1830	5.95
1836	6.00
1842	6.05
1848	6.10
1930	6.31
1936	6.34
1942	6.37
1948	6.39
1954	6.42
2000	6.44

PLANE OF REFERENCE (MEAN LOWER LOW WATER) = 1.26'

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE = 4.5'

() This is an inferred value.

GEOGRAPHIC NAMES

H-10342

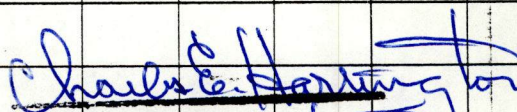
Name on Survey	ON CHART NO.										
	A	B	C	D	E	F	G	H	K		
ON PREVIOUS SURVEY											
CON U.S. QUADRANGLE MAPS											
FROM LOCAL INFORMATION											
ON LOCAL MAPS											
P.O. GUIDE OR MAP											
GRAND MCNALLY ATLAS											
U.S. LIGHT LIST											
BEENAR, POINT	X	X	X	X							1
BROAD SLOUGH			X	X							2
BROWNS ISLAND	X	X	X	X							3
CALIFORNIA (title)	X	X	X	X							4
CHAIN ISLAND	X	X	X	X							5
COLLINSVILLE	X	X	X								6
DOWEST SLOUGH			X	X							7
DUTTON			X	X							8
EMMET, POINT	X	X	X	X							9
FRASER SHOAL	X	X	X								10
MARSHALL CUT	X	X	X	X							11
MIDDLE SLOUGH	X	X	X	X							12
MONTEZUMA ISLAND	X	X	X	X							13
MONTEZUMA LANDING	X	X	X	X							14
MONTEZUMA SLOUGH	X	X	X	X							15
NEW YORK POINT	X	X	X	X							16
NEW YORK SLOUGH	X	X	X	X							17
PITTSBURG	X	X	X	X							18
PITTSBURG LANDING	X	X	X	X							19
PITTSBURG POINT			X	X							20
SACRAMENTO, POINT	X	X	X	X							21
SACRAMENTO RIVER	X	X	X	X							22
SAN JOAQUIN, POINT	X	X	X	X							23
SAN JOAQUIN RIVER	X	X	X	X							24
SHERMAN ISLAND	X	X	X	X							25

GEOGRAPHIC NAMES

H-10342

Name on Survey	A ON CHART NO. 18656	B Chart No. 18652 SC	C Chart No. 18659	D TP-01251	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G GRAND MCNALLY ATLAS	H U.S. LIGHT LIST	K
SPINNER ISLAND	X		X	X					1
SUISUN BAY	X	X	X	X					2
VAN SICKLE ISLAND	X	X	X	X					3
WINTER ISLAND	X	X	X	X					4
									5
									6
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									25

Approved:


Chief Geographer - N/CG2x5

OCT - 1 1991

NOAA FORM 77-27(H) (9-83)		U.S. DEPARTMENT OF COMMERCE		REGISTRY NUMBER H-10342	
HYDROGRAPHIC SURVEY STATISTICS					
RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.					
RECORD DESCRIPTION		AMOUNT		RECORD DESCRIPTION	
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	3				
CAHIERS					
BOXES					
SHORELINE DATA					
SHORELINE MAPS (List):					
PHOTOBATHYMETRIC MAPS (List):					
NOTES TO THE HYDROGRAPHER (List):					
SPECIAL REPORTS (List):					
NAUTICAL CHARTS (List):					
OFFICE PROCESSING ACTIVITIES <i>The following statistics will be submitted with the cartographer's report on the survey</i>					
PROCESSING ACTIVITY			AMOUNTS		
			VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET					2545
POSITIONS REVISED					
FOUNDINGS REVISED					
CONTROL STATIONS REVISED					
			TIME-HOURS		
			VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION					
VERIFICATION OF CONTROL					
VERIFICATION OF POSITIONS			198		198
VERIFICATION OF SOUNDINGS			332		332
VERIFICATION OF JUNCTIONS					
APPLICATION OF PHOTOBATHYMETRY					
SHORELINE APPLICATION/VERIFICATION					
COMPILATION OF SMOOTH SHEET			178		178
COMPARISON WITH PRIOR SURVEYS AND CHARTS				16	16
EVALUATION OF SIDE SCAN SONAR RECORDS					
EVALUATION OF WIRE DRAGS AND SWEEPS					
EVALUATION REPORT				61	61
GEOGRAPHIC NAMES					
OTHER' Digitization					
*USE OTHER SIDE OF FORM FOR REMARKS			TOTALS		785
Pre-processing Examination by M. Brown			Beginning Date 4/26/91		Ending Date 5/14/91
Verification of Field Data by L. Deodato			Time (Hours) 708		Ending Date 3/23/92
Verification Check by J. Stringham, B. Olmstead			Time (Hours) 62		Ending Date 5/14/92
Evaluation and Analysis by R. Davies			Time (Hours) 77		Ending Date 7/23/92
Inspection by D. Hill			Time (Hours) 8		Ending Date 2/10/93

EVALUATION REPORT

H-10342

1. INTRODUCTION

Survey H-10342 is a basic hydrographic survey accomplished by the Pacific Hydrographic Party under the following Project Instructions.

OPR-L208-PHP, dated May 3, 1989

OPR-L208-PHP, dated June 5, 1990

This survey was conducted in California and covers the eastern portion of Suisun Bay, the western portions of both the Sacramento and San Joaquin Rivers, the southern end of Montezuma Slough and all of New York, Broad and Middle Sloughs. The surveyed area extends from latitude 38/01/27N to latitude 38/05/51N, and from longitude 121/49/39W to longitude 121/53/44W. The shoreline has numerous industrial and commercial activities, low-lying islands made up of sand and marsh grass and numerous wrecks, ruins and floodgates. The bottom consists of sand, mud and shells. Depths range from zero to 69 feet.

In several areas, lines of hydrography appear to cross the HWL. In these places, the HWL is composed of tule grass which is not solid and therefore a survey launch can appear to have crossed the HWL, especially at a high stage of tide. This is substantiated by the legend note and compiled light shoreline shown on Map TP-01251. The compiled light shoreline describes apparent shoreline (offshore limits of vegetation and or cultural shoreline), and precludes the accurate portrayal of the mean high water line.

Predicted tides for Fort Point, San Francisco, California, were used for the reduction of soundings during field processing. Approved hourly heights zoned from Mallard Island, Collinsville, Montezuma Slough and Montezuma Slough Flood Gate, CA, gages 941-5112, 941-5176, 941-5205 and 941-5207, respectively, 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. NAD 27 is used as the horizontal datum for plotting and position computation. The TRA, sound velocity and electronic control 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 Guidelines No. 52, Standard Digital Data 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 contain adequate discussions of horizontal control and hydrographic positioning.

Positions of horizontal control stations used during hydrography are 1990 field and published values based on NAD 27. These values were used during office processing for the computation of positions. The smooth sheet and accompanying overlays are annotated with NAD 83 adjustment ticks based on values determined with NGS program NADCON. Geographic positions based on NAD 83 may be plotted on the smooth sheet utilizing the NAD 27 projection by applying the following corrections.

- Latitude: 0.289 seconds (8.919 meters)
- Longitude: -3.849 seconds (-93.837 meters)

The year of establishment of control stations shown on the smooth sheet originates with NGS listing and the horizontal control records for this survey.

The quality of several 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. A review of the data, however, indicates that none of these fixes are used to position dangers to navigation. The features or soundings located by these fixes are consistent with surroundings. These fixes are considered acceptable.

The following positions were acquired by the hydrographer as "see field sheet" fixes (SFS). These positions were transferred from the final field sheet.

<u>Position Numbers</u>	<u>Approximate</u>	
	<u>Latitude(N)</u>	<u>Longitude(W)</u>
2000-2005	38/02/24	121/53/16
2006-2029	38/02/10	121/52/23
2030-2034	38/02/12	121/53/12

The following shoreline maps apply to this survey.

	<u>Photo Date</u>	<u>Class</u>	<u>Scale</u>
TP-01251	Nov.1983, March 1984	III	1:10,000
TP-01058	April 1979	III	1:10,000

Shoreline centered at latitude 38/02/24N, longitude 121/53/09W, (Pittsburg Municipal Marina and vicinity), was drawn in brown for orientation only from chart 18659, 10th edition, dated July 7, 1990. Here, new construction has occurred since 1983-84 photography.

A pier at latitude 38/01/46.3N, longitude 121/51/22.7W, and an obstruction at MHW, latitude 38/01/59.5N, longitude 121/50/18W, were transferred to the smooth sheet from shoreline map TP-01251. These features were not verified or disproved during on-site observation.

The following shoreline changes are depicted in red with supporting positional information. These revisions are considered adequate to supersede the common

photogrammetrically delineated shoreline. Refer to the smooth sheet for an accurate depiction.

	<u>Latitude(N)</u>	<u>Longitude(W)</u>
HWL	38/03/00	121/51/16
catwalk	38/02/02	121/52/28
floodgate	38/05/35	121/53/08
wharf	38/01/48	121/51/33

The following shoreline changes are depicted in dashed red without supporting positional information. These revisions are considered adequate to supersede the common photogrammetrically delineated shoreline. Refer to the smooth sheet for an accurate depiction.

	<u>Latitude(N)</u>	<u>Longitude(W)</u>
HWL	38/03/22	121/50/59
HWL	38/03/13	121/51/13

3. HYDROGRAPHY

With the exceptions noted below and elsewhere 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;
- c. show the survey was properly controlled and soundings are correctly plotted.

The hydrographer was apparently unable to define the zero depth curve due to the steepness of the shoreline, the broad flat shallow areas and the areas of grass which exist throughout the survey. Grassy areas prevented the hydrographer from conducting an adequate investigation of some charted items.

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, April 1990 Edition, except as follows.

A comparison with a prior survey should discuss general trends such as shoaling or deepening that have occurred in the survey area. Give conclusions or opinions as to the reasons for significant differences. In addition, significant changes in the shoreline should be accounted for in a like quantifiable manner, discussing degree of accretion or erosion. Reference the FPM, Figure 6.1, Section M, Comparison with Prior Surveys.

Landmarks were not positioned or discussed. The hydrographer shall evaluate all charted landmarks from seaward to determine which are adequate and to determine which charted landmarks no longer exist and thus should be deleted from the charts. If there are new and more prominent objects that would serve as better landmarks, their positions shall be determined and listed among the landmarks to be charted. Reference Hydrographic Manual 5.5.1.

The descriptive report is poorly compiled and written. A detailed critique is beyond the scope of this report although the following items are of special note; the correct terminology when reducing features to the chart datum were not used i.e., features bare at MHW and uncover at MLLW. The hydrographer frequently uses the term charted visible wreck when in fact the charted wreck is symbolized as submerged. Several charting recommendations were made based on inadequate investigations. In some instances, listed geographic positions of AWOIS items and other charted features were incorrect.

AWOIS item 51485, a charted submerged pile, located at latitude 38/05/50N, longitude 121/53/40W, was not investigated on this survey or junctional survey H-10298. Reference the FPM, Figure 6.1, Section N, Comparison with the Chart.

During day 46, 1991, a hydrographic development was conducted on a stray sounding from a previous main scheme line and a least depth of four feet at MLLW was found by echosounder at position 9830/3d out. Although the hydrographer concludes this shoal sounding to be the westernmost of two charted submerged wrecks, no dive investigation was conducted to verify this sounding as a wreck with an associated least depth. Reference the FPM, Figure 6.1, Section M, Comparison with Prior Surveys.

A charted pier at latitude 38/01/46.27N, longitude 121/51/22.74W, lies within a grassy area and could not be verified or disproved during survey operations. Annotation as to the grassy nature of this area should have been portrayed on the final field sheet.

5. JUNCTIONS

Survey H-10342 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10298	1989	1:10,000	Northeast
H-10317	1989-90	1:10,000	West
H-10373	1991	1:10,000	Northeast
H-10398	1991	1:10,000	Southeast

The junction with survey H-10317 is complete. The junction with survey H-10298 has not been formally completed since the survey was previously processed and forwarded for charting. The junction note for the other two surveys is ADJOINS, because the depths on surveys H-10373 and H-10398 are in meters, while the soundings on this survey are in feet. Soundings are in good agreement, however; the depth curves shown on these surveys delineate different depths and, therefore, do not agree.

6. COMPARISON WITH PRIOR SURVEYS

H-1781(1886) 1:10,000

Survey H-1781 covers an area north of latitude 38/05/00N in Montezuma Slough. A considerable amount of change has taken place in the common area. Depths differ between 5 to 15 feet, the prior being shoaler. This difference is the result of dredging to build up the levees and to deepen the slough.

H-7797(1950) 1:10,000

H-7798(1950) 1:5,000

Surveys H-7797 and H-7798 cover the entire area of the present survey except north of latitude 28/05/00N in Montezuma Slough. Areas that are common to the prior surveys have changed through erosion, accretion and cultural development. The greatest differences have been effected by manmade changes and involve creation of the Sacramento Deep Water Ship Channel, running west to east in the Sacramento River, a small cut on the north end of Winter Island and the construction of three new marinas centered at approximately latitude 38/02/15N, longitude 121/53/06W. Comparison of depths between the present and the prior surveys reveals differences between 1 to 10 feet, with extreme cases of 25 feet. Additional discussion can be found in section K of the hydrographer's report.

A submerged cable crossing area is located on prior survey H-7797 between latitude 38/01/36N, longitude 121/50/41W, and latitude 38/01/44N, longitude 121/50/35W. This cable crossing was confirmed with positions on three cable crossing signs on opposite ends of the prior cable crossing. This feature has been brought forward from this prior survey to survey H-10342.

Several other features originating from the prior surveys were not found, disproved or adequately investigated during this survey. These features, listed below, have been brought forward onto this survey.

<u>Feature</u>	<u>Latitude(W)</u>	<u>Longitude(W)</u>
subm pile	38/01/32.5	121/49/52.5
subm ruins	38/01/47.9	121/51/27.4
subm ruins(east of)	38/02/11.0	121/52/50.0

With the transfer of these items, survey H-10342 is adequate to supersede the prior surveys within the common area.

AWOIS items 51418, 51419, 51428, 51429, 51430, 51438, and 51470 originate with the prior surveys mentioned above. Refer to the AWOIS item discussions in section M of the hydrographer's report supplemented as follows.

Investigation of AWOIS item 51419, two charted submerged wrecks, was performed using a 75-meter bottom drag from position 8141 at latitude 38/01/32.86N, longitude 121/49/53.62W. One wreck, submerged 4 feet at MLLW, was found at position 8142, latitude 38/01/31.49N, longitude 121/49/54.68W. This is likely the charted submerged wreck described as AWOIS item 51418. Reference discussion of AWOIS item 51418 in this report, Section 7b., AWOIS. A second wreck, submerged 9 feet at MLLW, is actually wreckage debris and was found at position 8144, latitude 38/01/33.27N, longitude

121/49/54.46W. In addition, a least depth by echosounder of 4 feet at MLLW (position 9830/3), was found 30 meters west of position 8144 at latitude 38/01/32.82N, longitude 121/49/55.68W. No dive investigation was conducted on this shoal sounding. However, it is likely that positions 8144 and 9830/3 confirm the extent of the wreck to scale as shown on prior survey H-7798. Recommend charting one submerged wreck, with a least depth of 4 feet, as found by this survey.

7. COMPARISON WITH CHART

Chart 18659, 10th edition, dated July 7, 1990; scale 1:10,000

Chart 18656, 49th edition, dated February 2, 1991; scale 1:40,000

Chart 18652, 27th edition, dated November 18, 1990; scale 1:40,000

a. Hydrography

Charted hydrography originates with the prior surveys mentioned in section 6 and miscellaneous sources.

Several charted features were not found or investigated during this survey, or were not investigated adequately for disproval. These features, listed below, should be retained at their presently charted position and depicted as shown below.

<u>Feature</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>	<u>AWOIS</u>
subm wreck PA	38/01/27.0	121/50/12.0	51421
sewerline	38/01/36.5	121/50/35.2	51423
pier	38/01/46.3	121/51/22.7	51468 ← pier on smooth sheet
subm piles	38/04/24.0	121/50/30.0	51468 ← within Foul area
3 shoals centered at	38/04/26.1	121/52/44.5	
subm pile <i>from H7797/50</i>	38/01/30.0	121/49/50.0	
subm pile	38/05/50.0	121/53/40.0	51485 ← row of pile and obstr shown on present survey, chart present survey data, delete charted pile (PA).

The charted foul area at latitude 38/01/33N, longitude 121/50/12W, was not addressed by the hydrographer. Although survey depths found within this area generally range from 1-5 feet, the depth information alone is not considered sufficient to disprove this feature. Recommend the charted foul area be retained.

The Montezuma Slough floodwater control structure in the vicinity of latitude 38/05/36N, longitude 121/53/08W, is not presently charted. The depiction on the smooth sheet is based on a limited amount of field investigation and is adequate for an approximate portrayal at chart scales. However, additional information obtained from the California Department of Water Resources, documents the engineering specifications and dimensions of the structure. This package of drawings, forwarded to the Nautical Data Section in June 1992, should be used to supersede the smooth sheet depiction of the structure.

Survey H-10317 is adequate to supersede charted hydrography within the common area,
b. AWOIS *except as noted above.*

All AWOIS items not mentioned in section 6 of this report originate with miscellaneous sources. Refer to the hydrographer's report for discussion and disposition of these features, supplemented as follows.

AWOIS item 51418, visible wreck, charted at latitude 38/01/30.4N, longitude 121/49/54.0W, was investigated by the hydrographer. A 50-meter bottom drag was done and nothing was found. The wreck and adjacent pile should be removed from the chart. However, a submerged wreck was found approximately 30 meters to the north at position 8142, latitude 38/01/31.49N, longitude 121/49/54.68W. This wreck is believed to be AWOIS item 51418. Chart a submerged wreck at the above position.

AWOIS item 51485, a charted submerged pile, located at latitude 38/05/50N, longitude 121/53/40W, was not investigated or discussed by the hydrographer. Recommend that this feature be retained as presently charted.

c. Controlling Depths

The Sacramento River Deep Water Ship Channel and New York Slough cut through this survey area in a west to east direction. The survey verified the project depths, although most depths are deeper than project depths.

d. Aids to Navigation

There are twenty three fixed aids and three floating aids charted within the area of this survey. They were located and serve their intended purpose. However, several aids to navigation have apparently been relocated or removed by the USCG since the publication of the chart. Refer to the hydrographer's report, section L and below for their revised positions and discussion.

Sacramento River Deep Water Ship Channel Light 6 was located at latitude 38/03/51.447N and longitude 121/50/03.693W, this is 25 meters to the northwest from the charted position.

Suisun Bay Light 34 was located at latitude 38/03/31.94N and longitude 121/51/57.24W, this is 90 meters to the northeast from the charted position.

The aids to navigation at the floodwater control structure (dam) in Montezuma Slough are not all depicted on the smooth sheet. Those with detached positions are plotted as part of a subplan. It is not clear which are considered temporary due to seasonal operation. None of the lights are listed in the Light List, the Coast Pilot, or depicted on any contemporary charts. They are considered to be privately maintained based on a permit application filed by the California Dept. of Water Resources with the USCG in 1990 (Appendix VI). It is recommended that when the dam is charted the lights be described with a note indicating their seasonal nature.

All charted landmarks should remain as charted.

e. Geographic Names

Names appearing on the smooth sheet and in the survey title have been approved by the Chief Geographer.

f. Dangers to Navigation

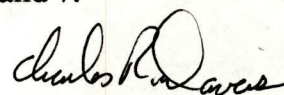
The hydrographer reported three dangers to the U. S. Coast Guard. One additional danger to navigation report was generated during office processing. Copies of these reports are attached.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10342 adequately complies with the project instructions, except where noted in this report.

9. ADDITIONAL FIELD WORK

This is an adequate hydrographic survey. Additional field work is recommended on a time available basis to address the features listed in sections 6 and 7.



C. R. Davies
Cartographer

APPROVAL SHEET
H-10342

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.

Dennis J. Hill Date: 2/10/93
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: 2/11/93
Commander Douglas G. Hennick, NOAA
Chief, Pacific Hydrographic Section

Final Approval

Approved:

J. Austin Yeager Date: 12-13-94
J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey



FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10342

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

- | REMARKS | |
|---|--|
| 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. | |

FD-302a (Rev. 11-29-60) FORM 8252 WHICH MAY BE USED