

10264

Diagram No. 5534

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-10-1-88.....
Registry No. H-10264.....

LOCALITY

State California.....
General Locality . Carquinez Strait.....
Sublocality Crockett to Benicia Point.....

1988

CHIEF OF PARTY
LT. F.R. Diaz.....

LIBRARY & ARCHIVES

DATE June 19, 1989.....

10264

"GP"
CHT
• 18657
• 18655
18656
18652 c

CARTOG;
SIGN OFF ON
FM. IN BACK

HYDROGRAPHIC TITLE SHEET

H-10264

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 10-1-88

State CaliforniaGeneral locality Carquinez StraitLocality Crockett to Benicia PointScale 1:10,000Date of survey April 6 to July 26, 1988Instructions dated October 9, 1987Project No. OPR-L202-PHPVessel Launch 1101 (EDP 0651), Truck (EDP 0650)Chief of party LT Federico R. DiazSurveyed by LT F.R. Diaz, LTJG T.K. Porta, ENG TECH B.H. Lund, EVAL. C.R. Davies,
SURVEY TECH. E.O. WernickeSoundings taken by echo sounder, hand lead, ~~etc.~~Graphic record scaled by PHP PersonnelGraphic record checked by F.R. Diaz, T.K. PortaVerification by: R.N. MihailovAutomated plot by PMC Xynetics PlotterEvaluation by: C.R. DaviesSoundings in ~~fathoms~~ feet at ~~MLLW~~ MLLW and tenths of feet

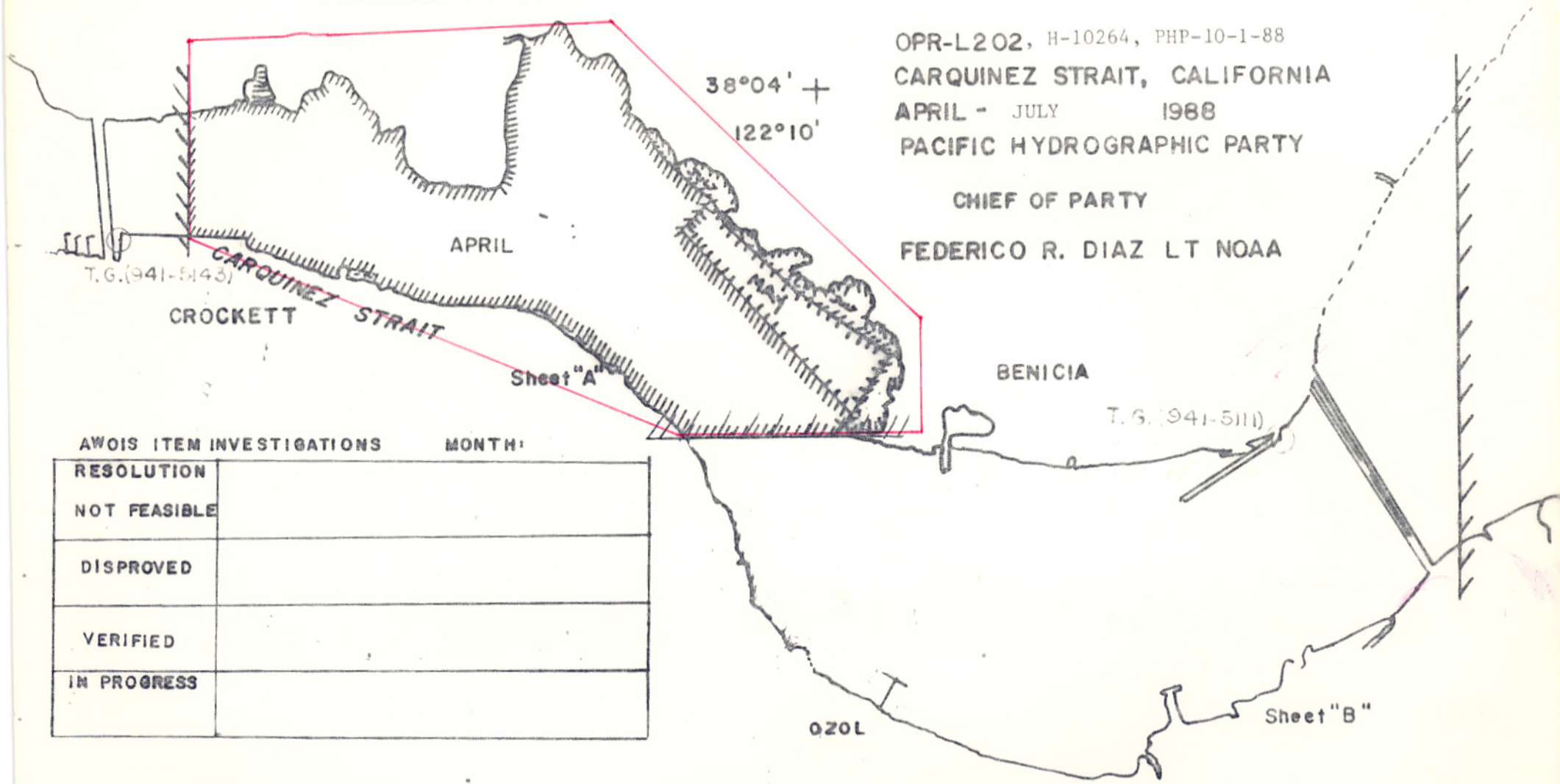
REMARKS: All times recorded in Universal Time Coordinate (UTC). Revisions and
marginal notes in black were generated during office processing. All
separates are filed with the hydrographic data, as a result page numbering
may be interrupted or non-sequential.

SB327-97 AWOIS+SURF 8/89 RWD

PROGRESS SKETCH TO ACCOMPANY ANNUAL FIELD OPERATIONS REPORT

OPR-L202, H-10264, PHP-10-1-88
 CARQUINEZ STRAIT, CALIFORNIA
 APRIL - JULY 1988
 PACIFIC HYDROGRAPHIC PARTY

CHIEF OF PARTY
 FEDERICO R. DIAZ LT NOAA



AWOIS ITEM INVESTIGATIONS	MONTH:
RESOLUTION	
NOT FEASIBLE	
DISPROVED	
VERIFIED	
IN PROGRESS	

	APR	MAY	JUN	JUL						
SQ.N.M. Sdgs.	12.25	0.5	0.2	0.4						
L.N.M. Misc Dist	26.00	8	8	16						
L.N.M. Dist To & Fr.	40.00	6	8	18						
L.N.M. Sdg Line	70.10	8	5.0	11.5						
Bottom Samples	0	0	0	23						
Control Stations	0	0	0	0						
Tide Gages	0	0	0	0						
Wire Drag S.N.M.	0	0	0	5.5						

CHART 18656
 1:40,000 - Scale

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY
H-10264, FIELD NO. PHP-10-1-1988
Sheet A, Scale 1:10,000, Year 1988
Pacific Hydrographic Party (PHP)
Chief of Party: LT Federico R. Diaz

A. PROJECT. ✓

A basic hydrographic survey, Sheet "A", was performed in accordance with Project Instructions OPR-L202-PHP, dated October 9 1987, Change No. 1 dated October 16, 1988 and Change No. 2 dated May 25, 1988.

B. AREA SURVEYED. ✓

The survey was conducted in Carquinez Strait, CA. The limits of the survey were

Latitude	Longitude
38/04/15 N	122/13/02 W
38/02/40 N	122/09/30 W.

See Eme Report, section 1

The inclusive dates of hydrography were from April 6, 1988 (DN 96) to July 26, 1988 (DN 208).

C. SOUNDING VESSEL. ✓

PHP's Launch 1101 (EDP 0651), a 29 ft. aluminum Jensen, equipped with a turbo Caterpillar diesel and a Hamilton jet drive, was used for bottom drags, and sounding acquisition.

There were no unusual problems encountered with Launch 1101 during the survey. Launch 1101 was hauled out for routine maintenance from May 31, 1988 to June 24, 1988 (DN 152 - DN 176).

Some of the detached positions were acquired by PHP personnel from the beach. These soundings were recorded as acquired by vessel 0650 (PHP truck) in the sounding volume. The hydrographer saw this analogous to taking "pole" soundings from the launch. The TRA and the TC/TI correction were zero so the accuracy of the soundings were not affected. This was the most efficient way to process the data.

D. SOUNDING EQUIPMENT. ✓

See section 1 of Eme Report

Launch 1101 is equipped with a standard Ross Finline 5000 echo sounder and digitizing system which utilizes a centerline mounted, 7.5 degree, 100 KHz transducer. Launch 1101 is also equipped with two side looking digital

transducers for navigational use in sloughs, narrow channels, and creeks. The Ross system on Launch 1101 consists of the following instruments:

<u>Component</u>	<u>Model No.</u>	<u>S/N</u>
Power Inverter	2000	1071
Transceiver	4000	1081
	DN 096 - 208	
Analog Recorder	5000	1080
Digitizer	6000	3787

Leadline PHP-1, was used for to acquire soundings for "See Field Sheet" detached positions on the end of the mooring slips in Glen Cove Marina. For leadline, calibration information see Appendix IV, Sounding Correction Abstract, following this report.

On May 10, 1988 (DN 131), the transceiver failed. There was no echogram or transmit pulse after the failure. The defective transceiver board was replaced and the echo sounder operated properly.

There were no faults in the equipment that affected the accuracy of the soundings.

Sounding Instrument Accuracy and Adjustments. ✓

The Ross echo sounding system simultaneously produces an analog echogram and a digitized depth value. Digitized soundings sampled by the logging system at predetermined time intervals are the primary source of sounding line data on the field sheet, but these are supplemented by depths scaled from the analog record in areas where digitized depths were incorrect or lacking. The digitized depths are sometimes triggered by a source other than the bottom (sea weeds, fish, etc.) or from an instrument generated source such as side echos. In these instances the digitized depths were replaced by values scaled from the echogram.

Initial error occurs when the echo sounder's transmit pulse trace is not adjusted to coincide with the zero on the echogram paper. The initial trace alignment was monitored and adjusted during survey operations. Any depths scaled from echograms with initial error were corrected before being applied to the survey.

Phase errors are caused by faulty stylus belt timing in the analog recorder due to belt stretching or improper internal adjustment. The system was checked for phase error at the beginning of each survey day and, with few exceptions, at the end of each survey day (or whenever the analog paper was changed) by introducing simulated depths (e.g. 10', 20', 30', etc.) into the analog recorder via the digitizer phase

calibration mode. The analog trace was then compared to the simulated digital depth and the equipment was adjusted as necessary.

The analog's speed had no inconsistencies on this survey.

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 line was measured using a surveying level (Lietz B-1, S/N 214303) and rod. The second part was done with the launch in the water with a normal fuel load 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 1.63 feet.

Sound Velocity Correctors. ✓

Velocity correctors were determined from bar check data to depths of 50 feet, however the deepest survey depths were 128 ft. Data were extrapolated from the velocity curves beyond the 63 ft limit set within the Hydrographic Manual (25% of the depth for which velocity data have been collected. HM, section 1.5.4). Approximately 60% of the soundings are affected. HM section 4.9.5.1.1 also states that bar check data must be supplemented with oceanographic observations to determine velocity corrections where all or some of the project area depths are beyond bar check range.

The hydrographer was cognizant of this problem at the start of the survey (and relayed it to MOP21) but was unable to comply with the two requirements because FHP has not been issued adequate velocity determination equipment, which has been purchased and at present being tested by NOS in Rockville, MD.

In the preprocessing examination for H-10223, the hydrographer is advised to assess the potential for unpredictable deviations from a simple extrapolated velocity curve due to temperature or salinity variations. The potential for deviations of temperature or salinity in the water column for depths between 50 and 125 ft, other than those indirectly measured by bar checks for depths to 50 ft are small due to the observable mixing on the surface of the water column. The current is very strong (measured up to 4 kts), eddies, upwelling and tide rips have been observed throughout the survey area.

Sound velocity correctors were derived from bar check data. Bar checks were made once daily when wind and sea conditions permitted. Most days the wind is too strong in the afternoon for the keel-less jet launch to obtain usable bar check data.

An 11 x 1 foot aluminum bar suspended on 1/4 inch steel chains with wire-tied and painted markings at 5 foot intervals was used to obtain bar check data. Chain markings were checked for accuracy prior to beginning the survey and were found to be accurate. The launch's beam is 11 ft, therefore no line correctors to correct for line angle were applied. Bar checks were abstracted daily using a measured static draft value of 1.6 feet. The calculated correctors for each bar depth are on these abstracts. The bar check abstracts contain the information of the position of the stations and the dates of velocity correction observations. For more information see Appendix IV, Sounding Correction Abstract. *Filed with the survey records*

The bar checks were grouped by time. All the bar checks from a one month period were used to determine a velocity curve. The hydrography during these times were in the same general locality.

Sound velocity correctors were computed using the mean of the daily corrector values for each bar depth using least squares analysis. The velocity curve that best fit the data was described by a linear equation. A multiple regression method was used to calculate the maximum depth value for each velocity corrector.

A graph of the velocity correctors and depth from the regression equation was also prepared. The following table is appropriate for the dates shown:

Table	Inclusive Dates (Year days)
I	096/88 - 180/88
II	181/88 - 208/88

A bar check was not possible on DN 131 due to the faulty transceiver board. The data on DN 131 should be retained since crosslines and junctions agree within one foot. All other days of hydrography had accurate bar checks.

Settlement and Squat Corrections. ✓

The digital speed log for Launch 1101 was originally acquired in April, 1984 to test for ground effect, which is the change in speed when moving to and from shallow water (see Ground Effect Report, May, 1984). From this testing it was determined that one method 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. All soundings collected with Launch 1101 were annotated as to speed through the water, not rpm. Speed through the water was likewise used during the settlement and squat measurements.

Settlement and squat measurements were observed for the Pacific Hydrographic Party's Launch (EDP 0651), on April 7, 1987 (DN 97). This test was conducted during survey operations on OPR-L123-PHP-86 and OPR-L123-PHP-87. The settlement and squat correctors apply to all data acquired with Launch 1101 on this survey (DN 096-DN 208 1988).

Equipment on the launch at the time of the test consisted of normal electronic positioning and depth finding gear (Mini-Ranger, HDL system, Ross echo sounder). The launch is equipped with a Caterpillar Diesel engine coupled to a jet pump. Three people were on board the launch at the time of the test (a normal crew for surveying).

The test was conducted between the General Mills pier ruins (38/04/50 N and 122/14/50 W) and Mare Island Strait Light 4. The test was in the limits of OPR-L123-PHP-86. The launch went from depths of 20 to 40 feet of water. The weather during the test was calm, with winds 0 to five knots, seas were 0 feet and the current was slack.

The level was set up on stable pier ruins at the General Mills flour company, Vallejo, California. A level rod was held on the cabin top, over the position of the hull mounted transducer. The launch made runs ranging from 3 ^{feet} to 10 ^{feet} towards the instrument, stopping for dead in the water (DIW) measurements before and after each run to account for the change in tide levels. These point values were plotted and connected to yield continuous speed versus draft correction curves.

Settlement and squat corrections are not applied to the field sheet, but are incorporated on the TC/TI tape.

Settlement and squat corrections are applied to Smooth Sheet.

Tide Correctors. ✓

Predicted tides were used to reduce the soundings in the sounding volume to MLLW by PHP in order to determine the proper cartographic code. The field plots at PMC were plotted with the tide correctors applied to the raw tidal data from Fort Point, San Francisco. See Appendix II. Field Tide Note for further information.

E. HYDROGRAPHIC SHEETS.

Field records were forwarded to the Pacific Marine Center, Nautical Chart Branch, Seattle, Washington, for initial plotting, verification and smooth plotting. The raw field data was transferred to PMC via modem. The plots, and F-
spool listings were returned to PHP for corrections, analysis and for review of the completeness and quality of the survey work. Final field sheets were not completed at PHP, as arranged by both PHP and PMC due to the lack of a full complement of personnel and time constraints.

*See ERM
Rpt, section 1*

F. CONTROL STATIONS. ✓

Control stations used on the survey were:

NEW POSITION OR VERIFICATION OF OLD BY PHP	STATION	LOCATION METHOD
POSITIONED	BARGE WRECK	HYDRO SIGNAL T2, EDM, SEXTANT
POSITIONED	BENICIA MARINA RED LT, 1988	TRAVERSE
VERIFIED	C & H 1986	TRAVERSE
VERIFIED	CARQUINEZ POINT 2 1922	TRAVERSE
VERIFIED	CARQUINEZ STRAIT LT 20, 1982 (dolphin)	TRIANGULATION
VERIFIED	CARQUINEZ STRAIT LT 21, 1982	TRIANGULATION
VERIFIED	CARQUINEZ STRAIT LT 22, 1982 (pile)	TRIANGULATION
VERIFIED	CARQUINEZ STRAIT LT 23, 1982 (pile)	TRIANGULATION
POSITIONED	CITY WHARF, 1988	TRAVERSE
VERIFIED	CROCKETT C & H SUGAR CO STK, 1932	INTERSECTION
VERIFIED	DILL USE, 1949	TRAVERSE
VERIFIED	EXXON REFINERY STK 1977.	INTERSECTION
POSITIONED	FENCE POST	HYDRO SIGNAL T2, EDM, SEXTANT
POSITIONED	FENDER, 1988	TRAVERSE
VERIFIED	GLEN, 1986	TRAVERSE

NEW POSITION OR VERIFICATION OF OLD BY PHP	STATION	LOCATION METHOD
POSITIONED	GLEN COVE MARINA RED LT, 1988 (pile)	TRAVERSE
POSITIONED	GLEN COVE MARINA GREEN LT, 1988 (pile)	TRAVERSE
POSITIONED	IRON PIPE, 1988	HYDRO SIGNAL SEXTANT
POSITIONED	LIGHTHOUSE, 1988	HYDRO SIGNAL T2, EDM, SEXTANT
VERIFIED	MOUNT DIABLO 1876	TRAVERSE
VERIFIED	PACIFIC G AND E N TRANSM TR, 1922	INTERSECTION
POSITIONED	RAMP, 1988	TRAVERSE
VERIFIED	ST PAULS EPISCOPAL CH SPIRE 1949	INTERSECTION
POSITIONED	TELEPOLE, 1988	HYDRO SIGNAL SEXTANT
VERIFIED	TEG, 1938	TRAVERSE

All stations were positioned to Third Order, Class I, or better accuracy, by the Pacific Photogrammetric Party, with the exception of the hydrographic signals. The hydrographic signals were positioned, by PHP, according to methods in the Hydrographic Manual, and used as visual signals only. Geodetic computations were based on the 1927 North American Datum. See the Horizontal Control Report, San Francisco Bay and San Pablo Bay, CA., DPR-L123-PHP-87 dated March, 1987 to October, 1987 which has been submitted to the Pacific Marine Center, Nautical Charts Branch, for verification.

There were no unconventional survey methods used or anomalies in the control adjustment or closure of ties.

There were no known photogrammetric problems that could contribute to position inaccuracies.

The hydrographic station LIGHTHOUSE is a structure on a private pier shaped like a lighthouse. It is not used for navigation.

G. HYDROGRAPHIC POSITION CONTROL.

Electronic position control on the launch were accomplished with a Motorola Mini-Ranger III ultra-high frequency transponder system in the range-range or range-azimuth configuration.

Methods of position control for items positioned by PHP personnel from the beach were range-azimuth, range-visual, and three point sextant fixes.

The detached positions have check positions. The inverse distance from the detached position to the check were calculated and were required to be within 0.5 millimeters at the scale of the survey. All of the detached positions are within 0.1 millimeters at the scale of the survey.

Positions inside the Glen Cove Marina were depicted on aerial photographs of the marina, using See Field Sheet methods, provided to PHP from the City of Benicia. The photograph is approximately 1:400 scale and was taken in the spring of 1985 (not at MLLW). The photograph shows Glen Cove in its present condition. The applicable charts and shoreline manuscripts do not show all the piers accurately. Establishing geodetic control for this marina would not be a cost effective survey method in this case. Concurrence on this opinion and procedure was obtained from MOP 211, Dennis Hill, and LTJG John Miller by telephone.

The aerial photographs were submitted with the hydrographic records for this survey. *These photographs were use to draw the dashed red H&W which surrounds the marina. See section 2 of EAC Report for further discussion.*

Electronic Control Equipment.

The following electronic positioning equipment were used on this survey:

Motorola Mini-Ranger III Mobile Station Launch 1101

Mini-Ranger Console S/N 713165
Transceiver (RT Console) S/N B1419

Motorola Mini-Ranger III Reference Stations

Mini Ranger Transponder, Code A	S/N F3233
Mini Ranger Transponder, Code B	S/N 911059
Mini Ranger Transponder, Code C	S/N E2712
Mini Ranger Transponder, Code 7	S/N 4709
Mini Ranger Transponder, Code 9	S/N 1628

Position Control Equipment Operation.✓

Baseline correctors (BLC) for Mini-Ranger data collected on this survey were calculated from the calibration performed on March 29 (DN 88).

Corrector/Minimum Signal Strength

Date of BLC	Code A	Code B	Code C	Code 7	Code 9	Applicable Dates
March 29, 1988	0/5	-2/5	+3/5	+3/4	0/5	088-208
July 29, 1988	-3/4	-1/4	-1/4	+1/5	-1/5	

Daily critical systems checks confirm that the calibration on March 29, 1988 (DN 088) is valid through to July 26, 1988 (See Change #2 of the Project Instructions).

Daily Calibrations..

Critical system checks were performed daily at a geodetic station. All daily system checks on the Mini-Rangers and console/RT unit during this time period resulted in a variance of less than 5 meters. PHP considers these system checks a confirmation of the BLC and proper Mini-Ranger operation as specified in the PMC QPORDERS.

The geometric configuration of the electronic control stations and the signal strengths for all positions were good. Angles of intersection for all electronic survey data were between 30 and 150 degrees. Signal strength was annotated on the raw data printout frequently during sounding acquisition. No data was submitted with less than minimum signal strength. *See ERM Report, section 2*

There were no unusual methods of electronic control operations, and no unusual atmospheric conditions on these item investigations.

Several of the visual detached positions were flagged by the automatic data processing program from PMC as weak positions. No additional field work was warranted because these positions were checked and are within 0.5 millimeters at the scale of the survey. *CMCWT*

ANDIST correctors were zero for all positions on this survey.

The theodolites used for range-azimuth control and calibrations were Wild T-2, S/N 276812.

The sextants used were Tamaya & Co. LTD. S/N T3725 and T3852. The sextants were checked for errors with each days use. The index error was set to zero.

The EDM used for these investigations was a K&E Ranger V, SN 07B-6026.

EQUIPMENT FAILURES ✓

There were no equipment failures that affected the accuracy of the positions acquired.

However on DN 202-208, the observed corrector for Code A (SN F3233) did not agree with the baseline corrector. For this reason Code A was not used to determine position from DN 202-208.

There was also a malfunction in the cable connecting the output from the Mini-Ranger console to the input of the HDL-100 Logger. This caused the output from the Logger, the raw data printout, to be printed in error. The error was a constant amount and was corrected by the OIC on the printout* by observing the Mini-Ranger console. The malfunction can be observed on the raw data printouts for DN 190-202 (vessel 0651). The cable malfunction did not affect the accuracy of the positions acquired from DN 190-202.

**Position listing provided by hydrographer verified as correct.*

For further information on electronic calibrations see Appendix V, Abstracts of Corrections to Electronic Position Control.

H. SHORELINE.

See Enc report, section 2

Shoreline data was from NGS shoreline manuscript TP-01247, scale 1:10000, with office review dated January 1987.

Shoreline verification was conducted by the hydrographer for all shoreline within sheet limits and are shown on the final field sheet.

The following recommendations are based on observation by the hydrographers at chart datum. The reported depths were based on MLLW from predicted tides. The reefs, ledges, and groins on this survey were composed of rock. The positions were determined by T-2/EDM with visual checks. *The following positions and depths are based on approved tides, final correctors i.e. velocity and electronic.*

ITEM	DN	TIME	VESNO
22 A	126	1803	0650
DESCRIPTION		LATITUDE N	LONGITUDE W POS
Charted (islet)		38/03/43	122/10/35
Observed (ledge ^{rock} -2.0 ^{-1.0} ft)		38/03/42.678	122/10/34.35 918
Observed (rock) -7.0 ^{-7.0} ft		38/03/42.48	122/10/33.11 919

RECOMMENDATION

Retain the islet as a high point on a ledge. Chart a ledge extending from the southwest end of the islet to position 918. The ledge has the same width as the charted islet. *Do not concur* *chock rocks according to Smooth Sheet*

ITEM	DN	TIME	VESNO
23 b	126	1904	0650
38	130	2118	"
DESCRIPTION		LATITUDE N	LONGITUDE W POS
Charted (rock and ruins)		38/03/31	122/10/28
Observed: ledge ^{do} +1.2 ^{0.0} ft		38/03/30.32	122/10/28.70 922
(W end ledge +1.2 ^{0.0} ft)		38/03/26.77	122/10/21.93 1024

RECOMMENDATION

Delete charted rock and ruins. Chart ledge extending from station RAMP to position 922. Revise the dotted zero foot curve line between positions 922 and 1024 to the ledge symbol. *concur*

ITEM	DN	TIME	VESNO
92	168	1547	0650
DESCRIPTION		LATITUDE N	LONGITUDE W POS
Charted (LWL)		38/04/01	122/12/15
Observed			
(S end ledge -1.8 ⁰ ft)		38/04/00.48	122/12/14.91 1163
(N end ledge and Obstr -5.0 ⁰ ft)		38/04/02.70	122/12/16.21 1184

RECOMMENDATION

Revise the low water line to show the ledge and the obstruction on the north end.

chart a continuous ledge from latitude 38°04'03"W, longitude 122°12'16"W to latitude 38°03'51"W, longitude 122°12'07"W.

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
93	168	1600-1609	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted (LWL)		38/03/59	122/12/13	
Observed				
(ledge -3.4 ⁰ ft)		38/03/58.86	122/12/12.84	1164
(S end ledge 0.6 ^{1.0} ft)		38/03/58.51	122/12/13.37	1165

RECOMMENDATION

Revise the low water line to show the ledge.

*See note for
Item 92*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
94	168	1618-1625	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted (LWL)		38/03/59	122/12/13	
Observed				
(N end ledge -3.4 ⁰ ft)		38/03/58.62	122/12/12.24 ⁵	1166
(S end ledge 0.6 ^{1.0} ft)		38/03/57.4	122/12/12.16	1167

RECOMMENDATION

Revise the low water line to show the extent of the ledge between these two positions.

*see note for
Item 92*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
95	168	1632-1642	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted (LWL)		38/03/55	122/12/11	
Observed				
(N end ledge -3.4 ⁰ ft)		38/03/57.36 ⁵	122/12/11.43 ⁴	1168
(S end ledge 0.6 ^{1.0} ft)		38/03/54.97 ⁶	122/12/11.46	1169

RECOMMENDATION

Revise the low water line to show the extent of the ledge between these two positions.

*see note for
Item 92*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
96	168	1654-1701	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted (LWL)		38/03/55	122/12/11	
Observed				
(N end ledge -3.4 ⁰ ft)		38/03/55.79	122/12/09.98 ⁹	1170
(S end Ledge 0.6 ^{1.0} ft)		38/03/55.04 ³	122/12/09.99	1171

RECOMMENDATION

Revise the low water line to show the extent of the ledge.

*see note for
Item 92*

ITEM	DN	TIME	VESNO	
99	168	1757, 1807	0650	
DESCRIPTION	LATITUDE N	LONGITUDE W	POS	
Charted (rock -2ft)	38/03/51	122/12/10		
Observed				
(S end ledge ^{1.0} 0.6 ft)	38/03/50.06	122/12/09.42	1175	
(NW end ledge -1.8ft)	38/03/52.52	122/12/09.34	1177	

RECOMMENDATION

Delete the rock symbol and show the extent of the ledge.

See note for Item 92

ITEM	DN	TIME	VESNO	
101	168	1830-1847	0650	
DESCRIPTION	LATITUDE N	LONGITUDE W	POS	
Charted (rock)	38/03/50	122/12/08		
(rock -3.0ft)	38/03/49	122/12/07		
Observed				
(SW end ledge ⁰ 0.2 ft)	38/03/49.32	122/12/08.18	1178	
(SE end ledge ⁰ 0.2 ft)	38/03/48.9 089	122/12/07.51	1179	
(N end ledge -2.0ft)	38/03/50.04	122/12/07.75	1180	

RECOMMENDATION

Delete the rock symbol and chart the ledges. See the aerial photographs of this area (photograph # A2). Glen Cove was seen at low water, the charted features are disproved.

See note for Item 92

ITEM	DN	TIME	VESNO	
102	168	1858	0650	
DESCRIPTION	LATITUDE N	LONGITUDE W	POS	
Charted (point)	38/03/52	122/12/05		
Observed				
(N end ledge ⁰ -3.2 ft)	38/03/51.21	122/12/04. ³⁰ 29	1181	
(S end ledge ⁰ -1.4 ft)	38/03/50.67	122/12/04.39	1182	

RECOMMENDATION

Chart the ledge. See the aerial photographs (photograph #A2) of this area.

See note for Item 92

ITEM	DN	TIME	VESNO	
103	168	1953	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted (point)		38/04/01	122/12/25	
Observed				
(S end ledge -3.2 ⁰ ft)		38/04/00.30	122/12/24.69	1183

RECOMMENDATION *CONCWT*

Chart the ledge.

I. CROSSLINES. ✓

Crossline soundings were acquired to check mainscheme sounding lines. Crosslines were 13 % of sounding lines. The discrepancies do not exceed 2 ft in the area of the channel where the bottom is irregular. The differences at the crossings on the mud flats do not exceed 1 ft.

J. JUNCTIONS. *See EML Report, section 5*

Registry Number	Scale	Year	Relative Location
H-10223	1:10000	1986-87	West
H-10283	1:10,000	1988	EAST

The soundings agree to within 2 ft at the junction in an area of irregular bottom. Adjustment to the soundings or contours is not recommended. The reason for these discrepancies could be due to the use of correctors applied to raw tidal data from Fort Point, San Francisco in lieu of real "smooth" tides and the irregular bottom.

K. COMPARISON WITH PRIOR SURVEYS.

The following prior surveys cover the project area.

	<u>Registry Number</u>	<u>Scale</u>	<u>Year Surveyed</u>
*	H-6524	1:10,000	1939-40
	H-6525	1:10,000	1940-41
	H-7784	1:5,000	1949
*	H-7785	1:10,000	1949-50
	H-7786	1:10,000	1949
	FE-69	1:5,000	1948
	FE-107	1:5,000	1952
	FE-108	1:10,000	1952
	FE-120	1:10,000	1953
	FE-127	1:10,000	1954
	TP-00525	1:20,000	1977
	TP-01057	1:20,000	1979
*	BP92720 COE	not supplied	1970
*	BP92721 COE	"	1970
*	BP70950 COE	1:4,800	1966

** Superseded by H-7785 and H-7786

* The present survey was compared to these prior surveys. The quality, equipment and methods of the COE surveys are not known to the hydrographer, but the soundings from these surveys were charted according to the "chart markup" for this project.

WEST OF DILLON POINT

The area of depths greater than 60 ft is being filled in from the west to the east with the greatest difference on the southern edge near Eckley. The contours in the 0-36 ft range agree very well.

CACUN

SOUTH OF DILLON POINT

The area of depths over 120 ft is not as deep but it has expanded in all directions.

On the north bank the 0 - 60 ft contours are in the same location, but on the south bank, northeast of Carquinez Strait Light 20, shoaling has occurred moving the 60 ft contour 50-100m further offshore.

There are 5-15 ft sand waves in the channel in the vicinity of Dillon Point due to the high currents and sandy bottom.

Note in area on Smooth Sheet.

EAST OF DILLON POINT

The contours have shifted about 50 m to the north. The channel has filled in the middle except between Carquinez Strait Lt 23 and Carquinez Strait Lt 22 where it has

deepened. There is a natural channel extending about 150m and parallel to the north shore between 122/10/30 W and 122/10/00 W.

The following prior survey depths should be deleted and present survey depths charted at the position listed. All depths in this report were at chart datum. The present depths and the prior depths are in the same general location. *refer to smooth printout for corrected depths and positions. All soundings have been superseded by H-18264, chart according to smooth sheet.*

CMC

<u>PRIOR SURVEY</u>	<u>PRIOR DEPTH</u>	<u>PRESENT DEPTH</u>	<u>POSN</u>	<u>CHART AT LATITUDE N</u>	<u>LONGITUDE W</u>
H-7785	50	54	47.0	38/03/51	122/12/49
"	46	51	101.4	38/03/51	122/12/36
	96	113	234.2	38/03/30	122/11/46
	114	123	127.4	38/03/30	122/11/39
	98	103	740.2	38/03/27	122/11/32
	117	124	731.0	38/03/32	122/11/31
	80	106	727.3	38/03/36	122/11/30
	3	13	480.1	38/03/41	122/11/24
	21	28		38/03/38	122/11/23
	61	58	765.5	38/03/23	122/11/23
	53	58	462.2	38/03/34	122/11/15
	15	14	772.0	38/03/35	122/11/09
	26	20	517.1	38/03/33	122/11/02
	88	93	773.5	38/03/29	122/11/12
	101	87	833.3	38/03/25	122/11/10
	108	122	587.2	38/03/23	122/10/58
	46	57	588.1	38/03/24	122/10/50
	60	72	601.4	38/03/20	122/10/48
	69	72	700.0	38/03/13	122/10/40
	3	8	944.0	38/03/29	122/10/28
	4	6	967.1	38/03/20	122/10/16
	4	6	975.1	38/03/18	122/10/14
	4	6	986.2	38/03/08	122/10/03
	3	5	878.0	38/02/43	122/10/00
	2	4	1000.3	38/03/06	122/09/57
BP92720	63	67	882.1	38/02/41	122/10/11
COE	71	75	849.5	38/02/45	122/10/17
	82	87	648.1	38/02/25	122/10/13
	78	86	657.4	38/02/59	122/10/33
	81	89	663.1	38/03/02	122/10/37
	121	112	552.3	38/03/23	122/11/05
BP92721	83	111	578.2	38/03/20	122/10/55
COE	40	46	787.4	38/03/15	122/11/22
	54	61	759.4	38/03/18	122/11/33
	64	69	749.1	38/03/22	122/11/34
BP70950	72	85	193.4	38/03/24	122/11/53
COE	63	67	219.4	38/03/22	122/12/05
	58	62	167.4	38/03/26	122/12/14
	56	60	149.5	38/03/27	122/12/21
	65	63	145.5	38/03/41	122/12/23
	41	53	160.3	38/03/38	122/12/17

The following significant features from H-7785 were investigated using range-azimuth (T2-EDM) or visual control at the sounding datum. A list of items to be deleted is followed by a list of items to be revised. Throughout these investigations photographs were taken of the items positioned from shore. The photographs are labeled by position and day and filed with its respective day in the cahier.

The following features have been disproved by visually inspecting the area at chart datum. Delete them from the chart.

<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
124	1620	0650	
DESCRIPTION	LATITUDE N	LONGITUDE W	
Charted (pier ruins)	38/02/44	122/09/41	
<i>Annex Item 51242</i>			<i>cancel</i>
<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
124	1620	0650	<i>chart a foul limit line at lat. 38°02'43.93"N, long. 122°09'40.56"W</i>
DESCRIPTION	LATITUDE N	LONGITUDE W	
Charted (pier ruins)	38/02/45	122/09/40	
			<i>cancel</i>
<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
167	2020	0650	
DESCRIPTION	LATITUDE N	LONGITUDE W	
Charted (pier ruins)	38/03/30	122/10/26	
			<i>cancel</i>
<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
141	2002	0650	
DESCRIPTION	LATITUDE N	LONGITUDE W	
Charted (pier ruins)	38/03/02	122/09/38	
<i>Annex Item 51246</i>			<i>cancel</i>

<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
139	1846	0650	
DESCRIPTION	LATITUDE N	LONGITUDE W	
Charted (pier ruins)	38/03/50	122/10/50	} <i>CONCUR</i>
Charted (area of piling)	38/03/52	122/10/55	
Charted (rock)	38/03/52	122/10/52	
Charted (rock)	38/03/52.5	122/10/54	
Charted (rock)	38/03/53.5	122/10/54	
Charted ("wk")	38/03/56	122/10/55	
Charted (pile)	38/03/54	122/10/57	
Charted (pier T-shaped)	38/04/00.5	122/10/55	

<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
165	1533-1611	0650	
DESCRIPTION	LATITUDE N	LONGITUDE W	
Charted (pile)	38/04/02	122/11/26	} <i>CONCUR</i>
Charted (pile)	38/04/01	122/11/27	
Charted (pile)	38/03/58	122/11/29	
Charted (pile)	38/03/56	122/11/29	
Charted (pile)	38/03/55	122/11/29	
Charted (pile)	38/03/54	122/11/28	

<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
165	1717	0650	
DESCRIPTION	LATITUDE N	LONGITUDE W	
Charted (pile)	38/04/04	122/11/02	<i>CONCUR</i>

<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
166	1733	0650	
DESCRIPTION	LATITUDE N	LONGITUDE W	
Charted (pier ruins)	38/03/22	122/10/04	<i>CONCUR</i>

<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
159	1600	0650	
DESCRIPTION	LATITUDE N	LONGITUDE W	
Charted (all pier ruins)	38/03/14	122/09/56	<i>CONCUR</i>

BOTTOM DRAG INVESTIGATIONS

The circle bottom sweep was used to investigate submerged items or disprove the existence of items. The center weight weighed 50 pounds. Attached to this weight was a float and the sweep line (3/4 inch nylon). Thirty meters from the centerweight a ten pound weight was attached. Sixty meters from this weight a twenty-five pound weight was attached. The towline was 25 to 30 meters long (see figure 1 in Appendix XII).

The length of the drag was determined to cover the extent of the feature plus 30 meters.

Four hundred percent coverage was achieved by sweeping the area, at one to two knots, two times clockwise and two times counter clockwise. Before changing directions the launch was pulled to the center weight to check for hangs and to check the position of the center weight.

When a hang occurred the launch was pulled to the hang, which was positioned by Mini-Ranger range-range with a check range or azimuth.

ITEM	DN	TIME	POSITIONS	VESNO
118	204	191836-193945	1554-1562	0651
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted (pipe ED) on chart 18655		38/03/11	122/11/26	
Observed (Subm pipe) on chart 18657				
(center of search)		38/03/11.28	122/11/26.25	1554

RECOMMENDATION

There were no hangs on a 30 m radius bottom drag, delete pipe. *Same as Item 127, delete pipe ED, chart piles at lat. 38°03'09.97" N, longitude 122°11'27.12" W*

ITEM	DN	TIME	POSITIONS	VESNO
111	207	170459-175117	1563-1581	0651
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted				
(config. of piles)		38/03/41	122/11/29	
Observed				
(center of search)		38/03/41.54	122/11/29.38	1563

RECOMMENDATION

There were no hangs with a 90 m radius bottom drag, delete the Configuration of piles.

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<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>POSITIONS</u>	<u>VESNO</u>
110	207	180536-183955	1582-1595	0651
DESCRIPTION				
Charted		LATITUDE N	LONGITUDE W	POS
(rock)		38/03/42	122/10/43	
Observed				
(center of search)		38/03/42.12	122/10/42.36	1582

RECOMMENDATION

There were no significant hangs with a 30 m radius bottom drag, delete the rock. *COMWV*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>POSITIONS</u>	<u>VESNO</u>
106	207	203558-212410	1599-1619	0651
DESCRIPTION				
Charted		LATITUDE N	LONGITUDE W	POS
(piles)		38/02/55	122/09/44	
Observed				
(center of search)		38/02/55.25	122/09/43.64	1599

RECOMMENDATION

There were no significant hangs with a 88 m radius bottom drag, delete the piles. *COMWV*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>POSITIONS</u>	<u>VESNO</u>
108	207	214010-221829	1620-1634	0651
DESCRIPTION				
Charted		LATITUDE N	LONGITUDE W	POS
(pipe)		38/03/46	122/10/54	
Observed				
(center of search)		38/03/45.62	122/10/53.02	1620

RECOMMENDATION

There were no hangs with a 90 m radius bottom drag, delete the pipe. *COMWV*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>POSITIONS</u>	<u>VESNO</u>
107	208	163739-171228	1635-1652	0651
DESCRIPTION				
Charted (pipe)		LATITUDE N 38/03/26	LONGITUDE W 122/10/27	POS
Observed (center of search)		38/03/25.80	122/10/26.88	1635

RECOMMENDATION

There were no hangs with a 90 m radius bottom drag, delete the pipe. *CONCERN*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>POSITIONS</u>	<u>VESNO</u>
109	208	174156-181503	1653-1667	0651
DESCRIPTION				
Charted (piles)		LATITUDE N 38/03/47	LONGITUDE W 122/10/50	POS
Observed (center of search)		38/03/46.13	122/12/50.04	1653

RECOMMENDATION

There were no hangs with a 90 m radius bottom drag, delete the piles. *CONCERN*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>POSITIONS</u>	<u>VESNO</u>
113	208	195232-202553	1668-1681	0651
DESCRIPTION				
Charted (config. of piles)		LATITUDE N 38/03/58	LONGITUDE W 122/10/50	POS
Observed (center of search)		38/03/58.33	122/10/49.94	1668

RECOMMENDATION

There were no significant hangs within the 90 m radius bottom drag, delete the piles. *CONCERN*

ITEM	DN	TIME	POSITIONS	VESNO
112	208	204932-211744	1682-1693	0651

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted <i>(subm pile on chart 18655)</i> (pile)	38/03/49	122/12/04	
Observed (center of search)	38/03/49.00	122/12/04.20	1682

RECOMMENDATION

There were no hangs within the 90 m radius bottom drag, delete the pile. *concur*

Revise the following charted features. The cartographic codes for these positions are listed in the Abstract of Positions and on the raw data.

ITEM	DN	TIME	VESNO
63	096	1835	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted (ruins)	38/02/42	122/09/43.5	
Observed <i>covered to flat mud</i> (ruins -0.2 ft)	38/02/42.68	122/09/44.21	1
(ruins -0.2 ft) <i>0.0</i>	38/02/41.27	122/09/40.92	2

RECOMMENDATION

Extend the pier ruins from position 2 to position 1. *concur, chart according to Smooth Sheet.*

ITEM	DN	TIME	VESNO
6	123	1830	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted (ruins) <i>-2.0</i>	38/02/42.9	122/09/40.6	
Observed (pile -3.0 ft) <i>74</i>	38/02/42.92 <i>78</i>	122/09/40.45 <i>74</i>	892

RECOMMENDATION

Delete ruins symbol, chart pile at position 892. *concur*

ITEM	DN	TIME	VESNO
10	124	1809	0650
DESCRIPTION			
Charted (ruins)		LATITUDE N	LONGITUDE W POS
		38/02/53	122/10/56
Observed (ruins ^{pile} -5.0 ft)		38/02/53.72	122/10/56.22 ³ 897
(" ^{pile} -4.2 ft)		38/02/53.12 ⁴	122/10/56.56 ⁴⁸ 898
		-5.0	

RECOMMENDATION

Delete the ruins charted seaward of the ruins between positions 897 and 898. Chart the ^{pile} ruins between 897 and 898. *CONCUR*

ITEM	DN	TIME	VESNO
11	124	1927	0650
DESCRIPTION			
Charted (row of piles)		LATITUDE N	LONGITUDE W POS
		38/02/56	122/10/56
Observed (ruins ^{pile} -10.2 ft)		38/02/56.17 ⁸	122/10/57.91 899
(ruins ^{40 maw} -7.8 ft)		38/02/55.68 ⁷	122/10/58.34 900

RECOMMENDATION

Delete the ruins charted between 899 and Carquinez Strait Light 22. Chart the row of piles between positions 899 and 900. *CONCUR*

ITEM	DN	TIME	VESNO
17	125	1922	0650
DESCRIPTION			
Charted (rock)		LATITUDE N	LONGITUDE W POS
		38/03/42	122/10/40.00
Observed (ledge ^{rock} -3.2 ft)		38/03/42.87	122/10/40.04 ⁵ 907
		-2.0	

RECOMMENDATION

Retain *as a highpoint on ledge.*
Delete the rock. Chart the ledge extending from the HWL, encompassing the charted rock to position 907.

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
21,22	126	1605-1724	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted (rock)		38/03/42	122/10/42	
Observed (ruins -4.0 ft)		38/03/43.02	122/10/40.523	912
(ruins 3.8 ^{4.0} ft)		38/03/43.69	122/10/41.989	913
(groin 0.4 ft) 1.0		38/03/42.89	122/10/42.40	914
(groin 0.6 ft) 1.0		38/03/42.7069	122/10/42.19	915
(groin 0.8 ft) 1.0		38/03/42.584	122/10/41.684	916
(groin 0.8 ft) 1.0		38/03/42.487	122/10/41.387	917

RECOMMENDATION

Delete the rock, chart the ruins between positions 912, 913 and the groins extending from the concrete ruins to positions 914, 915, 916, 917.

CONCUR
See Smooth Sheet

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
24	126	2000	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted (piles)		38/03/36	122/10/25	
Observed: wreck, 1.0				
(bow of wreck 0.0 ft)		38/03/35.665	122/10/24.70	923
(stern of wreck 0.8 ft) 0.0		38/03/34.220	122/10/25.645	939 51596

RECOMMENDATION

Delete the piles. Chart the wreck in the orientation described by the above positions.

CONCUR

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
25	126	201300	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted (pier)		38/03/41	122/10/28	
Observed:				
row of piling 0.2 ^{-3.0} ft		38/03/40.976	122/10/28.367	924

RECOMMENDATION

Revise the unbroken line signifying a pier, to a dashed line depicting a row of piles.

CONCUR

ITEM	DN	TIME	VESNO		
33A, 47 88	127	1845	0650		
DESCRIPTION		LATITUDE N	LONGITUDE W	POS	
Charted (rock)		38/03/17	122/10/09		
		38/03/18	122/10/10		
		38/03/19	122/10/09		
Observed (ledge 0.0 ^{2.0} ft)		38/03/17.287	122/10/08.55	938	
(highpt on ledge 8.6 ^{2.0} ft)		38/03/17.321	122/10/07.77	1084	
(ledge 3.4 ^{4.0} ft)		38/03/18.421	122/10/07.24	937	
(ledge 6.2 ^{6.00} ft)		38/03/16.487	122/10/07.24	1150	

RECOMMENDATION

Delete the charted rocks. Chart the ledge from position 937 to position 938 to 20 m SW of position 1150 then NE to the HWL. Revise the green shaded N of the HWL to tan. This area is about 10 ft above the HWL and has recently been developed. *CONCERN*

ITEM	DN	TIME	VESNO		
31A	126	2000	0650		
DESCRIPTION		LATITUDE N	LONGITUDE W	POS	
Charted (pier)		38/03/21	122/10/14		
Observed					
(priv lighthouse -10.0 ft)		38/03/21.167	122/10/13.88	932	

RECOMMENDATION

Chart the private lighted marker on the pier.

Do not chart, see page 7 of hydrographer's report, section F. Light does not serve the purpose intended for an aid to navigation (sig #410)

ITEM	DN	TIME	VESNO		
41	131	175444	0651		
DESCRIPTION		LATITUDE N	LONGITUDE W	POS	
Charted (pier)		38/03/13	122/10/03		
Observed (flt pier)		38/03/13.421	122/10/02.834	1067	

RECOMMENDATION

Chart the floating pier extending from the NE corner of the house to position 1067 parallel to the charted pier. *CONCERN*

ITEM	DN	TIME	VESNO
45	139	1846	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted (concrete block)	38/03/47	122/10/48	
Observed (concrete blk ^{-3.0} 4.1 ft)	38/03/47.57	122/10/48.146	1080

RECOMMENDATION

Revise the charted location of the concrete block to position 1080. *concur*

ITEM	DN	TIME	VESNO
51	140	2101-2126	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted (rock)	38/03/59	122/10/59	
(rock)	38/03/59	122/10/58	
Observed (reef ⁰ 4.2 ft)	38/03/57.98	122/10/57.60	1088
(reef ⁰ 2.1 ft)	38/03/59.00	122/10/58.88	1089

RECOMMENDATION

Delete the charted rocks. Chart the rock reef between positions 1088 and 1089. The high point of this ledge is position 1088 which bears 4.2 ft. *concur*

ITEM	DN	TIME	VESNO
56	145	1957	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted (piling)	38/02/47	122/09/41	
Observed (ruins ⁰⁰ 4.6 ft)	38/02/47.38	122/09/39.952	1098

RECOMMENDATION

Delete pilings and chart ruins from position 1098 SE to the HWL and SW to the HWL on the north side of the small point. The ruins do not extend around the west end of the point.

*check according to
Smooth sheet.*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
75	165	1743	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted (piling)		38/04/04	122/10/57	
Observed (ruins -1.0 ft)		38/04/04.464	122/10/57.15	1128
(ruins -3.20ft)		38/04/03.856	122/10/56.742	1129
(ruins -6.20ft)		38/04/04.175	122/10/56.28	1130

RECOMMENDATION

Delete pilings and chart ruins from position 1128 to 1129 to 1130. The ruins run from position 1128 to the HWL parallel to the line from 1129 to 1130.

Chart according to Smooth Sheet.

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
76	166	1604, 1925	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted (pier)		38/03/23	122/10/07	
Observed				
(pier ruins -5.8 ^{-6.0} ft)		38/03/23.052	122/10/07.22	1131
(pier ruins -7.0 ft)		38/03/23.598	122/10/06.79	1144

RECOMMENDATION

Revise the charted pier to pier ruins baring 7 ft.

CONCUR

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
80	166	1718	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted (pier ruins)		38/03/22	122/10/05	
Observed				
(stakes -0.4 ⁰ ft)		38/03/22.432	122/10/05.17	1136

RECOMMENDATION

Delete the charted pier ruins and chart the stakes.

CONCUR

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
81	166	1733	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted (pier ruins)		38/03/22	122/10/04	
Observed (stake -2.8 ⁰ ft)		38/03/22.47	122/10/04.10	1137

RECOMMENDATION

Delete the charted pier ruins and chart the stake.

CONCUR

ITEM	DN	TIME	VESNO
82	166	1806-1817	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted (pier ruins)	38/03/22	122/10/04	
Observed (fence 8.4 ^{-3.0} ft)	38/03/20.98	122/10/03.18 ²²	1140
(foul 8.6 ^{-3.0} ft)	38/03/21.7 ²²	122/10/02.9 ²¹	1141

RECOMMENDATION

The orientation of the charted ruins is incorrect. The inshore end of the ruins is in the proper position, however the offshore end is at position 1140 as shown on the shoreline manuscript. The fence bares ~~8.4~~^{-3.0} ft. The area between positions 1140 and 1141 is foul with ruins and debris. *chart according to smooth sheet.* *concur*

ITEM	DN	TIME	VESNO
86	167	1629-1637	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted (pier ruins)	38/03/14	122/10/00	
Observed (pier ruins -5.2 ⁶ ft)	38/03/13.7 ²¹	122/10/00.36	1147
(pier ruins -7.2 ⁶ ft)	38/03/13.66 ⁵	122/09/59.86 ⁷	1148

RECOMMENDATION

The inshore end of the ruins are charted incorrectly. The ruins are linear and end at positions 1147 and 1148. *chart according to smooth sheet.* *concur*

ITEM	DN	TIME	VESNO
91	167	2011	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted (piers)	38/03/28	122/10/24	
Observed (flt dock N end 8.2 ^{-3.0} ft)	38/03/28.48 ⁷	122/10/24.28	1161

RECOMMENDATION

Chart the ramp between the two charted piers. *concur*

ITEM	DN	TIME	VESNO
97,98	168	1713, 1723-1737	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted (rock)	38/03/56	122/12/13	
Observed : two reefs			
(center E reef -3.4 ⁰ ft)	38/03/56 00 ^{5.99}	122/12/12.94 5	1172
(center of W reef -3.4 ⁰ ft)	38/03/55.88 7	122/12/13.88 5	1173
(S end of W reef 0.8 ^{1.0} ft)	38/03/55.32	122/12/14.31	1174

RECOMMENDATION

Revise the charted rock to two rock reefs. The reefs point north and parallel the ledges at the shoreline. The eastern reef is 10 m long and about 10 m wide. The western reef is 15 m wide and 45 m long. The reef extends about 15 m SSW of position 1174. The reefs bare 3.4 ft at the highest point, and are submerged at high water.

chart according to Smooth sheet

ITEM	DN	TIME	VESNO
120	202	162033-162820	0651

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted (pier and ruins)	38/03/22	122/12/36	
Observed (pile -12.4 ft)	38/03/22.25 6	122/12/35.78 9	1494 (6)m NW pile
(house -16.0 ^{16.0} ft) NW	38/03/21.77 64	122/12/34.31 8	1495
(house -16.0 ^{16.0} ft) NW	38/03/21.74	122/12/33.75	1496
(house -16.0 ^{16.0} ft) NW	38/03/21.02	122/12/33.72	1524

RECOMMENDATION

No piers or ruins, or any row of piles were observed in this area. The only structure was the house delete all other structures on the HWL. The shoreline manuscript is accurate in this area.

CONCUR chart according to Smooth Sheet

ITEM	DN	TIME	VESNO
124	202	171615	0651
"	203	182700	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted (row of piles)	38/03/16	122/12/00	
Observed -4.0			
(pier ruins -10.0 ft)	38/03/15.61	122/12/00.23	1504
(" -10.2 ^{-4.0} ft)	38/03/14.59 8	122/12/00.52 8	1515

RECOMMENDATION

Revise the charted configuration of piles to the configuration on the shoreline manuscript which was verified by position 1504.

CONCUR

ITEM	DN	TIME	VESNO
127	203	1715	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted (pipe ED)	38/03/10	122/11/26	
Observed ^{-7.0} (piles -8.6 ft)	38/03/09.987	122/11/27.12	1511

Same as Item 118, page 19

RECOMMENDATION

Delete the pipe, chart piles.

concur

ITEM	DN	TIME	VESNO
64	097	201813	0651

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted ruins	38/03/26	122/12/46	
Observed ^{-6.0} (iron pipe -5.2 ft)	38/03/25.740	122/12/45.30	56

RECOMMENDATION

Chart the pipe because it is the most seaward and significant danger to navigation in the area of ruins.

Ruins carried around from H-7785 (1449-50)

concur, chart according to smooth sheet.

ITEM	DN	TIME	VESNO
44	139	1835	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted pipe	38/03/47	122/12/47	
Observed (offshore rock groin ⁰ -2.4 ft)	38/03/47.320	122/10/47.140	1079

RECOMMENDATION

Revise the pipe symbol to a rock symbol.

concur

AWOIS ITEMS

CHART: 18657 12TH ED. NOV. 24, 1984

AWOIS: 51242 ✓

ITEM DESCRIPTION: OBSTRUCTION

SOURCE: PHOTO REVISORY 1955

DATE	DN	POSITIONS	TIME	VESNO
5/3/88	124	895	1102	0650

GEODETIC POSITION	LATITUDE N	LONGITUDE W	POS
Charted: pier ruins	38/02/43.70	122/09/40.90	
Observed: rip/rap 1.4 ₀₀	38/02/43.93	122/09/40.56	895

POSITION DETERMINED BY:

T-2, EDM, visual check

METHOD OF INVESTIGATION:

visual search at chart datum for the full extent of the charted feature resulted in no sign of pier ruins. The area is now covered with rip/rap.

CHARTING RECOMMENDATION

Delete the pier ruins and chart the ^{rip/rap} ~~rip/rap~~.

CONCUR

CHART: 18657 12TH ED. NOV. 24, 1984

AWOIS: 51243 ✓
51244 ✓

ITEM DESCRIPTION: OBSTRUCTION

SOURCE: PHOTO REVISORY 1955

DATE	DN	POSITIONS	TIME	VESNO
5/24/88	145	1098-1099	1957	0650

GEODETIC POSITION	LATITUDE N	LONGITUDE W	POS
Charted: pier	38/02/48.40	122/09/40.00	51243
"	38/02/48.70	122/09/38.30	51244
Observed:			
ruins ^{8.0} 11.0 ft	38/02/47.38	122/09/39.952	1098
metal wreck ^{8.4} 8.4 ft	38/02/47.876	122/09/38.826	1099 51690
			^{-7.0}

POSITION DETERMINED BY:

1-2, EDM, visual check

METHOD OF INVESTIGATION:

visual search at chart datum for the full extent of the charted features resulted in no sign of pier ruins. The only feature in the vicinity of AWOIS 51243 was the foundation of a building which is presently charted as ~~*piling. The only feature in the vicinity of 51244 was a metal wreck.~~ The area was seen bare and no piers are in the area.

CHARTING RECOMMENDATION

Delete the piers, chart the wreck, *uncovers 7.0 ft. at MLLW and foul area, see smooth sheet.*

* shown as ruins (concrete debris) on the smooth sheet, approx 30m away to the SW. The metal wreck falls at the position of 51243.

CHART: 18657 12TH ED. NOV. 24, 1984

AWOIS: 51245✓

ITEM DESCRIPTION: OBSTRUCTION

SOURCE: PHOTO REVISION 1955

<u>DATE</u>	<u>DN</u>	<u>POSITIONS</u>	<u>TIME</u>	<u>VESNO</u>
5/24/88	145	1102	2113	0650

<u>GEODETTIC POSITION</u>	<u>LATITUDE N</u>	<u>LONGITUDE W</u>	<u>POS</u>
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Charted: pier	38/02/55.20	122/09/37.30	
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Observed:

stake 3.0 ft	38/02/55.47	122/09/36.96	1102
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-2.0

POSITION DETERMINED BY:

T-2, EDM, visual check

METHOD OF INVESTIGATION:

visual search at chart datum for the full extent of the charted features resulted in the observation of a stake.

CHARTING RECOMMENDATION

delete the pier ruins, chart the stake.

CAHAW

CHART: 18657 12TH ED. NOV. 24, 1984

AWOIS: 51246 ✓

ITEM DESCRIPTION: OBSTRUCTION

SOURCE: PHOTO REVISION 1955

DATE	DN	POSITIONS	TIME	VESNO
5/20/88	141	1091	2017	0650

GEODETTIC POSITION	LATITUDE N	LONGITUDE W	POS
Charted: pier	38/03/01.70	122/09/38.60	
Observed: piles (-40)	38/03/01.210	122/09/37.489	1091

POSITION DETERMINED BY:

i-2, EDM, visual check

METHOD OF INVESTIGATION:

Visual search at chart datum for the full extent of the charted features resulted in the observation of a group of five piles. These piles are not in the extent of the charted feature, but are the only feature in the area.

CHARTING RECOMMENDATION

Delete the pier ruins, chart the piles, *uncovers 40 ft of MLW*

CANON

CHART: 18657 12TH ED. NOV. 24, 1984

AWOIS: 51250 ✓

ITEM DESCRIPTION: OBSTRUCTION

SOURCE: H7785/49-50

DATE	DN	POSITIONS	TIME	VESNO
7/22/88	204	1538-1553	1708-1749	0651

GEODETIC POSITION	LATITUDE N	LONGITUDE W	POS
Charted: piles	38/03/15.30	122/11/54.60	
Search: center of drag	38/03/14.39	122/11/55.21	1538

POSITION DETERMINED BY:

Mini-Ranger range-range with check

METHOD OF INVESTIGATION:

The area was searched with a 90-m radius bottom drag. There were no hangs.

CHARTING RECOMMENDATION

Delete charted piles and submerged ruins.

Concave

CHART: 18657 12TH ED. NOV. 24, 1984

AWOIS: 51251 ✓

ITEM DESCRIPTION: UNKNOWN

SOURCE: H7785/49-50

DATE	DN	POSITIONS	TIME	VESNO
6/02/88	154	1111	1720	0650

GEODETTIC POSITION	LATITUDE N	LONGITUDE W	POS
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Charted: wreck 38/03/16.80 122/10/08.40

Observed:

wreck 6.2 ft <i>covered 10 ft at MLW</i>	38/03/16.51 <i>62</i>	122/10/08.46 <i>9.31</i>	1111
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POSITION DETERMINED BY:

Visual 3-point fix with check, offset with compass bearing and range finder.

METHOD OF INVESTIGATION:

The wreck is ^{NOT} visible at chart datum.

CHARTING RECOMMENDATION

Chart the wreck as *a dangerous subm wreck.*
~~described above.~~

CHART: 18655 52nd ED. JULY 14, 1984

AWOIS: 51252 ✓

ITEM DESCRIPTION: OBSTRUCTION

SOURCE: CL279/78

DATE	DN	POSITIONS	TIME	VESNO
7/24/88	204	1531-1537	1608-1626	0651

GEODETTIC POSITION	LATITUDE N	LONGITUDE W	POS
Charted: subm piles	38/03/18.00	122/12/09.80	
Search:			
center of drag	38/03/17.83	122/12/09.41	1531
Observed:			
hang (subm obstr.)	38/03/17.95	122/12/10.18	1537
POSITION DETERMINED BY:	I		

Mini-Ranger three ranges.

METHOD OF INVESTIGATION:

The area was swept with an 88-m bottom drag. A hang was observed at position 1537. The area was too foul to continue bottom drag operations. The least depth was not determined as stated in Section M.

CHARTING RECOMMENDATION

Retain the features as charted.

See Exam Report, section 7

CHART: 18657 12TH ED. NOV. 24, 1984

AWOIS: 51253 ✓

ITEM DESCRIPTION: OBSTRUCTION

SOURCE: BP109650/79-NANCI

DATE	DN	POSITIONS	TIME	VESNO
5/6/88	127	935	1806	0650

GEODETIC POSITION	LATITUDE N	LONGITUDE W	POS
Charted: ruins	38/03/18.80	122/10/08.00	
Observed:			
iron pipe -1.4 ⁰ ft	38/03/19.72 ³	122/10/06.97 ⁶	935
rock piles -1.4 ft	38/03/18.64 ³	122/10/07.92 ³	936
rock piles -3.4 ⁰ ft -2.0	38/03/18.42 ¹	122/10/07.24	937

POSITION DETERMINED BY:

T-2 EDM with visual check.

METHOD OF INVESTIGATION:

The extent of the ruins was searched at chart datum. The iron pipe and the line of rock piles were the only obstructions in the vicinity.

CHARTING RECOMMENDATION

Delete the ruins chart the iron pipe and rock piles described above. Because of the scale of the chart and survey, the rock piles fall within the Ledge at lat. 38°03'18"N, long. 122°10'08"W. See smooth sheet

CHART: 18657 12TH ED. NOV. 24, 1984

AWDIS: 51255 ✓
51256 ✓

ITEM DESCRIPTION: OBSTRUCTION

SOURCE: BF109650/79-NANCI

DATE	DN	POSITIONS	TIME	VESNO
5/10/88	131	1056-1062	1707-1731	0651
6/15/88	167	1151-1153	1741-1801	0650

GEODETIC POSITION	LATITUDE N	LONGITUDE W	POS
Charted: breakwater	38/03/20.50	122/10/12.50	51255
breakwater	38/03/21.00	122/10/14.00	51256 -

Observed:

pile 11.4 ft ^{-5.0}	38/03/20.576	122/10/11.68	1056
pier 8.2 ft ^{-7.0}	38/03/20.375	122/10/12.478	1057
pier 8.2 ft ^{-7.0}	38/03/20.43	122/10/11.79	1058
pier 8.2 ft ^{-7.0}	38/03/20.58	122/10/12.723	1059
pier 14.4 ft ^{-9.0}	38/03/22.221	122/10/11.94	1151
pier 15.0 ft ^{-9.0}	38/03/21.721	122/10/11.512	1153
piles 11.2 ft ^{-5.0}	38/03/20.943	122/10/13.345	1060
E end row piles 8.0 ft ^{-7.0}	38/03/20.72	122/10/13.342	1061
W end row piles 11.0 ft ^{-5.0}	38/03/20.85	122/10/13.95	1062
pier 11.0 ft ^{-6.0}	38/03/22.05	122/10/13.334	1152

POSITION DETERMINED BY:

T-2/Mini-Ranger or EDM with visual check.

METHOD OF INVESTIGATION:

The offshore ends of the piers were positioned using the launch. The inshore ends were positioned on foot. The features are piers. The western most pier has a row of piles in front.

CHARTING RECOMMENDATION

The piers are in good condition. The shapes and sizes are accurately depicted on the shoreline manuscript and the positions above. Chart the piles to the east of each pier (Pos 1056, 1060).

CONCUR

CHART: 18657 12TH ED. NOV. 24, 1984

AWOIS: 51257 ✓

ITEM DESCRIPTION: UNKNOWN

SOURCE: H7785/49-50

DATE	DN	POSITIONS	TIME	VESNO
6/14/88	166	1138, 1139 1142	1744-1838	0650

GEODETTIC POSITION	LATITUDE N	LONGITUDE W	POS
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Charted: wreck	38/03/21.30	122/10/05.60	
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Observed:

barge/pier -5.0 ft	38/03/21.921	122/10/03.46	1138 <i>inshore end</i>
barge -7.2 ⁰ ft	38/03/20.7±0	122/10/05.354	1139 <i>51692</i>
barge/pier -5.2 ₀ ft	38/03/22.242	122/10/03.37	1142 <i>offshore end - 51693</i>

POSITION DETERMINED BY:

Visual 3 point sextant with check

METHOD OF INVESTIGATION:

The area was seen bare. There were two barges in the vicinity. One was used as a pier at the back door of a private residence. ~~The other was a barge in ruins whose position is accurately charted.~~

CHARTING RECOMMENDATION

Delete the wreck ^{and PA} symbol. Chart the barges at the positions above.

*correct, see
Smooth sheet.*

CHART: 18657 12TH ED. NOV. 24, 1984

AWOIS: 51259 ✓

ITEM DESCRIPTION: OBSTRUCTION

SOURCE: Photo-Revision 1955

DATE	DN	POSITIONS	TIME	VESNO
5/18/88	139	1081-1082	1855-1903	0650

GEODETTIC POSITION	LATITUDE N	LONGITUDE W	POS
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Charted: pier	38/03/47.70	122/10/48.80	
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Observed:

row of piles	-6.0			
offshore end	11.0 ft	38/03/47.964	122/10/48.221	1081
inshore end	7.8 4.0	38/03/48.587	122/10/47.45	1082

POSITION DETERMINED BY:

T-2/EDM, with visual check

METHOD OF INVESTIGATION:

The extent of the feature was observed at chart datum.

CHARTING RECOMMENDATION

Chart position 1081 as the offshore end of the row of piles.
The cartographic code charted is correct.

*Chart according to
Smooth sheet.*

CHART: 18655 52TH ED. JULY 14, 1984

AWOIS: 51260 ✓

ITEM DESCRIPTION: SOUNDING

SOURCE: CL1085/84--CPR7-18655(1984)

DATE	DN	POSITIONS	TIME	VESNO
4/07/88	102	265-266	1656-1658	0651
7/15/88	197	1478-1486	2213-2220	0651
7/26/88	208	1696-1700	2147-2150	0651

GEODETIC POSITION	LATITUDE N	LONGITUDE W	POS
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Charted:

6 ft

38/03/58.50

122/12/46.00

Observed: soundings

4.2 5.0 ft left quarter	38/03/59.686	122/12/46.424	1485.3	
6.1 5.3 ft middle half	38/04/00.01	122/12/45.97	1481	Excessed
7.0 5.5 ft right quarter	38/03/59.80	122/12/45.768	1480	"
4.0 3.4 ft S of Red LT	38/03/57.77	122/12/45.62	265.2	"
5.0 3.8 ft S of Red LT	38/03/57.77	122/12/45.04	265.3	"

POSITION DETERMINED BY:

T-2/Mini-Ranger

METHOD OF INVESTIGATION:

Three ten meter spaced lines were performed in the entrance and 50 m inside and outside of the marina. A second midchannel line was performed on DN 208 from the entrance to the end of the marina. These lines were crossed by a shoreline, performed on DN 102.

CHARTING RECOMMENDATION

Chart the least depth at position 1485.3 described above. This depth is about 50 m inside the marina on the left quarter. The three least depths listed above are all in this same area. The harbor master is aware of shoaling in this area and said that the marina is dredged once every two years or as needed.

The soundings #265.2 and #265.3 were outside of the entrance channel to *Glen Cove Marina. The sounding #265.2 was approximately 5 m S of Glen Cove Marina Red Lt, station 406, and #265.3 was approximately 15 m SE of this light and along the breakwater. Since these soundings are out of the channel they should not be charted. Delete 6ft Rep; Chart soundings in Glen Cove Marina according to Smooth sheet.

* Glen Cove Marina is the business located in Elliot Cove

CHART: 18657 12TH ED. NOV. 24, 1984

AWDIS: 51261 ✓

ITEM DESCRIPTION: UNKNOWN

SOURCE: TP1247/83-84--REV CLASS III-NTH
CL279/78-CAS 18656

DATE	DN	POSITIONS	TIME	VESNO
6/13/88	165	1120-1121	1551-1559	0650

GEODETIC POSITION	LATITUDE N	LONGITUDE W	POS
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Charted: wreck	38/04/02.60	122/11/20.00	
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Observed: wreck (frame)

bow -4.0 ft	38/04/02.478	122/11/20.43	1120
stern -0.2 ^{0.0} ft	38/04/00.565	122/11/20.13	1121

POSITION DETERMINED BY:

T-2/EDM, with visual check

METHOD OF INVESTIGATION:

The wreck was verified by visual search on foot at chart datum.

CHARTING RECOMMENDATION

Chart the ^{visible} wreck described above. The position on the TP01247/83-84 is verified.

CHART: 18657 12TH ED. NOV. 24, 1984
51262

AWDIS:

ITEM DESCRIPTION: UNKNOWN

SOURCE: TP1247/83-84--REV CLASS III-NTH
H7785/49-50

DATE	DN	POSITIONS	TIME	VESNO
6/2/88	154	1115-1118	1900-1929	0650

GEODETTIC POSITION	LATITUDE N	LONGITUDE W	POS
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Charted: wreck	38/04/03.20	122/11/13.20	
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Observed: 2 wrecks (frames)

stern -0.8 ft	38/04/04.80	79	122/11/13.912	1115
bow -2.0 ft	38/04/02.90	1	122/11/12.956	1116
stern -1.5 ft	38/04/02.365		122/11/14.07	1117
bow -4.2 ft	38/04/04.37		122/11/14.05	1118

51765
51262

POSITION DETERMINED BY:

T-2/EDM, with visual check

METHOD OF INVESTIGATION:

The wreck was verified by visual search on foot at chart datum.

CHARTING RECOMMENDATION

Chart the wrecks described above. The positions of the wrecks on the TP01247/83-84 are verified. *chart visible wrecks*
Wks were on TP01247; Notes to Hydrographer print only.

L. COMPARISON WITH THE CHART.

This survey was compared to

Chart Number	Edition	Edition Date
18655	52nd	July 14, 1984
18657	12th	November 24, 1984

*See Eum Report section 7
See Sections Panel G, this report for
additional charting recommendations,
pages 59,60.*

DANGERS TO NAVIGATION

One Dangers to Navigation letter was written to the Commander, Eleventh Coast Guard District. A copy of this letter was included in Appendix XI, Dangers To Navigation. A copy of

this letter was also sent to the Chart Information Section, N/CB222, and PMC (N/MOP 21). The letter was dated August 17, 1988.

DESCRIPTION	LATITUDE	LONGITUDE	FT MLLW	POS
Pile	38/03/22.61	122/12/37.38	-3.0 -4.3	70
Wooden Wreck	38/03/27.62	122/10/23.21	-4.4	885
Concrete Blocks	38/02/41.66 ¹⁰	122/09/47.92 ²⁹	-2.90	890
Pipe	38/02/50.47 ⁶⁷	122/10/53.70 ^{4.00}	-5.0 -6.2	904
Pile	38/02/51.24 ⁰	122/10/54.66	-5.0 -6.2	905
Offshore End, Rock Ledge	38/03/42.87 ⁶	122/10/40.04 ⁵	-2.0 -3.2	907
Offshore End, Rock Ledge	38/03/42.84 ⁶	122/10/37.19 ²²	-3.6	908
Offshore End Rock Outcrop	38/03/40.44 ⁴	122/10/33.52	-1.3 ⁰	921
Offshore End Rock Ledge	38/03/30.32 ³	122/10/28.70	-1.2 ⁰	922
Offshore End Rock Ledge	38/03/21.66	122/10/14.67	0.2 ⁰	933
Rock Ledge *	38/03/22.57 ⁶	122/10/16.45	-1.8 ⁰	934
Rock Ledge *	38/03/22.50	122/10/16.53 ⁴	1.0 0.0	1021 <i>excessed</i>
Rock Ledge	38/03/21.68 ⁹	122/10/14.69	1.0 0.0	1022 <i>excessed</i>
Highest Point of Rock Ledge	38/03/24.70	122/10/18.70 ¹	-1.0 -2.0	1023
Pile	38/03/20.57 ⁶	122/10/11.68	-5.0 MHW -11.4	1056
Wreck "STAMBOUL"	38/03/42.79	122/10/44.26	covered 1.0 ft 2.9	1085 51697
Barge Ruins	38/03/42.53	122/10/39.48	0.0 0.0	1086
Center of Rip-Rap	38/03/43.94	122/10/50.14	-1.0 -0.5	1087

DESCRIPTION	LATITUDE	LONGITUDE	FT MLLW	POS
Tree Stump "Snag"	38/02/59.41	122/09/39.58	-1.0 ⁰ 0.0	1090
Offshore End, Rock Ledge	38/03/55.04 ³	122/12/09.99	1.0 ⁰ 0.6	1171
Offshore End, Rock Ledge	38/03/50.06	122/12/09.42	1.0 ⁰ 0.6	1175
Tree Stump, "Snag"	38/03/50.14 ³	122/12/10.05 ⁶	1.0 ⁰ 0.6	1176
Offshore End, Rock Ledge	38/03/49.32	122/12/08.18	0.0 ⁰ 0.2	1178
Offshore End, Rock Ledge	38/03/48.90 ⁸⁹	122/12/07.51	0.0 ⁰ 0.2	1179
Rock Ledge, Inshore, (see next position)	38/03/51.21	122/12/04.29 ³⁰	-3.0 ⁰ 0.2	1181
Rock Ledge, Offshore, (see above position)	38/03/50.67	122/12/04.39	-1.0 ⁰ 0.4	1182 <i>Excessed</i>
Offshore End, Rock Ledge	38/04/00.30	122/12/24.69	-3.0 ⁰ 0.2	1183
File	38/03/36.35 ⁴	122/10/31.25	-1.0 ⁰ 0.4	1373
Pier ruins	38/03/40.34	122/10/30.10	-4.0 ⁰ 0.4	1376
File	38/03/15.67 ⁶	122/12/07.70	-9.0 ⁰ 0.2	1518

* Positions 934 and 1021 are on the same feature, a ledge. Position 934 is about 5 m NE of 1021.

COMPARISON OF SOUNDINGS ✓

The charted soundings from prior surveys have been discussed in section K. These soundings are soundings which have not been charted and are significantly different from charted soundings.

AWOIS ITEMS

CHART: 18657 12TH ED. NOV. 24, 1984

AWOIS: 51258 ✓

ITEM DESCRIPTION: SOUNDING

SOURCE: CL685/84-USPS

DATE	DN	POSITIONS	TIME	VESNO
4/14/88	105	452-462	1750-1801	0651
"	"	517-531	2006-2049	0651
6/30/88	181	1219-1231	1738-1955	0651

GEODETTIC POSITION	LATITUDE N	LONGITUDE W	POS
--------------------	------------	-------------	-----

AWOIS: Shoal 6 ft	38/03/30.00	122/11/00.00	
-------------------	-------------	--------------	--

Observed: No Indication of shoaling.

POSITION DETERMINED BY:

Mini-Ranger, range-range

METHOD OF INVESTIGATION:

A 250 m echo sounder investigation was performed with 45 m line spacing. There was no indication of shoaling, therefore the lines were not split any further.

CHARTING RECOMMENDATION

The contours from the present survey have shifted 50 m north of the charted contours. There is no indication of shoaling in the area. Update the AWOIS item as disproved.

*cancel
chart according to
Smooth sheet.*

PHP ITEMS

	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
	131	1636	0651	
<u>DESCRIPTION</u>		<u>LATITUDE N</u>	<u>LONGITUDE W</u>	<u>POS</u>
Charted		not charted		
Observed	13	40.81	40.01	
(pinnacle 16 ft)		38/02/39.1	122/10/39.5	1044.3
<i>Excessed for 2.0 ft sounding at lat. 38/02/41.10, long. 122/10/40.21</i>				

POSITION DETERMINED BY:

T-2, Mini-Ranger

METHOD OF INVESTIGATION:

The pinnacle was observed while performing a shoreline, and while performing a bar check.

RECOMMENDATION:

Chart the 18-ft contour around this pinnacle and the echo sounder least depth.

Chart according to smooth sheet.

<u>DN</u>	<u>TIME</u>	<u>POS</u>	<u>VESNO</u>
131	1503-1654	942-1019	0651
194	1716-1939	1253-1306	0651

<u>DESCRIPTION</u>	<u>LATITUDE N</u>	<u>LONGITUDE W</u>	<u>POS</u>
Charted:	not charted		
Observed:			
Natural channel running NW along north shore of the strait with depths to 8 ft.			
NW end	38/03/30.0	122/10/31.0	
SE end	38/03/00.0	122/10/00.0	

POSITION DETERMINED BY:

Mini-Ranger, range-range

METHOD OF INVESTIGATION:

The channel was developed with 45-m line spacing normal to the channel and two channel lines.

RECOMMENDATION:

Chart the 6-ft contour around this channel and the other depths in the 3-5 ft range to delineate the natural channel. *CONWAY*

COMPARISON OF NON SOUNDING FEATURES

AWDIS ITEMS

CHART: 18657 12TH ED. NOV. 24, 1984

AWDIS: 51248 ✓

ITEM DESCRIPTION: OBSTRUCTION

SOURCE: CL279/78--CAS18656(1977)

DATE	DN	POSITIONS	TIME	VESNO
5/10/88	131	1075	1828	0651
GEODETTIC POSITION		LATITUDE N	LONGITUDE W	POS
Charted: obstr		38/03/09.76	122/09/56.55	
Observed:				
obstr 3.7 ft		38/03/09.187	122/09/56.66	1075
		-1.0		

POSITION DETERMINED BY:

T-2, EDM, visual check

METHOD OF INVESTIGATION:

The wreck is marked by PVC pipes. It was observed from the launch. The diesel engine remains were observed along with a separate area of wooden debris.

CHARTING RECOMMENDATION

Update the position and elevation of the charted feature.

Change obstruction to a wreck uncovers 1.0 ft at MLLW

CHART: 18657 12TH ED. NOV. 24, 1984

AWOIS: 51249 ✓

ITEM DESCRIPTION: UNKNOWN

SOURCE: CL79/78--USCGAUX

DATE	DN	POSITIONS	TIME	VESNO
5/04/88	125	906	1811	0650

GEODETTIC POSITION	LATITUDE N	LONGITUDE W	POS
--------------------	------------	-------------	-----

Charted: wreck PA	38/03/12.40	122/11/34.00	
Observed: wreck 4.2 ft -3.0	38/03/10.69	122/11/31.63	906

POSITION DETERMINED BY:

Visual 3-point fix and check.

METHOD OF INVESTIGATION:

The area was searched at chart datum.

CHARTING RECOMMENDATION

Delete the charted wreck, and chart the wreck as described *concur* above.

FHP ITEMS *The following FHP Items should be charted according to Smooth Sheet.*

ITEM	DN	TIME	VESNO
128	203	1955	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted	not charted		
Observed (pile 15.2 ft) -9.8 m+w	38/03/15.67	122/12/07.70	1518

RECOMMENDATION

Chart the pile. *concur*

ITEM	DN	TIME	VESNO
5	123	180000	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted	not charted		
Observed (pile -3.8 ft)	38/02/40.556	122/09/49.921	891

RECOMMENDATION

Chart the pile. *concur*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
7	124	1608-1610	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted		not charted		
Observed				
(wreck -1.4 ^{0.0} ft)		38/02/41.59	122/09/46.78	893
(wreck -1.9 ^{0.0} ft)		38/02/41.47	122/09/46.57	894

RECOMMENDATION

Chart the ^{visible} wreck. *concur*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
9	124	1642	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted		not charted		
Observed				
(center of a group 8 piling -9.2 ^{-6.0} ft)		38/02/45.85	122/09/39.90 ⁸⁷	896

RECOMMENDATION

Chart the piling. *concur*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
19	125	1959	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted		not charted		
Observed				
(30 ft x 60 ft ruins -4.0 ft) (<i>wooden cradle</i>)		38/03/44.21	122/10/42.145	909

RECOMMENDATION

Chart the area of ruins. *concur*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>	
20	125	2015	0650	
DESCRIPTION		LATITUDE N	LONGITUDE W	POS
Charted		not charted		
Observed				
wooden ruins				
W end (-3.0 ft)		38/03/44.34	122/10/37.16	910
E end (3.0 ft)		38/03/44.02	122/10/34.92	911

RECOMMENDATION

Chart the area of ruins. *Do not concur. Feature on HWC*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>		
27	126	2050	0650		
DESCRIPTION		LATITUDE N	LONGITUDE W	POS	
Charted		not charted			
Observed					
row of piles	-7.0				
Offshore end	-12.8 ft	38/03/40.769	122/10/30.967	926	

RECOMMENDATION

Chart the row of piles extending from the charted structure. *CONCUT*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>		
28	126	2116-2120	0650		
DESCRIPTION		LATITUDE N	LONGITUDE W	POS	
Charted		not charted			
Observed					
row of piles					
Inshore end	-6.4 ⁰ ft	38/03/23.97	122/10/07.365	927	
Offshore end	-11.4 ft -6.0	38/03/23.7069	122/10/07.556	928	

RECOMMENDATION

Chart the row of piles. *CONCUT*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>		
34	127	2124	0650		
DESCRIPTION		LATITUDE N	LONGITUDE W	POS	
Charted		not charted			
Observed					
wreck	-4.6 ⁰ ft	38/03/23.243	122/10/08.56	941	51694

RECOMMENDATION

Chart the ^{visible}wreck. *CONCUT*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>		
55	141	2154	0650		
DESCRIPTION		LATITUDE N	LONGITUDE W	POS	
Charted		not charted			
Observed					
pipe	-2.4 ft -1.0	38/03/14.054	122/09/50.045	1097	

RECOMMENDATION

Chart the pipe. *CONCUT*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>		
60	154	1610-1623	0650		
DESCRIPTION		LATITUDE N	LONGITUDE W	POS	
Charted		not charted			
Observed					
pier ruins ^{-1.0} -0.8 ft		38/03/14.34	122/09/47.521	1104	
corner ^{0.0} -0.8 ft		38/03/14.1001	122/09/47.13	1105	
end ⁰ -1.3 ft		38/03/14.41	122/09/46.843	1106	

RECOMMENDATION

Chart the "L" shaped pier ruins. *CONCUR*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>		
61	154	1633	0650		
DESCRIPTION		LATITUDE N	LONGITUDE W	POS	
Charted		not charted			
Observed					
stake ⁰ -1.8 ft		38/03/12.69	122/09/46.4039	1107	

RECOMMENDATION

Chart the stake. *CONCUR*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>		
62	154	1644	0650		
DESCRIPTION		LATITUDE N	LONGITUDE W	POS	
Charted		not charted			
Observed "T shaped ruins"					
pier ruins ⁰ -2.8 ft		38/03/11.57	122/09/44.943	1109	

RECOMMENDATION

Revise the charted "L" shaped pier ruins to a "T" shaped ruins. The east end of the ruins is at position 1109. The charted portion of the "T" shaped ruins were verified by positions 1108 and 1107. *CONCUR*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>		
3	154	1846	0650		
DESCRIPTION		LATITUDE N	LONGITUDE W	POS	
Charted		not charted			
Observed					
wreck ⁰ -3.4 ft		38/04/07.776	122/11/07.101	1114	51764

RECOMMENDATION

Chart the ^{visible} wreck. *CONCUR*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>
72	165	1627-1636	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted	not charted		
Observed: Row of stakes			
Inshore end -1.6 ⁰ ft	38/03/57.2010	122/11/30.776	1123
offshore end -4.6 ⁰ ft	38/03/57.154	122/11/30.17	1124

RECOMMENDATION

Chart the row of stakes.

concur

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>
73	165	1717	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted	not charted		
Observed			
pile -2.4 ⁰ ft	38/04/01.37	122/11/01.178	1125

RECOMMENDATION

Chart the pile.

concur

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>
74	165	1722-1729	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted	not charted		
Observed: wreck			
bow -1.6 ⁰ ft	38/04/04.00	122/11/04.31	1126
stern -0.6 ⁰ ft	38/04/04.553	122/11/04.82	1127

51700

RECOMMENDATION

Chart the ~~pile~~ *visible hulk as shown on smooth sheet.*

<u>ITEM</u>	<u>DN</u>	<u>TIME</u>	<u>VESNO</u>
79	166	1653-1708	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted	not charted		
Observed: rock rib			
E end -1.40ft	38/03/21.287	122/10/07.35	1134
W end -0.40ft	38/03/22.240	122/10/09.4950	1135

RECOMMENDATION

Chart the line of rocks.

*Do not concur
sheet.*

chart found area as shown on smooth

ITEM	DN	TIME	VESNO
84	166	2005	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted	not charted		
Observed rock -3.8 ⁰ ft	38/04/06.99	122/11/04.89	1145

RECOMMENDATION

Chart the rock. *CONCUR*

ITEM	DN	TIME	VESNO
100	168	1807	0650

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted	not charted		
Observed tree stump 1.0 0.6 ft	38/03/50.13 38/04/06.99	122/12/10.04 122/11/04.89	1176 1145

RECOMMENDATION

Chart the rock. *Do not concur, snag falls within ledge at same lat, long.*

ITEM	DN	TIME	VESNO
105	195	210537-211527	0651

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted	not charted		
Observed grounded barges			
S end -7.2 ft	38/02/50.86	122/09/43.38	1383
N end -7.2 ft	38/02/52.221	122/09/42.20	1384 >51691
grounded barges in a boatyard/salvage area			
S end -1.2 ft	38/02/49.7921	122/09/42.08	1385 /
N end -1.2 ft	38/02/52.12	122/09/39.96 36	1386

RECOMMENDATION

Revise the chart to show the offshore grounded barges (1383, 1384), and the grounded barges along the high water line (1385, 1386). *Position s 1385 and 1386 mark the limit of foul with wrecks, barges and debris*

ITEM	DN	TIME	VESNO
126	202	182907-185631	0651

DESCRIPTION	LATITUDE N	LONGITUDE W	POS
Charted (ruins)	38/03/07	122/11/15	

RECOMMENDATION

Retain
Revise "ruins" to "piling". *Pos # 1506, 1507, 1508, 1509 and 1510 outline the area of ruins (piles)*

M. ADEQUACY OF SURVEY. ✓

The survey is complete and adequate to supersede prior surveys.

see section 4 and 6 of EML Report

The velocity correctors for depths over 63 ft are substandard. For a description of the substandard nature of the velocity correctors see Section D of this report.

see section 1 of EML Report

The following least depths were not determined:

see Section 7.6 of EML Report

* (1) over the pinnacle at position 1044.3

(2) over the hangs because they were items previously

charted and were in water navigable by small craft.
* Position 1044.3 was exceeded by a 2 ft. sounding, least depth not required but pinnacle is further offshore and unusual. The 2 ft. sounding is a nearshore sounding and normal.
Settlement and squat tests were not performed at the start of this project but were performed on April 7, 1987. See Section D for further information.

N. AIDS TO NAVIGATION. ✓

Floating Aids to Navigation

There were no floating aids to navigation within the limits of this survey.

Non Floating Aids to Navigation

See EML Report section 7

Comparisons of positions, and the variance from the field to the U. S. Coast Guard Light List volume VI, 1988, and the February, 1986 DIFFILE Listing for fixed aids to navigation are shown below. These positions are based on the North American Datum of 1927 (NAD 27).

This DIFFILE Listing is the most recent provided by NCG/241

covering charts 18655 and 18656.

Non Floating Aids to Navigation				
Field Position				
Accuracy		Chart	Variance	Light
Aid	Lat. (N) Long. (W) NAD 27	Lat. (N) Long. (W) NAD 27	(m)	List # Lat. (N) Long. (W) NAD 27
CARQUINEZ STRAIT LT 20			0.1	6230
	38/03/14.51739	38/03/14.520		38/03.2
	122/11/40.23753	122/11/40.237		122/11.7
CARQUINEZ STRAIT LT 21			0.1	6225
	38/03/36.17502	38/03/36.173		38/03.6
	122/11/35.38505	122/11/35.381		122/11.6
CARQUINEZ STRAIT LT 22			0.5	6235
	38/02/55.99088	38/02/56.007		38/02.9
	122/10/57.42766	122/10/57.437		122/11.0
CARQUINEZ STRAIT LT 23			0.5	6240
	38/02/36.71688	38/02/36.715		38/02.6
	122/09/58.95158	122/09/58.933		122/10.0
GLEN COVE MARINA GREEN LT			19.2	
	38/03/58.17131	38/03/58.500		
	122/12/46.28014	122/12/46.950		
GLEN COVE MARINA RED LT				
	38/03/58.09061	not listed		
	122/12/45.60107			

* 3 = Third Order class I. See the Horizontal Control Report mentioned in Section S.

Geodetic information confirmed the location of the fixed aids to navigation in the survey area with the exception of the GLEN COVE MARINA GREEN LT which was shown as a "lighted marker" which should be updated on the next edition of the chart. The aids adequately serve the purpose of their establishment.

cmw

The positions, characteristic, and descriptions of the above aids to navigation were accurately described in the Light List. However, the Glen Cove marina lights are not listed in the Light List. They are described as follows:

<u>Name</u>	<u>Charac.</u>	<u>Ht. ft</u>	<u>Structure</u>	<u>Remarks</u>
GLEN COVE MARINA GREEN LIGHT	F G	13	on pile	private
GLEN COVE MARINA RED LIGHT	F R	12	on pile	private

It is recommended to list the Glen Cove Marina lights on the next edition of the Light List. *CONCUR*

There were no bridges, or overhead pipe lines within the limits of this survey. *CONCUR*

The overhead cable charted crossing the strait at Dillon Point is not lacking or questionable and should be retained as charted. *Height (clearance) not verified*

The hydrographer recommends that the area of charted submarine cables be extended on the north shore to include Glen Cove. This recommendation is based on a submerged cable sign west of the charted submerged cables (pos. 1701). *CONCUR*

There were no ferry routes or terminals within the limits of this survey. *CONCUR*

Q. STATISTICS. ✓

Vessel:	Launch 1101, EDP 0651
Number of Positions:	1483
N. miles of Sounding Lines:	95
Square nm of Hydrography:	13
N. miles of Bottom Drag:	6
Square nm of Bottom Drag:	.2
Days of production:	32

Vessel:	Truck, EDP 0650
Number of Positions:	218
N. miles of Sounding Lines:	0
Square nm of Hydrography:	0
N. miles of Bottom Drag:	0
Square nm of Bottom Drag:	0
Days of production:	25

Totals Statistics for Vessels 0651 and 0650

Number of Positions:	1701
N. miles of Sounding Lines:	95
Square nm of Hydrography:	13
N. miles of Bottom Drag:	6
Square nm of Bottom Drag:	.2
Number of bottom samples:	23
Number of tide gages:	1 (See Field Tide Note.)
Number of current stations:	0
Number of velocity casts:	0
Number of magnetic stations:	0
Days of production:	57

P. MISCELLANEOUS.

The charted tide rips around Dillon Point are accurate. There are also tide rips 200 m due east of Carquinez Strait LT 21 on Dillon Point. *Noted on smooth sheet.*

Bottom samples were acquired and sent to the Smithsonian Institute.

Elliot Cove ~~is~~ ^{contains} now a marina called Glen Cove Marina.

Position numbers 1185 to 1212 (Day 175) were "See Field Sheet" positions for the ends of the floating finger docks within the Glen Cove Marina. These positions were processed according to Section 4.10.2. of the Hydrographic Manual and Hydrographic Survey Guideline #62. See Section "G" of this report. These positions are located in sounding volume "VESNO 0650", pages 62-64.

Vessel 0650 is the EDP number given to detached positions which were acquired by the hydrographer from the beach. Since these positions have consecutive fix numbers with vessel 0651 they were not placed in a separate cahier.

Request for Smooth Tides to N/DMA 121 is being performed by N/MOP 21, as discussed with Mr. Dennis Hill and Mr. Jim Shofner. This procedure was established to relieve PHP of this type of processing work (see Field Tide Note, Appendix II).

At latitude 38/03/48 N and longitude 122/09/33 W revise "Interstate Highway 680" to "Interstate Highway 780"

Leadline soundings along the C&H Sugar Company pier in Crockett, CA were not acquired on this survey as they were performed on survey H-10223.

Position 1076, DN 131, marks a PVC pipe stuck into the mud (-8.2 ft). This pipe, according to local mariners was set

to mark a course turn for sailboard racing. Since this pipe is not permanent I do not recommend that it be charted.

Shown on the smooth sheet with note "PVC pipe temporarily used for sailboard racing"
Position 1701 (DN 208) is a detached position on a cable crossing sign on the north shore of Glen Cove. This position was acquired using resection methods; for positional data refer to the cahier for DN 208. For description and field data, refer to sounding volume "VESNO 0651", page 8.

Q. RECOMMENDATIONS.

Ships with drafts of 30 ft and greater transit the channel on a daily basis. The hydrographer recommends charting the 60 ft contour on chart 18657 to aid the navigation of these ships. *CONCERN*

There is no commercial vessel traffic along any of the coves on the north side of the strait. The natural unmarked channel along the shore is used by sport fishermen in small vessels only. This channel does not need further hydrographic development. *CONCERN*

Glen Cove Marina is dredged once every two years or sooner when needed. The hydrographer knows of no other construction or dredging plans within the survey limits.

It is recommended that PHF acquire the appropriate sound velocity equipment by Fall 1988.

R. AUTOMATED DATA PROCESSING. ✓

DEC PDP 8/e Computer

<u>Number</u>	<u>Name</u>	<u>Version Date</u>
RK201	Grid, Signal, and Lattice Plot	4/19/75
RK215	Visual and Non-Real Time Plot	2/11/81
RK221	Range-Range Non-Real Time Plot	2/13/84
RK226	Range-Azimuth Non-Real Time Plot	7/25/86
RK300	Utility Computations	10/21/80
RK362	Reformat and Data Check and Elinore-Line Oriented Generator	8/20/84
RK407	Geodetic Inverse Direct Comp.	9/25/87
AM500	Predicted Tide Generator	11/10/72
RK561	H/R Geodetic Calibration	12/01/82

Hewlett Packard 9815A Calculator.

<u>Number</u>	<u>Name</u>	<u>Version Date</u>
811101	Geodetic Package	Feb. 1985

IBM PC

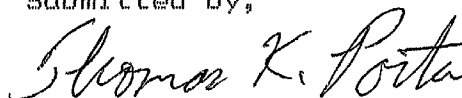
<u>Number</u>	<u>Name</u>	<u>Version Date</u>
MTEN	Micro - Terminal Entry Command STATS+	Nov. 1984

S. REFERRAL TO REPORTS. ✓

Other reports covering this survey area are:

- 1) Horizontal Control Report, PHP, OPR-L202-PHF-88,
Carcinez Strait, California, March - August, 1988.

Submitted by,



LT(JG) Thomas K. Porta, NOAA
Asst. Chief, PHP

SIGNAL TAPE LISTING

H-10264

PHP-10-01-88

~~401 0 38 02 31945 122 09 23782 139 0004 000000 BENICIA MARINA GREEN LT~~
402 0 38 02 31629 122 09 22677 139 0004 000000 BENICIA MARINA RED LT, 1988
~~403 0 38 02 17872 122 07 09692 139 0070 000000 BENICIA R/R ACRO BN~~
404 0 38 03 24988 122 13 03356 139 0000 000000 CROCKETT C & H SUGAR CO STK, 1922
405 0 38 03 53171 122 12 46280 139 0004 000000 GLEN COVE MARINA GREEN LT, 1988
406 0 38 03 58091 122 12 45601 139 0004 000000 GLEN COVE MARINA RED LT, 1988
407 0 38 03 43405 122 11 52099 139 0000 000000 PACIFIC S AND E N TRANSM TR, 1922
408 0 38 04 19568 122 08 13000 139 0000 000000 EXXON REFINERY STK 1977
409 0 38 03 06812 122 09 19968 139 0000 000000 ST PAULS EPICOPAL CH SPIRE 1949
410 0 38 03 21180 122 10 13880 252 0000 000000 LIGHTHOUSE, 1988
411 0 38 03 19720 122 10 06970 252 0000 000000 IRON PIPE, 1988
412 0 38 03 21050 122 10 00610 252 0000 000000 TELEPOLE, 1988
413 0 38 03 13610 122 09 44490 243 0000 000000 FENCE POST
414 0 38 04 07770 122 11 07100 243 0000 000000 BARGE WRECK
415 0 38 04 02000 122 11 26980 252 0000 000000 FILE
416 0 38 03 23120 122 10 06560 252 0000 000000 FLAGPOLE BASE
~~600 0 38 03 02036 122 07 45028 250 0057 000000 ARMY POINT #~~
601 0 37 52 54387 121 54 47107 250 1177 000000 MOUNT DIABLO 1876
~~602 0 38 01 49920 122 06 25128 250 0060 000000 ZINC 1932~~
~~603 0 38 02 02688 122 00 58696 250 0191 000000 BAY POINT USE 1932~~
604 0 38 02 05731 122 10 45520 250 0109 000000 CAROLINEZ POINT 2 1922
~~605 0 38 02 34142 122 13 41721 250 0181 000000 CROCKETT 1922~~
~~606 0 38 06 02023 122 06 12491 250 0065 000000 GOODYEAR 2 1979~~
~~607 0 38 10 03336 121 55 10801 250 0111 000000 KIRBY 1932~~

SIGNAL TAPE LISTING (Continued)

608	0	38	04	00640	122	12	13990	250	0005	000000	TEO 1938
609	0	38	04	11742	122	13	21410	250	0113	000000	VALLEJO 3 1982
610	0	38	03	57729	122	12	33664	250	0019	000000	GLEN 1986
611	0	38	03	27513	122	12	57567	250	0003	000000	D & H 1986
612	0	38	02	37176	122	09	54689	250	0001	000000	ISLE
613	0	38	03	44852	122	11	37673	250	0052	000000	DILL USE, 1949
614	0	38	02	40807	122	09	49034	250	0003	000000	CITY WHARF, 1988
615	0	38	02	23728	122	08	14060	250	0004	000000	DOCK 2
616	0	38	03	38646	122	13	26025	250	0005	000000	FENDER, 1988
617	0	38	03	31114	122	10	27030	250	0005	000000	RAMP, 1988
618	0	38	03	14517	122	11	40238	250	0003	000000	CARQUINEZ STRAIT LT 20, 1982
621	0	38	03	36175	122	11	35385	250	0003	000000	CARQUINEZ STRAIT LT 21, 1982
622	0	38	02	55991	122	10	57428	250	0003	000000	CARQUINEZ STRAIT LT 22, 1982
623	0	38	02	36717	122	09	58952	250	0003	000000	CARQUINEZ STRAIT LT 23, 1982

FIELD TIDE NOTE

DPR-L202-PHR-88

PHP 10-1-88, (H-10264)

CARQUINEZ STRAIT, CALIFORNIA

REDUCTIONS

Soundings on the field sheet were reduced on the basis of predicted tides for San Francisco, Golden Gate, Presidio, Fort Point, CA, (941-4290). Tide correctors were generated at 0.2-ft intervals using the DIGITAL PDP-8e computer system and program AM 500 "Predicted Tide Generator".

TIDE_ZONE_CORRECTORS

Predicted tides from the San Francisco, Fort Point, California tide gage (941-4290), were adjusted by the application of correctors supplied by NOAA, Office of Oceanography and Marine Assessment, Sea and Lake Levels Branch, Rockville, MD (N/DMA121). The correctors accompany project instructions DPR-L202-PHR-88, dated 09 October 1987. The "Hydrographic Area", West of longitude 122/10/00W was changed to North of latitude 38/02/40N via phone conversation with Joe Mullin (N/DMA1231) on 03 March 1988.

The correctors used for this survey are as follows:

+ 1 hr 45 min High Water
+ 2 hr 00 min Low Water
X 0.98 Height Ratio

STATIONS

Two permanent tide stations bracket the survey area. These two stations are operated by NOAA, Pacific Operations Group (POG), N/DMA1214. The gage at San Francisco, Fort Point (941-4290) is to the southwest of the survey area and Port Chicago (951-5144), Concord, CA is to the east. Frequent checks with POG confirmed that there were no significant breaks in the data from these stations (latest levels performed on 08 October 1987).

Tide station operated by PHP during this survey is:

C & H Sugar Company, Crockett, CA (941-5143)
Position: 32/03/28.0 N, 122/13/23.0 W
Staff/Gage Constant: 40.02 feet
Duration: 19 March 1988 to present

INSTALLATION, LEVELS AND OPERATION

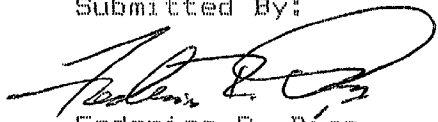
C & H Sugar Company, Crockett, CA (941-5143) was installed on 18 March 1988. The station occupies the historic site on the westernmost face of the C & H Sugar Company Wharf. A new staff was installed on the same day adjacent to the old historic floatwell. The historic well is in use. The intake orifice was removed and cleaned by PHP divers. The iron top coupling was too corroded to remove and is being used as is. A Fischer-Porter ADR (s/n 6903A5568M15), was installed atop the existing floatwell for this survey. No changes were made to the well or the ADR during the course of Survey H-10264.

Five historic bench marks were leveled on 18 March and 07 July 1988. Final levels will be run at the end of August 1988 when the gage/staff are removed. All levels were run to third order accuracy using the Leitz B1 Automatic Level (s/n 21303) and Keuffel and Esser one centimeter Metagrad rod (s/n 81-0167). The differences in elevation agreed with historical levels. The intermediate levels on 07 July 1988 were performed in cooperation with N/DMA1231 and N/MOP21 to acquire smooth tide data for hydrographic survey data acquired to that date. The request for smooth tides came from N/MOP21.

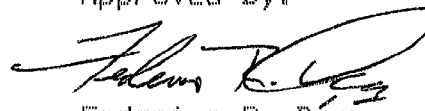
No survey data was acquired without the required tide support.

Universal Coordinated Time (UTC) was used throughout the survey for tidal record keeping at the tide station. Pacific Standard Time (120W) was used at the permanent stations operated by POG (N/DMA 1214).

Submitted By:


Federico R. Diaz
Chief, PHP

Approved By:


Federico R. Diaz
Chief, PHP

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD	FEDERICO R. DIAZ, LT. NOAA	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
POSITIONS DETERMINED AND/OR VERIFIED	FEDERICO R. DIAZ, LT. NOAA	FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		<input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION' <i>(Consult Photogrammetric Instructions No. 64,</i>		
OFFICE 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 FIELD I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field P - Photogrammetric L - Located Vis - Visually V - Verified 1 - Triangulation 5 - Field identified 2 - Traverse 6 - Theodolite 3 - Intersection 7 - Planetable 4 - Resection 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75 *FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	FIELD (Cont'd) 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 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 III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75 **PHOTOGAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.	

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD	FEDERICO R. DIAZ, LT. NOAA	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
POSITIONS DETERMINED AND/OR VERIFIED	FEDERICO R. DIAZ, LT. NOAA	FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		<input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION' <i>(Consult Photogrammetric Instructions No. 64.)</i>		
OFFICE 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 FIELD I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field P - Photogrammetric L - Located Vis - Visually V - Verified 1 - Triangulation 5 - Field identified 2 - Traverse 6 - Theodolite 3 - Intersection 7 - Planetable 4 - Resection 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75 *FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	FIELD (Cont'd) 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 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 III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75 **PHOTOGAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.	



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

Pacific Hydrographic Party
614 A East Fifth St.
Benicia, CA 94510

17 August 1988 N/MOP223:frd

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

Sir:

The following features were observed by the Pacific Hydrographic Party, NOS, NOAA, during field operations in Carquinez Strait, California. This information is field data, which is subject to verification, and will be used to update future editions of nautical charts 18655 and 18657. It is, however, considered important enough to warrant immediate publication.

DANGERS TO NAVIGATION

The following uncharted obstructions, shoals, and hazards were positioned during hydrographic survey operations. The surveyed depths have been corrected to the chart datum, which is mean lower low water (MLLW), by applying predicted tides. The geographic positions are based on the North American Datum 1927 (NAD 1927). Negative soundings signify that the object bares at MLLW.

CHARTS 18655, 18657

Description	Latitude (N) (NAD 1927)	Longitude (W)	Least Depth (ft @ MLLW)
Pile	38/03/22.61	122/12/37.38	-1.3
Wooden Wreck	38/03/27.62	122/10/23.21	-4.4
Concrete Blocks	38/02/41.06	122/09/47.92	-2.9
Pipe	38/02/50.67	122/10/53.96	-6.2
Pile	38/02/51.21	122/10/54.66	-6.2



CHARTS 18655, 18657

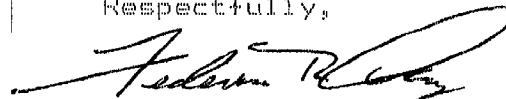
Description	Latitude(N) (NAD 1927)	Longitude(W)	Least Depth (ft @ MLLW)
Offshore End, Rock Ledge	38/03/42.87	122/10/40.04	-3.2
Offshore End, Rock Ledge	38/03/42.84	122/10/37.19	-3.6
Offshore End Rock Outcrop	38/03/40.44	122/10/33.52	-1.3
Offshore End Rock Ledge	38/03/30.32	122/10/28.70	-1.2
Offshore End Rock Ledge	38/03/21.66	122/10/14.67	0.2
Rock Ledge	38/03/22.57	122/10/16.45	-1.8
Rock Ledge	38/03/22.50	122/10/16.53	0.0
Rock Ledge	38/03/21.68	122/10/14.69	0.0
Highest Point of Rock Ledge	38/03/24.70	122/10/18.70	-2.0
File	38/03/20.57	122/10/11.68	-11.4
Wreck "STAMBDUL"	38/03/42.79	122/10/44.26	2.9
Barge Ruins	38/03/42.53	122/10/39.48	-0.8
Center of Rip-Rap	38/03/43.94	122/10/50.14	-0.5
Tree Stump "Snag"	38/02/59.41	122/09/39.58	-1.8
Offshore End, Rock Ledge	38/03/55.04	122/12/09.99	0.6
Offshore End, Rock Ledge	38/03/50.06	122/12/09.42	0.6

CHARTS 18655, 18657

Description	Latitude (N) (NAD 1927)	Longitude (W)	Least Depth (ft @ MLLW)
Tree Stump, "Snag"	38/03/50.14	122/12/10.05	0.6
Offshore End, Rock Ledge	38/03/49.32	122/12/08.18	0.2
Offshore End, Rock Ledge	38/03/48.90	122/12/07.51	0.2
Rock Ledge, Inshore, (see next position)	38/03/51.21	122/12/04.29	-3.2
Rock Ledge, Offshore, (see above position)	38/03/50.67	122/12/04.39	-1.4
Offshore End, Rock Ledge	38/04/00.30	122/12/24.69	-3.2
Pile	38/03/36.35	122/10/31.25	-1.4
Pier Ruins	38/03/40.34	122/10/30.10	-9.4
Pile	38/03/15.67	122/12/07.70	-15.2

For further information on the above items, contact the Chief, Pacific Hydrographic Party, 614-A East Fifth Street, Benicia, California 94510. The phone number is (707) 746-8189.

Respectfully,



Federico R. Diaz
LT NOAA
Chief of Party

cc: Chart Information Section, N/CG222
Nautical Charts Branch, N/MOP21



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

Pacific Hydrographic Party
614 A East Fifth St.
Benicia, CA 94510

31 August 1988 N/MOP223:frd

Commander (can)
Eleventh Coast Guard District
400 Ocean Gate Blvd.
Union Bank Building
Long Beach, CA 90822

Sir:

The following features were observed by the Pacific Hydrographic Party, NOS, NOAA, during field operations in Carquinez Strait, California. This information is field data, which is subject to verification, and will be used to update future editions of nautical charts 18655 and 18656. It is, however, considered important enough to warrant immediate publication.

DANGERS TO NAVIGATION

Geodetic information confirmed the location of the fixed aids to navigation in the survey area with the exception of the GLEN COVE MARINA GREEN LT, which is charted as a "lighted marker". The GLEN COVE MARINA RED LT is not charted. The aids adequately serve the purpose of their establishment as entrance markers for Glen Cove Marina.

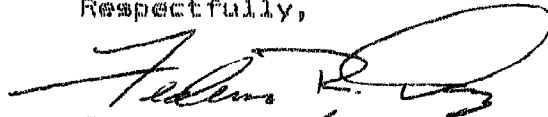
The aids described above are not listed in the U.S. COAST GUARD LIGHT LIST, Volume VI, 1988. They are described as follows:

<u>AID</u>	<u>LAT. (N)</u> <u>LONG. (W)</u>	<u>CHARAC.</u>	<u>HT (ft)</u>	<u>REMARKS</u>
GLEN COVE MARINA GREEN LIGHT	38/03/58.171 122/12/46.280	F1 G	13	On File (Private)
GLEN COVE MARINA RED LIGHT	38/03/58.091 122/12/45.601	F1 R	12	On File (Private)



For further information on these items, call/write the Chief, Pacific Hydrographic Party at (707) 746-8189, 614-A East Fifth Street, Benicia, California 94510. Your cooperation is appreciated.

Respectfully,



Federico R. Diaz
LT NOAA
Chief of Party

cc: Chart Information Section, N/CB222
Nautical Charts Branch, N/MCP21



**U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

National Ocean Service
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

OCT 3 1988

N/MOP21x2/JM

Commander (CAN)
Eleventh Coast Guard District
400 Ocean Gate Blvd.
Union Bank Building
Long Beach, California 90822

Dear Sir:

During the office review of hydrographic survey H-10264, California, Carquinez Strait, Crockett to Benicia Point, a revision in depth for a previously reported wreck, known locally as the STAMBOUL, was made. The wreck was originally reported to you in a letter dated August 17, 1988 (a copy is attached). The following correction is recommended for inclusion in the Local Notice to Mariners:

"A wreck, known locally as the STAMBOUL, is awash at MLLW (based on predicted tides). The wreck is located at latitude 38/03/43N, longitude 122/10/44W, on Chart 18657 (12th ed., Nov. 24/84, NAD 27). The wreck is 0.7 nautical miles, bearing 081 degrees true, from Carquinez Strait Lt 21".

Questions concerning the survey may be directed to Cdr. Thomas W. Richards, Chief, Nautical Chart Branch, telephone (206) 526-6835.

Attachment

Sincerely,

Robert L. Sandquist
Rear Admiral, NOAA
Director, Pacific Marine Center



100-METER RADIUS BOTTOM CIRCLE DRAG SET UP

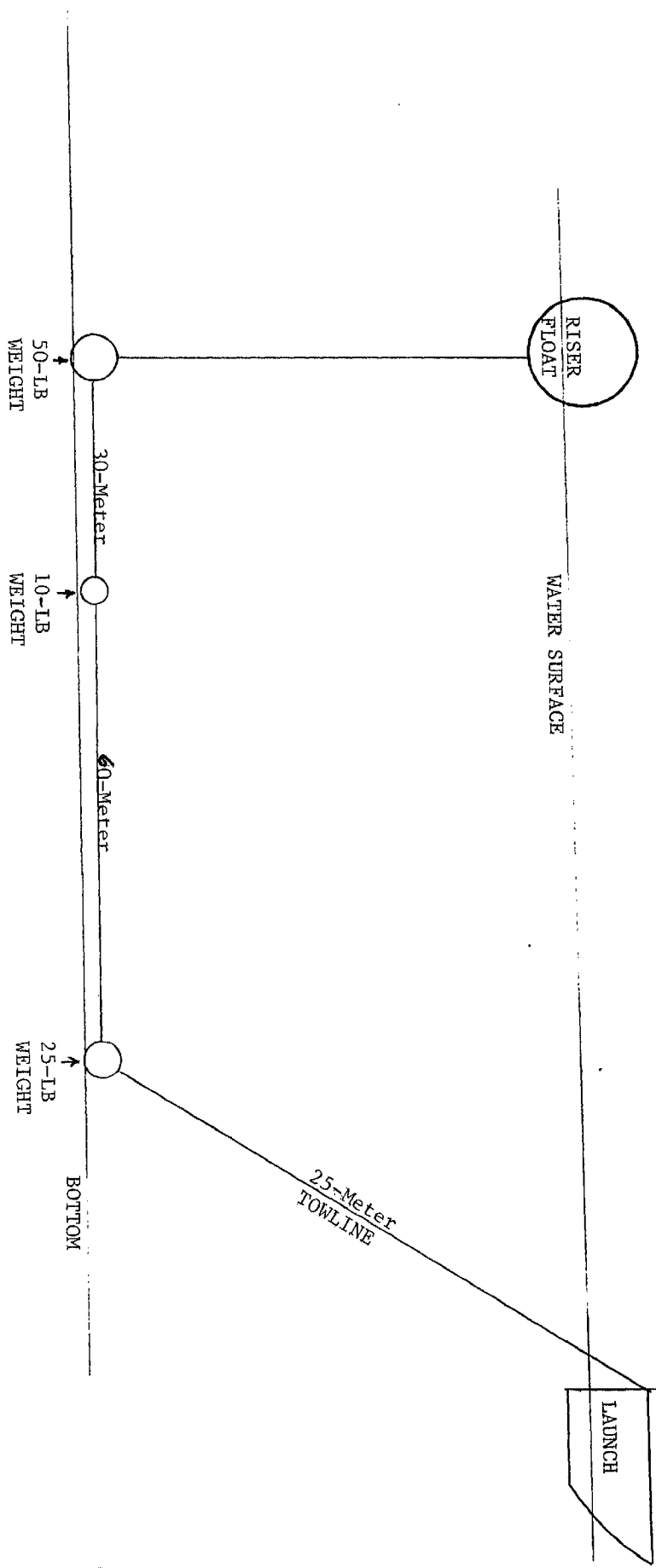


FIGURE 1

DRAWING NOT TO SCALE



Notes To Hydrographers

June 29, 1988

DATA TRANSFER BREAKTHROUGH

THE PACIFIC HYDROGRAPHIC PARTY TALKS TO THE NAUTICAL CHART BRANCH! The preceding statement doesn't sound all that unusual - after all, they should be talking to us. However, it is the way they are communicating - by IBM PC via a phone modem. Beginning the first week of June PHP has been routinely transmitting hydrographic survey data via the phone to an IBM PC here at NCB, which is then transferred to the large Harris computer for processing. This relatively simple step in computer communications hopefully has opened the door to faster processing of PHP's field data, resulting in a shorter completion time for a PMC smooth sheet.

Transmitting hydrographic data over the phone has been long in coming. Several hurdles had to be overcome first. The major obstacle was to take the paper tapes generated by the PDP-8 computer and read them into the IBM. This required some hardware and software modifications. PHP

personnel then loaded all of the data tapes onto a Bernoulli cartridge, storing each day's data under a filename that describes the data and the day number. Example: RAZCOR.157 for range/azimuth corrector data, day 157. Now the data can be edited without handling the paper tapes. At this early stage PHP has not yet edited any data on the IBM, but it has been suggested that the EDIT program, or perhaps WORD, might be used.

Once edited, the data may be sent via the phone to the Nautical Chart Branch. The receiving IBM computer is linked to the Harris computer, which receives the data and stores it on nine-track tape. The data is then processed in a normal fashion.

Text files generated with the word processing program WORD have also been transmitted, restricted so far to position abstract documents. This additional data greatly facilitates the office identification of features since it includes cartographic codes.

The exciting part of this communications link is that PHP is transferring data during the course of their current survey, before completion of the survey. This is being conducted under an experimental basis, partly due to PHP's loss of survey technicians. NCB is processing the survey data and generating a PPO (position plot) and PSS (sounding plot). These plots are on mylar copies of the shoreline maps of the survey area, another experimental first. The position and sounding plots, color coded for ease in contouring, may eliminate the need for PHP to produce a final field sheet. Instead, they will examine the plots on the shoreline maps throughout the course of the survey, check and approve a final plot, and add descriptive notes and correct cartographic symbols. This will then be sent back to NCB, along with all records, through the mails.

By the time PHP has ended the survey and approved the final sheet, NCB will have greatly progressed in the processing of the survey. All data will have been spooled, the processor working with PHP's data will be familiar with the area and the data, and many of the "bugs" will have been worked out, with the result that perhaps one to

two months of office processing time may be saved.

PHP is in a unique situation, in that they are land based and are only a phone call away from NCB. The above experiment would not be feasible with the ships. It is envisioned, however, that the ships will load all data onto a disk or a Bernoulli cartridge and submit the disk or cartridge, instead of paper tapes. NCB's computer section is working on that option now, but there are problems to be worked out (please keep sending paper tapes, as usual!).

The Pacific Hydrographic Party has also recently acquired a Zenith Z-183 laptop computer. This lightweight computer runs on batteries or on AC power, and has 20 MB of internal memory, the same as a Bernoulli box. PHP has loaded MTEN into the Z-183, allowing them to take the computer into the field. This gives them the capability of entering geodetic observations into MTEN before leaving a station. The Z-183 is also carried on the launch, to compute sextant fixes and calibrations "on the spot", using the MTEN utility programs.

PHP has also loaded WORD and other programs into the laptop. LT Diaz, the Chief

of PHP, has informed me that he has taken the Z-183 home with him to work on the Descriptive Reports or official correspondence. The Zenith Z-183 is proving to be a useful tool for surveying.

- John Miller

The PMC OPORDER requires that hydrographic survey data be mailed to NCB in four separate groups, to help insure against the loss of a complete survey (page 3.5-2 of the OPORDER). It would be more efficient for our processing system if the field units would mail the computer tapes, along with a copy of the Descriptive Report, before the other data. This will give the processors a chance to build the parameter file, spool the tapes, and make preliminary plots, all of which are time-consuming and do not require the other survey data. This change in procedure will appear in the next revision of the OPORDER.

Headquarters personnel are rapidly proceeding toward the completion of the new consolidated "C & GS OPORDER". This document combines the best of the PMC and AMC OPORDERS into a single set of instructions. Two major sections have already been reviewed at the Marine Center and it looks like the new OPORDER will largely resemble the existing PMC document. Discussions with headquarters indicates that this is a result of the present high quality of the PMC document which required little revision.

Did you know that "DIP" as in DIPFILE stands for Discrete Independent Point? This file contains valuable information about fixed and floating aids and landmarks. It is compiled by nautical chart cartographers and was the very first attempt to automate charting. Despite the many high tech advances in automated cartography this file remains as one of the oldest and most valuable sources of critical information.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

PACIFIC HYDROGRAPHIC PARTY
P.O. Box 1001
Sonoma, Ca. 95476-1001

June 2, 1986

TO: N/MOP - RADM Robert L. Sandquist
THRU: N/MOP-22 - CDR Thomas W. Richards
FROM: N/MOP-225 - LTJG Paul T. Steele
SUBJECT: Velocity Profiling System

I would like to request authorization for Electronics Engineering to purchase an Applied Microsystem Limited SVP-16 sound velocity profiling system for use by the Pacific Hydrographic Party.

In late August or early September PHP is to begin work in Carquinez Strait, an area known for salt and fresh water mixing, high wind and current. PHP currently uses bar check information to determine velocity of sound correctors. It is felt that it would be very difficult, in this area, to provide enough good velocity of sound data, using typical bar check procedures and equipment, to insure maintenance of NOS standards.

During the Hydro Survey Workshop participants were shown the Applied Microsystem Limited SVP-16 Sound Velocity Profiling System. Based upon PHP attendance at this workshop, exposure to other profiling systems tested on the RAINIER and DAVIDSON, and discussions with DAVIDSON and Electronics Engineering personnel it is believed that this system is highly suited for PHP use.

PHP's Launch 1101 is not equipped with a davit mounted winch. The SVP-16 is light and requires no electronic cable, making it suitable for single person, over-the-side, launch operations. In the mixing area where PHP will be operating velocity of sound correctors are expected to change significantly throughout the tidal cycle and with small changes in working area. The SVP-16 processing equipment is small, fast, and easy to operate making numerous daily launch observations possible.

The SVP-16 system, including a Radio Shack Tandy 100 computer, IBM PC interface capability and the Lotus 123 processing software, is expected to cost less than \$5000. PHP does not have these funds in its budget, therefore, it is requested that this item be given high operational priority for purchase by Electronics Engineering for PHP use.





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

June 5, 1986

N/MOP2x1/DAD

TO: Commanding Officer
NOAA Ship DAVIDSON

FROM: N/MOP - Robert L. Sandquist
Robert L. Sandquist

SUBJECT: Determination of Sound Velocity Correctors

REF: DAVIDSON memorandum dated March 20, 1986, subject: Use of the
AML16 Sound Velocity Probe for Correction of BS³ Sounding Data

The EEZ Bathymetric Mapping Project Office has denied permission for you to use the AML-16 Sound Velocity Probe to determine BS³ sound velocity correctors. The primary reasons for the decision are the limited descent rate and depth capability of the SVP, and the lack of adequate system documentation by the manufacturer. An explanation of these concerns is expressed in the attached memo from the EEZ project manager. In recognition of the relative efficiency of AML-16 sound velocity determinations, I encourage you to continue to collect comparison Nansen cast, Plessy CTD and AML sound velocity data sets as time permits, with the objective of increasing our experience and confidence in the use of the AML, and the quality of its data.

Attachment

bc: N/MOP13



PACIFIC HYDROGRAPHIC PARTY
P.O. BOX 1001
SONOMA, CA. 95476-1001

23 JUNE 1986

TO: N/MOP - RADM Robert L. Sandquist

THRU: N/MOP22 - CDR Thomas W. Richards

FROM: N/MOP23 - LTJG Paul T. Steele

SUBJECT: Velocity Profiling System

The purpose of this letter is to modify the letter of 2 June 1986 on the same subject, with regards to the 23 May 1986 memo from N/CG2x2.

I am requesting that Electronics Engineering lend the Applied Microsystem Limited SVP-16 Sound Velocity Profiling System, currently at EEB, to the Pacific Hydrographic Party for use on PHP's next hydrographic survey of the Carquinez Strait, San Pablo Bay, Ca.

In late July or early August of this year PHP is to begin work in Carquinez Strait. Two fresh water rivers, the Sacramento and Napa Rivers, junction here with San Pablo Bay, a large body of salt water. Because PHP uses only bar-check data for determining velocity of sound correctors, it would be very difficult to provide enough good data, using typical bar-check procedures and equipment, to insure maintenance of NOS velocity correction standards.

Depths in the Carquinez Strait area range from approximately 30 feet to 100 feet (MLLW). This is an area of high winds and strong currents.. It will be difficult for PHP personnel to obtain good useable bar-check data at maximum depths. Due to the different densities of water in this area, and the fact that the mixing zones shift up and down the Strait with the state of the tide, frequent and reasonably accurate velocity data is necessary.

The AML SVP-16 is supposedly light-weight and easily deployed from a launch. Some points of concern about the maximum allowable descent rate for the probe were discussed in the memo from N/CG2x2. I do not feel that this would be a problem for PHP since it will be lowered by hand from our launch. PHP will take care to use recommended procedures in collecting data to insure accuracy.

PHP would continue to take daily bar-checks. I suggest that the data from the AML SVP-16 would be used to compare, check, and supplement the data from the bar-checks.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL OCEAN SERVICE
 OFFICE OF CHARTING AND GEODETIC SERVICES
 ROCKVILLE, MARYLAND 20852

MOP 2

PM 11:15

NOV 26 1986

N/CG24x3:JLW

LOM 11/4 - MOP 2

*cc: CO/OA/ID/SU
 (EA/RA)
 FYI*

MOP 2 x1 m/s

21

File

TO: N/CG24 - Roy K. Matsushige
 FROM: N/CG24x3 - Jack L. Wallace *Jack L. Wallace*
 SUBJECT: Status of Sound Velocity Profiling Instrument

The need for a more efficient means of observing sound velocity data has been recognized for quite some time. This need was first raised by the Pacific Marine Center (PMC) in 1982 when they took the Martek CTD out of service because of unacceptable maintenance costs. Recognizing that Nansen casts were unacceptable as a long-term solution (because of costs due to expended ship time and sparseness of data) and XSV probes were too expensive, PMC published a "Statement of Interest" in the CBD for a suitable sound velocity/depth device. Three written responses were received all of which were proposals to develop a suitable device rather than to provide one which was currently in production.

In August 1982 I witnessed the demonstration of the SVP-1 sound velocity profiler made by NAVTRONIC which met all our requirements except depth (our requirement is 700 meters, the SVP-1 was 200 meters).

At about the same time the Canadian Hydrographic Service (CHS) began looking into an instrument of their own, and having decided that the \$10K cost of the NAVITRONIC instrument was too high, issued an RFP for a unit that profiled to 200 meters and had a deck unit superior to the SVP-1.

In 1983 the CHS awarded a contract to Applied Microsystems, Ltd. (AML), of Sidney, British Columbia, for the design and manufacture of five SVP-16 profiling instruments at a unit cost of approximately \$5K.

In August 1984, I initiated a procurement action with AML for the purchase of two SVP-16's for evaluation. These units were procured with the understanding that the depth range could be increased to 700 meters and the velocity range increased to 1400-1700 meters/second.



The two units (200-meter version) were delivered in early 1985 and evaluated on both the FERREL (east coast) and DAVIDSON (west coast). The results of the operational evaluation were highly favorable to this type of instrument in that it was lightweight and easy to deploy, and the Radio Shack TRS-80 based deck unit made it extremely easy to electronically transfer velocity data to a PC for post processing.

In the winter of 1985 both units were sent back to AML to have the depth (pressure) sensor changed to 700-meter capability. The memory size also had to be increased to maintain the 1-meter of depth sampling interval and still record pressure, sound velocity, and temperature (which came for "free" with the instrument).

In May of 1986 the units were sent to NRCC for a calibration to resolve intercomparison with STD problems reported by the DAVIDSON and to evaluate the new 700-meter depth capability.

The results of the calibrations, which were conducted using SVP-16 engineering units (vice raw units), showed an error in the depth measurements of both units to be on the order of 15 meters (1-sigma). This error was directly related to the temperature of the bath. Subsequent analysis by Mike Webb of PMC and AML concluded that the problem was not with the newly installed 700 meter (versus 200 meter standard) pressure sensor.

In July of 1986 I visited AML in Sidney and they acknowledged that some of the components on the circuit board which is used to process the output of the pressure sensor were in fact temperature sensitive. I discussed with AML how they intended to resolve the problem and whether or not the 12 units pending for delivery to Naval Oceanographic Office (NAVOCEANO) would be modified.

After my return to Rockville I discussed the situation with Mike Webb at PMC and it was decided to recalibrate one of the units in raw units before sending it back to AML for whatever AML decided to do with it. The results of that calibration are attached and from the graph it can be seen that there is definitely a temperature related pressure error.

On October 28 the unit calibrated in August (S/N 3003) was received at AML and is expected to be returned to PMC by November 26. I have also learned that AML made some modifications to the SVP-16's purchased by NAVOCEANO so that hopefully they will not experience the problems we have seen.

Upon completion of the modifications to #3003 the unit will be recalibrated at NRCC. Hopefully, the unit will be acceptable; however, if it still exhibits a temperature related problem, and we can determine that it is repeatable, then it may be possible

to use the instrument by introducing a temperature term in the pressure calibration equation. Capt. Mike Fleming of the Office of Oceanography and Marine Assessment has allowed me to discuss this course of action with their resident expert, Mike Basileo.

In addition to calibrating S/N 3003 upon its return from AML, I have spoken with George Macdonald at CHS and George Dupont at NAVOCEANO about the possibility of including one of their units in the calibration. Both have agreed subject to a formal request through the proper channels.

If the AML SVP-16 checks out I suggest we procure additional units for the remainder of the fleet at a cost of approximately \$7.5K each. If the SVP-16 is not acceptable we should look at the NAVITRONIC SVP-1 (600 meter option) at a cost of \$11K each. This unit, which we played with in 1982, was developed for NATO and is used by several hydrographic departments including the Royal Navy (they own eight).

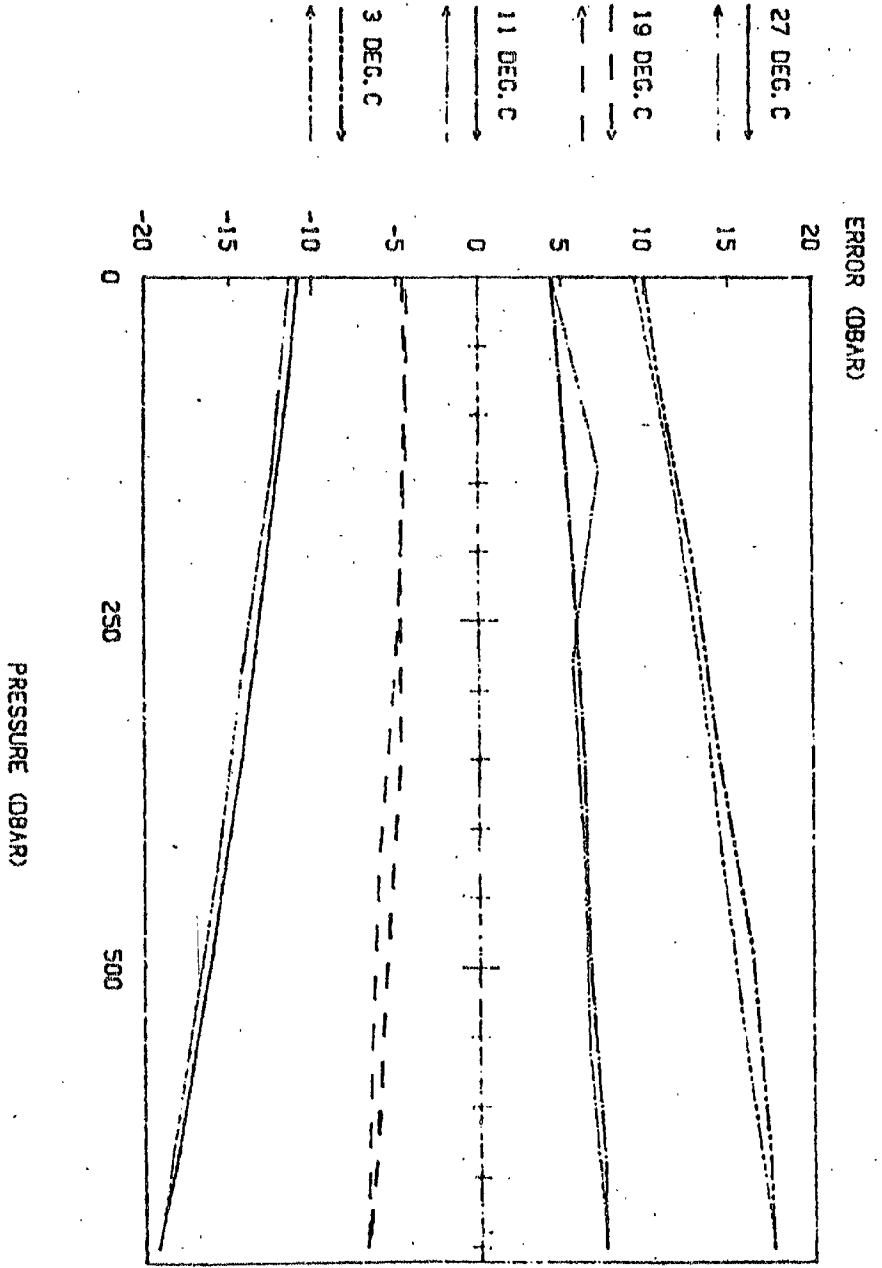
As for processing the data from a profiling type instrument and also determining the adequacy of the XSV, Chuck Dinkel, Don Pryor, and myself are rewriting the Rapid Response Task Order contract that the Office of Marine Operations has established to address these issues.

Attachment

cc:
N/CG2 - Yeager
N/MOA - Moses
N/MOP - Sandquist
NAVOCEANO - Dupont
CHS - Macdonald

AHL SV/T/D
Serial Number: 3003
Report Number: 86139
Reference File: N/A
Date: 8/25/85

PRESSURE ERROR GRAPH



Approval Sheet

OPR-L202-PHP

Basic Hydrographic Survey
Crockett to Benicia Point

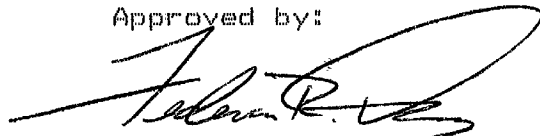
Supervision of field and office work on this hydrographic survey was continuous on a day to day basis to ensure completeness of the survey and that all work was done in accordance with the project instructions. The survey is complete and adequate, except for the following:

- Least depths were not determined for bottom drag hangs performed on days 204, 207 and 208 as the only feasible method for PHP to acquire least depths on hangs would have been diver investigations. At present PHP is down to one diver and could not acquire a second diver from FMC in a timely fashion. NOAA dive policy expressly prohibits "single person" dives. All bottom drag hangs observed during these days were insignificant and were items previously charted in water navigable only by small craft. Therefore, diver investigations were not necessary for this survey.

- Velocity correctors for depths over sixty-three feet were not determined due to the lack of adequate velocity determination equipment. It is recommended that the proper velocity determination equipment be forwarded to PHP before Fall 1988. For a description of the substandard nature of velocity correctors, see Section D of this report.

For a detailed description of PHP's experimental method of transferring hydrographic survey data, via modem, to FMC, see "Notes To Hydrographer" dated 29 June 1988 in Supplemental Information (Appendix XII).

Approved by:



LT Federico R. Diaz, NOAA
CHIEF
PACIFIC HYDROGRAPHIC PARTY
NATIONAL OCEAN SERVICE (NOS)

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: September 26, 1988

MARINE CENTER: Pacific

OPR: L202

HYDROGRAPHIC SHEET: H-10264

LOCALITY: Carquinez Strait, California

TIME PERIOD: April 5 - July 28, 1988

TIDE STATION(S) USED: 941-5143 Crockett, CA

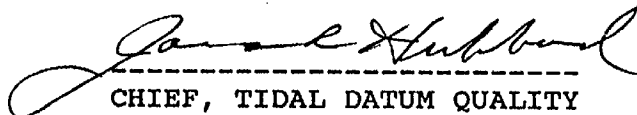
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 1.95 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 5.1 ft.

REMARKS: RECOMMENDED ZONING

1. West of longitude $122^{\circ} 12.0'$ ~~$11.6'$~~ zone direct.
2. East of longitude $122^{\circ} 12.0'$ to $122^{\circ} 11.55'$ apply a +0 hr 15 minute time correction and a X0.^{.98}~~95~~ range ratio to all heights.
3. EAST OF LONGITUDE $122^{\circ} 11.55'$ APPLY A +0 hr 15 min. time corr. AND AX0.95 RANGE RATIO.

* = FROM PHONE CONV. W/ JOE M. ON 9-30-88.



CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

H-10264

GEOGRAPHIC NAMES

Name on Survey
CALIFORNIA, CARQUINEZ STRAIT
CROCKETT TO BENICIA POINT

18655
18657
ON CHART NO. 18655
ON PREVIOUS SURVEY
CON U.S. QUADRANGLE MAPS
FROM LOCAL INFORMATION
ON LOCAL MAPS
P.O. GUIDE OR MAP
RAND McNALLY ATLAS
U.S. Light List

	A	B	C	D	E	F	G	H	K	
BENICIA		X								1
BENICIA POINT		X								2
CARQUINEZ STRAIT	X	X								3
COMMODORE JONES POINT		X								4
CROCKETT	X									5
DILLON POINT	X	X								6
ECKLEY	X									7
ELLIOT COVE	X									8
GLENCOVE	X									9
GLEN COVE	X									10
PORT COSTA		X								11
SOUTHAMPTON BAY	X	X								12
CALIFORNIA (title)	X	X								13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25

Approved:

Charles E. Hartington
Chief Geographer - N/CG 2x5

JAN 30 1989

HYDROGRAPHIC SURVEY STATISTICS

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT
SMOOTH SHEET		1	SMOOTH OVERLAYS: POS., ARC, EXCESS		8
DESCRIPTIVE REPORT		1	FIELD SHEETS AND OTHER OVERLAYS		1
DESCRIP-TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS
ACCORDION FILES	2				
ENVELOPES					
VOLUMES	2				
CAHIERS					
BOXES					

SHORELINE DATA

- SHORELINE MAPS (List):
- PHOTOBATHYMETRIC MAPS (List):
- NOTES TO THE HYDROGRAPHER (List):
- SPECIAL REPORTS (List):
- NAUTICAL CHARTS (List):

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET			1444
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			

PROCESSING ACTIVITY	TIME-HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			17
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	137		137
VERIFICATION OF SOUNDINGS	327		327
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	86		86
COMPARISON WITH PRIOR SURVEYS AND CHARTS		18	18
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		32	32
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	550	50

Pre-processing Examination by J. Miller	Beginning Date 9/19/88	Ending Date 10/13/88
Verification of Field Data by R.N. Mihailov	Time (Hours) 550	Ending Date 5/3/89
Verification Check by B. Olmstead	Time (Hours) 63	Ending Date 5/5/89
Evaluation and Analysis by C.R. Davies	Time (Hours) 50	Ending Date 5/26/89
Inspection by D. Hill	Time (Hours) 4	Ending Date 5/31/89

PACIFIC MARINE CENTER
EVALUATION REPORT
H-10264

1. INTRODUCTION

Survey H-10264 is a basic hydrographic survey accomplished by the Pacific Hydrographic Party under the following Project Instructions.

OPR-L202-PHP, dated October 9, 1987
CHANGE NO. 1, dated October 16, 1988
CHANGE NO. 2, dated May 25, 1988

This survey occurred in Carquinez Strait, California and covers the area between the town of Crockett and Benicia Point. The surveyed area extends from latitude 38°02'39"N, to latitude 38°03'56"N, and from longitude 122°09'39"W, to longitude 122°13'06"W. This area of Carquinez Strait has been inhabited for over one hundred fifty years and is extensively developed. Ruins along both shores are left from the time the area was a major exporter of wheat. These ruins are now mixed with modern day marinas and factories. The south shore is steeply sloping while the north shore consists of shallow bays and coves. Strong currents and rip tides are present during tidal changes. The bottom consists of sand, shells and mud. Depths range from zero to 128 feet.

The Nautical Chart Branch, in cooperation with the Field Surveys Branch, Pacific Marine Center, initiated a test process in June 1988. During survey H-10264 data acquisition, the Pacific Hydrographic Party periodically sent digital data subsets to the Seattle office via telecommunications. Following office processing, plotted data and a quality analysis were returned to the hydrographer via express mail. The intent of this modified process was to provide assistance to the hydrographer during a period of a temporary personnel shortage. As a result of this assistance PHP was able to continue surveying without a significant disruption in the project schedule. In addition to this benefit it was discovered that due to the increased level of timely interaction between field and office, the quality of survey data increased. Data quality problems normally detected after the completion of the survey were identified and resolved prior to survey completion which simultaneously resulted in an increased level of quality awareness by the hydrographer.

The final field sheet was compiled from a 3-mil mylar mosaic of the registered shoreline maps, photographically reproduced on mylar. This composite shoreline map was accurately positioned in a Xynetics, Model 1100, flatbed plotter utilizing the latitude-longitude projection for registry. Soundings and positions were plotted directly onto the map. The plotted sheet was returned to the hydrographer who manually supplemented the soundings with field notes as he considered appropriate.

Predicted tides for San Francisco, CA were used for the reduction of soundings during field processing. Approved hourly heights zoned from Crockett, CA, gage 941-5143, were used during office processing.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The TRA and electronic correctors are adequate. The velocity correctors were extrapolated beyond depths of 63 feet because of the inability to measure oceanographic observations beyond bar check depths. Soundings, with velocity correctors applied, were compared to soundings from other contemporary surveys in the area. There is no indication that the velocity tables are in error. See section D in the hydrographer's report for additional discussion. An accompanying computer printout contains the parameters and the correctors.

A digital file, generated for this survey, includes categories of information required to comply with CG2 Hydrographic Survey Guideline No. 23, Completion of Digital Hydrographic Surveys, September 7, 1983. 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 F and G of the hydrographer's report and the Horizontal Control Report for OPR-L202-PHP-88 contain adequate discussions of horizontal control and hydrographic positioning.

Positions of horizontal control stations used during hydrography are 1982, 1986 and 1988 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 by CG121. Geographic positions based on NAD 83 may be plotted on the smooth sheet utilizing the NAD 27 projection by applying the following corrections.

Latitude: 0.290 seconds (8.9 meters)
 Longitude: -3.881 seconds (-94.6 meters)

The year of establishment of control stations shown on the smooth sheet originates with the hydrographer's signal list.

There are 15 weak fixes (angles of intersection less than 30 degrees or more than 150 degrees) noted in this survey. Of the 15 weak fixes, 13 fixes were obtained by sextant. Each position has a check angle which confirms the position. The other two fixes are non-soundings, positions that confirm shoreline manuscript features. They also have satisfactory check angles. All of these fixes are considered acceptable.

The following registered shoreline map applies to this survey.

	<u>Photo Date</u>	<u>Class</u>
TP-01247	Nov., 1983	III
	March, 1984	

The following shoreline changes are depicted in red on the smooth sheet and are supported with position information. They are adequate to supersede the common photogrammetrically delineated shoreline.

<u>Feature</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>
pier ruins	38°03'19"	122°12'18"
pier ruins	38°03'12"	122°09'45"
floating pier	38°03'14"	122°10'03"
floating pier	38°03'27"	122°10'20"
pier ruins	38°03'40"	122°10'34"
*C&H Sugar pier	38°03'27"	122°13'05"
*transferred from H-10223(1986)		

An islet at latitude 38°03'43"N, longitude 122°10'35"W has been drawn in dashed red from notes and photographs by the hydrographer without supporting position information. This revision is considered adequate to supersede the common photogrammetrically delineated shoreline.

The shoreline changes at latitude 38°04'04"N, longitude 122°12'45"W and latitude 38°03'58"N, longitude 122°12'42"W were drawn in dashed red without supporting position information. The present photogrammetric compilation of the HWL is inadequate in this area. A review of this area by photogrammetry is recommended to resolve these discrepancies.

3. HYDROGRAPHY

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

- a. delineate the bottom configuration, determine least depths, and draw the standard depth curves;
- b. reveal there are no significant discrepancies or anomalies requiring further investigation; and
- c. show the survey was properly controlled and soundings are correctly plotted.

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 PMC OPORDER, except as noted.

An investigation of all charted features, especially features that originate from prior sources, is required for supersession. See section 6 of this report for discussions of prior survey features that were not found or investigated and, therefore, carried forward to survey H-10264.

5. JUNCTIONS

Survey H-10264 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10223	1986-87	1:10,000	West
H-10283	1988-89	1:10,000	East

The junction with survey H-10223 has not been formally completed since that survey was previously processed and forwarded for charting. The junction comparison was made using a copy. Soundings are in good agreement. Some soundings have been transferred to survey H-10264 to better portray the bottom in the common area.

The junction with contemporary survey H-10283 is complete.

6. COMPARISON WITH PRIOR SURVEYS

H-7785 (1949-50) 1:10,000
H-7786 (1949) 1:10,000

Surveys H-7785 and H-7786 cover the entire area of the present survey. Taking into consideration the differences

in the methods of surveying, comparison with these prior surveys is satisfactory. Some discrepancies between the two surveys were noted, however, and are discussed in section K of the hydrographer's report and as follows.

The following features were not investigated by the hydrographer and have been carried forward from prior survey H-7785:

<u>Feature</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>	<u>Carried Forward</u>
2 piles	38°03'11"	122°09'50"	2 subm piles
rock	38°03'12"	122°09'47"	rock uncovers
4 piles	38°03'45"	122°10'44"	4 subm piles
piling	38°02'54"	122°09'36"	subm ruins
pier	38°03'25"	122°12'46"	subm ruins

TP-00525 (1977) 1:20,000 (Blueprint No. 116944)
 TP-01057 (1979) 1:20,000

Shoreline maps TP-00525 and TP-01057 cover the entire area of the present survey. The shoreline map TP-00525 has been revised with 1979 and 1981 photographs. This revision print is filed as blueprint 116944. The comparison between the two prior shoreline maps and survey H-10264 is adequate, TP-01247 and present hydrography supersedes these maps.

AWOIS Items 51248, 51250, 51251, 51257, 51261, 51262 originate with prior surveys and are adequately discussed by the hydrographer in sections K and L of the hydrographer's report.

With the transfer of the features noted above, survey H-10264 is adequate to supersede the prior surveys within the common area.

7. COMPARISON WITH CHART

Chart 18652, 25th Edition, dated June 20, 1987; scale 1:40,000
 Chart 18655, 53rd Edition, dated July 30, 1988; scale 1:10,000
 Chart 18656, 47th Edition, dated Mar. 7, 1987; scale 1:40,000
 Chart 18657, 12th Edition, dated Nov. 24, 1984; scale 1:10,000

a. Hydrography

Charted hydrography originates with surveys H-7785, H-7786, shoreline map TP-01057 and miscellaneous sources and requires no further discussion.

Survey H-10264 is adequate to supersede charted hydrography within the common area, except as noted in section 7.b. of this report.

b. AWOIS

AWOIS Items 51242, 51243, 51244, 51245, 51246, 51249, 51252, 51253, 51255, 51256, 51258, 51259 and 51260 originate with miscellaneous sources.

These AWOIS items are adequately discussed in section K and L of the hydrographer's report except for:

AWOIS Item 51252, submerged piles, at latitude 38°03'18.00"N, longitude 122°12'09.80"W was investigated by the hydrographer with an 88-meter radius bottom drag. A submerged obstruction was found at latitude 38°03'17.95"N, longitude 122°12'10.18"W. A least depth was not obtained because of the inability to dive on the obstruction. It is recommended that the submerged piles be retained as charted, and a submerged obstruction be added at the above position.

c. Controlling Depths

There are no charted channels with controlling depths within the survey area.

d. Aids to Navigation

All charted fixed aids were located and serve their intended purpose. There are no floating aids in the survey area.

The following uncharted fixed aids were located and are recommended for charting.

<u>Aid Name</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
Glen Cove Marina Green Light	38°03'58.17"	122°12'46.28"
Glen Cove Marina Red Light	38°03'58.09"	122°12'45.60"

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 thirty features to the USCG and CG222. Copies of the messages/reports are attached. During office processing, one correction to the reported items was sent to the USCG and CG222.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10264 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is an good hydrographic survey. Additional field work is recommended on a low priority basis to verify or disprove the existence of features mentioned in sections 6 and 7 of this report.

Charles R. Davies

C. R. Davies
Cartographer


This survey has been examined and it meets Charting and Geodetic Services' standards and requirements for use in nautical charting. Approval is recommended.

Dennis Hill

Dennis Hill
Chief, Hydrographic Section

APPROVALS

I have reviewed the smooth sheet, accompanying data, and reports associated with hydrographic survey H-10264. This survey meets or exceeds Charting and Geodetic Services' standards for products in support of nautical charting.

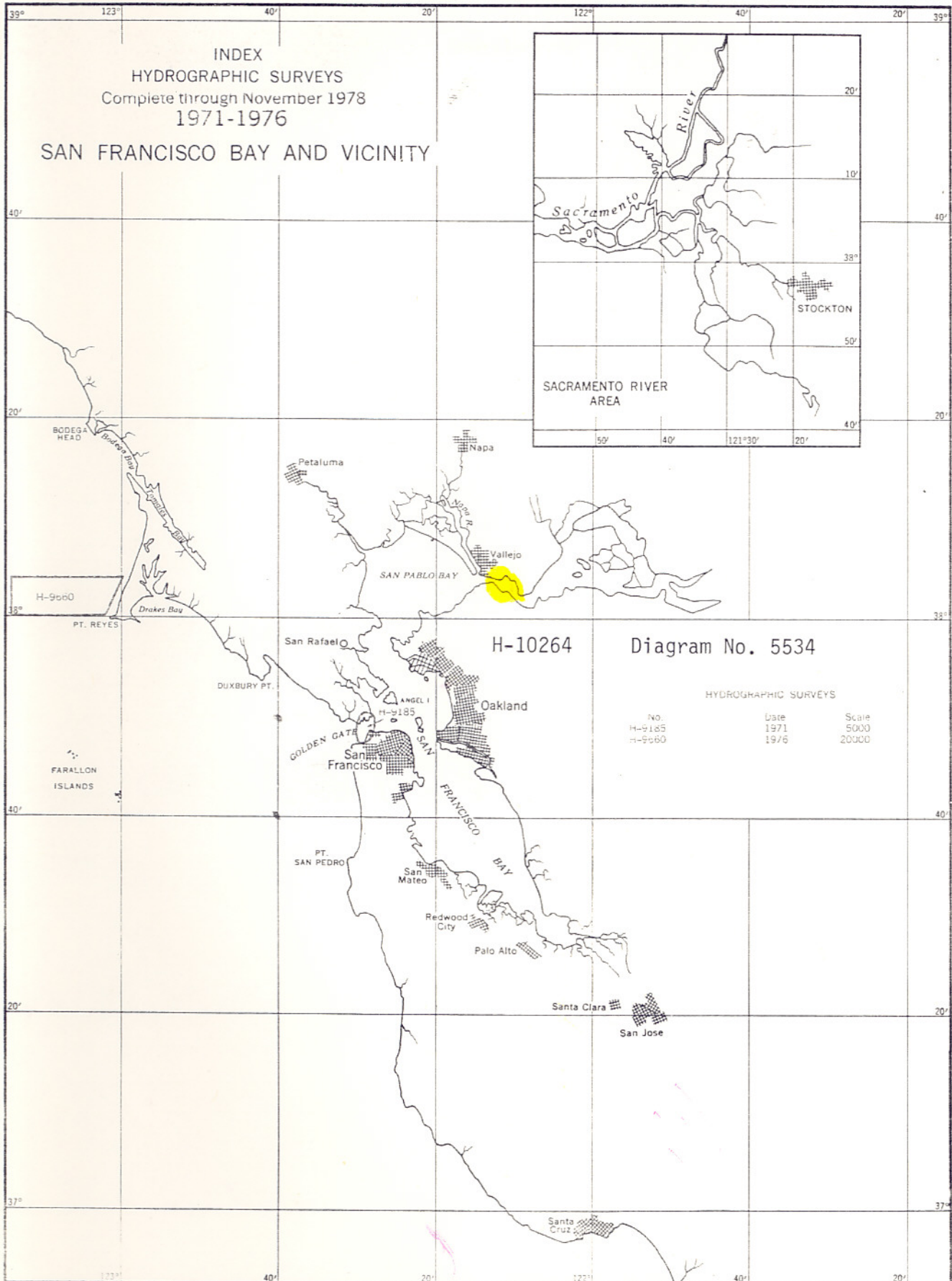

Chief, Nautical Chart Branch (Date) 6/1/89

After review of the smooth sheet and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards.


Director, Pacific Marine Center (Date) 6/6/89
For,

DEPARTMENT OF COMMERCE
 National Oceanic and Atmospheric Administration
 National Ocean Survey
 Rockville, Maryland

Hydrographic Index No. 96M



MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10264

**EXAMINED FOR NM
GDBU**

nmD 3/19-90 NC
Det 3-9-90

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

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
18655	8/27/90	Elizabeth H. Brown	Full Part Before After Marine Center Approval Signed Via Drawing No. <i>APPLIED SURVEY IN FULL</i>
18657			
18657	8/31/90	Elizabeth H. Brown	Full Part Before After Marine Center Approval Signed Via Drawing No. <i>Applied Survey in FULL</i>
18656	10/18/90	ALMACEN	Full Part Before After Marine Center Approval Signed Via <i>full application of</i> Drawing No. <i>sndgs. from SS thru 18657.</i>
18657	12/13/90	ALMACEN	Full Part Before After Marine Center Approval Signed Via <i>full application of</i> Drawing No. <i>sndgs. from SS thru 18656 & 18657.</i>
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
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