

HYDROGRAPHIC TITLE SHEET

H-9952

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-10-1-81

State California

General locality San Francisco Bay

Locality Vicinity of San Francisco Airport

Scale 1:10,000 Date of survey Aug 21, 1981 to Nov 16, 1982

Instructions dated August 11, 1981 (Changes 1, 2, and 3) Project No. OPR-L123-PHP-81

Vessel NOAA Launch 1101 (EDP 0651), Skiff 594 (EDP 0654)

Chief of party LCDR P. R. Chelgren, NOAA

Surveyed by LCDR P. R. Chelgren, LT(iq) E. Secretan, B. H. Lund

Soundings taken by echo sounder, hand lead, ~~XXX~~

Graphic record scaled by Pacific Hydrographic Party personnel

Graphic record checked by Pacific Hydrographic Party personnel

Verification ~~checked~~ by Isagani Almacen Automated plot by PMC Xynetics-Plotter

Evaluation ~~checked~~ by Bruce A. Olmstead

Soundings in ~~XXXXX~~ feet at ~~MLW~~ MLLW and tenths of feet

REMARKS: Times are Coordinated Universal Time

Revisions and marginal notes in black were added during Evaluation

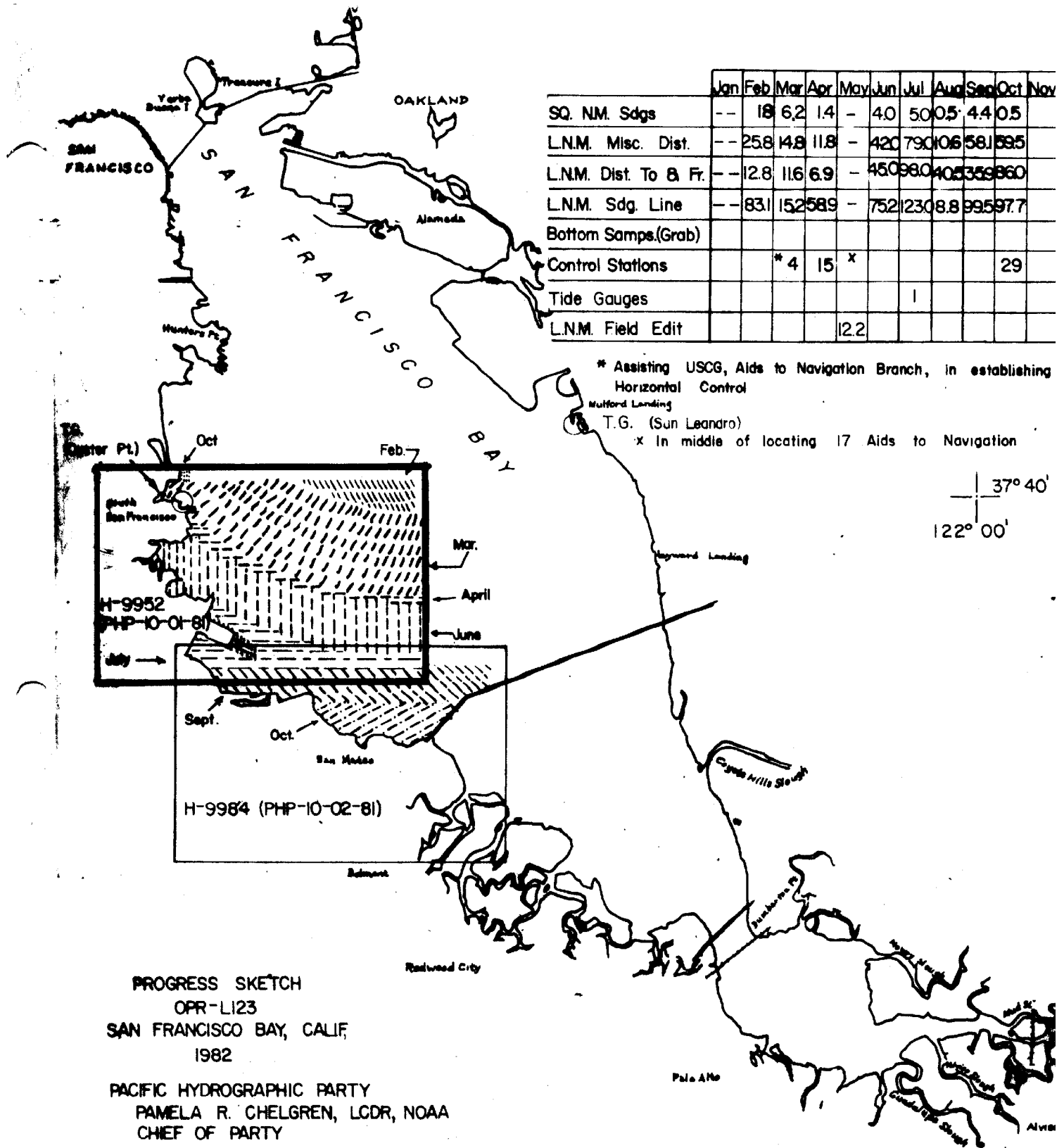
STANDARDS CK'D

5-29-84 C.L.M.

AWOL ✓ MUD 1984

SURF ✓

XWW 8/26/92



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
SQ. NM. Sdgs	--	18	6.2	1.4	-	4.0	50	0.5	4.4	0.5	
L.N.M. Misc. Dist.	--	25.8	14.8	11.8	-	420	790	106	58	59.5	
L.N.M. Dist. To & Fr.	--	12.8	11.6	6.9	-	450	980	405	35	860	
L.N.M. Sdg. Line	--	83.1	152	58.9	-	752	1230	8.8	99.5	97.7	
Bottom Samps.(Grab)											
Control Stations			* 4	15	x					29	
Tide Gauges							1				
L.N.M. Field Edit						12.2					

* Assisting USCG, Aids to Navigation Branch, in establishing Horizontal Control
 Mufford Landing
 T.G. (Sun Leandro)
 x In middle of locating 17 Aids to Navigation

37° 40'
 122° 00'

PROGRESS SKETCH
 OPR-L123
 SAN FRANCISCO BAY, CALIF,
 1982

PACIFIC HYDROGRAPHIC PARTY
 PAMELA R. CHELGREN, LCDR, NOAA
 CHIEF OF PARTY

(From Chart 18680)

BAY
 AREA
 SURVEY
 EXPEDITION

A. PROJECT

Survey H-9952 (PHP-10-1-81) was accomplished in accordance with Project Instructions OPR-L123-PHP-81, San Francisco Bay, Bay Area Survey Expedition (BASE), dated August 11, 1981; amended by Amendment No. 3, dated June 10, 1982. Refer to the Evaluation Report, Introduction, for additional Supplements to Instructions. ✓

B. AREA SURVEYED

Survey H-9952 was conducted in the south portion of San Francisco Bay. The survey encompassed a rectangular portion of southwest San Francisco Bay (25.6 square nautical miles) lying north of the San Mateo-Hayward Bridge and including the area around the San Francisco International Airport, Oyster Point Marina and the south portion of the San Francisco South Bay Channel (a.k.a. San Bruno Shoal Channel). The inclusive dates of the survey are from ~~June 12,~~ ^{August 12,} 1981 to November 16, 1982. The boundaries of the survey sheet are as follows: ✓

North	Latitude	37°40' ^{10"} 30"N
South	Latitude	37°35'35"N 37°36'00"N
East	Longitude	122°15'35"W 122°16'10"W
West	San Mateo County and the City of South San Francisco shoreline.	

C. SOUNDING VESSELS

<u>Vessel</u>	<u>Hull No.</u>	<u>EDP No.</u>	<u>Usage</u>
Launch	1101	0651	Soundings 0-52 feet. ✓
Skiff	594	0654	Soundings 0-15 feet.

The Skiffs transducer was on a portable mount on the skiff's gunwhale. It's depth was measured with a tape every day it was mounted.

Launch 1101 is the only one of its kind in the NOAA fleet. It is essentially a flat bottomed 29 foot aluminum light weight launch propelled by a deflectable stream jet pump instead of a propeller and rudder. Because it does not have a "V" hull or rudder to stabilize its forward direction launch 1101 is very limited in its ability to run a straight or steady speed line in a following (or quartering) sea of over 1½ feet. Because of its light weight and flat bottom it is very much influenced by wave action while running into the seas. Also because of its light weight and flat bottom, bar checks are almost impossible to get in winds of more than 1 or 2 knots, as the launch simply skims across the water like an empty beer can dragging the bar check behind it (a sea anchor did little to help this problem). It should be noted here that launch 1101 is excellent at working shallow sloughs and inshore ✓

areas. All data exceeding tolerances for bar check information and steady on-line speeds were rejected; and all lines exceeding spacing requirements were rejected and rerun, or split.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Nearly all soundings for H-9952 were recorded from launch 1101 using a standard Ross Fineline fathometer and digitizing system using a single 7 $\frac{1}{2}$ "⁰, 100 KHz, narrow beam transducer. The Ross system consists of a model 2000 power inverter, a model 4000 transceiver, a model 5000 analog recorder and a model 6000 digitizer. ✓

The Ross system on launch 1101 was made up of the following instruments:

<u>Component</u>	<u>Model No.</u>	<u>S/N</u>
Power inverter	2000	1003
Transceiver	4000	1097
Analog recorder	5000	1082
Digitizer	6000	1082 until (3/8/82)
"	6000	3787 after (3/8/82)

A few soundings (position numbers in the series 7000 - 7999) were recorded from skiff 594 (EDP 0654) using a Raytheon analog depth recorder with a portable mounted transducer. This system was used in depths of 15 feet or less in Oyster Point Marina. The Raytheon system used on skiff 594 consisted of the following:

<u>Component</u>	<u>Model No.</u>	<u>S/N</u>
Analog recorder	DE-719B	7348 until (6/2/82)
"	DE-719B	6241 after (6/2/82)

A few detached position soundings were taken using a leadline. Leadlines were checked for accuracy with a steel tape prior to the survey.

Sound Velocity Correctors.

Depths in this survey ranged from 0 to 52 feet. Bar checks were made daily (unless the seas were too rough or the wind too strong to collect reliable data) using a 11x1 foot aluminum bar suspended on $\frac{1}{4}$ inch steel chains with painted markings at 5 foot intervals. The chain markings were checked for accuracy prior to beginning the survey and after its completion ✓ and found to be accurate. Bar checks were abstracted daily using an estimated static transducer draft value of 1.6 feet.

Sound velocity correctors for the point values measured during the bar check (5 foot intervals) were computed using the following formula:

Bar depth at A = Digital depth value at bar depth A + estimated transducer draft + instrument draft corrector + velocity corrector at depth A.

Sound velocity correctors were computed using the mean of the daily values for each bar depth and the estimated static draft of 1.6 feet. The overall point corrector value for each bar depth was plotted on a depth versus velocity corrector grid and connected by a smooth curve which was the source of the sound velocity corrector table used to process the survey data. Soundings on the field sheet are corrected for sound velocity.

The same procedure as above was used with vertical cast data obtained from skiff 594 (EDP 0654) but with a static transducer depth of 0.5 or 0.9 feet. This data was then added to that obtained from launch 1101 before the velocity corrector plot was made.

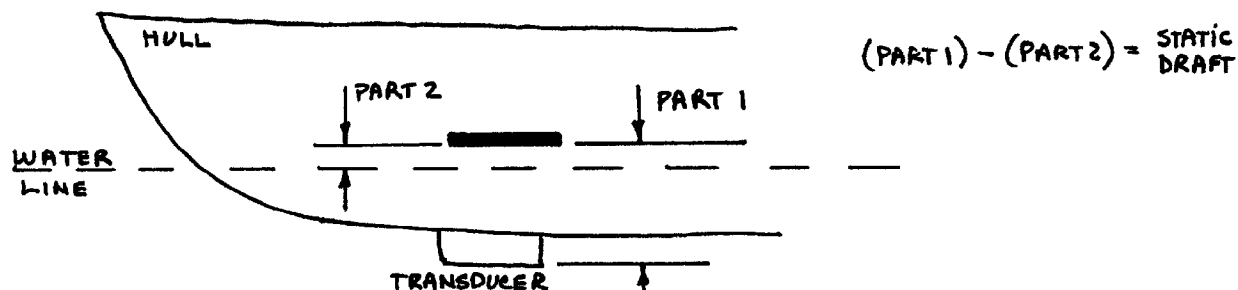
There are two sound velocity corrector tables for survey H-9952. Sound velocity table 1 is used for soundings taken from the beginning of the survey to JD 104 (1982). Table 2 is used for all soundings taken after JD 104 (1982).

The Raytheon initial and 50-foot calibration line were kept within 0.2 feet. The tide/TRA line were checked at the beginning and end of the days work and periodically in-between.

Static Transducer Draft.

The static transducer depth of launch 1101 (EDP 0651) 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 accurately 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 crew and fuel load. 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.

The static draft corrector of 1.6 feet is on the TC/TI tape, and applied to the field sheet. The value of 1.6 feet for static draft was altered as settlement and squat became significant. ✓

The static draft corrector of skiff 594 was measured with a steel tape while the skiff was in the water (the transducer is mounted on the side) each time the skiff was used for sounding. The actual static draft corrector of 0.5 and 0.9 feet, as appropriate, is applied on the field sheet and TC/TI tape. ✓

Instrument/draft Corrector.

The instrument/draft corrector for launch 1101 corrects soundings for errors caused by the difference in the pre-survey estimated static draft of 1.6 feet (used on all data tapes) and the actual static draft of 1.63 feet. It also corrects any instrument errors caused by the Ross sounding system or its transducer. ✓

The instrument/draft corrector is determined by extending the smooth curve on the velocity corrector graph so that it crosses the 0.0 foot velocity corrector line. The corresponding depth is the apparent transducer depth (because the velocity corrector must be zero at the transducer face). The difference between the estimated static transducer depth and the apparent transducer depth is the instrument/draft corrector and will correct soundings to the real static draft and also correct any internal instrument errors present in the Ross system or the launch's wiring system. The instrument/depth corrector will be the same for all water depths but different for each vessel and sounding system. This corrector was 0.0 feet for this survey.

Settlement and Squat Corrections.

Settlement and squat measurements for launch 1101 (EDP 0651) were conducted on August 6, 1982 along the face of the Municipal Wharf in Redwood City California. The depth of the water was always greater than 25 feet while taking the measurements. Changes in transducer draft versus RPM were measured by sighting from a stable level gun (Zeiss Ni2, S/N 100557) on the beach to a stadia rod held perpendicularly on the launch cabin top above the transducer. The change in transducer draft at a specific speed (measured in RPM's) was computed as the difference in rod elevation measured with the launch at rest and underway. Measurements were made at each speed with the launch running towards and away from the level gun. ✓ Several rod readings taken during each run were averaged and static rod elevation was determined by averaging rod readings taken before and after each run with the launch dead in the water. This procedure eliminates any error due to changing tide level (during our measurements the tide was at a low and only changing very slowly). Changes in transducer draft due to settlement and squat were measured at regular intervals (which included all standard survey speeds) through the range of 1000 to 2600 RPM with all surveying equipment installed and a normal fuel and crew

load on board. These point values were plotted and connected to yield a continuous RPM versus draft correction curve. A measurement summary and draft correction curve are appended to this report. Settlement and squat corrections are not applied to the field sheet, but are incorporated on the TC/TI tape.

See
Section 1
of
Evaluation
Report

Sounding Instrument Accuracy and Adjustments.

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

Initial error occurs when the fathometer's transmit pulse trace is not adjusted to coincide with zero on the fathogram paper. The initial trace alignment was monitored and adjusted during survey operations. Any depths scaled from fathograms with initial error were corrected before being applied to the survey. Initial error has no effect on digitized depth values. A maximum initial error of 0.4 feet was seen on this 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 and end of each 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 calibrate mode. The analog trace was then compared to the simulated digital depth. Survey operations were not conducted when phase error exceeded 0.2 feet in the range of depth encountered in the survey area. ✓

Application of Sounding System Correctors.

There are no area limitations on any of the sounding system correctors on H-9952 (i.e. all correctors are independent of area). The only corrector dependent on depth is the sound velocity correctors.

The correctors applied to soundings on the field sheet are:

Launch 1101 (EDP 0651)	Tide correctors ✓ Velocity correctors Static draft corrector (1.6 feet)
Skiff 594 (EDP 0654)	Tide correctors Velocity correctors Static draft corrector

E. HYDROGRAPHIC SHEETS

Hydrographic sheet H-9952 was divided into two field sheets at 1:10,000 scale (PHP-10-1-81 north and PHP-10-1-81 south) along latitude 37°38'00"N because of plotter size limitations. The sheets were constructed by PHP party members with program RK 201 (on a modified transverse Mercator projection). ✓

Developments, cross lines, split lines, channel lines, dive investigations and wire drag areas were plotted on two overlays to avoid congestion on the field sheet. Development contours necessary to represent the shoalest soundings in an area were transferred to the field sheet.

Ink Color Code on Hydrographic Sheets.

Because of the very narrow ocean entrance into San Francisco Bay in relation to the large volume of water contained; differences in actual tide levels from predicted tide levels can sometimes be quite large. Sometimes as large as 2 feet. It was desired that the entire survey be plotted using real tides to alleviate any questions of accuracy arising out of poor cross line and junction comparisons. Because of the long lead time in getting real tides from Rockville, Maryland this was not possible. All soundings obtained before September 1, 1982 are plotted in black ink using real tides. All soundings obtained on September 1, 1982 and later are plotted in purple ink using predicted tides.

Reference
Section 1
Evaluation
Report

Expansion Sheet.

Oyster Point Marina was plotted on an expansion sheet at 1:1,182 scale solely to match an engineers drawing showing the docks, breakwaters and shoreline details. The expansion sheets accuracy is only adequate for a 1:2,500 scale survey. ✓

Field records will be forwarded to the Pacific Marine Center, Seattle, Washington for verification and smooth plotting.

F. CONTROL STATIONS

Horizontal control for this survey was provided by three newly established control stations and existing triangulation. Stations recovered for survey control and location of new stations were:

Reference
Section 2
Evaluation
Report

~~Hospital 1947~~

~~Disk B 1979~~

~~Point San Bruno 1925~~

~~Sierra Point 1851~~

Point San Mateo 1925 *

~~Red Hill Top 1947/1974~~

Point San Bruno RM 4 1982 *

* Used For Survey Control

New stations Crab, 1981 and Loma, 1981 were established by Third Order Class I techniques using intersection and traverse methods. Both stations were monumented and described.

Station #3, 1981 was monumented by a private contractor working for the Airport Commission, San Francisco International Airport. This station was upgraded to Third Order Class I standards by double traverse methods. ✓

San Francisco Airport Daybeacon 1, 1982 was located by Third Order Class I standards using intersection and traverse methods.

Geodetic computations were based on the 1927 North American Datum. Hydrographic data was processed using unadjusted field geographic positions for the new stations established by the party. See Horizontal Control Reports from 1981 and 1982, OPR-L123-PHP-81/82, San Francisco Bay, California, For a complete discussion of horizontal control procedures, equipment, computations and observations.

G. HYDROGRAPHIC POSITION CONTROL

Launch position for this survey was controlled primarily by a Teledyne-Hastings Raydist radio navigation system configured for range-range operation at a frequency of 3290.400 KHz. Small areas nearshore in which one or both Raydist signals would have to travel overland were controlled by range-azimuth or range-range methods using a Motorola Mini-Ranger ultra-high frequency transponder system for the range measurements. One very small area was controlled by the range-visual method using one Raydist station for the range (the other Raydist station had a land path). Oyster Point Marina was controlled using "see-boat-sheet" methods.

Reference
Section 2
Evaluation
Report

The following positioning equipment was used for this survey:

Raydist Mobile Station, launch 1101

Transmitter	Model TA-96	S/N 45
Navigator	Model ZA-75C-1	S/N 118
Position Indicator	Model IA-36	S/N 169
" "	Model IA-36	S/N 180

 ✓

Raydist "Red" Base Station, Station 101, Crab 1981

Transmitter (until 4/9/82)	Model AA-60A	S/N 35
" (after 4/9/82)	Model AA-60A	S/N 241
Power Supply (until 4/5/82)	Model SA-201	S/N 34
" (after 4/5/82)	Model SA-192	S/N 209

Raydist "Green" Base Station, Station 100, Loma 1981

Transmitter	(until 3/10/82)	Model AA-60A	S/N 241
Transmitter	(after 3/10/82)	Model AA-60A	S/N 242
Power Supply		Model SA-192	S/N 33

Mini-Ranger Mobile Station, Launch 1101 ✓

Mini-Ranger Console	S/N 713165
Mini-Ranger Range Transceiver	S/N 4931

Mini-Ranger Reference Stations

Mini-Ranger Transponder, Code 5	S/N 4499
Mini-Ranger Transponder, Code 7	S/N 4709

The left ("red") Raydist shore station was located on a large two story flat-topped building approximately 100 meters from the water's edge at an elevation of 30 meters. The station consisted of a 35 foot whip antenna atop a 20 foot tower section with the ground plane radials spread out across the roof. The station was powered with 120 volts A.C. through a Raydist power supply and storage battery buffer. The Raydist power supply failed at this station after heavy winds tore the cover off the enclosure and exposed it to the rain; the transmitter itself failed about two weeks later from probably the same incident.

The right ("green") Raydist shore station was located on packed earth approximately 20 meters from the waters edge at an elevation of 2 meters. The station consisted of a 35 foot whip antenna atop a 20 foot tower section with the ground plane radials spread out across the ground. The station was powered with 120 volts A.C. through a Raydist power supply and a storage battery buffer. The transmitter was replaced on March 10, 1982 because of degrading signal quality. ✓

Raydist equipment was calibrated at a fixed point (Third Order, Class I non-floating aids) at the beginning and end of each day (and sometimes mid-day). Initial lane values computed for the calibration point were entered in the Raydist navigation interface and the phase tracking mechanism was activated with the launch antenna as close to the calibration point as possible. With the receiver tracking, ten sample rates were recorded to determine the partial lane correctors applied during the working day. At the end of the day (and sometimes in the middle of the day) this same procedure was repeated to verify the whole lane count and obtain another set of partial lane correctors. The daily correctors used in data processing were the mean of the morning, afternoon (if any) and evening values; or if the change was high enough at

mid-day the correctors were apportioned to meet accuracy requirements. The worst positional difference documented by calibrations were ± 11.8 meters. This falls within the recommended ± 1.5 mm at scale for all positional errors (15 meters for 1:10,000) but does not meet the recommended ± 0.5 mm range error. ✓

All Raydist LOP's used for position control intersected at at least 50° . No weak geometric intersections were encountered. No significant aberrations in the Raydist signal due to atmospheric effects occurred during the survey.

On JD 238 (1981) there is no ending Raydist calibration (i.e. only the morning calibration was used to determine correctors for the day). A whole lane check was performed with a sextant at the end of the day because of the failure of launch 1101's engine. The only data obtained this day were bottom samples of which the exact geographic position is not critical. ✓

Mini-ranger systems checks were performed before and after each survey day (at Third Order, Class I stations) to insure the equipment was operating properly. The mean of ten sample range values collected during the systems check was required to fall within 5 meters of the computed corrected value for the calibration point to be acceptable. Correctors used in data processing were determined from the baseline calibration performed on September 22, 1982 with a baseline calibration performed on April 7, 1982 used as a check comparison. ✓

In the area of H-9952 Mini-ranger signals would simply "go off the air" around 1000 PST. There would be no preceding loss of signal strength or position accuracy. The Mini-ranger system would just stop working. It was never determined what caused this problem but it is assumed that someone in the area was turning on some high power electronics which would essentially "jam" the Mini-ranger system. The launch would quit receiving both shore stations at the same time (always around 1000 PST) and would sometimes have signal strengths of 20 or greater remaining on the display from the last signal received. All Mini-ranger controlled survey work was obviously done before 1000 PST in the morning.

Location of shore station equipment for hydrographic position control on H-9952 is as follows: ✓

<u>Station</u>	<u>Station Name</u>	<u>M/R Code or Raydist Color</u>
101	Crab, 1981	Red
100	Loma, 1981	Green
112	Pt. San Bruno RM4, 1925-1963-1982	Code 5
111	"3", 1981	Code 5
125	San Francisco Apt Dbn 1, 1982	Code 7
109	Pt. San Mateo, 1925	Code 5

Andist correctors are not needed for this survey because: 1) The Mini-ranger antenna is only 1½ meters away. 2) The Raydist antenna, while it is 6 meters away from the transducer, because it is mounted at the very stern of the launch, parasitic antenna effects will shift the "apparent antenna" more toward the center of the launch and thus closer to the transducer. ✓

H. SHORELINE

Shoreline information for H-9952 was taken off AMC Coastal Mapping's "Chart Maintenance Print" of TP-00534 (5/28/82) expanded to 1:10,000 scale by a local reproduction company. Any subsequent changes to this print were annotated in red ink on a paper copy of this print (which has been submitted with the survey). All shoreline details were field edited and changes have been transferred to the field sheet. The photographs supplied were inconvenient in that there were no low water photos given to us, the scale was half that of the survey and we received no ratio prints. ✓

Control stations seaward of the shoreline include:

San Mateo Bridge Transmission Tower No 18 1955
San Francisco Airport Daybeacon 1 1982 (dolphin)

I. CROSSLINES

Crosslines comprise 13% of the soundings. Agreement was 0-2 feet which was good for a survey reduced with predicted tides (partly actual, partly predicted). ✓

J. JUNCTIONS

H-9819 is a PHP survey bordering on the north edge. It junctioned well, within 2 feet, which is quite adequate for soundings which were reduced with predicted tides (H-9819). H-9872 is a PHP survey bordering on the east edge. If a 1.5mm positional shift is allowed, it junctions well (within 2 feet). The Raydist system is within 10-15 meter positional tolerances.

Reference
Section 5
Evaluation
Report

K. COMPARISON WITH PRIOR SURVEYS

Presurvey Review Item number 29 (PSR #29).

This item consisted of two submerged piles charted at latitude 37°39'44"N, longitude 122°19'26.5"W, and latitude 37°39'47"N, longitude 122°19'19"W which originated as visible piles from an unascertainable source and were revised to submerged piles through a U.S. Power Squadrons report (CL 1766/74). ✓

The investigation of this item was done on the telephone to:

Mr. Wendell W. Williams
Maintenance Foreman ✓
Shell Oil Company
(415) 651-5890

Mr. Williams personally saw and reported the following information to us:

1. The piles were made of wood and were used for laying a pipeline across the ship channel. ✓
2. They extended approximately 20 feet above the water.
3. The piles were removed at the mud line by the Healy Tibbets Construction Company of San Francisco after pipeline construction.

These two submerged piles should be deleted from the chart. Evaluator Concur

Presurvey Review Item number 30 (PSR #30).

This item consisted of seven submerged piles, PA, charted at the following positions which originated as visible piles from a U.S. Power Squadrons report of 1967 (CL 1630/67). They were subsequently revised to submerged from another USPS report of 1971 (CL 406/71).

<u>Latitude</u>	<u>Longitude</u>
37°38'12"N	122°17'41"W
37°38'14"N	122°17'24"W
37°38'15"N	122°17'02"W ✓
37°38'16"N	122°16'43"W 48"
37°38'17"N	122°16'34"W
37°37'42"N	122°17'13"W
37°36'16"N 464 gms	122°16'23"W

The investigation of this item consisted of two independent conversations with two separate persons. Both persons gave the same information. The following information was obtained from:

Mr. Bill Asby
Dredge boat engineer ✓
Hydraulic Dredging Company
(415) 685-2589

Mr. John Holman
Dredge operator ✓
Healy Tibbets Construction Company
(415) 522-7783

1. The seven piles were all put in at the same time in 1963 by the Hydraulic Dredging Company.
2. The seven piles were used to define the dredging area limits of the Foster City, California land fill project. ✓
3. All seven piles were broke off 6 feet below the mud line when they were removed by the Hydraulic Dredging Company in 1968 at the completion of the Foster City project.

All seven submerged piles should be deleted from the chart.

Evaluator Concur

Presurvey Review Item number 31 (PSR #31).

This item consisted of a submerged dolphin, PA, charted at latitude $37^{\circ}38'00''N$, longitude $122^{\circ}17'12''W$ which originated as a visible dolphin through a U.S. Power Squadrons report of 1971 (CL 406/71). It was subsequently revised to a submerged dolphin as part of a cartographic decision resulting from the 1976 Chart Adequacy Survey (CL 980/76, item 24B). The 1976 survey did not locate the visible dolphin at its charted position and recommended that its position be revised to latitude $37^{\circ}37'37.1''N$, longitude $122^{\circ}17'05.4''W$. The charted visible dolphin was revised to a submerged dolphin for lack of proof of its non-existence. ✓

The investigation of the existence of this item consisted of the following:

1. Using the original range (a two object range, not a distance) and cross bearing as given by William E. Johns (CL 406/71) to plot the location of the dolphin results in a position of latitude $37^{\circ}37'35''N$, longitude $122^{\circ}17'06''W$, not latitude $37^{\circ}38'00''N$, longitude $122^{\circ}17'12''$ as he states in his letter. The correctly plotted position of the dolphin corresponds well with that of the dolphin located during the 1976 survey (latitude $37^{\circ}37'37.1''N$, longitude $122^{\circ}17'05.4''W$). ✓
2. A telephone conversation with Mr. John Holman ((415) 522-7783) who has worked in the South San Francisco Bay as a dredge boat operator for the last 37 years (and is highly respected by other marine construction people in the Bay Area) yielded the following information: ✓
 - a. There have never been any other dolphins on the San Bruno Shoal south of the Radar Tower other than the two presently charted at latitude $37^{\circ}38'43.6''N$, longitude $122^{\circ}17'37.2''W$, and latitude $37^{\circ}37'37.1''N$, longitude $122^{\circ}17'05.4''W$. ✓
 - b. The two dolphins south of the Radar Tower, the Radar Tower itself (latitude $37^{\circ}39'46.6''N$, longitude $122^{\circ}18'06.6''W$) and another dolphin north of the Radar Tower (latitude $37^{\circ}41.2''N$, longitude $122^{\circ}18.75''W$) formed a navigation range at one time. ✓

The PSR submerged dolphin, PA does not lie on the Radar Tower range, even though Mr. W. Johns states in his letter (CL 406/71) that it does. ✓
The dolphin located during the 1976 survey is directly on the range.

It is strongly felt by us doing this survey (LCdr P. Chelgren, Lt(j.g.) E. Secretan) that Mr. William Johns did a poor job of scaling off his fix in his 1971 letter. We concur with the recommendation given on the 1976 Chart Adequacy Survey. The submerged pile, PA should be deleted from the chart.
dolphin,

Evaluator
Concurs

NOTE: The dolphin located during the 1976 survey (latitude $37^{\circ}37'37.1''N$ latitude $122^{\circ}17'05.4''W$) was destroyed during survey H-9952. See section L, Comparison with the chart for the disposition of this. ✓

H-6726, 1:10,000 Scale, 1941

This survey generally ranged from 0-4 feet shoaler than the present survey, with a general difference of 2 feet (if a 1.5mm positional shift is allowed). Larger differences occurred in the dredged channel and south entrance to the dredged channel where depths ranged up to 9 feet shoaler than the present survey. Also San Bruno Shoal (latitude $37^{\circ}38.5'N$, longitude $122^{\circ}17.2'W$) has decreased in area by 20% at the 6-foot contour. It has receded along the SW edge up to 270 meters, and moved NE 60 meters along the NE edge. In the area of a permitted borrow site (latitude $37^{\circ}36.5-38.5'N$, longitude $122^{\circ}15.0-18.5'W$, observed) the present depths are up to 21 feet deeper. It is felt that because of the extensive dredging and borrowing in this area, the prior survey depths were made invalid. Current survey depths should supercede this prior survey depths. In addition, this survey showed a Bouy 1A and a visible wreck that are not on the chart. The current survey verified the non-existence of these items. (Evaluator Concurs)

Reference
Section 6
Evaluators
Report

H-8025, 1:10,000 Scale, 1954-1955

This survey agreed well, generally within 3 feet of the current survey if a 1.5mm positional shift is allowed. However, near the shoreline fills, depths were up to 7 feet shoaler. There has been extensive shoreline fills since this survey which extended the MHW line as much as 0.5Nm along the west edge of the survey area. Notable areas include Oyster Point to Point San Bruno and the NE side of San Francisco International Airport. The 3-foot contour on the north side of the entrance to Seaplane Harbor has extended SSW 160 meters on the current survey, which is not surprising, as the channel is no longer being maintained. The buoys marking that channel are no longer charted, and are not there. San Francisco Municipal Airport South Side Light structure is still there, but the light has been replaced by a daybeacon. To correct this and also be consistent with the USCG Light List, the survey, charted and geodetic names it should be changed to "San Francisco Airport Daybeacon 1 1982".
beacon

Reference
Section 6
Evaluators
Report

The entrance to Oyster Point Marina has dredged depths of 8-10 feet versus the 4-5 foot depths on the prior. The newer depths should be taken on this maintained channel. The 6-7 foot channel shown on the prior at the NW corner of our sheet has not been maintained since the 1950's. ✓
 The current survey has 4-5 foot depths here. The chart should show our shoaler soundings. NOTE: There are plans for dredging a new channel there with the new marina going in. This will be covered by a chart letter when the construction company is complete.

Features shown on the prior but no longer charted and no longer existing include:

Bell Buoy	latitude 37°39.4'N, ✓	longitude 122°21.7'W, ✓
Buoy 6	latitude 37°39.3'N, ✓	longitude 122°20.3'W, ✓
Duck Blind	latitude 37°38'36.9"N, ✓	longitude 122°22'48.0"W, ✓
Duck Blind	latitude 37°38'46.4"N, ✓	longitude 122°22'45.9"W, ✓
Duck Blind	latitude 37°38'36.4"N, ✓	longitude 122°23'11.0"W, ✓
Sunken Barge	latitude 37°38'29.4"N, ✓	longitude 122°23'07.5"W, ✓
Duck Blind	latitude 37°38'27.0"N, ✓	longitude 122°22'44.7"W, ✓

Prior survey H-8025 has a row of 7 dolphins shown at latitude 37°38.5'N, longitude 122°23.5'W. This area was observed while bare and only the 5 northern dolphins remain. The 8 dolphins shown on the other side of the channel are still present. All of these dolphins are shown correctly on Coastal Mapping's "Chart Maintenance Print". The chart should reflect this current status.

Evaluator
Concurs

Other features shown on the prior survey and charted are as follows:

1. Dolphin (in ruins) located at latitude 37°40'03.3"N, ✓
 longitude 122°22'07.0"W. This item was searched for using a 25 meter radius, on bottom circle search (Pos. #3840, JD 280). Nothing was found during the search and it is recommended that this item be deleted from the chart.

Evaluator
Concurs

2. Pile located at latitude 37°40'06.5"N, ✓ longitude 122°23'04.9"W. ✓
 This item was searched for using a 25 meter radius, on bottom circle search (Pos. #3841, JD 280). Nothing was found during the search and it is recommended that this item be deleted from the chart.

Evaluator
Concurs

3. Pile located at latitude 37°38'40.5"N, ✓ longitude 122°22'56.0"W, ✓
Pole located at latitude 37°38'47.7"N, ✓ longitude 122°23'04.5"W, ✓
 and another Pole located at latitude 37°38'28.6"N, ✓ longitude 122°22'52.4"W. ✓ These items are in 1 foot or less of water. The area was observed when it was all bare on a minus tide during field edit operations and the items were observed to no longer exist. It is recommended that these items be deleted from the chart.

Evaluator
Concurs

H-8026, 1:10,000 Scale, 1954-1956

This survey generally ranged from 0-3 feet deeper (if a 1.5mm positional shift is allowed) with the following exceptions: 1) Near the shoreline fills. 2) The over-40-foot section near the SE corner of the survey (latitude $37^{\circ}36-37'N$, longitude $122^{\circ}16.5-17.5'W$) is 0-3 feet shoaler than the prior. 3) The 12-foot and the 18-foot contours have receded SW 100 meters at latitude $37^{\circ}36.1'N$, longitude $122^{\circ}17.15'W$. 4) The permitted borrow area (latitude $37^{\circ}36.5-38.5'N$, longitude $122^{\circ}15.0-18.5'W$) has current depths up to 25 feet deeper. 5) The shoreline at the airport has extended 250 meters NE and extended 950 meters SE of the prior's deliniation.

Reference
Section 6
Evaluation
Report

Features shown on the prior survey H-8026 but no longer charted and no longer existing include: 1) All buoys shown on the prior survey. 2) Duck Blind at latitude $37^{\circ}36'04''N$, longitude $122^{\circ}21'21''W$. 3) Duck Blind at latitude $37^{\circ}36'07''N$, longitude $122^{\circ}20'28''W$. 4) Duck Blind at latitude $37^{\circ}36'12''N$, longitude $122^{\circ}19'57''W$.

A Stake shown on the prior survey, and also charted, at latitude $37^{\circ}37'15''N$, longitude $122^{\circ}21'18''W$ was searched for using a 25 meter radius diver circle search (Pos. #2704, JD 181). The stake was found; and then broken off at the mud line by the divers. It is recommended that this stake be deleted from the chart.

Evaluator
Concurs

Another Stake shown on the prior survey, and also charted, at latitude $37^{\circ}36'01''N$, longitude $122^{\circ}20'06''W$ is on the south border of survey H-9952 and it will be addressed on the next survey south (H-9984).

H-8027, 1:20,000 Scale, 1955

This survey generally ranged from 0-3 feet deeper if a 1mm positional shift of the 1:20,000 scale soundings is allowed. Exceptions include: 1) The new permitted borrow dredge area mentioned in the other prior surveys, where depths were as much as 20 feet deeper. 2) San Bruno Shoal (mentioned earlier) which has decreased in size, receding up to 170 meters on the SW side and 750 meters on the NW side at the 3-foot contour. 3) The single sounding line extending west from the rest of this prior survey is as much as 4 feet shoaler where it crosses the now-maintained dredged channel. Because of the extensive dredging in the area and the muddy and sandy nature of the bottom, the current deeper depths should be taken over the older shoaler prior survey depths.

L. COMPARISON WITH THE CHART

This survey was compared with the 32nd edition of Chart 18651 (8/1/81), the 20th edition of Chart 18652 (5/16/81), and a June 25, 1982 listing of Charts 18651 and 18652's FFAID's. A more current edition and more current information was used to eliminate the necessity of investigating

features already taken off the chart. If a 1mm positional shift of charted soundings is allowed the general agreement is from 1 foot shoaler to 4 feet deeper than the chart. Given the extensive dredging in the area, this agreement is thought to be adequate. Other than exceptions seen on the chart that have already been discussed in Section J of this report, the following additional items were found: 1) The charted shoreline varied as much as 50 meters from Coastal Mapping's "Chart Maintenance Print". 2) The nearshore depths from Point San Bruno to Oyster Point were 3-4 feet shoaler (because of the landfilling). 3) Seaplane Harbor Channel was charted as 7½ feet in 1976, and it is still 7½ feet. 4) Oyster Point Marina Channel now has a depth of 6½ feet. 5) San Francisco South Channel which had a depth of 29 feet in 1977 still has a controlling depth of 29 feet. ✓

Wire drag operations were performed in 1981 (JD 287-356, Pos #'s 8000-8969, 9100-9492) in an attempt to locate the PSR items on the San Bruno Shoal (this later proved to be unnecessary for disproof). ✓

North/south crosslines at 45 meter spacing were run across the center of the San Bruno Shoal to help define the depth curves and to insure that the least depth was represented in previous soundings. ✓

Non-sounding charted features which have changed or were investigated are as follows:

- ✓ 1. The dolphin located at latitude 37°37'37.5"N, longitude 122°17'05.5"W was destroyed by a barge during the survey. A 25 meter radius diver circle search was performed on the dolphin's location on JD 056 (Pos. #470). No remains of the dolphin were left. This dolphin should be deleted from the chart. Evaluator
Concurs
- ✓ 2. A 25 meter radius diver circle search was performed on JD 335 (1981)(Pos. #22) on the location of a previous wire drag hang which was also the charted location of an obstruction (37°38'06.8"N, 122°17'00.0"W). A submerged pile (5.2 feet high, covers 3 feet) was found at the location. This charted obstruction should be revised to a submerged pile (as recommended on the 1976 Chart Adequacy Survey). *Corrected depth - covers 4 feet gm* Evaluator
Concurs
- ✓ 3. The Radar Tower charted at latitude 37°39'46.6"N, longitude 122°18'06.6"W fell over during the survey. This structure was a steel skeletal tower about 45 feet high supported out of the water on four wood pile legs. The northeast leg failed and the tower fell over in that direction. The base of the tower is still attached to one or two of the wood pile legs with the top of the tower resting on the bottom. The remains are always visible above the water (5 feet). The charted Radar Tower should be revised to "Tower Ruins" *baring 5 feet at MHW.* Evaluator
Concurs

- ✓4. The pile, PA located at latitude $37^{\circ}39'30''N$, longitude $122^{\circ}18'47''W$, originated from a 1977 Power Squadron's report (CL 392/77) written by Paul G. Jones.

Paul G. Jones was contacted by telephone when the pile was not observed during hydrography. Mr. Jones stated that the pile supported instruments and had been put in by the U.S. Geological Survey with the U.S. Geological Survey vessel "Polaris". ✓

The person in charge of the project for the U.S. Geological Survey was determined, after a few phone calls, to be:

Dr. Ralph Cheng ✓
U.S. Geological Survey
Menlo Park, California
(415) 856-7206

Dr. Cheng reports that the "apparatus" was not a pile at all. It was a metal tripod resting on the bottom which supported scientific instruments. The tripod was recovered in 1977 by the U.S. Geological Survey with the U.S.G.S. vessel "Polaris". This pile, PA should be deleted from the chart.

Evaluator
Concurs

- ✓5. The South San Francisco Yacht Harbor (Oyster Point Marina) Daybeacon 6 charted at latitude $37^{\circ}39'53''N$, longitude $122^{\circ}22'18''W$ no longer exists. The pile was removed, because it was no longer needed, at the same time that the new outer breakwater was built. The pile was broken off at the mud line by the Peter Kewitts Construction Company. This information was obtained from: ✓

Merwin G. Hansen ✓
Harbormaster, Oyster Point Marina
P.O. Box 589
S. San Francisco, Ca 94080
(415) 871-4057

The South San Francisco Yacht Harbor Daybeacon 6 is charted with a small circle with no description. This item should be deleted from the chart.

Evaluator
Concurs

6. There are numerous changes inside of the Oyster Point Marina breakwater. The BoHo (boathouse) shown on the "Chart Maintenance Print" is instead the Yacht Club and Harbormaster's office, and has been for some time. The old launch ramp has been closed and filled in with cement and rock (the float docks remain) and a new launch ramp has been built farther east. Float docks have been built in the new eastern basin. All new changes are shown correctly in red on the main scheme field sheet. ✓

7. The dolphin charted at latitude $37^{\circ}39'00''$ ^AN, longitude $122^{\circ}22'32''$ W on the "Chart Maintenance Print" does not exist. This area was observed while bare and only rocks were present. This charted dolphin should be revised to "rock".

Evaluator
Concurs

8. The San Francisco Airport Daybeacon "1" charted at latitude $37^{\circ}37'50''$ N, longitude $122^{\circ}21'50''$ W has been discontinued by the U.S. Coast Guard. A 25 meter radius diver circle search was performed on JD 181 (Pos. #2705) to check for remains. Nothing was found during the search. This daybeacon should be deleted from the chart.

Evaluator
Concurs

9. The San Francisco Airport Daybeacon "3" charted at latitude $37^{\circ}37'57''$ N, longitude $122^{\circ}22'40''$ W has been renumbered "1" by the U.S. Coast Guard. ✓

This item should be revised from "3" to "1" (it is still marked with a square green dayboard and has no light).

Evaluator
Concurs

10. The piling charted at latitude $37^{\circ}37'53''$ N, longitude $122^{\circ}22'45''$ W does not adequately represent this area. There are dolphins and submerged remains of dolphins in this area. The dolphins still standing whole are very badly decomposed at the waterline and only submerged piles (piling) will remain in a year or two. ✓

This area should be charted as shown on Coastal Mapping's "Chart Maintenance Print" and the South Field Sheet which accurately depict the area at the finish of this survey.

Evaluator
Concurs

11. The markers (lighted) charted on either side of the platform located at latitude $37^{\circ}38'11''$ N, longitude $122^{\circ}21'37''$ W have been removed. The removal was done for the Federal Aviation Administration (F.A.A.) by the S.M.L. Construction Company on December 21, 1981 and inspected by the F.A.A. after completion. The poles were cut off at the mud line. The platform is lighted and still in use by the F.A.A.. The above information was obtained by telephone from:

Mr. Alex Gulyas ✓
F.A.A., San Francisco Airport
(415) 876-2748 ✓

The removal work was inspected by:

Mr. Max Haymie ✓
F.A.A., Environmental Chief
San Francisco Airport
(415) 876-2731

The markers (lighted) should be deleted from the chart and the platform should be charted as (revised to) "platform (lighted)".

Evaluator
Concurs

12. The duck blind located at latitude $37^{\circ}36'23''N$, longitude $122^{\circ}21'29''W$ on the "Chart Maintenance Print" was observed to no longer be visible during hydrography.

This item should be revised to "duck blind ruins". Evaluator
Concurs

13. The duck blind shown at latitude $37^{\circ}38'40''N$, longitude $122^{\circ}22'49''W$ on the "Chart Maintenance Print" was observed to no longer exist. The area was observed while bare and ruins were observed to remain.

This item should be revised to "duck blind ruins". Evaluator
Concurs

14. The spoil area charted at latitude $37^{\circ}39'N$, longitude $122^{\circ}22.4'W$ and the other spoil area just north of the Oyster Point Marina breakwater (latitude $37^{\circ}39.9'N$, longitude $122^{\circ}22.5'W$) are both no longer in use. Also, there are no longer any valid permits issued by the U.S. Army Corps of Engineers for these areas. ✓

The above information was obtained from:

Mr. Calvin Fong
Chief, Regulatory Branch
U.S. Army Corps of Engineers ✓
211 Main Street
San Francisco, California 94105
(415) 974-0418

Both of these spoil areas should be deleted from the chart.

Reference
Section 7
Evaluation
Report

The following additions should be made to the chart:

1. "Duck blind" at latitude $37^{\circ}36'21.6''N$, longitude $122^{\circ}21'50.5''W$ ✓
(Pos. #3910, JD 299).
2. "Area foul with stakes, piling and ruins". The area is enclosed by the shoreline and a line drawn from latitude $37^{\circ}36'33.2''N$, longitude $122^{\circ}21'27.5''W$, to latitude $37^{\circ}36'02.7''N$, longitude $122^{\circ}20'14.3''W$, and then to latitude $37^{\circ}35'31.6''N$, longitude $122^{\circ}20'14.3''W$ (the area south and west of this line). ✓

This area has duck blinds built and destroyed seasonally. It is covered with stakes, snags, pipes, piling and ruins. Some are visible above the water, most are submerged. These hazards seem to be in constant change in this area. All known hazards have been located, verified or disproved with more than one search being made for new hazards; but this in no way insures that we have found them all.

Evaluator
Concurs

M. ADEQUACY OF SURVEY

Survey H-9952 is complete and adequate to supersede all prior surveys for charting purposes. ✓

N. AIDS TO NAVIGATION

There are no floating aids to navigation in the survey area of H-9952. ✓

Third-order horizontal control updated positions of all non-floating aids to navigation in the survey area. The U.S. Coast Guard has been notified of the updated positions (see the attached letter under separate text I, "Landmarks for Charting"). ✓

The position differences from the latest available FFAID printout (June 25, 1982) are less than 1 meter for the San Bruno Shoal Channel aids (lights 3,4,5,6 and 8). San Francisco Airport Daybeacon 1 has a position difference of about 11 meters. South San Francisco Yacht Harbor Lights 1 and 2, and Daybeacons 3 and 5 have differences of approximately 20 meters. South San Francisco Yacht Harbor Light 8 and Daybeacon 4 have differences of approximately 40 meters. South San Francisco Yacht Harbor Lights 9, 1A and 2A have FFAID Position differences of approximately 100 meters. Some of these position differences for the South San Francisco aids seem quite large; but these aids are really only used to mark the marina channel and the ends of the breakwaters (i.e. because of their close proximity to shore they are not useful for navigation "fixes" out on the bay) and thus the position differences did not really constitute any hazard to navigation. ✓

All navigation aids in the survey area adequately serve the purpose for which they were established. ✓

Non-floating aids to navigation which are not listed in the U.S. Coast Guard Light List are:

1. South San Francisco Yacht Harbor Daybeacon 3. Latitude $37^{\circ}39'50.877''N$, longitude $122^{\circ}22'10.879''W$. Located in August 1979. 3 meter high wood pile with green square dayboards.
2. South San Francisco Yacht Harbor Daybeacon 4. Latitude $37^{\circ}39'52.004''N$, longitude $122^{\circ}22'11.453''W$. Located in August 1979. 3 meter high wood pile with red triangle dayboards. ✓
3. South San Francisco Yacht Harbor Daybeacon 5. Latitude $37^{\circ}39'50.852''N$, longitude $122^{\circ}22'17.476''W$. Located in August 1979. 3 meter high wood pile with green square dayboards.

The above aids mark the channel into the Oyster Point Marina. They are maintained by the Oyster Point Marina. They were located by the Pacific Hydrographic Party. ✓

The charted submerged pipeline running from the beach just south of Point San Bruno in a ENE direction was verified by Shell Oil Company during this survey. The charted sewer line extending ~~NE~~ from just north of Point San Bruno was found to be destroyed and no longer in use during field edit. A fix was taken on the remaining ruins on shore during field edit. ✓

O. STATISTICS

<u>Vessel</u>	<u>Number of Positions</u>	<u>N. Miles of Sounding Lines</u>	<u>Square Nm of Hydrography</u>	<u>Detached Positions</u>
1101 (EDP 0651)	4065	498.7	25.57	46
594 (EDP 0654)	78	2.9	0.06	15
Total	4143	501.6	25.63	61
Wire Drag	439 <u>4582</u>	62.5 <u>564.1</u>	1.32	0

Number of bottom samples: 49
 Number of tide stations: 2 (plus 2 of PTP's - San Mateo, Ft. Point)
 Number of current stations: 0
 Number of velocity casts: 0 (bar checks only)
 Number of magnetic stations: 0

P. MISCELLANEOUS

None.

Q. RECOMMENDATIONS

Borrow dredging is still continuing in the area of the east edge of the sheet (just east and south of the San Bruno Shoal). Therefore, only the general shoaler depths should be charted in this area. ✓

It is also recommended that verified depths from this survey of Oyster Point Marina be used to place depths on the chart. ✓

R. AUTOMATED DATA PROCESSING ✓

<u>Number</u>	<u>Name</u>	<u>Version date</u>
RK200	Geographic Data Plot	11/5/80
RK201	Grid, Signal, and Lattice Plot	4/18/75
RK211	Range-Range Non-Real Time Plot	2/2/81
RK212	Visual Station Table Load	4/1/74
RK214	Range-Visual Non-Real Time Plot	2/11/81
RK216	Range-Azimuth Non-Real Time Plot	2/9/81
RK300	Utility Computations	10/21/80
RK330	Reformat and Data Check	5/4/76
PM360	Electronic Corrector Abstract	2/2/76
RK410	Geodetic Three-Point Fix	9/22/78
AM500	Predicted Tide Generator	11/10/72
RK561	H/R Geodetic Calibration	2/19/75
AM602	Elinore--Line Oriented Editor	5/20/75
AM607	Self-Starting Binary Loader	8/10/80

S. REFERRAL TO REPORTS ✓

Other project reports covering this survey area include:

1. Horizontal Control Reports 1979-1982 (submitted yearly).
2. Field Edit Report, and Supplement to Field Edit Report for TP-00534 (submitted in 1980 and January 1982).
3. Tide Station Reports and leveling records submitted to OA/C231 on all project area tide stations semi-annually.
4. Coast Pilot Reports submitted annually to OA/CPM3 every January.

Respectfully Submitted,

Eric Secretan

Eric Secretan
LTJG, NOAA

✓
APPENDIX

- A. SHEET PARAMETERS
 - B. FIELD TIDE NOTE
 - C. GEOGRAPHIC NAMES LIST
 - D. ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS
 - E. ABSTRACTS OF CORRECTIONS TO ELECTRONIC POSITION CONTROL
 - F. LIST OF STATIONS
 - G. ABSTRACT OF POSITIONS
 - H. BOTTOM SAMPLES
 - I. LANDMARKS FOR CHART
 - J. APPROVAL SHEET
-

H-9952

PARAMETER TAPE LISTING

(NORTH)

SKEW=0,21,54

FEST=25000

CLAT=4151000

QMER=122/20/00

GRID=30

PLSCL=10000

PLAT=37/37/39

PLON=122/24/42

VESNO=0651

YR=81

ANDIST=0.0

H-9952

PARAMETER TAPE LISTING

(SOUTH)

SKEW=0,21,54

FEST=25000

QLAT=4151000

QMER=122/20/00

GRID=30

PLSCL=10000

PLAT=37/35/33

PLON=122/24/42

VESNO=0651

YR=81

ANDIST=0.0

H-9952
PARAMETER TAPE LISTING
OYSTER POINT MARINA

SCALE 1:1,182
SKEW=0,12,35

FEST=25000

CLAT=4151000

CMER=122/20/00

GRID=5

PLSCL=1182

PLAT=37/39/45

PLON=122/23/00

VESNO=0554

YR=82

ANDIST=0.0

✓
FIELD TIDE NOTE

Soundings on the field sheet were reduced on the basis of either predicted tides for San Francisco (Golden Gate), California, or real tides from San Mateo, California. Real tides were applied to soundings taken before September 1, 1982 (JD 244) and plotted in black. Predicted tides were used for soundings taken on and after September 1, 1982 (JD 244) and are plotted in purple on the field sheet.

Tides were corrected with correctors supplied by the Tides and Water Levels branch Rockville, Maryland as follows:

Real tides from San Mateo, California (941-4458):

Time of high water	0 minutes
Time of low water	0 minutes
Height ratio	0.97

Predicted tides for San Francisco, California (941-4290):

Time of high water	+43 minutes
Time of low water	+1 hour 10 minutes
Height ratio	1.37

Tidal reducers were computed at 0.2 foot intervals using a PDP 8/e computer system and program AM 500, "Predicted Tide Generator".

Two ADR tide gages were in operation at two locations in the project area. Location and period of operation are as follows:

<u>SITE</u>	<u>POSITION</u>	<u>PERIOD</u>
San Leandro 941-4688	37°41.7'N 122°11.5'W	July 1981-November 1982
Oyster Point 941-4392	37°39.9'N 122°22.8'W	July 1981-June 6 1982
Oyster Point 941-4392 (new site)	37°39.8'N 122°22.6'W	June 7 1982-November 1982

San Leandro

Fischer Porter ADR gage, S/N 6810A3845M1, was in place on San Leandro channel marker #15 at the beginning of the survey. On February 1, 1982 the gage was removed for refurbishment and replaced with Fischer Porter

ADR gage, S/N 7404A0407M17 for the remainder of the survey. During the month of March 1982 the data started to show some signs of a constricted floatwell opening; the gage was removed on April 9, 1982 for one hour to repair the floatwell. The analog record reads 40.7 feet greater than the staff.

Oyster Point

Fischer Porter ADR gage, S/N 7601A149M13, was in place at the beginning of the survey. On February 5, 1982 the gage was removed for refurbishment and replaced with Fischer Porter ADR gage, S/N 7304A1380M5 for the rest of the survey. On June 6, 1982 the gage was removed from its site because of impending destruction of the gage from construction work. The tide station was established at a new site about 100 meters away from the old site on June 7, 1982. Soundings were not taken while the gage was out of service. The analog record read 21.0 feet greater than the staff at the old site and reads 42.5 feet greater than the staff at the new site.

Levels

No significant variations from historical elevation data for tidal benchmarks was observed during leveling. The Oyster Point tide staff had shifts of less than 0.012 feet. The San Leandro tide staff had a shift of up to 0.042 feet (rise).

Time Meridian

The time meridian used for both tide stations was 120⁰ W (Pacific Standard Time).

NOTE: The Pacific Tide Party maintains tide gages at Fort Point, Alameda and San Mateo which all lie in our project area. We kept in close contact with PTP during this survey, and no problems were encountered with their gages which would result in a break in tide data during times of hydrography.

GEOGRAPHIC NAMES

H-9952

Name on Survey

A ON CHART NO. 18651
 B ON PREVIOUS SURVEY NO. H-6726, H-8025, H-8026, H-8027
 C ON U.S. QUADRANGLE MAPS
 D FROM LOCAL INFORMATION
 E ON LOCAL MAPS
 F P.O. GUIDE OR MAP
 G GRAND McNALLY ATLAS
 H U.S. LIGHT LIST
 T Sheet

Name on Survey	A	B	C	D	E	F	G	H	T
OYSTER POINT	X	X						X	1
POINT SAN BRUNO	X	X						X	2
SAN BRUNO	X	X						X	3
SAN BRUNO SHOAL	X	X						X	3
SAN FRANCISCO BAY	X	X						X	4
SAN FRANCISCO INTERNATIONAL AIRPORT	X	X						X	5
SEAPLANE HARBOR	X							X	6
SIERRA POINT	X	X						X	7
SOUTH SAN FRANCISCO CALIFORNIA (title)	X								8
OYSTER POINT MARINA (cultural feature)									9
									10
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20
									21
									22
									23
									24
									25

Approved:

Charles E. Harrington
 Chief Geographer - N/C62x5

9 SEPT 1983

From TIME	TRA CORR.	DAY	VEL. TBL.	TRA corr. is the algebraic sum of these columns			COMMENTS		
				INITIAL	SCALE-PHASE	DRAFT			
				F. ARC	S./	SQUAT			
165440	1.5	050	1	0	0	1.6	0	- 0.1	2400 RPM
231410	1.5	070	1	0	0	1.6	0	- 0.1	2400 RPM
011930	1.5	071	1	0	0	1.6	0	- 0.1	2350 RPM
164730	1.6	072	1	0	0	1.6	0	0	2300 RPM
173900	1.5	072	1	0	0	1.6	0	- 0.1	2350 RPM
182130	1.6	084	1	0	0	1.6	0	0	2300 RPM
164010	1.5	085	1	0	0	1.6	0	- 0.1	2350 RPM
193000	1.9	085	1	0	0	1.6	0	+ 0.3	1500 RPM
204300	1.5	085	1	0	0	1.6	0	- 0.1	2350 RPM
174220	1.6	102	1	0	0	1.6	0	0	2300 RPM
161800	1.6	174	2	0	0	1.6	0	0	2300 RPM
152538	1.9	180	2	0	0	1.6	0	+ 0.3	1500 RPM
200800	1.6	180	2	0	0	1.6	0	0	2300 RPM
154720	1.6	182	2	0	0	1.6	0	0	2300 RPM
171253	1.9	187	2	0	0	1.6	0	+ 0.3	1500 RPM
194530	1.6	188	2	0	0	1.6	0	0	2300 RPM

FROM TIME	TRA CORR.	DAY	VEL. TBL.	TRA CORR. INITIAL	SCALE-PHASE	DRAFT	F. ARC	S. / SQUAT	COMMENTS
203940	1.7	188	2	0	0	1.6	0	+ 0.1	2200 RPM
151430	1.6	189-195	2	0	0	1.6	0	0	2300/2250 RPM
145712	1.8	196	2	0	0	1.6	0	+ 0.2	2000 RPM
174900	1.6	196	2	0	0	1.6	0	0	2300 RPM
202230	1.7	196	2	0	0	1.6	0	+ 0.1	2200 RPM
152336	1.8	197	2	0	0	1.6	0	+ 0.2	2000 RPM
165330	1.9	197	2	0	0	1.6	0	+ 0.3	1500 RPM
151910	1.6	201-	2	0	0	1.6	0	0	2300 RPM
163450	1.7	209	2	0	0	1.6	0	+ 0.1	1000 RPM
170900	0	209	0	0	0	0	0	0	Leadlines
175645	1.9	210	2	0	0	1.6	0	+ 0.3	1500 RPM
151220	1.6	211	2	0	0	1.6	0	0	2300 RPM
160232	0	221	0	0	0	1.6	0	0	Leadlines
160630	1.8	223	2	0	0	1.6	0	+ 0.2	2000 RPM
161850	1.6	223	2	0	0	1.6	0	0	0, D.P.
151100	1.9	224	2	0	0	1.6	0	+ 0.3	1500 RPM

✓

RANGE RANGE ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 0651/4

SHEET : H-9952

1982 WORK

TIME	DAY	PATTERN 1	PATTERN 2
	ESTABLISHED		
165440	050	-00015	-00012
180600	051	-00046	-00022
163140	053	-00024	-00020
205710		-00044	-00024
210138	056	-00036	-00030
231410	070	+00043	-00031
000000	071	+00043	-00031
162410	071	-00055	-00029
161310	072	-00056	-00026
163930	084	-00057	-00029
164010	085	-00053	-00027
193000	085	-00053	-00027
222130		-00064	-00016
183410	086	-00053	-00022
171820	102	-00034	-00020
160242	103	-00026	-00024
161950	104	-00025	-00026
174440	166	+00000	+00000
180710	169	+00000	+00000
161800	174	-00039	-00040
155420	176	-00029	-00034
160200	179	-00016	-00038
152538	180	-00012	-00038
154720	182	-00012	-00024
165200	187	-00008	-00020

✓
RANGE/RANGE ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 0651/4

SHEET : H-9952

1981 WORK

TIME	DAY	PATTERN 1	PATTERN 2
160113	237	-00031	+00035
161442	238	-00016	+00043
154926	240	-00015	+00039
192730	258	+00000	+00000

RANGE/RANGE

✓
ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 0651/4

SHEET : H-9952

TIME	DAY	PATTERN 1	PATTERN 2
194530	188	-00022	-00018
151430	189	-0001 ⁵ 7	-00016
152500	190	-00009	-00014
151850	193	-00013	-00019
180310	195	-00016	-00038
174900	196	-00012	-00032
151910	201	-00006	-00026
213700	204	+00000	+00000
163450	209	+00000	+00000
151220	211	-00015	-00026
160232	221	+00000	+00000
160630	223	-00004	-00007
181900	224	-00022	-00029
150706	238	-00004	-00007
175820	299	+00000	+00000
154300	299	+00009	+00033

✓
ELECTRONIC CORRECTOR ABSTRACT
(Mini-Ranger)

VESSEL: 0651

SHEET: H-9952

TIME	/	DAY	/	PATTERN 1	/	PATTERN 2	/	NOTE
145712		196		-00004		not used		Range Az.
152336		197		-00004		not used		Range Az.
160630		223		-00004		-00007		Range/Range
151100		224		-00004		not used		Range Az.
142345		237		-00004		not used		Range Az.
141445		238		-00004		not used		Range Az.
150706				-00004		-00007		Range/Range

All correctors taken from the BASELINE CALIBRATION; 9-22-1982.

The mean error as noted in the BASELINE CALIBRATION has an opposite sign than the corrector. When used as a daily corrector value the sign is (-). The following values apply;

CODE 5 (pattern 1) = 3.73m rounded to 4m.

CODE 7 (pattern 2) = 6.54m rounded to 7m.

✓
ELECTRONIC CORRECTOR ABSTRACT
(Range/Visual-Raydist/Sextant)

VESSEL: 0651

SHEET: H-9952

TIME	DAY	PATTERN 1	PATTERN 2	Note
175645	210	not used (Vis.Pos.)	-00036	Pattern 1 not used because of land paths.

H-9952
 PHP-10-1-81

Signal Listing

STA	LATITUDE	LONGITUDE	CRT	ELEV	F. KHZ	NAME/SOURCE
100	37 39 58323	122 09 36578	250	0003	329000	Loma, 1981 - PHP 1981
101	37 46 36279	122 16 39353	253	0111	329040	Crab, 1981 - PHP 1981 ✓
103	37 40 10840	122 19 33474	139	0003	000000	San Bruno Shoal Channel Lt 3, 1977 - 371221/3093 ✓
104	37 40 08334	122 19 39150	139	0003	000000	San Bruno Shoal Channel Lt 4, 1977 - 371221/3094 ✓
105	37 38 35290	122 18 52118	139	0003	000000	San Bruno Shoal Channel Lt 6, 1977 - 371221/3096 ✓
106	37 36 17724	122 17 21194	139	0003	000000	San Francisco Bay South Channel Lt 8, 1977 - 371221/3098 ✓
107	37 39 50908	122 22 05098	139	0003	000000	South San Francisco Yacht Harbor Light 1, 1979 - PHP 1979 ✓
108	37 39 52110	122 22 05186	139	0003	000000	South San Francisco Yacht Harbor Light 2, 1979 - PHP 1979 ✓
109	37 35 28848	122 19 06017	250	0013	000000	Point San Mateo, 1925 - 371221/3036 ✓
110	37 39 14581	122 23 02571	139	0050	000000	South San Francisco Forbes Tower, 1977 - 371221/3100 ✓
111	37 38 07856	122 22 49504	250	0002	000000	#3, 1981 - PHP 1981 ✓ <small>1905 RMA</small>
112	37 39 11318	122 23 02927	250	0058	000000	Point San Bruno, RM 1925-1963-1982 - PHP 1982 ✓ <small>254</small>
113	37 37 01662	122 22 55754	139	0015	000000	San Francisco Apt Rot B, 1982 - PHP 1982 ✓
* 114	37 48 26462	122 21 00177	139	0029	000000	Yerba Buena Lighthouse, 1919 - 371221/4227
115	37 42 58177	122 23 38291	139	0110	000000	KYA Radio Tower, 1937 - 371221/3052 ✓
* 116	37 45 54676	122 12 50885	139	0116	000000	Oakland PG&E 50th Ave Gas Holder, 1947 - 371221/1072
* 117	37 35 11021	122 14 45779	139	0053	000000	San Mateo Bridge Transmission Tower No 17, 1955 - 371221/2082
118	37 34 56315	122 15 01900	139	0050	000000	San Mateo Bridge Transmission Tower No 18, 1955 - 371221/3070 ✓

STA	0	LATITUDE	LONGITUDE	CRT	ELEV	F. KHZ	NAME/SOURCE
119	3	37 39 46614	122 18 36586	139	3215	300000	San Francisco Bay Radar Tower, 1977 - 371221/3097 → (Ruins)
120	3	37 38 43553	122 17 37233	139	3033	300000	San Bruno Shoal South Dolphin (PIL) 1955 - 371221/3060 ✓
* 121	3	37 45 19573	122 27 35923	139	3575	300000	Mt. Sutro TV Tower S Antenna, 1976 - 371221/4329 ✓
* 122	3	37 35 37573	122 18 43325	139	3003	300000	Goyote Point Yacht Harbor Light 2, 1980 - PHP 1980 ✓
123	3	37 35 32815	122 18 47243	139	3033	300000	Coyote Point Yacht Harbor Daybeacon 6, 1980 - PHP 1980 ✓
124	3	37 37 37455	122 17 35519	252	3033	300000	San Bruno Shoal Dolphin - Hydrographic Position 1981 ✓
125	3	37 37 56327	122 22 39564	139	3033	300000	San Francisco Airport Daybeacon 1, 1982 - PHP 1982 ✓
* 126	3	37 32 49793	122 13 58872	139	3173	300000	Radio Station KNBC Tall Mast, 1955 - 371221/2044 ✓
* 129	3	37 35 19971	122 16 37122	139	3003	300000	South Channel Daybeacon 8A, 1980 - PHP 1980 ✓
* 130	3	37 40 28473	122 11 52794	139	3288	300000	Oakland Mormon Temple Spire, 1977 - 371221/1120 ✓
* 131	3	37 35 25965	122 14 29321	139	3348	300000	San Mateo Bridge Transmission Tower No 16, 1955 - 371221/2081 ✓

* Not used for Survey

ABSTRACT OF POSITIONS: H-9952

VESSEL: 0651

DAY/YR	POSITIONS	CTRL	S1	M	S2	REMARKS
233/81	0005	(Search DP's-PMC Don't smooth plot)				
237/81	9000-9020	04	101	0	100	Bottom Samples
238/81	9021-9046	04	101	0	100	Bottom Samples
240/81	9047-9049	04	101	0	100	Bottom Samples
287/81- 310/81	8000-8969	04	101	0	100	Wire Drag (PMC Don't smooth plot)
334/81	0018-0020 (Search DP's- PMC Don't smooth plot)					
335/81	0021-0023 (Search DP's- PMC smooth plot only Pos. 0022)					
313/81 356/81	9100-9492	04	101	0	100	Wire Drag (PMC Don't smooth plot)
		<u>1982</u>				
050/82	0024-0141	04	101	0	100	Hydro-XL,N&S Sheets.
051/82	0142-0272	04	101	0	100	Hydro-XL,N&S Sheets.
051/82	0273-0315	04	101	0	100	Hydro-M/S, N Sheet.
053/82	0316-0469	04	101	0	100	Hydro-M/S, N Sheet.
056/82	0470-0471	04	101	0	100	Dive Searches (PMC Don't smooth plot)
070/82	0472-0602	04	101	0	100	Hydro-M/S, N Sheet.
071/82	0603-0869	04	101	0	100	Hydro-M/S, N Sheet.
072/82	0870-1003	04	101	0	100	Hydro-M/S, N Sheet.
084/82	1004-1228	04	101	0	100	Hydro-M/S, N Sheet.
085/82	1229-1366	04	101	0	100	Hydro-M/S, N Sheet.
085/82	1367-1388	04	101	0	100	Hydro-Sh1, N Sheet.
085/82	1389-1533	04	101	0	100	Hydro-M/S,N&S Sheets.

ABSTRACT OF POSITIONS: H9952

VESSEL: 0651

DAY/YR.	POSITIONS	CTRL	S1	M	S2	REMARKS
086/82	1534-1677	04	101	0	100	Hydro-M/S,N&S Sheets.
102/82	1678-1792	04	101	0	100	Hydro-M/S,N&S Sheets.
103/82	1793-1950	04	101	0	100	Hydro-M/S,N&S Sheets.
104/82	1951-2100	04	101	0	100	Hydro-M/S,N&S Sheets.
174/82	2101-2360	04	101	0	100	Hydro-M/S,N&S Sheets.
176/82	2361-2519	04	101	0	100	Hydro-M/S,N&S Sheets.
179/82	2520-2558	04	101	0	100	Hydro-M/S,N&S Sheets.
180/82	2559-2581	04	101	0	100	Hydro-Sh1, N Sheet.
180/82	2582-2644	04	101	0	100	Hydro-Sh1, S Sheet.
180/82	2677-2703	04	101	0	100	Hydro-M/S, S Sheet.
181/82	2704-2705	04	101	0	100	Dive Searches (PMC Don't smooth plot)
182/82	2706-2862	04	101	0	100	Hydro-M/S, S Sheet.
187/82	2863-2879	04	101	0	100	Hydro-M/S, S Sheet.
188/82	2902-2955	04	101	0	100	Hydro-M/S, S Sheet.
189/82	2956-3157	04	101	0	100	Hydro-M/S, S Sheet.
190/82	3158-3241	04	101	0	100	Hydro-M/S, S Sheet.
193/82	3242-3309	04	101	0	100	Hydro-M/S, S Sheet.
193/82	3310-3447	04	101	0	100	Hydro-Dev, N Sheet.
195/82	3448-3494	04	101	0	100	Hydro-Dev, N Sheet.
196/82	3495-3581	04	101	0	100	Hydro-Dev,N&S Sheets.

ABSTRACT OF POSITIONS: H-9952

VESSEL: 0651

DAY	POSITION	CTRL	S1	M	S2	REMARKS
196/82	6000-6042	11	109	109	118	Hydro-M/S, S Sheet.
196/82	6043-6045	11	109	109	118	Hydro-Sh1, S Sheet.
197/82	6046-6085	11	112	112	118	Hydro-M/S, N Sheet.
197/82	6088-6111	11	112	112	118	Hydro-Sh1, N Sheet.
201/82	3582-3689	04	101	0	100	Hydro-Dev, S Sheet.
210/82	6112-6117	09	R 100	Vis. 118	110	Hydro-Sh1, N Sheet.
210/82	6118-6125	09	100	118	110	Hydro-XL, N Sheet.
210/82	6126-6130	09	100	118	113	Hydro-XL, N Sheet.
210/82	6131-6133	09	100	118	113	Hydro-Sh1, N Sheet.
211/82	3690-3826	04	101	0	100	Hydro-Dev, N Sheet.
223/82	6134-6143	04	111	0	125	Hydro-Sh1, S Sheet.
223/82	6144-6148	04	111	0	125	Hydro-Sh1/DP, S Sheet.
224/82	6149-6169	11	112	112	125	Hydro-Sh1, N Sheet.
224/82	3827-3835	04	101	0	100	Hydro-Ch1 Dev, S Sheet.
224/82	3836-3839	04	101	0	100	Hydro-Ch1 Dev, N Sheet.
237/82	6500-6516	11	112	112	125	Hydro-M/S, S Sheet.
237/82	6517-6524	11	112	112	125	Hydro-XL, S Sheet.
238/82	6170-6173	11	112	112	119	Hydro-Sh1/DP, S Sheet.
238/82	6174-6206	04	111	0	125	Hydro-M/S, S Sheet.

ABSTRACT OF POSITIONS: H-9952

VESSEL: 0651

DAY/YR	POSITIONS	CTRL	S1	M	S2	REMARKS
238/82	6207-6211	04	111	0	125	Hydro-XL, S Sheet.
280/82	3840-3841	04	101	0	100	Dive Searches, (PMC Don't smooth plot)
299/82	3842-3911	04	101	0	100	Hydro-Dev N Sheet.
308/82	4912-4938	04	101	0	100	Fatho Search - PMC Don't smooth plot.
OTHER POSITION NUMBERS						

OMITTED = 1-4 , 3912-4911 , 6048-6051 , 8970-9099.

REJECTED = 6-17 , 34-36 , 1836 , 2330 , 2582 , 2583 , 2645-2676 ,
 2880-2901 , 6106 , 6107 , 6086 , 6087 , 6130 , 6194-
 6197 , 8453-8475 , 8536.

DUPLICATED = 6095 , 6096 , 6115 , 6162 , 6163.

ABSTRACT OF POSITIONS: H-9952

VESSEL: 0651 & 0654 OYSTER POINT INSERT (1:1182)
 (Range/Range derived from "See Boat Sheet" positions)

DAY/YR.	POSITIONS	CTRL	S1	M	S2	REMARKS
VESNO: 0654						
258/81	7001-7023	04	101	0	100	Hydro-Raytheon
166/82	7024-7042	04	101	0	100	Hydro-Raytheon
169/82	7043-7062	04	101	0	100	HYdro-Raytheon
204/82	7063-7077	04	101	0	100	LeadLines from Skiff.
204/82	7073	04	101	0	100	DP on Tide Gag. site(Pile).

VESNO: 0651

209/82	7078-7091	04	101	0	100	Hydro-#7078 to 7087 are Lead Lines. #7088 to 7091 are std. fathos.
221/82	7092-7096	04	101	0	100	LeadLines.

REJECTED = 7013 , 7014.

KEY TO SYMBOLS IN THE REMARKS COLUMN.

M/S = Main Scheme

Shl = Shore Line

Dev = Development

Chl = Channel

XL = Cross Line

N = North

S = South

DP = Detached Position

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

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

VESSEL	PROJ. NO.	YEAR	DATE	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAMPLER	AP. PROX. PEN- TRA- TION	LENGTH OF CORE	COLOR OF SED- IMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, observations, depth water, etc., not type of bottom relief etc.)	OBS. INIT.
				LATITUDE	LONGITUDE								
0651	OPR-1123-81	1981		San Francisco Airport, Calif.									10-28-81
9000			JD 237 8/25	37 36	122 21	0.8				gy, gn	M., Sh., S.		
9001				37 36	122 20	1.5				gy, gn	M.		
9002				17.84	16.61	1.9				gy, gn	M., Worms		
9003				37 36	122 19	2.4				gy, gn	M., Worms		
9004				19.77	15.78	8.2				gy, gn	M., Sh.		
9005				37 36	122 18	7.3				gy, gn	M., Sh.		
9006				20.90	13.66	7.3				gy, gn	M., Sh.		
9007				37 36	122 17	0.6				gy, gn	M., Sh., Worms		
9008				20.45	15.91	2.2				br, gy, gn	M., Sh., Worms		
9009				37 36	122 16	1.8				gy, gn	M., Worms		
9010				46.68	43.80	1.5				gy, gn	M., Sh., Worms		
9011				37 36	122 17	1.3				gy, gn	M.		
9012				48.13	50.07	2.3				gy, gn	M., Sh., S.		
9013				37 36	122 20	2.4				gy, gn	M., Sh., Worms		
9014				44.48	40.27	6.1				gy, gn	M., Sh., S., Worms		
9015				37 37	122 21	8.0				gy, gn	M., Sh., S., Worms, wd		
9016				19.56	17.40	3.4				gy, gn	M.		
				37 37	122 20					gy, gn			
				17.08	14.67					gy, gn			
				37 37	122 19					gy, gn			
				15.62	14.93					gy, gn			
				37 37	122 18					gy, gn			
				16.55	15.32					gy, gn			
				37 37	122 17					gy, gn			
				15.90	14.64					gy, gn			
				37 37	122 16					gy, gn			
				48.56	46.02					gy, gn			

Use more than one line per sample if necessary.

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

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

VESSEL	PROJ. NO.	YEAR	DATE	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAMPLER	AP. PROX. PENE- TRATION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cobblestones, detritus, cutler, size, no., type of bottom relief i.e., slope, plain, disposition, etc.)	OBS. INIT.
				LATITUDE	LONGITUDE								
0651	OPR-L123-81	1981		San Francisco Airport, Calif,									10-28-81
9017		JD 237 8/25	37 37 44.92	122 17 46.14	5.2				gy, gn br	M, Sh, S			
9018			37 37 44.87	122 18 42.52	5.7				gy, gn	M., S.			
9019			37 37 45.14	122 19 48.04	2.6				gy, gn	M. Sh., S., Worms			
9020			37 37 48.02	122 20 49.39	0.0				gy, gn	M., Sh., Worms			
9021		JD 238 8/26	37 37 55.18	122 22 00.12	0.0				gy, gn	M.			
9022			37 38 18.12	122 21 16.47	1.3				gy, gn	M.			
9023			37 38 16.23	122 21 15.18	2.4				gy, gn br	M., Worms			
9024			37 38 17.45	122 20 15.86	3.1				gy, gn	M., Worms, wd			
9025			37 38 17.77	122 19 15.32	5.7				gy, gn	M., Sh., wd			
9026			37 38 17.05	122 18 15.69	5.6				gy, gn	M., Sh., S.			
9027			37 38 18.48	122 17 02.70	1.3				gn	S.	(On Shoal)		
9028			37 38 19.82	122 16 16.24	2.8				gy	Sh., S.			
9029			37 38 44.84	122 16 44.98	3.4				gy, gn	M., Sh., S.			
9030			37 38 36.10	122 17 16.31	1.4				gn	S.			
9031			37 38 43.33	122 17 45.83	2.5				gy, gn	M., Sh., S.			
9032			37 38 44.27	122 18 47.13	5.6				gy, gn	M., Sh., S.			
9033			37 38 44.92	122 19 45.33	4.9				gy, gn	M., Sh., Worms			

Use more than one line per sample if necessary.

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

VESSEL	PROJ. NO.	YEAR	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAM- PLER	AP. PROX. PEN- TRA- TION	LENGTH OF CORE	COLOR OF SED- IMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, detrital content, stat. no., type of bottom relief i.e., slope, plain, deposition, etc.)	DATE CHECKED
			LATITUDE	LONGITUDE								
0651	OPR-L123-81	1981										10-28-71
9034	JD 238 8/26		37 38 46.63	122 20 46.33	3.5			gy,gn	M., Worms			
9035			37 38 47.12	122 21 44.21	2.4			gy,gn	M.			
9036			37 38 42.56	122 22 47.19	0.9			gy,gn	M., S.			
9037			37 39 18.23	122 22 15.51	1.6			gy,gn	M.			
9038			37 38 19.16	122 21 14.96	3.3			gy,gn	M., Worms			
9039			37 39 17.64	122 20 13.69	4.9			gy,gn	M.			
9040			37 39 15.42	122 19 10.61	5.9			gn	Sh., S.			
9041			37 39 14.20	122 18 12.72	3.6			gy,gn	M., Sh.			
9042			37 39 10.96	122 17 35.36	1.5			gn	S.			
9043			37 39 14.03	122 17 13.94	3.6			gy,gn	M., Sh., S., Worms			
9044			37 39 47.32	122 16 44.19	3.2			gy,gn	Oz., Sft.			
9045			37 39 45.95	122 18 45.68	4.4			gy,gn	M., Sh., S., Sft.			
9046			37 39 46.63	122 19 47.19	4.5			gy,gn	M., Sft.			
9047	JD 240 8/28		37 39 42.89	122 21 43.04	2.7			gy,gn	M., Sft.			
9048			37 39 42.76	122 20 44.76	3.5			gy,gn	M., Sft.			
9049			37 39 44.20	122 17 43.84	2.5			gy,gn	M., Sh., S.			

Use more than one line per sample if necessary.

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 367.

NONFLOATING AIDS ~~FOR CHARTS~~ FOR CHARTS

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

REPORTING UNIT (If Aid is on Ship or Office)
NOAA NOS Pacific Hydro. Party California San Francisco Bay 11/16/82
DATE

TO BE CHARTED TO BE REVISED TO BE DELETED
The following objects HAVE HAVE NOT been inspected from seaward to determine their value as landmarks.
D.M. METERS / D.P. METERS

CHARTING NAME DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses.)
OPR-L123-PHP-81 PHP-10-1-81 H-9952
SURVEY NUMBER

LOCALITY

ORIGINATING ACTIVITY
 HYDROGRAPHIC PARTY
 GEODETIC PARTY
 PHOTO FIELD PARTY
 COMPILATION ACTIVITY
 FINAL REVIEWER
 QUALITY CONTROL & REVIEW GRP.
 COAST PILOT BRANCH
(See reverse for responsible personnel)

CHARTING NAME	DESCRIPTION	LATITUDE		LONGITUDE		METHOD AND DATE OF LOCATION (See Instructions on reverse side)		CHARTS AFFECTED
		° /	'	° /	'	OFFICE	FIELD	
		D.M. Meters		D.P. Meters				
Airport DBN 1	(San Francisco Airport Daybeacon 1 1982).	37	37	122	22		Triang. Rec. 11-15-82	18651, 18652
South Channel Lt 8	(San Francisco Bay South Channel Lt 8 1977). 371221/3098.	37	36	122	17		F-3-6-V 10-15-80	18651, 18652
SF Int Rot W G	(San Francisco Apt Rot Bcn 1982).	37	37	122	22		F-3-6-L 10-21-82	18651, 18652
San Bruno Shl Lt 6	(San Bruno Shoal Channel Lt 6 1977).	37	38	122	18		F-3-6-V 9-30-79	18651, 18652
San Bruno Shoal Lt 5	(San Bruno Shoal Channel Lt 5).	37	38	122	18		F-3-6-L 10-1-82	18651, 18652
Yacht Harbr Lt 1	(S San Francisco Yacht Har Light 1, 1979).	37	39	122	22	05.091	F-3-6-L 8-15-79	18651, 18652
SO S F Yacht Har Lt 8	(S San Francisco Yacht Har Lt 8, 1979)	37	39	122	22	20.175	F-3-6-L 10-15-80	18651
SO S F Yacht Hbr Lt 9	(S San Francisco Yacht Har Lt 9, 1979)	37	39	122	22	22.859	F-3-6-L 10-15-80	18651
SO S F Yacht Lt 2A	(S San Francisco Yacht Lt 2A, 1979)	37	39	122	22	24.065	F-3-6-L 10-15-80	18651
Yacht Harbor Lt 2	(S San Francisco Yacht Har Light 2, 1979).	37	39	122	22	05.186	F-3-6-L 8-15-79	18651, 18652

See reverse for details

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	Eric Secretan, LTJG, NOAA
POSITIONS DETERMINED AND/OR VERIFIED	Felipe L. Rosario, NOAA
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	Pamela R. Chelgren, LCDR, NOAA

ORIGINATOR
<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
FIELD ACTIVITY REPRESENTATIVE
OFFICE ACTIVITY REPRESENTATIVE
<input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'
 (Consult Photogrammetric Instructions No. 64.)

OFFICE	FIELD (Cont'd)
<p>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</p>	<p>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</p>
<p>FIELD</p> <p>I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection 5 - Field identified 6 - Theodolite 7 - Planetable 8 - Sextant</p> <p>A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75</p> <p>*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</p>	<p>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</p> <p>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75</p> <p>**PHOTOGAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</p>

Replaces C&GS Form 367.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE
NONFLOATING AIDS TO NAVIGATION FOR CHARTS

REPORTING UNIT
If NOAA, specify Office
NOAA, NOS
Pacific Hydro. Party

STATE
California

LOCALITY
San Francisco Bay

DATE
11/16/82

ORIGINATING ACTIVITY
 HYDROGRAPHIC PARTY
 GEODETIC PARTY
 PHOTO FIELD PARTY
 COMPILATION ACTIVITY
 FINAL REVIEWER
 QUALITY CONTROL & REVIEW GRP.
 COAST PILOT BRANCH
(See reverse for responsible personnel)

OPR PROJECT NO. OPR-L123-PHP-81

JOB NUMBER PHP-10-1-81

SURVEY NUMBER H-9952

DATUM N.A. 1927

CHARTING NAME

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

TO BE CHARTED

TO BE REVISED

TO BE DELETED

The following objects HAVE BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.

CHARTING NAME	DESCRIPTION	LATITUDE		LONGITUDE		METHOD AND DATE OF LOCATION (See instructions on reverse side)		CHARTS AFFECTED
		° /	D.M. Meters	° /	D.P. Meters	OFFICE	FIELD	
S S F Yacht Hbr Lt 1A	(S San Francisco Yacht Lt 1A, 1979). Hbr	37 40	08.334	122 19	39.150	F-3-6-V 9-30-79	F-3-6-L 10-15-80	18651
San Bruno Shl Lt 4	(San Bruno Shoal Channel Lt 4 1977). 371221/3094.	37 40	10.840	122 19	30.474	F-3-6-V 9-30-79		18651, 18652
San Bruno Shl Lt 3	(San Bruno Shoal Channel Lt 3 1977).							18651, 18652

See L-66 (80)

RESPONSIBLE PERSONNEL

TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD	Eric Secretan, LTJG, 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	Felipe L. Rosario, NOAA	FIELD ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	Pamela R. Chelgren, LCDR, NOAA	OFFICE ACTIVITY REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'
 (Consult Photogrammetric Instructions No. 64.)

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
 L - Located
 V - Verified
 1 - Triangulation
 2 - Traverse
 3 - Intersection
 4 - Resection
 5 - Field Identified
 6 - Theodolite
 7 - Planetable
 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

**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

Replaces C&GS Form 567.

~~NOA~~ **NOA** LANDMARKS FOR CHARTS

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

ORIGINATING ACTIVITY

HYDROGRAPHIC PARTY

PHOTO FIELD PARTY

COMPILATION ACTIVITY

FINAL REVIEWER

QUALITY CONTROL & REVIEW GRP.

COAST PILOT BRANCH

(See reverse for responsible personnel)

REPORTING UNIT (If Party, Ship or Office)
NOAA, NOS

STATE
California

LOCALITY
San Francisco Bay

DATE
11/16/82

OPR PROJECT NO.
OPR-L123-PHP-81

JOB NUMBER
PHP-10-1-81

SURVEY NUMBER
H-9952

DATUM
N.A. 1927

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

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION				METHOD AND DATE OF LOCATION (See instructions on reverse side)		CHARTS AFFECTED
		LATITUDE		LONGITUDE		OFFICE	FIELD	
		° / ' "	° / ' "	D.M. Meters	D.P. Meters			
Platform	Airport Approach Platform NOTE: In center of two deleted markers. (See attached 76-40; to be deleted).	37	38	11.0	122 21	36.2	V-Vis 10-15-80	18651
Radar Tower	San Francisco Bay Radar Tower 1977. 3712213097. NOTE: Now in ruins. Recommend: Be charted as "ruins".	37	39	46.518	122 18	06.494	V-Vis 7-15-82	18651, 18652

NOA

RESPONSIBLE PERSONNEL		ORIGINATOR
TYPE OF ACTION	NAME	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
OBJECTS INSPECTED FROM SEAWARD	Eric Secretan, LTJG, NOAA	FIELD ACTIVITY REPRESENTATIVE
POSITIONS DETERMINED AND/OR VERIFIED	Felipe L. Rosario, NOAA	OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	Pamela R. Chelgren, LCDR, NOAA	<input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'
(Consult Photogrammetric Instructions No. 64.)

OFFICE	FIELD (Cont'd)
I. OFFICE IDENTIFIED AND LOCATED OBJECTS Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75	B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982
FIELD I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection 5 - Field identified 6 - Theodolite 7 - Planetable 8 - Sextant 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.	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.

Replaces C&GS Form 567.

NONCOLLATING AIDS OR LANDMARKS FOR CHARTS

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

ORIGINATING ACTIVITY

- HYDROGRAPHIC PARTY
 - GEODETIC PARTY
 - PHOTO FIELD PARTY
 - COMPILATION ACTIVITY
 - FINAL REVIEWER
 - QUALITY CONTROL & REVIEW GRP.
 - COAST PILOT BRANCH
- (See reverse for responsible personnel)

REPORTING UNIT
IF NOAA, NOS, or Office
Pacific Hydro. Party
STATE
California
LOCALITY
San Francisco Bay
DATE
11-16-82

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

OPR PROJECT NO. OPR-L123-PHP-81
JOB NUMBER PHP-10-1-81
SURVEY NUMBER H-9952
DATUM N.A. 1927

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	LATITUDE		LONGITUDE		OFFICE	FIELD	CHARTS AFFECTED
		° / ' "	D.M. Meters	° / ' "	D.P. Meters			
Airport Daybeacon 1	Navigation aid discontinued by U.S. Coast Guard. (#3 renumbered #1).	37	37	48.00	122 21			18651, 18652
Marker	Removed by F.A.A. San Francisco Airport.	37	38	10.50	122 21			18651
Marker	Removed by F.A.A. San Francisco Airport	37	38	11.40	122 21			18651

RESPONSIBLE PERSONNEL

TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD	Eric Secretan, LTJG, 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	Felipe L. Rosario, NOAA	FIELD ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	Pamela R. Chelgren, LCDR, NOAA	OFFICE ACTIVITY REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'
 (Consult Photogrammetric Instructions No. 64.)

OFFICE	FIELD (Cont'd)
<p>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</p> <p>FIELD</p> <p>I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection</p> <p>A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75</p> <p>*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</p>	<p>B. Photogrammetric field positions** require date 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</p> <p>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</p> <p>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75</p> <p>**PHOTOGAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</p>

NOAA FORM 71-60
(8-74)

Replaces C&GS Form 367.

TO BE CHARTED
 TO BE REVISED
 TO BE DELETED

REPORTING UNIT
(Ship, Ship or Office)

NOAA, NOS
Pacific Hydro. Party

STATE

California

LOCALITY

San Francisco Bay

DATE

11/16/82

OPR PROJECT NO. OPR-L123-PHP-81

JOB NUMBER PHP-10-1-81

SURVEY NUMBER H-9952

DATUM N.A. 1927

The following objects HAVE BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NONFLUORESCENT LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY

- HYDROGRAPHIC PARTY
 - GEODETIC PARTY
 - PHOTO FIELD PARTY
 - COMPILATION ACTIVITY
 - FINAL REVIEWER
 - QUALITY CONTROL & REVIEW GRP.
 - COAST PILOT BRANCH
- (See reverse for responsible personnel)

CHARTING NAME

Monument

DESCRIPTION

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

(South San Francisco Forbes Twr, 1977).
371221/3100

POSITION

LATITUDE

37 39

LONGITUDE

122 23

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

OFFICE

Triang. Rec.
9-30-79

CHARTS AFFECTED

18651,
18652

See L-661 (84)

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	Eric Secretan, LTJG, NOAA
POSITIONS DETERMINED AND/OR VERIFIED	Felipe L. Rosario, NOAA
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	Pamela R. Chelgren, LCDR, NOAA

ORIGINATOR

PHOTO FIELD PARTY

HYDROGRAPHIC PARTY

GEODETIC PARTY

OTHER (Specify)

FIELD ACTIVITY REPRESENTATIVE

OFFICE ACTIVITY REPRESENTATIVE

REVIEWER

QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'
(Consult Photogrammetric Instructions No. 64.)

FIELD (Cont'd)

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
L - Located
V - Verified
1 - Triangulation
2 - Traverse
3 - Intersection
4 - Resection
5 - Field identified
6 - Theodolite
7 - Planetable
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.

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

**PHOTOGRAMMETRIC 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 SURVEY
22-Nov-82

Commander (oan)
12th Coast Guard District
Building 51
Government Island
Alameda, California 94501

Dear Sirs:

This letter is to assist your office in the updating of geographic positions (G.P.'s) of non-floating aids to navigation.

The following fixed aids to navigation were located using Third Order, Class 1 standards. These aids were located while conducting Hydrographic Survey H-9952.

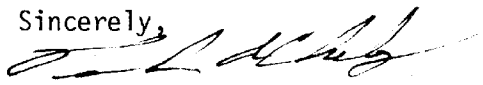
Also, it is strongly recommended that the "South San Francisco Yacht Harbor" Marina aids to navigation be re-named "Oyster Point Marina" aids to navigation in the Light List to reflect the correct name, and common usage.

1. South San Francisco Yacht Harbor Light 1 ¹
latitude $37^{\circ}39'50.908^{\circ}$ N, longitude $122^{\circ}22'05.098^{\circ}$ W
2. South San Francisco Yacht Harbor Light 2 ²
latitude $37^{\circ}39'52.110^{\circ}$ N, longitude $122^{\circ}22'05.186^{\circ}$ W
3. South San Francisco Yacht Harbor Daybeacon 3 ³
latitude $37^{\circ}39'50.877^{\circ}$ N, longitude $122^{\circ}22'10.879^{\circ}$ W
4. South San Francisco Yacht Harbor Daybeacon 4 ⁴
latitude $37^{\circ}39'52.004^{\circ}$ N, longitude $122^{\circ}22'11.452^{\circ}$ W



5. South San Francisco Yacht Harbor Daybeacon 5
latitude 37°39'50.852"N, longitude 122°22'17.478"W
6. South San Francisco Yacht Harbor Light 8
latitude 37°39'51.846"N, longitude 122°22'20.175"W
7. South San Francisco Yacht Harbor Light 9
latitude 37°39'51.878"N, longitude 122°22'22.858"W
8. South San Francisco Yacht Harbor Light 1A
latitude 37°39'53.638"N, longitude 122°22'24.078"W
9. South San Francisco Yacht Harbor Light 2A
latitude 37°39'52.358"N, longitude 122°22'24.064"W
10. San Bruno Shoal Channel Light 3
latitude 37°40'10.840"N, longitude 122°19'30.474"W
11. San Bruno Shoal Channel Light 4
latitude 37°40'08.334"N, longitude 122°19'39.150"W
12. San Bruno Shoal Channel Light 5
latitude 37°38'37.615"N, longitude 122°18'43.286"W
13. San Bruno Shoal Channel Light 6
latitude 37°38'35.290"N, longitude 122°18'52.118"W
14. South Channel Daybeacon 8A
latitude 37°35'19.978"N, longitude 122°16'07.022"W
15. San Francisco Airport Daybeacon 1 (used to be D.B. 3)
latitude 37°37'56.327"N, longitude 122°22'39.564"W
16. San Francisco Bay South Channel Light 8
latitude 37°36'17.794"N, longitude 122°17'21.194"W

Sincerely,


Pamela R. Chelgren, LCDR, NOAA
Chief of Party
Pacific Hydrographic Party, NOS

cc: OA/C 3x5

UNITED STATES DEPARTMENT OF THE INTERIOR BOARD ON GEOGRAPHIC NAMES WASHINGTON, D.C. 20242 DOMESTIC GEOGRAPHIC NAME REPORT	Controversial name	Recommended name Oyster Point Marina/Park
	<input checked="" type="checkbox"/> Name change	State California
	Changed application	County San Mateo
	Other	

Lat. $37^{\circ} 39' 30''$ N, Long. $122^{\circ} 23' 00''$ W, Mouth End Center (Circle one)
 Lat. $37^{\circ} 39' 50''$ N, Long. $122^{\circ} 22' 00''$ W, Heading End (Circle one)

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

Oyster Point Marina (and associated aids to navigation). In the city of South San Francisco, county of San Mateo.

Published Maps Using Recommended Name (Map name, date, agency, & scale)	Variant Name or Application	Map or Source Using Variant (Map name, date, agency, & scale)

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

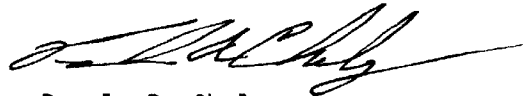
Engineer's blueprints (DMJM, 611 Veterans Blvd., Redwood City, Ca 94065, (415) 365-3900).

Oyster Point Marina is the name in common usage.

AUTHORITY FOR RECOMMENDED NAME	MAILING ADDRESS	OCCUPATION
Harbormaster	P.O. Box 589	Merwin G. Hansen
Oyster Point Marina	So. San Francisco, Calif. 94080	(Harbormaster)
San Mateo County Harbor	#1 Johnson Pier	Ronald McClellan
District	Half Moon Bay, Ca 94019	(Gen. Manager)
Submitted by: Name Eric Secretan	Title LTJG, NOAA	Date 22-Nov-82
Agency NOAA/NATIONAL OCEAN SURVEY	Address 1801 Fairview Ave E., Seattle, Wa 98102	
Person who prepared this copy if other than above:	Date	
Name	Title	

Approval Sheet
Hydrographic Survey H-9952
PHP-10-1-81
OPR-L123-PHP-81/82

The field sheet and accompanying records have all been inspected and are approved by me. All field work was personally supervised on a semi-weekly basis. This survey is complete and adequate to supercede all prior information.



Pamela R. Chelgren
LCDR, NOAA
Chief of Party
Pacific Hydrographic Party

HYDROGRAPHIC SURVEY STATISTICS

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT			
SMOOTH SHEET	1	BOAT SHEETS & PRELIMINARY OVERLAYS	7			
DESCRIPTIVE REPORT	1	SMOOTH OVERLAYS: POS. ARC, EXCESS				
DESCRIP- TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	3					
VOLUMES	1					
BOXES						

T-SHEET PRINTS (List) TP-00534 Enlargement 1:10,000
SPECIAL REPORTS (List) Chart 18651, 32nd Ed., Aug 1, 1981

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	PRE- VERIFICATION	VERIFICATION	TOTALS
POSITIONS ON SHEET			4197
POSITIONS CHECKED		4197	
POSITIONS REVISED		1204	
SOUNDINGS REVISED		205	
SOUNDINGS ERRONEOUSLY SPACED			
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED			
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	5	VERIF EVAL	5
VERIFICATION OF CONTROL		6 8	14
VERIFICATION OF POSITIONS		106 8	124
VERIFICATION OF SOUNDINGS		211 16	227
COMPILATION OF SMOOTH SHEET		36 12	48
APPLICATION OF TOPOGRAPHY		24	24
APPLICATION OF PHOTOBATHYMETRY			
JUNCTIONS		5 4	9
COMPARISON WITH PRIOR SURVEYS & CHARTS		3 36	39
VERIFIER'S REPORT		4 60	64
OTHER (Familiarization)			12
Digitizing	14		14
TOTALS	19	395 156	570
Pre-Verification by James S. Green	Beginning Date 12-27-82	Ending Date 12-27-82	
Verification by I. Almacen	Evaluation by: Bruce A. Olmstead	Beginning Date 2-7-83/1-27-84	Ending Date 10-20-83/3-23-84
Verification Check by Stanley Otsubo, James S. Green	Time (Hours) 33	Date 11-10-83/3-28-84	
Marine Center Inspection by	Time (Hours)	Date	
Quality Control Inspection by	Time (Hours)	Date	
Requirements Evaluation by	Time (Hours)	Date	

Soundings on the final field sheet were reduced on the basis of either predicted tides from San Francisco (Golden Gate) or real tides from San Mateo. Further information is available in paragraph E, Hydrographic Sheets and the Field Tide Note.

Sounding differences of one-half to one foot between the final field sheet and the smooth sheet are attributed to the application of approved tidal zoning and correction for settlement and squat. Greater differences are found around the area of San Bruno Shoal. Here, sounding data in these anomalous areas were selected to best represent the shoals and deeps. Additionally, numerous mis-digitized depths were corrected during office processing.

The projection parameters and signal list were amended during the verification process. Numerous abstracts and supplements not relevant to the final approval process have been removed from the Descriptive Report and filed in the field records.

2. CONTROL AND SHORELINE

All horizontal control stations used for controlling hydrography were established in accordance with Third Order Class I standards for geodetic surveying. The smooth sheet was plotted using published, preliminary adjusted and field positions.

Hydrographic positioning was conducted primarily using the Teledyne Hastings Raydist System. Other positioning systems/techniques utilized included: Motorola Mini-Ranger III (range-range, range-azimuth) and "see field sheet".

All remaining information affecting the positioning and station control of this survey is listed in paragraphs F and G of the Descriptive Report, the Horizontal Control Report and the Electronic Control Report for OPR-L123-PHP-81. Refer to letter N/MOP222, Computer Addendum to Horizontal Control Report (copy attached), dated November 18, 1982, concerning field procedures.

The mean high water line and other photogrammetrically determined features were applied from a Class I photorevised manuscript, TP-00534, using 1981 NOS photographs. Several revisions of this manuscript occurred during the compilation of CM-7704. Refer to letter OA/CAM 52x1, Coastal Mapping, Final Review AMC, dated May 28, 1982 (copy attached is page 1 of extract containing 13 pages. The remaining 12 pages are changes to shoreline manuscripts which do not apply to this survey).

Dates of Photography

TP-00534 March 1977

Dates of Field Edit

October 1980

3. HYDROGRAPHY

Depths at crossings are in good agreement.

The bottom configuration was adequately developed. Generally, all standard depth curves are complete and satisfactorily defined. Least depths were adequately determined.

The Raydist positioning system (range-range) for this survey is approximately 10-15 meters in error. This error is confirmed by the conflicts between positions and the Class I reviewed shoreline manuscript. Although this error approaches the maximum acceptable standards for a hydrographic survey (seldom to exceed 1.5 mm at survey scale), it has been accepted since there is a sparsity of specific hydrographic positioned features charted in the area of this survey.

Numerous soundings along the shoreline and around built-up cultural features were displaced to maintain legibility.

4. CONDITION OF SURVEY

The hydrographic records and reports are adequate and conform to the requirements of the Hydrographic Manual with the following exceptions:

a. A submerged obstruction, covers three feet, charted at latitude $37^{\circ}38'06.8''N$, longitude $122^{\circ}17'00.0''W$, was found during wire drag operations and substantiated as a submerged pile. The submerged pile was not plotted on the final field sheet. The field sheet must portray all hazards to navigation with elevations or depths as appropriate (Hydrographic Manual, section 4.2.1).

b. Names of triangulation stations should be recorded consistently throughout the survey records. Some stations listed on NOAA Form 76-40 are not consistent with names for the same stations included on the signal list. It is important that the names of fixed aids entered on the form be identical with those given in the light list and that the light list number be given (Hydrographic Manual, section 3.1.1.3 and 5.5.2).

c. Several instances were noted where line spacing was exceeded by 40-50 meters, most notably around San Bruno Shoal. No indication of this deviation or reason as to why the line spacing could not be maintained appears in the record. Two primary possibilities for these anomalies are documented in the ship's descriptive report.

- (1) Physical characteristics of Launch 1101
- (2) Electronic interference

As both of these problems existed during the survey, it is of particular importance that the raw records be annotated when necessary (Hydrographic Manual, section 4.8.3.10).

d. Digitized depths were sometimes triggered by a source other than the bottom (weeds, fish, etc.) or an instrument generated source such as the initial or blanking trace. Although many of these anomalous depths were replaced by values scaled from the fathogram, three significant mis-digitized depths were not corrected for on the Final Field Sheet.

<u>Field Sheet Depth</u>	<u>Smooth Sheet Depth</u>	<u>Latitude</u>	<u>Longitude</u>
27 ft sdg	33 ft	37°38'56"N ✓	122°19'00"W ✓
17 ft sdg	27 ft sdg (excessed)	37°38'20"N ✓	122°19'34"W ✓
28 ft sdg	33 ft sdg	37°37'17.5"N ✓	122°18'20"W ✓

e. Paragraph J of the Descriptive Report failed to discuss the junction with H-9984. Also, the final field sheet incorrectly labeled this junctional sheet as H-9844.

f. Wire drag operations conducted in 1981 to disprove PSR items #29, 30, and 31 should have been discussed in paragraph K as additional valuable information to support removing these items from the chart.

g. The two charted spoil areas located within the limits of the present survey were surveyed with 100 meter line spacing. Project Instructions OPR-L123-PHP-81, section 6.5.3, specifically prescribed line spacing for these areas not to exceed 50 meters.

5. JUNCTIONS

H-9952 is bordered by three contemporary surveys.

- H-9819 (1980) - adjoins
- H-9872 (1980) - adjoins
- H-9984 (1981-83) - joins

Adequate agreement was made with all standard depth curves and the junctional notes are inked accordingly. As H-9819 (1980) and H-9872 (1980) were processed at an earlier date, junctional depth curves were left in pencil. The chart compiler should refer to H-9952 (1981-82) for a more accurate representation of standard depth curves within the junctional areas. A lack of hydrographic data with H-9984 (1981-83) at latitude 37°36'00"N, longitude 122°21'30"W to longitude 122°22'00"W prevented an accurate portrayal of the 0-foot curve.

6. COMPARISON WITH PRIOR SURVEY

All numbered PSR items were adequately disposed of in paragraph K of the descriptive report.

- a. H-6726 (1941) 1:10,000

Generally, depths are 1-3 feet deeper since 1941. The active borrow dredging area southeast of San Bruno Shoal reveals that depths since the prior survey have increased from 8-15 feet with specific isolated areas having increased by 20 feet. The soundings on San Bruno Shoal have increased some 1-6 ft which has noticeably affected the 3-foot curve. This curve has shifted to the east and the shoal decreased in size by 200-550 meters. A combination of natural and man-made changes (dredging) have contributed to these differences since the prior survey.

The present survey is adequate to supersede the prior information in areas of common coverage.

- b. H-8025 (1954-55) 1:10,000
- H-8026 (1954-56) 1:10,000
- H-8027 (1955) 1:20,000

A comparison with these prior surveys reveal that depths have generally deepened by 1-3 feet. However, within the active borrow dredging area approximately .5 to 1.5 miles southeast of San Bruno Shoal, depths since 1954 have increased from 8-15 feet with specific isolated areas having increased some 20-29 feet. Generally, the standard depth curves compare very well and disclose a small amount of movement (seaward/inshore) although, the following isolated areas reveal a more drastic change;

(1) The 12-foot curve, centered at latitude 37°37'30"N, longitude 122°19'45"W has shifted 150-600 meters in a west to east direction, and 1,000 meters to the southeast.

(2) The 18-foot curve two miles east of Point San Bruno, has shifted south approximately 700 meters.

(3) The 0-foot curve, 3-foot curve and 6-foot curve has shifted extensively in those areas where shoreline fill has taken place.

Numerous cultural changes have greatly affected the shoreline configuration since the prior surveys. From Oyster Point to San Francisco International Airport, extensive shoreline fill has shifted the high water line 150-950 meters seaward. A new marina has been constructed at Oyster Point and related airport facilities have been greatly expanded.

A combination of natural and man-made changes (dredging) have contributed to the above differences since the prior surveys. With the following two exceptions, all additional prior survey features carried for charting purposes were satisfactorily disposed of in the Descriptive Report.

<u>Prior Survey</u>	<u>Feature</u>	<u>Latitude</u>	<u>Longitude</u>
H-8025	Buoy C "1"	37°39'18"N ✓	122°21'55"W ✓
H-8026	Duck Blind	37°37'23"N ✓	122°21'45"W ✓

Since these features are not charted and have probably been superseded by later information, confirmation that these items have been disproven is deferred to the chart compiler.

The present survey is adequate to supersede the prior information within the common area.

7. COMPARISON WITH CHART

18651, 32nd Edition, August 1, 1981

a. Hydrography. A chart comparison indicates that most offshore hydrography originates with the prior surveys previously discussed while inshore hydrography, particularly in culturally built-up areas originates with

miscellaneous sources not identified. All charted features were satisfactorily addressed and discussed except as follows:

The following charted spoil areas located within the limits of the present survey were not surveyed with 50 meter line spacing. The evaluator recommends retaining these items as discontinued spoil areas as all surveying considered necessary was not completed.

- (1) latitude 37°39'00"N, longitude 122°22'24"W ✓
- (2) latitude 37°39'54"N, longitude 122°22'30"W ✓

The area covered by H-9952 was examined for unreported dangers to navigation. None were determined to exist.

The present survey is adequate to supersede the charted hydrography within the common area.

b. Controlling Depths. Three channels with charted controlling depths were surveyed. Depths within the channel between San Bruno Shoal Channel Light 3 and San Bruno Shoal Channel Light 6 are no shoaler than 29 feet, confirming the charted note. Depths within the channel approaching Seaplane Harbor are no shoaler than 7.5 feet, confirming the charted note. However, the 8-foot controlling depth within Seaplane Harbor should be superseded as present depths reveal some shoaling to 6 feet. Depths within the Oyster Point Channel have shoaled to 2 feet and the charted controlling depth of 5 feet should be superseded. This condition has been reported to the 12th U.S. Coast Guard District (copy attached). The controlling depth into Oyster Point Marina should be charted as 7 feet.

c. Aids to Navigation. There are fifteen fixed aids to navigation (4 daybeacons, 11 fixed lights) within the sheet limits. The positions of these structures were compared to the charted positions and adequately serve the purpose intended. It should be noted that several fixed aids around Oyster Point Marina differ from the charted positions by as much as 100 meters due to new construction and placement of lighted aids.

8. COMPLIANCE WITH INSTRUCTIONS

H-9952 adequately complies with the project instructions except as noted in section 4, Condition of Survey.

9. ADDITIONAL FIELD WORK

H-9952 is a good basic survey. No additional field work is required.

Respectfully submitted,

Bruce A. Olmstead

Bruce A. Olmstead
 Evaluator
 March 26, 1984

This survey has been verified and evaluated. I have examined this survey and it meets charting and Geodetic Services survey standards and requirements for use in nautical charting except as noted in the Evaluation Report. The survey is recommended for approval.


James S. Green
Supervisory Cartographer



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102

January 18, 1983

N/MOP222-RBM

TO: N/CG164

FROM: N/MOP222 - R. B. Melby *R. B. Melby*

SUBJECT: PMC Computers' Addendum to Horizontal Control Report, Project
OPR L123 PHP, 1979, 1980, 1981, 1982, San Francisco, California
TSN 410-630

This report covers several years of field work. The field work was the continuation of the same basic project, so the field data was processed through the telephone data terminal as yearly projects. This report will cover the combined projects as one.

The project was the result of the field work as performed by the Pacific Marine Center Hydrographic Party in the southern part of San Francisco Bay to support hydrographic surveys.

Third order, Class I horizontal control methods were generally employed.

Considerable reprocessing was required of the field info at the Pacific Marine Center to permit its entry and recomputation through the telephone data terminal. Some of the stations were located by the eccentric resection method. The final positions at the involved stations were listed as no-check position, due to field procedure.

Due to the size of the project and the number of observations involved, several ADJNET programs were required to process all of the field positions. FILL (TEMP) indicated an excessive adjustment.

Horizontal and vertical observations that would not compute or properly adjust were deleted before the final ADJNET program was run.

The horizontal directions to the references marks at station DEL MONTE were not observed in the field.

A thorough review is recommended at all the field positions and their methods of location prior to any final office adjustment and subsequent publication.

Summary: The field data was processed through a telephone data terminal to the NGS Headquarters in Rockville, Maryland.





U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

AUG 05 1983

Commander (OAN)
Twelfth Coast Guard District
630 Sansome Street
San Francisco, CA 94126

Dear Sir:

During final office review of hydrographic survey H-9819, California, San Francisco Bay, Oyster Point to Hunters Point, the following changes affecting charts 18650, 18651 and 18652 were noted. Questions concerning the survey may be directed to Capt. Ned C. Austin, Chief, Nautical Chart Branch, telephone (206) 527-6835.

The following statement is recommended for the Local Notice to Mariners:

A 2-foot depth at MLLW exists in the Oyster Point Channel on charts 18651 and 18652 at latitude 37°40'09.5"N, longitude 122°22'47.5"W; 3.73 nautical miles, 196 degrees true from Hunters Point Light (LL #661).

A 16-foot depth at MLLW exists at latitude 37°42'58.0"N, longitude 122°21'36.0"W on chart 18650, 18651 and 18652; 0.75 nautical miles, 181 degrees true from Hunters Point Light (LL #661).

Sincerely,

Charles K. Townsend
Rear Admiral, NOAA
Director, Pacific Marine Center

bc: N/CG222



DATE: February 4, 1983

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): 941-4458 San Mateo Bridge, CA

Period: August 25, 1981 - October 26, 1982

HYDROGRAPHIC SHEET: H-9952

OPR: L123

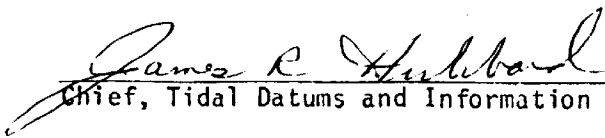
Locality: Offshore San Francisco International Airport

Plane of reference (mean lower low water): 14.67 ft.

Height of Mean High Water above Plane of Reference is 7.0 ft.

REMARKS: Recommended Zoning:

1. North of latitude $37^{\circ}39'$ apply x0.90 range ratio.
2. South of $37^{\circ}39'$ to $37^{\circ}37'$ apply x0.93 range ratio.
3. South of $37^{\circ}37'$ apply x0.97 range ratio.


Chief, Tidal Datums and Information Branch

ATTACHMENT TO DESCRIPTIVE REPORT FOR H-9952

I have reviewed the smooth sheet, accompanying data, and reports of this hydrographic survey. Except as noted in the Evaluation Report, the hydrographic survey meets or exceeds Charting and Geodetic Services (C&GS) standards, complies with instructions, and is accurately and completely represented by the smooth sheet and digital data file for use in nautical charting.

David W. Yeager 16 April 1984
Chief, Nautical Chart Branch (Date)

CLEARANCE:

N/MOP2:LWMordock

SIGNATURE AND DATE:

Raymond A. Mordock 4/19/84

After review of the smooth sheet and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards with only the exceptions as noted above. The above recommendations are forwarded with my concurrence.

Charles K. Townsend 4/24/84
Director, Pacific Marine Center (Date)



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

N/CG242:SRB

October 7, 1985

TO: N/CG24 - Roy K. Matsushige
 FROM: N/CG242 - *George K. Myers, Jr.*
 George K. Myers, Jr.

SUBJECT: Examination of Hydrographic Survey H-9952 (1981-82), California, San Francisco Bay, Vicinity of San Francisco Airport

Chief of Party P. R. Chelgren
 Field Unit Pacific Hydrographic Party
 Processed by Pacific Marine Center
 Examined by S. R. Baumgardner

An examination of hydrographic survey H-9952 (1981-82) was accomplished to monitor the survey for adequacy with respect to data acquisition, conformance with applicable project instructions, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, smooth plotting, shoreline transfer, digital data standards, decisions made and actions taken by the evaluator, and the cartographic presentation of data.

Cartographic deficiencies and constructive comments are noted on a 1/2-scale copy of the survey smooth sheet which will be forwarded to the marine center. Digital data and/or programming deficiencies are identified on a full-scale plot made from the magnetic tape transmitted by the marine center. This plot will also be forwarded to the marine center.

In general, the survey was found to conform to National Ocean Service standards and requirements except as stated in the Evaluation Report and as follows:

1. The hydrographer appears to have conducted excellent wire-drag investigations of the Presurvey Review items; however, no plots of drag strips exist other than an outline of the total area covered by the wire drag. Also, there is no indication that a preliminary plot of the 1981 wire-drag work was made during processing from raw data listings contained in a separate cahier. Although detailed information provided by private contractors per telephone conversations is addressed in the Descriptive Report, the lack of wire-drag plots made disproval of searched items difficult during processing.



The submerged pile, PA (Presurvey Review Item 30) charted at latitude 37°36'44"N, longitude 122°16'23"W is not included in the aforementioned outline of wire-drag work on the field sheet. It is questionable whether a wire-drag search was conducted in this area as required by the Presurvey Review.

2. The following additions to section 6 of the Evaluation Report are required so that the present survey adequately supersedes the prior survey in the common area.

H-8025 (1954-55 1:10,000

A pile, located at latitude 37°40'09"N, longitude 122°22'43"W, was neither verified nor disproved and should be carried forward as submerged. The charted submerged pile at this position is from U.S. Power Squadrons information of 1967 (CL 1631/1967).

A pier, located at latitude 37°39'05"N, longitude 122°22'40"W, which is presently charted as a dashed line, should be carried forward to the present survey as pier ruins that uncover at low water. This item was not mentioned by the hydrographer.

3. The following charted items, originating with miscellaneous sources, were neither verified nor disproved by the present survey, and should be retained as charted.

<u>Item</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
pile	37°39'04"	122°22'37"
three pier ruins	37°36'41"	122°21'10" (vicinity)

4. The following items, located on TP-00534, were revised by the hydrographer during field edit operations but were not documented in the Descriptive Report.

<u>Item</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>	<u>Hydrographer's Recommendation</u>
ruins (two)	vicinity of 37°39'52"	122°22'40"	do not exist
platform	37°39'51"	122°22'56"	does not exist

5. The echograms and raw data printouts for the positions listed below are missing from the survey records.

<u>Positions</u>	<u>Day Number</u>
7001-7023	258
24-141	50
142-315	51
316-469	53
472-602	71
3582-3689	201

<u>Positions</u>	<u>Day Numbers</u>
7078-7091	209
6112-6133	210
3690-3826	211
7092-7096	221
6134-6169	223-224
3827-3839	224
6500-6524	237
6170-6211	238
3842-3911	299

The processing office was asked to furnish these records; however, the missing data could not be located.

6. The evaluator stated that a Class I photo revised shoreline map, TP-00534, based on 1981 photographs was used during office processing. Photogrammetry Branch has informed us that this document does not exist. The shoreline originates with the final reviewed Class I shoreline map TP-00534 of 1977-1980.

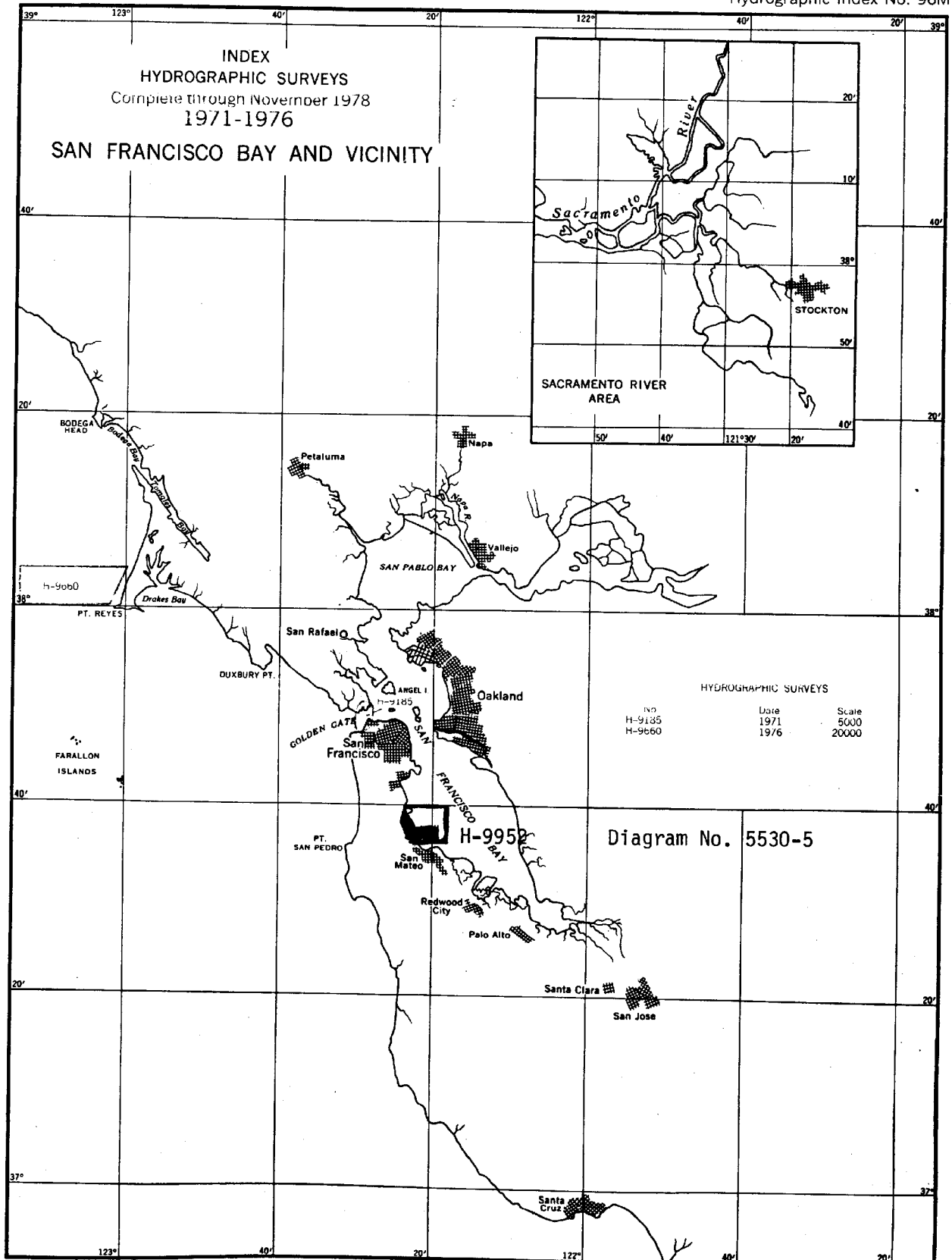
7. The first page of OA/CAM52x1, Coastal Mapping Final Review letter dated May 28, 1982, as referenced by the evaluator to be attached to the Descriptive Report is not included therein. A copy of this letter (CL-642/82) obtained from the Marine Chart Branch does not refer to items that fall in the area of the present survey.

8. The float docks addressed in section L, item 6, of the Descriptive Report were not identified on the final field sheet nor on the present survey. All of the piers in Oyster Point Marina, east of longitude 122°22'42"W, should be identified as floating piers.

9. A small section of shoreline located between two floating piers in latitude 37°39'46"N, longitude 122°22'42"W was revised by the hydrographer and should have been shown in red on the present survey.

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

Hydrographic Index No. 96M



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. _____

H-9952

INSTRUCTIONS

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

CHART	DATE	CARTOGRAPHER	REMARKS
18651	7/18/84	<i>Peter Shumar</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>40</i>
18652	10/10/86	<i>Conitto</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>28</i>
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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