

9672

Diag. Cht. No. 5101-4

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT
(HYDROGRAPHIC)

Type of Survey HYDROGRAPHIC
Field No. FA-5-3-77
Office No. H-9672

LOCALITY

State CALIFORNIA
General Locality ... SAN PEDRO BAY
Locality LONG BEACH HARBOR

1977

CHIEF OF PARTY

R.E. Alderman, B.I. Williams

LIBRARY & ARCHIVES

DATE April 25, 1978

2769

5148

HYDROGRAPHIC TITLE SHEET

H-9672

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.

FA-5-3-77

State California

General locality San Pedro Bay

Locality Long Beach Harbor

Scale 1:5,000 Date of survey 10 Feb to 19 Apr 1977

Instructions dated 18 Nov 76 Project No. OPR-411-FA-77

Vessel NOAA Ship FAIRWEATHER-Launches FA-4 (2024, 1010), FA-3 (2023, 1011), and FA-5 (2025, 1001)

Chief of party CAPT R.E. Alderman and CDR B.I. Williams

Surveyed by ENS G.E. Leigh

Soundings taken by echo sounder, hand lead, pole Ross Finline Fathometers (1054, 1046, 1036)

Graphic record scaled by FAIRWEATHER Personnel

Graphic record checked by FAIRWEATHER Personnel

Positions verified
~~Plotted~~ by Dennis L. Duffy Automated plot by PMC Xynetics Plotter

Soundings
Verification by Dennis L. Duffy

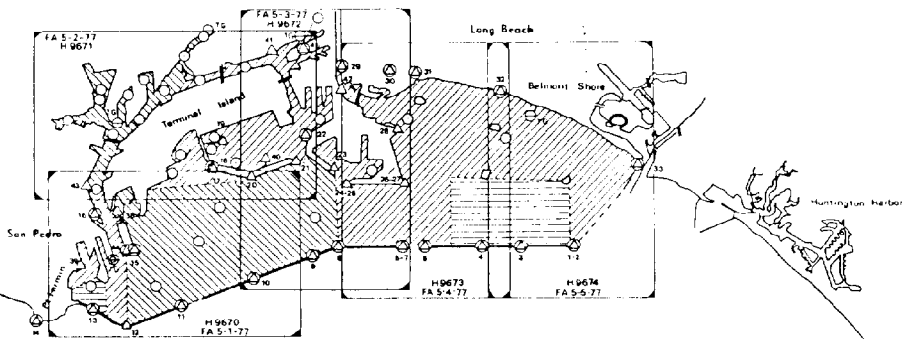
Soundings in ~~0.47006~~ feet at ~~MLLW~~ MLLW

REMARKS: The survey was run on GMT. The mean longitude of the survey is 118°12'15". This boatsheet is complete and adequate for charting.

Applied to this 10/2/75
[Signature]

18-15-00

18-05-00



STATIONS ESTABLISHED

- | | |
|----------------------------------|-----------------------------------|
| 12 BEND, 1977 (ELEC CONTROL) | 38 MOBIL, 1977 (ELEC CONTROL) |
| 17 EHLE RMS, 1977 (ELEC CONTROL) | 39 YACHT, 1977 (ELEC CONTROL) |
| 19 PIER 9, 1977 (ELEC CONTROL) | 40 PIER 15, 1977 (ELEC CONTROL) |
| 20 MOLE, 1977 (ELEC CONTROL) | 41 INNER T-2, 1977 (ELEC CONTROL) |
| 21 CARTER, 1977 (ELEC CONTROL) | 42 RANGER, 1977 (ELEC CONTROL) |
| 24 FRITZ, 1977 (ELEC CONTROL) | 43 TAXI, 1977 (ELEC CONTROL) |
| 26 QUEEN, 1977 (ELEC CONTROL) | |
| 28 MARY, 1977 (ELEC CONTROL) | |

STATIONS RECOVERED

- | | |
|--|-----------------------------|
| 1 LONG BEACH BREAKWATER EAST END LIGHT, 1953 | 44 WIL D-100 (LAC) |
| 2 LB H-10 (LAC) | 45 WIL K-4 (LAC) (ELEC CNL) |
| 3 LB F-10 (LAC) | |
| 4 LB D-10 (LAC) | |
| 5 LONG BEACH CHANNEL ENTRANCE EAST LIGHT, 1953 | |
| 6 LONG BEACH LIGHT, 1953 | |
| 7 LB B-10 (LAC) | |
| 8 WIL L-10 (LAC) | |
| 9 MIDEAST, 1948 | |
| 10 MIDWEST, 1948 | |
| 11 SAN PEDRO BREAKWATER LIGHTHOUSE, 1913 | |
| 13 WIL C-12 (LAC) | |
| 14 POINT FERMIN LIGHT, 1976 | |
| 15 WIL E-10A (LAC) (ELEC CONTROL) | |
| 16 SAN PEDRO PORTS CALL SKY TOWER, 1974 | |
| 18 EHLE, 1949 | |
| 22 LBHD P-3 (LAC) (ELEC CONTROL) | |
| 23 BASIN 6, 1977 (ESTABLISHED) (ELEC CONTROL) | |
| 25 LBHD J-104 (LAC) | |
| 27 LBHD J-103 (LAC) | |
| 29 WIL K-4, AUX 4, ECC 2 (LAC) | |
| 30 LONG BEACH BREAKERS HOTEL TOWER, 1932 | |
| 31 LONG BEACH VILLA RIVIERA HOTEL TOWER, 1932 | |
| 32 LB F-5A (LAC) | |
| 33 BMS-5 (LBC) | |

- Mortar
- ⊕ Tertiary Tide Gage
- ⊙ Primary Tide Gage
- ⊗ Stations Recovered
- △ Stations Established
- OC Orange Co
- LAC Los Angeles County
- LBC Long Beach City
- BHD Long Beach Harbor Dept

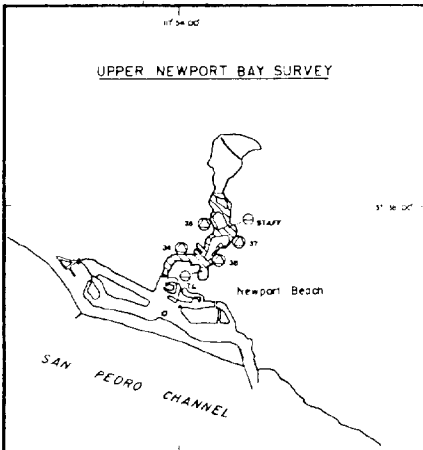
	FEB	MARCH	APRIL
L N M SOUNDING LINE	359.9	397.6	294.3
S Q N M SOUNDING LINE	6.5	8.2	8.9
CTD CAST (MARTEK)	2	3	23
BOTTOM SAMPLE	25	51	45



PROGRESS SKETCH
 OPR-411-FA-77
 SOUTHERN CALIFORNIA
 NOAA SHIP FAIRWEATHER (S 220)
 CDR BRUCE I. WILLIAMS, CMDR
 SCALE OF NOS CHART 18746

UPPER NEWPORT BAY STATIONS RECOVERED

- 34 UPPER BAY 2, 1968 (OC)
- 35 UPPER BAY 3, 1968 (OC)
- 36 UPPER BAY 9, 1968 (OC)
- 37 UPPER BAY J, 1968 (OC) (ELEC CONTROL STATIONS)



DESCRIPTIVE REPORT
NOAA SHIP FAIRWEATHER S220
OPR-411-FA-77
SURVEY H-9672 (FA-5-3-77)

A. PROJECT

This survey was accomplished in accordance with Project Instructions OPR-411-FA-77, Southern California Coast, dated 18 NOV 76 and with change numbers 1,2,4,5 and 6 dated 3 JAN 77, 6 JAN 77, 21 JAN 77 and 31 JAN 77 respectively, and with the PMC OpOrder. ✓

Change 7, 15 Feb 1977

B. AREA SURVEYED

The area encompassed by FA-5-3-77 included several sections of Long Beach Harbor: Inner Harbor, east of the "Overhead Power Cables", (including Channel Two and Channel Three), Back Channel, East Basin and the channel area of Middle Harbor, Basin Six, Southeast Basin, Outer Harbor from a north-south line near NAVAL BASE MOLE LIGHT 2 east to a north-south line approximately 0.2 nm west of LONG BEACH LIGHT, and finally the mouth of the Los Angeles River from a north-south line tangent to the bow of the QUEEN MARY upstream to the Ocean Blvd. Bridge. ✓
The survey was conducted between February 10 and April 19, 1977.

C. SOUNDING VESSELS

Hydrography and bottom samples on this sheet were accomplished by launches FA-4 (EDP 2024, S/N 1010), FA-3 (EDP 2023, S/N 1011), and FA-5 (EDP 2025, S/N 1001). FA-4 was used for most of this survey and was used in the range-azimuth mode on all days except J.D. 061, 062 and 066, when it was used in the range-range mode. FA-3 was used on J.D. 067 for range-range hydrography. FA-5 was used for range-azimuth hydrography on J.D. 068, 069 and 070. ✓

D. SOUNDING EQUIPMENT

All launches used Ross Fineline fathometers. A TRA corrector of +1.5 feet was applied to all soundings taken by launches FA-4, FA-3 and FA-5. These corrections were based on measured transducer drafts and verified by bar checks. See Report on Corrections to Echo Sounding, OPR-411-FA-77. Bar checks were taken once or twice daily as weather permitted. The depths of soundings on this sheet range from approximately 0 feet to 72 feet. ✓

Sounding Instrument:

<u>Vessel</u>	<u>Instrument</u>	<u>Model</u>	<u>S/N</u>
FA-4	Ross Fineline	5000	1054
FA-5	Ross Fineline	5000	1036
FA-3	Ross Fineline	5000	1046

E. BOAT SHEET

All data was plotted by the shipboard PDP-8e hydroplot system. The ship's PDP-8e computer (S/N 09524) utilized a complot plotter (model DP-3, S/N 6166-22). The projection was a modified transverse mercator at a scale of 1:5000. The area was divided into two plotter sheets, FA-5-3W-77 and FA-5-3E-77, each with a skew of 90, 22, 60 and with origins at 33°42'34" N, 118°12'13" W and 33°42'45" N, 118°11'02" W. A copy of the parameter tape for each sheet is appended.

F. STATION CONTROL

Extensive horizontal control was performed to locate the eight range-azimuth electronic stations, plus offsets, and the two other stations which were used for range-range hydrography on this sheet. All control stations for this sheet were tied together and were based on the 1974 Los Angeles County Adjustment. All of the stations meet Third Order, Class I accuracy standards with the possible exception of station RANGER, which may have a displacement of approximately 0.3 meters. See also Horizontal Control Report, OPR-411-FA-77.

G. POSITION CONTROL

All areas of FA-5-3-77 were controlled by range-azimuth positioning, (Miniranger or Del Norte and Wild T-2 Theodolite), except for a roughly square area south of Pier J which was controlled by range-range hydrography with a minimum intersection angle of 50°. This area was also, as a back-up, controlled by azimuth observations. FRITZ and WIL L-10 (LAC) were used as range-range electronic stations. For range-azimuth control, offsets were measured and computed, and used for the electronic station location while the theodolite occupied the main station. Initials were checked frequently and were a reasonable distance away. Some positions were controlled by dead reckoning, as in slips, where the launch was not visible from the theodolite station, and/or, the electronic rates were questionable due to obstructions on line. This occurred in the north-south slip in the Southeast Basin, in the eastern two north-south slips in the East Basin of the Middle Harbor, in various sections of Channel Two and Channel Three in the Inner Harbor, and in the three small harbors on the north side of the Los Angeles River near downtown Long Beach. Annotation on the raw data printout describes the course of these lines. In almost all cases, dead reckoned lines began with a fix controlled by range-azimuth information. Azimuths and electronic rates for these lines were computed based on raw data printout information and the boat sheet hand plot and the "in-betweens" were plotted as "time and course". This procedure gave lines fairly straight, and parallel with the edges of the slip. The distance to the end of the slip when the launch stopped running was also noted on the raw data printout. The lack of land marks along the sides of the slips made the hand plotted boat sheet positions somewhat rough. Generally, the range-azimuth controlled, beginning fix and the stopping point (at estimated distance to inner end of slip) were used to compute the other fixes assuming a straight line in between.

The launch could be maintained on a constant speed and an approximately straight course by keeping a constant distance from the side of the slip. The range-azimuth stations were carefully positioned to minimize the shadow areas but some were inevitable in such a complex area. ✓

In addition to the Miniranger and Del Norte baseline calibrations described in the Electronic Control Report, OPR-411-FA-77, check calibrations were carried out at the beginning and end of each day in accordance with the PMC OpOrder. ✓

The range-azimuth mode worked fairly well with the exception of the occasionally erratic electronic rates, especially in congested areas. It was necessary to spend much time in scanning and editing data to remove erratic rates and make other corrections. Due to the fair number of electronic stations sites, the complexity of the geography, causing many broken and short lines and the congestion of the area, data editing was a major operation. The extensive editing offered many chances for errors to enter into the system due to the often repeated, handling and duplicating of tapes. ✓

The ASI Logger is not ideal for running many short lines as in this project. Unless the time interval is ten seconds it is impossible to predict when the Logger system will go "on line" after it has been turned on. This made launch positioning at the beginning of lines somewhat difficult as the launch would often drift off line while waiting for the first fix. This is a real problem in areas where a line may be only two or three fixes long and you may be starting a new line every few minutes. ✓

The Del Norte system used in the range-range mode was also, at times, erratic making starting lines somewhat difficult. The system seemed to work better once a given course was established, (the launch was running in a straight line). In addition, on J.D. 062 the computer synchronization was off giving inconsistent sounding intervals. This necessitated adding many "in-betweens" to fill the gaps. ✓

H. SHORELINE

The shoreline details were obtained from class I manuscripts TP-00393, 394, 400 and 401. These delineations of the shoreline appear to be correct. The beach area, in the largest of three small bays off the Los Angeles River, was not sounded due to a log boom restricting boats from the swimming area. The Los Angeles River was sounded as far north as the Ocean Blvd. Bridge where signs warned of shallow water and submerged rocks, (unsafe navigation), beyond. On sheet FA-5-3W-77, the Back Channel and Channels Two and Three, often had the edge of the channel blocked by permanently moored vessels, barges, drydocks, etc. The launch was used wherever possible and in addition hand lead line soundings were taken inside and in-between obstructions. These are listed in the sounding volumes with positions indicated in green on the boat sheet. The shoreline in all other areas consisted of bulkhead or breakwater. ✓

I. CROSSLINES

215 nautical miles of hydrography were run on FA-5-3-77. Of this, 13 nautical miles or 6% were cross-lines. Comparisons at crossings are excellent with most agreements being one foot, some two feet and a few, on slopes, slightly greater. ✓

J. JUNCTIONS

This survey junctions with FA-5-1-77 (H-9670) to the southwest, FA-5-2-77 (H-9671) to the northwest and FA-5-4-77 (H-9673) to the east. Very good agreement was found in all cases with differences less than 2 feet. ✓

K. COMPARISON WITH PRIOR SURVEYS

The 1933-34 Coast & Geodetic Survey charts were of little value in comparison because of the large amount of dredging and landfill which have taken place in the area. Comparison with the Port of Long Beach "Water Depth" chart series, issued 1972 to 1976 were good. ✓

Presurvey review item 7, a 29 foot sounding at latitude 33°44.50', longitude 118°12.34', was found during several lines of hydrography in the area. In addition on 4 APR 77, 1000-1020 local time, two 150 foot wide sweeps were run along the west face of PIER F from approximately 10-12 meters inside the line through the given position to 40 meters outside the given position. No indication of a sharp peak was found with the drag at 30 feet. The 29 foot area is probably part of the mole base construction. It is recommended that this item be plotted as these current soundings indicate. ✓

Presurvey review item 8, submerged dolphins in the vicinity of latitude 33°44.67', longitude 118°12.30' were searched for and not found. On 4 APR 77, 1055-1120 local time, divers conducted a drag along the bottom with a total of a 20 meter wide sweep. The area covered extended from the floating dock to the point of PIER G. At local time 1245-1315, a wire drag 100 feet wide and 30 feet deep also gave negative results. Recommend removal from chart. ✓

Presurvey review item 9 and 10, pier ruins and floating dock, were investigated on 7 APR 77 at 1300. The Pilot station has a 10 foot wide float in the area with a dolphin at its seaward end. Conversations with a Long Beach pilot indicated that all ruins were recently removed and the area chain dragged from the shore to the edge of the channel. Recommend removal of ruins from chart. See Verifiers Report - section VII-A ✓

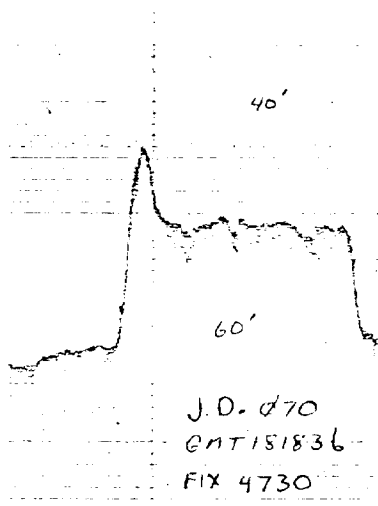
Presurvey review item 13, submerged pipe, PA, latitude 33°44.43', longitude 118°13.36' was searched for and not found. A wire sweep on 29 MAR 77 set at 45 feet, 100 feet wide, covered the search area bounded by the coordinates, latitude 33°44'19", longitude 118°13'34": 33°44'28", 118°13'34"; 33°44'36", 118°13'09"; 33°44'19", 118°13'09". Control was by range-range Miniranger. In addition on 25 FEB 77 (J.D. 056) the hydrographic launch spent about 1 hour and 15 minutes searching the area running 16 different ✓

lines at 5 meter spacing, with a man on the bow and the fathometer trace being scanned. The water visibility was at least 3-4 feet and nothing was found. Also on 20 APR 77 the last day of wire drag operation, the area was again swept. This time the depth was set at 20 feet and an area approximately 300 feet by 0.5 mile along the mole, centered on the given position, was swept. It is recommended that this pipe be removed from the chart. ✓

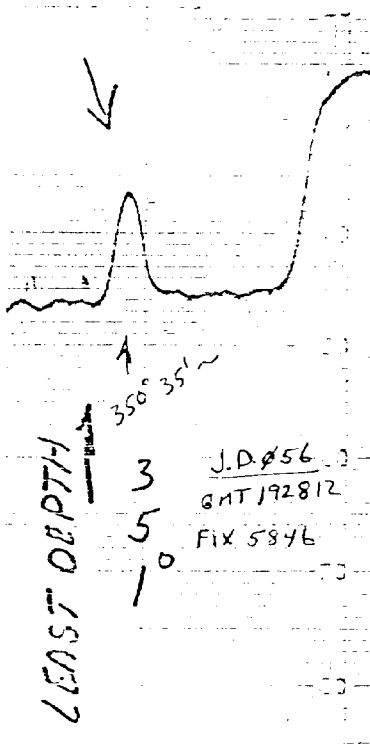
Presurvey review item 14, submerged obstruction, latitude 33°46.28', longitude 118°13.31' was searched for on 4 APR 77 at 1515. No pilings were found along the face of the pier. At the extreme western end of the catwalk (attached to pier) there is a broken piling including damage to the catwalk. (See Verifier's Report - sections IV-C and VII-A) ✓

Presurvey review item 16, moored bait barge, latitude 33°43.10', longitude 118°13.55' was found but located at a different position. The new position latitude 33°43'01.3", longitude 118°13'44.5" was found using a three-point sextant fix and a Miniranger range from station CARTER. The barge position number is 0027 and is listed in the sounding volume. The operator stated that the barge is moored to the same mooring buoy in the same location each year. ✓

In Southeast Basin at 1325 on 4 APR 77 a drag was pulled over an area found during hydrography. With the drag at 60 feet and 100 foot wide, the area was searched until 1335 when the ground line parted. The peak appears to be a ridge left from dredging operations. Additional sweeps in this area revealed no sharp peaks. See copy of fathometer trace below for D.P. 4730, J.D. 070, GMT 181836. ✓



The charted and dash-circled 29 foot sounding just southeast of NAVAL BASE MOLE LIGHT "2" at approximately latitude $33^{\circ}44'22''$ and longitude $118^{\circ}13'39''$ was searched for and not found. The hydrographic launch search on J.D. 056 was conducted at 10 meter spacing from 1120 to 1200 meters from station CARTER and centered around an azimuth of 351° from CARTER, (initial $000^{\circ}00'00.0''$ on station MOLE). The least depth found was 36^7 feet corrected to MLLW by predicted tides (D.P. 5846, J.D. 056, GMT 192812). See Verifications Approved ✓



The charted and dash-circled 27 and 29 foot sounding area just south of PIER J at approximately latitude $33^{\circ}44'13''$ and longitude $118^{\circ}11'30''$ was investigated by splits of the main scheme resulting in 20 meter spacing. Several ~~29~~³⁴ foot soundings were found, although the shape of the area is somewhat different. ✓

The charted and dash-circled 59 foot sounding at approximately latitude $33^{\circ}43'36''$ and longitude $118^{\circ}13'02''$ was not found. Twenty meter spacing in the arca, however, did reveal a 58 foot sounding approximately 175 meters away at a bearing 041° . The 58 foot sounding is "4 out" of fix ^{stray} ✓ 4771, J.D. 070. The regular "S" shaped contour lines in this area result from dredging with the future in mind. A local city engineer explained that much of this area will be filled eventually and the areas dredged to 60-70 feet are the areas which will be the future slips.

The charted and dash-circled 36 foot sounding south of CARTER at approximately latitude 33°44'22" and longitude 118°12'57" was not found after running 20 meter spacing across the area. However a ~~32~~³⁷ foot sounding was found in approximately the same location as well as several others in the area. A ridge extends north-south in this area from just south of the end of the NAVAL BASE MOLE (CARTER) south to about latitude 33°44'17". Soundings on one side of the ridge are slightly deeper than the other. A local city engineer informed us that two dredging companies failed to quite meet and thus a ridge was left behind. ✓

The charted and dash-circled 38 foot sounding southwest of CARTER at approximately latitude 33°44'30" and longitude 118°13'08" was not found. ✓ Twenty meter spacing plus a cross-line over this location failed to show a sounding shoaler than ~~42~~⁴⁶ feet. It is recommended that this sounding not be removed from the chart however.

At one half sounding interval out of fix 5190 on J.D. 076 an approximately 2 foot sounding (plotted 4 feet) was found. This is outside of the channel limits and is probably an outflow pipe from the power plant. ✓

L. COMPARISON WITH THE CHART

The boatsheet was compared with chart 18749, San Pedro Bay, 20th edition, February 14, 1976, scale 1:18,000. Very good agreement was found in all areas. The Long Beach Channel however showed some soundings shoaler than the 60 feet as charted. A brief summary follows. On FA-5-3E-77 54 and 56 foot soundings were found at the southwest edge of the Long Beach Channel approximately 600 meters northwest of LONG BEACH LIGHT 1953. Also ~~53~~⁶¹ foot soundings were found along an extensive area on the northeast half of Long Beach Channel from 800 to 1600 meters northwest of LONG BEACH LIGHT 1953. ✓ Also at the west point of PIER J, just north of Long Beach Pier J Light "4" the charted 29 foot shoal appears to be considerably smaller. On sheet FA-5-3W-77 various 59 foot soundings are found in the northeast half of Long Beach Channel between the southeast point of PIER F and the end of the NAVAL BASE MOLE. A large area of ~~59~~⁶¹ foot soundings extends completely across the channel just north of the end of the NAVAL BASE MOLE. A ~~57~~⁵⁹ foot sounding was found approximately 205 meters northwest of LBHD P-3 (LAC) (northwest corner of PIER A EXTENSION). Also a 54 foot sounding was found approximately 430 meters north of the same point. Just off the southeast corner of PIER E a major shoaling was confirmed as charted.

M. ADEQUACY OF SURVEY

All fathogram field survey records were scanned and checked for peaks and deeps. A holiday was left just north (upstream) of the most northerly of three small harbors off the Los Angeles River. This was due to a misinterpretation on the hand-plotted boat sheet and the fact that the semi-smooth sheet was not completely plotted before the end of the project. ✓ Another sparsely sounded area just north of the first and just off station RANGER was due to the same causes. A few other very small sparsely sounded areas throughout the sheet are due to inaccurate steering and/or erratic electronic rates.

N. AIDS TO NAVIGATION

Detached positions were taken on several buoys in this area. All are listed in the sounding volume. Of these only two were Coast Guard navigation buoys ("A" and "B" in Long Beach Channel) and these agreed well with the charted position. ✓

O. STATISTICS

<u>Vessel</u>	<u>Positions</u>	<u>Hydrography (n.m.)</u>
FA-3	159	13.2
FA-4	2943	198.9
FA-5	286	10.0
Total Area		3.8 snm
Total Bottom Samples		275
Total Number Martek Casts		4

P. MISCELLANEOUS

Greenwich Mean Time (+8 hours) was used for all survey records. Velocity correctors were not applied to the final plot of the field sheet. ✓

Q. RECOMMENDATIONS

This survey is complete and adequate for recharting this area and should supercede all prior surveys. It is recommended that it be accepted and because of the soundings less than 60 feet found in the Long Beach Channel, at least this area should be revised as rapidly as possible. ✓

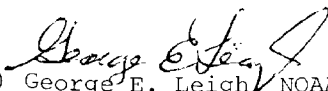
R. REFERENCES TO REPORTS

Report on Corrections to Echo Soundings OPR-411-FA-77
Electronic Systems Calibration Report OPR-411-FA-77 ✓
Horizontal Control Report OPR-411-FA-77

S. DATA PROCESSING RECORDS

All range-azimuth hydrographic data was collected using an Aircraft Standards Logger (FA-4, S/N 06, FA-5, S/N 03). Program RK-330, Reformat and Data Check, dated 5 May 76, was used to reformat all logger, range-azimuth with delayed azimuth tapes into master, range-azimuth tapes. The semi-smooth and smooth sheets were plotted using programs RK-212, Visual Station Table Load and Plot, dated 1 APR 74 and RK-216, Visual Stations and Sounding Plot, dated 5 FEB 76. Range-range data (FA-3 and FA-4) were collected by PDP-8e computers, program RK-111, dated 30 JAN 76 and plotted using program RK-211, dated 30 JAN 76. All plots were made on the ship's Hydroplot system. ✓

Submitted by:


Lt(jg) George E. Leigh NOAA

FIELD TIDE NOTE
OPR-411-FA-77
H-9670, H-9671, H-9672, H-9673, H-9674

Field tide reductions are based on Los Angeles Outer Harbor tides, and were interpolated by PDP 8/e computer utilizing AM500 program. All times of both predicted and recorded tides are on GMT.

Gage location and operation periods were as follows:

<u>Site</u>	<u>Location</u>	<u>Period</u>
Turning Basin 941-0683	33°45'14" N 118°16'08" W	18 January - 18 April 1977
Channel Two 941-0684	33°46'27.1" N 118°12'58.0" W	20 January - 21 April 1977
Consolidated Slip 941-0685	33°46'36.8" N 118°14'33.1" W	14 February - 8 March 1977
Belmont Pier 941-0679	33°45'20" N 118°08'52.5" W	9 March - 21 April 1977

Turning Basin

Gage SN 7304A1380 M9, an ADR gage, was installed 18 January and operated without breaks until removal on 18 April 1977. The gage reads 30.2 ft greater than the staff.

Channel Two

Gage SN 7601A1469 M20, an ADR, was installed 20 January 1977 and operated without breaks until removal on 21 April. The gage reads 14.9 feet greater than the staff. On or about 21 January some missing punch lines were noticed, these were few and far between and were found to be caused by an unadjusted punch bar and was remedied within the next few days.

Consolidated Slip

Gage SN 73A225, a Bristol Bubbler, was installed 19 February and began operating. On 18 Feb. the gage was found two hours slow and an unusually undulated trace was being recorded. On 19 Feb. the gage was replaced, SN73A230, and the new gage operated well until removal on 8 March. Both gages read the same as the staff.

This gage site's marigram showed sieche and surge of up to 1 ft. in 20 min.

Belmont Pier

Gage SN 7404A0407 M6, an ADR, was installed and operating on 9 March. By 14 March the gage was found to be days slow with unresolveable time errors.

On 15 March gage SN 7601A1469 M11 began operating as a replacement. This gage worked well until 31 March when the float wire was found tangled. The gage was rewired and a new staff/gage relation begins. On 1, 2 and 3 April sporadic punching occurred but there was no paper advance loss, there no time loss. On 11 April the paper was found jammed and a new roll started. The gage than ran well until removal on 21 April. The staff to gage relation for before 31 March is the gage reading 9.2 ft. greater than the staff, and for 1 April on is the gage reading 28.2 ft. greater than the staff.

All gage times were Greenwich Mean Time.

Levels

Turning Basin, Channel Two and Belmont Pier were all leveled to 5 bench marks. Consolidated Slip was leveled to three recoverable points. All levels showed the staffs to have had only negligible shifts if any.

Zoning

No zoning was attempted in the field. It is recommended that zoning be done by the Tides Branch after review of existing and observed data.

Velocity Table
Sound Velocity Corrector Abstract

The following sound velocity correctors are to be applied to all soundings in feet on the surveys FA-5-1-77 (H-9670), FA-5-2-77 (H-9671), FA-5-3-77 (H-9672), FA-5-4-77 (H-9673), FA-5-5-77 (h-9674).

Depth Feet	Corrector (Feet)
0.0 - 3.5	+ 0.0
3.6 - 10.7	0.2
10.8 - 18.0	0.4
18.1 - 25.1	0.6
25.2 - 32.5	0.8
32.6 - 40.1	1.0
40.2 - 48.0	1.2
48.1 - 56.1	1.4
56.2 - 64.5	1.6
64.6 - 73.2	1.8
73.2 - 82.0	2.0

UPR-401 ELECTRONIC CONTROL SIGNAL TAPE

SAN PEDRO BREAKWATER LIGHTHOUSE 1913 (1975)
 001 6 33 42 30656 118 15 02452 139 0010 000000

SAN PEDRO PORTS OF CALL SKYTOWER 1974
 002 0 33 43 54882 118 16 33909 139 0030 000000

EHLE RM 5
 003 1 33 44 34271 118 14 30580 139 0002 000000

EHLE RM5 M/R
 004 2 33 44 34244 118 14 30467 250 0002 000000

NAVY DOLPHIN - CALIBRATION
 005 0 33 44 07024 118 13 40892 139 0000 000000

LOS ANGELES CHANNEL LIGHT 5
 006 0 33 43 01773 118 16 07744 139 0000 000000

WIL L-10 (LAC)
 007 7 33 43 23562 118 12 19673 250 0000 000000

MIDWEST 1948 (WIL I-11, LAC)
 008 7 33 42 52804 118 13 54334 139 0000 000000

MIDEAST 1948 (WIL K-10, LAC)
 009 7 33 43 14669 118 12 47138 139 0000 000000

WIL C-12 (LAC)
 010 7 33 42 29039 118 16 34919 139 0000 000000

BEND
 011 7 33 42 13478 118 16 00031 139 0000 000000

MOBIL
 012 3 33 43 55596 118 16 16444 243 0000 000000

FRITZ
 013 2 33 44 18779 118 12 11604 139 0000 000000

LB D-10 (LAC)
 014 0 33 43 23495 118 09 54376 243 0000 000000

LB F-10 (LAC)
 015 0 33 43 23480 118 09 09086 139 0000 000000

WIL E-10A (LAC)
 016 1 33 43 21221 118 15 50092 139 0002 000000

WIL E-10A M/R
 017 0 33 43 21234 118 15 50054 250 0002 000000

EHLE 1949 (WIL G-7, LAC)
 018 1 33 44 35845 118 14 30961 139 0002 000000

CARTER
 019 4 33 44 40003 118 12 59796 139 0002 000000

CARTER M/R
 020 3 33 44 39940 118 12 59773 250 0002 000000

CARTER T-2
 021 5 33 44 39956 118 12 59845 139 0002 000000

MOLE
 022 1 33 44 25543 118 13 49556 139 0002 000000

BENDI M/R
 023 8 33 42 13475 118 15 59940 250 0001 000000

P-3 M/R
 024 5 33 45 03564 118 12 51477 250 0003 000000

P-3 T/2
 025 8 33 45 03531 118 12 51535 243 0003 000000

QUEEN
 026 1 33 44 18695 118 11 06864 139 0003 000000

MARY
 027 4 33 45 09855 118 11 12287 139 0003 000000

LB F-5A (LAC)
 028 2 33 45 42688 118 09 25485 139 0005 000000

BASIN 6
 029 6 33 44 33243 118 12 21266 139 0004 000000

BASIN 6 M/R
 030 4 33 44 33315 118 12 21330 250 0004 000000

BMS-5 (LBC)
 031 5 33 44 37997 118 07 00382 139 0003 000000

YACHT
 032 8 33 43 04148 118 16 44564 243 0003 000000

QUEEN D/N
 033 4 33 44 18669 118 11 06920 250 0003 000000

QUEEN M/R
 034 2 33 44 18695 118 11 06824 250 0003 000000

FRITZ RM2 M/R
 035 3 33 44 18770 118 12 11527 250 0003 000000

LONG BEACH LIGHT 1953 (1977)
 036 7 33 43 23531 118 11 09384 139 0023 000000

TAXI
 037 5 33 44 18560 118 16 38713 139 0004 000000

TAXI M/R
 038 8 33 44 18535 118 16 38678 250 0004 000000

WIL K-4 (LAC)
 039 1 33 46 20541 118 12 52294 139 0034 000000

WIL K-4 M/R
 040 3 33 46 20525 118 12 52249 250 0034 000000

MOLE M/R
 041 2 33 44 25554 118 13 49485 250 0002 000000

INNER T-2
 042 1 33 46 15031 118 13 24229 139 0002 000000

INNER M/R
 043 2 33 46 15002 118 13 24218 250 0002 000000

60-B T-2
 044 2 33 45 01684 118 14 44666 243 0002 000000

60-B M/R
 045 4 33 45 01784 118 14 44661 250 0002 000000

RANGER M/R
 046 3 33 45 46619 118 12 16690 250 0002 000000

RANGER
 047 0 33 45 46665 118 12 16725 250 0002 000000

PIER 9
 048 3 33 44 57818 118 14 18067 139 0002 000000

60-B
 049 4 33 45 01690 118 14 44621 250 0002 000000

LB F-10 M/R
 050 6 33 43 23445 118 09 09180 250 0002 000000

WIL K-4 AUX 4 ECC 2
 051 2 33 46 03211 118 12 12813 250 0002 000000

LONG BEACH BREAKERS HOTEL TOWER 1932
 052 2 33 45 59324 118 11 22544 139 0000 000000

LONG BEACH VILLA RIVERA HOTEL TOWER 1932 (1977)
 053 2 33 45 57177 118 10 54257 139 0000 000000

MARY M/R
 054 5 33 45 09796 118 11 12234 250 0002 000000

BMS-5 M/R
 055 2 33 44 38018 118 07 00411 250 0002 000000

LONG BEACH BREAKWATER EAST END LIGHT 1953
 057 5 33 43 23370 118 08 10060 139 0000 000000

LBHD P-3 (LAC)
 058 4 33 45 03455 118 12 51434 139 0002 000000

PIER 9 M/R
 059 0 33 44 57852 118 14 18064 250 0002 000000

PIER 15
 060 6 33 44 43395 118 13 32510 243 0002 000000

PIER 15 M/R
061 7 33 44 43387 118 13 32464 250 0002 000000

CALIBRATION RANGES
OPR-411

FA-5-1-77

TAXI M/R	MOBIL	909.4 meters
MOBIL	TAXI	910.6
YACHT	BREAKWATER PIER CALIB PT	1073.0
BEND M/R	LOS ANGELES CHANNEL LIGHT 5	1501.5
WIL E10A M/R	LOS ANGELES CHANNEL LIGHT 5	753.0
EHLE RM5 M/R	NAVY DOLPHIN	1527.0
MOLE M/R	NAVY DOLPHIN	612.3

FA-5-2-77

60-B M/R	SEASCOUT CALIB PT	797.4
P-3 M/R	PIER 9 CALIB PT	2235.1
PIER 9 M/R	P-3 T/2	2233.9
P-3 M/R	EAST DOLPHIN CALIB PT	2024.0
PIER 15 M/R	EAST DOLPHIN CALIB PT	843.8
PIER 9 M/R	EAST DOLPHIN CALIB PT	634.5

FA-5-3-77

CARTER M/R	NAVY DOLPHIN	1465.9
BASIN 6 M/R	PIER J CALIB PT	1325.2
RANGER M/R	BRIDGE CALIB PT	698.5
MARY M/R	BRIDGE CALIB PT	1313.3
FRITZ RM2 M/R	CONTAINER PIER CALIB PT	618.1
QUEEN M/R	CONTAINER PIER CALIB PT	1047.9
QUEEN D/R	CONTAINER PIER CALIB PT	1045.4
INNER M/R	GREEN LIGHT CALIB PT	576.3
WIL K-4 M/R	GREEN LIGHT CALIB PT	963.3
WIL L-10 (LAC)	CONTAINER PIER CALIB PT	1874.1

FA-5-4-77

USED CALIBRATION POINTS ON SHEETS 3 AND 5

FA-5-5-77


F-10 M/R	BELMONT PIER CALIB PT	3590.6
BMS 5 M/R	BELMONT PIER CALIB PT	3204.2
F-5A M/R	BELMONT PIER CALIB PT	1070.2
LB D-10 (LAC)	BELMONT PIER CALIB PT	3886.6
MARY M/R	BELMONT PIER CALIB PT	3553.2

APPROVAL SHEET

FIELD NUMBER FA-5-3-77

REGISTER NUMBER H-9672

This data package is complete and is transmitted for verification.



Bruce I. Williams, CDR., NOAA
Commanding Officer
NOAA Ship FAIRWEATHER

Replaces C&GS Form 567.

TO BE CHARTED
 TO BE REVISED
 TO BE DELETED

REPORTING UNIT
(Field Party, Ship or Office)
Coastal Mapping Div,
A.M.C., Norfolk, Va.

STATE
California

LOCALITY
Dana Point to
Point Vicente

DATE
Oct. 1975

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

~~CLASSIFIED~~ 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)

OPR PROJECT NO. 411 ✓

JOB NUMBER Ph-7107 ✓

SURVEY NUMBER TP-00393 ✓

DATUM N.A. 1927 ✓

Determine their value as landmarks.

CHARTING NAME
TOWER ✓

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

POSITION
LATITUDE
33 45. 25
779 ✓

LONGITUDE
118 13. 10
246 ✓

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

OFFICE 72L(C) 2893
Mar. 24, 1972 ✓

FIELD Not of landmark value ✓

CHARTS AFFECTED
18322
18323

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NAVAL CHARTS 5-3 LANDMARKS FOR CHARTS

Replaces CXGS Form 567.

REPORTING UNIT: Coastal Mapping Div., A.M.C. Norfolk Va.
 STATE: California
 LOCALITY: Dana Point to Point, Vicinity
 DATE: July 1975

OPR PROJECT NO.: 411
 JOB NUMBER: Ph-7107
 SURVEY NUMBER: TP-00393
 DATUM: N.A. 1927

DESCRIPTION: Formerly (Naval Base Tank, 1942) Triangulation Station
 RECORD REASON FOR DELETION: Record reason for deletion of landmark or aid to navigation. Show triangulation station name, where applicable, in parentheses.

CHARTING NAME: TANK

TO BE CHARTED:
 TO BE REVISED:
 TO BE DELETED:

THE FOLLOWING OBJECTS HAVE BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.
 HAVE HAD 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		
		° /	//	° /	//			OFFICE	FIELD
TANK	Formerly (Naval Base Tank, 1942) Triangulation Station	33 45	26.23 808	118 14	04.82 124	72L(C) 2892, Mar. 24, 1972	F-3-6-L April. 1975 18302 18323		
STACK	S.W. Stack of four	33 45	48.35 14907	118 13	59.58 787	72L(C) 2893, Mar. 24, 1972	" " 18337		
TANK	Formerly (Long Beach, Proctor and Gamble Co., Water Tank, 1933) Tri. Stat.	33 46	25.89 798	118 12	48.53 1249	72L(C) 2894, Mar. 24, 1972	" " "		
STACK	S.E. Stack of four	33 45	48.71 1501	118 13	29.43 757	72L(C) 2893, Mar. 24, 1972	" " "		
TANK	Formerly (Long Beach, Red Band, Steel Tank, 1920) Triangulation Station	33 46	05.16 159	118 12	47.60 1225	72L(C) 2894, Mar. 24, 1972	Field verifier suspects tank, has been moved " " "		

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)

Replaces C&GS Form 567.

NONFLOATING AIDS ~~CHARTS~~ FOR CHARTS

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

REPORTING UNIT (Field Party, Ship or Office): Coastal Mapping Div., A.M.C. Norfolk, VA
 STATE: California
 LOCALITY: Dana Point to Point Vicente
 DATE: July 1975
 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.
 OPR PROJECT NO.: 411
 JOB NUMBER: Ph-7107
 SURVEY NUMBER: TP-00394
 DATUM: N.A.1927

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 (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		
		D.M. Meters	D.P. Meters	OFFICE	FIELD	
LIGHT ✓	Long Beach Pier A Light ✓	33 45	118 12	01.59 495	72L(C) 2895, Mar. 24, 1972	18332 18323
LIGHT ✓	Naval Landing Entrance Light	33 45	118 11	54.60 1405	" "	" "
MARKER (Lighted)		33 45	118 10	33.71- 1039	F-4-8-L April 1975	" "
MARKER (Lighted)	Marker with horn ✓	33 45	118 10	31.05 957	" "	" "
MARKER (Lighted)		33 45	118 10	37.26 1148	" "	" "
MARKER (Lighted)		33 45	118 10	32.96 1016	" "	" "
LIGHT ✓	Quick flashing red light- 210 feet high on top of building. ✓	33 45	118 12	01.69 52	F-3-6-L ✓ April 1975	" " 18337
	** Note: These aids are not listed in the 1975 or 1976 Light Lists.					

** ** * * *

Replaces C&GS Form 567.

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

REPORTING UNIT (If field party, ship or office)
Coastal Mapping Div.
A.M.C., Norfolk, Va.

STATE
California ✓

LOCALITY
Dana Point to Point Vicente

DATE
July 1975

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. 411

JOB NUMBER Ph-7107

SURVEY NUMBER TP-00394

DATUM N.A. 1927

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

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION		LONGITUDE	OFFICE	FIELD	CHARTS AFFECTED
		LATITUDE D.M. Meters	LONGITUDE D.P. Meters				
LIGHT ✓	Navy Landing West Light ✓	33 45.7	118 12.0	//	72L(C) 2895 Mar. 24, 1972	Destroyed F-V-Vis. April 1975	18302 18323

ARC-ETM-1

Replaces C&GS Form 567.

NONFLOATING AIDS OF NAVIGATION 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 CRP
 - COAST PILOT BRANCH
- (See reverse for responsible personnel)

REPORTING UNIT
(Field Party, Ship or Office)
Coastal Mapping Div.,
A.M.C. Norfolk, Va.

LOCALITY
Dana Point to
Point Vicente

STATE
California

DATE
July 1975

OPR PROJECT NO. 4-11

JOB NUMBER Ph-7107

SURVEY NUMBER TF-00394

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	° /			
LIGHT	Long Beach Pier A Light	33 45	15.09 465	118 12	01.59 41	72L(O) 2895 Mar. 24, 1972	F-V-Vis. April 1975	18302 18323
LIGHT	Naval Landing Entrance Light	33 45	40.73 1255	118 11	54.60 1405	" "	" "	" "
MARKER (Lighted)	Marker with horn	33 45	33.71 1039	118 10	54.99 1415	" "	F-4-8-L April 1975	" "
MARKER (Lighted)		33 45	31.05 957	118 10	50.62 1303	" "	" "	" "
MARKER (Lighted)		33 45	37.26 1148	118 10	50.57 1301	" "	" "	" "
MARKER (Lighted)		33 45	32.96 1016	118 10	43.90 1130	" "	" "	" "
LIGHT	Quick flashing red light- 210 feet high on top of building.	33 45	01.69 52	118 12	27.62 711	" "	F-3-6-L April 1975	" " 18337
	** Note: These aids are not listed in the 1975 or 1976 Light Lists.							

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NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

TO BE CHARTED
 TO BE REVISED
 TO BE DELETED

REPORTING UNIT
(If field party, ship or office)
Coastal Mapping Div.
A.M.C. Norfolk, Va.

STATE
California

LOCALITY
Dana Point to
Point Vicente

DATE
July 1975

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

~~BOATBORNING AND SURFACE~~ 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)

The following objects HAVE been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO. 411

JOB NUMBER Ph-7107

SURVEY NUMBER TP-00394

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

POSITION

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

OFFICE

FIELD

CHARTS AFFECTED

TANK

STACK

TOWER
(Long Beach, Breakers Hotel Tower, 1932)

TOWER
(Long Beach, Villa Riviera Hotel Tower, 1932)

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

TOWER

D.M. Meters

19.05

587

20.77

610

59.324

1827.8

57.179

1761.7

D.P. Meters

17.37

447

12.94

333

22.544

580.1

54.237

1395.7

° /

118 12

118 12

118 11

118 10

72L(C) 2895

Mar. 24, 1972

" "

" "

" "

" "

" "

" "

" "

19302

18323

" "

" "

" "

" "

" "

" "

" "

1975-5-22

Replaces CGCS Form 567.

NONFLOATING AIDS

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
(Field Party, Ship or Office)
 Coastal Mapping Div. ✓
 A.M.C., Norfolk, Va. ✓

STATE
 California ✓

LOCALITY
 Dana Point to
 Point Vicente

DATE
 July, 1975

OPR PROJECT NO.
 411 ✓

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

JOB NUMBER
 Ph-7107

SURVEY NUMBER
 TP-00400 X

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.M. Meters	° / ' "			
LIGHT ✓	Long Beach Channel Light 6 ✓	46.964	33 44	118 12	52.552	72L(C) 2913 Mar. 24, 1972	F-2-6-L ✓ April, 1975	18302 18323
LIGHT ✓	Long Beach Channel Naval Base Mole Light 5 (Navy Mole Light, 1949) ✓	39.959	33 44	118 12	59.800	" ✓	F-3-6-L ✓ April, 1975	" ✓
LIGHT ✓	Los Angeles Main Channel Entrance Light 2 (East Breakwater Lighthouse, West End, 1942) ✓	1231.1	33 42	118 14	1539.2	72L(C) 3069 Mar. 27, 1972	F-V-Vis. April, 1975 ✓	" ✓
LIGHT ✓	Naval Base Mole Light 4 ✓	31.461	33 44	118 14	26.446	72L(C) 2911 Mar. 24, 1972 ✓	F-3-6-L ✓ April, 1975	" ✓
LIGHT ✓	Naval Base Mole Light 2 ✓	25.463	33 44	118 13	49.039	72L(C) 2912 Mar. 24, 1972 ✓	F-3-6-L ✓ April, 1975	" ✓
DAYMARK ✓	Black Square Daymark on White Square House.	784.5	33 44	118 14	1262.3		F-4-8-L ✓ April, 1975	" ✓
	NOTE: ** New field position ✓ * Not in 1976 Light List. Field editor found no light, but a daymark,	51.460			52.145			
		1585.5			1342.1			

Replaces C&GS Form 567.

MONITORING AIDS OR LANDMARKS FOR CHARTS

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

ORIGINATING ACTIVITY

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

(See reverse for responsible personnel)

REPORTING UNIT
(Field Party, Ship or Office)
Coastal Mapping Div.
A.M.C. Norfolk, Va.

STATE
California

LOCALITY
Dana Point to
Point Vicente

DATE
Jan. 1976

OPR PROJECT NO. 411 ✓

JOB NUMBER Ph-7107

SURVEY NUMBER TP-00400 ✓

DATUM

N.A. 1927 ✓

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

OFFICE

FIELD

CHARTS
AFFECTED

CHARTING NAME
RADAR TOWER ✓

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

LATITUDE
D.M. Meters

POSITION

LONGITUDE
D.P. Meters

33 44 / 47.42 / 118 12 / 51.94 / 1461 / 1337

18323 ✓

NON-FLOATING AIDS FOR CHARTS

Replaces C&GS Form 567.

<input checked="" type="checkbox"/> TO BE CHARTED <input type="checkbox"/> TO BE REVISED <input type="checkbox"/> TO BE DELETED		REPORTING UNIT (Field Party, Ship or Office) Coastal Mapping Div. A.M.C. Norfolk, Va.	LOCALITY Dana Point to Point Vicente	DATE July, 1975 May, 1976	ORIGINATING ACTIVITY <input type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> COMPILATION ACTIVITY <input type="checkbox"/> FINAL REVIEWER <input type="checkbox"/> QUALITY CONTROL & REVIEW GRP. <input type="checkbox"/> COAST PILOT BRANCH (See reverse for responsible personnel)
The following objects HAVE <input checked="" type="checkbox"/> BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.		STATE California			
GPR PROJECT NO. 411	JOB NUMBER Ph-7107	SURVEY NUMBER TP-00401	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)	POSITION		METHOD AND DATE OF LOCATION (See instructions on reverse side)		CHARTS AFFECTED
		LATITUDE D.M. Meters	LONGITUDE D.P. Meters	OFFICE	FIELD	
** LIGHT	(Long Beach Light, 1953)	33 43	118 11	72L(C) 3029 Mar. 24, 1972	F-3-6-L April, 1975	18302 18323 18337
** LIGHT	Long Beach Channel Entrance Light 2 (Long Beach Channel Entrance East Light 1953)	33 43	118 10		F-3-6-L April, 1975	" " "
** LIGHT	Pier J, Light J	33 44	118 11	07.159 164.3	" "	" " "
** LIGHT	Long Beach Pier J, Light 4	33 44	118 12	14.001 360.4	" "	" " "
** LIGHT	Long Beach Pier F, Light F	33 44	118 12	20.756 534.3	F-2-6-L April, 1975	" " "
** LIGHT	Southeast Basin Light 1	33 44	118 12	19.285 496.4	F-2-6-L March, 1976	18749 18751
** LIGHT	Southeast Basin Light 3	33 44	118 11	53.745 1383.4	" "	" "
** LIGHT	** New field positions, 1975 and 1976					

August 17, 1977

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): 941-0660 Los Angeles
941-0684 Channel Two

Period: February 10-March 23, 1977

HYDROGRAPHIC SHEET: H-9672

OPR: 411

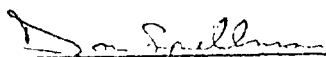
Locality: San Pedro Bay, California

Plane of reference (mean lower low water): 3.74 ft. - Los Angeles
2.84 ft. - Channel Two

Height of Mean High Water above Plane of Reference is
4.7 feet

Remarks: Recommended zoning:

- (1) South of 33°45.9' zone direct on Los Angeles
- (2) North of 33°45.9' zone direct on Channel Two.



Chief, Tides Branch

GEOGRAPHIC NAMES

H-9672

Name on Survey	Source of Name									
	A	B	C	D	E	F	G	H	K	
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	GRAND McNALLY ATLAS	U.S. LIGHT LIST		
BACK CHANNEL	X									1
BASIN SIX	X									2
CHANNEL THREE	X									3
CHANNEL TWO	X									4
EAST BASIN	X									5
FLOOD CONTROL CHANNEL	X									6
INNER HARBOR	X									7
LONG BEACH (ppi)	X									8
LONG BEACH CHANNEL	X									9
LONG BEACH OUTER HARBOR	X									10
LOS ANGELES	X									11
MIDDLE BREAKWATER	X									12
MIDDLE HARBOR	X									13
NAVAL BASE MOLE	X									14
<i>Deleted 8-24-57 Per Washington</i> PALM BEACH PARK	X									15
PIER A	X									16
PIER A EXTENSION	X									17
PIER B	X									18
PIER C	X									19
PIER D	X									20
PIER E	X							APPROVED		21
PIER F	X							<i>Chas. E. Harrington</i>		22
PIER G	X							CHIEF GEOGRAPHER - C318		23
PIER J	X							29 June 1978		24
PIER I	X									25

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

GEOGRAPHIC NAMES

H-9672

Name on Survey	1857										
	A	B	C	D	E	F	G	H	K		
	ON CHART	ON PREVIOUS SURVEY	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	RANDOMLY	ATLAS	U.S. LIGHT LIST		
PIER 2	X										1
QUEEN MARY	X										2
SAN PEDRO BAY	X										3
SOUTHEAST BASIN	X										4
TERMINAL ISLAND	X										5
QUEENSWAY BAY											6
											7
											8
											9
											10
											11
											12
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											23
											24
											25

APPROVED

Chas. E. Harrington
CHIEF GEOGRAPHER - C-3 x 8

29 JUNE 1978

APPROVAL SHEET

FOR

SURVEY H- 9672

A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position print-out has been made. A new final sounding print-out has been made.

B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic Manual. Exceptions are listed in the verifier's report.

Date: 3/20/78

Signed: _____



Title: Chief, Verification Branch

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		6 *	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS		3	
DESCRIP- TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	2 -with printouts		2			
VOLUMES	2					
BOXES			1 -smooth 1 -tides			

T-SHEET PRINTS (Lis)

1 -bundle of range/azimuth

SPECIAL REPORTS (Lis)

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			2947
POSITIONS CHECKED		2947	
POSITIONS REVISED		8994	
SOUNDINGS REVISED		259	
SOUNDINGS ERRONEOUSLY SPACED			
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED			
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	4		
VERIFICATION OF CONTROL		44	
VERIFICATION OF POSITIONS		72	
VERIFICATION OF SOUNDINGS		70	
COMPILATION OF SMOOTH SHEET		28	
APPLICATION OF TOPOGRAPHY		33	
APPLICATION OF PHOTOBATHYMETRY			
JUNCTIONS		3	
COMPARISON WITH PRIOR SURVEYS & CHARTS		16	
VERIFIER'S REPORT		62	
OTHER		24	
TOTALS	4	352	

Pre-Verification by
James S. Green

Beginning Date
7/22/77

Ending Date
7/22/77

Verification by
Dennis L. Duffy

Beginning Date
8/23/77

Ending Date
7/12/78

Verification Check by
A.E. Eichelberger & J.S. Green

Time (Hours)
29

Date
2/6/78

Marine Center Inspection by
HIT

Time (Hours)
15

Date
4/6/78

Quality Control Inspection by
R.W. Wellman

Time (Hours)
44

Date
6-27-78

Requirements Evaluation by
D.J. Hill

Time (Hours)
27

Date
9/12/78

Cartographer's Report

REGISTRY NO. _____

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

REGISTRY NO. H-9672

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

PACIFIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO: H-9672

FIELD NO: FA-5-3-77

California, San Pedro Bay, Long Beach

Harbor

SURVEYED: February 10, 1977 to April 19, 1977

SCALE: 1:5,000

PROJECT NO: OPR-411

SOUNDINGS: Ross Fineline Fathometer,
Modified Wire Drag, Divers and
Hand Lead

CONTROL: Mini-Ranger
Del Norte
Visual

Chief of Party.....CAPT R.E. Alderman, CDR B.I. Williams
Surveyed by.....ENS G.E. Leigh
Automated Plot by.....Xynetics Plotter (PMC)
Verified by.....Dennis L. Duffy
January 12, 1978

I. INTRODUCTION

H-9672 is a basic hydrographic survey conducted from February 10, 1977 to April 19, 1977 by the FAIRWEATHER. The area surveyed is Long Beach Harbor, San Pedro Bay, California.

Unusual problems encountered in the verification of H-9672 are documented in applicable sections of this report.

The signal list from the field was revised to include only aids to navigation, landmarks, signals used for calibration, and signals used to control hydrography on H-9672.

Projection parameters used to prepare the boatsheets have been revised to center the hydrography on the smooth sheet. Parameters used by PMC are appended in the smooth printout. All correctors used to plot and reduce soundings on H-9672 can be located in the smooth printout.

II. CONTROL AND SHORELINE

Horizontal control is adequately described in Sections F and G of the Descriptive Report.

Los Angeles County triangulation stations were given 254 carto codes because they are not described in NOS triangulation records.

Offsets from the triangulation station were used for the Mini-Ranger and Del-Norte transponders and the T-2 theodolite at several stations. Due to a lack of space to plot all names and symbols on the smooth sheet, only the triangulation station name and symbol were plotted. The signal numbers and a small "X" were plotted for the offsets.

Electronic control transponders were not consistently placed at the same offset or triangulation station at all times throughout the survey. For example, on a given day the transponder may have been located on the triangulation station and on a subsequent day on an offset. To eliminate confusion on the Hydrographic Control Overlay, only one set of arcs radiating from each cluster of signals was plotted. The arcs were labeled with the numbers of all signals within the cluster on which a transponder was located.

The following Class I unreviewed manuscripts, with their respective dates of photography and field edit were used for this survey:

TP-00393	1972-75
TP-00394	1972-75
TP-00400	1972-75
TP-00401	1972-75,76

III. HYDROGRAPHY

- A. Crosslines are in generally good agreement within 1 foot in most areas.
- B. Standard depth curves could be adequately drawn except for in a small holiday area near $33^{\circ}45'37''N$, $118^{\circ}12'00''W$. Depth curves were dashed through this area.
- C. Basic hydrography is adequate to delineate bottom configurations and determine least depths. There were no major difficulties encountered in the verification of main scheme soundings.

There were 25 bottom samples taken on this survey.

IV. CONDITION OF SURVEY

With the following exceptions, the hydrographic records, overlays, smooth sheet and reports are adequate and conform to the requirements of the Provisional Hydrographic Manual.

- A. Mini-Ranger baseline rate correctors could not be used for all days of hydro. On several days, daily Mini-Ranger calibration checks exceeded the baseline corrector rejection limits as specified in the PMC OORDER, Change 1-77. In compliance with the OORDER, daily calibration correctors were used for these days of hydrography.

- B. Specific recommendations concerning disposal of several PSR items were not made in the Descriptive Report.
- C. Pre-survey Review Items 1⁰ and 14 were positioned using 3 point sextant fixes with a check angle. The objects sighted were charted landmarks that were not a part of the control net for this survey. Positions were obtained by using the topographic manuscripts and a three-arm protractor and then scaling the geographic position from the manuscripts. Due to the unconventional method of location, combined with the land subsidence and horizontal movement in the area, it is recommended that the items be charted as "Position Approximate" original (see Section VII, Comparison with Chart). *charting source documents be examined and the chart be revised as considered appropriate.*

D and E (See Q.C. Report - items 2 and 3)

V. JUNCTIONS

This survey junctions to the east with H-9673, 1:5,000 (1977). Soundings and depth curves are in good agreement and the junction note is inked accordingly.

Junction was accomplished to the west with H-9671, 1:5,000 (1977). Soundings and depth curves are in agreement and the junction note is inked.*

Junction was also accomplished to the west with H-9670, 1:5,000 (1977). Soundings and depth curves are in good agreement and the junction note is inked.* **Indicated junctional sheets are not presently available and will be considered during their respective Q.C. inspections.*

VI. COMPARISON WITH PRIOR SURVEYS (See Q.C. Report - item 4)

H-5429 (1934)	1:5,000
H-5486 (1933-34)	1:10,000
H-5487 (1933-34)	1:10,000

A. H-5429

Soundings on H-9672 are deeper by five feet or more in both Channel 2 and Channel 3 and by 20 to 25 feet in the turning basin.

Numerous shoreline changes expected in a highly populated area have occurred since 1934.

Due to the vintage of the prior survey and the large amount of dredging and construction activity in the area, it is recommended that H-9672 supersede H-5429.

B. H-5486

H-5486 was conducted prior to the construction of the breakwater. Agreement of ^{depths} is within two feet in non-dredged areas, but H-9672 is deeper by 20 to 25 30 feet in dredged areas.

It is recommended that H-9672 supersede H-5486 in common areas of hydrography.

C. H-5487

Agreement is good, within two feet, in areas that apparently have not been dredged. H-9672 is deeper by 20 feet in dredged areas, but 5 to 10 feet shoaler in the area south of Pier J.

It is recommended that H-9672 supersede H-5487 in common areas.

VII. COMPARISON WITH CHART 18751 (C&GS 5147) 22nd Edition, April 3, 1976
T:12,000

A. Hydrography

The source could not be determined for most charted soundings. However, the origins of several charted soundings were identified and designated on the accompanying chart as follows:

Red	H-5487 (1933-34)
Violet	H-5486 (1933-34)
Green	BP-80024 (LBHD 1803-6)
Brown	BP-80022 (LBHD 1803-4)

Soundings are generally in good agreement within 1-3 feet in most areas. In addition to PSR items, the most serious discrepancy is a 35-foot sounding @33°44'30"N, 118°12'58"W. H-9672 shows 56 feet in the area. (See G.C. Report item 5-a from bp 51485 (1954))

Several PSR items were investigated using a wire sweep. Copies of the wire sweep documentation are attached to this report. (Filed with field records)

PSR #7, "29" foot sounding @33°44.50'N, 118°12.34'W. See Section K, paragraph 2 of Descriptive Report. Verifier concurs.

PSR #8, "Subm dols" @33°44.67'N, 118°12.30'W. See Section K, paragraph 3 of Descriptive Report. Verifier concurs.

PSR #9, Pier ruins @33°44.90'N, 118°12.87'W. See Section K, paragraph 4 of Descriptive Report. Verifier concurs.

PSR #10, Floating dock @33°44.83'N, 118°12.89'W. The Pilot Station float was located @33°44'50.19"N, 118°12'53.40"W with a dolphin at its seaward end. Recommend the float and dolphin be charted per H-9672 and designated "Position Approximate". (See section IV-C above) as considered appropriate.

PSR #13, "Subm pipe (3 ft rep.) PA" @33°44.43'N, 118°13.36'W. See Section K, paragraph 5 of Descriptive Report. Verifier concurs.

PSR #14, "Subm obst rep" @33°46.28'N, 118°13.31'W. Wire drag revealed no submerged obstruction along face of pier. Recommend deletion from chart. Damage to the catwalk and a broken piling at the westernmost end of the pier was reported by the ship. Recommend the catwalk continue to be charted as is and the piling added to the chart at 33°46'13.00"N 118°13'29.38"W and designated "~~Position Approximate~~"; subject to a consideration of position inaccuracies and recommendations included in section IV-C above.

PSR #16, "Moored barge" @33°43.10'N, 118°13.55'W. See Section K, paragraph 7 of Descriptive Report. Recommend the barge be charted per H-9672.

Dashed circle PSR Item "29"-foot-sounding @33°44'22"N, 118°13'39"W. See Section K, paragraph 9 of Descriptive Report. Recommend hydrography on H-9672 supersede 29-foot sounding. (See Q.C. Report -item 5-b)

Dashed circle PSR item @ 33°44'13"N, 118°11'30"W. See Section K, paragraph 10 of Descriptive Report. Recommend hydrography on H-9672 supersede charted soundings and depth curves.

Dashed circle PSR item "59"-foot-sounding @33°43'36"N, 118°13'02"W. Twenty meter spacing reveals 67 feet in the area. Recommend H-9672 supersede the charted 59-foot sounding. (See Q.C. Report -item 5-b)

Dashed circle PSR Item "36"-foot sounding @33°44'22"N, 118°12'57"W. See Section K, paragraph 12 of Descriptive Report. Recommend H-9672 supersede the 36-foot sounding. (See Q.C. Report -item 5-b)

Dashed circle PSR Item #38"-foot sounding @33°44'30"N, 118°13'08"W. Twenty meter spacing revealed 46 feet in the area. Recommend H-9672 supersede the 38-foot sounding. (See Q.C. Report -item 5-b)

The following charted features were not located on H-9672 and do not appear on the topographic manuscripts:

1 Pile	@33°45'47"N, 118°12'06"W
2 Piers	@33°46'19"N, 118°12'41"W
2 Piles	@33°46'22"N, 118°12'31"W
1 Pile	@33°46'20"N, 118°12'36"W
1 Pile	@33°46'15"N, 118°12'47"W
1 Pier	@33°46'26"N, 118°13'02"W
2 Piles	@33°46'21"N, 118°13'03"W
1 Pier	@33°46'21"N, 118°13'03"W
2 Piles	@33°46'24"N, 118°12'56"W
2 Piles	@33°46'28"N, 118°12'42"W
1 Pier & Ruins	@33°46'28"N, 118°12'42"W

Ruins	@33°46'35"N, 118°12'33"W
1 Pile	@33°46'36"N, 118°12'34"W
1 Pile	@33°46'34"N, 118°12'39"W
1 Pile	@33°46'33"N, 118°12'42"W
1 Pier	@33°44'39"N, 118°12'09"W
5 Dolphins	@33°44'39"N, 118°12'08"W
1 Pier	@33°44'20"N, 118°12'13"W
Ruins	@33°45'20"N, 118°13'05"W
Ruins	@33°45'42"N, 118°13'10"W
1 Pier	@33°45'47"N, 118°13'13"W
Ovhd Cable	@33°45'42"N, 118°11'30"W
1 Pier	@33°45'45"N, 118°11'53"W
3 Piles	@33°45'48"N, 118°11'54"W
2 Piles	@33°44'06"N, 118°13'52"W

Recommend these items be retained on the chart pending further investigation by the ship. See Section IX for additional field work recommendations.

A log boom was located at 33°45'42"N, 118°11'30"W and is depicted on the smooth sheet. Recommend it be charted.

Recommend the platform charted @33°43.7'N, 118°11.9'W be repositioned per H-9672.

The following uncharted features are depicted on the topographic manuscripts:

Bulkhead	@33°45'59"N, 118°13'10"N
Piers	@33°46'30"N, 118°12'59"N
Dolphin	@33°46'27"N, 118°13'00"N
Pier	@33°46'24"N, 118°12'55"N

Recommend they be applied to Chart 18751.

Hydrography on H-9672 is adequate to supersede the charted hydrography except, ^{as discussed in item 6 of the Q.C. Report as mentioned above and} in the holiday area at 33°45'37"N, 118°12'00"W. It is recommended that charted hydrography be retained in the holiday pending additional field work.

B. Controlling Depths

H-9672 located several depths of less than the charted 60-foot controlling depths of 1970 and 1971 for the Long Beach Channel. Depths of 52 feet were located on the southwestern edge of the channel near Lat. 33°43'35". Directly north of the Navy Base Mole, a 51-foot sounding and two 53-foot soundings were obtained near the southwest edge of the channel. A 59-foot depth was found in the center of the channel at 33°45'06"N, 118°12'59"W. Depths ranging from 41 to 51 feet were located directly east of Pier E and depths of 52 to 57 feet were found west of Pier D.

In the northern area of the controlled portion of the channel, a 46-foot depth was located at 33°45'51"N, 118°13'11"W. This is the only depth on H-9672 shoaler than the charted 47-foot controlling depth.

Recommend the chart be revised to depict ^{present survey} soundings shoaler than the charted controlling depth.

C. Aids to Navigation

Charted aids in the survey area adequately mark the features for which they are intended. However, numerous discrepancies exist between aids on H-9672 and charted aids and landmarks.

Positional data was not available for the following charted aids and landmarks.

Tower	@33°44'36"N, 118°11'22"W
Daybeacon	@33°45'54"N, 118°12'20"W
Daybeacon	@33°45'54"N, 118°12'13"W
Light	@33°45'41"N, 118°11'57"W
Horn	@33°45'26"N, 118°13'05"W
Mooring Buoy	@33°43'33"N, 118°12'00"W

Recommend the present charted locations be retained.

Recommend deletion of the tower charted @33°45'02"N, 118°12'28"W per attached copies of NOAA Form 76-40 revised by Coastal Mapping Division.

Uncharted buoys were located by H-9672 as follows:

Mooring buoy	@33°45'22.80"N, 118°11'44.19"W
Mooring buoy	@33°45'22.90"N, 118°11'46.32"W
Mooring buoy	@33°45'23.91"N, 118°11'46.10"W
Spherical buoy	@33°45'45.89"N, 118°12'06.01"W
Spherical buoy	@33°45'45.71"N, 118°12'06.98"W
Spherical buoy	@33°45'43.40"N, 118°12'05.71"W
Spherical buoy	@33°45'41.91"N, 118°12'04.72"W
Spherical buoy	@33°45'40.41"N, 118°12'02.60"W
Spherical buoy	@33°45'39.50"N, 118°12'00.20"W
Spherical buoy	@33°45'41.22"N, 118°11'58.79"W

VIII. COMPLIANCE WITH PROJECT INSTRUCTIONS

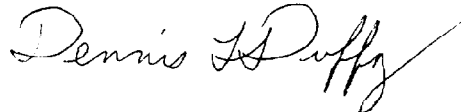
This survey adequately complies with Project Instructions, dated November 18, 1976 and Change Nos. 1, dated January 3, 1977; 2 and 3, dated January 6, 1977; 4 and 5, dated January 21, 1977; 6, dated January 31, 1977; and 7, dated February 15, 1977.

IX. ADDITIONAL FIELD WORK

This survey is considered a good basic survey.

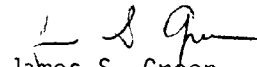
Additional field work has been recommended to complete the holiday area mentioned in Section III, paragraph b. Field work has also been recommended to resolve the discrepancies, between the chart and topographic manuscripts, listed in Section VII. The Project Instructions for OPR 411-FA-78 have been amended to accomplish the above during April 1978.

Respectfully submitted,



Dennis L. Duffy
Cartographic Technician
12 January 1978

Examined and approved,




James S. Green
Chief, Verification Branch



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Pacific Marine Center, 1801 Fairview Ave. E.
Seattle, WA 98102

10 April 1978

TO: Eugene A. Taylor
Director, PMC

FROM: 
Glen R. Schaefer
Chief, Processing Division

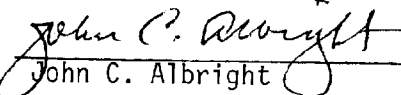
SUBJECT: PMC Hydrographic Inspection Team Report for Survey H-9672

This survey is a basic hydrographic survey of Long Beach Harbor, San Pedro Bay, California. This survey was conducted by NOAA Ship FAIRWEATHER in 1977 in accordance with Project Instructions OPR-411-FA-77, dated 18 November 1976, and Change Nos. 1 thru 7, dated 3 January 1977, 6 January 1977, 6 January 1977, 21 January 1977, 21 January 1977, 31 January 1977, and 15 February 1977, respectively.

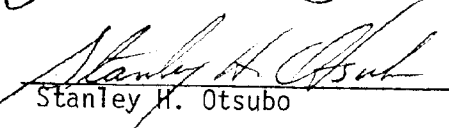
Many discrepancies have been noted between the 1975 field edit data and the 1977 hydrographic sounding data, done two years later in a rapidly changing area. Additionally, there are differences between the best data available for the smooth sounding sheet and the charted information. These discrepancies have been listed and are currently being resolved thru field examination by NOAA Ship FAIRWEATHER in accordance with Project Instructions OPR-L100-FA-78.

The inspection team finds H-9672 to be a good basic survey adequate to supersede common areas of prior surveys and charted hydrography. Administrative approval is recommended.


Glen R. Schaefer


John C. Albright

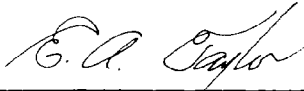

James W. Steensland


Stanley H. Otsubo



ADMINISTRATIVE APPROVAL
H-9672

The smooth sheet and reports of this survey have been examined and the survey is adequate for charting and to supersede common areas of prior surveys.



Eugene A. Taylor, RADM
Director
Pacific Marine Center

4-11-78

Date



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

352/KWW

June 27, 1978

TO: *A. J. Patrick*
A. J. Patrick
Chief, Marine Surveys Division

THRU: Chief, Quality Control Branch

FROM: K. W. Wellman *K. W. Wellman*
Quality Evaluator

SUBJECT: Quality Control Report for H-9672 (1977), California, San Pedro Bay, Long Beach Harbor

A quality control inspection of H-9672 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths and navigation hazards, junctions, shoreline transfer, decisions and actions by the verifier, and cartographic presentation of data.

In general, the present survey was found to conform to National Ocean Survey standards and requirements except as discussed in the Verifier's Report, the HIT Report, and as follows:

1. Control Station No. 62 was improperly symbolized as a triangulation station. This station is identified as Long Beach Channel Light 6, 1975. The National Geodetic Survey Information Center (Information Branch) has no record of such a triangulation station. Further, a former triangulation station in the immediate vicinity (Long Beach Lighthouse, 1949) was reported lost in 1975. Accordingly, the station symbol was revised to a hydrographic station (Cartographic Code 243). This station was not indicated on the Master Signal List.

2. Position numbers to be used by the various vessels engaged in a hydrographic survey are generally assigned in blocks of numbers to avoid confusing duplication of position numbers in the survey records. (See sections 1.4.5.2 and 4.4.6 of the Hydrographic Manual--Fourth Edition.) Adherence to this practice was disregarded during field work on the present survey. This resulted in extensive duplication of position numbers and thus hindered the ready referral to specific positions in the final printouts during subsequent processing. Such referral is further complicated by the careless assembly of the final printouts during verification; i.e., they were assembled so as to present some blank pages to the



user. Reference to specific information on the obverse side of the print-out pages necessitated a random separation of the pages along the perforated edges until the proper page was found.

Section IV of the Verifier's Report is supplemented by the following:

D. The hydrographer did not adhere to the common practice of assigning blocks of position numbers to the various vessels. This resulted in extensive and unnecessary duplication of position numbers in the survey records and hindered the ready and efficient referral to the printouts.

3. Section IV of the Verifier's Report is supplemented by the following:

E. Section L of the Descriptive Report is deficient in that it does not indicate that the largest scale chart of the area (chart 18751) was used for the comparison. (See section 5.3.4(L) of the Hydrographic Manual--Fourth Edition.)

4. Reference section VI of the Verifier's Report (Comparison with Prior Surveys):

The results of the comparisons would have been more appropriately discussed in one group since they are generally similar. Further, two of the separate discussions lack any reference to the extensive shoreline changes that have occurred. (See the memorandum dated March 21, 1977, from the Office of Marine Surveys and Maps entitled "Verifier's Report Format.")

Section VI of the Verifier's Report is supplemented by the following:

The former shoreline and cultural features have been significantly altered by extensive development of substantial piers in the area. Former depths of as much as 40 feet have been filled to effect the noted cultural changes.

5. Several Presurvey Review items were unnecessarily discussed in section VII-A of the Verifier's Report. In most cases the Presurvey Review items were adequately discussed in section K of the Descriptive Report and required no further consideration. It is customary to appropriately annotate the Descriptive Report thereby obviating the need for further discussion in the Verifier's Report. (See the memorandum dated March 21, 1977, from the Office of Marine Surveys and Maps entitled "Verifier's Report Format.")

Annotated cross-referenced items in section VII-A of the Verifier's Report are supplemented by the following:

a. The cross-referenced charted sounding originates with miscellaneous charting source Bp-51485 (1954). Its continued validity is referred to the compiler for evaluation and appropriate action.

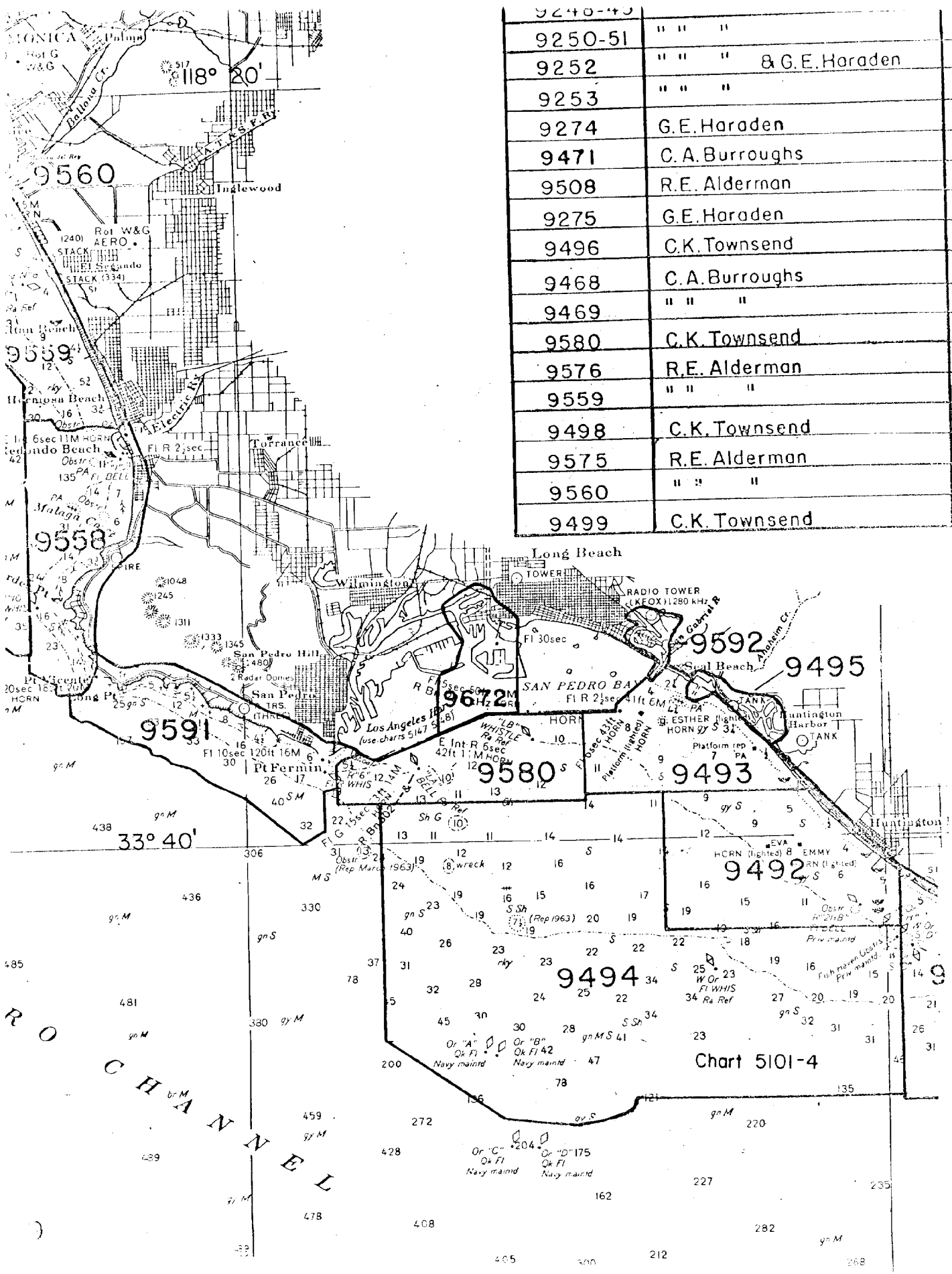
b. The charted items originate with miscellaneous sources and are not necessarily disproved by the present survey. The indicated items should be retained as presently charted.

6. Section VII-A of the Verifier's Report is supplemented by the following:

A few additional charted items at variance with the present survey are not verified or disproved by the present survey and are not addressed in the Verifier's Report. Such items originate with miscellaneous sources and are referred to the compiler for identification and appropriate action.

7. The original boat sheets were not included in the shipment of the material for H-9672 received from the Pacific Marine Center. (See section 8.3 of the Hydrographic Manual--Fourth Edition.)

cc:
C35
C351



9248-43	" " "
9250-51	" " "
9252	" " " & G.E. Haraden
9253	" " "
9274	G.E. Haraden
9471	C.A. Burroughs
9508	R.E. Alderman
9275	G.E. Haraden
9496	C.K. Townsend
9468	C.A. Burroughs
9469	" " "
9580	C.K. Townsend
9576	R.E. Alderman
9559	" " "
9498	C.K. Townsend
9575	R.E. Alderman
9560	" " "
9499	C.K. Townsend

ROCHANEL

Chart 5101-4

