

9558

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-10-9-75
Office No.	H-9558
LOCALITY	
State	CALIFORNIA
General Locality	SANTA MONICA BAY
Locality	PT. VICENTE TO REDONDO BEACH
..... <u>1975</u>	
CHIEF OF PARTY R. E. ALDERMAN	
LIBRARY & ARCHIVES	
DATE	12-30-76

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Area 5

Chts
 X5142 Applied *and*
 X5144 Applied
 X5101 applied
 5002 No cot r
 5020 applied

NOAA FORM 77-28 (11-72) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION HYDROGRAPHIC TITLE SHEET	REGISTER NO. H-9558
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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-10-9-75
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State California

General locality Santa Monica Bay

Locality Pt. Vicente to Redondo Beach including King Harbor

Scale 1:10,000, 1:5,000 Insert Date of survey 30 Sept. - 17 Oct. 1975

Instructions dated 11 August 1975 Project No. OPR-411-FA-75
SHIP FAIRWEATHER (Launches)

Vessel FA-6 (Hull #1243, EDP #2026), FA-4 (Hull #1233, EDP 2024)

Chief of party Cdr. Richard E. Alderman

Surveyed by Ens S. L. Poole; Lt. (jg) J. Gulley

Soundings taken by echo sounder, ~~and fath~~, ~~etc~~ Ross Fineline Fathometers S/N 1054 & 1047

Graphic record scaled by Ross 6000 Digitizer

Graphic record checked by FAIRWEATHER Personnel

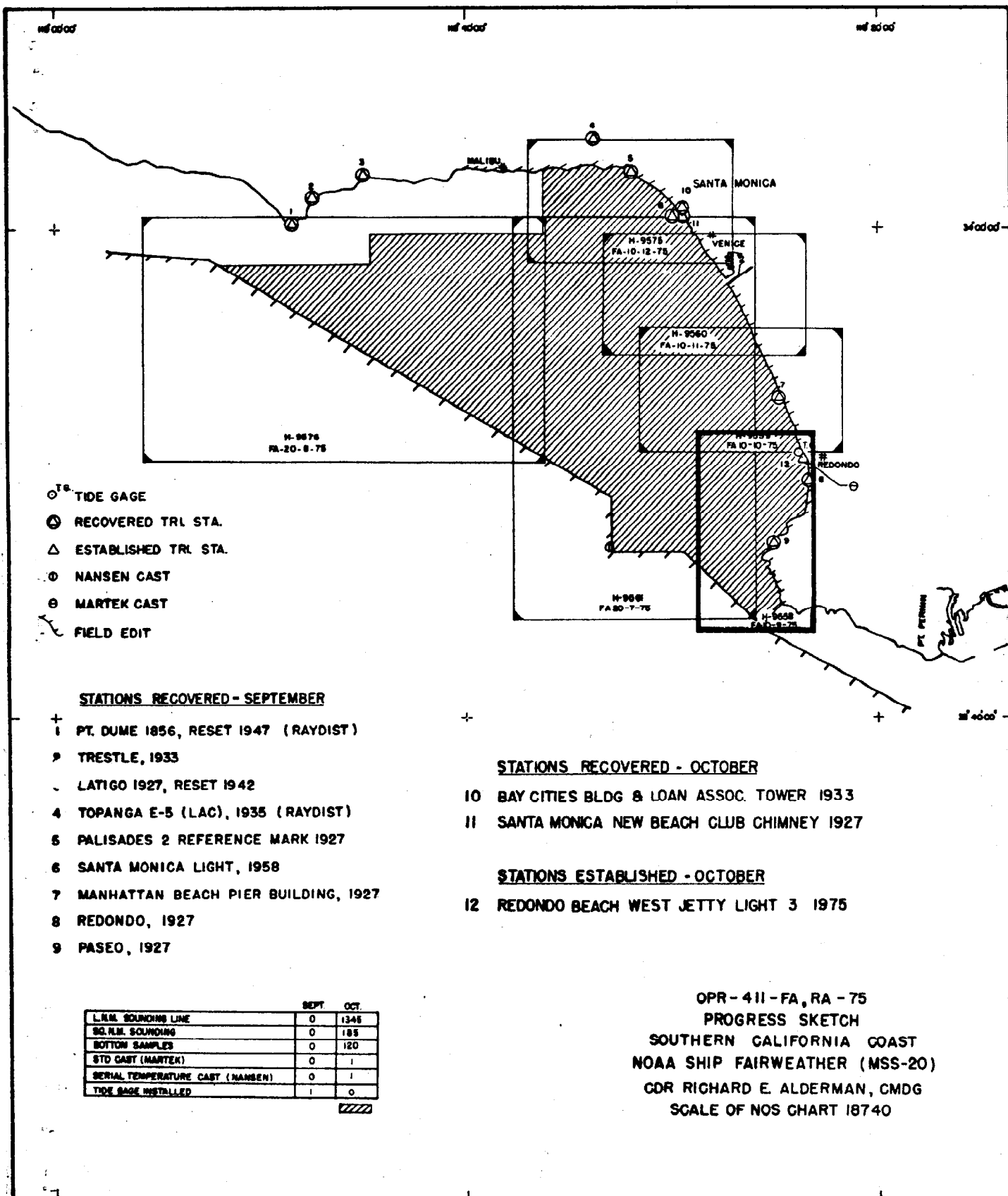
Positions verified by James L. Stringham Automated plot by PMC Xynetics Plotter

Sounding Verification by James L. Stringham

Soundings in fathoms ~~feet~~ at MLLW ^{at MLLW} (1:5,000 Scale Soundings in Feet)

REMARKS: All survey records were kept on GMT. The mean longitude of the main
survey is 118/25/00 W. The mean longitude of the King Harbor insert is
118/23/45 W. This ^{smooth} ~~beatsheet~~ is complete and adequate for charting.

Applied to stob 6/17/77
CRB



- TIDE GAGE
- ⊙ RECOVERED TRI STA.
- △ ESTABLISHED TRI STA.
- ⊙ NANSEN CAST
- ⊙ MARTEK CAST
- ~~~~~ FIELD EDIT

STATIONS RECOVERED - SEPTEMBER

- + 1 PT. DUME 1856, RESET 1947 (RAYDIST)
- ⦿ 2 TRESTLE, 1933
- 3 LATIGO 1927, RESET 1942
- 4 4 TOPANGA E-5 (LAC), 1935 (RAYDIST)
- 5 5 PALISADES 2 REFERENCE MARK 1927
- 6 6 SANTA MONICA LIGHT, 1958
- 7 7 MANHATTAN BEACH PIER BUILDING, 1927
- 8 8 REDONDO, 1927
- 9 9 PASEO, 1927

STATIONS RECOVERED - OCTOBER

- 10 10 BAY CITIES BLDG & LOAN ASSOC. TOWER 1933
- 11 11 SANTA MONICA NEW BEACH CLUB CHIMNEY 1927

STATIONS ESTABLISHED - OCTOBER

- 12 12 REDONDO BEACH WEST JETTY LIGHT 3 1975

	SEPT	OCT
L.R.M. SOUNDING LINE	0	1345
SO. R.M. SOUNDING	0	185
BOTTOM SAMPLES	0	120
STD CAST (MARTEK)	0	1
SERIAL TEMPERATURE CAST (NANSEN)	0	1
TIDE GAGE INSTALLED	1	0

~~~~~

OPR-411-FA, RA-75  
 PROGRESS SKETCH  
 SOUTHERN CALIFORNIA COAST  
 NOAA SHIP FAIRWEATHER (MSS-20)  
 CDR RICHARD E. ALDERMAN, CMDG  
 SCALE OF NOS CHART 18740

DESCRIPTIVE REPORT

NOAA SHIP FAIRWEATHER (MSS-20)

OPR-411-FA-75

SURVEY H-9558 (FA-10-9-75)

A. PROJECT

This survey was accomplished in accordance with project instructions OPR-411-FA-75, Southern California Coast, dated 11 August 1975 and with change dated 22 August 1975, and with the PMC OORDER. ✓

B. AREA SURVEYED

The area surveyed on sheet FA-10-9-75 is located in Santa Monica Bay, between Redondo Beach and Point Vicente, including inside King Harbor. The northern boundary is latitude 33/51/15 N, the western boundary is longitude 118/26/52 W, the eastern boundary is the shoreline south to Point Vicente. From Point Vicente, at latitude 33/44/20 N the boundary runs southwest to a point at latitude 33/43/30 N and longitude 118/25/40 W; thence northwest until it intersects the western boundary at latitude 33/44/45 N. Hydrography was accomplished from September 30 to October 17, 1975. ✓

C. SOUNDING VESSELS

Hydrography on this sheet was accomplished by launches FA-6 (Hull#1243, EDP#2026) and FA-4 (Hull#1233, EDP#2024). Launch FA-4 was used only for the visual hydrography inside King Harbor. ✓

D. SOUNDING EQUIPMENT

The launches used Ross Fineline Fathometers. TRA correctors of +0.4 fathoms and +2.1 - 2.9 feet, based on bar checks taken during the project, were used for launches FA-6 and FA-4 respectively. Sound velocity correctors were determined from one Nansen and one Martek TDC cast taken within the project area. The Martek TDC cast was taken within King Harbor and was used only to correct the soundings in feet taken within the harbor. For details see Report on Corrections to Echo Soundings, OPR-411-FA-75. The depths of soundings on this sheet range from approximately 0 fathoms to 199 fathoms. ✓

FA-6 experienced difficulty in obtaining a clear fathometer trace over the steep slopes and deeps of the Redondo Canyon, in the north central area of the survey. The problem was a failure of the fineline circuitry that was not resolved completely before the completion of the survey. It necessitated increasing the gain of the signal, to the point of obscuring the fix and sounding marks on the trace, in order to produce digital output. The sounding marks were later redrawn and the depths were verified by careful scanning of the fathogram. ✓

FA-4, which conducted the survey within King Harbor, experienced some difficulty in obtaining a clear fathogram trace on lines run near the King Harbor breakwater, due to side echos off the breakwater. Discrepancies were resolved by careful scanning of the fathogram and comparison with the digital output. ✓

*Sections of several lines were rejected by Quality Evaluator as being unrealistic.*

#### Sounding Equipment:

| <u>Vessel</u> | <u>Instrument</u> | <u>Model</u> | <u>S/N</u> |
|---------------|-------------------|--------------|------------|
| FA-6          | Ross Fineline     | 5000         | 1054 ✓     |
| FA-4          | Ross Fineline     | 5000         | 1047       |

#### E. BOAT SHEET

The boat sheet projection used was a modified transverse Mercator. The scale is 1:10,000 with a 1:5,000 insert for the area inside King Harbor. The skew is 90°. The origin for FA-10-9-75, excluding King Harbor, is latitude 33° 43' 30"N and longitude 118° 23' 15"W. The origin for the King Harbor insert is latitude 33° 50' 00"N and longitude 118° 23' 00"W. The channel entrance into King Harbor is presented on a second insert, scale 1:5,000, soundings in fathoms. The skew of the channel entrance insert is 125°, the origin is latitude 33° 50' 08"N and longitude 118° 23' 10"W. All data was plotted on the ship's hydroplot system, utilizing the ship's PDP-8/e computer (S/N M-40-00000-1006) and Complot plotter (Model DP-3, S/N 5848-17). Copies of the three parameter tape printouts are appended, included with field records. ✓

#### F. STATION CONTROL

Horizontal control for the electronically controlled portion of this survey consisted of existing triangulation stations, with the following three exceptions: (1) REDONDO BEACH WEST JETTY LIGHT 3 was established by third order traverse; (2) REDONDO BEACH CALIBRATION BUOY was established by short traverse from REDONDO BEACH WEST JETTY LIGHT 3; and (3) MARINA DEL REY BREAKWATER CALIBRATION BUOY was established by a short traverse from a third-order resection temporary point. Signals used for sextant fixes during the visually controlled survey of King Harbor were natural objects located by standard photogrammetric techniques. The 1927 North American datum was used for all computations, which are included in the Electronic Systems Calibration Report, OPR-411-FA-75. ✓

### G. POSITION CONTROL

The Hastings Raydist electronic positioning equipment, operating in the range-range mode, was used to control the hydrography on this sheet, excluding the 1:5,000 scale King Harbor survey, which was controlled by visual methods. ✓

The pattern I station was located over PT DUME 1856 on Pt. Dume and the pattern II station over TOPANGA CANYON E-5 (LAC) 1935, a Los Angeles County Surveyor first-order triangulation station, located in Will Rogers State Park in the Santa Monica foothills. FA-6 was equipped with a Raydist mobile transceiver, navigator, strip chart recorder and a 35 foot whip antenna. The strip chart was monitored and annotated at all times between calibrations. Electronic correctors were determined by averaging the calibrations normally taken twice daily. ✓

Calibration of the Raydist navigator was accomplished by fixed point method using one or both of the calibration bridles established. ✓

Electronic correctors, derived from the calibration data, were applied to the observed ranges before plotting on the field sheet. Slope Corrections were automatically applied by either the on-line or the off-line plot programs. ✓

Base station operation was excellent, with generally negligible drift between morning and evening calibration corrections and with very few lane jumps. ✓

Due to the large (1:5,000) scale of the survey of King Harbor, most of the hydrography within the harbor was controlled by visual three-point sextant fixes observed on a traverse station and on signals located photogrammetrically. No control problems were encountered. Hydrography in narrow channels and boat slips was controlled by dead reckoning with visual reference to distinctive piers and bulkheads. Positions were plotted on the field sheet and ~~with three point~~ three point fixes were scaled to permit automated processing of these positions. This method of control proved to be entirely adequate in restricted navigation areas. ✓

### H. SHORELINE

The shoreline details were obtained from class III manuscripts TP-00397, TP-00792 and TP-00791. All shoreline and topographic details were verified by field edit. Due to high surf conditions it was not possible to delineate the low water line. ✓

### I. CROSSLINES

The 168.3 n.m. of hydrography run on this sheet include 36.1 n.m. of crosslines and soundings overlap. The crosslines and overlap are 21.4% of the main scheme of hydrography. Comparisons at crossings are good, never exceeding 1 fathom. Crossline comparisons within King Harbor are good to within 1 foot. ✓

J: JUNCTIONS

The boatsheet junctions to the west with contemporary survey FA-20-7B-75. Agreement is good, to within 1 fathom in depths from 23 to 113 fathoms. <sup>H-9561, 1975</sup> ✓  
 The boatsheet junctions to the north with contemporary survey FA-10-10-75. <sup>H-5539, 1975</sup> Agreement is good, to within 1 fathom in depths from 2 to 35 fathoms.

There are no contemporary surveys to the south of the boatsheet. The boatsheet junctions to the south with the prior surveys H-5397 (1933) and H-5653 (1933-1934). <sup>H-9591 (1976) joins to the southeast.</sup> Agreement is good, and is discussed in Section K, Comparison with Prior Surveys. ✓

The junction between the main 1:10,000 scale survey area of FA-10-9-75 and the 1:5,000 scale insert of King Harbor is good to within 2 feet in depths from 18 to 59 feet. The maximum 2 foot variation is attributed to swell action. ✓

K. COMPARISON WITH PRIOR SURVEYS

The soundings on the boatsheet were compared with prior surveys H-5653 (1933-1934) scale 1:40,000 and prior survey H-5397 (1933) scale 1:10,000. the agreement with the 1:40,000 survey H-5653 is good, generally within 1 fathom in depths from 12 to 100 fathoms. In deeper water, ie. Redondo Canyon, the soundings on the boatsheet are slightly shallower, sometimes as much as 5 fathoms in 200 fathoms. The agreement with the 1:10,000 survey H-5397 is excellent, usually less than a fathom in depths from 1 to 100 fathoms. Again the boatsheet showed depths in the canyon are less now than in 1933 on the order of 1 fathom, with a maximum difference of 3 fathoms. The offshore beach area just south of Redondo Pier is apparently 4 fathoms deeper now, possibly the result of construction of King Harbor. It should be noted that velocity corrections were not applied to the boatsheet soundings and will tend to improve the above comparisons. ✓

- ✓ Item AK of Pre-Survey Review update of 30 October 1973 is a large, visible wreck charted at latitude 33° 46.4'N, longitude 118° 25.71'W. The wreck still exists and is a prominent landmark on Palos Verdes Point. Its location determined photogrammetrically, is the same as charted. It is recommended that the wreck continue to be charted at the same location. <sup>Origin CL 1122 of 1971</sup> See Verifiers Rep. para VII. <sup>Concur</sup> ✓
- ✓ Item BQ of Pre-Survey Review update of 20 August 1974 is a mooring buoy "CG4" charted at latitude 33° 46.62'N, longitude 118° 25.87'W. It was located electronically at its charted position. It is recommended that the buoy continue to be charted as located. <sup>Concur</sup> See Verifiers Rep. para VII ✓
- ✓ Item 6 of the Pre-Survey Review update of 24 September 1970 is a visible wreck formerly charted at latitude 33° 46.73'N, longitude 118° 25.50'W. The wreck was searched for and located electronically at its formerly charted location. It is no longer visible, but awash in an area of 1 to 2 fathom depths. <sup>Origin T-4826(33)</sup> See Verifiers Rep. para VII for current position. ✓

It must be emphasized that this wreck is different from, and approximately 5000 yards to the northeast of the visible wreck mentioned above in item AK. However, according to the Pre-Survey Review description of AK, both wrecks are now being charted at the location of the large visible wreck in item AK. The wreck awash is no longer being charted separately (see section L, Comparison with Chart). Since the wreck awash is still potentially dangerous it is recommended that it be recharted as located.

- ✓ Item 88 of Pre-Survey Review update of 6 February 1975 is a fish haven buoy charted at approximate latitude 33° 51.26'N, longitude 118° 24.58'W. This buoy was not present at the time of this survey, having been reportedly carried away by a recent storm. The fish haven itself was searched for, but no indication of it was found on the fathogram. Since the fish haven was not disproven (this could be done only by wire drag or side scanning sonar) and the buoy will probably be replaced, it is recommended that both continue to be charted. *Origin CL 1181 of 60; Nm 43 of 60. Concur*
- ✓ Item 90 of the Pre-Survey Review update of 6 February 1975 is a sunken wreck (Notice to Mariners No. 49 of 1963) charted at latitude 33° 47.5'N and longitude 118° 25.0'W. This wreck was searched for by sounding launch, and while no indication of it was found it was not disproven. The least depth in this area is 5.5<sup>8</sup> fathoms. It is recommended that the wreck continue to be charted at the same position. *Concur*
- ✓ Item 91 of the Pre-Survey Review update of 6 February 1975 is a sunken wreck (Notice to Mariners No. 52 of 1968) charted at latitude 33° 49.06'N and longitude 118° 25.36'W. This wreck was searched for by sounding launch, and while no indication of it was found it was not disproven. It is recommended that the wreck continue to be charted at the same position. *Concur*
- ✓ Item 92 of the Pre-Survey Review update of 6 February 1975 is a fish haven charted at latitude 33° 48.8'N, longitude 118° 24.3'W. No indication of this fish haven was found on the fathogram. It is recommended that the fish haven continue to be charted at the same position. *Origin CL 922 of 59. Concur*
- ✓ Item 93 of the Pre-Survey Review update of 6 February 1975 is a spar buoy marking a fish haven charted at latitude 33° 50.29'N, longitude 118° 24.58'W. The spar buoy was located electronically at its charted location. It is horizontally banded in orange and white. No indication of the fish haven was found on the fathogram. It is recommended that both buoy and fish haven continue to be charted at the same position. *Origin Fish haven CL 93 of 63; Nm 8 of 63. Buoy Nm 31 of 70. Concur*
- ✓ Item 96 of the Pre-Survey Review update of 6 February 1975 is a pair of intake-discharge towers for the Southern California Edison Company. The discharge tower was found at its charted location of latitude 33° 50.56'N, longitude 118° 23.58'W. It is marked by a small can buoy labeled "DANGER", which was located by sextant fix. The least depth at the towers is 2.5 fathoms. The intake tower charted at latitude 33° 50.42'N, longitude 118° 23.65'W was searched for by both fathometer and SCUBA divers but was not found, although a side echo was observed on an adjacent sounding line. The divers were unsuccessful because of swell action and



and very poor visibility. It is recommended that both towers continue to be charted at the same positions, and in addition that the buoy be charted. Origin CL 919 of 1967. Concur

Item 97 of the Pre-Survey Review update of 6 February 1975 is a pair of intake towers for the Southern California Edison Company. These towers were located electronically by sounding launch at their charted locations of latitude  $33^{\circ}50.99'N$ , longitude  $118^{\circ}24.16'W$  and latitude  $33^{\circ}50.97'N$ , longitude  $118^{\circ}24.12'W$ . Their least depths were  $4.0$  fathoms and  $3.8$  fathoms respectively. It is recommended that both towers continue to be charted at the same positions. See Verifiers Report, para VII

Item 98 of the Pre-Survey Review update of 6 February 1975 is two intake towers, which are part of the water circulation system of the Southern California Edison Company, charted in latitude  $33^{\circ}50.7'N$ , longitude  $118^{\circ}23.92'W$ . Both towers are marked by red and black can buoys. The buoys were located by sextant fixes and least depths on the towers were obtained by SCUBA divers. It is recommended that both buoys and both towers continue to be charted. See Verifiers Report, para VII

Item 103 of the Pre-Survey Review update of 6 February 1975 is a group of three oil and gas seepage areas, two of which fall within the limits of this survey. The largest area was observed at its charted location of latitude  $33^{\circ}49.9'$ , longitude  $118^{\circ}25.58'$ . The oil slick produced was approximately 2000 yards long, along an east-west axis, and 500 yards wide. No oil was observed in the other charted area. However, the Standard Oil Company monitors these areas on a weekly basis, and reported that seepage does occur at times at both. It is therefore recommended that both seepage areas continue to be charted. The third seepage area is discussed in the Descriptive Report of survey FA 20-7-75 (H-9561).  
Origin - H-5653 (1933) Concur

#### L. COMPARISON WITH CHART

The boatsheet was compared with charts 18744 (Santa Monica Bay, scale 1:40,000 at latitude  $33^{\circ}55'N$ , 19<sup>th</sup> edition 24 May 1975) and 18746 (San Pedro Channel, scale 1:80,000 at latitude  $33^{\circ}31'N$ , 14<sup>th</sup> edition 25 January 1975) which are the largest scale charts covering the area surveyed. Agreement between the soundings on the boatsheet and the depths charted is good on both charts, approximately to within a fathom in depths from 2 to 198 fathoms.

The wreck awash mentioned in Item 6 of the Pre-Survey Review dated 24 September 1970, and located again during this survey, is no longer charted, (see section K Comparison with Prior Surveys). This wreck was found to be approximately 500 yards northeast of the large visible wreck on Palos Verdes Point, mentioned in Item AK of the Pre-Survey Review dated 30 October 1973, although both wrecks are charted at the location of the visible Palos Verdes wreck. The wreck awash is still potentially dangerous and it is recommended that it be reinstated on the charts at its

previously charted position of latitude 33°46.73', longitude 118°25.50'.

There is an orange and white spar buoy charted at latitude 33°50.27', longitude 118°24.54' which marks a fish haven obstruction. This buoy is incorrectly labeled on the chart as having the letter "A". The actual fish haven buoy is not designated by any letter. There is a spar buoy "A", but this is an uncharted racing buoy located at latitude 33°50.43', longitude 118°25.8', approximately 1 n.m. west of the spar buoy charted as "A". Thus it would be possible, especially in the thick fog that often obscures this bay, to mistake the racing buoy "A", and be off in position by a mile. It is therefore recommended that the fish haven spar buoy no longer be labeled on the chart with the letter "A".

The shoal area in the vicinity of 33°50.88'N, 118°24.03'W (in King Harbor) has a gradual sloping sandy bottom and is marked with a buoy labeled "SHOAL". detached positions were taken on the outer edges of the shoal. There is another small shoaling area along the breakwater located at 33°50.48'N, 118°23.47'W, extending westward about 20 yards.

#### M. ADEQUACY OF SURVEY

All fathogram field survey records were scanned for peaks and deeps. The survey is complete and adequate to supersede prior surveys for charting.

#### N. AIDS TO NAVIGATION

There are a number of floating aids and buoys in the area of the survey. They can be divided into five categories: Coast Guard maintained lighted buoys, fish haven spar buoys, racing buoys maintained by the King Harbor Yacht Club, channel and mooring buoys inside King Harbor, and warning buoys on the discharge towers of the Southern California Edison Company's conduits. With one exception, all buoys were located and are plotted on the boatsheet. The exception is the fish haven buoy charted at 33°51.26'N, 118°24.54'W. This buoy was not present during the time of survey; it reportedly had been carried off by a recent storm. It is recommended that all buoys located during this survey be charted in the future to reduce the ambiguity between the lettered racing buoys and the unlettered fish haven buoys.

#### O. STATISTICS

| <u>VESSEL</u> | <u>POSITIONS</u> | <u>HYDROGRAPHY, n.m.</u> |
|---------------|------------------|--------------------------|
| FA-6          | 920              | 160.1                    |
| FA-4          | 229              | 8.2                      |

Total Area: 14.0 sq.n.m.  
Total Bottom Samples 21

P. MISCELLANEOUS

Greenwich Mean Time was used for all survey records. King Harbor has also been surveyed by the Southern California Edison Company. A copy of their report, "Bathymetry of King Harbor, Redondo Beach, California," July 25-26, 1974, is included with this survey's records. Agreement between the two surveys was good, generally within about two feet. ✓

The Los Angeles County Engineer has surveyed, and is continuing to resurvey on a regular basis, the coastline from Malaga Cove north to the county line in order to monitor beach erosion and study sand migration. These surveys consist of profiles extending from the high water line out to approximately the 50-foot depth curve, generally run normal to the beach line, and spaced at intervals varying from 200 feet (61 meters) to 500 (152 meters). Dates of the latest profile vary from 1953 to the present, depending upon location. Data is available in two parts, plan drawings showing the locations of the profiles, and the profiles themselves. ✓

While the data appears to be of high quality, it was not accepted for two reasons. First, some of the profiles date as far back as 1953, which in an area of known sand migration makes them of questionable value for charting purposes. Second, the time and expense required to convert the engineering profile data into a format suitable for automated processing would have greatly exceeded the field time required to extend the current sounding lines from the 50-foot depth curve to the usual inshore limit of launch hydrography. Consequently, this area was included in the present survey. See letter appended; dtd Nov 5, 1975. ✓

Q. RECOMMENDATIONS

It is recommended that this survey be accepted and used for charting purposes. ✓

R. REFERENCES TO REPORTS

Report on Corrections to Echo Soundings, OPR 411-FA-75  
 Electric Systems Calibration Report, OPR 411-FA-75 ✓  
 Coast Pilot Report, OPR 411-FA-75 C.L. 2261 of 1975  
 Field Edit Reports, OPR 411-FA-75

S. DATA PROCESSING PROCEDURES

Programs RK-111, version 7 August 1974 and RK-161 version 17 September 1974 were used on launch FA-6 to acquire and compile hydrographic on-line data. Program RK-211 version 16 August 1974, was used on the ship's hydroplot system to plot the field sheet. ✓

Launch FA-4 used an ASI logger (s/n-03) to acquire on line hydrographic data. Program RK-337, version 8 August 1974, was used to convert the

visual logger format to the visual master format. Program RK-213 version 4/1/74, was used for visual station table load and plot, and program RK-215, version 8/16/74, was used to generate visual positions and soundings. ✓

Submitted by

*John C. Wright*

*for* Stephen L. Poole, Ens. NOAA

FIELD TIDE NOTE

Field tide reduction of soundings was based on predicted tides from Los Angeles Outer Harbor, California, and were interpolated by PDP8e computer utilizing AM500. All times of both predicted and recorded tides are based on GMT.

One Fisher-Porter ADR gage was installed in the project area. Location and period of operation is as follows:

| <u>Site</u>   | <u>Location</u> | <u>Period</u>          |
|---------------|-----------------|------------------------|
| King Harbor,  | 33°50.8'N       | 41 days                |
| Redondo Beach | 118°23.9'W      | 20 Sept. - 1 Nov. 1975 |

KING HARBOR

ADR gage (S/N 7403A3402M14) was installed 9-20-75 and ran satisfactorily for 41 days until removal on 11-1-75. On 10-2-75 at 1704Z the gage was found to be 2 minutes fast. The gage was corrected and no other time errors were observed. The marigram reads 2.1 feet greater than the staff.

Time & Height Differences

No hourly height tabulations were done as the only gage observed was an ADR using a paper punch data record. No time & height differences were examined as only the King Harbor gage was observed; the Los Angeles Outer Harbor and Santa Monica Pier gages' data is submitted directly to Tides Branch by contract observers.

Levels

In a comparison of installation and removal level records, the King Harbor tide staff had a negligible shift of 0.001 ft.

Zoning

No zoning was required or attempted as only data from the King Harbor gage was observed. It is recommended that any necessary zoning be done by the Tides Branch after a review of existing (Los Angeles Outer Harbor and Santa Monica Pier) and observed data.

VELOCITY TABLE 0001SOUND VELOCITY CORRECTOR ABSTRACT

The following sound velocity correctors are to be applied to all soundings on sheets:

|             |                 |
|-------------|-----------------|
| FA-10-9-75* | <u>(H-9558)</u> |
| FA-10-10-75 | (H-9559)        |
| FA-10-11-75 | (H-9560)        |
| FA-10-12-75 | (H-9575)        |
| FA-20-7-75  | (H-9561)        |
| FA-20-8-75  | (H-9576)        |

| <u>DEPTH (FATHOMS)</u> |          | <u>CORRECTOR (FATHOMS)</u> |
|------------------------|----------|----------------------------|
| 0.0-2.0✓               | 0.02 = 0 | + 0.0✓                     |
| 2.1-4.0✓               | 0.04 = 1 | 0.1✓                       |
| 4.1-8.2✓               |          | 0.2✓                       |
| 8.3-11.0✓              |          | 0.3✓                       |
| 11.1-14.0✓             |          | 0.4✓                       |
| 14.1-18.8✓             |          | 0.5✓                       |
| 18.9-22.0✓             |          | 0.6✓                       |
| 22.1-27.5✓             |          | 0.7✓                       |
| 27.6-34.9              |          | 0.8✓                       |
| 35.0-43.1✓             |          | 1.0✓                       |
| 43.2-53.6✓             |          | 1.2✓                       |
| 53.7-65.0✓             |          | 1.4✓                       |
| 65.1-77.0✓             |          | 1.6✓                       |
| 77.1-79.0✓             |          | 1.8✓                       |
| 79.1-100.0✓            |          | 2.0✓                       |
| 100.1-112.0✓           |          | 2.2✓                       |
| 112.1-137.0✓           |          | 2.5✓                       |
| 137.1-168.0✓           |          | 3.0✓                       |
| 168.1-200.0✓           |          | 3.5✓                       |
| 200.1-231.0✓           |          | 4.0✓                       |
| 231.1-260.0✓           |          | 4.5✓                       |
| 260.1-294.0✓           |          | 5.0✓                       |
| 294.1-337.0✓           |          | 5.5✓                       |

\* Excluding soundings in feet on the 1:5000 scale insert of King Harbor (see Velocity Table 0002).

*JDC*

VELOCITY TABLE 0002SOUND VELOCITY CORRECTOR ABSTRACT

The following sound velocity correctors are to be applied to all soundings in feet on the 1:5000 scale King Harbor insert on sheet FA-10-9-75, H-9558.

| <u>DEPTH (FEET)</u> | <u>CORRECTOR (FEET)</u> |
|---------------------|-------------------------|
| 0.0 - 2.5 /         | + 0.0 /                 |
| 2.6 - 8.0 /         | 0.2 /                   |
| 8.1 - 14.0 /        | 0.4 /                   |
| 14.1 - 19.5 /       | 0.6 /                   |
| 19.6 - 26.5 /       | 0.8 /                   |
| 26.6 - 33.5 /       | 1.0 /                   |
| 33.6 - 49.8         | 1.2                     |
| 49.9 - 66.6         | 1.8                     |

- JCA

## ABSTRACT OF RAYDIST EQUIPMENT UTILIZATION

H-9558, 9559, 9560, 9561, 9575 and 9576

BASE STATION LOCATIONS

## JULIAN DAYS 273 thru 303

Unit S/N 124, Frequency 1650.015 KHz, 35 ft. whip antenna on a  
40 ft. tower, with 80 ft. radial ground plane.

Location: POINT DUME 1856 34° 00' 05.652"N 118° 48' 20.652"W

Unit S/N 125, Frequency 1650.425 KHz, 35 ft. whip antenna on a  
20 ft. tower, with 80 ft. radial ground plane.

Location: TOPANGA CANYON E-5 (LAC) 1935  
34° 03' 40.193 118° 33' 46.981"W

MOBILE TRANSMITTERS

Ship: Model TA-96B, S/N 83, Frequency 3300.520 KHz

FA-3: Model TA-96B, S/N 96, Frequency 3300.465 KHz

FA-5: Model TA-96, S/N 90, Frequency 3300.400KHz

FA-6: Model TA-96B, S/N 83, Frequency 3300.520 KHz

MOBILE NAVIGATORS

Ship: Model ZA-75C, S/N 16, Frequency 330/490 Hz

FA-3: Model ZA-75C, S/N 21, Frequency 435/385 Hz

FA-5: Model ZA-75C, S/N 18, Frequency 370/450 Hz

FA-6: Model ZA-75C, S/N 16, Frequency 330/490 Hz



OPR 411 SOUTHERN CALIFORNIA COAST FALL 1975

STATION LIST: H-9558, 9559, 9560, 9561, 9575 & 9576  
 =====

| STA            | O            | LATITUDE                                             | LONGITUDE                     | CRT            | ELEV            | F                 | KHZ | SOURCE         |
|----------------|--------------|------------------------------------------------------|-------------------------------|----------------|-----------------|-------------------|-----|----------------|
| ---            | -            | ---                                                  | ---                           | ---            | ---             | ---               | --- | ---            |
|                |              | PT DUME 1856                                         |                               |                |                 |                   |     |                |
| 001            | 0            | 34 00                                                | 05652 118 48 20652            | 250            | 0062            | 330040            |     | Q-341183       |
|                |              | TOPANGA CANYON E-5 (LAC) 1935                        |                               |                |                 |                   |     |                |
| 002            | 0            | 34 03                                                | 40193 118 33 46981            | 250            | 0437            | 330040            |     | (1)            |
|                |              | <del>REDONDO BEACH WEST JETTY LT 3 See Sta 101</del> |                               |                |                 |                   |     |                |
| <del>004</del> | <del>0</del> | <del>33 50</del>                                     | <del>27754 118 23 40498</del> | <del>250</del> | <del>0011</del> | <del>000000</del> |     | <del>(2)</del> |
|                |              | REDONDO 1927                                         |                               |                |                 |                   |     |                |
| 005            | 0            | 33 49                                                | 39405 118 23 21230            | 250            | 0021            | 000000            |     | Q-3311814      |
|                |              | BAY CITIES BLDG & LOAN ASSOC TOWER 1933              |                               |                |                 |                   |     |                |
| 008            | 0            | 34 00                                                | 55744 118 29 44492            | 139            | 0000            | 000000            |     | Q-341182       |
|                |              | PT DUME 1856                                         |                               |                |                 |                   |     |                |
| 009            | 0            | 34 00                                                | 05652 118 48 20652            | 250            | 0062            | 000000            |     | Q-341183       |
|                |              | MARINA DEL REY BREAKWATER TP 1975                    |                               |                |                 |                   |     |                |
| 010            | 0            | 33 57                                                | 36658 118 27 41864            | 250            | 0005            | 000000            |     | (2)            |
|                |              | SANTA MONICA LIGHT 1958                              |                               |                |                 |                   |     |                |
| 011            | 0            | 34 00                                                | 27006 118 29 56399            | 250            | 0014            | 000000            |     | Q-341182       |
|                |              | PASEO 1927                                           |                               |                |                 |                   |     |                |
| 012            | 0            | 33 47                                                | 08799 118 25 02100            | 139            | 0063            | 000000            |     | Q-3311814      |
|                |              | REDONDO BEACH WEST JETTY LT 3                        |                               |                |                 |                   |     |                |
| 101            | 0            | 33 50                                                | 27754 118 23 40498            | 250            | 0011            | 000000            |     | (2)            |
|                |              | REDONDO BEACH EAST JETTY LT 2                        |                               |                |                 |                   |     |                |
| 102            | 0            | 33 50                                                | 30023 118 23 33796            | 243            | 0007            | 000000            |     | (3)            |
|                |              | NW CORNER OF PIER                                    |                               |                |                 |                   |     |                |
| 103            | 0            | 33 50                                                | 35281 118 23 35857            | 243            | 0005            | 000000            |     | (3)            |
|                |              | NW CORNER OF BLDG                                    |                               |                |                 |                   |     |                |
| 104            | 0            | 33 50                                                | 24765 118 23 31346            | 243            | 0005            | 000000            |     | (3)            |
|                |              | PORTOFINO TOWER (CENTER)                             |                               |                |                 |                   |     |                |
| 105            | 0            | 33 50                                                | 40247 118 23 44997            | 243            | 0018            | 000000            |     | (3)            |
|                |              | PORTOFINO LT 1                                       |                               |                |                 |                   |     |                |
| 106            | 0            | 33 50                                                | 48556 118 23 52230            | 243            | 0003            | 000000            |     | (3)            |

MAST OF PRINCESS LOUISE II  
 107 0 33 50 30704 118 23 30918 243 0020 000000 (3)  
 KING HARBOR LT 2  
 108 0 33 50 54365 118 23 56353 243 0002 000000 (3)  
 BREAKWATER PLATFORM (SOUTH END)  
 109 0 33 50 40669 118 23 56742 243 0005 000000 (3)  
 NORTH STACK OF 8  
 110 0 33 51 06524 118 23 41271 243 0040 000000 (3)  
 KHYC FLAGPOLE  
 111 0 33 50 56151 118 23 59075 243 0013 000000 (3)  
 STACK (240 FT)  
 114 0 33 55 45958 118 25 53371 243 0073 000000 (3)  
 STACK (334 FT)  
 115 0 33 55 07562 118 25 35191 243 0102 000000 (3)  
 NW CORNER OF PIER  
 118 0 33 50 19766 118 23 29129 243 0005 000000 (3)  
 LAT & LONG GRID FOR D. R. WORK  
 119 0 33 51 30000 118 24 15000 243 0000 000000 (3)  
 123 ~~LR VENTR INN SPIRE (M21)~~  
~~33 47 42700 118 23 57110~~  
~~SPIRE DELETE~~  
~~120 0 33 53 12000 118 24 36000 243 0100 000000 (4)~~

REDONDO BEACH CALIBRATION BUOY  
 PATTERN I = 923.50  
 PATTERN II = 636.60

MARINA DEL REY BREAKWATER CALIBRATION BUOY  
 PATTERN I = 708.02  
 PATTERN II = 321.85

- (1) LOS ANGELES COUNTY SURVEY DEPARTMENT
- (2) SEE HORIZONTAL CONTROL ADDENDUM
- (3) PHOTO PICKED SIGNALS FROM MAP TP-00791
- (4) PHOTO PICKED SIGNALS FROM MAP TP-00790

NOAA FORM 76-40  
(8-74)

Replaces C&GS Form 567.

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

REPORTING UNIT:  TO BE CHARTED (if Aid Party, Ship, or Office)  
 TO BE REVISED  
 TO BE DELETED  
 COASTAL MAPPING DIV. CALIFORNIA  
 AMC NORFOLK, VA. STATE: CALIFORNIA  
 LOCALITY: POINT VICENTE TO PORT HUENEME DATE: MARCH 1975

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

OPR PROJECT NO. 411  
 JOB NUMBER CM-7404  
 SURVEY NUMBER TP-00791  
 DATUM N.A. 1927

| CHARTING NAME | DESCRIPTION<br><small>(Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)</small> | POSITION                               |                                         | METHOD AND DATE OF LOCATION<br><small>(See instructions on reverse side)</small> | CHARTS AFFECTED                                                       |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------|
|               |                                                                                                                                                                 | LATITUDE<br><small>D.M. Meters</small> | LONGITUDE<br><small>D.P. Meters</small> |                                                                                  |                                                                       |
| FOG SIGNAL    | HERMOSA BEACH PIER FOG SIGNAL                                                                                                                                   | 33 51.7                                | 118 24.3                                | 74L(1) 1645<br>MARCH 31 1974                                                     | 18301<br>18740<br><small>SEE DRAWING ON REVERSE FOR POSITION.</small> |
| LIGHT         | KING HARBOR LIGHT 1                                                                                                                                             | 33 50                                  | 118 23                                  | 74L(1) 1644<br>MARCH 31 1974                                                     | "<br>" V-Vis<br>10-7-75                                               |
| LIGHT         | KING HARBOR LIGHT 2                                                                                                                                             | 33 50                                  | 118 23                                  | "                                                                                | " V-Vis<br>10-7-75                                                    |
| LIGHT         | PORTOFINO LIGHT 1                                                                                                                                               | 33 50                                  | 118 23                                  | "                                                                                | " V-Vis<br>10-7-75                                                    |
| LIGHT         | PORTOFINO LIGHT 2                                                                                                                                               | 33 50                                  | 118 23                                  | "                                                                                | " V-Vis<br>10-7-75                                                    |
| LIGHT         | REDONDO BEACH EAST JETTY LIGHT 2                                                                                                                                | 33 50.2                                | 118 23                                  | "                                                                                | " V-Vis<br>10-7-85                                                    |
| LIGHT         | REDONDO BEACH WEST JETTY LIGHT 3                                                                                                                                | 33 50                                  | 118 23                                  | "                                                                                | " F-2-6-L<br>10-7-75                                                  |
| LIGHT         | MOLE C LIGHT                                                                                                                                                    | 33 50.4                                | 118 23.7                                | "                                                                                | " SEE PHOTO 74L(1) 1644 FOR POSITION                                  |
| LIGHT         | REDONDO HARBOR LIGHT                                                                                                                                            | 33 50.7                                | 118 23.4                                | "                                                                                | " SEE PHOTO 74L(2) 1644 FOR POSITION                                  |

\* Data from Form 76-40 CL 860 of 1976.

4/11/75 JD



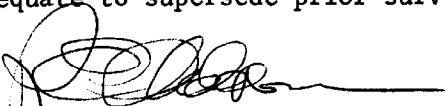


## APPROVAL SHEET

Field number      FA-10-9-75

Register number      H-9558

The field sheet and all accompanying records are hereby approved. The survey was conducted under my personal supervision and the field sheet and other records were examined daily. This survey is complete and adequate to supersede prior surveys for charting.



CDR, Richard E. Alderman, NOAA  
Commanding Officer  
NOAA Ship FAIRWEATHER (MSS-20)

1/28/76

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): Redondo Beach

Period: September 30-October 17, 1975

HYDROGRAPHIC SHEET: H-9558

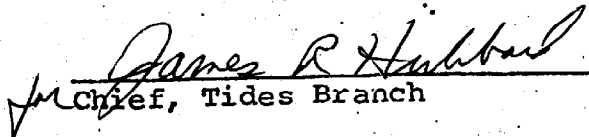
OPR: 411

Locality: Santa Monica Bay, California

Plane of reference (mean lower low water): 0.87 ft.

Height of Mean High Water above Plane of Reference:  
4.6 ft.

Remarks: Zone direct.

  
\_\_\_\_\_  
Chief, Tides Branch

GEOGRAPHIC NAMES

Survey No. 9558

| Name on Survey        | Source of Name |                    |                          |                        |               |                    |                    |                  |   |    |
|-----------------------|----------------|--------------------|--------------------------|------------------------|---------------|--------------------|--------------------|------------------|---|----|
|                       | A              | B                  | C                        | D                      | E             | F                  | G                  | H                | K |    |
|                       | On Chart No    | On previous survey | On U. S. Quadrangle Maps | From local information | On local maps | P. O. Guide or Map | Rand McNally Atlas | U. S. Light List |   |    |
| BIT ROCK              |                |                    |                          |                        |               |                    |                    |                  |   | 1  |
| BLUFF COVE            |                |                    |                          |                        |               |                    |                    |                  |   | 2  |
| CLIFTON               |                |                    |                          |                        |               |                    |                    |                  |   | 3  |
| FLAT ROCK POINT       |                |                    |                          |                        |               |                    |                    |                  |   | 4  |
| FLAT ROCK             |                |                    |                          |                        |               |                    |                    |                  |   | 5  |
| KING HARBOR           |                |                    |                          |                        |               |                    |                    |                  |   | 6  |
| LUNADA BAY            |                |                    |                          |                        |               |                    |                    |                  |   | 7  |
| MALAGA COVE           |                |                    |                          |                        |               |                    |                    |                  |   | 8  |
| PALOS VERDES POINT    |                |                    |                          |                        |               |                    |                    |                  |   | 9  |
| POINT VICENTE         |                |                    |                          |                        |               |                    |                    |                  |   | 10 |
| REDONDO BEACH         |                |                    |                          |                        |               |                    |                    |                  |   | 11 |
| REDONDO CANYON        |                |                    |                          |                        |               |                    |                    |                  |   | 12 |
| RESORE POINT          |                |                    |                          |                        |               |                    |                    |                  |   | 13 |
| SANTA MONICA BAY      |                |                    |                          |                        |               |                    |                    |                  |   | 14 |
| TORRANCE COUNTY BEACH |                |                    |                          |                        |               |                    |                    |                  |   | 15 |
|                       |                |                    |                          |                        |               |                    |                    |                  |   | 16 |
|                       |                |                    |                          |                        |               |                    |                    |                  |   | 17 |
|                       |                |                    |                          |                        |               |                    |                    |                  |   | 18 |
|                       |                |                    |                          |                        |               |                    |                    |                  |   | 19 |
|                       |                |                    |                          |                        |               |                    |                    |                  |   | 20 |
|                       |                |                    |                          |                        |               |                    |                    |                  |   | 21 |
|                       |                |                    |                          |                        |               |                    |                    |                  |   | 22 |
|                       |                |                    |                          |                        |               |                    |                    |                  |   | 23 |
|                       |                |                    |                          |                        |               |                    |                    |                  |   | 24 |
|                       |                |                    |                          |                        |               |                    |                    |                  |   | 25 |
|                       |                |                    |                          |                        |               |                    |                    |                  |   | 26 |

APPROVED

*Chas. E. Harrington*  
STAFF GEOGRAPHER - CS142

7 Jan. 1977



APPROVAL SHEET

FOR

SURVEY H- 9558

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: 12/7/76

Signed:



Title: Chief, Verification Branch

**HYDROGRAPHIC SURVEY STATISTICS**  
**HYDROGRAPHIC SURVEY NO. 9558, 1975**

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

| RECORD DESCRIPTION              |               | AMOUNT               | RECORD DESCRIPTION |            | AMOUNT        |                            |
|---------------------------------|---------------|----------------------|--------------------|------------|---------------|----------------------------|
| SMOOTH SHEET                    |               | 1                    | BOAT SHEETS        |            | 3             |                            |
| DESCRIPTIVE REPORT              |               | 1                    | OVERLAYS           |            |               |                            |
| DESCRIPTION                     | DEPTH RECORDS | HORIZ. CONT. RECORDS | PRINTOUTS          | TAPE ROLLS | PUNCHED CARDS | ABSTRACTS/SOURCE DOCUMENTS |
| ENVELOPES                       |               |                      |                    |            |               |                            |
| CAHIERS                         |               |                      |                    |            |               |                            |
| VOLUMES                         |               |                      |                    |            |               |                            |
| BOXES                           |               |                      |                    |            |               |                            |
| T-SHEET PRINTS ( <i>List</i> )  |               |                      |                    |            |               |                            |
| SPECIAL REPORTS ( <i>List</i> ) |               |                      |                    |            |               |                            |

**OFFICE PROCESSING ACTIVITIES**  
The following statistics will be submitted with the cartographer's report on the survey

| PROCESSING ACTIVITY                                               | AMOUNTS                   |                         |        |        |
|-------------------------------------------------------------------|---------------------------|-------------------------|--------|--------|
|                                                                   | PRE-VERIFICATION          | VERIFICATION            | REVIEW | TOTALS |
| POSITIONS ON SHEET                                                |                           |                         |        | 1155   |
| POSITIONS CHECKED                                                 |                           | 1155                    |        |        |
| POSITIONS REVISED                                                 |                           | 54                      |        |        |
| DEPTH SOUNDINGS REVISED                                           |                           | 155                     |        |        |
| DEPTH SOUNDINGS ERRONEOUSLY SPACED                                |                           | 0                       |        |        |
| SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED                        |                           | 0                       |        |        |
|                                                                   | TIME (MANHOURS)           |                         |        |        |
| Verification of Control                                           |                           | 12                      |        |        |
| Verification of Positions                                         |                           | 34                      |        |        |
| Verification of Soundings                                         |                           | 159                     |        |        |
| Smooth Sheet Compilation                                          |                           | 100                     |        |        |
| ALL OTHER WORK                                                    | 5                         | 2                       |        |        |
| <b>TOTALS</b>                                                     | 5                         | 307                     | HIT 13 |        |
| PRE-VERIFICATION BY<br>Mr. James Green                            | BEGINNING DATE<br>1/20/76 | ENDING DATE<br>1/20/76  |        |        |
| VERIFICATION BY<br><i>James Stringham</i><br>Mr. James Stringham  | BEGINNING DATE<br>3/26/76 | ENDING DATE<br>11/16/76 |        |        |
| REVIEW BY<br><i>R.W. Derkazarian</i><br>OC Insp. R.W. Derkazarian | BEGINNING DATE<br>5/13/77 | ENDING DATE<br>3/3/77   |        |        |

*Carstonis* 16 hr  
*R.D. Samuels* 8 hrs 31 Mar 77  
U.S. G.P.O. 1972-769-562/439 REG.#6

REGISTRY NO. 9558

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:

|        |        |              |
|--------|--------|--------------|
| 614806 | 687205 | 805501-05    |
| ↓ Rej  | 687300 | 807301       |
| 615006 | 688901 | 807305 (dig) |
| 672900 | 688903 | 808905 (dig) |
| 677903 | 691800 | 8518         |
| 04 Rej | 691900 | 817401-03    |
|        | 692004 |              |

REGISTRY NO. \_\_\_\_\_

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:

H-9558

Items for Future Presurvey Reviews

The bottom has basically remained unchanged since the prior surveys of 1933; however, some changes inshore from 3 fathoms to the high water line have occurred due to cultural improvements. Future surveys should include investigation of the Presurvey Review items in paragraph K of the Descriptive Report and the piers in paragraph 6 of the Quality Control Report which are not disproved. Inshore development of the several bays and coves is not adequately done.

| <u>Position Index</u> |              | <u>Bottom Change</u> | <u>Use</u>   | <u>Resurvey</u> |
|-----------------------|--------------|----------------------|--------------|-----------------|
| <u>Lat.</u>           | <u>Long.</u> | <u>Index</u>         | <u>Index</u> | <u>Cycle</u>    |
| 334                   | 1183         | 3                    | 2            | 50 years        |
| 335                   | 1183         | 3                    | 2            | 50 years        |

## VERIFIER'S REPORT

H-9558, 1975

FA-10-9-75

This survey was verified and plotted at the Pacific Marine Center, Seattle, Washington. Information relating to this survey is provided as specified in Chapter 6 of the Provisional Hydrographic Manual.

### I. INTRODUCTION

The Hastings Raydist electronic positioning equipment, operating in the range-range mode, was used to control the main sheet, scale 1:10,000, and Inset Two (Harbor entrance, scale 1:5,000).

Visual three point sextant positioning and the use of the Class III manuscript TP-00791 was used to control hydrography on Inset One (King Harbor, scale 1:5,000).

Projection parameters used to prepare the boatsheet and two insets have been revised to plot all hydrographic information contained in H-9558, 1975. Parameters used by Pacific Marine Center are appended in the smooth printout. All correctors used to plot and reduce soundings on H-9558, 1975 can be located in the smooth printout. *Tide reducers with field records.*

The field sheet soundings were reduced from Los Angeles outer Harbor predicted tides. H-9558, 1975 smooth sheet soundings are reduced from Redondo Beach tide gage and approved by Tide Branch, Rockville.

The main sheet and Inset Two (harbor entrance) hydrography was accomplished by launch 2026 with soundings in fathoms. Inset One (King Harbor) hydrography was accomplished by launch 2024 with soundings in feet. Good junction agreement exists between the main sheet and both insets. Tide correctors are accepted as correct.

### II. CONTROL AND SHORELINE

See ship's report items F and G. The shoreline was transferred from unreviewed Class I maps TP-00397, TP-00791 and TP-00792 scale 1 to 10,000 and TP-00791 scale 1 to 5,000.

TP-00397

|                     |                        |
|---------------------|------------------------|
| Date of Photography | March, 1972            |
| Date of Field Edit  | February - March, 1976 |

TP-00791 scale 1 to 5,000 and 1 to 10,000

|                     |                     |
|---------------------|---------------------|
| Date of Photography | March - April, 1974 |
| Date of Field Edit  | Fall, 1975          |

TP-00792

Date of Photography  
Date of Field Edit

March - April 1974  
October 1975

Nonfloating aids to navigation located on Class I map TP-00791 are transferred to smooth H-9558, 1975 from photo locations (see Notes to Compiler).

### III. HYDROGRAPHY

See H.I.T. Report

Hydrography accomplished more perpendicular to the shoreline from south edge of H-9558, 1975 to approximate latitude  $33^{\circ}48'30''$  from MLLW line out to ten fathom curve would have aided verification of H-9558, 1975 inshore data. H-5397, 1933 was used extensively, to supplement H-9558, 1975 from MLLW line out to five fathom curve.

Shoreline positions 6630 to 6675 day 277, launch 2026 are not annotated as to what the shoreline features were, i.e., breakers, kelp or high water rocks. Some significant rocks displayed on H-5397, 1933 and Chart 18744 scale 1:40,000 19th edition 24 May 1975 were not displayed on Class III or Class I manuscript TP-00792. See para VI

If the launch hydrography of Redondo Canyon from west edge of sheet to the entrance of King Harbor, California at approximate latitude  $33^{\circ}50.4'N$  and longitude  $118^{\circ}23.6'W$  had been oriented in a north-south direction across the Redondo Canyon area, more accurate depth curves could have been displayed. A high percentage of side echos exist on the fathograms for Redondo Canyon.

Two pipe lines in King Harbor and one pipe line north of the harbor at approximate latitude  $33^{\circ}51.0'$  north longitude  $118^{\circ}24.0'$  west were not developed or mentioned in the ship's report.

A detached position was not taken on the intake tower located at approximate latitude  $33^{\circ}50.42'$  and longitude  $118^{\circ}23.65'$  west (see ship's report, Comparison with Prior Surveys, item 96). Origin CL 919 of 1967

### IV. CONDITION OF SURVEY

Recording volume 1 and form C&GS 733M, Bottom Sediment Data Sheet, contain some errors. The following information for positions 6676, 6678, 6677 and 6679 was changed; 6676 and 6678 (my) was deleted. 6677 and 6679 (no sample) was changed to hrd.?

Ship's report submitted velocity table two in feet covering soundings to the depth of 33.5 feet. The smooth boatsheet and soundings records revealed soundings to the depth of 60 feet. A new velocity table two was constructed at PMC to cover all soundings in feet for Inset One, King Harbor.

Velocity tables <sup>were</sup> ~~one~~ was logged in error by ship's personnel. ~~A~~ <sup>New</sup> tapes ~~was~~ <sup>were</sup> out during verification of H-9558, 1975.

The Ship FAIRWEATHER electronic corrector abstract page 17, <sup>(destroyed)</sup> ship's report is compiled in error. See smooth electronic corrector abstract in smooth printout, ~~and included with field records.~~

Detached position information contained in recording volume is too brief. A better description of buoys, wrecks, rocks and harbor features such as floats and pilings would have aided the processing of H-9558, 1975.

Detached position 6653, day 277 contains information regarding a wreck located at approximate latitude  $33^{\circ}46'41.6''N$ , longitude  $118^{\circ}25'30.9''W$ . Recording volume 1, page 7 in the remarks column states "wreck awash." A sounding of 0.4 tenths of a fathom ~~was~~ also recorded. The four tenths of a fathom was reduced for wrecks height above MLLW information.

The smooth hydrographic records, overlays and report are adequate and conform with the requirements of the Hydrographic Manual and PMC OORDER 1975 edition.

#### V. JUNCTIONS

H-9558, 1975 junctions with contemporary survey H-9559, 1975 scale 1:10,000 to the north. Junction curves and soundings are in excellent agreement. Junction note and curves are inked.

H-9558, 1975 junctions with contemporary survey H-9561, 1975 scale 1:20,000 to the west. Junction curves and soundings are in excellent agreement. Junction note and curves are inked.

This survey junctions with contemporary survey H-9591, 1976 to the south of H-9558, 1975. Junction curves and note left in pencil due to the stage of processing.

H-9558, 1975 contains two internal junctions. All depth curves are drawn in good agreement between main sheet scale 1:10,000, Inset One scale 1:5,000 and Inset Two scale 1:5,000.

#### VI. COMPARISON WITH PRIOR SURVEYS

H-9558, 1975 was compared to H-5653, 1933-34-35, scale 1:40,000, soundings in fathoms. Considering the year and scale difference the agreement in depth curves and soundings is very good between H-9558, 1975 and H-5653, 1933-34-35. ~~Seven~~ <sup>Sixteen</sup> soundings were transferred in red from H-5653, 1933-34-35 to supplement H-9558, 1975. Generally the soundings and depth curves on H-5653, 1933-34-35 were used as a guide in drawing smooth depth curves on H-9558, 1975. See Q.C. Report para. 5.

H-9558, 1975 was compared to H-5397, 1933 scale 1:10,000 agreement was fair to good with H-9558, 1975 being deeper approximately 3 fathoms in depths from 10 to 90 fathoms. Several rocks and soundings were transferred from H-5397, 1933 in brown ink to supplement H-9558, 1975. H-5397, 1933 soundings and depth curves from 1 to 10 fathoms were used extensively to draw solid smooth depth curves on H-9558, 1975.

H-9558, 1975 was compared to H-5396, 1933 scale 1:10,000 agreement was good. H-9558, 1975 was slightly deeper in depths from 20 to 30 fathoms. Because of the distortion reflected on H-5396, 1933 copy, no soundings were transferred to supplement H-9558, 1975 smooth sheet.

H-9558, 1975 smooth sheet data is complete and adequate to supersede, with additions noted, the above listed prior surveys in common areas of hydrography.

VII. COMPARISON WITH CHART See Q.C. Report, para 6.

H-9558, 1975 was compared to charts <sup>(5144)</sup> 18744 scale 1:10,000<sup>^</sup>, 19th Edition, 24 May 1975 and 18746<sup>(5144)</sup> scale 1:80,000, 25th Edition, 25 January 1975. Agreement was very good except for inshore topographic items, rocks and aids to navigation on the main sheet and Inset One. <sup>and 1:10,000 inset</sup>

There are approximately 12 pre-survey review items located on H-9558, 1975. To identify and locate each item was very time consuming because the pre-survey review items are listed over a five year period. The following items are located on H-9558, 1975 main sheet scale 1:10,000:

- ✓ Item AK of pre-survey review update, 30 October 1973, contains information that is in <sup>incomplete</sup> error. There are two wrecks in the area of Palos Verdes Point. ✓

<sup>PSR item AK, origin CL 1122 of 1971,</sup>  
A wreck is at approximate latitude 33°46'27.9"N and longitude 118°25'39.9"W, scaled from Class I map TP-00792. Another wreck is to the northeast of Palos Verdes Point at approximate latitude 33°46'41.6"N and longitude 118°25'30.94"W, detached position 6653, day 277, launch 2026. Recommend both wrecks be charted, from the present survey. <sup>Origin T-4826 (1933) PSR item 6</sup>

- ✓ Item BQ of pre-survey review update of 20 August 1974 is covered sufficiently in ship's report section K. The description of the mooring buoy ("CG4") contained in volume one page 6 position 6955 is vague. The buoy is assumed to be white with red and blue reflective material. Position 6955 plots the buoy approximately 100 meters to the south of charted position. Recommend that this buoy be charted as located by this survey. <sup>Origin LNM 15 of 1971</sup>

- ✓ Item 6 of pre-survey review update, 24 September 1970, a visible wreck 3 feet above MLLW, plotted at approximate latitude 33°46'41.6"N longitude 118°25'30.94"W. (See above statement for item AK.) ✓



Verification Branch considers the Ship FAIRWEATHER statements contained in item K of the ship's report adequately cover the pre-survey review items 88, 90, 91, 92 and 93. Recommend items 88, 90, 91, 92 and 93 be charted as on chart 18744, 19th edition.

- ✓ Item 96 of the pre-survey review update, 6 February 1975 is a pair of towers for the Southern California Edison Company. The discharge tower is located on Inset One at approximate latitude  $33^{\circ}50'33.31''N$  longitude  $118^{\circ}23'34.73''W$  and marked by a can buoy. The least depth over the tower is 13.2 feet, position 8503, day 282, launch 2024, recorded in volume two, page 26. The intake tower was not located during the survey H-9558, 1975 on Inset Two (see ship's report, item K, pre-survey item 96). Holding the present charted position is recommended. Origin CL 919 of 1967 (as charted)
- ✓ Item 97 of the pre-survey review update 6 February 1975 is a pair of intake towers located on Positions 6969 and 6970, day 290. Position 6969 at approximate latitude  $33^{\circ}50'59.14''N$  and longitude  $118^{\circ}24'9.88''W$  reveals a least sounding of 3.8 fathoms over the tower. Position 6970 at approximate latitude  $33^{\circ}50'58.16''N$  and longitude  $118^{\circ}24'7.64''W$  reveals a least sounding of 3.3 fathoms over the tower. Origin CL 288 of 1950; BP 46517 (as charted)
- ✓ Item 98 of the pre-survey review update of 6 February 1975 is two intake towers located on Inset One. Position 8517 at approximate latitude  $33^{\circ}50'41.99''N$  and longitude  $118^{\circ}23'55.58''W$  is a tower covered by 15 feet of water, see volume 2, page 28, day 282, launch 2024. Position 8518 at approximate latitude  $33^{\circ}50'40.53''N$  and longitude  $118^{\circ}23'55.22''W$  is the other tower, covered by 17 feet of water, see volume 2, page 28, day 282, launch 2024. Source Nm 2(59); CL 63(59). (as charted)
- ✓ Item 103 of the pre-survey review update 6 February 1975 is an oil and gas seepage area located by detached position 6966 at approximate latitude  $33^{\circ}50'25.96''N$ ,  $118^{\circ}25'51.75''W$ , day 290, launch 2026. Origin H-5653 (1933)  
See Des. Rep. para. K.

Several rock awash and high water rock symbols were transferred from survey H-5397, 1933 in brown ink are recommended for charting between latitude  $33^{\circ}44'20''$  to  $33^{\circ}48'00''$  from the high water line to approximately 300 meters off shore. H-9558 is adequate to supersede the charted hydrography.

#### VIII. COMPLIANCE WITH INSTRUCTIONS

This survey adequately complies with the project instructions dated 11 August 1975.

#### IX. ADDITIONAL FIELD WORK

This is an adequate basic survey and supersedes charted information in the area. No additional field work is recommended.

#### X. NOTES TO COMPILER

Special attention is made to the aidsto navigation lights located in King Harbor, California, plotted on Inset One. The latitude and

longitude for the lights are contained in the signal list. A 2X chart enlargement is included with Class I manuscript TP-00791, displaying the difference in location of the lights between the Chart and Manuscript. A recommendation is made that the chart be updated to agree with Class I manuscript TP-00791.

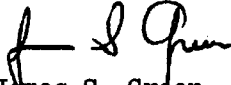
Respectfully submitted,



James L. Stringham

James L. Stringham  
Cartographic Technician  
16 November 1976

Examined and approved,



James S. Green  
Chief, Verification Branch



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL OCEAN SURVEY  
Pacific Marine Center  
1801 Fairview Avenue East  
Seattle, Washington

DATE: 10 December 1976

TO : Director, Pacific Marine Center

FROM: *Donald E. Nortrup*  
Donald E. Nortrup  
Chief, Processing Division

SUBJ: PMC Hydrographic Survey Inspection Team Report, H-9558

This survey is a basic hydrographic survey of the alongshore area in the vicinity of King Harbor, California. The survey was conducted by NOAA Ship FAIRWEATHER in 1975 in compliance with Project Instructions OPR-411-FA-75 dated 11 August 1975.

Main scheme hydrography on this survey is basically a sound piece of work. However, detail development is lacking in a number of aspects. The Descriptive Report indicates that PSR items 88, 90, 91, and 92 were developed by sounding launch. The records do not include the data from any of these investigations. The near shore area, particularly south of Flat Rock Point, was sparsely defined necessitating the carrying forward of a considerable number of rocks and soundings from prior survey and dashing of depth curves including, in places, the five fathom curve. The Descriptive Report indicates that the low water line was not delineated due to surf conditions.

Descriptive information concerning the wreck at 33°46.7'N, 118°25.5'W is ambiguous. The field records are not clear as to whether the wreck was submerged 0.4 fathoms or at the water level at the time of observation. The wreck is depicted on the smooth sheet as being exposed 3 feet based on the 0.4 fathoms interpretation. This is the conservative interpretation. The fishing barge at 33°49.55'N, 118°24.9'W is not considered to be a permanent feature. Consequently, it is recommended that the barge not be charted. The nearby, privately maintained, mooring buoy should be charted with a "privately maintained" annotation.

The inspection team finds H-9558 to be a fair basic survey. With the data which has been carried forward, it is considered adequate for charting and to supersede common areas of prior surveys. Administrative approval is recommended.

*Donald E. Nortrup*  
Donald E. Nortrup, LCDR, NOAA

*John C. Albright*  
John C. Albright, LCDR, NOAA

*Stanley H. Otsubo*  
Stanley H. Otsubo

*Dean R. Seidel*  
Dean R. Seidel, LCDR, NOAA



Administrative Approval

H-9558

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



\_\_\_\_\_  
Eugene A. Taylor  
Director, Pacific Marine Center

12/10/76  
Date



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

C352

March 3, 1977

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

THRU: Chief, Quality Control Branch

FROM: R. W. DerKazarian *RW DerKazarian*  
Quality Evaluator

SUBJECT: Quality Control Report for H-9558 (1975), Point Vicente to Redondo Beach, Santa Monica Bay, California

Survey H-9558 was inspected to evaluate the accuracy and adequacy of the survey with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, shoreline transfer, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data. In general, it was found to conform to the National Ocean Survey's standards and requirements except as follows:

1. It would have been desirable to have performed more electronic calibration checks and bar checks during the course of the survey in accordance with the Provisional Hydrographic Manual.
2. The Verifier's Report did not follow the commonly accepted format in the discussion of "Hydrography" and "Comparison with Chart."
3. A black landmark symbol and annotation for Point Vicente Lighthouse had been improperly shown on the smooth sheet. These were replaced with a triangulation symbol and annotation.
4. Several bare rocks carried forward from prior survey H-5397 (1933) have been shown on the smooth sheet as features awash. The Provisional Hydrographic Manual section 6.3.7.3 discusses the proper symbolization of this transfer.
5. This additional information should be noted to supplement the Comparison with Prior Surveys.

H-5396 (1933)

The high water line on the present survey north of the King Harbor Breakwater has accreted approximately 100 meters. Inshore soundings less than



3 fathoms on the present survey reveal that considerable shoaling has taken place. This can be attributed to natural deposits of sand from migration and from the effect of the breakwater.

H-5397 (1933)

H-5653 (1933-4-5)

These prior surveys, compared to the present survey, reveal only slight changes in the bottom; however, in latitude  $33^{\circ}49.5'$ , longitude  $118^{\circ}25.25'$  in Redondo Canyon, several depths on the present survey were in marked disagreement with prior depths. These shoaler soundings would indicate an unrealistic feature in this area and have been rejected. Several soundings from these prior surveys have been carried forward in this area to supplement the present survey.

The high water line as shown on the present survey has accreted approximately 10 meters to 40 meters as compared to prior survey H-5397, from latitude  $33^{\circ}48.5'$  to latitude  $33^{\circ}50.5'$ . Some deepening has occurred from approximate latitudes  $33^{\circ}48.75'$  to  $33^{\circ}49.75'$  from approximately 300 meters to 500 meters offshore. Depths of 5 fathoms on the prior survey are as much as 7.5 to 8 fathoms on the present survey which is attributed to scouring.

Several bottom characteristics, and a pier ruin in latitude  $33^{\circ}48.15'$ , longitude  $118^{\circ}23.98'$ , have been carried forward.

6. The Verifier's Report did not include a statement in the "Comparison with Chart" indicating the origin of the charted information. The verifier should determine the source of all the charted information in the area of the present survey, if possible. Generally, most of the charted hydrography will have originated with the prior surveys discussed under "Comparison with Prior Surveys" and will have been superseded by a statement in that section of the report. If such is true, a reference to that statement should be made here. Items for which a source cannot be determined by the verifier and have not been verified or disproved by the present survey should be noted for disposition by Headquarters personnel.

The charted hydrography originates with the previously discussed prior surveys in paragraph VI of the Verifier's Report that require no further consideration, supplemented by Corps of Engineers Condition Survey of October 1962 (Bp-67516), used exclusively in the vicinity of King Harbor, and several Presurvey Review items from chart letters and Notice to Mariners.

Attention is directed to the following:

The charted piers in King Harbor in latitude  $33^{\circ}50.91'$ , longitude  $118^{\circ}23.94'$ ; latitude  $33^{\circ}50.81'$ , longitude  $118^{\circ}23.86'$ ; and latitude  $33^{\circ}50.81'$ , longitude  $118^{\circ}23.84'$  have originated from NOS photographs of 1966-68, through Bp-98604. The piers have not been verified or disproved by the present survey and should remain as charted.

With the exception of the Presurvey Review items in paragraph K of the Descriptive Report and the items mentioned above, the present survey is adequate to supersede the charted information.

cc:  
C351

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L-447(96)

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