

9559

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-10-10-75
Office No..... H-9559

LOCALITY

State CALIFORNIA
General Locality SOUTHERN CALIFORNIA
Locality HERMOSA BEACH TO EL SEGUNDO

19 75

CHIEF OF PARTY
R. E. ALDERMAN

LIBRARY & ARCHIVES

DATE 10-22-76

9559

Area 5
chds
X 5101 applied
X 5194 applied
- 5020 applied
- 5003 No corr

HYDROGRAPHIC TITLE SHEET

H-9559

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-10-10-75

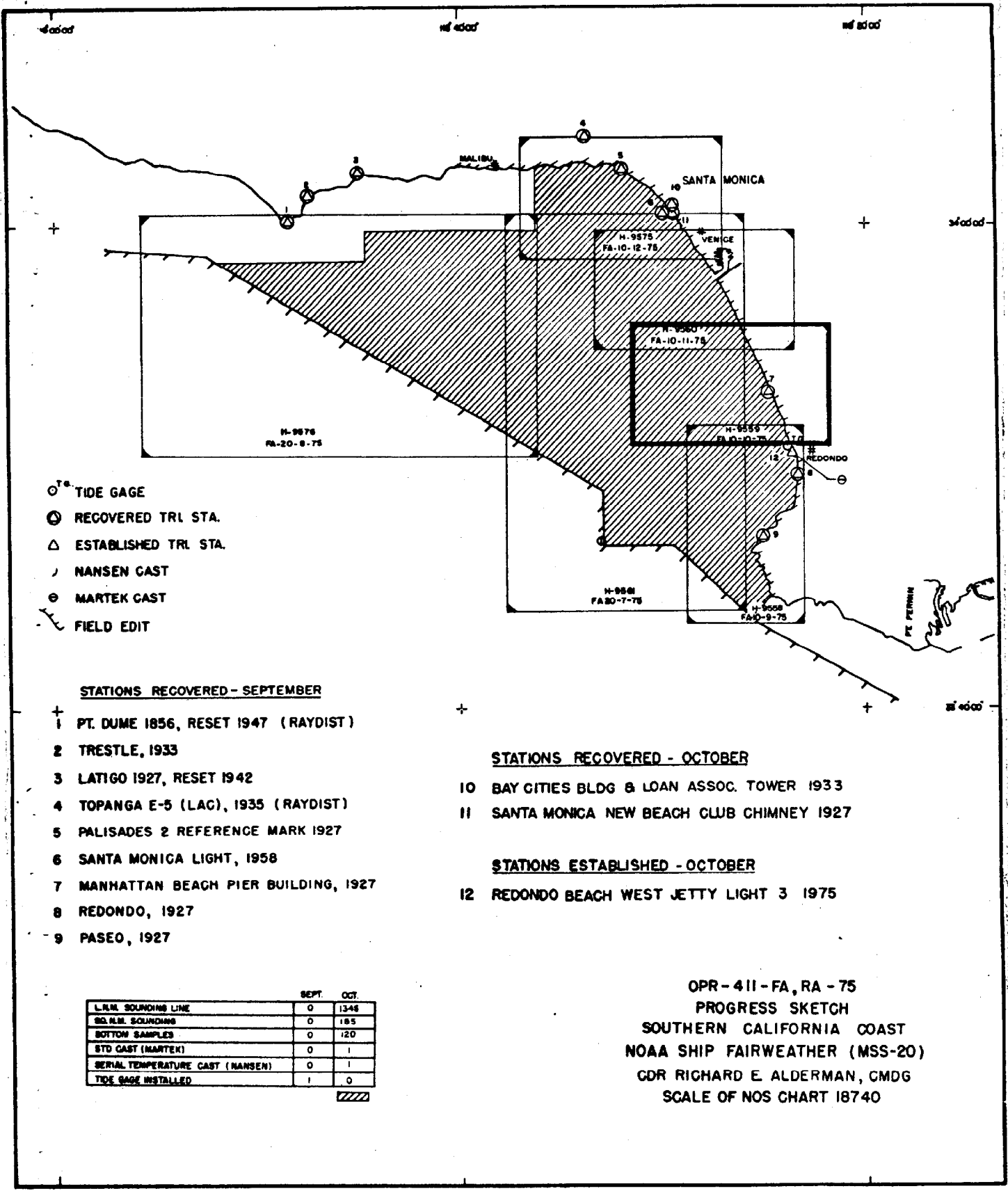
State CaliforniaGeneral locality Southern CaliforniaLocality Hermosa Beach to El SegundoScale 1:10,000Date of survey 1 October - 9 October, 1975Instructions dated 11 August 1975Project No. OPR-411-FA-75Vessel Fairweather Launch
FA-3 (hull no. 1240, EDP no. 2023)Chief of party CDR R. E. Alderman, NOAASurveyed by LT (jg) Deborah Astle, NOAASoundings taken by echo sounder, hand lead, pole Ross Fineline Fathometer (S/N 201065)Graphic record scaled by Ross 6000 DigitizerGraphic record checked by FAIRWEATHER Personnel

Verified

~~XXXXXXXX~~ by Thelma O. JonesAutomated plot by PMC-Kynetics Plotter

Soundings

~~XXXXXXXX~~ by Thelma O. JonesSoundings in fathoms ~~XXXX~~ at ~~XXXX~~ MLLWREMARKS: The survey was run on GMT. The mean longitude of the survey is118°26'30"W. This ^{smooth} boatsheet is complete and adequate for charting.Applied to stds 3/2/77
[Signature]



- 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 TOPANGA E-5 (LAG), 1935 (RAYDIST)
- 5 PALISADES 2 REFERENCE MARK 1927
- 6 SANTA MONICA LIGHT, 1958
- 7 MANHATTAN BEACH PIER BUILDING, 1927
- 8 REDONDO, 1927
- 9 PASEO, 1927

STATIONS RECOVERED - OCTOBER

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

STATIONS ESTABLISHED - OCTOBER

- 12 REDONDO BEACH WEST JETTY LIGHT 3 1975

	SEPT	OCT
L.R.M. SOUNDING LINE	0	1348
SO. R.M. SOUNDINGS	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-9559(FA-10-10-75)

A. PROJECT

This survey was accomplished in accordance with project instructions OPR-411-FA-75, Southern California Coast, dated August 11 1975, and with change number 2 dated 22 August 1975. ✓

B. AREA SURVEYED

The area surveyed on sheet FA-10-10-75 extends from Hermosa Beach to El Segundo. It is bounded on the north and south by latitudes $33^{\circ}55'30''N$ and $33^{\circ}51'20''N$ respectively. On the east the survey is bounded by the shoreline and on the west by a diagonal line between the following points: $33^{\circ}55'30''N$, $118^{\circ}29'15''W$ and $33^{\circ}51'20''N$, $118^{\circ}26'48''W$. Hydrography was accomplished from October 1 to October 9 1975. ✓

C. SOUNDING VESSEL

All hydrography on this sheet was accomplished by launch FA-3(hull no. 1240 EDP no. 2023). ✓

D. SOUNDING EQUIPMENT

The launch used a Ross Finline fathometer. A TRA corrector of +0.4 fathom, based on bar checks taken during the project, was used for the launch. The sound velocity correctors were determined from one Nansen cast taken within the project area. For details see Report on Corrections to Echo Soundings, OPR-411-FA-75. The depths of soundings on this sheet range from approximately 0 fathom to 37 fathoms. ✓

Sounding Instruments:

<u>Vessel</u>	<u>Instrument</u>	<u>Model</u>	<u>S/N</u>
FA-3	Ross Finline	200-A	204065

E. BOAT SHEET

The boat sheet projection used was a modified transverse Mercator. The scale is 1:10,000. The skew is 116° and the origin is $33^\circ 51' 07''$ N, $118^\circ 23' 07''$ W. All data was plotted by the shipboard Hydro-plot 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). A copy of the parameter tape printout is appended. ✓

F. STATION CONTROL

Horizontal control for 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. No photogrammetrically located signals were used for this survey. The 1927 North American datum was used for all computations, which are included in the Electronic Systems Calibration Report, OPR-411-FA-75. ✓

beyond limits of survey

G. POSITION CONTROL

The Hastings Raydist electronic positioning equipment, operating in the range-range mode, was used to control all the hydrography on this sheet.

beyond limits of survey

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. Launch FA-3 was equipped with a Raydist mobile transceiver, navigator, strip chart recorder and a 9 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 program.

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

H. SHORELINE

TP-00788 Shoreline detail information was obtained from class III shore-line manuscripts, TP-00790 and TP-00791. Field edit was completed on both manuscripts during October 1975. The low water line could not be delineated because of high surf conditions. ✓

I. CROSSLINES

Crosslines accounted for 10% of all hydrography completed on this survey. Comparisons at crossings agreed within one fathom. ✓

J. JUNCTIONS

The survey junctions with the 1:10,000 scale surveys FA-10-9-75 (H-9558), FA-10-11-75 (H-9560), and H-8921 1967, and with the 1:20,000 scale survey FA-20-7-75 (H-9561). All junctions agreed within one fathom. *See Verifier's Report regarding H-8921.* ✓

K. COMPARISON WITH PRIOR SURVEYS

The boatsheet was compared with prior hydrographic surveys H-5396, 1933 (scale 1:10,000), H-5235, 1933 (scale 1:10,000), and H-5653, 1933-1935 (scale 1:40,000). Comparison of representative soundings between present and prior surveys did not exceed 1 fathom. ✓

The following Pre-Survey Review items from the update of 6 February 1975 were investigated:

✓ Item 85, a mooring buoy labeled "CG3", was established at latitude $33^{\circ}54.0'$, longitude $118^{\circ}25.73'$. This buoy was located on the present survey, is plotted on the field sheet, and should be charted as shown. originates with L.N.M. 15 of 1971. Concur

Item 94 is artificial fishing reefs constructed of quarry stone placed in piles 20 feet by 100 feet, 65 to 85 feet off the seaward end of the Manhattan Beach and Hermosa Beach Piers at positions $33^{\circ}53.0'N$, $118^{\circ}24.8'W$ and $33^{\circ}51.7'N$, $118^{\circ}24.3'W$ respectively. These fish havens were developed with approximately 10 meter spacing as shown on the field sheet but no evidence of them was found, possibly an indication that they have sanded over. Since the quarry stone no doubt still exists as placed, it is recommended that the obstructions continue to be charted as shown. originates with C/L 1540 (65) Concur ✓

✓ Item 99 is twenty-five mooring buoys charted in the vicinity of latitude $33^{\circ}54.5'$, longitude $118^{\circ}26.7'$. These buoys were located on the present survey, are plotted on the field sheet, and should be charted as shown. originates with Bp 85657 Concur

✓ Item 102 is an obstruction charted in latitude $33^{\circ}54.91'$, longitude $118^{\circ}25.88'$. This area was developed on the survey and no evidence of the obstruction was found, but a line of pilings up to three feet in height and extending out into the surf was observed. It is therefore recommended that the obstruction continue to be charted as shown. *originates with NM No 35 of 1943*
Concur

L. COMPARISON WITH CHART

The field sheet was compared with chart 18744(5144), Santa Monica Bay, 19th Ed., 24 May 1975, scale 1:40,000. All soundings on the present survey agreed within one fathom with the chart.

There are 25 mooring buoys in the vicinity of latitude $33^{\circ}54.5'$, longitude $118^{\circ}26.7'$ which were located on the present survey and are shown on chart 18744. Several uncharted spar and nun buoys (position numbers 2706-2710) used in the transfer of oil are located amongst these mooring buoys, but since they are not fixed and are often hoisted alongside moored tankers, it is recommended that they not be charted. *Concur*

M. ADEQUACY OF SURVEY

All fathogram field survey records were scanned and checked for deeps and peaks with appropriate changes made to the original records. The survey is complete and adequate to supersede prior surveys for charting.

N. AIDS TO NAVIGATION

All aids to navigation located on the survey are properly shown in the latest Light List and on chart 18744(5144). It is recommended that all buoys located on the survey be charted except position numbers 2706-2710 which are the spar and nun buoys associated with the mooring buoys as described in section L.

O. STATISTICS

<u>Vessel</u>	<u>Total Positions</u>	<u>Hydrography, n.m.</u>
FA-3	771	136.1
Total area - 11.2 sq. n.m.		
Total bottom samples - 12		

P. MISCELLANEOUS

Greenwich Mean Time was used for all survey records. Velocity

corrections have not been applied to the soundings on the field sheet.

A pipeline extending seaward in the vicinity of latitude 33°55' 25", longitude 118°26'00" was not investigated because this area was developed in a 1967⁸ survey (H8921) by the NOAA Ship DAVIDSON. ✓

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 ✓
Electronic Systems Calibration Report, OPR-411-FA-75
Coast Pilot Report, OPR-411-FA-75
Field Edit Reports, OPR-411-FA-75

S. DATA PROCESSING PROCEDURES

All data was collected using an ASI Logger. The unscrambler program RK 337, version 8/08/74 was used on the ship to convert the data to the master format. Program RK 211, version 8/16/74, was used on the ship's Hydroplot system to plot all of the survey data. ✓

Submitted by:

Deborah Astle

Deborah Astle, LT(jg), 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 0001

SOUND VELOCITY CORRECTOR ABSTRACT

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

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

DEPTH (FATHOMS)

CORRECTOR (FATHOMS)

0.0-2.0✓	+ 0.0✓
2.1-4.0✓	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
Not on
H-9559

APPROVAL SHEET

Field No. FA-10-10-75

Register No. H-9559

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



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

OPR 411 SOUTHERN CALIFORNIA COAST FALL 1975

STATION LIST: H-9559

STA	0	LATITUDE	LONGITUDE	CRT	ELEV	F	KHZ	SOURCE
		FT DUNE 1856						
001	0	34 00	05652 118 48 20652	250	0062	330040		G-341163
		TOPANGA CANYON E-5 (LAC) 1935						
002	0	34 03	40193 118 33 46981	250	0437	330040		(1)
		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)
		SPIRE (landmark)						
120	0	33 53	10000 118 24 36000	243	0100	000000		(4)

See Q.C. Report-Item 6

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
- (3) PHOTO PICKED SIGNALS FROM MAP TF-00791
- (4) PHOTO PICKED SIGNALS FROM MAP TF-00790.

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

- TO BE CHARTED
- TO BE REVISED
- TO BE DELETED

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

STATE
CALIFORNIA ✓

LOCALITY
POINT VICENTE
TO PORT HUENEME

DATE
APRIL 10
1975

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

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 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)	LATITUDE		LONGITUDE		POSITION		METHOD AND DATE OF LOCATION (See instructions on reverse side)		CHARTS AFFECTED
		° /	"	° /	"	D.M. Meters	D.P. Meters	OFFICE	FIELD	
		33-55	14 1/2	118-25	53.38	1371	74 L(1) 2200	F-V-Vis 10-16-75		
STACK ✓	(240 FT.) ✓	33-55	14 1/2	118-25	53.38	1371	74 L(1) 2200	APRIL 5, 1974	F-V-Vis 10-16-75	+8301 18740
STACK ✓	(334 FT.) ✓	33-55	7.56	118-25	35.19	904	"	"	F-V-Vis 10-16-75	-17-
		-		-						
		-		-						
		-		-						
		-		-						
		-		-						
		-		-						
		-		-						
		-		-						
		-		-						

J. DESCH

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

TO BE CHARTED
 TO BE REVISED
 TO BE DELETED

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

STATE
CALIFORNIA

LOCALITY
POINT VICENTE
TO PORT HUENEME

DATE
APRIL 1975

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)

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

HAVE NOT

DATUM

N.A. 1927

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

OPR PROJECT NO.
411

JOB NUMBER
CM-7404

SURVEY NUMBER
TP-00790

POSITION

OFFICE

CHARTS
AFFECTED

CHARTING
NAME

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

LATITUDE

LONGITUDE

D.P. Meters

FIELD

STACK

33-54

34.89

118-25

26.78

74 L (1) 2199

18304

STACK

33-54

33.11

118-25

25.84

APRIL 5, 1974

18740

TANK

33-54

24.47

118-25

18.92

"

"

TANK

33-54

21.49

118-25

17.36

"

"

SPIRE

33-54

6.62

118-25

446

"

"

AMERICAN MARTYRS CATHOLIC
CHURCH SPIRE
SEE TP-00791(1:5,000) FOR
OTHER LANDMARKS

118-25

"

Delete as per
C/L 860/76

Approximate

NOIA FORM 76-40
(8-74)

Replaces CGCS Form 567.

NONFLOATING AIDS ~~AND~~ FOR CHARTS

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

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

REPORTING UNIT: COASTAL MAPPING DIV. AMC NORFOLK VA.
 STATE: CALIFORNIA
 LOCALITY: POINT VICENTE TO PORT HUENEME
 DATE: APRIL 1975

OPR PROJECT NO.: 411
 JOB NUMBER: CM-7404
 SURVEY NUMBER: TP-00790
 DATUM: N.A. 1927

REPORTING UNIT: COASTAL MAPPING DIV. AMC NORFOLK VA.
 STATE: CALIFORNIA
 LOCALITY: POINT VICENTE TO PORT HUENEME
 DATE: APRIL 1975

CHARTING NAME: LIGHT
 DESCRIPTION: EL SEGUNDO INTAKE PIER LIGHT
 METHOD AND DATE OF LOCATION: 74L(1) 2199 10751
APRIL 5, 1974 10-F-35

CHARTS AFFECTED: 18301
18740

POSITION: 33 54.0 N 118 25.0 W
 LONGITUDE: 41.18
 D.P. Meters: 1058
 OFFICE: See 1800790

NOTE 1: LIGHT IS ON SEAWARD END OF PIER ALL THE WAY TO THE PIER EDGE ON CENTERLINE OF PIER.

* from CL 860 of 76 (Form 76-40)

19

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

TO BE CHARTED
 TO BE REVISED
 TO BE DELETED

REPORTING UNIT
(If Aid Party, Ship or Office)
COASTAL MAPPING DIV.
AMC NORFOLK, VA.

STATE
CALIFORNIA

LOCALITY
VICENTE
TO PORT HUENEME

DATE
MARCH
1975

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

OPR PROJECT NO.
411

JOB NUMBER
CM-7404

DATUM
N.A. 1927

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

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

SURVEY NUMBER
TP-00791

POSITION

OFFICE

CHARTS
AFFECTED

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

CHARTING NAME	DESCRIPTION	LATITUDE		LONGITUDE		D.P. Meters	OFFICE	FIELD	CHARTS AFFECTED
		D.M. Meters	° /	D.M. Meters	° /				
FOG SIGNAL	HERMOSA BEACH PIER FOG SIGNAL	33 51.7	✓	118 24.3	✓		74L(1) 1645 ✓ MARCH 31, 1974 ✓	SZE DRAWING ON MYLAR FOR POSITION.	18304- 18740
LIGHT	KING HARBOR LIGHT 1	33 50	✓	56.22 1732	✓ 118 23	58.35 1500	74L(1) 1644 ✓ MARCH 31, 1974 ✓	V-VIS 10-7-75	" "
LIGHT	KING HARBOR LIGHT 2	33 50	✓	54.37 1675	✓ 118 23	56.36 1449	" "	V-VIS 10-7-75	" "
LIGHT	PORTOFINO LIGHT 1	33 50	✓	48.56 1496	✓ 118 23	52.24 1343	" "	V-VIS 10-7-75	" "
LIGHT	PORTOFINO LIGHT 2	33 50	✓	47.55 1465	✓ 118 23	49.79 1280	" "	V-VIS 10-7-75	" "
LIGHT	REDONDO BEACH EAST JETTY LIGHT 2	33 50	✓	30.02 925	✓ 118 23	33.80 869	" "	V-VIS 10-7-85	" "
LIGHT	REDONDO BEACH WEST JETTY LIGHT 3	33 50	✓	27.78 856	✓ 118 23	40.53 1012	" "	F-2-6-2 10-7-75	" "
LIGHT	MOLE C LIGHT	33 50	✓		118 23			SEE PHOTO 74L(2) 1644 FOR POSITION	" "
LIGHT	REDONDO HARBOR LIGHT	33 50	✓		118 23			SEE PHOTO 74L(1) 1644 FOR POSITION	" "

Approved

107-A FORM 75-40
(8-74)

Replaces C&GS Form 567.

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

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)

REPORTING UNIT
If field party, Ship or Office
COASTAL MAPPING DIV., CALIFORNIA
AHC NORFOLK, VA.
STATE: CALIFORNIA
LOCALITY: POINT VICENTE TO PORT HUENEHUE
DATE: MARCH 1975

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

CHARTING NAME
411
JOB NUMBER
CM-7404
SURVEY NUMBER
TP-00791
DATUM
N.A. 1927
POSITION
LATITUDE: 33 51
LONGITUDE: 118 23

CHARTS AFFECTED
18301
18740
"
"
"
212
"

DESCRIPTION
(REDONDO WATER TANK, 1927)
REASON FOR DELETION
Record reason for deletion of landmark or aid to navigation.
Show triangulation station names, where applicable, in parentheses.

CHARTING NAME	JOB NUMBER	SURVEY NUMBER	D.A.T.U.M.	POSITION		METHOD AND DATE OF LOCATION (See instructions on reverse side)	OFFICE	CHARTS AFFECTED
				LATITUDE	LONGITUDE			
TANK (REDONDO WATER TANK, 1927)	CM-7404	TP-00791	33 51	118 23	D.M. Meters	74 L (C) 1113 MARCH 4, 1974	18301 18740	
					D.P. Meters			
TANK			33 50	118 22	D.M. Meters	74 L (1) 1843 APRIL 3, 1974	" "	
					D.P. Meters			
STACK (NORTH OF EIGHT)			33 51	118 23	D.M. Meters	" " " "	"	
					D.P. Meters			

4/11/75 JD

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 9, 1975

HYDROGRAPHIC SHEET: H-9559

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.

James R. Schulz

for Chief, Tides Branch

Survey No. 9559

Name on Survey	<div style="display: flex; justify-content: space-between; font-size: small;"> On Chart No. On previous charts On U.S. Charts From 1899 to 1914 On 1899 charts P. O. Guide or Map Rang. Monthly A. 2. U. S. Light List </div>										
	A	B	C	D	E	F	G	H	K		
EL SEGUNDO											1
HERMOSA BEACH											2
MANHATTAN BEACH											3
PACIFIC OCEAN											4
SANTA MONICA BAY											5
											6
											7
											8
											9
											10
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											26

APPROVED
 Char. E. Harrington

STAFF GEOGRAPHER - CS1x2

9 Nov. 1976

APPROVAL SHEET

FOR

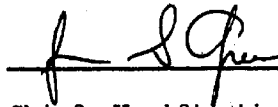
SURVEY H-9559

- 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:

9/22/76

Signed:



Title: Chief, Verification Branch

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9559

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET with 1 each smooth PNO & excess		1	BOAT SHEETS (mylar)		1	
DESCRIPTIVE REPORT		1	OVERLAYS (preliminary)		8	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1-with	printouts	XX			
VOLUMES	1					
BOXES			1-smooth P/O, cahier & sndg. vol.			
T-SHEET PRINTS (List) TP-00790, TP-00791						
SPECIAL REPORTS (List) N/A						

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				771
POSITIONS CHECKED		771		
POSITIONS REVISED		0		
DEPTH SOUNDINGS REVISED		47		
DEPTH SOUNDINGS ERRONEOUSLY plotted		262		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		0		
	TIME (MANHOURS)			
Verification of Control		4		
Verification of Positions		83		
VERIFICATION OF SOUNDINGS		152		
Smooth Sheet		56		
ALL OTHER WORK		8		
TOTALS		303	HIT 10 hrs	
PRE-VERIFICATION BY J. S. Green	BEGINNING DATE 1-20-76	ENDING DATE 1-20-76		
VERIFICATION BY Thelma O. Jones	BEGINNING DATE 2-21-76	ENDING DATE 9-21-76		
REVIEW BY Q.C. Insp R.W. Derkazavian	BEGINNING DATE	ENDING DATE		

Thelma O. Jones
Q.C. Insp R.W. Derkazavian 110 hrs
R.D. Sanocki 9 Feb 77 8 hrs *Carters 20 hrs 1/27/77*
04/05/77

REGISTRY NO. H-9559

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:

positions	243906	262302	260101
	253006	dig. 2623 -	260102
	258000	262303	272704
	257908	226906	248605
	260606	251103	
	260700	258302	
dig.	2613 -	258303	
dig.	2623 -	258304	

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-9559

Items for Future Presurvey Reviews

The bottom has basically remained the same since the prior surveys with the exception of the many submerged pipelines added. Little change can be expected in the area but a future investigation should include least depth determination by hand lead line on the following features and the many submerged pipelines.

<u>Depth (fms)</u>	<u>Latitude</u>	<u>Longitude</u>
5.1	33°55.10'	118°26.78'
1.3	33°54.98'	118°26.60'
2.3	33°55.00'	118°26.53'
2.1	33°54.47'	118°25.94'
2.1	33°54.43'	118°25.94'
3.3	33°54.45'	118°25.84'

<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>
335	1183	3	2	50 years

VERIFIER'S REPORT

FA-10-10-75

H-9559

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

H-9559 is a basic survey conducted by the FAIRWEATHER in October, 1975. Sounding equipment used for this survey consisted of a Ross Fineline fathometer and a Ross 6000 Digitizer. The Hastings Raydist electronic positioning equipment, was used to provide position control. See paragraph G of the ship's report.

With the following exception, few problems were encountered in the verification of this survey.

- a. Due to the previous straight line interpolation of the PMC computer, rates were added to numerous soundings in order to plot the true position in the development areas or when the vessel was off line.

II. CONTROL AND SHORELINE

The shoreline originates from unreviewed Class I manuscripts, TP-00788, TP-00790 and TP-00791, from photos flown in March and April 1974. Field edit was accomplished in the fall of 1975 and supplemented in the spring of 1976. Horizontal control is adequately described in paragraph F of the Descriptive Report.

III. HYDROGRAPHY

The basic hydrography incorporated in this survey is adequate to delineate the bottom configuration and to determine least depths. There were no major difficulties in the verification of the main scheme soundings, and the crosslines were in excellent agreement. The zero curve was not delineated by hydrography due to surf conditions. There are twelve bottom samples in this survey. See QC Report

IV. CONDITION OF SURVEY

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

V. JUNCTIONS

This survey junctions with contemporary surveys H-9558, 1:10,000 (1975) to the south, H-9560, 1:10,000 (1975) to the north, and H-9561, 1:20,000 (1975) to the west. The junction soundings and curves are in excellent agreement.

The project instructions list H-8921, 1:10,000 (1968) as a junctional survey, but H-9559 and the northern junctional survey, H-9560 encompass the entire area covered by H-8921. The curves and soundings on H-8921 were not in good agreement with H-9559. The verifier recommends that H-8921, be superseded. See Q.C. Report

VI. COMPARISON WITH PRIOR SURVEY

Comparison was made with prior surveys H-5396, 1:10,000 (1933), H-5235, 1:10,000 (1933) and H-5653, 1:40,000 (1935). Comparison of soundings was excellent, within a fathom. ³³⁻³⁵

The pre-survey review items for this survey were adequately disposed of in paragraph K of the Descriptive Report.

The present survey supersedes the above surveys in the areas of common coverage. See Q.C. Report

VII. COMPARISON WITH CHART

Comparison was made with Chart 18744 (C&GS 5144), Santa Monica Bay, 19th Edition, 24 May 1975, scale 1:40,000. All soundings were in good agreement. The present soundings should supersede charted hydrography in the area.

The project instructions for OPR-411 1976 work required investigation of the pipelines charted in the vicinity of El Segundo. These items were investigated in the spring of 1976 and are reflected on revised Class I manuscripts and the smooth sheet. See Attachment A of the Verifier's Report.

There are two uncharted spar buoys, "C" ^{pos. 2711} at latitude 33°54'22.62", longitude 118°26'20.05" and "B" ^{pos. 2722} at latitude 33°54'45.24", longitude 118°26'22.17". The verifier recommends that these buoys be charted.

Obstruction buoy at latitude 33°51.3', longitude 118°24.6' was investigated and not found at time of survey. Complete details in Ship's Descriptive Report for junction survey H-9558, 1975.

The southernmost stack of latitude 33°55.1', longitude 118°25.6' is not addressed in the ship's data. The verifier recommends that the source be researched and the stack be charted accordingly.

Buoy ^{SA} at latitude 33°54'55.59", longitude 118°26'42.93" is identified as red and white spar. It is on the chart as an orange and white spar. ^{pos 2723} The verifier suggests that the source be researched for correct color.

There are two non-floating aids to navigation in this survey. El Segundo Intake Pier Light and Hermosa Beach Pier Fog Signal.

See Q.C. Report

VIII. COMPLIANCE WITH INSTRUCTIONS

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

IX. ADDITIONAL FIELD WORK

This is a good basic survey and supersedes charted information in the area. ~~No~~ Additional field work is recommended. ✓

See QC. Report

X. NOTES TO COMPILER

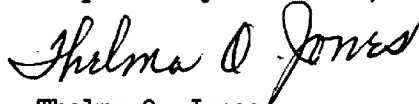
The signal list is at the beginning of the Position Printout. ✓

The velocity and TC/TI correctors are at the beginning of the sounding printout. ✓

The tide corrector printout is in the fathogram cahier. ✓

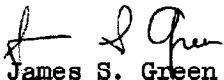
There are several special purpose spar and nun buoys (position numbers 2706-2710) in the vicinity of latitude $33^{\circ}54'30''$ and longitude $118^{\circ}27'00''$, which were plotted on the smooth sheet. It is recommended that they not be charted. ✓

Respectfully submitted,



Thelma O. Jones
Cartographic Technician
September 21, 1976

Examined and approved,



James S. Green
Chief, Verification Branch

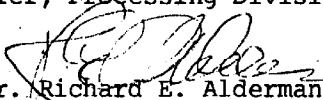
ATTACHMENT "A"



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
NOAA SHIP FAIRWEATHER MSS-20

Date: 23 June 1976

To : Chief, Processing Division, CPM3

From: 
Cdr. Richard E. Alderman, NOAA
Commanding Officer

CAM Forwarded to
MSS-21

Subj: Field Edit Report, OPR-411-FA-76, Follow-Up:
Standard Oil Company Pipelines

In accordance with item 4.13.b. of the PROJECT INSTRUCTIONS for OPR-411, dated 12 November 1975, contact was made with plant engineers at the Standard Oil Company of California El Segundo Refinery regarding the location of offshore pipelines. The FAIRWEATHER has been assured that the pipes are correct as charted, and no more have been recently constructed or planned.

Enclosed are drawings, obtained from the company, that describe the lines. Azimuths (from south) and other pertinent data have been computed from plans and the location of their termini are submitted in the form of geographic positions. These have been computed using the geodetic forward computation program RK-407, with input data from the drawings. Positions agree fairly well with the zone 7 state plane coordinates as shown on the plans. The high tide crossing of the pipelines, as depicted by the drawings, were determined by the company some years ago and may not be accurate. The data is in order except:

- 1) There are two ^{pipe} lines (42" and 60") that have existed for some time but are currently not charted. *Both pipelines currently plotted on present survey.*
- 2) There is an apparent typographical error in one of the plans for berth #1; there is further ambiguity about the location of the line, with two sets of terminus locations. *Pipeline ~~plotted~~ currently plotted on present survey.*

No more can be accomplished on the pipelines in the field. Our entire data package is submitted, with the suggestion that further clarification about berth #1 (and other information) be obtained from: A.F. Swanson, Standard Oil of California Western Operations Inc., Post Office Box 97, El Segundo, California, who, along with B.M. Chambers and W.E. Larson, have been of considerable help during the field investigation.





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

Date: 1 October 1976

To: Eugene A. Taylor, RADM
Director, Pacific Marine Center

From: *Donald E. Nortrup*
Donald E. Nortrup, LCDR
Chief, Processing Division

Subject: PMC Hydrographic Survey Inspection Team Report, H-9559

This survey is a basic hydrographic survey of an along shore area in the vicinity of Hermosa Beach and El Segundo, California. The survey was conducted by NOAA Ship FAIRWEATHER in October, 1975 in compliance with Project Instructions OPR-411-FA-75 dated 11 August 1975. Minor cartographic and report changes have been made as a result of the inspection process.

This survey is a relatively small, straight-forward survey. The northern portion of the survey area is characterized by numerous pipelines and associated buoys. The locations and characteristics of these features were well documented by the ship. Several sounding lines exhibit deviations from the expected vessel track. This is a result of plotting each sounding at its recorded position rather than interpolating locations between numbered positions.

The inspection team finds H-9559 to be a very good basic survey, complete and adequate for charting and to supersede prior surveys. Administrative approval is recommended.

Donald E. Nortrup
Donald E. Nortrup, LCDR

Dean R. Seidel
Dean R. Seidel, LCDR

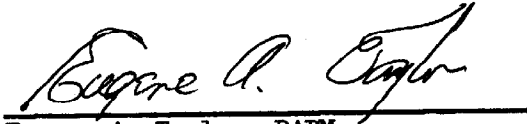
John C. Albright
John C. Albright, LCDR

Richard D. Lynn
Richard D. Lynn

Administrative Approval

H-9559

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



Eugene A. Taylor, RADM
Director, Pacific Marine Center

10/14/76
Date



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

C352

January 5, 1977

TO: *for* *R.H. Cantano*
A. J. Patrick
Chief, Marine Surveys Division

THRU: Chief, Quality Control Branch

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

SUBJECT: Quality Control Report for H-9559 (1975), Hermosa Beach to
El Segundo, Southern California, California

Survey H-9559 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. The Verifier's Report under "Hydrography" states that "the survey is adequate to delineate the bottom configuration and to determine least depths." It would have been desirable to cross the various sewer outfalls with additional sounding lines and provide more information on the general depths over these features. Of special interest would be the least depths on possible submerged structures at the offshore end of pipelines and sewer outfalls.
2. The Verifier's Report under "Junction" states that "the curves and soundings on H-8921 were not in good agreement with H-9559." The verifier recommends that H-8921 be superseded. Inasmuch as the area of H-8921 has been resurveyed on contemporary surveys, it would be desirable to treat H-8921 as a prior survey and make a comparison with it.

Comparison with Prior Survey H-8921 (1968) 1:10,000

A comparison with this closely developed prior survey shows that deepening of approximately 0.4 fathom in 5-fathom depths and 0.2 fathom in 10-fathom depths has occurred. These changes can probably be attributed to current scour and the different seasons of the year in which the surveys were



conducted. Several significant shoaler depths have been carried forward to supplement the present survey. These generally are depths on submerged pipelines or sewer outfalls. Two topographic signals, 014 and 015 (formerly located approximately 600 meters offshore in latitude $33^{\circ}54.6'$, longitude $118^{\circ}25.9'$, on the prior survey were on an old pier which has subsequently been removed in its entirety. C/L 1488 (1971)

With the addition of the soundings carried forward, the present survey is adequate to supersede this prior survey in the common area.

3. Under "Comparison with Prior Surveys" more specific information than provided in the Verifier's Report is desirable. In the common area with the prior surveys variable changes of 0.2 to 0.7 fathom have occurred in depths less than 5 fathoms. In depths greater than 5 fathoms the bottom has revealed little change. North of latitude $33^{\circ}55'$ accretion in the shoreline of as much as 100 meters has occurred. The shoreline accretion is attributed largely to sand that was pumped from the sand dunes behind the Hyperion Sewer Disposal Plant, C/L 249 (1948).

4. 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 and paragraph 2 of this report which require no further consideration, together with various chart letters and blueprints.

Attention is directed to the following:

a. No information regarding the abandoned sewer charted in latitude $33^{\circ}55.25'$, longitude $118^{\circ}26.9'$ is provided by the present survey and the sewer should be retained as charted.

b. The ruins charted in latitude $33^{\circ}54.57'$, longitude $118^{\circ}25.5'$ originate from aerial photography of April 1968 applied to Bp-98604. This charted ruin has not been disproved by the present survey and should be retained as charted. *Additional information through C.L. 2261 of 1975 recommends deletion of ruins from chart RWS 471*

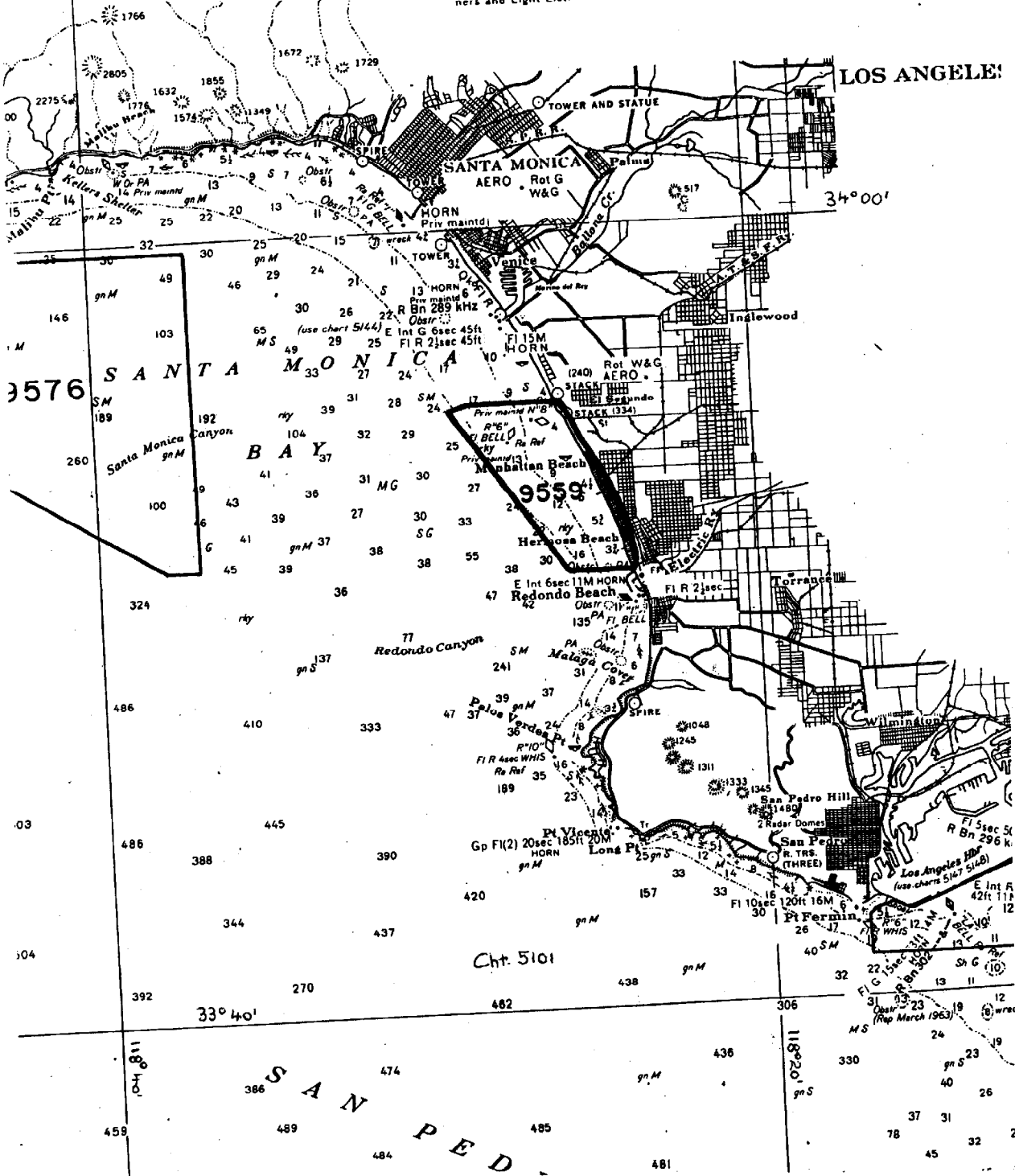
With the exceptions noted in paragraph K of the Descriptive Report and the items mentioned above, the present survey is adequate to supersede the charted hydrography in the common area.

5. The four buoys in the vicinity of latitude $33^{\circ}54.45'$, longitude $118^{\circ}25.95'$, and the spar buoy in latitude $33^{\circ}54.93'$, longitude $118^{\circ}26.72'$ plotted on the present survey are in considerable disagreement with their charted positions. Several other buoys located by the present survey are not in their charted positions although they adequately mark the features for which they were intended.

6. The landmark (SPIRE), control station 120 located in latitude $33^{\circ}53.2'$, longitude $118^{\circ}24.6'$, was plotted on the present survey apparently from an approximate position recorded only to tenths of a minute in a landmark report. The station has been deleted from the present survey.

CC:
C351

RACING BUOYS
Racing buoys within the limits of this chart are not shown hereon. For the location and description see the Coast Guard Local Notices to Mariners and Light List.



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9559

INSTRUCTIONS

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

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

CHART	DATE	CARTOGRAPHER	REMARKS
18744 (5144)	1/27/78	Cortis RCS	Full Part Before After Verification Review Inspection Signed Via Drawing No. Fully applied
18740 (5101)	5-3-78	Shagun B. N. Min RCS	Full Part Before After Verification Review Inspection Signed Via Drawing No. 44 Exam, No corr
18022 (5020)	5-19-78	Shagun B. N. Min RCS	Full Part Before After Verification Review Inspection Signed Via Drawing No. 39 Exam, No corr
18020 (5002)	1-8-79	Hamilton ^{WV}	Full Part Before After Verification Review Inspection Signed Via Drawing No. Exam - no corr
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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