

9467

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 10-1-74
Office No. H-9467
.....

LOCALITY

State California
General Locality ... Southern California
Locality ... Dana Point and Vicinity
.....

19 74

CHIEF OF PARTY

..... C. A. Burroughs
.....

LIBRARY & ARCHIVES

DATE 12/16/76
.....

9467

HYDROGRAPHIC TITLE SHEET

H-9467

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-10-1-74

State CALIFORNIA

General locality Southern California

Locality Dana Point and Vicinity

Scale 1:10,000

Date of survey 24 Sept. - 24 Oct. 1974

Instructions dated 5 June 1974

Project No. OPR-411-FA-74

Ship FAIRWEATHER Launches
Vessel FA-4 (1211, 1233, EDP 2024), FA-5 (1001, 2025), FA-6 (1243, 2026)

Chief of party Cdr. Charles A. Burroughs, NOAA

Surveyed by FAIRWEATHER personnel

Soundings taken by echo sounder, ~~and lead, and~~ Ross Fineline Fathometer (S/N 1046 & 1047)

Graphic record scaled by Ross 6000 Digitizer

Graphic record checked by FAIRWEATHER personnel

Position verified

~~Plotted~~ by Nicholas Lestenkof Automated plot by PMC Kynetics Plotter

Verification by Nicholas Lestenkof, Isagani A. Almacen

Soundings in fathoms ~~xxx~~ at ~~MLLW~~ MLLW

REMARKS: The survey was run on GMT. The survey centered on longitude 117°41.5'W.

This boatsheet is complete and adequate for charting.

Applied to sheets 4-6-77
[Signature]

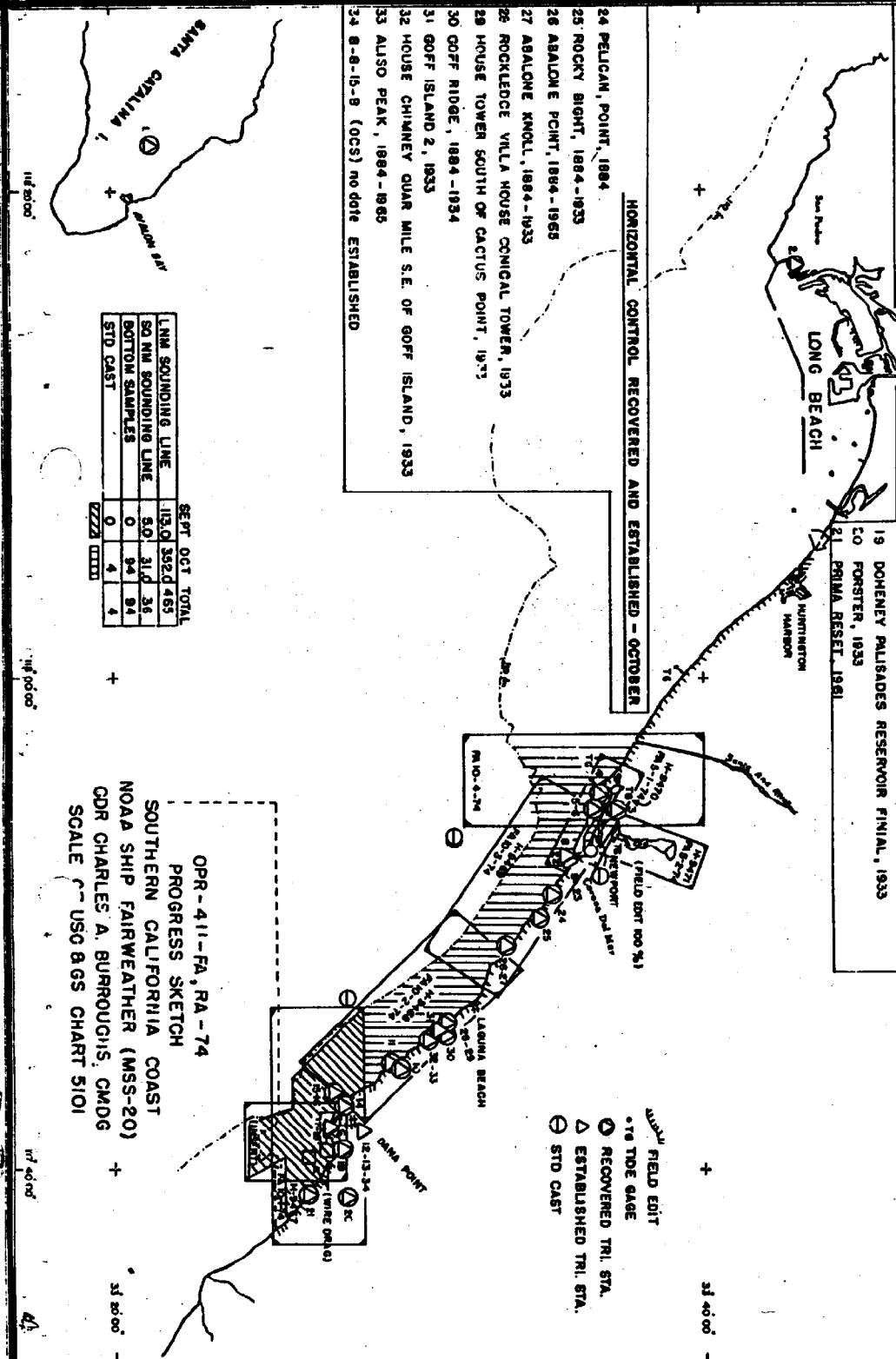
HORIZONTAL CONTROL RECOVERED AND ESTABLISHED - SEPT/EMER

- 1 HI FIX, 1972 (RAVIST)
- 2 OLD, RM, 1999 (RAYDIST)
- 3 GOLF, 1928
- 4 NEWPORT BEACH OUR LADY OF MT. CARMEL CROSS, 1933
- 5 NEWPORT BEACH BALBOA PAVILION FLAGPOLE, 1933
- 6 NEWPORT BEACH BALBOA DISTRICT HOTEL TOWER, 1933
- 7 COORS, 1974 (TOPO)
- 8 NEWPORT BAY WEST JETTY LIGHT, 1974
- 9 NEWPORT BAY EAST JETTY LIGHT, 1974
- 10 SOUTH NAUEL, 1884-1923
- 11 MUSSEL COVE 2, 1933
- 12 DANA POINT CARSTRAND BEACH WTR. DIST. TANK, 1974
- 13 9 15B AUX. (GDH), 1957
- 14 DANA POINT, 1884-1957
- 15 SAN, 1933
- 16 SAN JUAN ROCKS HIGHEST RK OF GROUP, 1933
- 17 DANA POINT BREAKWATER LIGHT, 1974
- 18 DANA POINT JETTY LIGHT, 1974
- 19 DOHENEY PALLSIDES RESERVOIR FINAL, 1933
- 20 FORSTER, 1933
- 21 PRIMA RESET, 1961

- 22 NEWPORT BAY WEST JETTY LIGHT, 1937
- 23 NEWPORT BAY EAST JETTY LIGHT, 1937

HORIZONTAL CONTROL RECOVERED AND ESTABLISHED - OCTOBER

- 24 PELICAN, POINT, 1884
- 25 ROCKY BIGHT, 1884-1933
- 26 ABALONE POINT, 1884-1965
- 27 ABALONE KNOLL, 1884-1933
- 28 ROCKLEDGE VILLA HOUSE CONICAL TOWER, 1933
- 29 HOUSE TOWER SOUTH OF CACTUS POINT, 1973
- 30 GOFF RIDGE, 1884-1934
- 31 GOFF ISLAND 2, 1933
- 32 HOUSE CHIMNEY QUAR MILE S.E. OF GOFF ISLAND, 1933
- 33 ALISO PEAK, 1884-1965
- 34 8-8-15-9 (OCS) no date ESTABLISHED



SEPT OCT TOTAL	
1NM SOUNDING LINE	13.0 352.465
50 NM SOUNDING LINE	5.0 31.0 3.6
BOTTOM SAMPLES	0 94 94
STD CAST	0 4 4
	ZZZ ZZZZ

OPR-411-FA, RA-74
 PROGRESS SKETCH
 SOUTHERN CALIFORNIA COAST
 NOAA SHIP FAIRWEATHER (MSS-20)
 CDR CHARLES A. BURROUGHS, CMDG
 SCALE 1" = 500' BGS CHART 5101

FIELD EDIT
 * TIDE GAGE
 Δ RECOVERED TRI. STA.
 ▽ ESTABLISHED TRI. STA.
 ⊕ STD CAST

DESCRIPTIVE REPORT
NOAA SHIP FAIRWEATHER (MSS-20)
OPR-411-FA-74

SURVEY H-9467 (FA 10-1-74)

A. PROJECT

Project OPR-411-FA-74, a continuation of work by the DAVIDSON, McARTHUR, PATHFINDER, and RAINIER on the southern California coast, is intended to provide a new data base for nautical charts. It was carried out according to the project instructions, dated 5 June 1974, and Change No.1, dated 5 September 1974.

B. AREA SURVEYED

The survey was conducted from 24 September to 24 October 1974 off Dana Point. The survey area is bounded on the north by the shoreline and by latitude 33°28'15" to longitude 117°43'15". H-9274 from longitudes 117°42'45" to 117°41'00"; on the east by 117°38'00"; on the south by 33°24'30" (this includes insert); and on the west by the 110-fathom curve.

An insert was also surveyed along with FA-10-1-74 on 2 October 1974. The boundaries of the insert are as follows:

North	33° 26' 00"N
East	117° 39' 45"W
South	33° 24' 37"N
West	117° 42' 30"W

Two shoal developments were also run on sheet FA 10-1-74. One centers on 33°27.32'N and 117°41'.3W, just outside the entrance to Dana Point Harbor. The work was done 3 October 1974. The outer shoal development, completed 4 October, is bounded as follows:

North	33° 26' 45"N
East	117° 40' 15"W
South	33° 25' 45"N
West	117° 41' 00"W

C. SOUNDING VESSELS

The survey, including the insert and two shoal developments, was completed by launch FA-5. Launches FA-4 and FA-6 were used only for wire dragging operations during the two shoal investigations.

D. SOUNDING EQUIPMENT

The launches used Ross Fineline fathometers. A TRA corrector of +0.4 fathom, based on the bar checks taken during the project, was used for the launches. The sound velocity correctors were determined by meaning two Nansen and one Martek TDC casts taken within the project area. For details see Report on Corrections to Echo Soundings, OPR-411-FA-74. The depths of soundings on this sheet range from approximately 0 fathom to 161 fathoms.

Sounding Instruments:

<u>Vessel</u>	<u>Instrument</u>	<u>Model</u>	<u>S/N</u>
FA-4	None		
FA-5	Ross Fineline	5000	1046
FA-6	Rodd Fineline	5000	1047

E. BOAT SHEET

All data was plotted, on three separate sheets, by the shipboard Hydroplot system, consisting of the ship's PDP 8/e computer (S/N M-40-00000-1006) and Complot plotter (model DP-3, S/N 4670-2). The projections used were modified transverse Mercators at a scale of 1:10,000. Plotting scale for the enlargement is 1:5,000. The skew was 000° (090° for FA-10-1-74 insert and enlargement). The date of the first plot was 24 September and the date of the last plot was 25 October. There was no discernable distortion between the first and last plots made of the sheets. The origin of the sheet is 33°25'30" N and 117° 46' 30" W (33°24'25" N and 117°39'30" W for FA-10-1-74 insert; and 33°25'30" N and 117°40'00" W for the enlargement). Copies of the parameter tapes are appended.

F. STATION CONTROL

Horizontal control for this survey consisted of existing triangulation. The electronic control stations were located on triangulation or reference marks.

Geographic positions were determined for seven fixed aids to navigation in this area. Two are the lighted entrance lights to Dana Point Harbor and five are the day shapes marking the channel into Dana Point Harbor. All of the aids were located using standard third-order resection and traverse methods.

No photogrammetrically located signals were used for this survey. The 1927 North American datum was used for all computations.

G. POSITION CONTROL

The Hastings Raydist electronic positioning equipment, operated in the range-range mode, was used to control all the hydrography on this sheet. The pattern I station was located over HIFIX 1972 on Santa Catalina Island and the pattern II station over OLD 1899 RM 1 on Point Fermin. Launches FA-3, 5, & 6 were equipped with Raydist mobile transmitter, navigator, strip chart recorder and a 9 ft. whip antenna. The strip chart recorders were monitored and annotated at all times between calibrations. Electronic correctors were determined by averaging the calibrations normally taken twice daily.

Calibration of the Raydist navigators was accomplished at fixed points located by third-order traverse or by visual three-point sextant fixes utilizing signals located over triangulation stations or fixed aids to navigation with known geodetic positions.

Base station operation was generally satisfactory. An unusually high incidence of mobile equipment failure was experienced throughout the project. Failures occurred randomly and were not predominant in any one item or type of component. The entire system has since been returned to the Hastings plant for overhaul and adjustment. Outside interference from an unknown source was encountered during the first week of the project.

Electronic correctors, derived from the calibration data, were applied to the observed ranges before plotting on the boat sheets. Slope corrections were not required.

H. SHORELINE

Shoreline detail information was obtained from TP-00415, a class III shoreline manuscript. Field edit up to the west of Dana Point Harbor was completed in 1972 by the RAINIER. The rest of the field editing (west of the harbor) was completed in 1974 by the FAIRWEATHER. There were several areas in which the low water line was not defined by the soundings, due either to heavy kelp in the area or to surf conditions. The rock shown on the boat sheet (located at $33^{\circ}26.78' N$ and $117^{\circ}39.62' W$) was not found after a one-hour search by FA-5. This same rock does not appear on prior survey H-5604 (1:10,000 dated 1934).

I. CROSSLINES

Crosslines accounted for 8.7 % of FA-10-1-74 hydrography (including the insert). Comparisons at crosslines were in very good agreement, showing a maximum discrepancy of one fathom.

J. JUNCTIONS

Junctions with H-9274 (1:5,000 1972), H-9276 (1:10,000 1972) and H-9468 (FA-10-2-74, 1:10,000 1974) are in very good agreement, with no discernable discrepancies.

K. COMPARISON WITH PRIOR SURVEYS

Item One, Pre-Survey Review dated 11/10/69 (Item BN on 8/20/74, update) is a reported 2-fathom submerged rock, position approximate, charted at latitude $33^{\circ} 26.0'$ and longitude $117^{\circ} 40.5'$. An extensive search with launch FA-5 was made (from latitude $33^{\circ} 25.8'$ to $33^{\circ} 26.6'$ and longitude $117^{\circ} 40.3'$ to $117^{\circ} 41'$ with a 25-meter spacing grid) over the reported site but nothing was found. This development is plotted on the enlargement. This feature ~~should be deleted from the chart.~~ A rock was found submerged ~~2.7~~ ^{2.7} fathoms in 3-5 fathoms of water at $33^{\circ} 26.58' N$ and $117^{\circ} 40.34' W$ which is approximately 1/2 mile north of the reported site. This is probably the rock reported and should be charted. See Verifier's Report - section VII-A *Although the investigation of the rock is not considered conclusive without Wire Drag, the 10 to 20 meter development is adequate to discredit the approximate position reported. Concur with above.*
Item BR, Pre-Survey Review, 8/20/74 update is a 13-foot shoal depth located at latitude $33^{\circ} 27.25'$ and longitude $117^{\circ} 41.29'$ from survey H-9276 in depths greater than 20 feet by the RAINIER in 1972. This sounding falls on the edge of a kelp patch. At that location a rock with least depth 16.2 feet was found by launch development and wire drag, and was diver verified. The 13-foot sounding was apparently due to kelp. *28.1-10-77*

Item Two, Pre-Survey Review dated 11/10/69, includes several rocks:

1. A rock located at $33^{\circ} 26.9' N$ and $117^{\circ} 39.97' W$ was found to be awash (2135 z, 10-3-74) in 2.5 fathoms of water. *(2)
2. The rock at $33^{\circ} 26.8' N$ and $117^{\circ} 39.46' W$ was found submerged ~~2.0~~ fathom (1936 z, 10/24/74). (Position 5126)
*Shown as * from T-11864(2) - also * on prior survey H-5604 (1934)*
3. A rock reported at $33^{\circ} 26.78' N$ and $117^{\circ} 39.62' W$ was not found after a one hour search using a 10-meter sounding grid. Its existence, however, can only be ~~proved~~ ^{disproved} using a wire drag. See Verifier's Report - section VII-A
4. Additional minor rocks were located by the hydrography and developments and are shown on the field sheet.

Item 7 of the Pre-Survey Review dated 11/10/69 pertains to rocks off Dana Point Harbor. The harbor has been completed. The rocks that were near the entrance to the harbor are reported to have been blasted out. The NOAA Ship RAINIER surveyed this area in 1972 and

did not find any traces of these rocks. Launches FA-4, FA-5 and FA-6 of the NOAA Ship FAIRWEATHER developed and wire dragged the area and found at the entrance to the harbor a rock with a least depth of approximately ~~7.6~~^{8.1} feet below MLLW (located at 33°27'18.1" N and 117°41'15.5" W). See sections L and P.

Agreement with prior survey H-6116 (1:40,000. 1935) was good with no discernable discrepancies.

L. COMPARISON WITH THE CHART

NOAA chart 5142 (which includes an inset of Dana Point at a scale of 1:20,000) covers the area surveyed. Dated 20 April 1974, at a scale of 1:80,000, it is the most recent edition (13th) and the largest-scale chart of this area. Soundings on the chart compared within one fathom in shoal areas and within 01% in deeper waters.

See Section K for a discussion on the 2-fathom submerged rock (PA) which appears on chart 5142.

Newly found dangers:

<u>Item</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Least Depth</u>	<u>Location</u>
Rock	33°27'18.1"	117°41'15.5"	Approximately 7.6 ^{8.1} ft.*	Entrance to Dana-Point Harbor v App
Rock	33°26.58'	117°40.34'	2.7 ^{2.7} fathoms	Approximately 1 mile S.E. of harbor entrance

* Wire dragged and diver verified - reported to USCG, copy of message appended.

M. ADEQUACY OF SURVEY

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

N. AIDS TO NAVIGATION

Dana Point Navigational aids shown on chart 5142 and in the light list:

- 1) R "2" : F1 2 1/2 sec, WHIS buoy
- 2) Breakwater Light "1", F1 G 5 sec
- 3) Breakwater Light "2", F1 R 2 1/2 sec
- 4) Sewer Outfall Buoy A
- 5) Sewer Outfall Buoy B

The three lighted buoys agreed well with the latest Light List and the largest scale chart of the area (5142); however, there have been changes with regard to the two sewer buoys. Sewer buoy S''A'' has been removed from the area. There has been no replacement for S''A''. Sewer buoy S''B'' (white and orange) as been replaced by a white and red "A" buoy. The aids adequately serve the purposes for which they were established.

There are four privately-maintained navigational aids in the Dana-Point area not listed in the Light List. Three are maintained by the Dana Point Yacht Club:

<u>Buoy</u>	<u>Description</u>	<u>Approximate Location</u>	
Spar buoy "A"	orange/white	33°26.41' ⁸	117°42.59' ⁷
Spar buoy "B"	orange/white	33°26.07'	117°41.51'
Spar buoy "C"	orange/white	33°26.62'	117°40.33'

These three buoys are used to mark a race course. Another spar buoy, S''F'' (orange/white) has an approximate location of 33°26.55' N and 117°41.46' W. The function and maintenance of this buoy is unknown.

All of the above buoys are plotted on the field sheets.

O. STATISTICS

<u>Vessel</u>	<u>Total Pos.</u>	<u>NM</u>
FA-5	1080	185.2

Total area - 9.2 sq. n.m.

Total bottom samples - 14

P. MISCELLANEOUS

Greenwich Mean Time was used for all survey records.

In areas of steep slopes where the depth ranged from 50-150 fathoms the Ross Fineline fathometer gave a poor trace at the normal sounding speed of 15 knots. It was found that going at half speed the trace improved greatly and became readable.

In some areas kelp presented a problem. In going thru a patch of kelp the launch would likely clog the engine cooling waters intake valves, thus overheating the engine, or foul the propellor with kelp.

Because of the considerable danger should power thus be lost in or just outside of the surf zone, it was necessary to avoid some areas of heavy kelp. For this reason, in addition to the always-present surf, the low-water line could generally not be developed.

Positions 5100 through 5152 were plotted using a faulty predicted tide tape. The resultant errors in the plotted soundings are no larger than 0.5 fathom and average approximately 0.2 fathom, and therefore the field sheet was not replotted.

To aid in the search for a pinnacle rock reported near Dana Point Harbor and for investigation of some questionable soundings, a wire drag was designed and assembled. It was constructed from lengths of aircraft cable, fenders, concrete anchors, lead line weights, and manila line. A ground wire of 75 meters was used, giving an effective sweep of about 50 meters. Dragging at a depth of 10 ft. below Mean Lower Low Water, the rock in the harbor entrance was located. Divers determined its least depth to be approximately 7.6 feet below MLLW. Two sweeps at 18 feet below MLLW over the questionable soundings farther south (possible side echoes on fathogram at positions 4998-9 and 5013-14) failed to indicate any sign of shoaling. Further use of the drag was hindered by the onset of lobster fishing season and the resultant increase in lobster traps around most rocky areas. A sketch of the wire drag used is included in the appendix of this report.

The U.S. Coast Guard reported (see Local Notice to Mariners, 11th C.G. District, Long Beach, number 11-75, dated 4 March 1975) that they intend to buoy, on or about 10 March 1975, the rock covered approximately 7.6 feet at MLLW located just off the entrance to Dana Point Harbor. The buoy will be red and black horizontally banded, with the topmost band red, covered with reflective material, and will be located 180° true 10 yards from the rock in 18 feet of water.

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-74
Electronic Systems Calibration Report, OPR-411-FA-74
Coast Pilot Report, OPR-411-FA-74
Field Edit Reports, OPR-411-FA-74
Horizontal Control Report, OPR-411-FA-74

S. DATA PROCESSING PROCEDURES

Program AM-170, version 11/10/72, was used on launch FA-5 to acquire and compile all its hydrographic on-line data.

Program AM-200, version 03/23/73, was used on the ship's Hydroplot system to plot all of the survey data.

Submitted by:

Joanne Gulley

Lt(jg) Joanne Gulley, NOAA

FIELD TIDE NOTE

Field tide reduction of soundings was based on predicted tides from Los Angeles Outer Harbor, California, corrected to Balboa, California, and were interpolated by PDP 8/E computer utilizing AM 500. All times of both predicted and recorded tides are based on GMT.

Two Fisher-Porter ADR gages and three Bristol Bubbler gages were installed at five locations in the project area. Locations and periods of operation are as follows:

<u>SITE</u>	<u>LOCATION</u>	<u>PERIOD</u>
Dana Point Harbor	33° 27.7' N 118° 42.3' W 7	40 Days 9-19-74 to 10-29-74
Newport Bay Turning Basin	33° 37.0' N 117° 55.3' W	30 Days 9-18-74 to 10-9-74 and 10-21-74 to 10-31-74
Newport Dunes, Newport Beach	33° 37.1' N 117° 53.6' W	41 Days 9-20-74 to 10-31-74
Balboa Pier, Newport Beach	33° 35.9' N 117° 54.0' W	42 Days 9-19-74 to 10-31-74
Huntington Beach Pier	33° 39.2' N 118° 00.3' W	20 Days 10-11-74 to 10-30-74

Dana Point Harbor

ADR gage (S/N 7404A1193M2) and staff were installed 9-19-74 and ran satisfactorily for 40 days. The gage was removed 10-29-74. The marigram reads 10.0 feet greater than the staff.

Newport Bay Turning Basin

ADR gage (S/N 7304A1380M18) and staff were installed 9-18-74. On 9-26-74 the floatwire was found off the drum and was replaced. The gage ran until 10-9-74 at which time the paper takeup ceased to function. This problem was corrected and rediscovered several times, resulting in unsatisfactory data, until 10-21-74 at which time the problem was solved.

The gage ran satisfactorily until removal on 10-31-74. The marigram reads the same as the staff.

Newport Dunes

Bubbler gage (S/N 67A16202) and staff were installed on 9-20-74 and ran satisfactorily for 41 days until removal on 10-31-74. The marigram reads 3.5 feet greater than the staff.

Balboa Pier

Bubbler gage (S/N 67A10286) and staff were installed on 9-19-74 and ran satisfactorily for 42 days until removal on 10-31-74. The marigram reads 6.3 feet greater than the staff.

Huntington Beach Pier

Bubbler gage (S/N 68A14941) and staff were installed on 10-11-74 and ran satisfactorily for 20 days until removal on 10-30-74, in accordance with a late change to the project instructions. The marigram reads 6.3 feet greater than the staff.

Levels

All levels closed within the required limits of accuracy. Comparison of levels made at the installation and removal of each tide gage show no apparent tide staff shifts, with the exception of the Huntington Beach Pier staff, which appears to have sunk 0.03 feet during its period of operation.

Zoning

No zoning was required or attempted in the field. It is recommended that any necessary zoning be done by the Tides Branch after a review of existing and observed data. Data from the Newport Bay control tide station is also available for support of the Newport Bay survey.

Recommendations

The standard dampening valves on the Balboa Pier and Huntington Beach Pier bubbler gages were turned up to their limit, but the pens still traced a five foot wide path on the marigrams during times of heavy swells. It is recommended that Nupro type dampening valves be installed on all bubbler gages to be used in this area in the future.

SOUND VELOCITY CORRECTOR ABSTRACT

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

FA 10-1-74	(H-9467)
FA 10-2-74	(H-9468)
FA 10-3-74	(H-9469)
FA 10-4-74	(H-9487)

<u>Depth (fathoms)</u>	<u>Corrector (fathoms)</u>
0-1.0	+ 0.0
1.1-4.0	0.1
4.1-6.0	0.2
6.1-10.0	0.3
10.1-14.0	0.4
14.1-18.0	0.5
18.1-22.0	0.6
22.1-26.0	0.7
26.1-32.0	0.8
32.1-42.0	1.0
42.1-52.0	1.2
52.1-64.0	1.4
64.1-75.0	1.6
75.1-86.0	1.8
86.1-97.0	2.0
97.1-111.0	2.2
111.1-134.0	2.5
134.1-161.0	3.0
161.1-190.0	3.5
190.1-243.0	4.0

ABSTRACT OF RAYDIST EQUIPMENT UTILIZATION

H-9467, H-9468, H-9469, H-9470, H-9471, H-9487

BASE STATION LOCATIONS

JULIAN DAYS 267 thru 304

Unit S/N 125, Frequency 1650.425 KHz, 35 ft. whip antenna on a 20 ft. tower with 50 ft. radial ground plane.

Location: HI FIX 1972 33°21'25.31" N, 118°21'50.72" W

JULIAN DAYS 267 thru 304

Unit S/N 124, Frequency 1650.015 KHz, 35 ft. whip antenna on a 40 ft. tower, with 50 ft. radial ground plane.

Location: OLD 1899 RM1 33°43'12.94" N, 118°16'56.98" W

MOBILE TRANSMITTERS

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

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

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

MOBILE NAVIGATORS

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

FA-5: Model ZA-75C, S/N 16, Frequency 330/490 Hz

FA-6: Model ZA-75C, S/N 18, Frequency 370/450 Hz

STATION LIST
OPR-411

STA	O	LATITUDE	LONGITUDE	CRT	ELEV (M)	F (KHZ)	TYPE/NAME	SOURCE
001	4	33 21 2531	118 21 5072	250	500	3300.4	HI FIX 1972	331182
002	4	33 43 1294	118 16 5698	250	35	3300.4	OLD 1899 RM 1	331181
003	4	33 27 1564	117 41 2638	139	9		DANA PT OUTER BREAKWATER LIGHT	*
004	4	33 27 2437	117 41 2804	139	9		DANA PT INNER BREAKWATER LIGHT	*
005	4	33 27 5110	117 42 3017	139	62		DANA PT 1884 1957	331173
006	4	33 27 2561	117 42 4608	139	2		SAN JUAN ROCK (HIGHER OF TWO ROCKS) 1933	331173
007	4	33 27 3789	117 42 4092	139	50		SAN 1933	331173
008	4	33 27 4903	117 39 1510	139	120		DOHENY PALISADES RESERVOIR FINIAL 1933	331173
009	4	33 28 2621	117 41 3785	139	112		8 15B AUX (CDH) 1967	*
010	4	33 27 5966	117 38 5436	139	260		FORSTER 1884	331173
013	4	33 30 4361	117 45 1255	139	16		HOUSE CHIMNEY 1/4 m S.E. OF GOFF ISLAND	331174
014	4	33 31 1716	117 45 1945	139	169		GOFF RIDGE	331174
015	4	33 30 5110	117 45 3478	139	9		GOFF ISLAND 2	331174
016	4	33 31 1419	117 45 4927	139	10		ROCKLEDGE VILLA HOUSE CONICAL TOWER	331174
017	4	33 29 5122	117 43 5804	139	285		SOUTH NIGUEL	331173
018	4	33 33 1403	117 49 0693	139	21		ABALONE POINT	331174
019	4	33 33 2247	117 49 0220	139	61		ABALONE KNOLL	331174
020	4	33 34 1964	117 50 1481	139	21		ROCKY BIGHT	331174
021	4	33 34 4768	117 51 0598	139	22		PELICAN POINT	331174
022	4	33 35 2262	117 52 3548	139	5		NEWPORT HARBOR EAST JETTY LIGHT	*
023	4	33 35 1783	117 52 4321	139	5		NEWPORT HARBOR WEST JETTY LIGHT	*
024	4	33 37 2211	117 54 4487	139	25		NEWPORT HARBOR HIGH SCHOOL TOWER	331174
025	4	33 36 0977	117 53 5255	139	25		NEWPORT HARBOR BALBOA PAVILION	331174
026	4	33 36 0600	117 53 5688	139	15		NEWPORT HARBOR HOTEL TOWER	331174
027	4	33 28 3135	117 41 3887	139	110		DANA POINT CAPISTRANO BEACH WATER DIST TANK	*

* Station established by FAIRWEATHER 1974. See horizontal control appendices to Descriptive Reports, OPR-411-FA-74.

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

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

ORIGINATING ACTIVITY

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

Replaces CGCS Form 567.

TO BE CHARTED
 TO BE REVISED
 TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office) _____ STATE _____ LOCALITY _____ DATE 9/74
 NOAA SHIP PAIRWEATHER CALIFORNIA DANA POINT

The following objects HAVE HAVE NOT been inspected from seaward to determine their value as landmarks.
 OPR PROJECT NO. _____ JOB NUMBER _____ SURVEY NUMBER _____

OPR-411 PH-7107 TP-00415
 DATUM NA-1927

CHARTING NAME _____ DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses.)
 METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE _____ FIELD _____ CHARTS AFFECTED _____

Light Dana Point Outer Breakwater Light #1 (See Light List 363.10) ⁽⁴⁵⁰⁾
 33/27 15.593 117/41 26.387
 F-2-6-L 9/24/74 CGCS 5101 & 5142

Light Dana Point Inner Breakwater Light #2 ⁽⁴⁶⁰⁾
 (See Light List 363.20) ⁽⁴⁶⁰⁾
 33/27 24.366 117/41 28.063
 F-2-6-L 9/24/74 CGCS 5101 & 5142

Day Beacon #4 ⁽⁸⁾
 33/27 24.697 117/41 37.891
 F-2-6-L 9/24/74 CGCS 5142

Day Beacon #6 ⁽¹⁰⁾
 33/27 26.540 117/41 45.835
 F-2-6-L 9/24/74 CGCS 5142

Day Beacon #8 ⁽¹²⁾
 33/27 28.407 117/41 53.825
 F-2-6-L 9/24/74 CGCS 5142

Day Beacon #10 ⁽¹⁴⁾
 33/27 30.267 117/42 01.785
 F-2-6-L 9/24/74 CGCS 5142

Day Beacon #12 ⁽¹⁴⁾
 33/27 32.139 117/42 09.749
 F-2-6-L 9/24/74 CGCS 5142

CHARTING NAME	DESCRIPTION	LATITUDE		LONGITUDE		METHOD AND DATE OF LOCATION	OFFICE	FIELD	CHARTS AFFECTED
		D.M. Meters	''	D.P. Meters	''				
Light Dana Point Outer Breakwater Light #1	(See Light List 363.10)	33/27	15.593	117/41	26.387	F-2-6-L 9/24/74			CGCS 5101 & 5142
Light Dana Point Inner Breakwater Light #2	(See Light List 363.20)	33/27	24.366	117/41	28.063	F-2-6-L 9/24/74			CGCS 5101 & 5142
Day Beacon #4		33/27	24.697	117/41	37.891	F-2-6-L 9/24/74			CGCS 5142
Day Beacon #6		33/27	26.540	117/41	45.835	F-2-6-L 9/24/74			CGCS 5142
Day Beacon #8		33/27	28.407	117/41	53.825	F-2-6-L 9/24/74			CGCS 5142
Day Beacon #10		33/27	30.267	117/42	01.785	F-2-6-L 9/24/74			CGCS 5142
Day Beacon #12		33/27	32.139	117/42	09.749	F-2-6-L 9/24/74			CGCS 5142

-30A

GEOGRAPHIC NAMES

Survey No.
H-9467

Name on Survey	-11-									
	A	B	C	D	E	F	G	H	I	J
	On Chart No.	On previous survey No.	On U. S. Quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List	Photogrammetric	Manuscript
Dana Point	5142							415		1
Dana Cove								415		2
Dana Point Harbor	5142							415		3
San Juan Anchorage	5142							415		4
San Juan Creek								415		5
Capistrano Beach	5142							415		6
San Clemente	5101									7
Gulf of Santa Catalina	5142							415		8
Capistrano Bight										9
Doheny State Beach										10
San Juan Rock										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
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										24
										25
										26
										27

APPROVED

Charles E. Huntington

STAFF GEOGRAPHER - C51x2

14 Jan 1977

June 3, 1975

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): Dana Point Harbor

Period: September 19 - October 29, 1974

HYDROGRAPHIC SHEET: H-9467 and INSERT

OPR: 411

Locality: Capistrano Beach, Southern California

Plane of reference (mean lower low water): 1.21 ft. ✓

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

Remarks: Zone direct.

James R. Hubbard
for Chief, Tides Branch

APPROVAL SHEET

Field No. FA 10-1-74

Register No. H-9467

The boatsheet and all accompanying records are hereby approved. The survey was conducted under my personal supervision and the boatsheet and other records were examined daily. This survey is complete and adequate to supersede prior surveys for charting. Special note should be made of sections K and L of this report.

for Freddie L. Jeffries
Cdr. Charles A. Burroughs, NOAA
Commanding Officer
NOAA Ship FAIRWEATHER MSS-20

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9467

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET & smooth excess, PNO overlays		1	BOAT SHEETS (6 parts, paper & 2 overlays)		1	
DESCRIPTIVE REPORT		1	OVERLAYS (prelim.)		4	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1-with P/O		I			
VOLUMES	1					
BOXES			1-smooth P/O, sndg. vol., sawtooth rec. & tide P/O			
T-SHEET PRINTS (List) Class I Manuscripts TP-00415 and T-11864 (2) - not received from field MCR 12/16/76						
SPECIAL REPORTS (List)						

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				1089
POSITIONS CHECKED		1089		
POSITIONS REVISED		37		
DEPTH SOUNDINGS REVISED		145		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		0		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		0		
	TIME (MANHOURS)			
Verification of Control		6		
Verification of Positions		14		
Verification of Soundings		163		
Smooth Sheet Compilation		110		
ALL OTHER WORK		5		
TOTALS		298	HIT 16	
PRE-VERIFICATION BY James Green	BEGINNING DATE 4/8/75	ENDING DATE 4/8/75		
VERIFICATION BY N. Lestenkof, I. Almacen	BEGINNING DATE 4/9/76	ENDING DATE 9/25/76		
REVIEW BY QUALITY CONTROL BY J. W. Wellman - DR Engle	BEGINNING DATE 12-17-76	ENDING DATE 1-13-77		

92 hrs
31

21

R. Stenoff 3/16/77 8 hrs

REGISTR. NO. _____

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

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

CARDS CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

REGISTRY NO. H-9467

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:

1. Digitize the position of the submerged rock (1.3 fathoms - Pos. 5127) in the vicinity of latitude 33°27'18", longitude 117°41'15".
2. Verify pos. 504403 (Record number 50020). Does data bank correspond to the smooth plot printout vis-a-vis raw, reduced, and plotted soundings. (printout page 89)
3. Excess soundings at pos. 417703, 504805.
4. Revise sounding at pos. 511500, 510608, 505100.
5. Return from excess 506205.
6. Add 5.7 sounding at position 506204 and digitize position from SS. (Approx. latitude 33°26.6', longitude 117°40.31')
7. Revise sounding at pos. 505905 and leave in excess.

H-9467

Information for Future Presurvey Reviews

Pier ruins and several submerged rocks and rocks awash were carried forward from prior surveys. During future work in the area, these rocks should be investigated and verified or disproved.

<u>Position Index</u>		<u>Bottom Change Index</u>	<u>Use Index</u>	<u>Resurvey Cycle</u>
<u>Lat.</u>	<u>Long.</u>			
332	1175	3	2	50 years
332	1174	3	2	50 years

VERIFIER'S REPORT

H-9467

FA-10-1-74

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

I. INTRODUCTION

This survey was conducted by NOAA Ship FAIRWEATHER from 24 September to 24 October 1974 off Dana Pt. harbor on an area bounded on the northeast by the shoreline extending from latitude $33^{\circ}24'30''N$ to latitude $33^{\circ}28'15''N$ and on the west by the 110-fathom curve.

Hastings Raydist electronic positioning equipment operating in the range-range mode was used to control this survey.

II. CONTROL AND SHORELINE

The horizontal controls used in this survey consisted of existing triangulation stations described in the Descriptive Report and the Horizontal Control Report of the project OPR-411-FA-74.

No photogrammetrically located signals were used for this survey.

Shoreline detail information was obtained from T-11864 (2)^{of (1972/72)} and TP-00415, of 1971/72-74, unreviewed Class I shoreline manuscripts, where field edit information in 1972 and 1974 had been applied. (See Q.C. Report-item 3)
Revisions on final reviewed TP-00415 applied to smooth sheet. X.W.W. 11-30-78

III. HYDROGRAPHY

Crossline soundings were in good agreement except for some occasional discrepancies of less than $\frac{1}{2}$ fathom in deeper waters.

The low water line and 1-fathom curve on this survey were not clearly defined by the soundings on account of heavy kelp, surf and foal nature of the bottom. Depth curves in some instances were drawn in dashed lines showing ~~the~~ probable location, where development of the bottom had not been done in the field.

In all other instances except as mentioned above, the development of the bottom configuration is considered adequate.

The inset development of the entrance to the harbor shows an indication of deeper soundings, probably brought about by the reported blasting of rocks and subsequent dredging of the area by the Corps of Engineers. The Corps of Engineers condition survey of August 1972 in conjunction with Dana Pt. harbor improvement shows considerable change in depths in the vicinity of the harbor entrance. The 3-fathom curve had shifted northward to a certain extent.

IV. CONDITION OF SURVEY

The automated plotting, sounding records, reports and field procedures are adequate and conform to the requirements of the hydrographic Manual except for the following:

Due to a number of uneven intervals of peaks differing from the normally digitized soundings by about 0.2 to 0.4 fathom, re-scanning had to be done, particularly for the area joining this survey with H-9274 (1974) survey.

V. JUNCTIONS

H-9253 (1971-72) 1:40,000 (See Q.C. Report-item 8)

H-9274 (1972) 1:5,000 (Within the area of, and entirely encompassed by, the present survey)

Junction soundings, ^(present survey) averaged about 0.2⁴ to 0.4⁶ fathom deeper which could be due to the differences in the method of control and type of sounding instrument used in the survey. The depth curve especially the 3-fathom and 5-fathom curve had appreciably shifted inshore. The junction with H-9274 has been accomplished and the curves and note are inked. (See Q.C. Report-items 8 and 9)

H-9468 (1974) (On the north) (See Q.C. Report-item 12)

Junction with this survey is in good agreement, the curves and note are inked.

H-9276 (1972) (On the south) (See Q.C. Report-item 12)

This junction sheet is still in a preliminary stage, therefore, the junction with H-9276 has not been accomplished.

VII COMPARISON WITH PRIOR SURVEYS

H-5603 (1934), H-5604 (1934) 1:10,000

H-6116 (1935) 1:40,000

The submerged ruins on Chart 5142 ^{are the} ~~is what~~ remains of the Doheney Pier on H-5604 survey, where triangulation station End Doheney Pier, 1933 was previously located. No investigation of these ruins had been done in the field on this survey. The ruins should be carried forward as charted. (See Q.C. Report-item 5)

These prior surveys are still in good agreement and comparison in general revealed minor differences of 0.1 to 0.3 fathom on shoaler depths and about 1 fathom on deeper areas. This survey supersedes the above surveys for the area of common coverage.

H-9274 (1972) 1:5,000

The 13-foot shoal depth (Pre-survey Review, Item BR) at latitude 33°27.25'N, longitude 117°41.29' was investigated by launch development,

wire drag and verified by diver. A rock with least depth of 16.8 feet was found on the site of the shoal. The previous shoal sounding apparently falls on the edge of a kelp patch. The charted 13 foot depth is disproved and the data from the present survey charted.

(Pre-survey Review, Item 7) The rest of the rocks near the entrance to the harbor were reported to have been blasted out and presumably dredged afterwards. On the 1972 survey no indication of these rocks were found. Again on this survey the Ship FAIRWEATHER developed and wire dragged the same area and this time they located one rock with least depth of 8.1 feet (reported as 7.6') at latitude $33^{\circ}27'18.1''$ longitude $117^{\circ}41'15.8''$ W. The U.S. Coast Guard reported that they intended to place a buoy in this area about 10 March 1975.

VII. COMPARISON WITH CHART

- A. Comparison was made with Chart 5142, 13th Edition, April 20, 1974 (1:80,000). Soundings on the chart agree to within 0.1 to 0.3 fathom in shoal areas and within one fathom in deeper waters. (See Q.C. Report-items 10 and 11)

The ~~reported~~ ^{charted} 2-fathom submerged rock ^{PA} (Pre-survey Review, Item ~~2~~ ^{8N}) with charted position at latitude $33^{\circ}26.0'N$ longitude $117^{\circ}40.5'W$ had been investigated on this survey with 25-meter grid developments over the site. Nothing was found at the site after extensive search. Instead, a ~~2-2~~ 2-fathoms submerged rock in 3-5 fathoms of water at latitude $33^{\circ}26.58'N$ longitude $117^{\circ}40.34'W$ was found which is approximately $\frac{1}{2}$ mile north of the charted position. The newly located rock should be charted. (Charted rock originates with CL 252/1965.)
~~The charted submerged rock is not considered disproved and should be retained on the chart. See page 4, par. X. Ship report.~~

The two (2) charted submerged rocks located at latitude $33^{\circ}27.18'N$ longitude $117^{\circ}40.10'W$ and latitude $33^{\circ}27.01'N$ longitude $117^{\circ}40.40'W$ were not investigated in the field on this survey, they should be retained as charted.

The rock reported at latitude $33^{\circ}26.78'N$, longitude $117^{\circ}39.62'W$ (Pre-survey Review, Item 2) was not found after sounding development. No attempt had been made to disprove its existence using wire drag. This rock should be retained as charted. This rock is shown on the present survey (From T-11864 (2))

B. Aids to Navigation

The present location of the two (2) breakwater lights and the whistle buoy off Dana Point agreed well with the latest light list and Chart 5142. As to the two (2) sewer outfall buoys, buoy "A" had been removed and buoy "B" located at latitude $33^{\circ}27.1'$ longitude $117^{\circ}41.28'$, was replaced by white and red buoy "A" *

There are four (4) privately maintained navigational aids not listed in the light list, ^{of which} and the following three (3) ~~aids~~ are maintained by Dana Point Yacht Club:

- | | | | |
|------------------|----------------|-----------|------------|
| 1. Spar Buoy "A" | (orange/white) | 33°26.48' | 117°42.57' |
| 2. Spar Buoy "B" | (orange/white) | 33°25.68' | 117°41.45' |
| 3. Sapr Buoy "C" | (orange/white) | 33°26.61' | 117°40.31' |

The above spar buoys are used as race course markers.

Another spar buoy, S "F" (orange/white) whose function is unknown was located at latitude 33°26.55'N longitude 117°41.45'W.

VIII. COMPLIANCE WITH PROJECT INSTRUCTION

This survey complies with the project instruction.


IX. ADDITIONAL FIELD WORK

This is an adequate basic survey. Additional field work is not necessary.

X. NOTES TO THE COMPILER

This survey was verified by Isagani Almacen, verifier trainee, under my supervision.

Respectfully submitted,


Stanley H. Otsubo
Cartographic Technician
September 28, 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 98102

Date: 24 November 1976

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

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

EM

Subject: FMC Hydrographic Survey Inspection Team Report, H-9467

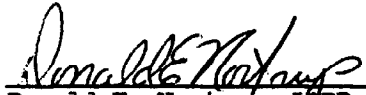
This survey is a basic hydrographic survey of the alongshore area in the vicinity of Dana Point, California. The survey was conducted by NOAA Ship FAIRWEATHER in 1974 in compliance with Project Instructions OPR-411-FA-74 dated 05 June 1974. Numerous cartographic and report changes have been made as a result of the inspection process.


The main scheme hydrography and investigation of pre-survey review items in this survey area were well done. Development of the near shore area and features indicated on prior surveys was lacking. Numerous near shore soundings were carried forward to this survey to support the one and two fathom curves. Similarly, several submerged rocks were carried forward which, in the judgement of the verifier, were not disproven by the survey data. A significant shoal at 33°27.4'N, 117°43.1'W was developed on prior survey H-5603 (1934) but neither substantiated nor disproven by this survey. The shoal soundings were carried forward. Pier ruins charted at 33°27.3'N, 117°40.2'W were not addressed in the survey records and have been carried forward from H-5604 (1934). (See Q.C. Report-items 4 and 5)

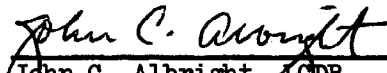
As configured on the smooth sheet survey H-9467 is adequate to supersede prior surveys. This adequacy is based on the retention of an excessive amount of prior survey data. There is no assurance that all the retained data is valid, however, such retention is made imparative by the lack of disproving information and the necessity to present conservative information.

Considerable time and effort was devoted to the wire drag search for, and diver determination of least depth over, the submerged rock in the entrance to Dana Point Harbor. This rock was not found during the 1972 survey of the harbor, and consequently is not charted; the current investigation, outside the limits of the present survey, was in response to local reports of its existence. The initiative displayed in implementation of a wire drag and the subsequent location of this hazard, probably the most significant danger to navigation in the project area, is commendable.

The inspection team finds H-9467 to be a fair basic survey, adequate for charting and to supersede common areas of prior surveys. Administrative approval is recommended.


Donald E. Nortrup, LCDR


Dean R. Seidel, LCDR


John G. Albright, LCDR


A. E. Eichelberger

Administrative Approval

H-9467

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, RADM
Director, Pacific Marine Center

12/5/76

Date



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

C352

January 13, 1977

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

THRU: Chief, Quality Control Branch

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

SUBJECT: Quality Control Report for H-9467 (1974), California, Southern California, Dana Point and Vicinity

A quality control inspection of H-9467 has been accomplished to evaluate the accuracy and adequacy of the survey with respect to data acquisition, delineation of the bottom, determination of least depths and navigation hazards, junctions, shoreline transfer, decisions and actions by the verifier, and cartographic presentation of data.

Junctional sheet H-9276 (1972) on the south is not available for a quality control inspection of the junction, the adequacy of which will be considered during the course of its quality control inspection.

In general, the present survey was found to conform to National Ocean Survey standards and requirements, except as follows:

1. The records do not confirm the verified smooth sheet (inset) position of the 1.3-fathom submerged rock (latitude 33°27'18", longitude 117°41'15"). The recorded position of this rock falls approximately 21 meters to the west of the verified smooth sheet position. During quality control inspection, the position of this rock was revised to agree with the recorded information (see D.P. 5127, volume 1 - page 8). Further, this detached position is not included in the smooth position or sounding printout.
2. The verified smooth sheet position of the rock awash (shown by the verifier as a 0.6-fathom submerged rock) in the vicinity of latitude 33°26'48", longitude 117°39'28" was displaced approximately 15 meters to the northeast of the recorded position (Position 5126, volume 1 - page 8). During quality control inspection the position was revised to agree with T-11864(2). Further, this detached position is not included in the smooth position or sounding printout.



3. Some sections of the low water line were not accurately transferred to the smooth sheet from the topographic sheets during verification. The low water line was revised to agree with the topographic sheets where displaced beyond acceptable limits (east of longitude $117^{\circ}40.65'$).
4. Numerous soundings and two submerged rocks carried forward to the present survey from H-5604 (1934) were displaced beyond acceptable limits (as much as 55 meters), thereby distorting the configuration of the corresponding depth curves. During quality control inspection, only the most excessively displaced soundings and rocks were revised to correspond with the prior survey positions. Further, several retained prior survey soundings were incorrectly converted from fathoms and feet on the prior survey to fathoms and tenths on the present survey; e.g., $1 \frac{4}{6}$ fathoms on the prior survey erroneously converted to 1.7 fathoms when carried forward [see provisional manual - table 7 (facing page 4-292)].
5. The verifier carried forward the pier ruins (vicinity of latitude $33^{\circ}27.25'$, longitude $117^{\circ}40.20'$) from H-5604 (1934) in black ink rather than the color selected to identify other information carried forward from the prior survey. This is considered misleading inasmuch as it indicates that the ruins were located during the present survey work in the area; and, further, is not in conformance with the provisional manual - section 6.3.7.3.
6. The verifier failed to effect a junction with H-9253 (1971-72) on the southwest, thus necessitating extensive revisions of depth curves in the common area. An adequate junction was effected with H-9253 during the quality control inspection.
7. No contemporary junctional survey exists to the northwest of the present survey. However, charted soundings are in harmony with present depths in that area. A few soundings have been carried forward from H-6116 (1935) in approximate latitude $33^{\circ}26.5'$, longitude $117^{\circ}43.5'$ to aid in the delineation of depth curves.
8. There are significant junctional depth differences (0.4 to 0.6 fathom - present survey deeper) between the hydrography on the inset of the present survey (scale 1:5,000) and H-9274 (1972). These depth differences were not addressed in the appropriate section of the Verifier's Report. The noted depth differences are attributed to bottom changes brought about by blasting as noted in section K of the Descriptive Report and thus precluded a normal junction in the area. During quality control inspection, a butt junction was effected between the present survey inset and H-9274.
9. Significant irreconcilable depth differences (present depths generally 0.4 to 0.6 fathom deeper) were noted in the junctional area between the

present survey (exclusive of the inset discussed in item 8 above) and H-9274 (1972). The Verifier's Report indicates that the junction has been accomplished. An adequate junction, however, was not effected with H-9274 during verification. An extensive reexamination of the available records and reports was necessary to determine the most likely cause of the noted depth differences. The greatest depth differences were noted in general depths exceeding 4 fathoms and are attributed to natural changes in the sand bottom. A partial butt junction was effected with H-9274 during the quality control inspection.

10. The verifier failed to specify that the charted hydrography is superseded [see provisional manual - section 6.6 (12a)]. Section VII-A of the Verifier's Report is supplemented by the following:

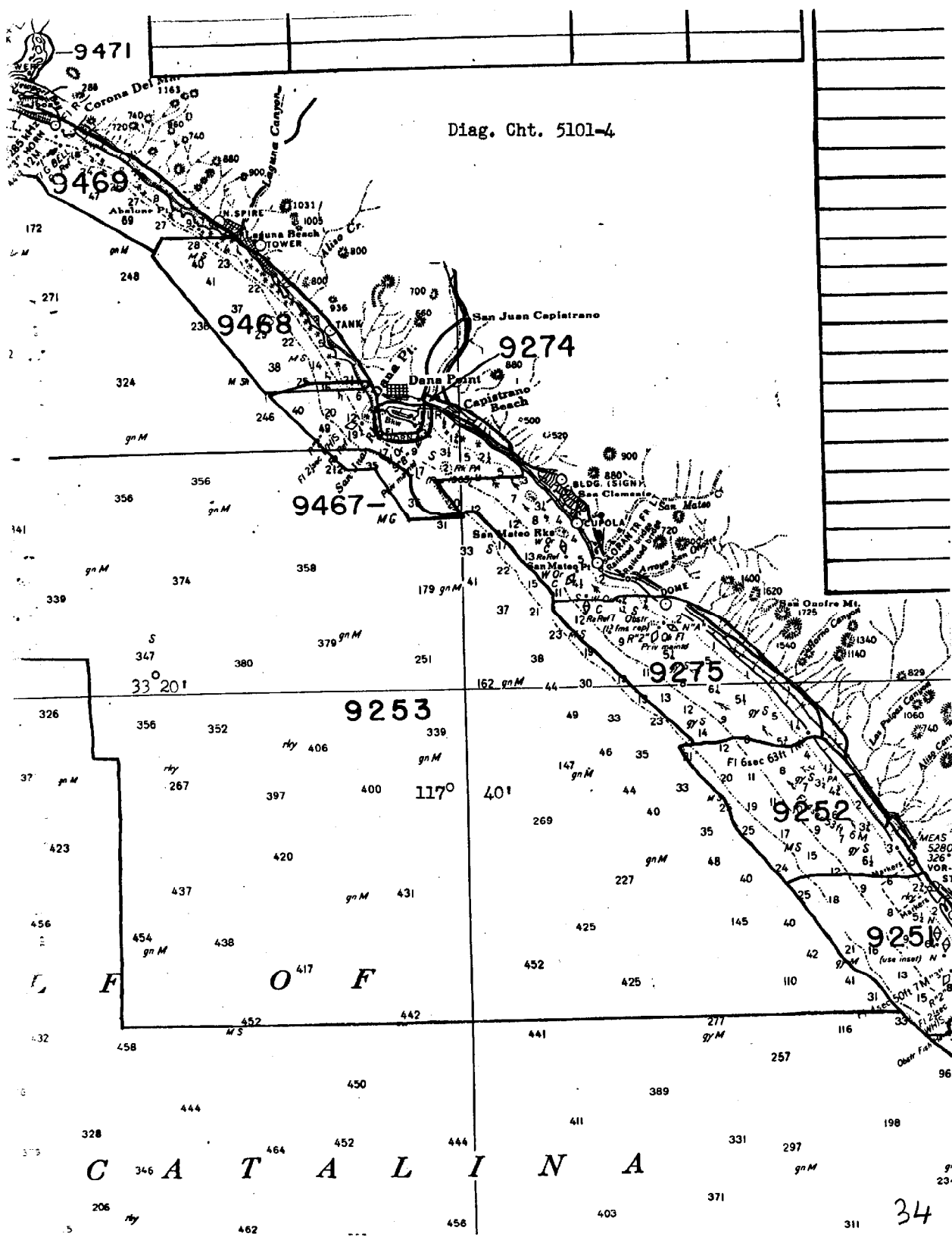
The present survey is adequate to supersede the charted hydrography within the common area.

11. Several charted offshore rocks and islets in the vicinity of Dana Point are at variance with the present survey. Section VII-A of the Verifier's Report is supplemented by the following:

The ledge, submerged rocks, rocks awash, and islets charted in the vicinity of Dana Point (vicinity of latitude $33^{\circ}27.60'$, longitude $117^{\circ}42.40'$ to longitude $117^{\circ}43.00'$) originate with Bp-70780 [T-11659 (1959)]. Subsequent shoreline manuscript TP-00415 of 1971/72-74 and the present survey information are considered to provide the most reliable portrayal of the above features. The chart should be revised to agree with the present survey.

12. It is common practice to include in the Verifier's Report the registry number, year, and relative position of the surveys which junction the present survey [see provisional manual - section 6.6 (10)]. Section V (Junctions) of the Verifier's Report is lacking in the latter two particulars which were added during quality control inspection.

cc:
C351



Diag. Cht. 5101-4

9471

9469

9468

9467-

9274

9275

9253

9252

9251

C A T A L I N A

34

