9487

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-10-4A-4B-74-75

Office No. H-9487

LOCALITY

State CALIFORNIA

General Locality SAN PEDRO CHANNEL

Locality NEWPORT BEACH

19 74-75

CHIEF OF PARTY
C. A. BURROUGHS & R. E. ALDERMAN

LIBRARY & ARCHIVES

DATE 2-14-77

☆ U.S. GOV. PRINTING OFFICE: 1975—668-353

9487

Area 5

Charts
5020 v
* 5101 v
* Rec'd 5108 v, 5142 v applied 8-31-77 D.C.

NOAA FORM 77-28 (11-72) | U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION | REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H-9487

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-10-4A-74

State California

General locality San Pedro Channel

Locality Newport Beach

Scale 1:10,000 Date of survey 10 - 31 October 1974

Instructions dated June 5, 1974 Project No. OPR-411-FA-74

Vessel Launch FA-6 (Hull #1243, EDP #2026), and the ship FAIRWEATHER (EDP #2020)

Chief of party CDR Charles A. Burroughs

Surveyed by FAIRWEATHER Personnel

Soundings taken by echo sounder, ~~hand lead, pole~~ Ross Fineline Fathometer (model #5000, S/N 1047)

Graphic record scaled by Ross 6000 Digitizer

Graphic record checked by FAIRWEATHER Personnel

Positions verified by Bruce Alan Olmstead Automated plot by PMC Xynetics Plotter

Soundings

Verification by Bruce Alan Olmstead

Soundings in fathoms and tenths at ~~XXXX~~ MLLW

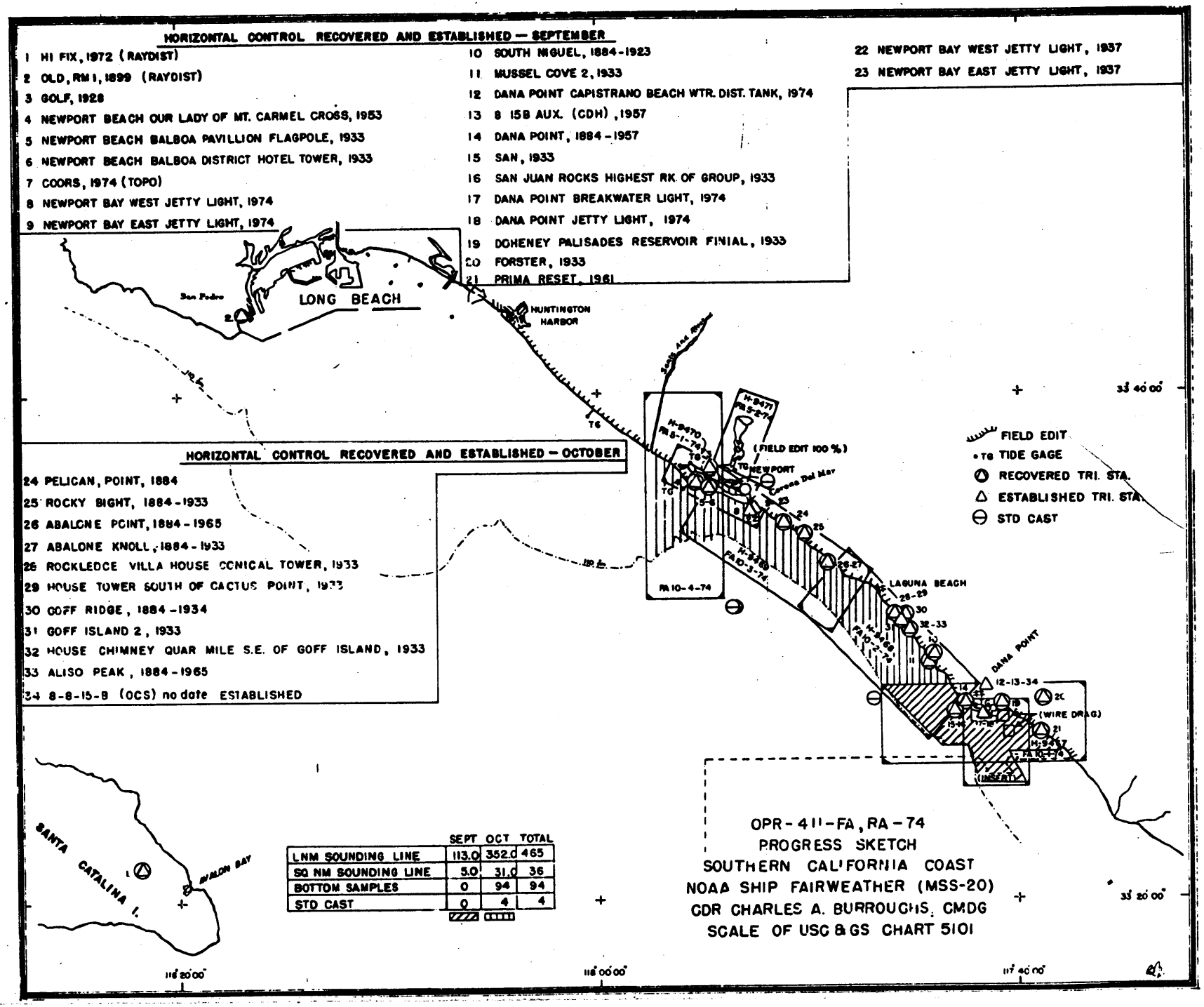
REMARKS: The survey was run on GMT. The mean longitude of the survey is 117°55'43.5"W. This boatsheet is incomplete. The computer sheet that covers the eastern half of the boatsheet is complete and adequate for charting. Work started this field season. Sheet FA-10-4B-74 will be surveyed during the 1975 field season.

Applied to stds 8/22/77 CAB.

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

2

☆ U.S. GOVERNMENT PRINTING OFFICE: 1976—665-661/1222 REGION NO. 6



	SEPT	OCT	TOTAL
LNM SOUNDING LINE	113.0	352.0	465
SQ NM SOUNDING LINE	5.0	31.0	36
BOTTOM SAMPLES	0	94	94
STD CAST	0	4	4

OPR-411-FA, RA-74
PROGRESS SKETCH
SOUTHERN CALIFORNIA COAST
NOAA SHIP FAIRWEATHER (MSS-20)
CDR CHARLES A. BURROUGHS, CMDG
SCALE OF USC&GS CHART 5101

DESCRIPTIVE REPORT
NOAA SHIP FAIRWEATHER
OPR-411-FA-74

SURVEY H-9487
SHEET FA-10-4A-74

A. PROJECT

This project was accomplished in accordance with project instructions OPR-411-FA,RA-74, Southern California Coast dated June 5, 1974, with Change Numbers 1-4 dated 5, 6, 20, 26 September, 1974 respectively, and with the PMC OPORDER. ✓

B. AREA SURVEYED

The area surveyed on sheet FA-10-4A-74 is bounded by the 110-fathom curve on the south, the shore on the north, and longitudes 117°54.5' W and 117°57.1' W on the east and west respectively. Hydrography was accomplished from October 10-31, 1974. ✓

C. SOUNDING VESSEL

All hydrography on this sheet was accomplished by launch FA-6 (hull no. 1243, EDP no. 2026). ✓

D. SOUNDING EQUIPMENT

The launch used a Ross Fineline Fathometer. A TRA corrector of +0.4 fathom, based on the bar checks taken during the project, was used for the launch. The sound velocity correctors were determined from 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 150 fathoms. ✓

Sounding Instruments:

Vessel	Instrument	Model	S/N
FA-6	Ross Fineline	5000	1047

✓

E. BOAT SHEET

The boat sheet projection used was a modified transverse Mercator. The scale is 1:10,000. The skew is 90°. The origin for FA-10-4A-74 is 33°31'50" N, 117°54'05" W. All data was plotted by the shipboard Hydroplot system, utilizing the ships PDP 8/e computer (S/N M-40- ✓

00000-1006), a Complot plotter (model DP-3, S/N 4670-2). A copy of the parameter tape printout is appended.

F. STATION CONTROL

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

Two calibration points were located inside Newport Beach Harbor. The points were established using third-order resection and traverse. ✓

No photogrammetrically-located signals were used for this survey. The 1927 North American datum was used for all computations, which are located in the appendix of this report. ✓

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. Launch FA-6 was equipped with a Raydist mobile transmitter, navigator, strip chart recorder and a 9 ft. whip antenna. The strip chart recorder 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 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 predominent 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 sheet. Slope corrections were not required. ✓

H. SHORELINE

Shoreline detail information was obtained from Class III shoreline manuscripts TP-00410 and TP-00409. Field edit of both manuscripts was completed November, 1974. The low water line could not be defined because of the ever-present surf.

I. CROSSLINES

Crosslines accounted for 15% or 9.7 nm of all hydrography completed on this survey. Comparisons at crossings agreed within one fathom in water less than 35 fathoms deep, within two fathoms in 35-80 fathoms, within three fathoms in 80-115 fathoms, and within four fathoms in waters over 115 fathoms deep. The disagreements over one fathom occurred at steep gradients in deep waters.

J. JUNCTIONS

The survey junctions with the 1:10,000 scale survey FA-10-3-74 (H-9469) agreed within one fathom.

K. COMPARISON WITH PRIOR SURVEYS

This survey compared with the 1934 1:10,000 scale survey H-5534 (H-5533 was not available), and the 1934 1:40,000 scale survey H-6115 within one fathom in shoal areas, and within 10% in deeper waters. Soundings were generally deeper in the 1934 surveys, with the only significant discrepancies occuring on the steep slopes of the canyon off Newport Pier.

Item AQ, Pre-Survey Review update of October 30, 1973, is white mooring buoy "CG 7" charted in latitude 33°36.1' longitude 117°55.5'. This mooring buoy was located and is plotted on the field sheet.

A charted 49-foot sounding from survey H-5534 (1934) is circled on sheet 5 of 7, Pre-Survey Review dated September 24, 1970. A sounding line was run directly over the charted position (see the 3rd and 4th soundings between positions 6108 and 6109) and the fathogram was closely examined for any evidence of a shoal. None was found. Depths on either side of the charted position varied from 51 to 55 feet.

L. COMPARISON WITH CHART

Chart #5108 (11th Edition, February 27, 1971, scale 1:10,000) compared within one fathom in shoal areas, and within 10% in deeper waters. The only significant discrepancies occurred on the steep

slopes of the previously-mentioned canyon. Comparisons with the soundings in the project area on chart #5142 (13th Edition, April 20, 1974, scale 1:80,000) was good considering the difference between the chart and survey scales.

M. ADEQUACY OF SURVEY

All fathogram field survey records were scanned and checked for peaks and deeps. The area covered by sheet FA-10-4A-74 is complete and adequate to supersede prior surveys for charting. Sheet FA-10-4B-74 will be surveyed during the 1975 field season.

N. AIDS TO NAVIGATION

The only aid to navigation in the survey area is white mooring buoy "CG 7", shown on charts 5108 and 5142. This buoy was located and is plotted on the field sheet.

O. STATISTICS

Vessel	Total Positions	Hydrography	NM
FA-6	329	65.4	

Total area - 5.3 sq. nm
Total bottom samples - 11

P. MISCELLANEOUS

Greenwich Mean Time was used for all survey records. Positions 6120 through 6257 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.

The submarine canyon south of Newport Pier was thoroughly developed, with sounding lines spaced at 100 meters, to accurately define the depth contours.

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-100, version 11/10/72, was used on launch FA-6 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 the field sheet.

Submitted by:

John C. Dwright

for Lt(jg) Pamela R. Chelgren, NOAA

APPROVAL SHEET ✓

Field No. FA 10-4A-74

Register No. H-9487

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 sheet is complete and adequate to supersede prior surveys for charting.

Sheet FA 10-4B-74 will be surveyed during the 1975 field season.

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

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		DOHENEY 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.

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)

Depth (fathoms)	Corrector (fathoms)
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

Az. OLD – SOLITARY 2 = 96-08-43 ✓
+ ∠ SOLITARY to RM 1 = 301-42-00 ✓ *
397-60-43 ✓
-360
Az. OLD – OLD RM 1 = 37-50-43 ✓

* from OLD 1899 recovery note

INVERSE COMPUTATION

STATION 1 OLD 1899

LATITUDE = 33/43/13.250 ✓
LONGITUDE = 118/16/56.686 ✓

STATION 2 SOLITARY 2 1932

LATITUDE = 33/43/16.557 ✓
LONGITUDE = 118/17/33.458 ✓

RESULT

DISTANCE = 952.223 -JCA

FWD AZIMUTH = 96/08/42.657

BACK AZIMUTH = 276/08/22.243

DIRECT COMPUTATION (408)

STATION 1 OLD 1899

LATITUDE = 33/43/13.250 ✓
LONGITUDE = 118/16/56.686 ✓
* DISTANCE = 12.229 ✓
FWD AZIMUTH = 37/50/43 ✓

STATION 2 OLD 1899 RM 1

PAT. II

LATITUDE = 33/43/12.9366 ✓

LONGITUDE = 118/16/56.9774

JCA

NOAA FORM 77-28 (11-72) | U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION | REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H-9487

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-10-4B-74

State California

General locality San Pedro Channel

Locality Newport Beach

Scale 1:10,000 Date of survey 7 March - 3 April, 1975

Instructions dated 22 January 1975 Project No. OPR-411-FA-75

Vessel Launch FA-6 (Hull #1243, EDP #2026), and the ship FAIRWEATHER (EDP #2020)

Chief of party CDR Richard E. Alderman

Surveyed by ENS R. A. Morris

Soundings taken by echo sounder, ~~hand lead, pole~~ Ross Fineline Fathometer (S/N 1054)

Graphic record scaled by Ross 6000 Digitizer

Graphic record checked by FAIRWEATHER Personnel

Positions verified by ~~XXXXXXXX~~ by Bruce Alan Olmstead Automated plot by PMC Xynetics Plotter

Soundings verification ~~XXXXXXXX~~ by Bruce Alan Olmstead

Soundings in fathoms and tenths at ~~XXXX~~ MLLW

REMARKS: All survey records were kept on GMT. The mean longitude of the survey is 117°55'43.5"W. This computer sheet completes boatsheet FA-10-4-74. Computer sheet FA-10-4A-74 was completed by the FAIRWEATHER in October 1974. This boatsheet is complete and adequate for charting.

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

☆ U. S. GOVERNMENT PRINTING OFFICE: 1976—665-661/1222 REGION NO. 6

DESCRIPTIVE REPORT

NOAA SHIP FAIRWEATHER (MSS-20)

OPR-411-FA-75

SURVEY H-9487 (FA-10-4B-74)

A. PROJECT

This survey was accomplished in accordance with project instructions OPR-411-FA-75, Southern California Coast, dated 22 January 1975, and with change numbers 2 and 4 dated 18 February 1975 and 5 March 1975 respectively, and with the PMC OPORDER.

This computer sheet completes boatsheet FA-10-4-74. Computer sheet FA-10-4A-74 was completed by the FAIRWEATHER in October 1974, and records and descriptive report for that sheet were submitted at that time.

B. AREA SURVEYED

The area surveyed on sheet FA-10-4B-74 lies between Newport and Huntington Beaches and is bounded by the 110 fathom curve on the south, the shore on the north, and longitudes 117° 57.1'W and 117° 59.5'W on the east and west sides respectively. Hydrography was accomplished from 7 March 1975 to 11 March 1975 and on 3 April 1975.

C. SOUNDING VESSELS

All hydrography on this sheet was accomplished by launch FA-6 (hull no. 1243, EDP no. 2026). Some bottom samples were accomplished by the ship.

D. SOUNDING EQUIPMENT

The launch used a Ross Fineline 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 by meaning two Nansen casts and one Martek TDC 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 to 129 fathoms.

Sounding Instruments:

Vessel	Instrument	Model	S/N
FA-6	Ross Fineline	5000	1054

E. BOATSHEET

The boatsheet projection used was a modified transverse Mercator. The scale is 1:10,000. The skew is 90°. The origin for FA-10-4B-74 is 33° 31' 50"N, 117° 56' 35"W. All data was plotted by the shipboard Hydroplot system, utilizing the ship's PDP8/e computer (s/n M-40-00000-1006), and a Complot plotter (model DP-3, s/n 3750-1). A copy of the parameter tape printout is appended.

F. STATION CONTROL

Horizontal control for this survey consisted of existing triangulation stations, with the exception of OLD 1899 RM3 1975, which was established by third-order traverse especially for this project. The pattern I electronic control station was located over HIFIX 1972 and the pattern II station over OLD 1899 RM3 1975.

One calibration point was established near the east end of Long Beach Breakwater by third-order resection and traverse. (see Electronic Systems Calibration Report, OPR-411-FA-75). All other calibration signals were located over existing triangulation or were existing triangulation intersection stations.

No photogrammetrically-located signals were used for this survey. The 1927 North American datum was used for all computations, which are located in the appendix to this report.

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 RM3 1975 on Point Fermin. Launch FA-6 was equipped with a Raydist mobile transmitter, navigator, strip chart recorder and a 9 ft. whip antenna. The strip chart recorder was monitored and annotated at all times between calibrations, normally taken twice or three times daily.

Calibration of the Raydist navigator was accomplished at a fixed point located by third-order traverse, or by visual three-point sextant fixes utilizing signals located over triangulation stations or triangulation intersection stations.

Base station operation was generally satisfactory. The mobile transmitter and navigator in FA-6 worked well during the entire project. Deterioration of performance was encountered several times during the project due to heavy rain squalls in the area, and there was one

incidence of outside electronic interference that precluded operations for half a day.

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

Bottom samples taken by the ship were controlled by visual bearings ✓ on triangulation stations.

H. SHORELINE

The shoreline details were obtained from Class III manuscripts TP-00406 and TP-00407. All shoreline and topographic details were ✓ verified by field edit.

The low water line was not delineated by soundings, as the surf conditions did not allow launch operations sufficiently close to the ✓ sand beach.

I. CROSSLINES

The 96.7 n. m. of hydrography run on this sheet include 9.3 miles of crosslines. The crosslines are 11% of the main scheme hydrography. ✓ Comparisons at crossings never exceeded 1 fathom, and were generally in closer agreement.

J. JUNCTIONS

The survey junctions to the east with 1:10,000 scale survey FA-10-4A-74 (H-9487), which agrees within 1 fathom in depths up to 30 fathoms, and within 3 fathoms up to depths of 129 fathoms. The survey junctions to the west with 1:10,000 scale contemporary survey FA-10-1-75 (H-9492) and 1:20,000 scale contemporary survey ✓ FA-20-1-75 (H-9494). Agreement is within 1 fathom in depths to 40 fathoms, 3 fathoms in depths to 120 fathoms.

The survey is bounded on the north by the shoreline and on the south ✓ by the project limits.

K. PRIOR SURVEYS

The boatsheet was compared with prior hydrographic surveys H-5533 (1:10,000 scale) and H-6115 (1:40,000 scale) dated 1934 and 1934. Comparison showed representative soundings of prior and present surveys did not differ by more than 1 fathom, and were in closer ✓ agreement in most cases. The close comparison of the surveys can be attributed to the uniformity of the sand bottom.

The following Pre-Survey Review items dated 24 September 1970 and update dated 30 October 1973 were investigated:

Item 17 and update item AF: Two fish havens, one charted in lat. 33°37!19, long. 117°59!31 and the other charted in lat 33°37!00, long. 117°58!90 were developed with 25 meter spacing as shown on the field sheet, and no shoaling was found. It is recommended these obstructions be retained on the chart. Orange and white striped spar buoys marked "C", "D" and "E" were found in the vicinity of the westernmost reported obstruction and are shown on the field sheet. It is recommended these buoys be shown on the chart. This item was also investigated on adjacent survey FA-20-1-75 (H-9494), and additional information is contained in the descriptive report of that survey. ✓

A 3 1/4 fathom sounding on chart 5142, circled on sheet 2 of 7 of the Pre-Survey Review, was developed as shown on the field sheet. A shoal of 3.8 fathoms was found and is plotted on the field sheet. It is recommended this feature be charted in accordance with the current survey. ✓

3.2 nearby

Update item AI: A mooring buoy charted in lat. 33°37!30, long. 117°57!00 was located on the present survey and is plotted on the field sheet. This buoy is marked "CG 6". It is recommended this buoy be charted as shown. ✓

L. COMPARISON WITH CHART

The field sheet was compared with chart 18337 (5142), San Pedro Channel, 13th edition 20 April 1974, scale 1:80,000. ✓

Charted depths compare with soundings on the field sheet to within 1 fathom, except in the southeast corner of the field sheet, where the difference is 2 fathoms in a depth of 120 fathoms. ✓

The longer of two sewers shown on the chart extending southwest from the Santa Ana River was found and is plotted on the field sheet. It shows up as a ridge of 2 fathom peaks on the fathograms. ✓

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

Bell buoy R"4" is shown properly in the Light List and on chart 5142. ✓

Buoy N"4HB" is shown properly in the Light List and on chart 5142 except that no markings are visible on the buoy. ✓

These buoys are also located on the field sheet. ✓

O. STATISTICS

Vessel	Total Positions	Hydrography, n.m.
FA-6	483	96.7

✓

Total area: 10.9 sq. n.m.
Total bottom samples: 26

P. MISCELLANEOUS

Two unmarked spherical white mooring buoys were found and located on the field sheet near the mouth of the Santa Ana River. It is recommended they be charted as shown on the field sheet. ✓

Two orange and white striped spar buoys were found and located on the field sheet at lat. 33°34'15", long. 117°58'56" and lat. 33°35'40", long. 117°58'18". The first buoy is marked "12". It is recommended they be charted as shown on the field sheet. ✓

Greenwich Mean Time was used for all survey records. Velocity corrections have not been applied to the soundings on the field sheet. ✓

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

FA-6 used program AM-170, version 11/10/72 on its PDP8/e computer to acquire and compile all on-line hydrographic data. The ship used program AM-200, version 3/23/73, on its PDP8/e to plot the field sheet. ✓

Submitted by:

Roger A. Morris

Ens Roger A. Morris, NOAA

APPROVAL SHEET ✓

Field No. FA-10-4B-74

Register No. H-9487

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

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

SIGNAL LIST ✓

HI FIX 1972
001 4 33 21 25308 118 21 50720 250 0500 330040 Q-33

OLD 1899 RM3 1975
002 4 33 43 06185 118 17 01404 250 0035 330040 (2)

PELICAN POINT 1884
003 4 33 34 47680 117 51 05976 139 0022 000000 Q-3

NEWPORT BAY EAST JETTY LIGHT
004 4 33 35 22623 117 52 35480 139 0005 00000

NEWPORT BAY WEST JETTY LIGHT
005 4 33 35 17827 117 52 43211 139 0005 000

NEWPORT BEACH BALBOA PAVILION FLAGPOLE 193
006 4 33 36 09774 117 53 52552 139 0025 0000

NEWPORT BEACH BALBOA DISTRICT HOTEL TOWER 19
007 4 33 36 05997 117 53 56884 139 0015 000000 Q-3

NEWPORT HARBOR HIGH SCHOOL TOWER 1933
008 4 33 37 22108 117 54 44873 139 0025 000000 Q-33

NEWPORT BEACH OUR LADY OF MT CARMEL CROSS 1953
009 4 33 36 24448 117 55 09823 139 0025 000000

HUNTINGTON BEACH EDISON SE STK 1974
010 4 33 38 37672 117 58 38793 139 0061 000000

HUNTINGTON BEACH EDISON NW STK 1974
011 4 33 38 40087 117 58 42982 139 0061 0000

NEWPORT BEACH RAD KOCM MAST 1974
012 4 33 37 55661 117 56 12903 139 0107 000

HUNTINGTON BEACH HS SPIRE 1933
013 4 33 40 37632 118 00 05437 139 0036 000

SUNSET BEACH ABAND MIL TK 1956
014 4 33 42 32884 118 02 24692 139 0020 00000

HUNTINGTON BEACH MUN TANK 1956
015 4 33 42 42351 118 02 58281 139 0020 000000

SUNSET BEACH SUNSET LAND AND WATER CO NW WATE
016 4 33 43 27589 118 04 39208 139 0015 000000

SEAL BEACH NAVY DEPOT N TANK 1956
017 4 33 44 52127 118 05 19939 139 0050 000000 (1)

LONG BEACH RAD STA KFOX MAST 1974
018 4 33 45 55258 118 07 10097 139 0107 000000 (1)

LONG BEACH VILLA RIVIERA HOTEL TOWER 1932
019 4 33 45 57179 118 10 54237 139 0050 000000 Q-3311811

LONG BEACH BREAKWATER EAST END LIGHT 1953
020 4 33 43 23400 118 08 10100 139 0008 000000 Q-3311812

LONG BEACH CHANNEL ENTRANCE EAST LIGHT 1953
021 4 33 43 23495 118 10 46867 139 0008 000000 Q-3311812

SEAL BEACH NAVY DEPOT RADAR TOWER 1956
022 4 33 43 50543 118 05 08143 139 0033 000000 Q-3311812

SAN PEDRO, PORTS OF CALL, SKY TOWER 1974
023 4 33 43 54882 118 16 33909 139 0094 000000 (3)

LONG BEACH LIGHT 1953
024 4 33 43 23530 118 11 09371 139 0008 000000 Q-3311812

(1) UNPUBLISHED FIELD POSITIONS FROM 1974 GEODETIC FIELD PARTY G-16

(2) SEE "OLD 1899 RM3 1975 GEODETIC POSITION COMPUTATION"

(3) UNPUBLISHED FIELD POSITIONS FROM "LOCATION OF LANDMARKS, SAN PEDRO, CALIFORNIA, MARCH 1974, R. B. MELBY"

VELOCITY TABLE 0001 ✓

SOUND VELOCITY CORRECTOR ABSTRACT

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

FA-10-4B-74	(H-9487)
FA 10-1-75	(H-9492)
FA-10-2-75	(H-9493)
FA-20-1-75	(H-9494)

Depth (fathoms)	Corrector (fathoms)
0-2.0	+ 0.0
2.1-5.0	0.1
5.1-10.0	0.2
10.1-13.5	0.3
13.6-18.5	0.4
18.6-23.0	0.5
23.1-28.0	0.6
28.1-33.5	0.7
33.6-38.5	0.8
38.6-52.5	1.0
52.6-63.5	1.2
63.6-74.5	1.4
74.6-85.5	1.6
85.6-96.5	1.8
96.6-107.5	2.0
107.6-121.5	2.2
121.6-144.5	2.5
144.6-176.5	3.0
176.6-208.0	3.5

ABSTRACT OF RAYDIST EQUIPMENT UTILIZATION ✓

H-9487, 9492, 9493, 9494 and 9508

BASE STATION LOCATIONS

JULIAN DAYS 66 thru 101

Unit S/N 124, Frequency 1650.015 KHz, 35 ft. whip antenna on a 20 ft. tower, with 50 ft. radial ground plane.
Location: HI FIX 1972 33° 21' 25.308"N, 118° 21' 50.720"W

Unit S/N 125, Frequency 1650.425 KHz, 35 ft. whip antenna on a 40 ft. tower, with a submerged water pipe system used for a ground plane.
Location: OLD 1899 RM3 1975 33° 43' 06.185"N, 118° 17' 01.404"W

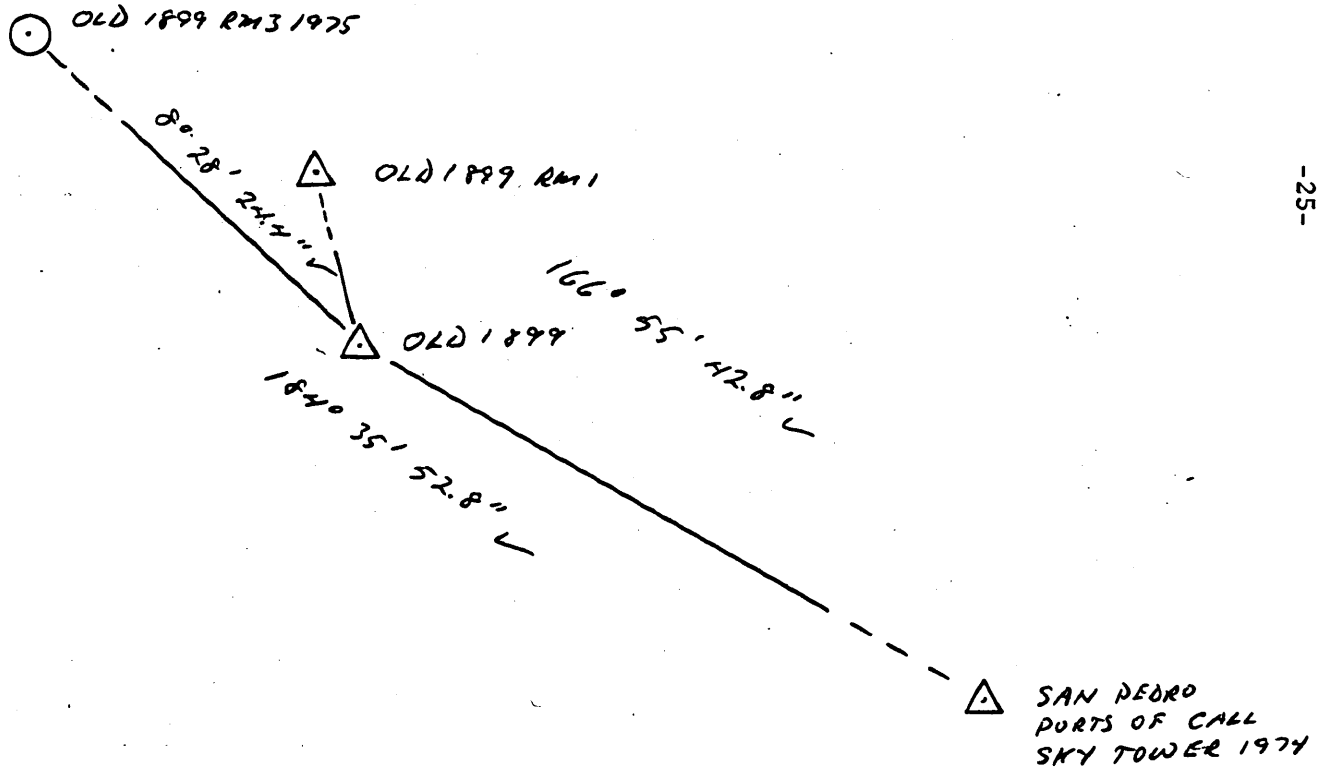
MOBILE TRANSMITTERS

Ship: Model TA-96, S/N 90, Frequency 3300.400 KHz
FA-3: Model TA-96, S/N 90, Frequency 3300.400 KHz
FA-5: Model TA-96B, S/N 83, Frequency 3300.520 KHz
FA-6: Model TA-96B, S/N 96, Frequency 3300.465 KHz

MOBILE NAVIGATORS

Ship: Model ZA-75C, S/N 18, Frequency 370/450 Hz
FA-3: Model ZA-75C, S/N 18, Frequency 370/450 Hz
FA-5: Model ZA-75C, S/N 16, Frequency 330/490 Hz
FA-6: Model ZA-75C, S/N 21, Frequency 435/385 Hz

TRAVERSE SCHEME FOR OLD 1899 RM3 1975



1899

INVERSE COMPUTATION

FROM STATION = OLD 1899

LATITUDE = 33/43/13.250
LONGITUDE = 118/16/56.686

TO STATION = SAN PEDRO PORTS OF CALL SKY TOWER 1974

LATITUDE = 33/43/54.882
LONGITUDE = 118/16/33.909

DISTANCE = 1410.347

FWD AZIMUTH = 204/34/00.313

BACK AZIMUTH = 24/34/12.960

	204°	34'	00.3"
+	184°	35'	52.8"
	29°	09'	53.8"

DIRECT COMPUTATION

FROM STATION = OLD 1899

LATITUDE = 33/43/13.250
LONGITUDE = 118/16/56.686
DISTANCE = 249.267
FWD AZIMUTH = 29/09/53.1

TO STATION = OLD 1899 RM3 1975

LATITUDE = 33/43/06.1851

LONGITUDE = 118/17/01.4039

BCK AZIMUTH = 209/09/50.4808

Q 331181

STATION	NOAA FORM 76-86 (1-72)	U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
OLD 1899	ABSTRACT OF DIRECTIONS	

STATE	COMPUTED BY	DATE	VOLUME NO.
CALIFORNIA	JAS	3/3/75	1
OBSERVER	CHECKED BY	INSTRUMENT NO.	SHEET 1 OF 1
LCDR J.A. SOWERS	DWK	WILD T2 #85652	

POSITION NO.	STATIONS OBSERVED							
	SAN DIEGO HARTS OF CALL SKY TOWER	OLD 1899 RM 3	OLD 1899 RM 1					
	(INITIAL) 0° 00'	° '	° '	° '	° '	° '	° '	° '
	"	"	"	"	"	"	"	"
1	0.00	54	24					
2	0.00	57	15					
3	0.00	50	15					
4	0.00	50	15					
5	0.00							
6	0.00							
7	0.00							
8	0.00							
9	0.00							
10	0.00							
11	0.00							
12	0.00							
13	0.00							
14	0.00							
15	0.00							
16	0.00	24						
SUM,		211	69					
MEAN,		52.8	17.2					
COR. FOR ECC.,								
DIRECTION,		52.8	17.2					

NOAA FORM 76-86 (1-72) SUPERSEDES C&GS FORM 470

* U.S. G.P.O. 1972-769378/517 REG.#6

Q 331181

NOAA FORM 76-72
(8-71)

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

LIST OF DIRECTIONS

Station: OLD 1899	State: California	Height of tower
Chief of party: Richard E. Alderman, CDR, NOAA	Date: 3 March 1975	Eccentricity
Observer: J. A. Sowers, LCDR, NOAA	Instrument: Wild T-2 #85652	Recorded in volume: One
		Computed by: J. A. Sowers, LCDR, NOAA
		Checked by: R. A. Morris, ENS, NOAA

OBSERVED STATION	Observed direction	Eccentric reduction	Corrected direction with zero initial	Sealevel reduction**	Adjusted direction**
	° ' "	' "	° ' "	"	"
SAN PEDRO PORTS OF CALL SKY TOWER 1974	0 00 00.00		0 00 00.00		
OLD 1899 RM3 1975	184 35 52.8		184 35 52.8		
OLD 1899 RM1	193 04 17.2		193 04 17.2		

* Objects visible from the ground.
** These columns are for office use and should be left blank in the field.

NOAA FORM 76-72 SUPERSEDES FORM C&GS-24A, WHICH MAY BE USED

- GPK

CA1000 FIELD RECORD — GEODIMETER

	MASTER	REMOTE
DATE	3/3/75	
SERIAL Nº	1048	1047
SITE	OLD LEDGE	OLD LEDGE RM 3 1975
OPERATOR	SOWERS	PRICE

READINGS

B	0	0					
C		0	8				
D			8	1			
E				1	7		
A					7	8	0

UNCORRECTED SLOPE DISTANCE	0	0	8	1	7	8	0	FEET
SYSTEM ZERO CORRECTION					+	0	3	
=	0	0	8	1	7	8	3	FEET
OFFSET								
=	0	0	8	1	7	8	3	FEET

MET. CORRECTIONS

	MASTER	REMOTE	MEAN
DRY BULB	60	60	60
WET BULB	57	57	57
PRESSURE	30.16	30.16	30.16
REFRACTIVE INDEX FROM NOMOGRAM			339

CORRECTION = 1.000325 - REFRACTIVE INDEX = -.24 PARTS / MILLION

SLOPE DISTANCE ---------- 817.81 FEET

X 0.3048 = ---------- 249.268 METERS

CA1000 FIELD RECORD — GEODIMETER

	MASTER	REMOTE
DATE	3/3/75	
SERIAL Nº	1048	1047
SITE	OLD LEDGE	OLD LEDGE RM 3 1975
OPERATOR	SOWERS	PRICE

READINGS

B	0	0					
C		0	8				
D			8	1			
E				1	7		
A					7	8	0

UNCORRECTED SLOPE DISTANCE	0	0	8	1	7	8	0	FEET
SYSTEM ZERO CORRECTION					+	0	3	
=	0	0	8	1	7	8	3	FEET
OFFSET								
=								FEET

MET. CORRECTIONS

	MASTER	REMOTE	MEAN
DRY BULB	60	60	60
WET BULB	57	57	57
PRESSURE	30.16	30.16	30.16
REFRACTIVE INDEX FROM NOMOGRAM			339

CORRECTION = 1.000325 - REFRACTIVE INDEX = -.24 PARTS / MILLION

SLOPE DISTANCE ---------- 817.81 FEET

X 0.3048 = ---------- 249.268 METERS

CA1000 FIELD RECORD — GEODIMETER

MASTER — DATE 3/3/75 — REMOTE

SERIAL Nº 1048 — 1047

SITE OLD LEDGE — OLD LEDGE RM 3 1975

OPERATOR SOWERS — PRICE

READINGS

B	0	0					
C		0	8				
D			8	1			
E				1	7		
A					7	8	0

UNCORRECTED SLOPE DISTANCE	0	0	8	1	7	8	0	FEET
SYSTEM ZERO CORRECTION					+	0	3	
=	0	0	8	1	7	8	3	FEET
OFFSET								
=								FEET

MET. CORRECTIONS

	MASTER	REMOTE	MEAN
DRY BULB	60	60	60
WET BULB	57	57	57
PRESSURE	30.16	30.16	30.16
REFRACTIVE INDEX FROM NOMOGRAM			339

CORRECTION = 1.000325 - REFRACTIVE INDEX = -.24 PARTS / MILLION

SLOPE DISTANCE ---------- 817.81 FEET

X 0.3048 = ---------- 249.268 METERS

FIELD TIDE NOTE ✓

Field tide reduction of soundings was based on predicted tides from Los Angeles Outer Harbor, California, and were interpolated by PDP 8/E computer utilizing AM 5ØØ. All times of both predicted and recorded tides are based on GMT.

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

SITE	LOCATION	PERIOD
Balboa Pier, Newport Beach	33° 35.9' N 117° 54.0' W	30 Days 3-4-75 to 4-3-75
Huntington Beach Pier	33° 39.2' N 118° 00.3' W	38 Days 3-4-75 to 4-11-75
Belmont Pier, Long Beach	33° 45.3' N 118° 08.9' W	36 Days 3-6-75 to 4-11-75
Alamitos Bay	33° 45.5' N 118° 06.9' W	19 Days 3-23-75 to 4-11-75

BALBOA PIER

Bubbler gage (S/N 68A14941) and staff were installed 3-4-75 and ran satisfactorily for 30 days. The gage was removed 4-11-75. The marigram reads 2.7 feet greater than the staff. Because the concession stand operator at Balboa Pier was absent during attempts to tend the tide gage, it was not possible to gain access to the gage to make observations or wind the clock after 4-3-75. When the gage was removed 4-11-75 it was found with the clock run down. This problem is not serious as a 30 day record was obtained on this gage anyway, and the Huntington Beach Pier gage will serve to control hydrography after 4-3-75.

HUNTINGTON BEACH PIER

Bubbler gage (S/N 67A10286) and staff were installed 3-4-75 and ran satisfactorily for 38 days until removal on 4-11-75. The marigram reads 4.4 feet greater than the staff. The marigram displays two periods of pressure loss in the orifice-bellows system, each lasting about three hours and each self correcting. These occured on 3-26-75 and 4-9-75. The tide curve was interpolated for the periods in question.

BELMONT PIER

ADR gage (S/N 7404A1193M2) was installed 3-6-75 and ran satisfactorily for 36 days until removal on 4-11-75. The tide staff from the ship Rainier's 1974 installation was used. On 3-11-75 at 1900Z the gage was found to be thirteen minutes fast. The time was corrected and no other time errors were observed. The marigram reads 20.0 feet greater than the staff.

ALAMITOS BAY

Bubbler gage (S/N 73A229) and staff were installed on 3-23-75 and ran satisfactorily for 19 days until removal on 4-11-75. The marigram reads 5.2 feet greater than the staff. This gage was installed to control hydrography in Alamitos Bay, but time limitations forced postponement of this survey until fall, 1975. These records may be useful, however, in controlling the survey accomplished in adjacent Anaheim Bay.

TIME & HEIGHT DIFFERENCES

Hourly height tabulations for Balboa Pier, Huntington Beach Pier and Alamitos Bay were examined for time and height differences among the respective tide cycles. No significant differences were observed.

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 Balboa Pier staff stop, which appears to have sunk 0.02 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.

RECOMMENDATIONS

All gages performed well during the project period. The Nupro dampening valves on the Balboa Pier and Huntington Beach Pier gages worked very well in minimizing the effects of wave action. It is recommended that all gages to be used in areas of heavy swell be supplied with Nupro valves.

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 5ØØ. 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:

SITE	LOCATION	PERIOD
Dana Point Harbor	33° 27.7' N 116° 42.3' W	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.

June 4, 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 Form 362

Tide Station Used (NOAA Form 77-12): Balboa Pier

Period: September 21 - October 31, 1974

HYDROGRAPHIC SHEET: H-9487

OPR: 411

Locality: Newport Beach, Southern California

Plane of reference (mean lower low water): 7.4 ft.

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

Remarks: Zone direct.

James R Hubbard
for Chief, Tides Branch

Rec'd 8-11-75

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 Form 362

Tide Station Used (NOAA Form 77-12): Huntington Beach

Period: March 7-11, 1975

HYDROGRAPHIC SHEET: H-9487

OPR: 411

Locality: Off Huntington Beach

Plane of reference (mean lower low water): 8.1 ft.

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

Remarks: Zone direct.

James R Hubbard
for Chief, Tides Branch

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GEOGRAPHIC NAMES

Survey No.

H-9487

Name on Survey	A On Chart No	B On previous survey No	C On U S Quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
NEWPORT BEACH										1
HUNTINGTON BEACH										2
SANTA ANA RIVER										3
SAN PEDRO CHANNEL										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26

APPROVED

Chas. E. Harrington

STAFF GEOGRAPHER - C51x2

16 March 1977

APPROVAL SHEET

FOR

SURVEY H-9487

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: 1/11/77

Signed: [signature]

Title: Chief, Verification Branch

NOAA FORM 77-27
(9-72)
(PRESC. BY HYDROGRAPHIC MANUAL 20-2, 6-94, 7-13)

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

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9487

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS 1-paper ('74) 1-mylar ('75)	2
DESCRIPTIVE REPORT	1	OVERLAYS (preliminary)	6

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	Ø	Ø	1			Ø
CAHIERS	1 *					
VOLUMES	2					2
BOXES			Ø		Ø	Ø

T-SHEET PRINTS (List)
Class I Manuscripts TP-ØØ4Ø6, TP-ØØ4Ø7, TP-ØØ4Ø9, TP-ØØ41Ø

SPECIAL REPORTS (List)
* cahier contains fathograms, printouts, tides & misc. data

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				812
POSITIONS CHECKED		812		
POSITIONS REVISED		43		
DEPTH SOUNDINGS REVISED		33Ø		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		Ø		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		Ø		
	TIME (MANHOURS)			
Verification of Control	3	3		
Verification of Positions		45		
Verification of Soundings		139		
Smooth Sheet Compilation		61		
ALL OTHER WORK		32		
TOTALS	3	28Ø		

	BEGINNING DATE	ENDING DATE
PRE-VERIFICATION BY James S. Green	4 April 1975	4 April 1975
VERIFICATION BY Bruce Alan Olmstead *Bruce Alan Olmstead*	29 April 1975	17 December 1976
REVIEW BY		

39

Quality Insp. G K Myers 42 hrs 3-22-77 No. Baumgardner 4hrs

* U.S. G.P.O. 1972-769-562/439 REG.#68-10-71

Reg. No. H-9487

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 REQ'D_____ INITIALS_____

REMARKS:

Reg. 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 REQ'D._____ INITIALS_____

REMARKS:

H-9487

Information for Future Presurvey Reviews

None

Position Index		Bottom Change Index	Use Index	Resurvey Cycle
Lat.	Long.			
333	1180	4	2	50 years

"VERIFIER'S REPORT"

Registry No. H-9487 Field No. FA-1Ø-4A & B-74-75

State: California
General Locality: San Pedro Channel
Locality: Newport Beach

Surveyed: 1Ø-31 October, 1974, 7-11 March and 3 April, 1975

Project No: OPR-411 Scale: 1:1Ø,ØØØ

Soundings: Ross 5ØØØ Fineline Fathometer Control: Hastings-Raydist

Chief of Party.....CDR C. A. Burroughs
.....CDR R. E. Alderman
Surveyed by.....Ship's Officers
Plotted by.....PMC Xynetics Plotter
Verified by.....B. A. Olmstead
Inspected by.....PMC's HIT

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

This basic survey done by the FAIRWEATHER in 1974 and 1975 covers that area bounded by Latitude 33°33'ØØ"N to Latitude 33°38'45"N Longitude 117°54'3Ø"W to Longitude 117°59'35"W. Specifically, the Mean High Water Line from Huntington Beach to Balboa Beach, seaward to the 1ØØ-fathom depth curve.

The bottom configuration comprises generally a gently sloping bottom with the exception directly south of Newport Beach Pier, where the existence of a submarine canyon is readily evident. The bottom characteristics consist of fine green mud and sand.

The projection parameters and signal list were amended to accommodate the orientation and uniqueness of this individual sheet. Verifier gleaned only those signals used on this survey. The attached list in the Descriptive Report reflects a master copy of all stations used in the project area of OPR-411 in Southern California. The corrected listings are submitted within the smooth position and sounding printout.

Selected prior survey data from H-5533 (1934-35), H-5534 (1934) and H-6115 (1934-35) was brought forward to the present survey. With the transfer of this supplemental data, the present work comprises a fair basic survey. It is adequate to supersede common areas of prior surveys mentioned above and charted hydrography except as noted in the comparison with chart section of this report.

II. CONTROL AND SHORELINE

The origin of control is given in Part F of the Descriptive Reports and the Horizontal Control Reports for OPR-411-FA-74-75.

The shoreline originates with unreviewed Class I manuscripts TP-00406, TP-00407, TP-00409 and TP-00410, photography dated March and December 1971. Date of field edit was accomplished in September and October 1974.

One significant discrepancy exists between the T-sheet, boatsheet and charted information. This concerns the two submerged sewers located at the mouth of the Santa Ana River. The longer one of the two sewers is partially compiled on Class I unreviewed manuscript TP-00406. The boatsheet symbolizes this feature as a dashed red line across the entire survey limits. The other sewer is not depicted at all. Both submerged sewers are readily identifiable by a series of 1.5 to 2.0 fathom peaks. Verifier recommends showing the longer sewer as per the field sheet and retaining the other sewer as charted.

III. HYDROGRAPHY

Depths at crossings are in good agreement.

Few of the standard depth curves were adequately delineated. With the exception of the five fathom, ten fathom and twenty fathom depths, development was poor.

The development of the mean low water line up to and including the 3-fathom depth curve was not adequately surveyed due to the surf conditions. Lack of substantial development is also apparent from 30-fathoms seaward. Adequate intensification of the bottom configuration and determination of least depths was good from five fathoms to twenty fathoms throughout the survey limits. The same is true of the Submarine Canyon off Newport Beach.

IV. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records and reports are adequate and conform to the requirements as stated in the Provisional Hydrographic Manual with the exception of:

a. Triangulation stations #110 and #111 are plotted incorrectly on the boatsheet. Station names are:

Huntington Beach Edison SE Stack, 1974
Huntington Beach Edison NW Stack, 1974

b. 1974 bottom samples and one mooring buoy were located by visual and radar-visual methods. These were not converted to Pattern I and Pattern II lanes of Raydist and as such were not logged with the original data. The verifier transferred these items directly from the boatsheet and pseudoed the rates.

c. Duplicate position numbers were used for both years of work.

d. The 1975 digitized sounding values are erratic and the analog trace depicts a wavering initial. It appears at times that the digitizer hangs up and records the following depth rather than on the fix. And, will then hold this depth for several sounding intervals. This causes very obvious anomalies around the depth curves.

The depths recorded by the Ross Fathometer in 1975 do not in many cases agree with the analog trace. As much as a three fathom difference exists in 80 fathoms. No internal phase checks were taken during this year's work. Although, blanking was apparently used as an indication of instrument error.

A new fathometer was installed in FA-6 on Day 68 '75'.

This survey is in compliance with the Project Instructions. There is, however, a conflict between Sections 4.5 and 4.8 (1974) and Sections 4.4 and 4.7 (1975). Here, the requirement of 800 meter line spacing is in direct conflict with the later statement to adequately delineate the 110 fathom curve. Supplemental soundings were carried fwd.

V. JUNCTIONS

Adequate junctions were effected with H-9469 (FA-10-3-74) on the east, H-9492 (FA-10-1-75) and H-9494 (FA-20-1-75) on the west. The junction with H-9492 (FA-10-1-75) produced only one standard curve common to both sheets (5 fathom).

All curves with the adjoining surveys were inked in their entirety within the common areas.

VI. COMPARISON WITH PRIOR SURVEYS

H-5533 (1934-35) 1:10,000
H-5534 (1934) 1:10,000
H-6115 (1934-35) 1:40,000

The shoreline has accreted seaward approximately 70-150 meters since 1933. This is particularly noticeable and directly reflects the trend when comparing the present depths along the shoreline out to five fathoms. Such changes can be expected due to this area's high susceptibility to seasonal fluctuations. Depths from ten fathoms to fifty fathoms generally agree within one fathom with the prior work. Larger discrepancies are readily evident in the Submarine Canyon off Newport Beach and in some areas over 50 fathoms. There appears to be no discernible pattern of shoaling or deepening in these areas.

Surveying methods, surveying equipment and the depth of water probably contribute to such large differences with the present survey beyond fifty fathoms.

Parts of the 30-fathom, 40-fathom, 50-fathom and 100-fathom depth curves were supplemented by the transfer of prior soundings. The area involves from Latitude 33°33'30"N to Latitude 33°35'30"N, Longitude 117°56'00"W to Longitude 117°59'30"W.

With the following exception, the Pre-Survey Review items were satisfactorily spoken to in the Descriptive Report.

a. Item AQ a white mooring buoy "CG7" charted at Latitude 33°36'07"N Longitude 117°55'30"W was found and located on the field sheet. The verifier recommends retaining this feature as charted. ✓

b. The circled 49-foot sounding charted at Latitude 33°35'43"N Longitude 117°54'49"W originates with prior survey H-5534 (1934). Present survey depths reveal 49-51-foot soundings in the area. Verifier recommends deleting the circled 49-foot depth and using the present survey information. ?

The present survey (H-9487, FA-10-4A and B-74-75) is adequate to supersede all prior survey information within the common area.

VII. COMPARISON WITH CHART

A chart comparison was made with Charts C&GS 5142 13th Ed., April 20, 1974 and 5108 11th Ed., February 27, 1971. The charted hydrography originates primarily with the three previously discussed prior surveys.

The present survey is adequate to supersede the charted hydrography within the common area except as noted below:

a. The smaller of the two submerged sewers charted at approximately Latitude 33°37'45"N Longitude 117°57'45"W was not depicted on the boatsheet. Soundings indicate its presence and it should be retained as charted.

The charted aids adequately mark the features intended.

VIII. ADDITIONAL FIELD WORK

This is a fair basic survey. Additional field work is not required.

Respectfully submitted,

Bruce Alan Olmstead

Bruce A. Olmstead
Cartographic Technician
December 14, 1976

Examined and approved,

James S. Green
Chief, Verification Branch

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Pacific Marine Center, 18Ø1 Fairview Ave. E.,
Seattle, WA 981Ø2

Date: January 14, 1977

To: Eugene A. Taylor, RADM
Director, PMC

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

Subject: PMC Hydrographic Survey Inspection Team Report, H-9487

This survey is a basic hydrographic survey of a portion of San Pedro channel in the vicinity of Newport Beach, CA. The survey was conducted by NOAA Ship FAIRWEATHER in 1974 and 1975 in compliance with Project Instructions OPR-411-FA-74, dated Ø5 June 1974 and OPR-411-FA-75, dated 22 January 1975, respectively.

This is an excellent survey of that portion of the area with depths between 5 and 3Ø fathoms and of the submarine canyon off Newport Beach Pier. The deeper water portion of the survey area was not well delineated by the 8ØØ meter line spacing. Near shore development is minimal due, at least in part, to the existence of adverse surf conditions at the time of the survey.

Project Instructions for this survey specified 8ØØ meter line spacing in depths exceeding 3Ø fathoms. They also specified adequate delineation of the 11Ø fathom curve. That these two provisions are incompatible is conclusively shown by this survey. Prior surveys of the area are in very good agreement with this survey and, consequently, were utilized in the construction of the 4Ø, 5Ø and 1ØØ fathom depth curves. The use of prior survey data resulted in adjustments of up to 5ØØ meters in the 1ØØ fathom depth curve between the 8ØØ meter main scheme sounding lines. With the incorporation of the prior survey soundings, the delineation of the bottom configuration is considered adequate.

The inshore development is slightly better on the 1974 portion of the survey than on the 1975 portion. In neither portion were any sounding lines run parallel to the beach (or surf line). One, two, and three fathom depth curves are intermittent due to lack of

data. A group of rocks at 55°37.Ø'N, 117°56.3'W were carried forward from survey H-5533 (1934-5). It is likely that, with the accretion of the shoreline, that these rocks do not constitute a significant hazard. However, lacking any field investigation for their existence and in the interest of conservatism, they have been carried forward.

No forms 76-4Ø, Nonfloating Aids or Landmarks for Charts, were submitted with either of the Descriptive Reports although several landmarks are currently charted. It is recommended that landmarks, as presently charted, continue to be charted.

An error in the application of tidal correctors was discovered during the inspection procedure. Tidal correctors were subsequently recomputed and applied to sounding records correctly. All plotted soundings reflecting errors in excess of Ø.1 fathom have been manually corrected on the smooth sheet. Some differences, between smooth sheet soundings and digital records, of Ø.1 fathom remain. It is the opinion of the inspection team that these differences are insignificant relative to other variables effecting data accuracy, specifically the effect of sea action during sounding operations.

The inspection team finds survey H-9487 to be a fair basic survey, complete and adequate, with prior survey soundings carried forward, for charting purposes and to supersede the common areas of prior surveys. Administrative approval is recommended.

Donald E. Nortrup, LCDR

John C. Albright, LCDR

Dean R. Seidel, LCDR

Arnold E. Eichelberger

ADMINISTRATIVE APPROVAL

H-9487

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.

E. A. Taylor

Eugene A. Taylor, RADM
Director, PMC

2/2/77

Date

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

C352

March 22, 1977

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

FROM: G. K. Myers
Chief, Quality Control Branch

SUBJECT: Quality Control Report, H-9487 (1974-75), California, San Pedro Channel, Newport Beach

A quality control inspection of H-9487 has been accomplished to evaluate the adequacy and accuracy of the survey with respect to data acquisition, delineation of the bottom, determination of least depths and navigation hazards, transfer of topographic information, decisions and actions by the verifier, and cartographic presentation of data.

The heights of some charted landmarks located in the vicinity of the present survey were carried forward from T-11654 (1963) during quality evaluation.

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

1. A comparison with a portion of H-5524 (1934) which falls in depths of greater than 13 fathoms on the present survey was made during quality evaluation. There are no significant differences between prior and present depths. The present survey is considered adequate to supersede the prior survey in the common area. The scale of the prior survey is 1:20,000.

2. A statement in the Verifier's Report that a new fathometer was installed in Launch FA-6 on day 68 (1975) is questionable. This remark is apparently based on a notation indicated on the fathogram. However, the hydrographer noted in the Descriptive Report and on Stamp No. 31 that only one fathometer (SN:1054) was used during the survey.

3. The following comments pertaining to Presurvey Review items are made to supplement the Verifier's Report.

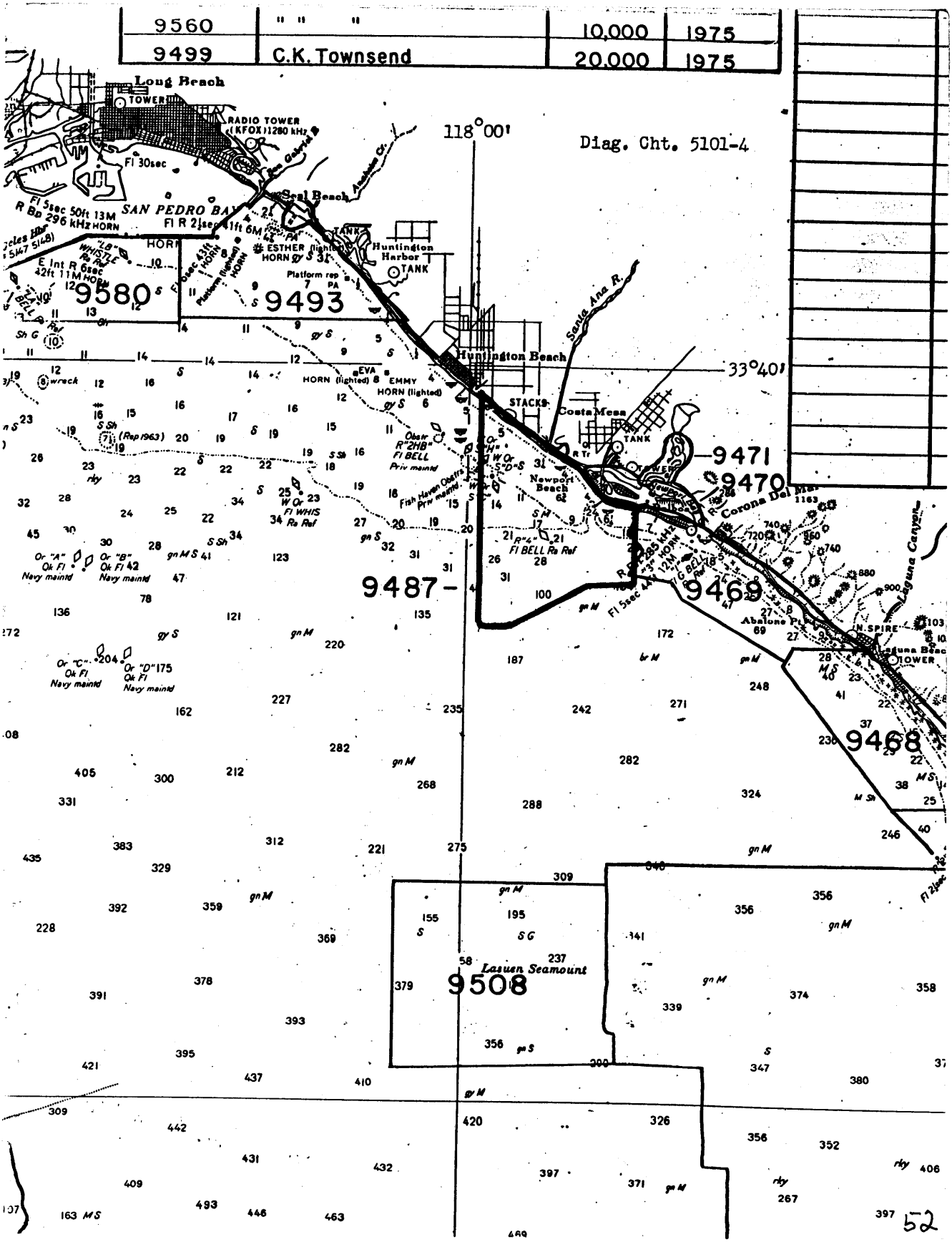
a. The mooring buoy charted at latitude 33°38.84', longitude 117°59.36' originating with NM 39/59 was not mentioned by the hydrographer. This feature should be retained on the chart.

b. The privately maintained orange and white buoys that mark fish haven obstructions charted in the immediate vicinity of latitude 33°37.2', longitude 117°59.25' were located on the present survey. These features should be retained on the chart.

4. It was necessary to scan fathograms and select soundings in some areas from the analog trace as digital depths were found to be in error.

cc:
C351

9560	" " "	10,000	1975
9499	C.K. Townsend	20,000	1975



FORM C&GS-8352
(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9487

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
18754	8/30/77	D.R. Curtis	Full ~~Part Before~~ After Verification Review Inspection Signed Via
(5108)	9/6/77	RCS	Drawing No. Fully Applied
18746	8/31/77	D.R. Curtis	Full ~~Part Before~~ After Verification Review Inspection Signed Via
(5142)	9/7/77	RCS	Drawing No. Fully Applied
18740	9/9/77	D.R. Curtis	Full ~~Part Before~~ After Verification Review Inspection Signed Via
(5101)	9/12/77	RCS	Drawing No. Fully Applied
18022	5-26-78	Gregory B. Morris	Full ~~Part Before~~ After Verification Review Inspection Signed Via
(5020)	5/26-78 Thr 5101 - Ray Spencer		Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
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