9276

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. RA-10-2-72

Office No. H-9276

LOCALITY

State ..... California

General Locality ..... Gulf of Santa Catalina

Locality ..... San Onofre to San Clemente

1972

CHIEF OF PARTY
G. E. Haraden

LIBRARY & ARCHIVES

DATE ..... April 26, 1977

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

9276

Chart
5142 applied
5101
18774 applied

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

H-9276

HYDROGRAPHIC TITLE SHEET

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.

RA-10-2-72

State California

General locality Gulf of Santa Catalina

Locality San Onofre to San Clemente

Scale 1:10,000 Date of survey March 16-29, 1972

Instructions dated Jan 7 1972 Project No. OPR-411-RA-72

Vessel NOAA Ship RAINIER Launches RA-6, RA-5, and RA-4

Chief of party CAPT G.E. Haraden

Surveyed by LTJG M. McCabe, LTJG R. Johnson, LTJG S. Anderly, LTJG N. Franklin
LTJG W. Turnacliff, LTJG J.R. Faris, ENS S. Hollinshead

Soundings taken by echo sounder, [redacted] Raytheon DE-723 (S/N 819) Ross Model 5000 (S/N 1040)

Graphic record scaled by Ship's personnel

Graphic record checked by Ship's personnel

Positions verified by John E. Lotshaw Automated plot by PMC/Xynetics Plotter

Soundings Verification by John E. Lotshaw

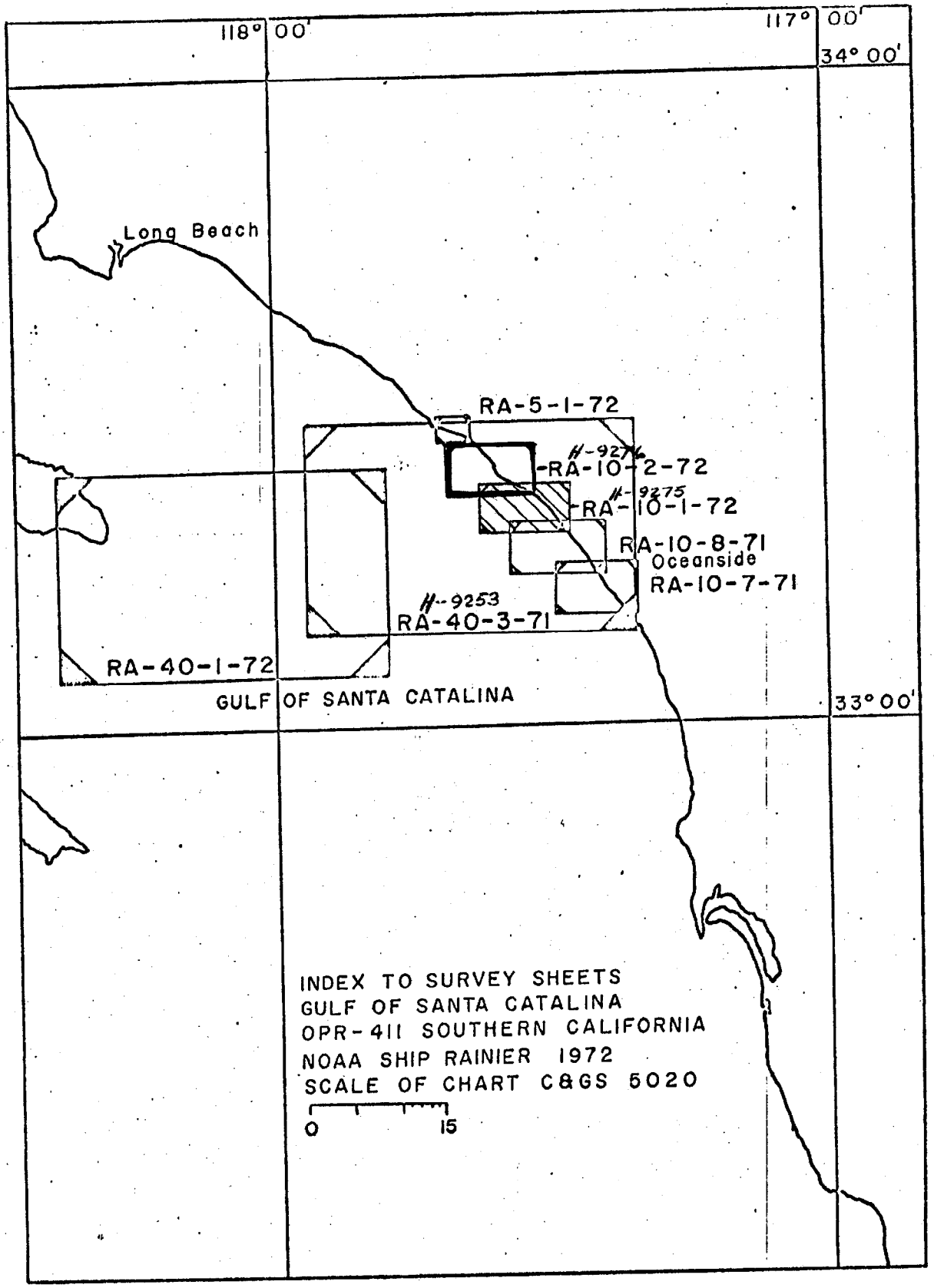
Soundings in fathoms [redacted] at [redacted] MLLW

REMARKS: The Modified Transverse Mercator Projection, soundings and position numbers on the boat sheet were plotted by the RAINIER's PDP 8/e computer and complot plotter.

Applied to stat 11-9-77
CAB

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

☆ U.S. G.P.O. 1972-769-565/519 REG.#6


118° 00'
117° 00'
34° 00'
33° 00'
Long Beach
RA-5-1-72
H-9274
RA-10-2-72
H-9275
RA-10-1-72
RA-10-8-71
Oceanside
RA-10-7-71
H-9253
RA-40-3-71
RA-40-1-72
GULF OF SANTA CATALINA
INDEX TO SURVEY SHEETS
GULF OF SANTA CATALINA
OPR-411 SOUTHERN CALIFORNIA
NOAA SHIP RAINIER 1972
SCALE OF CHART C&GS 5020
0
15

A. PROJECT

This hydrographic survey was conducted in accordance with PROJECT INSTRUCTIONS, OPR-411-RA-72, Southern California dated 7 January 1972, and Change No. 1, dated 4 February 1972.

B. AREA SURVEYED

The coastal area from this survey covers approximately 1½ miles south to 3 miles north of San Mateo Point California. The surveyed area is bounded by latitudes 33° 22' 13"N and 33° 25' 48"N and runs from the beach westward to the 22 fathom curve. Included in this sheet is approximately 4½ miles of sandy beach backed by bluffs. Two foul areas previously charted on this sheet were confirmed; one, San Mateo Rocks at latitude 33° 24' 17"N and longitude 117° 36' 57"W and the other at latitude 33° 25' 17"N and longitude 117° 37' 54"W.

Prior surveys of the area consist of two 1:10,000 scale surveys, H-5604 (1934) and H-5605 (1934) and one 1:40,000 scale survey, H-6116 (1935). Junctions were made with two contemporary surveys; a 1:10,000 scale survey H-9275 (RA-10-1-72) and a 1:40,000 scale survey H-9253 (RA-40-3-71). The survey began on March 16, 1972 (J.D. 076) and was completed on March 29, 1972 (J.D. 089). The field edit for this boat sheet was accomplished by NOAA Ship RAINIER in 1972.

C. SOUNDING VESSEL

Soundings were obtained using a Uniflite launch RA-6 and a Bertram launch RA-4. Launch RA-6 utilized position numbers 1000 through 1999 whereas RA-4 used position numbers 60 through 497. Thirty three of the 40 bottom samples obtained were taken from Bertram launch RA-5 using position numbers 918 through 956.

All sounding lines run by RA-6 are plotted in blue ink with crosslines in red ink. Sounding lines obtained by RA-4 are plotted in black ink. Bottom samples taken by RA-4, RA-5, and RA-6 are plotted in green ink. A listing of the specific position numbers employed in this survey is included in the appendix to this report.

D. SOUNDING EQUIPMENT

Launch RA-4 utilized a Raytheon DE-723 Fathometer (Ser. No. 819) for this survey whereas launch RA-6 used a Ross Model 5000 Fathometer (Ser. No. 1040). The depth limits for both launches were from 0 to 23 fathoms.

On the Raytheon DE-723, the initial value was scanned continuously during the survey. It was again inspected when the fathogram was scanned and the results abstracted. Fine arc and A-F checks were made routinely.

For the Ross Model 5000, the initial value on the fathogram was maintained at zero through continuous scanning. No abstract of initial corrections to the fathogram was compiled in that any observed difference in the initial value appeared only on the analog record and not on the digitized record. During the check scanning of the fathogram, the initial value of the fathogram was considered prior to reading the analog values and comparing them with the digitized hydrolog soundings. Any discrepancy between the digitized value and the fathogram was resolved by correcting the digitized value to agree with the analog value. This correction is justifiable in that the digitized value is a product of an instantaneous record and the fathogram presents a continuous record. Observation and compensation for sea swells can be readily applied to the analog record whereas complete dependence on the digitized record for depths may result in spurious values.

Bar checks were taken twice daily. A maximum depth of 7 fathoms was used and the depths obtained were abstracted. The velocity correction applied to this survey might best be called a modified velocity correction in that it incorporates launch draft, instrument error, and velocity corrections. The velocity correction curve was constructed by plotting the values obtained by subtracting the bar check values from the true depths. This was done to the limit of the bar checks, 7 fathoms. The velocity correction curve was then constructed using the difference in depths and the data gathered from a Nansen Cast.

The Nansen Cast was taken on 17 March at 33° 18' 56"N, 117° 44' 36"W. Velocity correction tables were compiled and applied through the Transducer Correction/Table Indicator (TC/TI) tape.

Phase comparisons were omitted on both launches as only one scale was used. The draft correction was applied via the velocity table. Therefore, all fathometer corrections were included on the velocity tape and the TC/TI tape was only used to call on the velocity tape.

All sounding equipment operated properly throughout the survey with no equipment-produced errors which would have an adverse effect on the accuracy of the soundings. For further information on soundings refer to the Sounding Correction Report, OPR-411, NOAA Ship RAINIER, 1972.

E. SMOOTH SHEET

The smooth sheet will be plotted by the Pacific Marine Center, Electronic Data Branch.

The paper boat sheets were produced aboard the NOAA Ship RAINIER using the COMPLOT DP-3 plotter coupled with the Digital Equipment Corporation PDP 8/e computer. The boat sheets were produced as Modified Transverse Mercator projections with a Central Meridian of 118° 25' 00"W and a control latitude of 3,500,000 meters North. Boat sheet soundings and positions numbers, as well as Hi-Fix arcs, were also plotted by the computer and plotter.

Two areas were developed in detail in search of presurvey review soundings. In the first development at latitude 33° 23' 04"N and longitude 117° 36' 43.5"W one shoal sounding of ~~5.2~~ 6.8 fathoms was found in an area of generally 7-8 fathoms. The second development was in search of a two fathom shoal in 10 fathoms at latitude 33° 26'N and 117° 40.5'W. This second shoal was not found. Further discussion of these developments will be found in J. Comparison with Prior Surveys. See Ver. Rep. para. VI

F. CONTROL

Decca Hi-Fix was used for horizontal control and was operated in the hyperbolic mode on Type A moderate power, while transmitting on 1799.6 KHz. The stations operated satisfactorily and caused no problems during the work on the survey.

The master station was located on a 40 foot bluff, 0.23 miles from the ocean overlooking a flat sandy, grassy plain. A 35 foot whip antenna was erected adjacent to R.M. 1 of triangulation station OLD, 1899. The antenna was located at latitude 33° 43' 12.946"N, and longitude 118° 16' 56.980"W. The master station was within the confines of Fort McArthur Army Reservation, San Pedro, California.

Slave station 1 was established atop a rounded hill on Santa Catalina Island, California. A 35 foot whip antenna was placed over traverse station, HI FIX, 1972 at an elevation of approximately 1525 feet, 1.4 miles from the ocean. No topographic obstruction of consequence was between slave station 1 and the survey area. The exact position of slave station 1 was latitude 33° 21' 25.309"N, longitude 118° 21' 50.721"W. The hyperbolic arcs generated by the master station and slave station 1 were drawn on the boat sheet with green ink.

Slave station 2 included a 35 foot whip positioned over station TEMPORARY, 1972 at an approximate elevation of 45 feet. The station was 0.30 miles from the ocean overlooking a sandy beach at latitude 33° 14' 57.267"N and longitude 117° 25' 28.755"W. The hyperbolic rates created by the master station and slave station 2 were inscribed on the boat sheet in red ink.

The Hi-Fix receiver in RA-6 was calibrated at the beginning and end of each day's work and when there was doubt as to the correct lane count. The calibration was accomplished by visual three-point sextant fixes on previously established geodetic positions of natural or hand fabricated objects. The objects used for this calibration are listed in the Appendix. A mathematical solution for three-point fixes was obtained by using program AM 560 in the PDP 8/e computer.

G. SHORELINE

Shoreline details were traced to the boat sheet directly from manuscripts T-11865, T-11866, and T-11867. Field edit of the manuscripts was done by the NOAA Ship RAINIER in 1972. The inshore ledges between latitudes 33° 22' 18"N and 33° 22' 26"N have been removed as field

edit revealed that they were not ledges but stone and pebble patches. The kelp area centered at latitude 33° 24' 03"N and longitude 117° 36' 36"W was not found and was removed. The area listed as foul at latitude 33° 24' 30"N and longitude 117° 37' 00"W is actually kelp which resulted in a revised foul line being drawn around the San Mateo Rocks centered at 33° 24' 17"N and 117° 36' 57"W. The field edit of the San Mateo Rocks indicates that the compilation should be as depicted on the boatsheet. An inshore ledge was found in the area bounded by latitude 33° 25' 25"N and 33° 25' 29"N. A rock awash was also found along the shoreline at latitude 33° 25' 30"N and longitude 117° 37' 35"W. Both of these newly discovered features are annotated on the boat sheet. Field edit suggests that the group of rocks awash centered at latitude 33° 25' 16"N and longitude 117° 37' 54"W should be as shown on the boat sheet. A foul area was sketched around these rocks awash and the kelp area trailing into shore from the rocks was confirmed. The rock awash at latitude 33° 25' 20"N and longitude 117° 37' 51"W was searched for on two occasions but not found. For additional discussion of these rocks see Shoreline/Field Edit Report, OPR-411, NOAA Ship RAINIER, 1972.

Consistent heavy surf prevented development of the Mean Lower Low Waterline.

H. CROSSLINES

Crosslines on sheet RA-10-2-72 constitute 23.1 miles or 11.6% of the sounding lines run. The crossings are excellent, agreeing within 0.2 to 0.3 fathom in all cases.

I. JUNCTIONS

This survey junctions with sheet H-9275 (1972) (1:10,000) on the South and H-9252 (1973) (1:40,000) on the West. There is excellent agreement with H-9275 with 90% of the soundings being within 0.2 fathom and all soundings agreeing within 0.5 fathoms. Sheet H-9252 (1973) also shows excellant agreement. The soundings are plotted to a whole fathom and all the crossings agree within a fathom.

J. COMPARISONS WITH PRIOR SURVEYS

Three presurvey review items on Chart 5101 dated 11/10/69 were investigated:

1. A minimum depth of ~~5.2~~ 4.4 fathoms was found ~~while making a 25 meter development of a charted 4.5 fathom feature~~ at latitude 33° ~~23~~ 22' ~~04~~ 29"N and longitude 117° 36' ~~23.8~~ 23.5"W. The shoal sounding is in an area of generally ~~7.0~~ 5 fathoms and a leadline depth was not taken. It is recommended that this feature be charted at ~~5.2~~ 4.4 fathoms. A 25 meter development was done on a submerged feature located in Lat. 33°23.07', long. 117°36.72', from T-11866(2) and found to have depth of 6 fathoms.

2. A 12 fathom sounding was investigated at latitude 33° 24.8'N and longitude 117° 39.5'W. Since this area is generally 14 to 15 fathoms normal line spacing of 90 meters was retained. No evidence of the shoal was found and the sounding should be deleted from the chart. Concur, the sounding is considered doubtful.

3. The Project Instructions, change No. 1, 1(A), dated ~~7 January~~ Feb. 16 1972 required the investigation of a 2-fathom shoal at latitude 33° 26'N and longitude 117° 40.5'W. This area was developed extensively with sounding lines 50 meters apart, but the shoal was not found. Since this reported shoal lies on the northern limits of sheet H-9276 it is felt that the shoal area should not be deleted; instead, additional investigation north of as well as inshore of the developed area should be conducted. See Ver. Rep. para VI. Soys in this area excessed in favor of junctional soys. See H-9467 (1972)

Two 1:10,000 prior surveys covered this area; H-5604, 1934 and H-5605, 1934. Survey H-5604 agrees within one fathom, except for a 3 fathom discrepency at latitude 33° 25' 35"N and longitude 117° 40' 45"W. Sheet H-5605 shows excellent agreement with all except one comparison within 0.3 fathom and the greatest difference being only one fathom in a 12 fathom area.

Comparison was also made with H-6116 (1935), 1:40,000 in 18 fathoms and deeper. The soundings agree within 2 fathoms.

K. COMPARISON WITH THE CHART

Comparison was made with 1:25,000 scale H.O. Chart 15010-25-2 (1st Ed., 3/62; Revised 8/69) and the 1:234,270 scale C&GS Chart 5101 (15 Ed., 2/71). The large scale differences between the survey and the published C&GS Chart 5101 makes detailed sounding comparison difficult but the soundings agree within one fathom. The soundings on H.O. Chart 15010-25-2 also show agreement within one fathom.

L. ADEQUACY OF SURVEY

Survey H-9276 is complete and adequate to supersede prior surveys for charting.

M. AIDS TO NAVIGATION

Three buoys lie off San Mateo Point in 6 to 7 fathoms of water. These buoys are listed in the Light List and outline a security zone for President Nixon's Western Whitehouse. These buoys are maintained by U.S.C.G.

An 8 foot, red and white horizontally stripped spar buoy is located at latitude 33° 23' 12"N and longitude 117° 37' 07"W. This buoy is maintained by the Dana Point Yacht Club.

N. STATISTICS

This survey contains 257.8 mautical miles of sounding line covering an area of approximately 9.4 square nautical miles. Within the survey area 40 bottom samples were taken. A tabulation of statistics are as follows:

Launch	Miles Hydro	No. of Pos.	Bottom Samples
RA-4	57.4	397	2
RA-5	---	33	33
RA-6	200.4	985	5
Total	257.8	1415	40

O. DATA PROCESSING

Launch RA-6 was equipped with a NOS Hydrolog system which when used in conjunction with program AM 170 allowed for all sounding data to be recorded in master tape format. Launch RA-4 employed a manual data logger and the data was later converted to master tape format. Corrector tapes were prepared utilizing the standard Hydroplot/Hydrolog format by scanning the fathogram and Hi-Fix strip chart for all peaks, deeps, and sounding or control changes.

Separate master tapes and corrector tapes were prepared for each day. Standard formats, as specified in the INSTRUCTION MANUAL, Automated Hydrographic Surveys, were used for the preparation of the TC/TI and Velocity correction tapes. NOTE: TRA corrector values and velocity table numbers shown on the Hydroplot/Hydrolog tapes are not necessarily correct and are to be ignored for processing at PMC. The correct data is listed on the TC/TI tape.

P. RECOMMENDATIONS

Additional sounding lines in the vicinity of the 2 fathom, "PA Rk" at latitude 33° 26.0'N, longitude 117° 40.5'W, are necessary to locate or disprove the existence of this sounding. If further investigation to the north reveals no shoal it is recommended that additional searching to the east on RA-10-2A-72 be conducted. See Ver. Rep. para VI

Q. REFERENCES TO REPORTS

1. Sounding Correction Report, OPR-411, NOAA Ship RAINIER, 1972.
2. Hi-Fix Report, OPR-411, NOAA Ship RAINIER, 1972.
3. Tide Report, OPR-411, NOAA Ship RAINIER, 1972.
4. Shoreline Field Edit, OPR-411, NOAA Ship RAINIER, 1972.

Respectfully submitted,

Wayne Turnacliff

W.F. Turnacliff
LTjg, NOAA

APPROVAL SHEET

OPR-411

H-9276 (Field No. RA-10-2-72)

The hydrography was examined daily during the conduct of this survey. The boat sheet and accompanying records are approved for transmittal to the Pacific Marine Center.

GE Haraden

G. E. Haraden
CAPT, NOAA

VISUAL SIGNALS USED FOR CALIBRATION

No.	Description	Latitude	Longitude
022	DANA PT. MARINA OUTER BREAKWATER LIGHT	33 27 15.64	117 41 26.38
028	DANA PT. MARINA INNER BREAKWATER LIGHT	33 27 24.37	117 41 28.04
029	DANA PT. NORTHWESTERN BAN ON BREAKWATER	33 27 28.06	117 42 11.52
030	DANA PT. CENTER BAN ON BREAKWATER	33 27 25.03	117 41 40.36
701	MEDIO *1886*	33 22 59.19	117 35 01.00
703	SAN ONOFRE WATER TANK *1933*	33 23 15.87	117 34 31.32
705	AIRWAY NO. 5 *1932*	33 23 17.53	117 35 40.88
707	COTTON 2 *1961*	33 23 52.53	117 35 56.92
801	SAN MATEO ROCK *1933*	33 24 17.22	117 36 59.05

NOAA FORM 76-40
(2-71)
PRESCRIBED BY
PHOTOGRAMMETRY INSTRUCTION NO. 64.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- ☐ FIELD INSPECTION
- ☒ FIELD EDIT
- ☐ COMPILATION
- ☐ FINAL REVIEW
- ☐ QUALITY CONTROL AND REVIEW

(See reverse for responsible personnel)

☒ TO BE CHARTED
☐ TO BE DELETED

ORIGINATING LOCATION: NOAA Ship RAINIER

DATE: 3/20/72

The following objects have (have not) been inspected from seaward to determine their value as landmarks:

JOB NUMBER: OPR-411

SURVEY NUMBER: T-11866

STATE:

DATUM: NA-1927

POSITION

METHOD AND DATE OF LOCATION (See instructions on reverse of this form)

CHARTING NAME	DESCRIPTION	LATITUDE ° ′	LATITUDE D.M. METERS	LONGITUDE ° ′	LONGITUDE D.P. METERS	FIELD INSPECTION	COMPILATION	FIELD EDIT	CHARTS AFFECTED
LORAN TR FR LT	San Mateo Point Calif. Loran Station	33° 23.4′	21.51	117° 35.6′	37.47	3/20/72		P.1	

RAINIER DATA IDENTIFICATION

OPR- 411

SHEET - RA- 10-2-72

TYPE OF DATA Velocity Corr'n P10

FLEXOWRITER ..... TELETYPE ✓

DAY	FROM POS.	TO POS.

REMARKS: For all season

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000045 0 0000 0010 000 000000 000000
000080 0 0001
000150 0 0002
000250 0 0004
000350 0 0006
000460 0 0008
000580 0 0010
000705 0 0012
000830 0 0014
000965 0 0016
001095 0 0018
001225 0 0020
001685 0 0025
002200 0 0030
003000 0 0040
003800 0 0050
004700 0 0060
005600 0 0070
000020 0 0004 0006 000 000000 000000
000055 0 0005
000095 0 0006
000140 0 0007
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000135 0 0006
000235 0 0008
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000015 0 0002 0004 000 000000 000000
000045 0 0003
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000130 0 0005
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000210 0 0016
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000560 0 0024
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000540 0 0024
000625 0 0026
000715 0 0028
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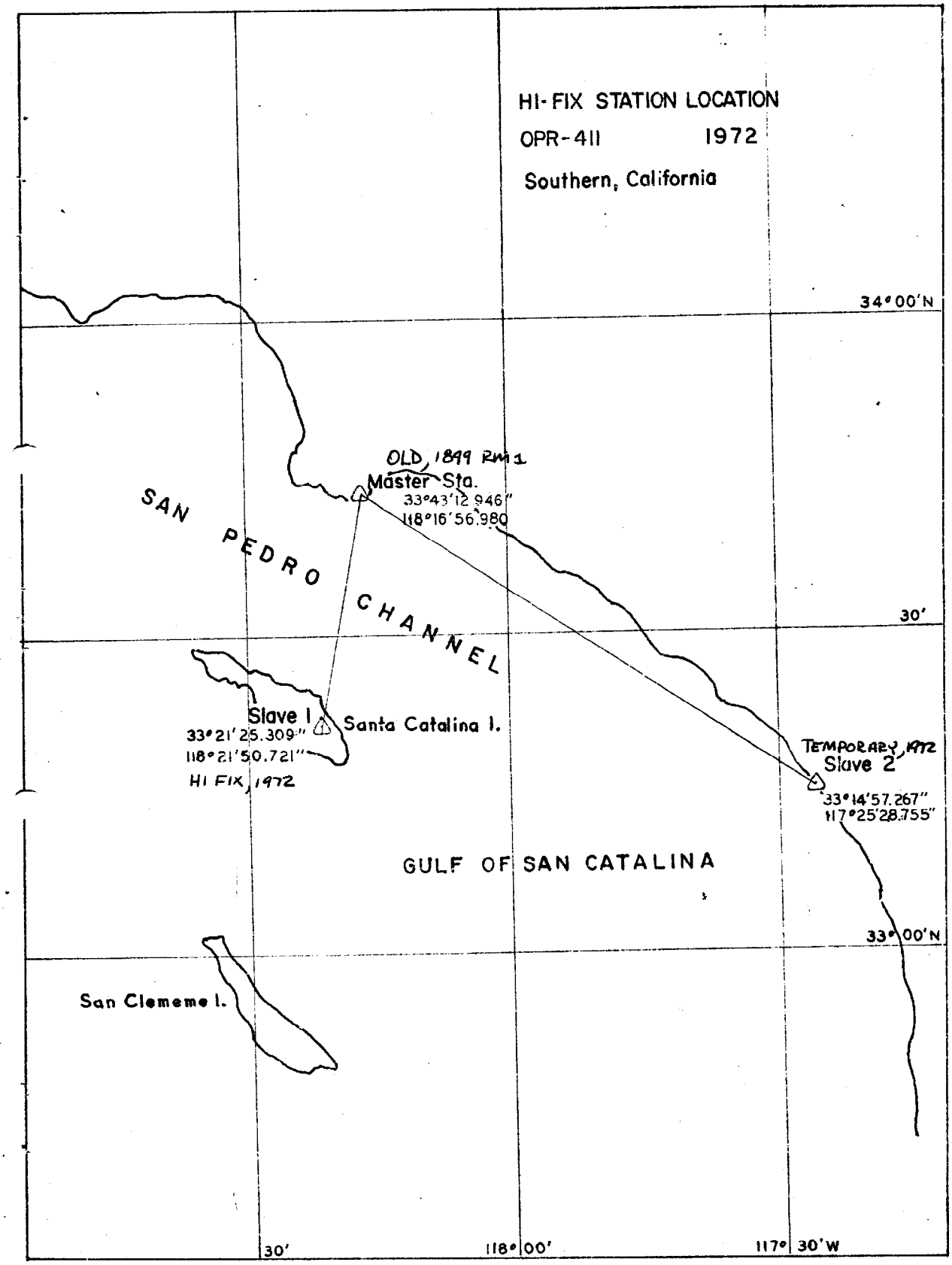
HI-FIX STATION LOCATION
OPR-411 1972
Southern, California
34°00'N
OLD, 1899 RM1
Master Sta.
33°43'12.946"
118°16'56.980
SAN PEDRO CHANNEL
30'
Slave I
33°21'25.309"
118°21'50.721"
HI FIX, 1972
Santa Catalina I.
TEMPORARY, 1972
Slave 2
33°14'57.267"
117°25'28.755"
GULF OF SAN CATALINA
33°00'N
San Clemente I.
30'
118°00'
117°30'W

TIDE NOTE

H-9276 (RA-10-2-72)

It is recommended that the tide station at Dana Point, California (latitude 33° 27' 43"N, longitude 117° 42' 17"W) be used to control this survey. Hourly heights and time and height differences will be furnished by the National Ocean Survey Tides Branch, Rockville, Maryland. For further information on tides refer to Tide Report, OPR-411, NOAA Ship RAINIER, 1972.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

2/28/73

Processing Division: Pacific Marine Center

Hourly heights are approved for

Tide Station Used (NOAA form 77-12): Dana Point, California

Period: March 7 - 29, 1972

HYDROGRAPHIC SHEET: H-9253, H-9274, H-9275, H-9276

OPR: 411

Locality: Dana Point, southern California

Plane of reference (mean lower low water): 3.3 ft.

Height of Mean High Water above Plane of Reference is 4.7 ft.

Remarks: Zoning instructions. Use Dana Point, California hourly heights direct.

8/20/73
PER HURRAHD LTR. - SAN DIEGO
CAGK - WITH -12 MIN AND X.92
FOR H-9253 (1971) WORK
(ALSO FOR H-9274, 9275, 9276 (1971) WORK)

Chief, Tides Branch

GEOGRAPHIC NAMES

Survey No.

H-9276

Name on Survey	On Chart No A	On previous survey No B	On U.S. quadrangle Maps C	From local information D	On local Maps E	P.O. Guide or Map F	Rand McNally Atlas G	U.S. Light List H	K	
GULF OF SANTA CATALINA										1
SAN CLEMENTE										2
SAN CLEMENTE STATE PARK										3
SAN MATEO POINT										4
SAN MATEO ROCKS										5
SAN ONOFRE										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
					APPROVED					17
					Chas. E. Harrison					18
					STAFF GEOGRAPHER				C5/K2	19
					6 May 1977					20
										21
										22
										23
										24
										25
										26

APPROVAL SHEET

FOR

SURVEY H- 9276

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: 2/11/77

Signed: [signature]

Title: Chief, Verification Branch

NOAA FORM 77-27
(9-72)
(PRESC. BY HYDROGRAPHIC MANUAL 20-2, 6-84, 7-13)

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

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9276

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET with smooth PNO & excess overlay	1	BOAT SHEETS (2 parts, paper)	1 ~~2~~
DESCRIPTIVE REPORT	1	OVERLAYS (preliminary)	5

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES			1-smooth printouts			
CAHIERS	1-with	printouts				
VOLUMES	I					
BOXES						

T-SHEET PRINTS *(List)*

T-11865 T-11866 T-11867

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				1415
POSITIONS CHECKED		1415		
POSITIONS REVISED		112		
DEPTH SOUNDINGS REVISED		~~45~~ ~~645~~		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		Ø		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		1		
	TIME (MANHOURS)			
Verification of Control		8		
Verification of Positions		56		
Verification of Soundings		134 ~~118~~		
Smooth Sheet Compilation		~~45~~		
ALL OTHER WORK	1	17 ~~333~~	HIT 12	
TOTALS	1	~~260~~		

	BEGINNING DATE	ENDING DATE
PRE-VERIFICATION BY James S. Green	9/27/74	9/27/74
VERIFICATION BY John E. Lotshaw	9/26/75	1/21/77
REVIEW BY Q.C. R.W. Derkazarian 92 hrs		6/15/77

Carsteus 7 hrs 8/1/77

Critique: 4 hrs 10-25-77 DNW

* U.S. G.P.O. 1972-769-562/439 REG.#6

Reg. No. H-9276

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: Pos. 156 365 1457 1535 1540 1570-76 1581 1587 1611 1615 1624 1625 1855 1926 1932 1933 1936 1940 1984 1985 1988 1989

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-9276

Items for Future Presurvey Reviews

This survey falls in an area which is subject to littoral drift caused by alongshore currents. Future surveys should include investigation of the two items discussed in the HIT Report.

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

VERIFIER'S REPORT

RA-1Ø-2-72 H-9276

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

I. INTRODUCTION

Field work on H-9276 was conducted between March 16 and 29, 1972 by the RAINIER. The area surveyed is a segment of the California coast immediately south of San Mateo Point.

Decca Hi-Fix operating in the hyperbolic mode on a frequency of 1799.6 KH_Z was used for horizontal control.

Projection parameters used by PMC to accomplish the smooth plot of H-9276 are incorporated as a file listing in the smooth printout. All correctors to positions and soundings on H-9276 can be located in the smooth printout.

Tide reducers used on the smooth sheet were derived from the Dana Point, CA tide gage, and approved by the Tides Branch, Rockville, MD.

II. CONTROL AND SHORELINE

Section F, Ship's Report, adequately describes the Hi-Fix system used to control this survey.

Shoreline was transferred from Class I manuscripts T-11865, T-11866 and T-11867. Date of photography for T-11865 and T-11867 was August - September 1960, and the late of photography for T-11866 was August 1966. Date of field edit for all sheets is March 1972. See Q.C. Report, Para 1

T-11865 contains a sunken rock symbol at Lat. 33°23.Ø7', Long. 117°36.72'. This feature falls within an area of hydrographic development having a least depth of 6 fm. and should be considered disproven by hydrography. See Q.C. Report, Para 2.

III. HYDROGRAPHY

The hydrographic records for this survey are adequate and support all detail shown on the smooth sheet.

Positions 18Ø1 through 1912 consitute a block of hydrography which does not agree well with adjacent hydrography, crosslines, or the hydrographic plot of H-9467, 1974 to the north. Showing an apparent shift of all positions to the southwest, this data conflicts with adjacent hydrography by less than one fathom in all cases. In the original plot of this portion

of the survey, the R_1 corrector for these positions was changed to -.29, a value derived by adding the values of the morning and evening correctors and dividing by four. Assuming the absence of sudden lane jumps, and a constant drift of Hi-Fix values, this corrector would approach but not exceed the true mean value of the R_1 corrector for the period of time in question. Plotted in this fashion, the conflicts in hydrography noted above were reduced to an insignificant value. This procedure was rejected by the HIT team (see attached HIT team letter, dated 24 February 1977). The R_1 corrector has been returned to this value originally submitted by the RAINIER, and the plot reflects the same positioning parameters as the boatsheet.

Because of conflicts between overlapping hydrography, that portion of H-9276 which is also covered by H-9467 has been placed in excess. A butt junction has been made between H-9276 and H-9467 and depth curves on H-9276 have been inked up to the point of junction. See O.C. Report, Para 6.

A shoal area was identified by hydrography at Lat. 33°22.92', Long. 117°36.3'. Failure to more adequately develop this shoal is a deficiency which could be corrected by additional hydrography.

Two rocks in the group centered at Lat. 33°25.25', Long. 117°37.9Ø' are lifted from the boatsheet without supporting positional data. They do not appear on T-11865. Heights shown on the smooth sheet related to these rocks are derived from the hydrographic record. See O.C. Report, Para 4.

With the above qualifications, H-9276 is an adequate basic survey, adequate to delineate the configuration of the bottom, and is suitable as a source for determining least depths.

IV. CONDITION OF SURVEY AND COMPLIANCE WITH PROJECT INSTRUCTIONS

The hydrographic records for H-9276 are adequate and complete, and conform to the requirements of the Provisional Hydrographic Manual.

This survey complies with the Project Instructions, dated 2Ø August 1971 and Change No. 1, dated 7 January 1972.

V. JUNCTIONS

An exact junction was made with contemporary survey H-9275, 1972, which lies to the south of H-9276. A butt junction was made with H-9467, 1974, under conditions described in Section III above. Related depth curves have been made to coincide and have been inked.

Junction with the 1:40,000 scale survey, H-9253, 1972, has not been completed, although all hydrography is in general agreement. The 20 fm. curve on H-9276 is the result of a much denser sounding pattern, and better defines the bottom than the more generalized 20 fm curve on H-9253. The 20 fm curve on H-9253 (smooth sheet previously submitted) should be adjusted to conform to that shown on H-9276. With this action, the junction with H-9253 will be complete. See O.C. Report, Para 6.

VI. COMPARISON WITH PRIOR SURVEYS

Comparisons with H-5604, 1:10,000 1934 and H-5605, 1:10,000 1934 reveal no important differences with most soundings agreeing within one fathom. H-6116 (1935) 1:10,000

H-9276, as surveyed, has large gaps in hydrography in the inshore areas where breakers prevented survey activity. Soundings from H-5604 and H-5605 have been transferred to fill these gaps in hydrography, and to make H-9276 a complete survey. In its present condition, H-9276 is adequate to supersede H-5604 and H-5605 in its area of coverage.

Pre-survey review items on H-9276 include three charted soundings and a 2 fm rock. The 2 fm rock, located at Lat. 33°26', Long. 117°~~39.5'~~ 40.5' Origin CL 252/65 was searched for, but not found. Subsequent hydrography on H-9467 (1974) also disproves this shoal. It is, therefore, recommended that this charted feature be deleted. A sub. rock was located at lat. 33°26.58', long. 117°40.34' by H-9467 (1974) with a depth of 2.7 fathoms.

Circled PSR. Items

A 12-fm sounding charted at Lat. 33°24.8', Long. 117°39.5' has been disproven by hydrography on H-9276. This sounding should be deleted ~~or~~ and Concur corrected to a deeper value. ~~m~~ Sounding is considered doubtful. Origin H-6116 (1935)

A 4½ fm sounding charted at Lat. 33°22.8', Long. 117°36.4' should be replaced by the third sounding out from position #365. This 4.4 fm sounding is located at Lat. 33°22'55.96", Long. 117°36'19.87". Origin H-5604 (1934) See O.C. Report, Para 7.

A 4 3/4 fm sounding charted at Lat. 33°22.4', Long. 117°34.8' should be replaced by the first sounding out from position #177. ~~This 4.5 fm sounding is located at Lat. 33°22'28.12", Long. 117°34'47.09".~~ Origin H-5605 (1934) See O.C. Report, Para. 7.

VII. COMPARISON WITH THE CHART

Comparison with C&GS Chart 5101, 15th Edition, 2/71 reveals no discrepancies other than the questionable 12 fm sounding discussed in Section ~~IV~~ VI above.

Aids to navigation consist of three can buoys used to outline a security zone around President Nixon's Western White House and a spar buoy used by the Dana Point Yacht Club. These aids are located by detached positions and are shown on the smooth sheet by buoy symbols.

Landmarks identified on the chart as "CUPOLA" and "BLDG (SIGN)" were not addressed by the hydrographer. These should be retained on the chart unless disproven by another source. See O.C. Report, Para 3.

VIII. COMPLIANCE WITH INSTRUCTIONS

The RAINIER complied with project instructions when surveying H-9276. Failure to develop the inshore areas is the major deficiency of this survey.

IX. ADDITIONAL FIELD WORK

Additional field work is not recommended for H-9276. Improvements in the overall coverage and quality of the survey could be made, however, by further development of the inshore area, and by development of the shoal located at Lat. 33°22.92', Long. 117°36.3'. Prior soundings carried forward

Because of problems noted in Sections III and VI above, the overall quality of H-9276 is judged to be fair, but adequate to supersede prior surveys.

Respectfully submitted,

John E. Lotshaw
Cartographic Technician
January 21, 1977

Examined and approved,

James S. Green
Chief, Verification Branch

ADMINISTRATIVE APPROVAL
H-9276

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

E A Taylor

Eugene A. Taylor, RADM
Director
Pacific Marine Center

3/24/77
Date

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

Date: 21 March 1977

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

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

Subject: PMC Hydrographic Survey Inspection Team Report, H-9276

This survey is a basic hydrographic survey of the alongshore area in the vicinity of San Clemente and San Onofre, CA. The survey was conducted by NOAA Ship RAINIER in 1972 in accordance with Project Instructions OPR-411-RA-72 dated 07 January 1972.

It was determined during this inspection that, despite the poor junction with survey H-9467, the adjustments to electronic correctors for day 088 applied by the verifier were not substantiated by either the Hi-Fix strip chart record or calibration records. The survey was returned for replotting on the basis of a definitive lane jump corrector as per ship's determination and the effecting of a butt junction if appropriate. These changes are reflected on the smooth sheet and in the records.

No densification of the main scheme hydrography was accomplished over pre-survey review dashed circle soundings. One development was accomplished but missed the PSR position. PSR depths were confirmed in two instances but least depths remain questionable. In the third instance, main scheme soundings in depths of 15 fathoms give no indication of shoaling and the 12 fathom PSR depth is considered disproven. Two additional shoal soundings should have been developed, i.e:

7.3 at 33°24.43'N, 117°38.11'W
6.7 at 33°25.72'N, 117°39.43'W

These shoal soundings do not justify additional field work but should be considered as future PSR items.

The lack of near shore hydrography on this survey necessitated the transfer of numerous soundings from prior surveys H-5605 and H-5604. These transferred soundings were taken from distorted paper copies of the prior surveys. Positional accuracy of transferred soundings should be evaluated against original survey smooth sheets during quality control.

The inspection team finds survey H-9276 to be a fair basic survey, adequate to supersede common areas of prior surveys and charted hydrography. Administrative approval is recommended.

Donald E. Nortrup, LCDR

Dean R. Seidel, LCDR

John C. Albright, LCDR

Richard D. Lynn

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

C352

June 13, 1977

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

THRU: Chief, Quality Control Branch

FROM: R. W. DerKazarian
Quality Evaluator

SUBJECT: Quality Control Report for H-9276 (1972), San Onofre to San Clemente, Gulf of Santa Catalina, California

Survey H-9276 was inspected to evaluate the accuracy and adequacy of the survey with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, shoreline transfer, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data. In general, it was found to conform to the National Ocean Survey's standards and requirements except as follows:

1. The shoreline manuscripts applied to the present smooth sheet were not the latest available. The entire low water line was subsequently revised from the reviewed manuscripts, edition 2 of T-11865, T-11866, and T-11867 of 1972.

2. A submerged rock (position approximate) as shown on T-11866(2) in latitude 33°23.07', longitude 117°36.72' has been investigated on the present survey with a 25-meter development and was not found. A 6-fathom peak appears on the graphic record as the least depth. It is considered unlikely that significantly shoaler depths necessary to justify charting a sunken rock symbol would be found at this position.

Lead line or drift soundings and a detached position would have been desirable on this feature to ascertain its least depth and position.

3. Two landmarks have been transferred to the present smooth sheet from the shoreline manuscripts previously mentioned in paragraph 1, during the quality control evaluation.

Landmark, Tower, in latitude 33°23.35', longitude 117°35.62', was transferred to the smooth sheet approximately 12 meters out of position and has been corrected.

4. Field records, in particular a sounding volume containing detached positions, were not submitted. Several rocks were not recorded except on the boat sheet and two others in the vicinity of latitude 33°25.25', longitude 117°37.90' had notations on the raw data printout as to distances to the rocks, but the launch was in a questionable location making verification of these rocks questionable. Those two rocks added during verification from the boat sheet were removed from the smooth sheet and one line of soundings was relocated to a realistic position.

5. The control arcs for station Hi-Fix on the control overlay are plotted at an interval too far apart for practical usage; the greatest interval plotted in excess of 30 centimeters.

The frequency value notation (1799.6 KHz) was added to the control overlay.

6. The junction with H-9253 (1971-72) to the west and H-9275 (1972) to the south have been adequately completed. Two spherical red and white marker buoys "A" and "D" were transferred from H-9275 (1972).

The junction with H-9467 (1974) on the north has been evaluated to determine the cause of the apparent disagreement. Depths are from 0.3 fathom to 1.0 fathom shoaler on H-9276 (1972) than on H-9467 (1974).

A crossline on day 83 on the present survey indicates deeper depths than the regular system of lines on day 88. An examination of the plots indicates the control as a contributing factor but the cause is not known. This portion of the survey is in disagreement with itself. Another contributing factor is the time difference of the two surveys and the seasonal change affecting the sand bottom. A butt junction was the most expedient method to resolve the problem.

The butt junction shown on the survey is not in full accordance with the Provisional Hydrographic Manual section 7.3.12.5 because the soundings were excessed. Soundings in the affected area of the butt junction should be retained on the smooth sheet and a dashed line should indicate the limit of superseded soundings. A notation "Superseded by survey, year," should then be appended. Several soundings not in disagreement with the junctional work have been added from the survey records to the smooth sheet.

7. This information should be noted under "Comparison with Prior Surveys."

Survey H-6116 (1935) 1:40,000 was not discussed in the Verifier's Report. The present survey is in fair agreement with the prior survey except in the vicinity of latitude 33°25.65, longitude 117°40.75', where current depths were as much as 3 fathoms shoaler. This portion of the present survey is in the vicinity of questionable depths as so noted in paragraph 6 above.

Random changes, migration, and accretion from 10 to 50 meters of the high water line on H-5604 and H-5605 (1934) have occurred.

The 4.5-fathom sounding circled Presurvey Review item in latitude 33°22.80', longitude 117°36.32' has been supported by present depths and has been carried forward.

The 4.6-fathom sounding circled Presurvey Review item in latitude 33°22.28', longitude 117°34.95' has not been disproved by the present survey and has been carried forward.

Several bottom characteristics, two sunken rocks located in latitude 33°25.32', longitude 117°37.93' and latitude 33°24.26', longitude 117°36.86', and many inshore soundings have been carried forward to supplement the present survey.

With these additions mentioned above, the present survey is adequate to supersede these prior surveys in the common area.

8. Numerous soundings carried forward to the present survey from H-5604 and H-5605 (1934) were displaced beyond acceptable limits (as much as 30 meters), thereby distorting the configuration of the corresponding depth curves. During quality control inspection, only the most excessively displaced soundings 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 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)).

9. These additional comments should be noted to clarify the "Comparison with Chart" of the Verifier's Report, paragraph VII.

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

The charted hydrography originates with the previously discussed prior surveys in paragraph VI of the Verifier's Report and paragraph 7 of this report, which require no further consideration.

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

10. The Verifier's Report did not follow the commonly accepted format in its discussion of "Comparison with Prior Surveys" or "Comparison with Chart."

cc:
C351

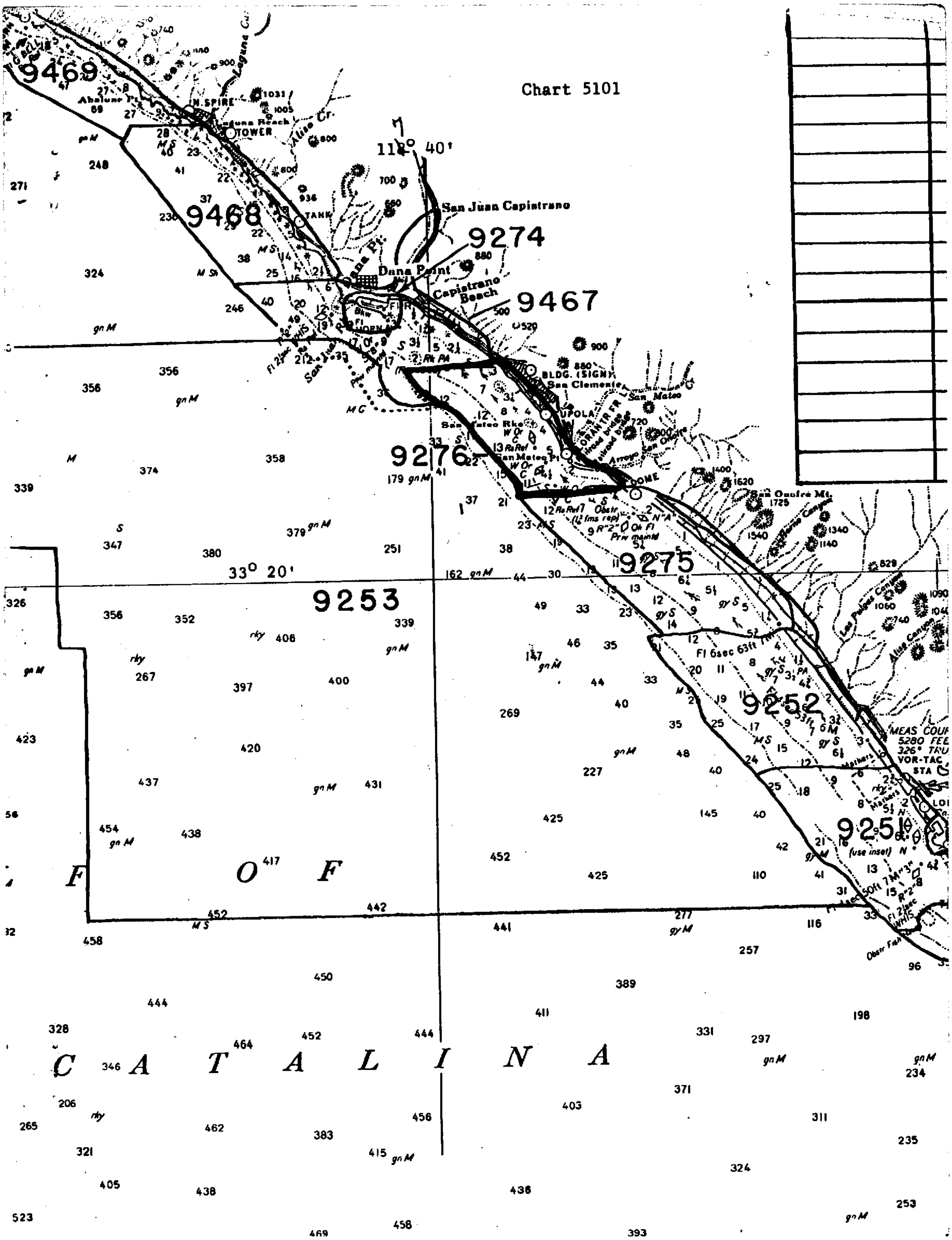
Chart 5101
9469
9468
9274
9467
9276
9275
9253
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9251
San Juan Capistrano
Dana Point
Dana Pt.
Capistrano Beach
San Clemente
San Mateo Rks
San Mateo Pt
San Onofre Mt.
Laguna Beach
TOWER
TANK
CUPOLA
DOME
BLDG. (SIGN)
33° 20'
F O F
C A T A L I N A

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

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9276

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
5142	12-1-77	R. A. Lillis	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 32
18774	2/9/78	[illegible]	Full Part Before After Verification Review Inspection Signed Via
			Drawing No. APPLIED THRU CHT 5142
18740	12-13-78	Hamilton	Full ~~Part Before~~ After Verification Review Inspection Signed Via
(5101)			Drawing No. 44
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
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FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975.

USCOMM-DC 8558-P63