9476

Diagram Chart 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-5-3-74

Office No. H-9476

LOCALITY

State California

General Locality San Clemente Island

Locality Pyramid Cove

1974

CHIEF OF PARTY
CDR K.W. Jeffers

LIBRARY & ARCHIVES

DATE August 26, 1981

☆ U.S. GOV. PRINTING OFFICE: 1978—666-172

9476

1

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H-9476

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-5-3-74

State CALIFORNIA

General locality SAN CLEMENTE ISLAND

Locality PYRAMID COVE

Scale 1:5,000 Date of survey Sept. 17-30, 1974

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

Vessel NOAA Ship RAINIER (2120), Lanuches RA-4 (2124), RA-5 (2125) and RA-6 (2126)

Chief of party CDR K. W. Jeffers

Surveyed by LT L. Pfeifer, LTJG A.A. Armstrong, ENS G.W. Stroble, ENS K.A. Andreen

Soundings taken by echo sounder, ~~hand lead/pole~~ Ross Fineline, Model 5000

Graphic record scaled by Ross Digitizer

Graphic record checked by Ship's Personnel

Position verified J.L. Stringham, M.G. Sanders, F.L. Rosario,
~~Protracted~~ by S.H. Otsubo, S.A. Feher Automated plot by Xynetics Plotter (PMC)

Soundings Verification by S.H. Otsubo, S.A. Feher, and L.T. Deodato

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW

REMARKS: Survey completed.

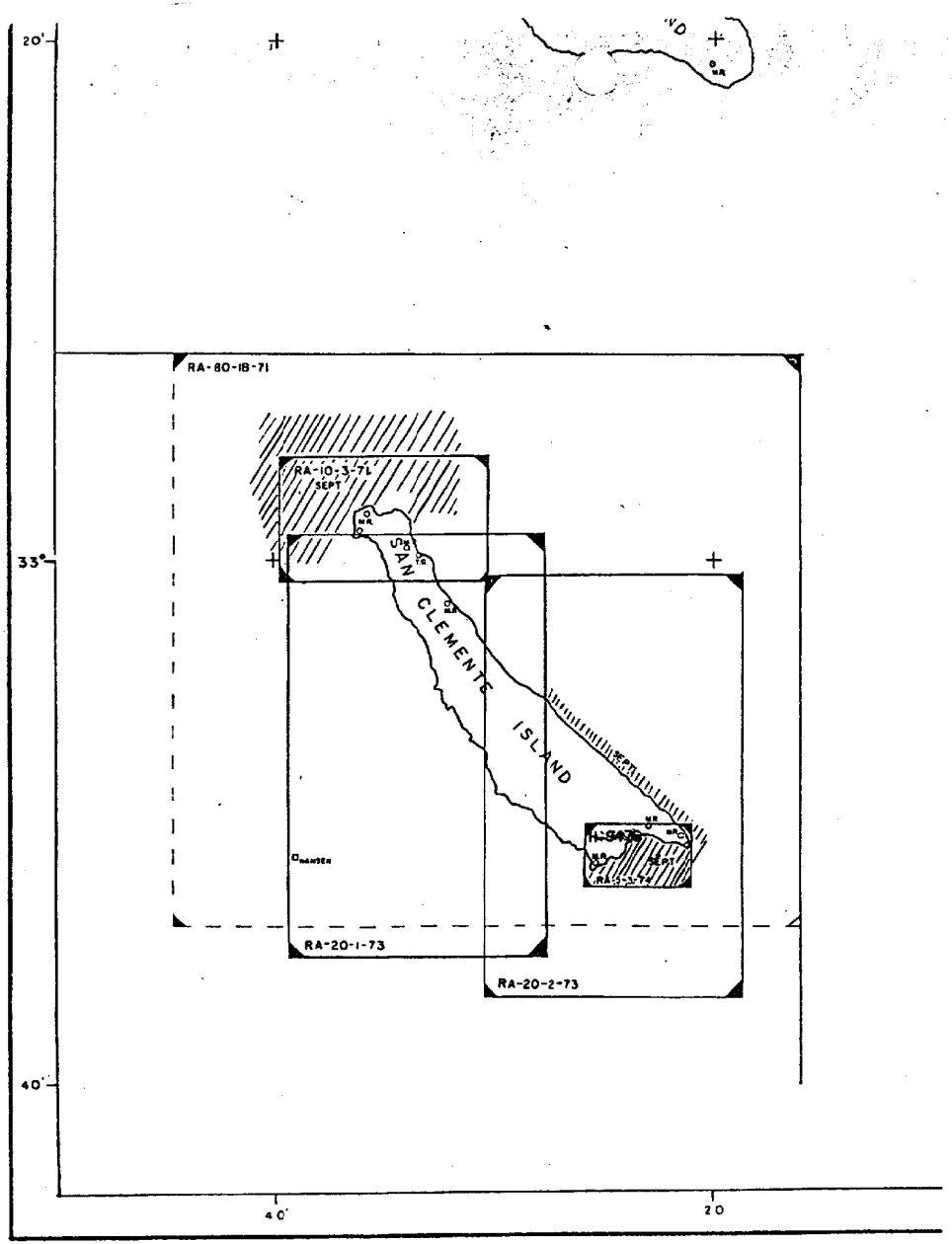
Time Meridian: GMT

STANDARDS CHECKED 9-22-82
Clay

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

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

2



PROGRESS SKETCH
OPR-411
SOUTHERN CALIFORNIA

NOAA Ship RAINIER
K. WILLIAM JEFFERS, CDR., NOAA
COMD'G.

SEPT., 1974

SCALE OF CHART 5101

LEGEND

SEPT	OCT.	NOV.
1		
1		
0		
9		
12		
34		
487.1		
117		
82		
52.62		

- TIDE GAGE
- NANSEN CAST
- TEMPERATURE, DEPTH, CONDUCTIVITY
- MINI RANGER STATION
- WATER SAMPLES ANALYZED (SALINTY)
- BOTTOM SAMPLES (GRAB)
- L.N.M. SOUNDING LINE
- L.N.M. DISTANCE TO AND FROM
- L.N.M. MISCELLANEOUS DISTANCE
- SQ. N.M. SOUNDING

A. PROJECT

This survey was conducted in accordance with PROJECT INSTRUCTIONS OPR-411-RA-74, San Clemente Island, California, dated 5 June 1974, and CHANGE NO.1, dated Sept.5,1974.

B. AREA SURVEYED

This survey covers the area of Pyramid Cove at the southern end of San Clemente Island, California, bounded on the north by San Clemente Island, on the west by a meridian passing through China Point (118/25/30), on the east by a meridian passing through Pyramid Point (118/21/15), and on the south by latitude 32/47/45. The survey was conducted between September 17, 1974 and September 30, 1974, inclusive.

C. SOUNDING VESSELS

All soundings in this survey were obtained by the NOAA Ship RAINIER (MSS-21) launches RA-4 (2124), RA-5 (2125) and RA-6 (2126). Bottom samples were obtained by the RAINIER (2120).

D. SOUNDING EQUIPMENT

The soundings were obtained by Ross Fathometers, model 5000, in conjunction with Ross Digitizers, model 6000, serial numbers:

	Fathometer	Digitizer
RA-4	1041	1042
RA-5 before J.D. 270	1042	1040-3
RA-5 J.D. 270 and after	1040-6	1040-3
RA-6	1042	1041-7

The fathometers were continuously monitored by technicians, making corrections when needed. The initial was always kept at a value of "zero". Phase checks were made frequently by setting the Ross switch to "Calibrate Phase Set" and entering a depth to assure no change of phasing.

Bar checks were taken routinely throughout the project on each launch. On days bar checks were not obtained, the TRA from the previous day or an average value was used to process the soundings. Velocity corrections were determined from Nansen casts taken on September 17, 1974 and October 1, 1974.

Corrections were incorporated on TC/TI (Transducer Correction/Table Indicator) tapes for automatic processing.

For further information concerning sounding equipment and corrections refer to Corrections to Echo Soundings report, OPR-411-RA-74.

E. BOAT SHEET

Transverse Mercator Projection and soundings were plotted by RAINIER personnel using the on-board PDP8/e Hydroplot system. The system includes the PDP8/e computer, S/N 1011, and DP-3 Complot Plotter, S/N 4670-4. The hydroplot system aboard launch RA-5 (2125) was also used for plotting boat sheets. This system is composed of PDP8/e computer S/N 1015 and DP-3 Complot Plotter S/N 3750-3. The control meridian for the project is 118/30/00W, and the control latitude is 3615000 meters north of latitude zero. Position numbers and soundings were machine plotted.

Rough sheets were comprised daily and the final plot collated as the work progressed. The main scheme soundings are plotted in black ink, crosslines in red ink, bottom samples in blue ink, prior surveys in violet ink, and junction soundings in blue ink.

F. STATION CONTROL

Control for this survey made use of existing triangulation stations in the area. Mini-Ranger stations used were:

Station	Signal No.	Xpndr	Code
China Point Lighthouse	105	775	2
Pyramid Cove Anchorage Light	114	776	3
Pyramid Point 1933 (ECC)	115	777	4

Control stations used for T-2 calibrations were also located at existing triangulation stations. Refer to station list and daily calibrations in the Separates following the text.

G. POSITION CONTROL

The super-high-frequency (SHF) Motorola Mini-Ranger (range-range system) was used for position control of soundings. The M/R transponders were positioned on shore at the stations described in Section "F". The Range Consoles and Receiver/Transceivers used on the launches were as follows:

Launch	Console	R/T
RA-4	715	720
RA-5	720	727
RA-6	711	718

The R/T units were placed on 10 foot masts for better reception.

Calibrations of the Mini-Ranger system were taken once a day in the area that the launches were working. This was done by intersection from two T-2 stations located on shore and in the positions noted in the Stations List in the Separates following the text. The solution was determined from

the observed angles to the launches using the Wang Intersection Program in the Wang 700 Series, Advanced Programming Calculator and program AM300 Utility Computations using the PDP8/e computer. The corrections were then incorporated into the Hydroplot/Hydrolog system. The position control of the plot of the soundings on the boat sheet includes the correctors. Slope corrections were applied to the calibrations whenever the Mini-Ranger transponders were greater than 40 meters above sea level.

Refer to Electronic Control Report, OPR-411-RA-74 for more information concerning the operation of the Mini-Rangers.

H. SHORELINE

Shoreline was transferred from T-sheet manuscripts (TP-00389, TP-00390, TP-00391) onto the boat sheets. The shoreline and topographic details were completed by field edit verification. Details on the manuscripts that were verified are in black ink, new objects are described in red ink, and unverified objects in blue ink.

I. CROSSLINES

Approximately 17.3 nautical miles of hydrography run were crosslines. This was 6.9% of the total number of nautical miles of hydro. All crosslines had excellent agreement with the main scheme soundings.

J. JUNCTIONS

Junction was made with the following contemporary surveys:

Reg. No.	Field No.	Scale	Date
H-9377	RA-20-2-73	1:20,000	1973-74

Comparisons along the junction of this survey had excellent agreement of soundings.

K. COMPARISON WITH PRIOR SURVEYS

Pre-Survey Review items: applied to 18764 & 18762 11-3-82 RAL

(#79) Mooring bouy charted at latitude 32/49/00N, longitude 118/21/39W was fixed at latitude 32/49/00.3N, longitude 118/21/47.8W. The charted position should be so adjusted. concur

(#80) Mooring bouys charted at latitude 32/48/06N, longitude 118/22/40W and latitude 32/49/12N, longitude 118/23/19W are no longer present, and should be deleted from the chart. concur

A 2 3/4 fathom sounding charted at approximately 32/47/~~55~~56.5N, 118°25'19.5"W was disproved. A corrected least depth of 3½ feet was recorded in the vicinity of that position. The sounding may be correlated to a shoal slightly to the west. See VR Sect. 6a.3

A 20 fathom sounding at approximately 32/48/~~43~~43.8N, 118/22/~~03~~02.0W properly locates a shallow point, although the corrected least depth was determined to be ~~111~~ 107 feet. See VR Sect. 6c 3

An 11 fathom sounding at approximately 32/48/~~46~~45.2N, 118/21/~~57~~58.8W was correlated with a peak slightly to the southeast at approximately 32/48/45N, 118/21/56W (Position 5175; ~~just before~~ second sounding out). The ~~exact~~ least depth of the peak was missed. Therefore it is recommended that the 11 fathom sounding be retained, ~~in the slightly adjusted position.~~ See VR Sect. 6c3b

A corrected 9 fathom sounding at approximately 32/48/~~48~~40.2N, 118/21/43W was sounded. The least depth obtained in the vicinity was 6½ ~~feet at that position.~~ See V Sect. 6c3c

A 4¼ fathom sounding at 32/49/~~08~~9.7N, 118/23/~~08~~9.5W was investigated. A least depth of 28 feet was measured slightly to the southeast at the location of the third sounding after position 7482. See VR Sect. 6a4

This survey is compared with H-5459, 1:10,000, 1933.34 Soundings on this survey (H-9476) are consistently shoaler than those of the prior survey. The difference in soundings generally increases with depth. Within the 10 fathom curve they differ by ½ to 1 fathom. Outside the 10 fathom curve they differ by 1 to 2½ fathoms. See VR Sect. 6

L. COMPARISON WITH THE CHART

Comparison with the largest scale chart available, C&GS 5117 (4th ed, April 7, 1973), yields basically the same results as the comparison with the prior survey in Section "K". Soundings on H-9476 are generally shoaler than the chart, the difference increasing with depth. Differences range from ½ to 2 fathoms. ✓

M. ADEQUACY OF THE SURVEY

H-9476 is a completed survey and is recommended to supersede all prior surveys for charting purposes. All fathograms were scanned and checked for peaks and deeps in the field. All fathogram annotations are clearly marked. See VR Sect. 1

N. AIDS TO NAVIGATION

Aids in the area were compared with the Light List and with C&GS chart 5117. All lights were in agreement with the Light List and the ✓

chart.

Two landing markers charted at lat. 32/48/48N, long. 118/24/09W and lat. 32/49/17N, long. 118/23/42W are no longer of any navigational use, and should be deleted from the chart.

A white-washed rock located at lat. 32/48/58.319N, long. 118/21/15.058W should be charted as "Balanced Rock".

All other existing aids are satisfactory. No other new aids are necessary in the area. For further information, see Field Edit Report, OPR-411-RA-74.

O. STATISTICS

251.9 nautical miles of sounding lines were run, covering 4.7 square nautical miles.

Vessel	Miles of Hydro	No. of Positions	Bottom Samples
RAINIER	0	13	13
RA-4	8.7	107	0
RA-5	209.2	1520	0
RA-6	34.0	293	0

P. MISCELLANEOUS

Two new geographic names should be added to the chart, in the vicinity of China Point on the southwest end of San Clemente Island. These are Horse Cove, lat. 32/48/36N, long. 118/24/36W, and Abalone Cove, lat. 32/48/18N, long. 118/25/48W. For more information refer to Geographic Names in the Separates following the text.

Horse Cove not accepted as Geographic Name (See Geo. List)
Abalone Cove off limits of smooth sheet.

The bottom of the near-shore area is strewn with unexploded Naval ordnance. A note on the chart should so indicate. See Geo Names Report

Q. RECOMMENDATIONS

None.

R. REFERENCES TO REPORTS

Corrections to Echo Soundings, OPR-411-RA-74
Field Edit Report, OPR-411-RA-74
Geodetic Control Report, OPR-411-RA-74
Electronic Control Report, OPR-411-RA-74
Coast Pilot and Geographic Names, OPR-411-RA-74

S. DATA PROCESSING PROCEDURES

All standard procedures were used to obtain soundings. Launch RA-6 is equipped with a NOS Hydrolog system, which was used in conjunction with program AM170, version 11/10/72, allowing all sounding data to be recorded in master tape format.

Launch RA-5 used AM100, version 11/10/72, which enabled the launch to plot on-line. Raw data was corrected to produce electronic master tapes. For each electronic master tape, a corrector tape was made with TRA and Mini-Ranger calibration corrections. These corrector tapes were prepared to include Mini-Ranger busts and also to insert peaks and deeps. Revised master and master reduced to sea level tapes were made from electronic master tapes. Ignore correctors in the corrector words on master tapes. Use correctors as supplied on corrector tapes.

Other computer programs used during the survey include:

Program	Version	Description
AM200	23MAR73	Off-line plot
AM201	10Nov72	Grid and Lattice Plot
AM300	24May73	Utility Computations
AM301	8Dec72	VISTA
AM500	10Nov72	Predicted Tide Generator
AM560S	10Apr72	M/R Calibration w/Slope Correction
AM602	10Mar72	ELINORE
PM340	1Dec72	Master tape Reduced to Sea Level
RK408	10Nov72	Geodetic Inverse

Respectfully submitted,

Andrew A. Armstrong
Ltjg., NOAA

APPROVAL SHEET

H-9476 (RA-5-3-74)

OPR-411-RA-74

SAN CLEMENTE ISLAND

CALIFORNIA

In producing this sheet, standard procedures were observed in accordance with the Hydrographic Manual, PMC OPORDER, and the Instruction Manual for Automated Hydrographic Surveys. The data was examined daily during the execution of the survey.

The boatsheets and accompanying records have been examined by me and are considered complete and adequate for charting purposes and are approved.

K. William Jeffers

K. William Jeffers
CDR., NOAA

STATION LIST
H-9476
RA-5-3-74

STA	O	LATITUDE	LONGITUDE	CRT	ELEV	F.KHZ	SOURCE
			TYPE/NAME				
103	7	32 49 13.57	118 21 08.93	139	0067	149835	
			PYRAMID POINT LIGHT-1933				
105	7	32 48 13.740	118 25 29.208	139	0034	149835	
			CHINA POINT LIGHTHOUSE-1933				
106	7	32 48 58.217	118 21 15.443	139	0022	149835	
			PYRAMID POINT-1933				
114	7	32 49 59.282	118 22 56.678	139	0272	149835	
			PYRAMID COVE ANCHORAGE LIGHT-1955				
115	7	32 48 58.089	118 21 17.132	139	0020	149835	
			PYRAMID POINT-1933-(ECC)				
118	7	32 48 13.761	118 25 29.115	139	----	149835	
			CHINA POINT LIGHTHOUSE-1933-ECCENTRIC				

//

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
- [X] FIELD EDIT
- [ ] COMPILATION
- [ ] FINAL REVIEW
- [ ] QUALITY CONTROL AND REV

(See reverse for responsible person

- [X] TO BE CHARTED
- [ ] TO BE DELETED

ORIGINATING LOCATION: NOAA SHIP RAINIER

DATE: SEPT. 1974

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

JOB NUMBER: PH-7108

STATE: California

SURVEY NUMBER: T - TP-00391

DATUM: N.A. 1927

CHARTING NAME	DESCRIPTION	POSITION LATITUDE ° ′	LATITUDE ″ D.M.METERS	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P.METERS	METHOD AND DATE OF LOCATION (See instructions on reverse of this form) FIELD INSPECTION	COMPILATION	FIELD EDIT	CHARTS AFFECTED
light	Pyramid Point Light 1933	32 49	13.57	118 21	08.83			Traiangulation Rec'd Sept. 1974	C&GS 5111 5117
rock	White-washed rock USN on Balanced rock should be charted as "Balanced Rock"	32 48	58.319	118 21	15.058			Triangulation Rec'd Sept. 1974	C&GS 5111 5117
	L-290(75)								

12

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 REVI
(See reverse for responsible personn

☒ TO BE CHARTED
☐ TO BE DELETED

ORIGINATING LOCATION: NOAA SHIP RAINEIR

DATE: SEPT. 1974

The following objects have (~~XXXXXX~~) been inspected from seaward to determine their value as landmarks:

JOB NUMBER: PH- 7108

STATE: California

SURVEY NUMBER: T - TP-00390

DATUM: N.A. 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
light	Pyramid Cove Anchorage Light 1955	32 49	59.282	118 22	56.678			Triangulation Rec'd Sept. 1974	C&GS 5111 5117
	L-290(75)								

NOAA FORM 76-40
(2-71)
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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 RE

(See reverse for responsible perso

☒ TO BE CHARTED
☐ TO BE DELETED

ORIGINATING LOCATION: NOAA SHIP RAINIER

DATE: SEPT. 1974

The following objects have (~~XXXXXX~~) been inspected from seaward to determine their value as landmarks:

JOB NUMBER: PH- 7108

STATE: California

SURVEY NUMBER: T - TP-00389

DATUM: N.A. 1927

CHARTING NAME	DESCRIPTION	POSITION LATITUDE ° ′	LATITUDE ″ D.M.METERS	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P.METERS	METHOD AND DATE OF LOCATION (See instructions on reverse of this form) FIELD INSPECTION	COMPILATION	FIELD EDIT	CHARTS AFFECTE
light	Chinapoint Lighthouse 1933	32 48	13.740	118 25	29.203			Triangulation Rec'd Sept. 1974	C&GS 511 511
	L-290(75)								

14

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 RE

(See reverse for responsible perso

☐ TO BE CHARTED
☒ TO BE DELETED

ORIGINATING LOCATION: NOAA SHIP RAINIER

DATE: Sept. 1974

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

JOB NUMBER: PH-7108

STATE: ~~California~~

SURVEY NUMBER: T - TP- 00390

DATUM: N.A. 1927

POSITION

CHARTING NAME	DESCRIPTION	LATITUDE ° ′	LATITUDE ″ D.M. METERS	LONGITUDE ° ′	LONGITUDE ″ D.P. METERS	METHOD AND DATE OF LOCATION (See instructions on reverse of this form) FIELD INSPECTION	COMPILATION	FIELD EDIT	CHARTS AFFECTE
target	Landing target, Pyramid Cove	32 48	47.752 1471.0	118 24	09.378 244.0			photo picked Sept. 1974	5111 C&GS5117
target	Landing target, Pyramid Cove	32 49	17.010 524.0	118 23	41.825 1088.0			photo picked Sept. 1974	C&GS 5111 5117
	L-290 (75)								

15

VELOCITY CORRECTOR TAPE LISTING
RA-5-3-74(H-9476)

TABLE # 1
VESSEL: 2126,2124,2123(RA-6,RA-4,RA-3)

```
000062 0 0000 0001 000 000000 000000
000200 0 0005
000350 0 0010
000500 0 0015
000810 0 0020
001050 0 0030
001548 0 0040
002000 0 0050
002420 0 0060
002910 0 0070
003420 0 0080
003980 0 0090
004520 0 0100
005140 0 0110
```

See attached.

VESSEL: 2125(RA-5)

```
000140 0 0000 0001 000 000000 000000
000270 0 0005
000415 0 0010
000570 0 0015
000720 0 0020
001070 0 0030
001450 0 0040
001860 0 0050
002300 0 0060
002800 0 0070
003300 0 0080
003800 0 0090
004400 0 0100
005000 0 0110
```

VELOCITY CORRECTOR TAPE LISTING
RA-5-3-74(H-9476)

TABLE # 2
VESSEL: 2126,2124,2123(RA-6,RA-4,RA-3)

```
000070 0 0000 0002 000 000000 000000
000210 0 0005
000348 0 0010
000486 0 0015
000760 0 0020
001038 0 0030
001362 0 0040
001743 0 0050
002200 0 0060
002670 0 0070
003150 0 0080
003680 0 0090
004200 0 0100
004770 0 0110
005360 0 0120
```

See attached

TABLE # 2
VESSEL: 2125(RA-5)

```
000070 0 0000 0002 000 000000 000000
000208 0 0005
000348 0 0010
000482 0 0015
000760 0 0020
001034 0 0030
001360 0 0040
001747 0 0050
002180 0 0060
002680 0 0070
003180 0 0080
003720 0 0090
004230 0 0100
004780 0 0110
005320 0 0120
```

VELOCITY-TRANSDUCER FILE: V09476 LISTING MADE: 04-03-81 03:29:20

TRANSDUCER CORRECTION TABLES

VESSEL: 2120 YR: 74 FT

DAY	TIME	TRA COR	VEL TABLE
273	155800	15.60	1
290	235959	15.60	1

VESSEL: 2124 YR: 74 FT

DAY	TIME	TRA COR	VEL TABLE
270	170312	1.50	1
270	235959	1.50	1

VESSEL: 2125 YR: 74 FT

DAY	TIME	TRA COR	VEL TABLE
260	215340	1.60	1
270	165728	.00	1
270	170240	1.60	1
271	000037	1.60	2
271	173251	.00	2
271	173446	1.60	2
271	181320	.00	2
271	181532	1.60	2
271	182143	.00	2
271	182338	1.60	2
271	183318	.00	2
271	183325	1.60	2
272	185403	.00	2
272	185414	1.60	2
272	203144	.00	2
272	203253	1.60	2
273	195000	.00	2
273	195137	1.60	2
273	235959	1.60	2

VESSEL: 2126 YR: 74 FT

DAY	TIME	TRA COR	VEL TABLE
272	153834	1.80	2
272	235959	1.80	2

VELOCITY CORRECTION TABLES

TABLE#: 01 YR: 74 FT		TABLE#: 02 YR: 74 FT	
DEPTH	VEL COR	DEPTH	VEL COR
6.20	.00	7.00	.00
20.00	.50	21.00	.50
35.00	1.00	34.80	1.00
50.00	1.50	48.60	1.50
65.00	2.00	62.20	2.00
81.00	2.50	76.00	2.50
116.00	3.00	103.80	3.00
154.80	4.00	136.20	4.00
200.00	5.00	174.30	5.00
242.00	6.00	220.00	6.00
291.00	7.00	267.00	7.00
342.00	8.00	315.00	8.00
398.00	9.00	368.00	9.00
452.00	10.00	420.00	10.00
514.00	11.00	477.00	11.00
999.90	11.00	536.00	12.00
		999.90	12.00

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2125 SHEET : RA-5-3A-74

TIME	DAY	PATTERN 1	PATTERN 2
154844	271	-00003	+00000
152831	272	+00002	-00006
163308	272	-00008	-00006

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2124 SHEET : RA-5-3A-74

TIME	DAY	PATTERN 1	PATTERN 2
170312	270	-00001 ~~-00012~~	-00001 ~~-00008~~

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2126 SHEET : RA-5-3B-74

TIME	DAY	PATTERN 1	PATTERN 2
153834	272	-00008	-00022

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2125 SHEET : RA-5-3B-74

TIME	DAY	PATTERN 1	PATTERN 2
		+00003	
215340	260	~~+00006~~	+00002
155453	261	-00005	-00005
164833			+00001
~~170240~~	270	+00001	~~+00004~~
000037	271	+00001	+00002
220800	271	-00003	+00000
003953	272	-00003	+00000
153846	273	-00004	-00002
183242	273	-00003	-00004

TIDE NOTE

H-9247 (RA-10-3-71)
H-9254 (RA-80-1-71)
H-9376 (RA-20-1-73)
H-9377 (RA-20-2-73)
H-9476 (RA- 5-3-74)

OPR-411-RA-74 San Clemente Island, Calif.

Tide reducers for boatsheet soundings were generated by Hydro plot Program AM 500, using daily values of Los Angeles, California, Reference Station listed in Tide Tables, High and Low Water Predictions, 1974, West Coast of North and South America. The following correctors, as listed for Wilson Cove, San Clemente Island were applied:

Time

High water	-0hr. 04m
low water	-0hr. 05m

Height ratio

(High and low water)	0.96

An ADR Tide Gage was installed by RAINIER personnel on September 16, and removed on October 18. The control station at Los Angeles remained in operation throughout the survey.

Tabulated hourly heights, value of MLLW, Forms 712 for insertion in Descriptive Reports, time and height relationships between gages, and Tidal zoning for the smooth sheet have been requested from Tides Branch (C 331), Rockville.

4/8/75

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

Tide Station Used (NOAA Form 77-12): Wilson Cove, Calif.

Period: Sept. 16 - Oct. 18, 1974

HYDROGRAPHIC SHEET: H-9476

OPR: 411

Locality: Off the south end of San Clemente Island

Plane of reference (mean lower low water): 4.27 ft.

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

Remarks: Zone direct.

James R. Hubbard
for Chief, Tides Branch

25

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-9476

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	KT-Sheet	
CHINA POINT	5117								TP-00389	1
~~HORSE COVE~~				X						2
PYRAMID COVE	5117								TP-00390	3
PYRAMID HEAD	5117								TP-00391	4
SAN CLEMENTE ISLAND	5117								TP-00389 TP-00390	5
BALANCED ROCK									TP-00391	6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
				Approved:						18
										19
				Clara E. Harrington						20
				Chief Geographer - C3x5						21
				10 Feb. 1982						22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

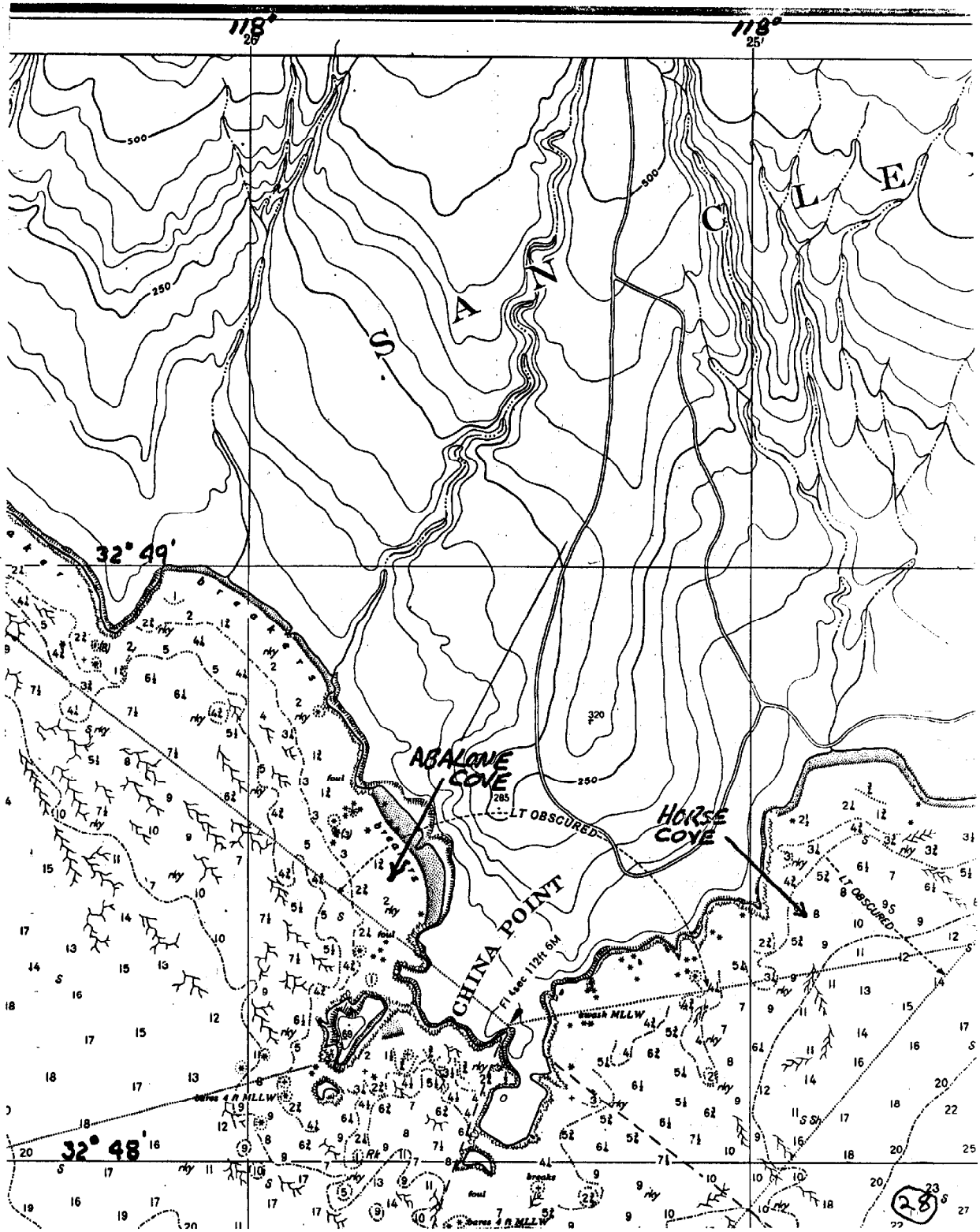
Geographic Names

Two new Geographic Names need to be added to C&GS Charts 5111 and 5117, scales 1:40,000 and 1:15,000, respectively. The two new names identify coves in the immediate vicinity of China Point on the southwestern end of San Clemente Island. The information comes from Naval personnel on San Clemente Island.

Horse Cove is located on the east side of China Point extending eastward from the southern tip of the point to longitude 118° 24.6' W (latitude 32° 48.6' N). Horse Cove rejected by Staff Geographer (See Geographic Name List)

Abalone Cove is located on the west side of China Point extending northward from latitude 32° 48.3' N (longitude 118° 25.8' W) to latitude 32° 48.6' N (longitude 118° 25.8' W). Falls outside limit of survey.

A section of C&GS Chart 5117, scale 1:15,000, is included for definition of these areas.


118° 25'
118° 25'
SANTA CATALINA ISLAND
32° 49'
32° 48'
ABALONE COVE
HORSE COVE
CHINA POINT
LT OBSCURED
Fl 4sec 112ft 6M
500
250
320
285
28

APPROVAL SHEET

FOR

SURVEY H-9476

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.* (Publication 20-2) Exceptions are listed in the verifier's report.

Date: 5/18/81

James L Green

Chief, Verification Branch

* Added by permission of Mr. James Green per telecon on 9/14/81.

GK. Myers

NOAA FORM 77-27 (5-77) | U. S. DEPARTMENT OF COMMERCE NOAA | HYDROGRAPHIC SURVEY NUMBER

HYDROGRAPHIC SURVEY STATISTICS

H-9476

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS & PRELIMINARY OVERLAYS 2 2 1	4
DESCRIPTIVE REPORT	1	SMOOTH OVERLAYS: POS/ARC, EXCESS	2

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1 & Raw Printouts					
VOLUMES	2					
BOXES			2-smooth & misc.			

T-SHEET PRINTS (List) TP-00389, TP-00390, TP-00391

SPECIAL REPORTS (List) Horizontal Report & Echo Sounding Report

OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS: PRE-VERIFICATION	VERIFICATION	TOTALS
POSITIONS ON SHEET			2159
POSITIONS CHECKED		2159	
POSITIONS REVISED		83	
SOUNDINGS REVISED		325	
SOUNDINGS ERRONEOUSLY SPACED			
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED			
	TIME – HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	3		
VERIFICATION OF CONTROL		19	
VERIFICATION OF POSITIONS		106	
VERIFICATION OF SOUNDINGS		363	
COMPILATION OF SMOOTH SHEET		34	
APPLICATION OF TOPOGRAPHY		25	
APPLICATION OF PHOTOBATHYMETRY		-	
JUNCTIONS		28	
COMPARISON WITH PRIOR SURVEYS & CHARTS		74	
VERIFIER'S REPORT		64	
OTHER			
TOTALS	3	713	716

Pre-Verification by J. S. Green	*Beginning Date* March 19, 1975	*Ending Date* March 19, 1975
Verification by J.L. Stringham, M.G. Sanders, F.L. Rosario	*Beginning Date* April 6, 1975	*Ending Date* April 21, 1981
Verification by S.A. Feher, L.T. Deodato	*Time (Hours)* 91	*Date* May 7, 1981
Marine Center Inspection by S. H. Otsubo & J.S. Green HIT	*Time (Hours)* 11	*Date* June 4, 1981
Quality Control Inspection by D.R. Baumgardner	*Time (Hours)* 78	*Date* Nov. 6, 1981
Requirements Evaluation by Stephen Myers	*Time (Hours)* 2	*Date* April 26, 1982

D. Myers 11 hrs 1/8/82

REGISTRY NO. 9476

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE_____ TIME REQUIRED_____ INITIALS_____

REMARKS:

PACIFIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO: H-9476 FIELD NO: RA-5-3-74

California, San Clemente Island, Pyramid Cove

SURVEYED: September 17 - 30, 1974

SCALE: 1:5000 PROJECT NO: OPR-411-RA-74

SOUNDINGS: Ross Fineline, Model 5000 Echo Sounder
Lead Line
CONTROL: Range/Range Mini-Ranger

Chief of Party.....CDR K. W. Jeffers

Surveyed by.....LT L. Pfeifer, LTJG A.A. Armstrong, ENS K. A. Andreen, ENS G. W. Stroble

Automated Plot by.....PMC Xynetics Plotter

Verified by.....J. L. Stringham, M. G. Sanders, F. L. Rosario, S. H. Otsubo, S. A. Feher, L. T. Deodato

1. INTRODUCTION

a. This is a basic hydrographic survey of Pyramid Cove, San Clemente Island, California conducted by NOAA Ship RAINIER from September 17 - 30, 1974.

b. The following were unusual problems encountered and corrected during verification:

(1) Fathograms were not properly scanned and annotated.

(2) Velocity correction tables were reduced from 4 to 2.

(3) Electronic correctors were recomputed during verification.

(4) Soundings over rocks were not properly annotated. ~~It was~~ They were presumed to be lead line soundings since ~~it was~~ they were not shown on the fathogram.

(5) A buoy (fix #5422) was not properly described. It was presumed to be a mooring buoy since only mooring buoys were charted in the area.

c. Except where noted, no non-standard procedure was used.

d. The following were revised during verification:

(1) Field projection parameters have been revised to meet PMC software requirements.

(2) Part of the electronic corrector abstract was revised to conform to calibrations.

(3) Predicted tide reductions were based on Los Angeles tides corrected to Wilson Cove. Approved tides from Wilson Cove Tide gage were utilized for soundings on the smooth sheet.

2. CONTROL AND SHORELINE

a. The source of control is adequately described in Sections F and G of the Descriptive Report.

b. The following Class I manuscripts with their respective dates of photography and field edit were used in this survey.

~~Unr~~eviewed Class I		
TP-00389	1971	1974
Reviewed Class I		
TP-00390	1971	1974
TP-00391	1971	1974

The above ~~unreviewed and~~ reviewed Class I manuscripts were updated by changes marked by colored pencil by Coastal Mapping Division to clarify conflicts between field edit information and photogrammetric compilation. TP-00389 reviewed sheet supersedes all other prior topo data. TP-00390 - no corrections made, TP-00391 - no corrections made

c. A rock located by the hydrographer and one verified by field edit exist in the vicinity of latitude 32°48'54.2"N, longitude 118°21'34.5"W and latitude 32°49'10.2"N, longitude 118°21'59.5"W. deleted superseded by topo position

d. A rock awash at MHW shown on the Class I manuscript, TP-00391, in the vicinity of latitude 32°48'56.3"N, longitude 118°21'19.3"W is now shown on the smooth sheet as an islet based on actual tide. Elevation of some rocks were also changed based on the notes in the field smooth sheet and actual tides.

e. The rocky ledge limit in the vicinity of latitude

32°48'24.0"N, longitude 118°24'56.5"W was modified to conform with the hydrographic data.

3. HYDROGRAPHY

a. Crossline soundings are in good agreement, generally 2 - 4 feet or less at all depths.

b. Standard depth curves were adequately drawn with the exception of depth curves close to the shore. See H.I Report item 2

c. Except where noted in this report the development of the bottom configuration and the determination of least depths are adequate. See H.I Report items 1 and 3

4. CONDITION OF SURVEY

With the exception of the following, the smooth sheet, accompanying overlays, hydrographic records, and reports are adequate and conform to the requirements of the Hydrographic Manual.

a. The hydrographer made inadequate comparison with the prior surveys and chart as the field work progressed, which led to inadequate bottom delineation and determination of least depths. See Q.C. report

b. Check fixes were not taken on rocks located by the hydrographer.

c. Vessels 2124 and 2126 were used on JD-270 and 274 respectively with no phase calibrations shown on the fathograms. Digitized depths were not affected. Shoal in-between soundings were corrected based on the adjacent digitized depth.

d. Vessel 2125 was used on JD-260 and 261 without phase calibrations in the fathograms. Shoal in-between soundings were corrected as stated above. On JD-271 a phase calibration was shown in the fathogram with no adjustments made. It shows that the analog trace was shoaler by 3 ft. and 0.3 ft. on the 100 - 200 ft. and 200 - 300 ft. scales respectively. This was adjusted on JD-272 as shown on the fathogram before the start of the day's work.

e. The positions of the plotted soundings on the field smooth sheet do not agree with the positions on the smooth sheet. Elevation of the signals was not incorporated in producing the field smooth sheet.

f. The position of some field edit rocks as transfered to the field smooth sheet does not agree ~~to its~~ with their final positions on the Class I manuscripts.

g. Some field edit rocks and verified rocks from Class III manuscripts shown on the field smooth sheet were not shown on the Class I manuscripts in the vicinity of latitude 32°48'13.0"N, longitude 118°25'18.5"W and latitude 32°48'42.5"N, longitude 118°24'19.0"W.

5. JUNCTIONS

H-9377 (1973-74) 1:20,000

The above survey which has been forwarded to headquarters has a satisfactory junction with this survey. Slight adjustments in depth curves are needed most especially the 50 fm. curve. Junction notes and depth curves have been inked. Completed during QC evaluation.

6. COMPARISON WITH PRIOR SURVEYS

a. H-5459 (1933-34) 1:10,000

(1) The shoreline on the present survey has moved offshore and inshore by an average of 15 meters which could be due to natural changes or to less accurate method used to delineate the shoreline.

(2) Soundings on the present survey agree within 0 ± 7 feet at all depths.

(3) The 16 ft. sounding (charted as 2 3/4 fms.) at latitude 32°47'56.5"N, longitude 118°25'19.5"W, which originates from H-1429 (1878-79), was transfered to H-5459. It is also an unnumbered PSR item and was transfered to the smooth sheet for it was not disproven by hydrography.

(4) Another unumbered PSR item is a 26 ft. sounding (charted as 4 1/4 fms.) at latitude 32°49'9.7"N, longitude 118°23'9.5"W. This sounding originates from ~~H-4558 (1926), transfered to~~ H-5459 and is ~~again~~ transfered to the smooth sheet for it was not disproven by hydrography.

(5) Shoaler soundings and some shore features were also transfered to the smooth sheet.

b. H-5758 (1933-34) 1:20,000

This is an offshore prior survey and the common area is in the southeast corner of the present survey. Soundings on the present survey agree within 0 ± 5 feet.

c. H-6159 (1936) 1:10,000

(1) The shoreline from longitude 118°23'30"W to longitude 118°24'10"W was compared to the present survey. The shoreline has moved offshore by an average of 10 meters which could be due to natural changes or the less accurate method used on the prior survey to delineate the shoreline.

(2) Soundings on the present survey agree within 0 ± 2 ft. Some shoal soundings and shore features are transfered to the smooth sheet.

(3) Unnumbered PSR items:

(a) The 20 fms. sounding at latitude 32°48'43.8"M. longitude 118°22'02.0"W though not properly developed was not transfered to the smooth sheet for a 107 ft. sounding was found in the area.

(b) The 11 fms. sounding at latitude 32°48'45.2"N, longitude 118°21'58.8"W was transfered to the smooth sheet for it was not disproven.

(c) The 9 fms. sounding at latitude 32°48'49.2"N, longitude 118°21'43.0"W was also transfered to the smooth sheet for the same reason stated above.

(4) For PSR item #80 refer to Section K of the Descriptive Report.

d. With the transferences of some shoal soundings and shore features from the above prior surveys to the smooth sheet, the present survey is adequate to supercede the above prior surveys in the common area.

e. H-6165WD (1936) 1:10,000

This prior wire drag survey has no hang~~up depths~~ in the common area. No soundings on the present survey conflict with the indicated effective drag depths.

7. COMPARISON WITH CHARTS

Comparison was made with Chart #5117 (4th edition, April 7, 1973).

a. Hydrography

(1) Charted features and soundings that originate from the previously discussed prior surveys were disposed of in Section 6 of this report, ~~also see enclosed chartlet~~.

(2) For PSR #79 refer to Section K of the Descriptive Report.

(3) H-9476 is adequate to supercede the charted data in the common area.

b. Aids to Navigation

(1) There are no floating aids to navigation in the surveyed area.

(2) For fixed aids to navigation and landmark refer to Section N of the Descriptive Report. The charted aids falling on this survey adequately mark the features intended.

8. COMPLIANCE WITH PROJECT INSTRUCTIONS

Except where noted, this survey adequately complies with the Project Instructions dated June 5, 1974 and Change No. 1 dated September 5, 1974.

9. ADDITIONAL FIELD WORK

This is a fair basic survey and should the area be resurveyed in the future, least depths on shoals shown on the smooth sheet should be determined.

Submitted by,

Leonardo T. Deodato

Leonardo T. Deodato
April 21, 1981

Examined and Approved:

James S. Green
Chief, Verification Branch

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

June 11, 1981 OA/CPM3/JWC

TO: OA/CPM - Charles K. Townsend

FROM: OA/CPM3 - John W. Carpenter

SUBJECT: PMC Hydrographic Inspection Team Report for Survey H-9476

This survey is a basic hydrographic survey of Pyramid Cove, San Clemente Island, California. This survey was conducted by NOAA Ship RAINIER in 1974 in accordance with Project Instructions OPR-411-RA-74 dated June 5, 1974 and Change No. 1, dated September 5, 1974.

The following items were noted:

1. The maximum sounding interval is exceeded (Hydrographic Manual, Pub. 20-2, 6-59) ~~exceeds the 4 to 8mm interval (Hydrographic Manual 4.5.6)~~ in many areas of the sheet especially on the inshore part of the survey.

2. The inshore depth curves were not complete due to the lack of sounding data which may be due to possibly dangerous surf conditions, but this was not addressed in the Descriptive Report.

3. There are several areas where the sounding lines indicated possible shoal areas, but due to the lack of any shoal development, the least depths may not have been obtained. Several soundings were brought forward from prior surveys. See Q.C. Report

The inspection team finds H-9476 to be a basic survey adequate to supersede common areas of prior surveys and charted hydrography. Administrative approval is recommended.

John W. Carpenter

James M. Wintermyre

James W. Steensland

James L. Stringham

ADMINISTRATIVE APPROVAL
H-9476

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.

for K. W. Jeffers
Charles K. Townsend
Director
Pacific Marine Center

June 15, 1981
Date

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

OA/C352:SRB

November 6, 1981

TO: Glen R. Schaefer
Chief, Hydrographic Surveys Division

THRU: Chief, Quality Control Branch

FROM: S. R. Baumgardner
Quality Evaluator

SUBJECT: Quality Control Report for H-9476 (1974), California, San Clemente Island, Pyramid Cove

A quality control inspection of H-9476 was accomplished to monitor the survey for adequacy with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, smooth plotting, shoreline transfer, decisions made and actions taken by the verifier, and the cartographic presentation of data. Revisions and additions to the smooth sheet, plus helpful comments made to the verifier, are identified on a one-half scale copy of the survey to be furnished the verifier. In general, the survey was found to conform to the National Ocean Survey's standards and requirements except as stated in the Verifier's Report, the HIT Report, and as follows:

The hydrographer did not obtain an adequate number of bottom samples. Therefore, sand and rocky bottom characteristics were brought forward from prior surveys during quality control to provide this information. Also, some bottom characteristics that accompany shoal depths transferred to the present survey from the prior surveys during verification were depicted on the smooth sheet. (See sections 5-70 and 5-76 of the Hydrographic Manual, Publication 20-2.)

cc:
OA/C351

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

SEP 1 1982

C351:SJV

TO: CPM - Charles K. Townsend

FROM: for C3 - C. William Hayes Glen A Schaefer

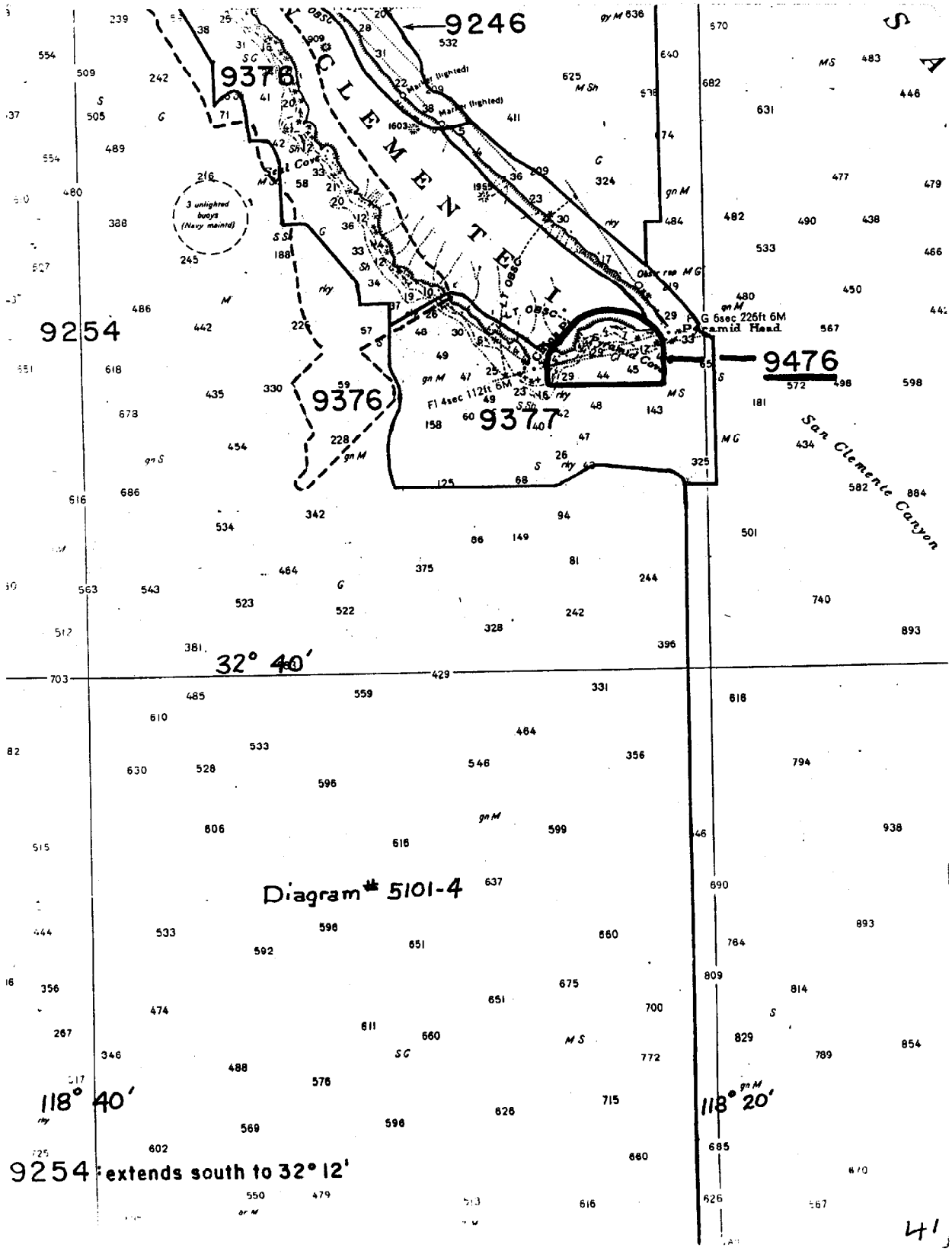
SUBJECT: H-9476 (1974), California, San Clemente Island, Pyramid Cove, Report of Compliance with Project Instructions

The smooth sheet and Descriptive Report for the subject survey have been examined. This survey, except as noted in the Quality Control Report, dated November 6, 1981 (copy attached), and the Hydrographic Survey Inspection Team Report, dated June 4, 1981, is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-411-RA-74, dated June 5, 1974.

Attachment

cc:
C352 w/o att.

43


9246
9376
9254
9376
9377
9476
CLEMENTE I.
Pyramid Head
Fl 6sec 226ft 6M
Fl 4sec 112ft 6M
3 unlighted buoys (Navy maintd)
San Clemente Canyon
32° 40′
118° 40′
118° 20′
Diagram # 5101-4
9254 extends south to 32° 12′

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

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9476

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
18764	11-3-82	R A Lillis	Full ~~Part Before~~ After Verification Review Inspection Signed Via
	11-12-82	Ray Spence	Drawing No. 10
18762	11-4-82	R. A. Lillis	Full ~~Part Before~~ After Verification Review Inspection Signed Via
	11-12-82	Ray Spence	Drawing No. 18
18774	11-5-82	R A Lillis	Full ~~Part Before~~ After Verification Review Inspection Signed Via
	11-16-82	Ray Spence	Drawing No. 3
18740	11-5-82	R. A. Lillis	Full ~~Part Before~~ After Verification Review Inspection Signed Via
	11-12-82	Ray Spence	Drawing No. 48
18020	11-8-82	R. A. Lillis	Full ~~Part Before~~ After Verification Review Inspection Signed Via
	11-12-82	Ray Spence	Drawing No. 34 No Corr
18022	11-8-82	R. A. Lillis	Full ~~Part Before~~ After Verification Review Inspection Signed Via
	11-12-82	Ray Spence	Drawing No. 43 No Corr
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.