

9499

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-20-2-75
Office No. H-9/99

LOCALITY

State CALIFORNIA
General Locality .. SANTA CATALINA ISLAND
Locality GOAT HARBOR TO WEST END

19 75

CHIEF OF PARTY

C. K. Townsend

LIBRARY & ARCHIVES

DATE 11/18/76

9499

Area 5
charts - 5142 app
R05 5128 app
5112 app
5101 app

HYDROGRAPHIC TITLE SHEET

H-9499

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-20-2-75

State California

General locality Santa Catalina Island

Locality Goat Harbor to West End
~~Santa Catalina Island~~

Scale 1:20,000

Date of survey 14-28 March, 1975

Instructions dated 22 January 1975

Project No. OPR-411-RA-75

Vessel NOAA Ship RAINIER launches 2123, 2124, 2125, 2126

Chief of party Cdr. Charles K. Townsend

G.W. STROBLE, C.A. CAVIN, B.K. MEZGER,

Surveyed by RAINIER Personnel A.D. PICKERELL, K.P. DOLAN, A.A. ARMSTRONG

Soundings taken by echo sounder, hand lead, pole Ross Model 5000 S/N's 1071, 1070, 1042, 1040-6

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Positions verified by

~~PROCESSED~~ by Karol M. Hoops

Automated plot by PMC Kynetics Plotter

Soundings verified

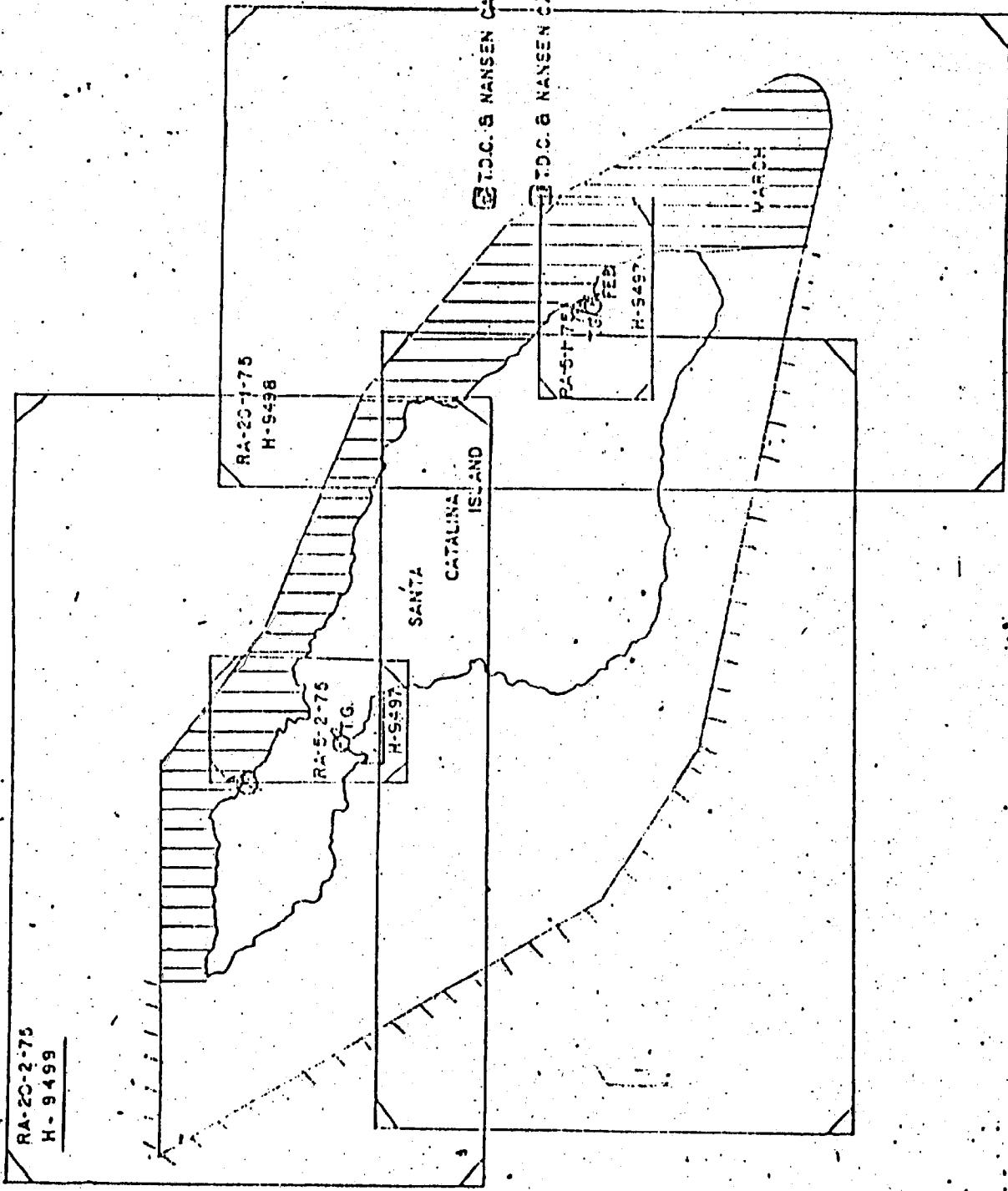
~~PROCESSED~~ by Karol M. Hoops

Soundings in fathoms ~~XXX~~ at ~~XXX~~ MLLW

REMARKS:

Applied to stels 3-16-77

CAB



A. PROJECT

This survey was conducted in accordance with PROJECT INSTRUCTIONS OPR-411-RA-75, Southern California Coast, dated 22 January, 1975.

B. AREA SURVEYED

This survey covers the north coast of Catalina Island, west of longitude 118° 25' 50" W. excluding the area of Isthmus Cove and approaches thereto. The seaward boundary is defined by the 110 fathom curve. The survey was conducted between 14 March, 1975 and 28 March, 1975, inclusive.

C. SOUNDING VESSELS

All soundings in this survey were obtained by NOAA Ship RAINIER (MSS-21) launches RA-6 (2126), RA-5 (2125), RA-4 (2124), and RA-3 (2123). Some bottom samples were obtained by RAINIER (2120).

D. SOUNDING EQUIPMENT

Soundings were obtained by ROSS Fathometers, model 5000, in conjunction with ROSS Digitizers, model 6000, serial numbers:

	Fathometer	Digitizer
RA-3	1071	1041-4
RA-4	1070	1080
RA-5	1042	1042
RA-6	1040-6	1040-6

A copy of fathometer calibration procedures is included as a separate following the text.

Bar checks were taken daily throughout the project on each launch.

Velocity corrections were determined from Nansen and TDC casts taken on March 3, 1975 and March 26, 1975. Vertical casts were taken for comparison purposes on two different days. When TRA and velocity correctors were applied to fathometer depths, they agreed very closely with the vertical casts.

Corrections were incorporated on Transducer Correction/Table Indicator (TC/TI) tapes for automated processing. For further information concerning sounding equipment and corrections refer to Corrections to Echo Soundings Report, OPR-411-RA-75.

E. BOAT SHEET

Transverse Mercator Projection and soundings were plotted by RAINIER personnel using the PDP8/e Hydroplot System (PDP8/e computer, S/N 1011, DP-3 Complot Plotter, S/N 4670-4). The system on RA-5 (PDP8/e, S/N 1015, DP-3 Complot Plotter, S/N 3750-3) was also used for plotting boatsheets. The first plot was dated Feb. 26, 1975. The last plot was dated March 26, 1975. There is no discernible distortion between the first and last.

Rough sheets were compiled daily and the semi-smooth plot collated as the work progressed. The final smooth sheet was plotted after all hydrography was complete. The main scheme soundings are plotted in black ink, crosslines in red ink, bottom samples in blue ink, prior surveys in green ink, junctions in blue ink, and pre-survey review items in light green ink.

F. STATION CONTROL

Station control for the electronic hydrography was based upon pre-existing triangulation, supplemented by two new triangulation stations established with methods that exceed third order precision. Information regarding these stations is available in the stations list following the text. The name, date, quadrangle, and numbers that appear in the published description of the triangulation station are included.

Raydist stations were established at NIKE ECC 1975 and ABALONE KNOLL 1884 for electronic control. Cabrillo Mole was used for a static calibration. The remaining stations on the list were used for dynamic sextant calibration of the electronic control system, and to establish NIKE ECC 1975 and CABRILLO MOLE 1975.

A computer paper tape punched in even parity ASCII is submitted with this report for the station list as it occurs in the separate following the text. Additionally, a computer paper tape without the descriptive information is submitted for the list to facilitate present processing procedures. A station list for the entire project is included for completeness. No paper tape is submitted for this list.

For further information concerning station control, see Horizontal Control Report, OPR-411-RA-75.

G. POSITION CONTROL

The Teledyne Hastings Raydist system (range-range phase comparison) was used for position control of soundings and detached positions. The

Raydist stations were positioned on shore as described in section F.

The Raydist sets used on RAINIER and the launches were as follows:

<u>VESSEL</u>	<u>SET</u>
RAINIER	1
RA-3	2
RA-4	2
RA-5	1
RA-6	4

Calibrations were taken at least twice a day, before and after the hydrography by three-point sextant fixes and computed using PDP8/e program RK-561. The corrections were not applied on line to the Hydroplot/Hydrolog system. They are inserted on the corrector tapes.

Refer to Section S and Electronic Control Report, OPR-411-RA-75 for more information concerning the application of correctors and the designation and operation of the Raydist sets.

H. SHORELINE

Shoreline was transferred from T-Sheet manuscripts (TP-00608, TP-00609) onto the boat sheets. The shoreline and topographic details were completed, for the area surveyed, by field edit verification. No significant changes in the shoreline have occurred, although a number of new rocks were located. Details on the manuscript that were verified are in black ink. New objects are described in red ink, objects from photographs in purple ink, and unverified objects in blue ink.

I. CROSSLINES

Approximately 42.3 nautical miles of hydrography run were crosslines. This equals 55% of the number of main-scheme miles of hydrography. Agreement of crosslines with main-scheme lines is excellent. At only one intersection is there a slight discrepancy (less than 3% of the depth). This is undoubtedly attributable to the steepness of the bottom since other soundings in both lines crossed with no discrepancy. In this case the shoaler sounding should be accepted.

J. JUNCTIONS

Junction was made with the following contemporary surveys:

<u>Reg. No.</u>	<u>Field No.</u>	<u>Scale</u>	<u>Date</u>
H-9497	RA-5-2-75	1:5,000	1975
H-9498	RA-20-1-75	1:20,000	1975

All soundings along these junctions agree very well.

K. COMPARISON WITH PRIOR SURVEYS

Pre-survey review items:

#28. There are numerous mooring buoys in the small coves along the coast. Detached positions of all significant mooring buoys in the entire survey are ~~are~~ provided. None of the buoys were lighted. These buoys are privately maintained and are very likely subject to frequent changes in position.

A 14 fathom shoal charted at latitude $33^{\circ} 28' 40''$, longitude $118^{\circ} 35' 34''$. on the edge of a foul area was investigated. The foul

area should be extended as shown on the field sheet to include the 2¹/₂-fathom sounding, position number 6175, at latitude 33° 28.61', longitude 118° 35.40'. The shoal, which actually merges into the foul area ~~may~~ ^{is} be represented by a 10³-fathom sounding at latitude 33° 28.6⁵/₃', longitude 33° 35.4³/₁' and a 4 fathom sounding at latitude 33° 28.6³/₅', longitude 118° 35.35'.

A 2 3/4 fathom shoal ^{charted} plotted at latitude 33° 27' 40", longitude 118° 31' 00" was investigated and confirmed. A least depth of 2 ⁵/₂ fathoms is located at latitude 33° 27' 39.9", longitude 118° 30' 59.6".

This survey is compared with H-5555, 1:20,000, 1934. The soundings obtained in 1975 are generally shoaler than those of 1934. The overall average difference of a randomly selected number of soundings is 1.5 fathoms, with differences ranging from 0 - 6 fathoms. The average difference inside the 50 fathom curve is .9 fathom; the average outside the 50 fathom curve is 1.9 fathom. When velocity correctors are applied to H-9498 (RA-20-2-75) this discrepancy will be largely eliminated. Any remaining differences probably reflect improved depth sounding procedures rather than a difference in positioning. Soundings from the contemporary survey are recommended to take precedence.

L. COMPARISON WITH THE CHART

Comparison with C&GS Charts 5128 and 5112 yields basically the same results as the comparison with the prior surveys.

A ~~least~~ depth of ⁵17 fathoms on a previously uncharted shoal was recorded at latitude 33° 28.79', longitude 118° 35.84'. The shoal is a steep pinnacle of ~~very~~ slight areal extent. The depth of ⁵17 fathoms is drawn from what is evaluated as a side echo on the fathogram. at position 6179 plus 15 seconds. *The bottom at 23 fms is plotted here* *a crossline at pos, 6577 plus 18"* The peak appears ~~on no other fathograms~~ *plotted as 11 fm. side echo, which is the least depth in the area.* in the area and is ~~not considered a hazard to navigation.~~ *feature is not plotted before position 6179.*

The charts should be updated to reflect the latest surveys with particular emphasis on the newly found shoal, and the changes noted in section K.

M. ADEQUACY OF SURVEY

H-9499 is a complete and adequate survey within the area described in section B., and is recommended to supersede all prior surveys in that area for charting purposes. All fathograms were scanned in the field for peaks and deeps and all fathogram annotations are clearly marked.

N. AIDS TO NAVIGATION

Two fixed aids to navigation are located within the survey area. A determination of the position of Ship Rock Light was made and is shown in the separate following the text. West End Light was not precisely located during this survey and it is recommended that this be accomplished when the southern coast of the island is surveyed. A tank of landmark value was located at latitude 33° 27.5',

OK

longitude $118^{\circ} 31.2'$. The area was compared with the largest scale chart available and with the Light List, both of which are correct and up to date. For more detailed information see Field Edit Report, OPR-411-RA-75.

O. STATISTICS

127.9 nautical miles of sounding lines were run, covering 14.8 square nautical miles. one magnetic station was observed at triangulation station PABLO 1875.

<u>Vessel</u>	<u>Mi. Hydro</u>	<u>Positions</u>	<u>D.P.'s</u>	<u>Bottom Samples</u>
RAINIER			10	10
RA-3	3.8	50		
RA-4	25.1	161		
RA-5	3.6	19	9	5
RA-6	95.3	460	24	15

Q. RECOMMENDATIONS

West End Light should be located when the south coast of the island is surveyed.

R. REFERENCES TO REPORTS

Field Edit Report, OPR-411-RA-75
Electronic Control Report, OPR-411-RA-75
Corrections to Echo Soundings Report, OPR-411-RA-75
Horizontal Control Report, OPR-411-RA-75
Coast Pilot Report, OPR -411-RA-75

S. DATA PROCESSING PROCEDURES

This project saw the implementation of "new format" hydroplot software. Difficulties arose in the initial use of these new programs and it became necessary to rely upon the old software to keep data acquisition and processing running smoothly. The problems stemmed from a variety of hardware-associated malfunctions that were eventually solved. After two weeks of a combination of old and new software usage, implementation of the new software began. (It was still necessary, however, to use AM 201 GRID AND LATTICE PLOT and AM 300 UTILITY COMPUTATIONS as the new format versions of these programs were not available. RK 201 GRID SIGNAL AND LATTICE PLOT replaced AM 201 when it arrived during the last week of the project.) For the first two weeks all data that had been acquired through the old format was transformed to the new format with computer program RK 337 UNSCRAMBLER for submission to Pacific Marine Center.

The following discussion deals primarily with processing of the hydrographic data in the production of the boat sheet. Information relating to tides processing procedures is contained in the Field Tide Note in the separates following the text. Field edit procedures can be referenced in the Field Edit Report, OPR-411-RA-75. Processing of the data followed instructions for the 1975 field season as set forth by the Processing Division of Pacific Marine Center in the letter dated 13 February 1975.

Sounding data for this boat sheet was collected by the hydroplot and hydrolog system and also by the ASI logger system. The tapes that came from the launches were not as clean as they should have been because the sounding and electronic control digitizing systems sporadically malfunctioned to the extent that hand logging became necessary at times. As a result it was not practical to correct the raw master tape with the corrector tape alone. After the fathograms and strip charts had been scanned at the end of the day, the master tapes were edited to correct sounding digitizer errors. A corrector tape was made to apply corrections to electronic control readings.

When electronic control digitizing system failed and the Raydist rates were logged by hand on the long records (fix numbers), then the Raydist rates were changed in the long records on the master tape to reflect the hand logging. The corrector tape would then contain (in addition to the normal corrections to electronic control readings) the in-between soundings using short records--time, indicator, and sounding. The indicator (3) would cause the plotting system to ignore the control information on the master tape for these in-between soundings and time and course plot the soundings between fixes (long records) on the master tape. In all circumstances, the depth and correctors as inserted through the corrector tape supersedes the depth and correctors on the master tape.

On Julian date 086 hand logging became necessary for both left

and right control readings on launch RA-3. The red (right) digitized control reading was found to be erroneous immediately. The correct reading was taken from the navigator and logged on the printout. The green (left) control reading appeared to be digitizing properly but after a short time malfunctioned. This malfunction was not found until after the day had ended. The values for the green control reading were then scaled from the strip chart recorder. Processing procedure continued as discussed in the previous paragraph.

Corrections for drift in the Raydist electronic system were handled by linear interpolation through the corrector tape. The method of linear interpolation used is shown in an example in Figure 1. The corrector at A, A', was from the beginning calibration and at D, D', was from the closing calibration for the period of hydrography. The corrector intervals a, b, c were chosen to be equal or approx-

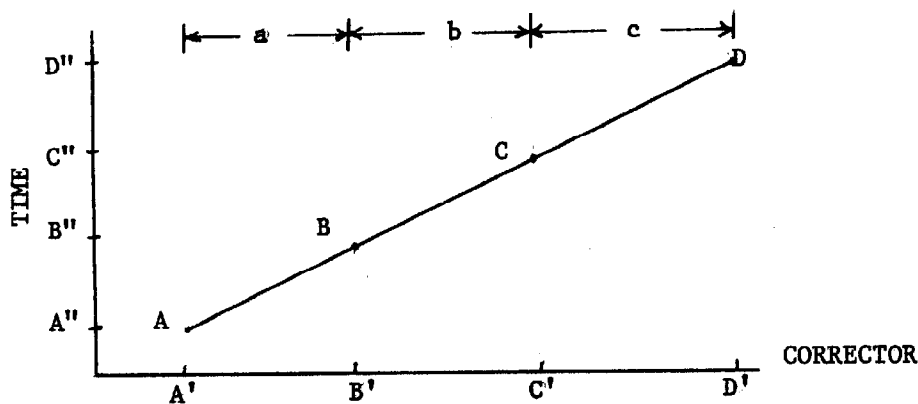


Figure 1

imately so at a convenient value not to exceed .05 lane of correction.

Both left and right Raydist correctors were considered to determine the interval for each electronic control corrector so that the correctors for both rates could be applied at the same time. The corrector that would be applied to a span of time would be the mean of the correctors at either end of the interval. For example, in Figure 1 the corrector from time A" to time B" would be computed as $\frac{A'+B'}{2}$. The values of A' and D' were taken from the dynamic sextant calibrations.

On Julian date 074, the aforementioned procedure resulted in a position plotting on shore. The calibrations were analyzed and it was surmised that a linear application of the correctors might be erroneous. A second calibration taken 50 minutes after the first showed that one half of the drift for the day had already occurred. The other half was measured six hours later. It seems more probable that the entire drift for the day occurred in the first hour or two after initial calibration (during equipment warm-up) and before the time of the suspect position.

A second corrector tape, based on this premise is provided, and recommended to take precedence over the standard corrector tape.

Further information on calibration procedure can be found in Electronic Control Report, OPR-411-RA-75.

Plots were made using the edited master tapes and corrector tapes as discussed in the preceding paragraphs. Teletype printouts were made of the raw data as ^{it}~~it~~ was acquired in the launch and were

also made of the final master and corrector tapes.

Bottom samples and detached positions were obtained in the field and were then transferred to a separate sounding volume. Latitudes and longitudes for bottom samples and detached positions were computed and then plotted on the boat sheets (on the final boat sheet for bottom samples and on a separate sheet for detached positions). Signals were plotted on the boat sheets with AM 202 VISUAL STATION TABLE LOAD AND PLOT and arcs of the electronic control stations were plotted on the boat sheets with RK 201 GRID SIGNAL AND LATTICE PLOT. Pre-survey review items, prior surveys, and junction soundings were transferred to the final boat sheet by hand and shoreline was transferred from the appropriate T-sheet manuscripts under the supervision of field edit.

For sounding data acquired by launches RA-3 and RA-4 a latitude and longitude was computed for the fix at the beginning of a line that started the day or that started after a LBKS (line breaks). The latitudes and longitudes were then recorded on the original printout with the corresponding fixes.

Boat sheets submitted with this report include the rough boat sheets used in the launches, the semi-smooth boat sheet (a semi-complete boat sheet used by the ship for processing and planning purposes), the final boat sheet, a plot of detached positions, an expansion plot of a development, and a corrected plot of positions

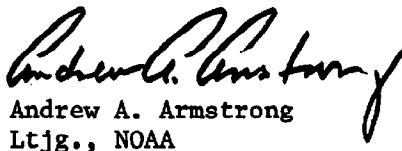
6007 to 6148.

A listing of the computer programs and their respective version dates used during data acquisition and processing follows:

<u>Program</u>	<u>Version</u>	<u>Title/Description</u>
AM 100	10Nov72	REAL TIME HYDRO PLOT
RK 111	7Aug74	RANGE-RANGE REAL TIME HYDRO PLOT/HYDROLOG
RK 161	7May74	RANGE RANGE REAL TIME HYDRO PLOT
AM 170	10Nov72	REAL TIME HYDROLOG
AM 200	10Nov72	OFF-LINE POSITION AND SOUNDING PLOT
AM 201	10Nov72	GRID AND LATTICE PLOT
RK 201	19Feb75	GRID SIGNAL AND LATTICE PLOT
AM 202	10Nov72	VISUAL STATION LOAD AND PLOT
RK 211	16Aug74	RANGE-RANGE POSITION AND SOUNDING PLOT
RK 212	1Apr74	VISUAL STATION LOAD AND PLOT
AM 300	24May73	UTILITY COMPUTATIONS
AM 301	8Dec72	VISUAL STATION TABLE MAKER (VISTA)
RK 301	12Aug74	VISUAL STATION TABLE MAKER (VISTA)
MI 335	1Apr73	DATA TAPE TIME CHANGE
RK 337	8Aug74	UNSCRAMBLER
PM 360	21Mar74	ELECTRONIC CORRECTOR ABSTRACT
RK 407	15Aug74	GEODETTIC DIRECT AND INVERSE COMPUTATIONS
RK 409	5Sep73	GEODETTIC UTILITY PACKAGE
AM 500	10Nov72	PREDICTED TIDE GENERATOR
RK 530	25Jun74	VELOCITY CORRECTION COMPUTATIONS
RK 561	1Jul74	GEODETTIC CALIBRATION
AM 602	10Mar72	ELINORE LINE EDITOR
AM 603	10Oct72	BINARY TAPE CONSOLIDATOR
AM 607	1Jan71	SELF-STARTING BINARY LOADER

FOCAL SCALING PROGRAM (used for photo signal computations)
13Aug73 WANG intersection for TTY output 700/PF/022

Respectfully submitted,


Andrew A. Armstrong
Ltjg., NOAA

APPROVAL SHEET

H-9499 (RA-20-2-75)

OPR-411-RA-75

Southern California

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

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


Charles K. Townsend
CDR., NOAA

STATION LIST
 OPR-411-RA-75
 ALL BOAT SHEETS

101 3 33 42 59296 118 18 50585 250 0041 329646
 NIKE ECC 1975 33 118 1 SW
 REF COMPUTATIONS IN DESCRIPTIVE REPORTS
 THIS POSITION TO SUPERSEDE PREVIOUS POSITION AS
 USED DURING HYDROGRAPHY

102 3 33 33 22471 117 49 02200 250 0064 329646
 ABALONE KNOLL 1884 33 117 4 1001
 ELEVATION FROM TOPOGRAPHIC MAP (NOT CRITICAL
 FOR SLOPE REDUCTION OF LONG RANGES)

103 3 33 20 29530 118 19 14170 139 0000 000000
 FLAGSTAFF 1934 33 118 2 1059

104 3 33 20 51210 118 19 38660 139 0000 000000
 CARILLION 1934 33 118 2 1056

105 3 33 20 55860 118 19 29289 139 0000 000000
 CASINO 1934 33 118 2 1057

106 3 33 20 55706 118 19 26946 139 0000 000000
 CASINO FLAGPOLE 1934 33 118 2 1058
 THIS POSITION TO SUPERSEDE PREVIOUS POSITION
 AS USED DURING HYDROGRAPHY

107 6 33 20 42439 118 19 15206 139 0003 000000
 CABRILLO MOLE (RAYDIST CALIBRATION SITE)
 CENTER OF NORTHERNMOST GROUP OF CORNER PILINGS
 OF PIER REF COMPUTATIONS IN DESCRIPTIVE REPORTS
 THIS POSITION TO SUPERSEDE PREVIOUS POSITION AS
 USED DURING HYDROGRAPHY

108 3 33 20 34055 118 18 59390 139 0046 000000
 FORLIS 1975 33 118 2
 REF COMPUTATIONS IN DESCRIPTIVE REPORTS
 THIS POSITION TO SUPERSEDE PREVIOUS POSITION AS
 USED DURING HYDROGRAPHY

109 0 33 20 53973 118 19 22760 139 0005 000000
 AVALON BAY NORTH LIGHT (LIGHT 2) 33 118 2
 REF COMPUTATIONS IN DESCRIPTIVE REPORTS
 THIS POSITION TO SUPERSEDE PREVIOUS POSITION AS
 USED DURING HYDROGRAPHY

CONTINUED ON NEXT PAGE

STATION LIST
 OPR-411-RA-75
 (CONTINUED)

110	3	33	20	53362	118	19	42610	139	0134	000000		
				LOW POLE 1917			33 118 2			1030		
111	3	33	20	34015	118	19	44220	139	0069	000000		
				NEW 1917			33 118 2			1031		
112	3	33	20	42264	118	19	16006	139	0000	000000		
				AVALON BAY SOUTH LIGHT (LIGHT 1)			33 118 2					
				REF COMPUTATIONS IN DESCRIPTIVE REPORTS								
				THIS POSITION SUPERSEDES PREVIOUS POSITION AS								
				USED DURING HYDROGRAPHY								
113	3	33	43	54664	118	19	55263	139	0270	000000		
				BENCH 1870, 1960			33 118 1 SW			3002		
114	3	33	42	17354	118	17	35087	139	0034	000000		
				NAVY 1921			33 118 1 SW			3017		
115	3	33	43	31144	118	20	11312	139	0105	000000		
				SEA BENCH 1870			33 118 1 SW			3028		
116	3	33	27	47328	118	29	26698	139	0000	000000		
				BIRD ROCK 1875			33 118 2			1002		
117	3	33	26	34796	118	29	57251	139	0000	000000		
				GLO NO 1 1933			33 118 3			1021		
118	3	33	26	20864	118	29	52181	139	0000	000000		
				SANTA CATALINA NORTH BASE 1875			33 118 2			1041		
119	3	33	26	09118	118	29	47419	139	0000	000000		
				ISTHMUS 1933			33 118 2			1026		
120	3	33	27	04406	118	29	10363	139	0000	000000		
				WHITE ROCK 1875			33 118 2			1052		
121	3	33	26	48080	118	28	38316	139	0000	000000		
				CHANNEL 1933			33 188 2			1010		
122	3	33	27	10897	118	30	02584	139	0000	000000		
				CHERRY 2 1933			33 118 3			1005		
123	3	33	26	35309	118	30	28427	139	0000	000000		
				PROSPECT 2			33 118 3			1021		

CONTINUED ON NEXT PAGE

STATION LIST
 OPR-411-RA-75
 (CONTINUED)

124	3	33	27	54658	118	31	17979	139	0000	000000
				PABLO	1875			33	118	3 1020
125	3	33	42	58678	118	18	50766	139	0000	000000
				NIKE	1975	33	118	1	SW	
				REF COMPUTATIONS IN DESCRIPTIVE REPORTS						
				THIS POSITION SUPERSEDES PREVIOUS POSITION AS						
				USED DURING HYDROGRAPHY						
201	3	33	20	27461	118	18	50461	243	0000	000000
				PHOTO	TP-00612					
202	6	33	20	33661	118	18	55023	243	0000	000000
				PHOTO	TP-00612					
203	6	33	20	36939	118	18	59315	243	0000	000000
				PHOTO	TP-00612					
204	3	33	20	38854	118	19	12837	243	0000	000000
				PHOTO	TP-00612					
205	4	33	20	38043	118	19	18792	243	0000	000000
				PHOTO	TP-00612					
206	6	33	20	39341	118	19	24128	243	0000	000000
				PHOTO	TP-00612					
207	5	33	20	44859	118	19	32944	243	0000	000000
				PHOTO	TP-00612					
208	0	33	20	48105	118	19	34104	243	0000	000000
				PHOTO	TP-00612					
209	3	33	21	09413	118	19	38442	243	0000	000000
				PHOTO	TP-00612					
210	3	33	21	04707	118	19	39680	243	0000	000000
				PHOTO	TP-00612					
211	6	33	20	34634	118	19	22659	243	0000	000000
				PHOTO	TP-00612					
212	5	33	20	39860	118	19	30547	243	0000	000000
				PHOTO	TP-00612					

CONTINUED ON NEXT PAGE

STATION LIST
 OPR-411-RA-75
 (CONTINUED)

213	3	33	20	58233	118	19	34298	243	0000	000000
				PHOTO			TP-00612			
214	6	33	20	33368	118	19	03944	243	0000	000000
				PHOTO			TP-00612			
215	6	33	20	33888	118	19	06148	243	0000	000000
				PHOTO			TP-00612			
216	3	33	20	19508	118	18	45202	243	0000	000000
				PHOTO			TP-00612			
217	7	33	20	14607	118	18	39788	243	0000	000000
				PHOTO			TP-00612			
218	3	33	20	17142	118	18	43818	243	0000	000000
				PHOTO			TP-00612			
219	5	33	20	15159	118	18	41737	243	0000	000000
				PHOTO			TP-00612			
220	3	33	20	16587	118	18	54513	243	0000	000000
				PHOTO			TP-00612			
221	3	33	20	22040	118	19	08669	243	0000	000000
				PHOTO			TP-00612			
222	3	33	21	20495	118	19	47334	243	0000	000000
				PHOTO			TP-00612			
223	3	33	21	33193	118	19	54082	243	0000	000000
				PHOTO			TP-00612			
224	3	33	20	31518	118	19	58333	243	0000	000000
				PHOTO			TP-00612			
225	3	33	26	44534	118	29	02361	243	0000	000000
				PHOTO			TP-00611			
226	3	33	26	41418	118	28	52802	243	0000	000000
				PHOTO			TP-00611			
227	3	33	26	38204	118	29	00503	243	0000	000000
				PHOTO			TP-00611			

CONTINUED ON NEXT PAGE

STATION LIST
 OPR-411-RA-75
 (CONTINUED)

228	3	33	26	37977	118	29	05884	243	0000	000000		
				PHOTO			TP-00611					
229	3	33	26	40087	118	29	12233	243	0000	000000		
				PHOTO			TP-00611					
230	3	33	26	31995	118	29	23773	243	0000	000000		
				PHOTO			TP-00611					
231	3	33	26	31738	118	29	30292	243	0000	000000		
				PHOTO			TP-00611					
232	3	33	26	26613	118	29	34898	243	0000	000000		
				PHOTO			TP-00611					
233	3	33	26	27230	118	29	41344	243	0000	000000		
				PHOTO			TP-00611					
234	3	33	26	28992	118	29	48776	243	0000	000000		
				PHOTO			TP-00611					
235	3	33	26	31330	118	29	49311	243	0000	000000		
				PHOTO			TP-00611					
236	3	33	26	39620	118	29	56104	243	0000	000000		
				PHOTO			TP-00611					
237	3	33	26	45066	118	29	50340	243	0000	000000		
				PHOTO			TP-00611					
238	3	33	26	47773	118	29	55346	243	0000	000000		
				PHOTO			TP-00611					
239	3	33	26	48653	118	29	57970	243	0000	000000		
				PHOTO			TP-00611					
243	3	33	26	52688	118	29	55431	243	0000	000000		
				PHOTO			TP-00611					
				DUPLICATED IN STATION 303								
300	3	33	26	48396	118	30	01812	243	0000	000000		
				PHOTO			TP-00611					
301	3	33	26	50412	118	30	00643	243	0000	000000		
				PHOTO			TP-00611					

CONTINUED ON NEXT PAGE

STATION LIST
 OPR-411-RA-75
 (CONTINUED)

302	3	33	26	51896	118	29	58385	243	0000	000000
				PHOTO			TP-00611			
303	3	33	26	52688	118	29	55431	243	0000	000000
				PHOTO			TP-00611			
				DUPLICATE OF STATION 243						
304	3	33	26	57608	118	29	59890	243	0000	000000
				PHOTO			TP-00611			
305	3	33	27	01016	118	30	06497	243	0000	000000
				PHOTO			TP-00611			
306	3	33	27	01143	118	30	07806	243	0000	000000
				PHOTO			TP-00611			
307	3	33	27	02490	118	30	10020	243	0000	000000
				PHOTO			TP-00611			
308	3	33	27	05158	118	30	07748	243	0000	000000
				PHOTO			TP-00611			
309	3	33	27	08297	118	30	05335	243	0000	000000
				PHOTO			TP-00611			
310	3	33	26	28291	118	29	06093	243	0000	000000
				PHOTO			TP-00611			
311	3	33	26	44673	118	28	45095	243	0000	000000
				PHOTO			TP-00611			
312	3	33	28	52226	118	28	49612	243	0000	000000
				PHOTO			TP-00611			
313	3	33	26	50273	118	28	58148	243	0000	000000
				PHOTO			TP-00611			
314	3	33	26	46634	118	28	55346	243	0000	000000
				PHOTO			TP-00611			
315	3	33	27	16158	118	30	22720	243	0000	000000
				PHOTO			TP-00611			

CONCLUDED ON NEXT PAGE

STATION LIST
OPR-411-RA-75
(CONCLUDED)

316	3	33	27	15795	118	30	24772	243	0000	000000	
				PHOTO			TP-00611				
317	3	33	27	17207	118	30	27823	243	0000	000000	
				PHOTO			TP-00611				
318	3	33	27	19482	118	30	28434	252	0000	000000	
				REFERENCE FIELD EDIT REPORT OR							
				DESCRIPTIVE REPORT FOR COMPUTATIONS							
319	3	33	27	26044	118	30	50902	252	0000	000000	
				REFERENCE FIELD EDIT REPORT OR							
				DESCRIPTIVE REPORT FOR COMPUTATIONS							
320	3	33	27	23642	118	30	44594	252	0000	000000	
				REFERENCE FIELD EDIT REPORT OR							
				DESCRIPTIVE REPORT FOR COMPUTATIONS							

DESCRIPTIVE REPORT CONTROL RECORD

MAP TP - 60608 PROJECT NO. PH-7112 SCALE OF MAP 1:20,000 SCALE FACTOR NONE

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR Y COORDINATE		DISTANCE FROM GRID OR PROJECTION LINE IN METERS (2 PL. = 304800 meters)	N.A. 1927 - DATUM
			LONGITUDE OR X COORDINATE	FORWARD		
LACT POINT, 1875	Quod. 531183 STAN. NO. 1001	N.A. 1927	33° 28' 29.779"	118° 34' 42.969"	917.4	(931.1)
			118° 34' 42.969"	33° 28' 32.420"	1109.5	(439.7)
SLE, 1933	" " " " 1014	" "	118° 34' 06.903"	33° 28' 22.252"	998.8	(849.9)
			33° 28' 22.252"	118° 33' 17.901"	178.2	(1370.9)
DUNK POINT, 1874	" " " " 1030	" "	118° 33' 17.901"	33° 28' 39.665"	462.2	(1163.0)
			33° 28' 39.665"	118° 36' 13.298"	1222.0	(226.5)
ND, 1934	" " " " 1008	" "	118° 36' 13.298"	33° 28' 31.989"	343.4	(1205.7)
			33° 28' 31.989"	118° 32' 12.464"	985.5	(863.0)
E.D. PEAK 2, 1933	" " " " 1022	" "	118° 32' 12.464"	33° 27' 54.658"	320.3	(1228.8)
			33° 27' 54.658"	118° 31' 17.979"	1683.9	(164.6)
4820, 1875	" " " " 1020	" "	118° 31' 17.979"	33° 27' 10.897"	464.9	(1085.0)
			33° 27' 10.897"	118° 30' 02.584"	335.7	(1512.5)
LE ROY 2, 1933	" " " " 1005	" "	118° 30' 02.584"	33° 25' 22.460"	691.9	(1482.9)
			33° 25' 22.460"	118° 30' 43.896"	1134.1	(156.6)
ONE, 1875	" " " " 1008	" "	118° 30' 43.896"	33° 26' 56.890"	1752.7	(416.0)
			33° 26' 56.890"	118° 34' 47.146"	1217.6	(95.8)
JLL, 1934	" " " " 1011	" "	118° 34' 47.146"	33° 25' 59.771"	1841.4	(332.0)
			33° 25' 59.771"	118° 33' 12.897"	1600.2	(7.1)
ORN, 1934	" " " " 1013	" "	118° 33' 12.897"	33° 25' 51.942"	333.2	(1216.7)
			33° 25' 51.942"	118° 31' 58.208"	1600.2	(248.3)
OVR, 1875	" " " " 1028	" "	118° 31' 58.208"	33° 25' 40.510"	1503.7	(46.3)
			33° 25' 40.510"	118° 30' 20.398"	1248.0	(600.5)
LARS 505, 1933	" " " " 1012	" "	118° 30' 20.398"	33° 25' 30.203"	527.0	(1023.0)
			33° 25' 30.203"			

CHECKED BY

DATE

1433
 2nd K 1433

DESCRIPTIVE R. CRT CONTROL RI RD

MAP TP-00608 PROJECT NO. PH-7112 SCALE OF MAP 1:20,000 SCALE FACTOR NONE

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR Y COORDINATE		DISTANCE FROM GRID OR PROJECTION IN METERS (1 FT. = 3048006 meters)	N.A. 1927 - DATUM
			LONGITUDE OR X COORDINATE	FORWARD		
✓ GRAPE, 1876	Quad 331182 STA. NO. 1023	N.A. 1927	33° 22' 16.547"	118° 28' 47.876"	509.8	(1338)
			118° 28' 47.876"	1237.6	(313.4)	
✓ SLIP, 1933	" " 1043	"	33° 21' 23.032"	118° 29' 10.934"	709.6	(1138.9)
			118° 29' 10.934"	282.7	(1258.6)	
✓ CHANNEL, 1933	" " 1010	"	33° 26' 48.080"	118° 28' 38.316"	1481.2	(367.3)
			118° 28' 38.316"	789.6	(566.1)	
✓ FISH NOOK 1933	" " 1017	"	33° 24' 04.554"	118° 29' 04.773"	140.5	(1708.2)
			118° 29' 04.773"	123.3	(1477.2)	
✓ WHITE BUOY, 1876	" " 1051	"	33° 23' 30.442"	118° 28' 41.942"	937.2	(911.3)
			118° 28' 41.942"	1083.9	(466.8)	
✓ SANTA CATALINA ISLAND	" " 331183	"	33° 25' 58.649"	118° 30' 04.703"	1806.9	(41.6)
			118° 30' 04.703"	121.5	(1428.4)	
✓ SANTA CATALINA ISLAND	" " 331182	"	33° 26' 20.864"	118° 29' 52.181"	652.8	(1205.7)
			118° 29' 52.181"	1347.8	(201.9)	
✓ CANAL, 1933	" " 1008	"	33° 21' 20.735"	118° 28' 33.467"	639.8	(1209.7)
			118° 28' 33.467"	865.3	(686.0)	
✓ WEST POINT, 1933	" " 331183	"	33° 28' 20.269"	118° 35' 46.851"	774.4	(1224.1)
			118° 35' 46.851"	1209.1	(1339.5)	
✓ WHITE ROCK, 1876	" " 331182	"	33° 27' 04.406"	118° 29' 10.363"	135.7	(1712.8)
			118° 29' 10.363"	267.6	(1282.0)	
✓ GLO NO. 1, 1933	" " 1021	"	33° 26' 34.796"	118° 29' 57.251"	1072.0	(776.5)
			118° 29' 57.251"	1478.8	(70.9)	

COMPUTED BY
 J. A. Gustafson

DATE
 1/8/74

CHECKED BY
 F. R. Gustafson

DATE
 1-11-74

LOCATION OF WEST END LIGHT

The position of West End Light on Santa Catalina Island was verified by taking sextant angles from a launch. Using triangulation intersection station SHARP as a reference point, the angles between SHARP and West End Light were taken simultaneously with a Raydist fix. From the Raydist fix, which gave a geographic position of the sextant, and sextant angles, an azimuth was computed giving an azimuth from a known geographic position to the light.

Five sets of angles were observed. Set No. 1 and No. 5 have 6 positions in each set and sets 2 through 4 have 3 positions in each set giving 21 azimuth from 21 geographic positions. From this data inverse computations from each geographic position determined by Raydist to station SHARP were done using program RK-407. Azimuths were then calculated by adding the sextant angle to the azimuths from the launch position to SHARP.

Computation of the position started with a graphic solution to determine any busts in the Raydist positions or the sextant angles. Second, intersections were computed using the Wang Program for intersections. The intersections were random and were used to check the final position. For the computation of the final position a program was written, intersection by least square method, to accept all data. The documentation is included in this report, (Appendix C).

The graphic solution indicated that there were no busts. The intersections to check the final solution agreed with the final

solution within a meter. The position of the light was computed to

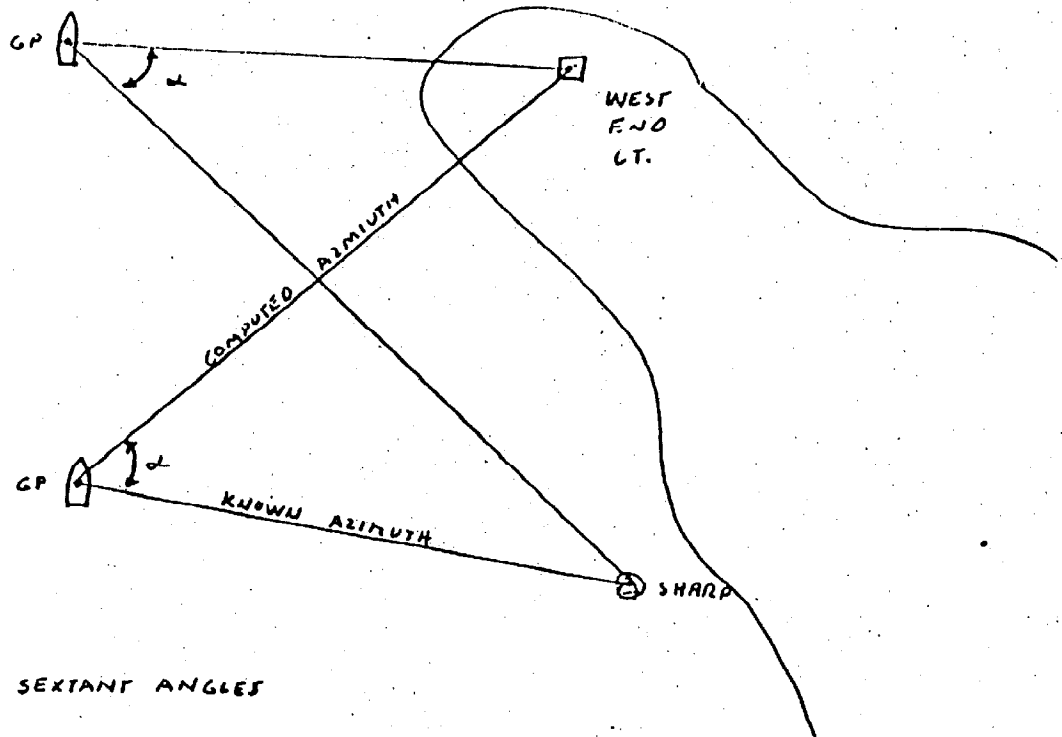
be: 33/28/42.826 118/36/17.546

33/28.7138 118/36.2924

The published position in the light list is:

33/28.7 118/36.3

The computations are as follows:



α = SEXTANT ANGLES

GP = POSITION OF LAUNCH DETERMINED BY RADIFF.

STATION

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

122

ABSTRACT OF DIRECTIONS

STATE

CALIFORNIA

COMPUTED BY

GBS

DATE

2 OCT 75

VOLUME NO.

OBSERVER

STANKE / READ

CHECKED BY

GBS / LER

INSTRUMENT NO.

SEXTANT FIXES

SHEET _____ OF _____

POSITION NO.	STATIONS OBSERVED							
	SHARP	WEST END LIGHT	WEST END LIGHT	WEST END LIGHT	WEST END LIGHT	WEST END LIGHT		
	(INITIAL) 0° 00'	SET #1	SET #2	SET #3	SET #4	SET #5	"	"
1	0.00	19°23'21"	25°11'05"	28°08'30"	20°51'23"	13°15'59"		
2	0.00	19°32'21"	25°29'15"	28°09'14"	20°37'16"	13°07'14"		
3	0.00	19°38'23"	25°35'02"	28°07'56"	20°30'45"	12°58'15"		
4	0.00	19°10'46"				12°47'58"		
5	0.00	19°09'47"				12°34'34"		
6	0.00	19°18'14"				12°25'42"		
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							
SUM,								
MEAN,	*	FIVE SETS OF ANGLES WERE TAKEN WITH A NO. OF POSITIONS						
COR. FOR ECC.,		IN EACH SET, THERE IS A GEOGRAPHIC POSITION FOR EACH POSITION						
DIRECTION,		IN EACH SET, GEOGRAPHIC POSITIONS WERE DETERMINED WITH RADIST CONTR.						

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

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

36

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): Avalon Bay

Period: February 27-March 29, 1975

HYDROGRAPHIC SHEET: H-9499

OPR: 411

Locality: Off the northeast coast of Santa Catalina Island

Plane of reference (mean lower low water): 2.79 ft.

Height of Mean High Water above Plane of Reference is 4.60 ft.

Remarks: Zone direct.

James R. Hurlburt
for Chief, Tides Branch

GEOGRAPHIC NAMES

Survey No. 9499

Name on Survey	On Chart No 5112		On previous charts	On U.S. S. 2025	From local information	(Report)	On local maps	P. O. Guide of Map	Rand McNally A. S.	U. S. Light List	Shoreline Manuscripts
	A	B									
ARROW POINT ✓ X	X									TP-00608	1
BIRD ROCK ✓ X	X									00608	2
BLACK POINT ✓ X	X									00608	3
BLUE CAVERN POINT ✓ X	X										4
CABRILLO HARBOR ✓ X										00609	5
CHERRY COVE ✓ X	X									00608	6
CHERRY VALLEY ✓ X	X										7
EAGLE REEF ✓ X	X									00608	8
EMERALD COVE BAY ^{CSH} ✓ X	X									00608	9
EMPIRE LANDING ✓ X	X									00609	10
FISHERMAN COVE ✓ X	X									00608	11
FOURTH OF JULY COVE ✓ X	X									00608	12
GOAT HARBOR ✓ X	X									00609	13
HOWLAND LANDING ✓ X	X									00608	14
INDIAN ROCK ✓ X	X									00608	15
ISTHMUS COVE ✓ X	X									00608	16
JOHNSONS LANDING ✓ X	X									00608	17
LION HEAD ✓ X	X									00608	18
LITTLE GIBRALTAR ✓ X										00609	19
LORENZO BEACH ✓ X										00608	20
PARSONS ^{mCR} LANDING ✓ X	X									00608	21
PARSONS ^{CSH}	X										22
RIPPERS COVE } Pending Investigation by CSH				X							23
SANDY BEACH } Pending Investigation by CSH				X						00608	24
SAN PEDRO CHANNEL ✓ X	X									00609	25
SANTA CATALINA ISLAND ✓ X	X										26

GEOGRAPHIC NAME

Survey No. 9499

Name on Survey	On Chart No. 5112		C	D	E	F	G	H	U. S. Light List	Shoreline Manuscript
	A	B								
SHIP ROCK ✓ ✓	X								00608	1
STONY POINT ✓ ✓	X								00608	2
TWIN ROCKS ✓ ✓	X								00609	3
TWO HARBORS ✓ ✓	X									4
VALLEY OF OLLAS ✓ ✓	X								00609	5
WEST END ✓ ✓	X								00608	6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
									APPROVED	18
									<i>Chas. E. Harrington</i>	19
									STAFF GEOGRAPHER - C51x2	20
									23 Nov. 1976	21
										22
										23
										24
										25
										26

Geographic Names

Three new geographic names should be added to the C&GS Chart 5112, scale 1:40,000.

Rippers Cove is a new name which identifies a cove approximately 3.2 nautical miles northwest of Long Point, on the east side of Santa Catalina Island. It is located along the coastline at latitude 33° 35' 38"N, extending from longitude 118 25' 23" to 118 25' 30"W.

The cove which is located just SE of Arrow Point at 33 26' 55"N, 118 31' 41"W, according to the Chart 5112, is called Emerald Cove. This should be changed to Emerald Bay.

In Emerald Bay, the sand beach is commonly known as Sandy Beach.

These names were obtained from a map of the island, published by the City of Avalon. For more information refer to the Field Edit Report, OPR-411-RA-75.

A section of the C&GS Chart 5112, scale 1:40,000, is included for the definition of these areas.

APPROVAL SHEET

FOR

SURVEY H- 9999

- 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 Nov 76

Signed: 

Title: Chief, Verification Branch

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. 9499

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT			
SMOOTH SHEET & smooth PNO, excess overlays	1	BOAT SHEETS (2 parts & DP ovly)	XX 1			
DESCRIPTIVE REPORT	1	OVERLAYS	3 XX			
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES			1			
CAHIERS	1 -with printouts		XX			
VOLUMES	3 X					
BOXES						
T-SHEET PRINTS (List) not received from PNC TP-00608, TP-00609						
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				1311
POSITIONS CHECKED		1311		
POSITIONS REVISED		5		
DEPTH SOUNDINGS REVISED		110		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		0		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		0		
		TIME (PERSON HOURS) - Don't be tricky		
Verification of Control		3	MANHOURS	
Verification of Positions		107		
VERIFICATION OF SOUNDINGS		97		
Smooth Sheet		18		
ALL OTHER WORK		10		
TOTALS	4	235	HIT 9	
PRE-VERIFICATION BY James S. Green, Chief Verification Branch	BEGINNING DATE 4 June 1975	ENDING DATE 4 June 1975		
VERIFICATION BY <i>Karol M. Hoops</i> Karol M. Hoops, Cartographic Technician	BEGINNING DATE 14 July 1975	ENDING DATE 20 Sept. 1976		
REVIEW BY G.C. INSPECTION - F. SAULSBURY	BEGINNING DATE Dec. 20, 1976	ENDING DATE Jan. 11, 1977		

Carstens 1/19/77 14 h U.S. G.P.O. 1972-769-562/439 REG.#6 45

REGISTRY NO. H-9499

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

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

CARDS CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

REGISTRY NO. _____

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

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

MAGNETIC TAPE CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

H-9499

Items for Future Presurvey Reviews

Side echos reducing to 15 and 11 fathoms were found in the vicinity of latitude 33°28.79', longitude 118°35.84'. The least depth of this shoal should be determined.

<u>Position Index</u>		<u>Bottom Change Index</u>	<u>Use Index</u>	<u>Resurvey Cycle</u>
<u>Lat.</u>	<u>Long.</u>			
332	1183	1	1	50 years
332	1184	1	1	50 years

VERIFIER'S REPORT

RA-20-2-75

H-9499

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 survey, off the north end of Santa Catalina Island was accomplished by NOAA Ship RAINIER in March 1975 in accordance with project instructions dated 22 January 1975.

Originally this survey was to extend around West End to include the northwesterly side of the island. With the chart adequacy survey conducted by the NOAA Ship RAINIER in the fall of 1975, along the western side of Catalina Island, to supplement this survey it was considered complete for processing and charting.

There were no major problems encountered during verification of this survey. There did appear to be a slight problem with electronic ranges reading long. The verifier concluded that this was magnified by the size of the numerals and the scale of the survey.

The steep slope of the bottom just offshore gives the impression that 2 to 5 fathom soundings fall on the high water line or rocks when they may be as far as 50 meters offshore. The high water line is broken for those soundings which remain on the smooth sheet. Those soundings detracting from the portrayal of rocks are placed in excess.

Boatsheet parameters have been revised to combine both complot sheets and center the hydrography on the smooth sheet. Smooth sheet parameters are appended.

Tide correctors for this survey were computed using hourly heights from Avalon Bay marigrams, approved by Tides Branch, Rockville. The approved Form 712 is appended.

II. CONTROL AND SHORELINE

The unreviewed Class I maps TP-00608 and TP-00609 were used for transferring shoreline and other topographic features. The dates of photography were not recorded and compilation data is not shown on the manuscripts. Field edit for the shoreline area included in this survey was accomplished during the 1975 field season by NOAA Ship RAINIER.

When transferring the shoreline to the smooth sheet, where the rocks were too abundant to accurately present, only the highest and/or the outermost rocks are shown.

Ship Rock Light 1975 as depicted on TP-~~00608~~ ,Class I map is not a triangulation station and was located by sextant cuts. Bird Rock 1875 is the triangulation station and is not the same geographic position of Ship Rock Light. (See Light List.)

West End Light 1975 as shown on the ~~same~~ manuscript is also erroneously depicted. This light was also located by sextant fixes, therefore should be labeled only West End Light as shown on the smooth sheet.

The ~~200~~ series numbers on the Harris computer listing of signals for H-9499 are added aids to navigation, not the ~~200~~ series photo picked stations used elsewhere during the project and listed with the ship's signal list in their descriptive report.

III. HYDROGRAPHY

The area covered by H-9499 does not lend itself to proper delineation of the inshore depth curves or foreshore interpretation at the scale of this sheet. (See VIII. Compliance with Project Instructions later in this report.)

The hydro as displayed in this survey does, however, show a stable bottom which has been adequately surveyed previously.

Crosslines are in good agreement and an adequate number of bottom samples were taken.

IV. CONDITION OF SURVEY

The smooth sheet, overlays, and all other hydrographic records adequately conform to the requirements of the Provisional Hydrographic Manual.

V. JUNCTIONS

This survey junctions with H-9498, 1975 (1:20,000) to the East and H-9497, 1975 (1:5,000) in Isthmus Cove.

The junction with H-9498 is in very good agreement. Junction curves and note are inked.

The junction with H-9497 is generally in good agreement. Junction curves and note are inked accordingly.

There are no contemporary surveys junctioning elsewhere within the sheet limits.

VI. COMPARISON WITH PRIOR SURVEYS

This survey was compared with H-5555, 1934 (1:20,000); H-5556, 1934 (1:10,000); and H-5658, 1934 (1:20,000). All comparisons were in very good agreement.

Pre-survey review item #28 and unnumbered items within survey limits are adequately described in section K of the ship's descriptive report.

Pre-survey review item #21 was not discussed in the ship's report. The seven mooring buoys have been located by the hydrographer and are plotted on the smooth sheet. These are privately maintained and subject to change of location.

In areas of common hydrography, H-9499 is adequate to supplement the above prior surveys.

VII. COMPARISON WITH CHART

Comparison was made with Chart 5128, 7th Edition, April 10, 1971 (1:10,000) and 5112, 5th Edition, October 7, 1972 (1:40,000). Detailed comparison with both charts which encompass H-9499 indicated very good agreement.

Due to excessive line spacing on this survey and very good prior survey comparison, it is recommended that this survey be used in conjunction with prior surveys for chart application.

VIII. COMPLIANCE WITH PROJECT INSTRUCTIONS

Areas of less than 20 fathoms were run with line spacing of 150 to 200 meters which is more than specified in project instructions. The scale of the survey, 1:20,000, does not allow adequate spacing as prescribed in the project instructions.

The verifier recommends a chart adequacy type investigation in this area rather than surveys of this type unless some dramatic change is apparent.

IX. ADDITIONAL FIELD WORK

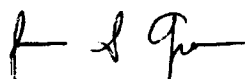
This is an adequate survey to supplement the prior surveys of the area and to confirm that additional field work is not needed in the area of H-9499. Future consideration should be given to chart adequacy surveys as suggested in section VIII of this report.

Respectfully submitted,



Karol M. Hoops
Cartographic Technician
September 21, 1976

Examined and approved,



James S. Green
Chief, Verification Branch



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

Date: 2 November 1976

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

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

Subject: PMC Hydrographic Survey Inspection Team Report, H-9499

This survey is a basic hydrographic survey of the alongshore area of the northeastern portion of Santa Catalina Island, California. The survey was conducted by NOAA Ship RAINIER in 1975 in compliance with Project Instructions OPR-411-RA-75 dated 22 January 1975.


Nearshore (less than 20 fathoms) development on this survey is minimal. The nearshore area is developed on 200 meter spacing despite the project instruction requirement for 100 meter spacing around rocky points and spits. Prior survey H-5555 (1934) depicts significantly more detail in the nearshore area and in the deeper water portions of the survey area than H-9499. The 1:20,000 scale of this survey is not conducive to thorough nearshore development. The area would have been better surveyed at a scale of 1:10,000.


A 15 fathom sounding at latitude 33°28.79'N, longitude 118°35.84'W lies in an area of depths in excess of 30 fathoms. The vicinity was insufficiently developed to state conclusively that the least depth was found. In fact, the single 15 fathom sounding is the only sounding less than 30 fathoms in the immediate vicinity. *Lesser depth of 11 from side echo evaluation used instead of 15*


The quality of Class I shoreline manuscripts served to complicate the verification process. It appears that the manuscripts were compiled at a scale of 1:10,000 and then reduced to 1:20,000 resulting in a very congested representation. As a result, it was necessary to selectively apply shoreline detail to the smooth sheet (see Verifier's Report, Sect. II).

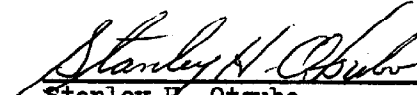
This survey is in substantial compliance with project instructions. However, the extent of hydrographic coverage is considerably less than prior survey H-5555 (1934). Since the present survey is in very good agreement with H-5555, it is recommended that H-5555 not be superseded by H-9499 but rather that both surveys be used concurrently in future charting of the area.

The inspection team finds H-9499 to be a fair survey. The survey data is appropriate for charting but should be used in conjunction with H-5555 (1934). Shoreline detail should be charted from H-9499. Administrative approval is recommended.


Donald E. Nortrup, LCDR


John C. Albright, LCDR



Dean R. Seidel, LCDR


Stanley H. Otsubo

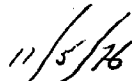
Administrative Approval

H-9499

The smooth sheet and reports of this survey have been examined and the survey data is appropriate for charting purposes. The survey, when used in conjunction with survey H-5555 (1934), is adequate for charting.



Eugene A. Taylor, RADM
Director, Pacific Marine Center



Date



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

C352

January 14, 1977

a J Petrol
TO: Chief, Marine Surveys Division

THRU: Chief, Quality Control Branch

FROM: F. P. Saulsbury *F.P. Saulsbury*
Quality Evaluator

SUBJECT: Quality Control Report for H-9499 (1975), California, Santa Catalina Island, Goat Harbor to West End

Survey H-9499 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. No elevation was furnished for the tank plotted on the present survey as a landmark in latitude $30^{\circ}26.47'$, longitude $118^{\circ}29.11'$.
2. The hydrographic title sheet item "Surveyed by" is noted as RAINIER Personnel. The surveyors should be identified by name.
3. A side echo reducing to 15 fathoms at position 6179 plus 15 seconds was plotted in latitude $33^{\circ}28.79'$, longitude $118^{\circ}35.84'$ and described in the Descriptive Report as appearing on no other fathograms in this area. Rescanning of the fathograms during quality control inspection revealed a shoal trace, considered to be a side echo, reducing to 11 fathoms at position 6577 plus 18 seconds, approximately 50 meters northeast of the 15-fathom sounding. The 11-fathom sounding was plotted. The 15-fathom sounding was removed and replaced with the true depth of the bottom under the vessel which reduced to 23 fathoms. Future investigation should determine the least depth of this shoal.
4. Prior surveys of 1934 along this coast were detailed and well done. With the addition of some inshore soundings, rocks awash, and rock elevations, the present survey is adequate to supersede the prior surveys



54

within the common area. Should shoreline studies or chart compilation require additional soundings, they can be obtained from the 1934 surveys.

5. An examination of the fathograms covering inshore areas generally revealed kelp traces coming to the surface. The existence of the kelp is generally not noted in the records nor was it shown on the smooth sheet. It was subsequently added from reviewed photogrammetric maps.

6. Many items of field edit information shown on the western boat sheet were processed using real tide correctors and added to the smooth sheet during quality control inspection.

7. The islet charted in latitude $33^{\circ}28.12'$, longitude $118^{\circ}31.58'$ from an undetermined source is plotted on the present survey from field edit information, with real tides applied, as a rock awash uncovering 6 feet at MLLW.

8. The two piers charted from an undetermined source in latitude $33^{\circ}28.12'$, longitude $118^{\circ}31.79'$ at Johnsons Landing are not on the present survey nor do they appear on the contemporary reviewed photogrammetric manuscript T-00608 (1972-75). Their retention as ruins is recommended.

9. The names of lights should have been in red slanting letters instead of black vertical letters.

Because of scale limitations, a number of inshore sunken rocks and rocks awash shown on the boat sheet, generally within outlined foul or kelp areas, are not plotted on the smooth sheet. The two boat sheets for the survey, containing field edit information, are filed with the printouts. The shoreline has been compared with reviewed photogrammetric manuscripts T-00608 and T-00609 of 1972-75.

cc:
C351

