

9732

Diag. Cht. No. 5202-2

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-20-4-77 ..
Office No..... H-9732 ..

LOCALITY

State CALIFORNIA ..
General Locality SANTA BARBARA CHANNEL ..
Locality OFFSHORE SANTA BARBARA ..

1977

CHIEF OF PARTY
James P. Randall

LIBRARY & ARCHIVES

DATE June 26, 1978 ..

9732

Charts

18020

18022

18720 ✓

18721 ✓

18725 ✓

HYDROGRAPHIC TITLE SHEET

H-9732

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-20-4-77

State California

General locality Santa Barbara Channel

Locality Offshore Santa Barbara

Scale 1:20,000

Date of survey Nov. 21-29, 1977

Instructions dated 3 Aug 77

Project No. OPR-411-RA-77

Vessel NOAA Ship RAINIER S221 (Vessel 2120), Launch RA-3 (Vessel 2123)

Chief of party CAPT James P. Randall

Surveyed by Survey Team Leader: LCDR L. Lapine; Team Member: ENS J. Barnett

Soundings taken by echo sounder, ~~XXXXX, XXXXX~~ Ross Fathometer Model 5000

Graphic record scaled by RAINIER Survey Department

Graphic record checked by RAINIER Survey Department

Positions verified

Protracted by Donald E. Zimmer

Automated plot by PMC Xynetics Plotter

Verification by Donald E. Zimmer

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

REMARKS: Time Meridian: 0° (GMT)

*Appd. std's. 9-19-78
WST*

DESCRIPTIVE REPORT
TO ACCOMPANY HYDROGRAPHIC SURVEY
H-9732
RA-20-4-77

A. PROJECT

This survey was accomplished in accordance with PROJECT INSTRUCTIONS, OPR-411-RA-77, Southern California Coast, dated 3 August 1977; Change No. 1: Supplement to Instructions, dated 16 September 1977; Change No. 2: Supplement to Instructions, dated 16 December 1977. ✓

B. AREA SURVEYED

The survey was conducted in the Santa Barbara Channel off the California coast. The area surveyed was trapezoidal in shape, covering approximately 72 square nautical miles bounded on the north by parallel 34/19/00 N, on the east by meridian 119/33/54 W, on the west by meridian 119/46/48 W, and on the south by a delineation of the 110 fathom depth curve (roughly a line running 112°T from a point on the western boundary of the survey; Latitude 34/14/24 N, Longitude 119/46/42 W). ✓

Survey operations began on 21 November 1977 (J.D. 325) and were completed on 29 November 1977 (J.D. 333).

C. SOUNDING VESSELS

Vessels used in this survey were RAINIER S221 (2120), and automated aluminum launch RA-3 (2123). All bottom sampling and most hydrography was accomplished by RAINIER. Launch RA-3 was used to fill in an area around the drilling ship ZAPATA TRADER and ran some short development lines. ✓

D. SOUNDING EQUIPMENT

For RA-20-4-77 all echo soundings were taken with Ross Fathometer Systems which include the following components: Ross Model 4000 Transceiver, Ross Model 5000 Analog Recorder, Ross Model 6000 Digitizer and 100 khz transducer. The following is a list of components used with their respective serial numbers: ✓

<u>COMPONENT</u>	<u>RAINIER (2120)</u>	<u>RA-3 (2123)</u>
Transceiver	1041	1080
Analog Recorder	1042	1071
Digitizer	1042	1080

For information detailing the procedures to obtain Corrections to Echo Soundings, refer to: Echo Sounding Report, OPR-411-RA-77.

E. HYDROGRAPHIC SHEETS

The modified transverse mercator projection and all soundings were plotted by RAINIER personnel using PDP/8e Complot Systems. Smooth field sheets were constructed and plotted using PDP/8e Computer S/N 01015 and Complot Plotter S/N 5848. Rough sounding plots were made daily and a semi-smooth sounding plot collated at the end of the survey. The smooth field sheet was begun on 9 December 1977 and completed on 12 December 1977. No discernable distortion was detected. Preliminary velocity correctors, TRA, and predicted tides were applied to all data on the smooth field sheets. Control meridian for the projection is 119/30/00 W, control Latitude 37/54/00 N.

F. CONTROL STATIONS

Temporary stations RESERVOIR and BATES ECC were established by RAINIER personnel as sites for Raydist shore stations. Both eccentric points were positioned by spur traverses from established stations as follows: RESERVOIR from station SANTA BARBARA 2 1956 and BATES ECC from station BATES 1927. The geographic positions of these points were based on the 1927 North American Datum and were computed using Third Order, Class I survey procedures. Neither temporary point was monumented or described.

Numerous previously positioned 3rd order landmarks on or near the coastline in the vicinity of Ventura, Oxnard, and Port Hueneme were used as visual signals for the calibration of hydrographic position control systems. For a complete listing of these stations, the reader is referred to the Master Station List attached to this report.

Various aids to navigation and landmarks on or near the coast were positioned by RAINIER personnel in conjunction with hydrographic survey operations. For discussion of the positioning of these objects, as well as detailed discussion of the establishment of temporary points and stations mentioned above, the reader is referred to: Horizontal Control Report, OPR-411-RA-77, Southern California.

G. HYDROGRAPHIC POSITION CONTROL

Position control was provided by electronic range-range methods using Teledyne Hastings Raydist. Two (2) Raydist shore stations, station RESERVOIR, signal 102, and station BATES ECC, signal 111, were established and used for controlling hydrography on sheet H-9732. Station RESERVOIR was equipped with a Red Raydist Transmitter, S/N 232, while station BATES ECC was equipped with a Green Raydist Transmitter, S/N 233. For a detailed discussion of the two Raydist shore stations, see Electronic Control Report, OPR-411-RA-77.

Two (2) vessels were used during the survey work: NOAA Ship RAINIER (EDP No. 2120) and Launch RA-3 (EDP No. 2123). The same Raydist positioning equipment was used in both vessels and was as follows: Raydist Transmitter S/N 167, Raydist Navigator S/N 115, Raydist Position Indicator S/N 118, and Hazlow Navigation Interface S/N 35. ✓

Raydist equipment calibrations for both vessels were performed at the beginning and end of each day's hydrographic survey operations. Equipment calibrations on RAINIER were accomplished by visual means using three-point sextant fixes with check angles. Equipment calibrations on Launch RA-3 were accomplished by running at a slow speed along a known range and noting Raydist rates when crossing a set of angles to a third signal (on range and visual). Methods of calibration, in detail, are discussed in Electronic Control Report, OPR-411-RA-77. ✓

At least four (4) readings were made during each calibration to obtain sufficient data to calculate a mean corrector to the partial (fractional) lane counts. Partial lane counts which differed from the mean by more than 0.2 (10 meters) lanes were rejected. The morning and evening calibration results were meaned to obtain correctors used in smooth plotting of survey data. ✓

The two (2) Raydist shore stations and all electronic control equipment used on board the two (2) survey vessels performed flawlessly throughout the survey. ✓

H. SHORELINE

There was no shoreline in the area surveyed. ✓

I. CROSSLINES

Crosslines on this survey totaled 32.6 n.m., 18% of the mainscheme mileage. Crossline agreement was excellent with 89% of the crossings agreeing exactly and the remaining 11% disagreeing by only one (1) fathom. This discrepancy could be attributed to rounding or a slight difference in the position of the soundings compared. ✓

The crossline running north and south along Longitude 119/37/48 W shows a jog to the east where RAINIER maneuvered to avoid traffic.

J. JUNCTIONS

The eastern boundary of survey RA-20-4-77 joins contemporary surveys RA-20-3-77 and RA-20-2-77 along Longitude 119/33/54 W. The junction with RA-20-3-77 extends from Latitude 34/19/00 N, south to Latitude 34/13/24 N. This area is characterized by a regular gently sloping bottom resulting in excellent agreement between the surveys. Comparison of the 38 coincidental soundings in the overlapping area shows 95% (36 soundings) are in exact agreement and the remaining 5% (2 soundings) differ by only one (1) fathom. Additional soundings lying ✓

in the overlap provide no direct means of comparison (sounding locations do not coincide) but show excellent agreement through continuity of depth curves and trends of bottom relief.

The junction with RA-20-2-77 extends from Latitude 34/13/20 N, south to Latitude 34/10/00 N. Very little overlap exists between the two (2) surveys and only two pairs of soundings coincide; one agreeing exactly and one differing by one (1) fathom. A comparison of depth curves however shows excellent continuity between the sheets. The slight discrepancy in soundings could be due to rounding or a small difference in position of the soundings compared.

Survey RA-20-4-77 was divided into two boat sheets, RA-20-4A-77 and RA-20-4B-77. The boat sheets join along Latitude 34/14/00 N with all coincidental soundings in the overlapping area agreeing exactly.

The junction of work done by RAINIER and launch RA-3 showed excellent agreement with 93% of the 26 soundings compared, agreeing exactly and the remaining 7% differing by one (1) fathom.

K. COMPARISON WITH PRIOR SURVEYS

This survey was compared to prior survey H-5030, a 1:^B50,000 scale survey conducted in 1930. The surveys were compared using a Kargyl Reflecting Projector and the H-5030 soundings plotted in brown on the smooth sheet. Of 29 coincidental soundings compared 59% (17 soundings) agreed exactly, 38% (11 soundings) agreed within one (1) fathom, and one (1) sounding showed a difference of three (3) fathoms. The 3 fathom discrepancy occurs in an area of rapidly changing depth and is probably due to a slight misposition of the soundings compared. Depth contours, compared on the reflecting projector, show excellent agreement.

One unnumbered presurvey review item, a plateau with soundings of 61 fathoms (Latitude 34/13/6 N, Longitude 119/40/54 W) and 62 fathoms (Latitude 34/13/18 N, Longitude 119/40/42 W) in surrounding depths of 75 to 100 fathoms, was investigated in this survey. The area surrounding these soundings, approximately 1.7 square nautical miles, was developed with lines running east and west at 100 meter spacing to fully delineate the plateau. This development with preliminary velocity correctors, TRA, and predicted tide, exhibits a least depth of 56 fathoms (position #3694, Latitude 34/13/12 N, Longitude 119/40/48 W; and position #3826, 6th out, Latitude 34/13/23 N, Longitude 119/40/50 W). It is recommended that this least depth be charted in the future.

This survey includes a 100 meter spaced development over an area of approximately .28 square nautical miles defining a deep of 103 fathoms

(with preliminary correctors) located at Latitude 34/12/09 N, Longitude 119/37/56 W. It is recommended this feature be charted in the near future.

Six (6) east and west development lines approximately 0.8 n.m. in length with 100 meter spacing were run in an area centered about Latitude 34/13/21 N, Longitude 119/37/30 W to investigate indications of shoaling. No significant shoaling exists.

Two (2) east and west development lines, approximately 0.9 miles (n.m.) in length centered about Latitude 34/12/40 N, Longitude 119/36/51 W were run to investigate indications of a peak. No significant formation exists.

L. COMPARISON WITH THE CHART

This survey was compared to two charts; Chart 18725 (C&GS 5120), 15th edition, 12 February 1977, a 1:50,000 scale chart covering about 90% of the area surveyed (from the eastern boundary to Longitude 119/45/00 W), and Chart 18721 (C&GS 5066), 5th edition, 10 July 1976, a 1:80,000 scale chart covering the remainder of the survey (from Longitude 119/43/00 W to the western boundary).

Comparison was accomplished using a Karyl reflecting projector. Of the 78 soundings compared, 80% (62 soundings) agreed exactly, 15% (12 soundings) differed by 1 fathom, 1% (1 sounding) differed by 2 fathoms, and 4% (3 soundings) differed by 3 fathoms. These discrepancies can be attributed to rounding or a slight difference in position of the soundings compared. The 3 fathom differences all occurred in depths approaching 100 fathoms and represent a maximum error of 3%. Agreement of depth curves was nearly exact with only slight offsets most likely due to the lower sounding density of the prior survey. Agreement with the chart is considered excellent throughout.

M. ADEQUACY OF SURVEY

Survey H-9732 is complete and adequate to supercede all prior surveys for charting purposes. All fathogram field survey records were scanned and checked for peaks and deeps; appropriate changes were made to the original records.

N. AIDS TO NAVIGATION

No fixed or floating aids to navigation were located in the survey area.

O. STATISTICS

<u>VESSEL NO.</u>	<u>N.M.</u>	<u>SQ. MI.</u>	<u>POSITIONS</u>	<u>BOTTOM SAMPLES</u>
2120	223.3	72	933	43
2123	16.1	2	104	0
TOTAL	239.4	74	1037	43

P. MISCELLANEOUS

No other significant scientific observations were made during this survey, however, it should be noted that expanding exploitation of the Santa Barbara Channel oil field will mean frequent location of drilling equipment in the area and continued submarine and surface construction associated with oil and gas production.

Q. RECOMMENDATIONS

No part of this survey is considered inadequate or incomplete for charting. No special insets are required on either the smooth sheet or the chart for clarity.

R. AUTOMATED DATA PROCESSING

Data acquisition and processing were accomplished per instructions in the Provisional Hydrographic Manual, Manual Automated Hydrographic Surveys, and the PMC OORDER.

Soundings and positions were taken by the Hydroplot system using program RK-111. There are daily master tapes and corresponding corrector tapes which include the ship's TRA, electronic control calibration corrections, and all depth corrections. Velocity correction tapes were generated from Nansen Cast Data. The following is a list of all computer programs used for data acquisition or processing:

<u>PDP/8e</u>	<u>Version Date</u>
RK 111 Range-Range Real Time Hydroplot	01/30/76
RK 201 Grid, Signal, and Lattice Plot	04/18/75
RK 211 Range-Range Non-Real Time Plot	01/15/76
RK 300 Utility Computations	02/05/76
RK 330 Reformat and Data Check	05/04/76
RK 360 Electronic Corrector Abstract	02/02/76
RK 407 Geodetic Inverse, Direct Comp.	10/23/75
RK 409 Geodetic Utility Package	09/15/73

This is not the full list of the PDP/8e

Data Processing Programs (con't)

<u>PDP/8e</u>	<u>Version Date</u>
AM 500 Predicted Tide Generator	11/10/72
RK 530 Layer Corrections for Velocity	05/10/76
RK 561 H/R Geodetic Calibration	02/19/75
AM 602 ELINORE - Line Oriented Editor	05/20/75
AM 603 Tape Consolidator	10/10/72
RK 606 Tape Duplicator	08/22/74

S. REFERENCES TO REPORTS

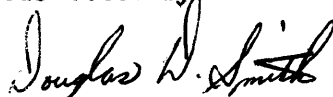
The following reports contain information related to this survey:

HORIZONTAL CONTROL REPORT, OPR-411-RA-77

ECHO SOUNDING REPORT, OPR-411-RA-77

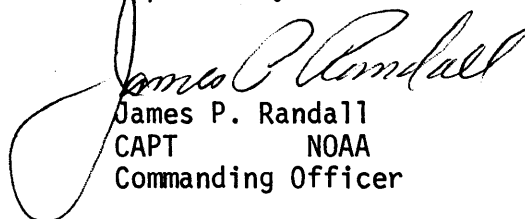
ELECTRONIC CONTROL REPORT, OPR-411-RA-77

Respectfully
Submitted by:



Douglas D. Smith
ENS NOAA

Approved by:



James P. Randall
CAPT NOAA
Commanding Officer

APPROVAL SHEET
DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY

H-9732

RA-20-4-77

OPR-411-RA-77

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

The boatsheet and the accompanying records have been examined and are complete and adequate for charting purposes and are approved.



JAMES P. RANDALL

CAPTAIN, NOAA

MASTER STATION LIST
OPR-411
SOUTHERN CALIFORNIA

FINAL VERSION

101	4	34	01	06933	119	34	30939	254	0540	329652	
/HIGH ECC. RED RAYDIST STATION											341193
102	4	34	24	15814	119	42	54120	254	0134	329652	
/RESERVOIR RED AND GREEN RAYDIST STATION											341193
103	4	34	08	42491	119	12	30114	250	0000	000000	
/LIGHT RM 1 1976 M/R											341192
105	4	34	18	02199	119	19	47980	250	0341	000000	
/CHAFFEE 2 1923 M/R											341192
108	4	34	11	58485	119	14	49763	250	0003	000000	
/TEAL 2 1959 M/R											341192 (1010)
109	4	34	22	41786	119	27	36574	250	0158	000000	
/BATES 1927 M/R											341192
110	6	34	20	39533	119	24	25800	250	0201	000000	
/SEACLIFF 1927 M/R											341192
111	4	34	22	40961	119	27	38005	254	0133	329652	
/BATES ECC GREEN RAYDIST											341192
200	1	34	08	42574	119	12	32584	139	0000	000000	
/POINT HUENEME LIGHTHOUSE 1948 1965											341192 (1073)
201	4	34	09	08341	119	11	33712	139	0000	000000	
/PORT HUENEME MUNICIPAL WATER TANK 1960											341192 (1039)
202	4	34	09	54919	119	12	08822	139	0000	000000	
/PORT HUENEME NCBC WATER TANK #374 1976											341192 (1037)
203	4	34	09	30260	119	12	28588	139	0000	000000	
/PORT HUENEME NCBC WATER TANK #431 1960											341192 (1038)
205	4	34	12	23155	119	15	01278	139	0000	000000	
/SO CAL EDISON CO MANDALAY GENERATING STA STACK 1959 1960											341192

206	4	34	07	46581	119	10	02336	139	0000	000000	
/ORMOND BEACH SCE EAST STACK 1976											341192
207	1	34	07	47422	119	10	03517	139	0000	000000	
/ORMOND BEACH SCE WEST STACK 1976											341192
208	4	34	08	38236	119	12	55094	139	0000	000000	
/POINT HUENEME WEST JETTY LIGHT #3 1976											341192
209	3	34	08	34970	119	12	39498	139	0000	000000	
/POINT HUENEME EAST JETTY LIGHT #4 1976											341192
210	3	34	08	44416	119	12	41589	139	0000	000000	
/POINT HUENEME CHANNEL LIGHT #5 1976											341192
211	5	34	08	42807	119	12	37020	139	0000	000000	
/PORT HUENEME CHANNEL LIGHT #6 1977											341192
212	4	34	09	07775	119	12	17390	139	0000	000000	
/POINT HUENEME RANGE FRONT LIGHT 1976											341192
213	1	34	09	34907	119	13	59973	139	0000	000000	
/CHANNEL IS HARBOR BREAKWATER NORTH LIGHT 1976											341192
214	4	34	09	16202	119	13	45677	139	0000	000000	
/CHANNEL IS HARBOR BREAKWATER SOUTH LIGHT #1 1976											341192
219	5	34	08	42534	119	12	30153	139	0000	000000	
/ABANDONED USCG TWR 1976											341192
220	4	34	17	46952	119	16	21333	139	0000	000000	
/P T & T MICROWAVE TWR 1976											341192
221	4	34	20	49661	119	26	40567	139	0019	000000	
/RINCON IS LIGHT 1977											341192
222	4	34	22	43258	119	28	49986	139	0014	000000	
/CASA (CADH) 1974											341192
223	1	34	20	39657	119	24	25171	139	0202	000000	
/TANK (NEAR SEACLIFF 1927) 1977											341192
224	4	34	16	56630	119	17	31757	139	0000	000000	
/VENTURA COUNTY COURTHOUSE CUPOLA 1933 1959											341192

225 4	34 06	30312	119 03	49559	139 0000	000000	
/SIXTY FT. LAGUNA PEAK RADAR DISK(RADAR DOME) 1977							341192
226 4	34 00	56817	119 21	30853	139 0054	000000	
/ANACAPA LT 1933							341192
227 4	34 06	54196	119 02	54802	139 0000	000000	
/VORTAC 1976							341192
228 4	34 23	46726	119 43	17883	139 0013	000000	
/SANTA BARBARA LTHSE 1941 1956							341193
230 4	34 15	00698	119 16	21567	139 0000	000000	
/VENTURA MARINA BREAKWATER NORTH LIGHT 1977							341192
231 3	34 14	46890	119 16	18364	139 0000	000000	
/VENTURA MARINA BREAKWATER SOUTH LIGHT #1 1977							341192
232 2	34 14	46369	119 16	09509	139 0000	000000	
/VENTURA MARINA SOUTH JETTY LIGHT #2 1977							341192
233 4	34 14	52018	119 16	13395	139 0000	000000	
/VENTURA MARINA NORTH JETTY LIGHT #3 1977							341192
300 4	34 19	08729	119 21	52764	243 0000	000000	
/PHOTO SIGNAL						TP-00924	
301 4	34 18	41532	119 21	30000	243 0000	000000	
/PHOTO SIGNAL						TP-00924	
302 4	34 18	05682	119 20	43140	243 0000	000000	
/PHOTO SIGNAL						TP-00924	
303 2	34 22	29666	119 28	41134	243 0000	000000	
/PHOTO SIGNAL						TP-00924	
304 2	34 22	31639	119 28	20408	243 0000	000000	
/PHOTO SIGNAL						TP-00924	

VELOCITY CORRECTOR TAPE LISTING
RA-20-4-77 (H-9732)

TABLE NO. 4
VESSEL-2120 (RAINIER)
SCALE-FATHOM

000043	0	0000	0004	001	212000	009732
000070	0	0001				
000100	0	0002				
000132	0	0003				
000160	0	0004				
000195	0	0005				
000235	0	0006				
000267	0	0007				
000308	0	0008				
000352	0	0009				
000400	0	0010				
000450	0	0011				
000500	0	0012				
000550	0	0013				
000605	0	0014				
000657	0	0015				
000710	0	0016				
000775	0	0017				
000818	0	0018				
000880	0	0019				
000910	0	0020				
000960	0	0021				
001020	0	0022				
001070	0	0023				
001120	0	0024				
001170	0	0025				
001230	0	0026				
001270	0	0027				
001340	0	0028				
001380	0	0029				
001440	0	0030				
999999	0	0031				

VELOCITY CORRECTOR TAPE LISTING
RA-20-4-77 (H-9732)

TABLE NO. 5
LAUNCH-2123 (RA-3)
SCALE-FATHOM

000017	0	0000	0005	001	212300	009732
000047	0	0001				
000074	0	0002				
000106	0	0003				
000137	0	0004				
000167	0	0005				
000200	0	0006				
000235	0	0007				
000275	0	0008				
000320	0	0009				
000365	0	0010				
000410	0	0011				
000460	0	0012				
000510	0	0013				
000560	0	0014				
000615	0	0015				
000665	0	0016				
000717	0	0017				
000765	0	0018				
000820	0	0019				
000870	0	0020				
000920	0	0021				
000970	0	0022				
001030	0	0023				
001090	0	0024				
001140	0	0025				
001200	0	0026				
001240	0	0027				
001300	0	0028				
001350	0	0029				
001510	0	0030				
999999	0	0031				

FIELD TIDE NOTE

H-9725, H-9728, H-9730, H-9732

OPR 411

SANTA BARBARA CHANNEL, CALIFORNIA

Los Angeles Outer Harbor, California predicted tides (reduced to Ventura, California) were used for field tide reduction of soundings for H-9725, H-9728, H-9730, H-9732. PROGRAM AM 500, PREDICTED TIDE GENERATOR (version 10 November 1972) was used to convert predicted tides to GMT tide correctors. All tidal observations were performed on GMT (000⁰W). Time errors were noted on the observation forms. One tide station was established to monitor the tides within the project limits of H-9725, H-9728, H-9730, and H-9732:

<u>Station</u>	<u>Location</u>	<u>Dates</u>
T1, Point Mugu Lagoon Entrance (Ocean), 941-1015	LAT 34 ⁰ 05' 54" N LON 119 ⁰ 05' 48" W	10/12/77 - 12/1/77 50 days

T1, Point Mugu Lagoon Entrance (Ocean), 941-1015

The T1 gage was a Fisher Porter ADR, SN 7404A0407M1. On the ADR tape, 21.374 feet equalled 0.0 feet on the fixed tide staff. Metric installation levels were run to 5 benchmarks on 12 October 1977 and metric removal levels to the same benchmarks on 20 November 1977 with the levels indicating that the tide staff did not move. Twelve minute staff/gage comparison observations were accomplished on 13 October 1977 from well before to well after high and low tide stages. A tide observer was contracted for this station. The time for T1 was reset on the following days because the timer was 1 minute slow: 20 Oct 77, 25 Oct 77, 2 Nov 77, 7 Nov 77, 15 Nov 77, 18 Nov 77, and 30 Nov 77. On 30 October 1977 the gage ceased to operate because of a paper jam. The gage was repaired on 31 October 1977 and continued to operate for the remainder of the project. The chart paper skipped ahead 12 minutes on 18 November 1977 and the time was reset on 21 November 1977, all times between these two days are 12 minutes ahead of time. The paper tape was removed on 18 November 1977 and again when the gage was removed.

Gage to Predicted Tides Comparison

The T1 gage was compared to the predicted tides on 8 days during its operation. The gage and predicted tides do not agree very well for the

middle period of the gage's operation. There was heavy surf from a storm front in the area before the days of disagreement between the tide gage and the predicted tides.

<u>Date</u>	<u>T1</u>			<u>Predicted Tides</u>		
	<u>High</u>	<u>Low</u>	<u>Range</u>	<u>High</u>	<u>Low</u>	<u>Range</u>
10/13/77	1700Z	2336Z	6.53 ft	1650Z	2337Z	6.56 ft
10/16/77	1927Z	0118Z	6.34 ft	1856Z	0118Z	6.17 ft
10/23/77	1542Z	0915Z	2.50 ft	1453Z	0836Z	5.09 ft
11/01/77	2036Z	0418Z	2.91 ft	1919Z	0219Z	3.92 ft
11/07/77	1542Z	0924Z	2.90 ft	1411Z	0751Z	4.31 ft
11/15/77	2000Z	0230Z	6.23 ft	1938Z	0204Z	6.26 ft
11/23/77	1530Z	2236Z	5.89 ft	1520Z	2220Z	6.07 ft
11/30/77	1842Z	0142Z	4.71 ft	1850Z	0148Z	4.61 ft

Recommended Zoning

Unless Rockville smooth tides display a significantly different comparison, zoning is not recommended because the predicted tides at T1 and the predicted tides at Ventura differ as follows: The time of Ventura high tide is 6 minutes later, while the time of Ventura low tide is 5 minutes later, and the tide range difference is only 2% (0.02 fm).

Comments

As per the revised project instructions, the Santa Cruz tide gage, 941-0971, was used in place of the Ventura gage. Additionally, the Rincon Island gage, 941-1270, and the Santa Barbara gage, 941-1340, were used for these projects. The Santa Cruz gage is an extended jurisdiction gage and the Rincon Island and Santa Barbara gages are maintained by the Pacific Tides Party. The gages at Rincon Island and Santa Barbara were checked to insure that they were operating.

March 17, 1978

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): 941-1270 Rincon Island, Ca.

Period: October 14 - November 23, 1977

HYDROGRAPHIC SHEET: H-9732

OPR: 411

Locality: Santa Barbara Channel, California

Plane of reference (mean lower low water): 4.17 ft.

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

Remarks: Zone direct.

Don Spill
Chief, Tides Branch

GEOGRAPHIC NAMES

H-9732

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 GRAND MCNALLY ATLAS
H U.S. LIGHT LIST
K

SANTA BARBARA CHANNEL

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APPROVED

Chas. E. Harrington

CHIEF GEOGRAPHER - C3X8

10 JULY 1978

APPROVAL SHEET

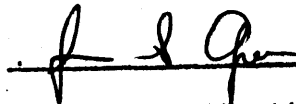
FOR

SURVEY H- 9732

- 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: 5/31/78

Signed: _____



Title: Chief, Verification Branch

HYDROGRAPHIC SURVEY STATISTICS

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS 2 MYLAR B/S., 1 B/S OVERLAY, 4 PRELIM. OVERLAYS		8	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS		2	
DESCRIP- TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1 <i>with printouts & misc.</i>					
VOLUMES						
BOXES			1 - Smooth			
T-SHEET PRINTS (List)				1 - TIDE CURVE PLOT, 1 CHART		
SPECIAL REPORTS (List)				SECTION 18725		

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			1039
POSITIONS CHECKED		1039	
POSITIONS REVISED		0	
SOUNDINGS REVISED		21	
SOUNDINGS ERRONEOUSLY SPACED		0	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	3		
VERIFICATION OF CONTROL		3	
VERIFICATION OF POSITIONS		13	
VERIFICATION OF SOUNDINGS		14	
COMPILATION OF SMOOTH SHEET		17	
APPLICATION OF TOPOGRAPHY		0	
APPLICATION OF PHOTOBATHYMETRY		0	
JUNCTIONS		2	
COMPARISON WITH PRIOR SURVEYS & CHARTS		10	
VERIFIER'S REPORT		4	
OTHER			
TOTALS	3	63	66
Pre-Verification by James S. Green	Beginning Date 4/1/78	Ending Date 4/1/78	
Verification by Donald E. Zimmer	Beginning Date 4/13/78	Ending Date 5/17/78	
Verification Check by A.E. Etchelberger, J.S. Green	Time (Hours) 22	Date 5/26/78	
Marine Center Inspection by HIT	Time (Hours) 7	Date 6/6/78	
Quality Control Inspection by <i>J.K. Meyer</i>	Time (Hours) 3	Date 7/7/78	
Requirements Evaluation by <i>D.J. Hill</i>	Time (Hours) 1	Date 9/14/78	

Reg. No. H-9732

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

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

CARDS CORRECTED

DATE _____ TIME REQ'D _____ INITIALS _____

REMARKS:

Reg. No. _____

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

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

MAGNETIC TAPE CORRECTED

DATE _____ TIME REQ'D _____ INITIALS _____

REMARKS:

PACIFIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO: H-9732

FIELD NO: RA-20-4-78

California, Santa Barbara Channel

SURVEYED: Nov 21-29, 1977

SCALE: 1:20,000

PROJECT NO: OPR-411

SOUNDINGS: Ross Model 5000

CONTROL: Range-Range
Raydist

Chief of Party.....CAPT J.P. Randall
Surveyed by.....LCDR L. Lapine, ENS J. Barnett
Automated plot by.....PMC Xynetics Plotter
Verified by.....Donald E. Zimmer
May 17, 1978

I. INTRODUCTION

This is a basic hydrographic survey conducted by the NOAA Ship RAINIER from Nov 21 thru Nov 29, 1977. The area surveyed is offshore of Santa Barbara in the Santa Barbara Channel.

No unusual problems were encountered in the verification of H-9732.

The signal list from the field was revised to include only aids to navigation, landmarks, signals used for calibration and signals used to control hydrography on H-9732.

Project parameters used to prepare the boatsheets have been revised to center the hydrography on the smooth sheet. Parameters used by PMC are appended in the smooth printout.

Predicted tides from Los Angeles Outer Harbor adjusted to Ventura, CA were used to reduce soundings on the field sheet. Observed tides from the Rincon Island tide gage approved by the Tide and Current Division, Rockville, were used to reduce the soundings on the smooth sheet.

II. CONTROL AND SHORELINE

Horizontal control is adequately described in Sections F and G of the Descriptive Report.

There is no shoreline within the survey area.

III. HYDROGRAPHY

Crosslines are in excellent agreement throughout the entire survey, with no difference being greater than 1 fathom.

Standard depth curves could be adequately drawn and conform to the Hydrographic Manual.

Basic hydrography is adequate to delineate bottom configurations and determine least depths. There were no major difficulties encountered in the verification of the main scheme hydrography.

There were 43 bottom samples taken on this survey.

IV. CONDITION OF SURVEY

All of the hydrographic records, overlays, smooth field sheets and reports are adequate and conform to the requirements of the Provisional Hydrographic Manual. *Depth recorder displacement of 32m. from Raydist antenna not corrected in plot. Error not significant in this topography.*

V. JUNCTIONS

H-9732 junctions with contemporary surveys H-9730 (1977) to the northeast, H-9752 (1978) to the north and H-9728 (1977) to the southeast. However, no junctions were made due to the different stages of processing. Junction curves and notes were left in pencil on the smooth sheet.

VI. COMPARISON WITH PRIOR SURVEYS

H-5030 (1930) 1:80,000

Soundings and depth curves are in excellent agreement to within + 1 fathom throughout the survey indicating little change in the bottom since 1930. Recommend H-9732 supersede H-5030 in all areas of common hydrography.

There was one (1) dashed circle presurvey review item within H-9732, a 61 to 62 fathom plateau located at approximately Lat. 34°13'15"N and Long. 119°40'50"W. This area was adequately developed at 100 meter line spacing with the least depth found of 56 fathoms (sndg. No. 382606). Recommend this 56 fathom sounding be charted.

VII. COMPARISON WITH CHART

Chart 18725 (C&GS 5120) 15th Edition, Feb. 12, 1977 1:50,000

Chart 18721 (C&GS 5066) 5th Edition, July 10, 1976 1:100,000

A) Hydrography

H-5030, 1:80,000, 1930 was determined as the source of charted soundings for both chartlets, hence discrepancies have been disposed of in Section VI, "Comparison with Prior Surveys". It is recommend that H-9732 supersede charted hydrography.

B) Controlling Depths

There are no controlling depths charted in H-9732 survey area.

C) Aids to Navigation

There are no aids to navigation in the survey area.

VIII. COMPLIANCE WITH PROJECT INSTRUCTIONS

This survey adequately complies with Project Instructions, OPR-411-RA-77, Southern California Coast, dated 3 August 1977; Change No. 1; Supplement to Instructions, dated 16 September 1977; Change No. 2; Supplement to Instructions, dated 16 December 1977.

IX. ADDITIONAL FIELD WORK

This survey is considered an excellent basic survey adequate to supersede charted soundings of the area. No additional field work is recommended.

Respectfully submitted,

Donald E. Zimmer

Donald E. Zimmer
Cartographic Technician
May 17, 1978

Examined and approved,

James S. Green


James S. Green
Chief, Verification Branch



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

DATE: 7 June 1978

TO : Eugene A. Taylor
Director, Pacific Marine Center

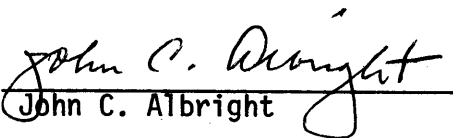
FROM: 
Glen R. Schaefer
Chief, Processing Division

SUBJ: PMC Hydrographic Inspection Team Report for Survey H-9732

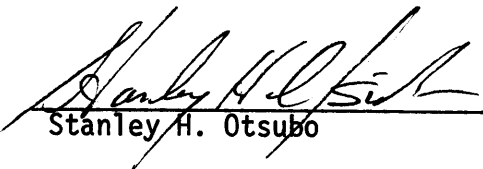
This survey is a basic hydrographic survey of Santa Barbara Channel, Offshore Santa Barbara, California. This survey was conducted by NOAA Ship RAINIER in 1977 in accordance with Project Instructions OPR-411-RA-77 dated 3 August 1977 and Change Nos. 1 and 2 dated 16 September 1977 and 16 December 1977, respectively.

The inspection team finds H-9732 to be an excellent basic survey adequate to supersede common areas of prior surveys and charted hydrography. Administrative approval is recommended.


Glen R. Schaefer


John C. Albright


James W. Steensland


Stanley H. Otsubo



ADMINISTRATIVE APPROVAL

H-9732

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

E. A. Taylor

Eugene A. Taylor, RADM
Director
Pacific Marine Center

12 June 1978

Date



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

C352/GKM

July 7, 1978

A. J. Patrick
TO: A. J. Patrick
Chief, Marine Surveys Division
G. K. Myers
FROM: G. K. Myers
Chief, Quality Control Branch

SUBJECT: Quality Control Report for H-9732 (1977), California, Santa Barbara Channel, Offshore Santa Barbara

A quality control inspection of H-9732 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths, navigation hazards, junctions, sounding line crossings, smooth plotting, decisions and actions taken by the verifier, and cartographic presentation of data. In general, it was found to conform to the National Ocean Survey's standards and requirements except as stated in the report by the verifier and Hydrographic Inspection Team and as follows:

A bottom characteristic was carried forward from H-5030 (1930) in the area of the least depth on the present survey.

cc:
C35
C351



119° 40'

SANTA BARBARA CHANNEL

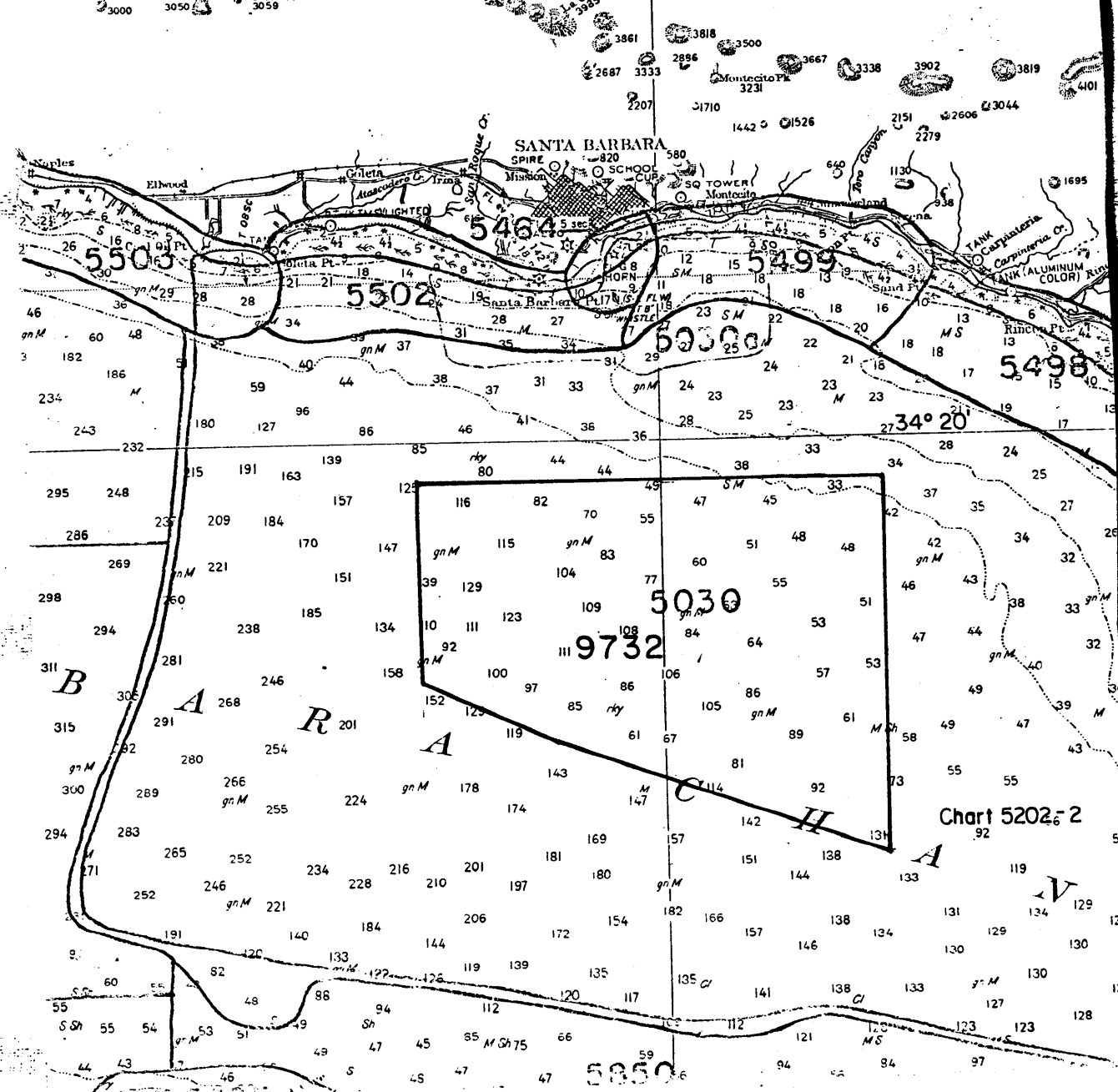


Chart 5202-2

