

9728

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 HYDROGRAPHY
Field No. RA-20-2-77
Office No..... H-9728

LOCALITY

State California
General Locality Santa Barbara Channel
Locality Offshore Ventura Harbor

1977

CHIEF OF PARTY
James P. Randall

LIBRARY & ARCHIVES

DATE October 18, 1978

8226

Area 5

Cht

✓ 18725

✓ 18720

✓ 18740

✓ (18020)

✓ 18022

✓ 18729

(50) ✓

(232) ✓

(234) ✓

(1,400) ✓

(865) ✓

(40) ✓

HYDROGRAPHIC TITLE SHEET

H-9728

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-20-2-77

State CALIFORNIA

General locality SANTA BARBARA CHANNEL

Locality OFFSHORE VENTURA HARBOR

Scale 1:20,000

Date of survey 18 OCT. - 17 NOV. 1977

Instructions dated 3 AUGUST 1977

Project No. OPR-411-RA-77

Vessel RAINIER (2120); LAUNCHES RA 3 (2123), RA 5 (2125) and RA 6 (2126)

Chief of party JAMES P. RANDALL, CAPT, NOAA

SURVEY TEAM

Surveyed by LEADER: LCDR LAPINE - OIC's ENS BARNETT, LTJG RAMSEY

ROSS FINELINE

Soundings taken by echo sounder, ~~hand lead, etc.~~ FATHOMETER: RAINIER - S/N 1042, RA-3 S/N 1071
RA-6 S/N 1070

Graphic record scaled by RAINIER PERSONNEL

Graphic record checked by RAINIER PERSONNEL

Positions Verified

~~XXXXXXXXXX~~ DONALD E. ZIMMER

Automated plot by PMC XYNETICS PLOTTER

Soundings Verified

~~XXXXXXXXXX~~ DONALD E. ZIMMER

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

REMARKS: Time Meridian: 0° (GMT)

Applied to plots 12/18/78
[Signature]

DESCRIPTIVE REPORT
TO ACCOMPANY HYDROGRAPHIC SURVEY

H-9728

RA-20-2-77

SCALE 1:20,000

1977

NOAA SHIP RAINIER
CAPT JAMES P. RANDALL
COMMANDING

DESCRIPTIVE REPORT
TO ACCOMPANY HYDROGRAPHIC SURVEY
H-9728
RA-20-2-77

A. PROJECT

Survey operations were 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, and Presurvey Review update, dated 13 September 1977. ✓

B. AREA SURVEYED

This basic hydrographic survey was conducted in the Santa Barbara Channel area of California. The survey area was bounded on the east by Longitude 119/19/36W, on the north by Latitude 34/13/24N, on the west by Longitude 119/33/42W, and on the south by a line running 112°T beginning at the intersection of the western limit and Latitude 34/10/00N and extending to the point where the eastern limit intersected Latitude 34/05/09N. This last boundary line adequately develops the 110 fathom curve. ✓

Hydrographic survey operations were conducted between 18 October 1977 (J.D. 291) and 20 October 1977 (J.D. 293) while bottom samples were taken on 1 November 1977 (J.D. 305), 3 November 1977 (J.D. 307), 16 November 1977 (J.D. 320), and 17 November 1977 (J.D. 321). ✓

C. SOUNDING VESSEL

NOAA Ship RAINIER (Electronic Data Processing Number 2120) was used to obtain all depth soundings and bottom samples taken during the survey. No unusual vessel configurations were incorporated nor problems encountered which might have affected the accuracy of the survey. ✓

D. SOUNDING EQUIPMENT

For RA-20-2-77, all echo soundings were obtained with a Ross Fine-line Fathometer System which included the following components: Ross Model 4000 Transceiver - S/N 1041, Ross Model 5000 Analog Recorder - S/N 1042, Ross Model 6000 Digitizer - S/N 1042, a 100 khz transducer, and a Digital Electronics Corporation Hydroplot Controller - S/N 04. ✓

Several possible error sources are present in the Ross echo sounding system including: sound velocity, vessel draft, dynamic settlement

and squat, and instrument error. Field corrections for each of these error sources and procedures used to obtain Corrections to Echo Soundings are discussed in detail in Echo Sounding Report, OPR-411-RA-77.

E. HYDROGRAPHIC SHEETS

The Modified Transverse Mercator Projection was used and all soundings were plotted by RAINIER personnel using three separate Complot systems.

Rough plots were made daily and a semi-smooth sheet plotted as the work progressed aboard RAINIER (EDS Number 2120) using two (2) PDP/8e computers - S/N 01015 and S/N 11430 and Houston Complot plotters, Model DP-3 - S/N 5848-18 and S/N 5445-7. The smooth field sheet was plotted using the Digital PDP/8e Computer - S/N 1006 and Houston Complot Plotter, Model DP-3 - S/N 6166-23 aboard launch RA-3 (EDS Number 2123). Plotting of the smooth field sheet began on 2 December 1977 and was completed on 3 December 1977.

All sheets were standard size and none were skewed. No discernable distortion was detected in the mylar smooth sheet. Preliminary sound velocity correctors, TRA, and predicted tides were applied to all fathometer soundings on the smooth sheet.

All field hydrographic sheets and associated survey data will be submitted to Pacific Marine Center for verification and processing.

F. CONTROL STATIONS

Temporary stations RESERVOIR and HIGH 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 HIGH ECC from station HIGH 1951. The geographic positions of these points were based on the 1927 North American Datum and were computed using Third-Order, Class 1 survey procedures. Neither temporary point was monumented or described.

Two existing triangulation stations, CHAFFEE 2 1923 and LIGHT RM 1 1976 were recovered and used as sites for Mini-Ranger shore stations.

Numerous previously positioned 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, refer 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, refer to OPR-411-RA-77, Horizontal Control Report, Southern California.

G. HYDROGRAPHIC POSITION CONTROL

Position control was provided by electronic range-range methods using Teledyne Hastings Raydist. Two Raydist shore stations, station RESERVOIR, signal 102 and station HIGH ECC, signal 101, were established and used for controlling hydrography on sheet H-9728. Station RESERVOIR was equipped with a Green Raydist transmitter S/N 233 while station HIGH ECC was equipped with a Red Raydist transmitter S/N 232. For a detailed discussion of the two (2) Raydist shore stations see Electronic Control Report, OPR-411-RA-77.

NOAA Ship RAINIER (EDP NO. 2120) was the sole vessel used during the survey and was equipped with Raydist Transmitter S/N 167, Raydist Navigator S/N 115, Raydist Position Indicator S/N 118, and a Hazlow Navigation Interface S/N 17.

Raydist equipment calibrations were performed twice daily and were accomplished by means of three-point sextant fixes with check angle, using PDP/8e software RK 561 for processing and for determining lane-counts. All visual signals used were located on at least Third-Order, Class 1, triangulation stations. At least four (4) readings were made during the calibration checks to obtain sufficient data to calculate a mean corrector to the partial (fractional) lane-count. Partial lane-counts which differed from the mean by more than 0.2 (10 meters) lanes were rejected. All sets of data for any single day were meaned to obtain the correctors used in plotting of survey data.

Two (2) Motorola Mini-Ranger III stations were established and used during the survey work to verify Raydist whole-lane counts. The two (2) stations, CHAFFEE 2, signal 105, and LIGHT RM 1, signal 103, were located on at least Third-Order Class 1 triangulation stations. Station CHAFFEE 2 was equipped with Mini-Ranger Code 4 (S/N 777) while station LIGHT RM 1 was equipped with Mini-Ranger Code 3 (S/N 776). Mini-Ranger Code 4 on station CHAFFEE 2 was replaced by Mini-Ranger Code 2 (S/N 775) on 19 October 1977, when the original unit was suspected to be malfunctioning.

The two (2) Raydist shore stations and all electronic control equipment aboard RAINIER performed flawlessly throughout the survey operations.

H. SHORELINE

No shoreline was contained within the limits of this survey. ✓

I. CROSSLINES

A total of 496.2 nautical miles of hydrography were run on H-9728 of which 61.9 nautical miles or 12.5 percent were crosslines. A gradually sloping bottom characterized the entire survey area and as a result an excellent agreement in the 342 intersections between crosslines and mainscheme lines was noted. A statistical breakdown of the crossline-mainscheme line intersections revealed that depths agreed exactly at 191 intersections - fifty-six (56) percent and differed by one (1) fathom or less at 339 intersections - ninety-nine (99) percent. The remaining three (3) crossline-mainscheme line intersection (1 percent) differed by less than two (2) fathoms with that difference possibly being caused by slight position differences and rapidly changing bottom characteristics. ✓

J. JUNCTIONS

Hydrographic survey H-9728 joins three contemporary RAINIER Surveys: H-9725 (RA-20-1-77), H-9730 (RA-20-3-77), and H-9732 (RA-20-4-77). Details on these junctions and additional information on sheet H-9728 follows. ✓

Survey H-9728 (RA-20-2-77) was divided into two sheets. RA-20-2A-77 and RA-20-2B-77, their junction being along 34/10/00N. Mainscheme line spacing was kept continuous at the junction between the two (2) sheets with no overlapping lines being run. In the junction area 10 crosslines from sheet RA-20-2A-77 overlapped soundings on sheet RA-20-2B-77 and agreed to within 1 fathom or less in all cases. The 20, 30, 40, 50, 100, and 110 fathom curves drawn on both sheets formed continuous lines at the junction. ✓

Survey H-9728 joins survey H-9725 (RA-20-1-77), scale 1:20,000, along Longitude 119/19/36W. A 400 meter overlap between the mainscheme lines on H-9728 (run north-south) and the mainscheme lines H-9725 (run east-west) indicated an excellent agreement between the two (2) surveys. All soundings in the overlap area that were compared agreed to within 1 fathom or less. The 20, 30, 40, 50, 100, and 110 fathom curves drawn on both survey sheets formed continuous lines at the junction. ✓

Survey H-9728 joins survey H-9730 (RA-20-3-77), scale 1:20,000, along Latitude 34/13/24N. Mainscheme lines on both sheets were run in an east-west direction with no overlapping lines being run. The eight (8) crosslines run on survey H-9730 (RA-20-3B-77) extended approximately 400 meters into the H-9728 survey area, two (2) overlapping crosslines ✓

on sheet H-9728 while 6 crossed H-9728 mainscheme lines. In crossline overlapping areas 75 percent of the soundings agreed exactly while the remaining 25 percent differed by 1 fathom or less. Exact agreement was noted at 59 percent of the intersections between H-9730 crosslines and H-9728 mainscheme lines with the remaining 41 percent differing by 1 fathom or less. The 20, 30, 40, and 50 fathom curves drawn on both survey sheets formed continuous lines at the junctions. ✓

Survey H-9728 joins survey H-9732 (RA-20-4-77), scale 1:20,000, along Longitude 110°33'42"W. Five (5) of the 8 mainscheme lines which were run on the eastern edge of survey H-9732 (sheet RA-20-4B-77) butted with mainscheme lines on H-9728 - all junctions showed excellent continuity. The remaining 3 mainscheme lines on H-9732 overlapped mainscheme lines on H-9728. All soundings in the overlap area agreed to within 1 fathom or less. The 100 and 110 fathom curves drawn on both survey sheets formed continuous lines at the junction. ✓

K. COMPARISON WITH PRIOR SURVEYS

Comparison of this survey data with prior surveys H-5030 and H-5849 showed very good agreement throughout. H-5030 at a scale of 1:80,000, dated 1930, and H-5849 at a scale of 1:40,000, dated 1934, are the only previous surveys with soundings inside the limits of this survey. *See Verifiers Report*

Thirty-One (31) soundings from survey H-5030 were compared to the new sounding data. Of this total, 9 soundings (29 percent) agreed exactly while 26 soundings (84 percent) differed by 1 fathom or less. The remaining 5 soundings (16 percent) located in an area where depths are in excess of 125 fathoms, were all shoaler in the new data by 2 fathoms or less. All soundings that were compared from survey H-5030 are plotted in brown on the smooth sheet. ✓

Twenty-Eight (28) soundings from survey H-5849 were compared to the new sounding data. Of this total, 4 soundings (14 percent) agreed exactly, 27 soundings (96 percent) differed by 1 fathom or less, while the remaining sounding differed by 2 fathoms or less. All soundings that were compared from survey H-5849 are plotted in green on the smooth sheet. ✓

No formal presurvey review items were contained within the limits of this survey.

L. COMPARISON WITH THE CHART

Two charts completely cover the H-9728 survey area: Chart 18725 (formerly C&GS 5120), scale 1:50,000 and Chart 18720, scale 1:232,188 with two additional charts containing part of the surveyed area: Chart 18729, scale 1:40,000 and Chart 18740, scale 1:234,270. ✓

Survey H-9728 data was compared to the 15th Edition of Chart 18725, dated 12 February 1977 and that comparison showed excellent agreement. The approximate 200 charted soundings within the survey limits were scattered throughout the area with no discernable pattern. H-9728 survey lines overlapped or butted charted soundings at 86 locations, of which 37 soundings (43 percent) agreed exactly while 82 soundings (95 percent) differed by 1 fathom or less. The remaining 4 soundings (5 percent) differed by 2 fathoms or less with that difference being caused by slight positional differences. ✓

There were eight (8) depth curves drawn within the survey limits of H-9728 on Chart 18725: 12, 14, 16, 18, 20, 30, 50, and 100 fathoms. The 20, 30, 50, and 100 fathom curves drawn on the smooth sheet for H-9728 corresponded to those charted on Chart 18725. ✓

Chart 18725 is the largest scale chart of the Port Hueneme to Santa Barbara area, and would be the chart most used during local operations in that area. ✓

No dangers to navigation were charted within the survey limits nor were any dangers found during the survey.

M. ADEQUACY OF SURVEY

The survey is complete and adequate to supersede prior surveys H-5849 and H-5030 for charting. The use of modern sounding equipment, highly accurate electronic hydrographic positioning equipment, and a more dense and systematic pattern of soundings are the basis for the supercedure. All fathograms were scanned and appropriate changes made to the records where necessary to compensate for swells. See Verifiers Report ✓

N. AIDS TO NAVIGATION

There were no floating or fixed aids to navigation within the limits of this survey nor are any recommended. ✓

O. STATISTICS

During the hydrographic survey of sheet H-9728 a total of 1524⁰⁹ positions (fix numbers 1000-2449 and 2500-2573) were obtained over 496.2 nautical miles of hydrography in an area of 68.08 square nautical miles.

There were two (2) tide stations in the immediate area of the survey. The specifics of these tide stations can be found in the tide note in the separates following the text. ✓

There were ~~74~~⁶⁸ bottom samples taken over the project area specifics of which can be found in the copy of NOAA Form 75-44 appended to this report.

P. MISCELLANEOUS

No particularly significant phenomena were observed during this survey. No unusual conditions exist in or near the surveyed area which might affect the nature of the bottom in the near future. ✓

The survey area's orientation made the use of electronic range-range navigational control possible with all fixes being geometrically strong.

Q. RECOMMENDATIONS

Hydrographic survey RA-20-2-77 is complete and adequate to supercede all previous hydrographic surveys in this area and it is, therefore, recommended that it be used in the future for charting purposes. No other recommendations are made. ✓

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
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 separate reports are referenced in the descriptive report as having specific information relevant to the hydrographic data:

HORIZONTAL CONTROL REPORT, OPR-411-RA-77

CORRECTIONS TO ECHO SOUNDINGS, OPR-411-RA-77

ELECTRONIC CONTROL REPORT, OPR-411-RA-77

FIELD TIDE NOTE, OPR-411-RA-77

Respectfully Submitted:

Levish Lapine
LEOR NOAA

for Douglas G. Brockhouse
ETJG NOAA

Approved by:

James P. Randall
James P. Randall
CAPT NOAA
Commanding Officer

APPROVAL SHEET
DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY

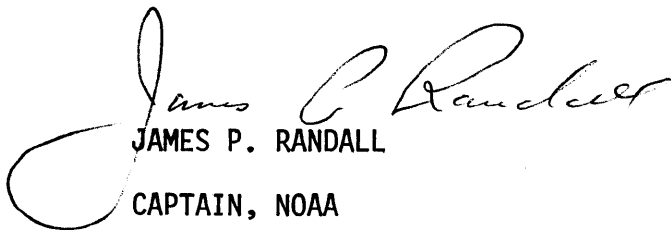
H-9728

RA-20-2-77

OPR-411-RA-77

In producing this sheet, standard procedures were observed in accordance with the Provisional Hydrographic Manual and the PMC OPORDER. 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 17888 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 LISTING
RA-20-2-77 (H-9728)

TABLE NO.2
VESSEL-RAINIER (2120)
SCALE-FATHOM

000042 0 0000 0002 001 212000 009728
000065 0 0001
000090 0 0002
000120 0 0003
000150 0 0004
000185 0 0005
000225 0 0006
000265 0 0007
000305 0 0008
000350 0 0009
000390 0 0010
000430 0 0011
000485 0 0012
000530 0 0013
000575 0 0014
000625 0 0015
000675 0 0016
000725 0 0017
000770 0 0018
000820 0 0019
000870 0 0020
000905 0 0021
000950 0 0022
001000 0 0023
001070 0 0024
001130 0 0025
001190 0 0026
001250 0 0027
001300 0 0028
001350 0 0029
001400 0 0030
001470 0 0031
001530 0 0032
001610 0 0033
001640 0 0034
001690 0 0035
001760 0 0036
001810 0 0037
001850 0 0038
001920 0 0039
001980 0 0040
002040 0 0041
002100 0 0042
002170 0 0043
999999 0 0044

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 (000^oW). 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 ^o 05' 54" N LON 119 ^o 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-9728

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 Spillman
35 Chief, Tides Branch

GEOGRAPHIC NAMES

H-9728

Name on Survey	Source of Name											1	
	A	B	C	D	E	F	G	H	K				
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	RAND McNALLY ATLAS	U.S. LIGHT LIST					
SANTA BARBARA CHANNEL													1
													2
													3
													4
													5
													6
													7
													8
													9
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													23
													24
													25

APPROVED

Chas. E. Harrington

CHIEF GEOGRAPHER - C378

30 Oct. 1978

APPROVAL SHEET
FOR
SURVEY H- 9728

- 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: 14 Sep 1978

Signed: _____

Title: Chief, Verification Branch

HYDROGRAPHIC SURVEY STATISTICS

H-9728

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS & PRELIMINARY OVERLAYS 2- B/S, 1- B/S OVERLAY, 3- Prelim. Overlays	6
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			1 - SMOOTH POS. & SMDG. P.O.'S			
CAHIERS	1					
VOLUMES						
BOXES						

T-SHEET PRINTS (List)

1 - Chart Section 18725

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	TOTALS
POSITIONS ON SHEET			1509
POSITIONS CHECKED		1509	
POSITIONS REVISED		0	
SOUNDINGS REVISED		9	
SOUNDINGS ERRONEOUSLY SPACED		0	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	

TIME - HOURS

CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	3		
VERIFICATION OF CONTROL		2	
VERIFICATION OF POSITIONS		9	
VERIFICATION OF SOUNDINGS		8	
COMPILATION OF SMOOTH SHEET		38	
APPLICATION OF TOPOGRAPHY		0	
APPLICATION OF PHOTOBATHYMETRY		0	
JUNCTIONS		1	
COMPARISON WITH PRIOR SURVEYS & CHARTS		2	
VERIFIER'S REPORT		4	
OTHER		8	
TOTALS	3	72	15

Pre-Verification by James S. Green	Beginning Date 2/21/78	Ending Date 2/21/78
Verification by Donald E. Zimmer	Beginning Date 6/6/78	Ending Date 7/19/78
Verification Check by A.E. Eichelberger, J.S. Green	Time (Hours) 19	Date 9/8/78
Marine Center Inspection by HIT	Time (Hours) 6	Date 9/15/78
Quality Control Inspection by <i>PK Myers</i>	Time (Hours) 13	Date 10/27/78
Requirements Evaluation by <i>J Baumgardner</i>	Time (Hours) 1	Date 11/7/78

REGISTRY NO. 9728

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:

PACIFIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO: H-9728

FIELD NO: RA-20-2-77

California, Santa Barbara Channel, Offshore Ventura Harbor

SURVEYED: 18 October-17 November 1977

SCALE: 1:20,000

PROJECT NO: OPR-411

SOUNDINGS: Ross Finline Fathometer

CONTROL: Range-Range
Raydist

Chief of Party Capt. James P. Randall

Surveyed by Lt. Cdr. L. Lapine
Lt. (JG) S. Ramsey
Ens. J. Barnett

Automated plot by PMC Xynetics Plotter

Verified by Donald E. Zimmer
July 19, 1978

I. INTRODUCTION

This is a basic hydrographic survey conducted by the NOAA Ship RAINIER from 18 October to 17 November 1977. The area surveyed is Santa Barbara Channel, offshore Ventura Harbor.

No unusual problems were encountered in the verification of this survey. ~~However, after the smooth sheet was plotted it was noted that a correction for the displacement between the navigation and the Ross Fathometer antennas of 32.2 meters had not been applied. In view of the offshore nature of this survey, the scale (1:20,000) and the lack of significant features, this error is not deemed significant enough to necessitate a replot of the smooth sheet.~~

The signal list from the field was revised to include only signals used for calibration and signals used to control hydrography on H-9728.

Project parameters used to prepare the boat sheets 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, reduced to Ventura, California were used to reduce sounding on the field sheet. Observed tides from Rincon Island gage approved by the Tides and Current Division, Rockville, were used to reduce 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 are adequately drawn and conform to the requirements of the Hydrographic Manual. Additional depth curves are drawn in brown to conform with chart 18725.

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

There were 68 bottom samples taken on this survey.

IV. CONDITION OF SURVEY

All of the graphic records, overlays, smooth field sheets and reports are adequate and conform to the requirements of the Hydrographic Manual.

V. JUNCTIONS

This survey junctions to the east with contemporary survey H-9725 1:20,000 1977, to the west with H-9732 1:20,000 1977, and to the north with H-9730 1:20,000 1977. *Junctions with H-9725 and H-9730 will be examined during quality evaluation of these surveys.*
H-9732 and H-9725, soundings and depth curves are in excellent agreement with H-9728.

VI. COMPARISON WITH PRIOR SURVEYS

H-5030 (1:80,000) 1930
H-5849 (1:40,000) 1934
H-5420 (1:10,000) 1933

H-5030, H-5420 and H-5849: soundings and depth curves are in excellent agreement throughout the entire survey with no difference being greater than ± 2 fathoms. Recommend H-9728 supersede H-5030, H-5849 and H-5420 in all areas of common hydrography.

There are no Pre-Survey Review Items within the limits of H-9728.

VII. COMPARISON WITH CHART

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

See Quality Control Rep.

A. Hydrography

H-5420, H-5030 and H-5849 were determined as the charting sources, hence discrepancies have been disposed of in Section VI, "Comparison with Prior Surveys." Recommend H-9728 supersede all charted hydrography in areas of common coverage.

B. Controlling Depths

There are no controlling depths charted in the H-9728 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 Aug 1977; Change No. 1: Supplement to Instructions, dated 16 Sep 1977; Change No. 2: Supplement to Instructions, dated 16 Dec 1977, and Pre-Survey Review Update, dated 13 Sep 1977.

IX. ADDITIONAL FIELD WORK

This survey is considered an excellent basic survey, adequate to supersede charted hydrography. No additional field work is recommended.

Respectfully submitted,

Donald E. Zimmer

Donald E. Zimmer
Cartographic Technician
July 19, 1978

Examined and Approved,

J. 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

CPM3/GRS/SLML

DATE : 15 September 1978

TO : Eugene A. Taylor
Director, Pacific Marine Center

FROM : 
Glen R. Schaefer
Chief, Processing Division

SUBJECT: PMC Hydrographic Inspection Team Report for Survey H-9728

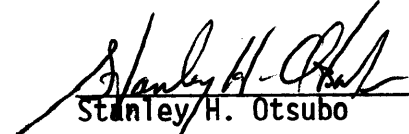
This survey is a basic hydrographic survey of the area Offshore Ventura Harbor, Santa Barbara Channel, California. This survey was conducted by NOAA Ship RAINIER in 1977 in accordance with Project Instructions OPR-411-RA-77 dated 3 August 1977, Presurvey Review dated 13 September 1977, Change No. 1 dated 16 September 1977 and Change No. 2 dated 16 December 1977.

The inspection team finds H-9728 to be an excellent basic survey adequate to supersede common areas of prior surveys and charted hydrography. Administrative approval is recommended.


Glen R. Schaefer


David B. MacFarland, Jr.



James W. Steensland


Stanley H. Otsubo



ADMINISTRATIVE APPROVAL
H-9728

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.



Eugene A. Taylor, RADM
Director
Pacific Marine Center

15 Sept. 1978
Date



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

C352/GKM

October 27, 1978

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

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

SUBJECT: Quality Control Report for H-9728 (1977), California, Santa Barbara Channel, Offshore Ventura Harbor

A quality control inspection of H-9728 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 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:

1. A comparison with the largest scale chart common in part with the area covered by the present survey was not made during verification. The following comment supplements the discussion under the heading "Comparison with Charts" in the Verifier's Report:

Chart 18729 (C&GS 5114), 8th Edition, August 20, 1978

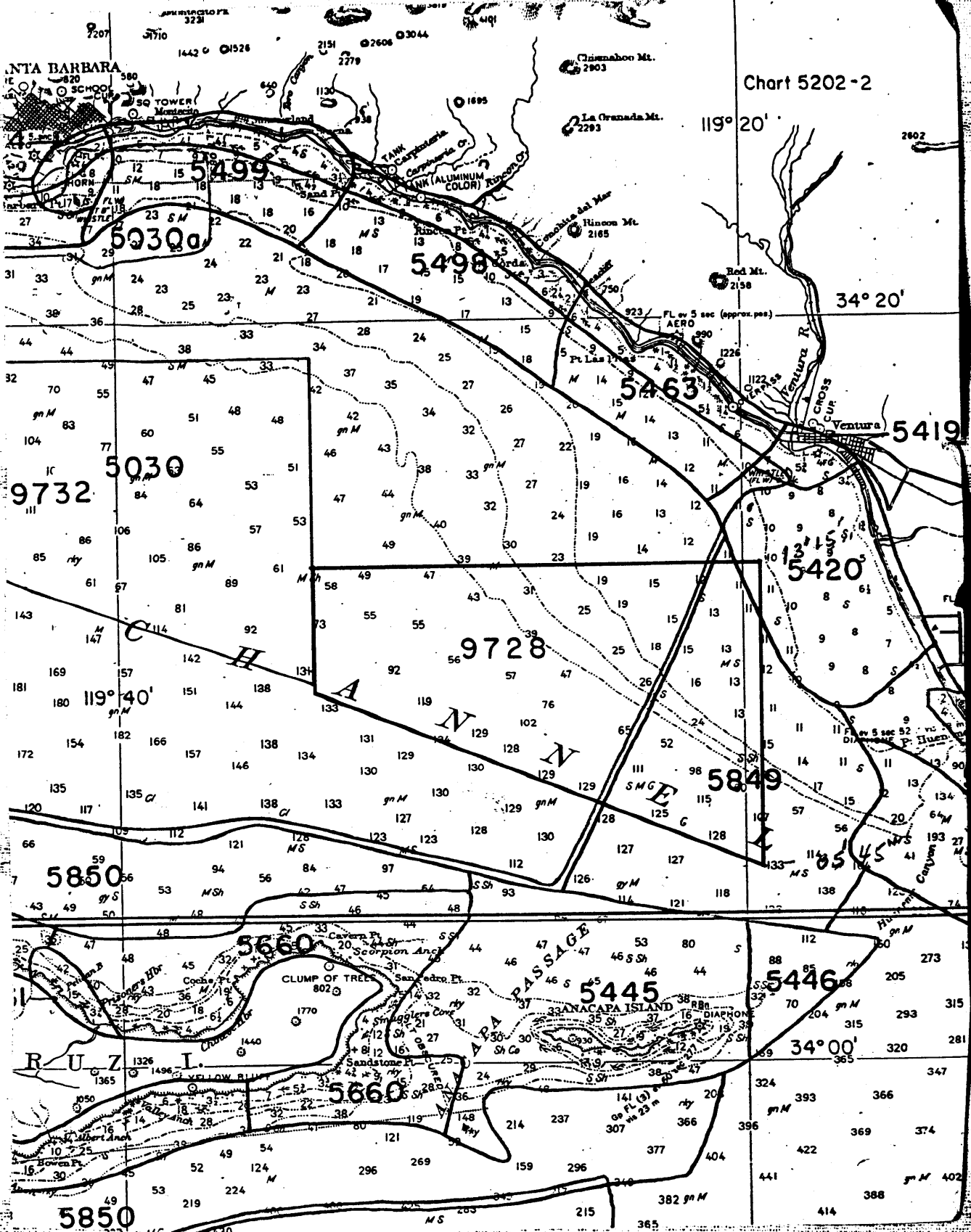
The charted hydrography originates with a previously discussed survey, H-5849, which requires no further consideration. The present survey is adequate to supersede the charted information in the common area.

2. Comments pertaining to controlling depths need not be discussed in the Verifier's Report unless notes to the effect are charted. Therefore, the statement made during verification is extraneous. Charted information compared with the present survey does not include controlling depth notes.

cc:
C35
C351



Chart 5202-2



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. _____

H-9728

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
18729	4/23/79	G. James 5/1/79 (18729) ROS	Full Part Before After Verification Review Inspection Signed Via Drawing No.
18725	5/3/79	G. James 5/1/79 (18725)	Full Part Before After Verification Review Inspection Signed Via Drawing No.
18720	5/24/79	G. James (18720) ROS 5-24-79-ROS	Full Part Before After Verification Review Inspection Signed Via Drawing No.
18740	6/6/79	G. James (18740) 6/8/79 ROS	Full Part Before After Verification Review Inspection Signed Via Drawing No.
18022	6/11/79	G. James (18022) 6-11-79 ROS	Full Part Before After Verification Review Inspection Signed Via Drawing No.
18020	6/11/79	G. James 18020 6-12-79 ROS	Full Part Before After Verification Review Inspection Signed Via Drawing No.
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