

10171

Diagram No. 5202-3

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic
Field No. FA-20-1-85
Office No. H-10171

LOCALITY

State California
General Locality Santa Barbara Channel
Locality Gaviota to Point Conception

19 85

CHIEF OF PARTY
CAPT. J.W. Carpenter

LIBRARY & ARCHIVES

DATE April 3, 1986

☆U.S. GOV. PRINTING OFFICE: 1980-766-230

Area 3 & 5
CH 75

18721

18720

18700

18022

18020

501

530

550

TO SIGN OFF SEE
"RECORD OF APPLICATION"

HYDROGRAPHIC TITLE SHEET

H-10171

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.

FA 20-1-85

State CaliforniaGeneral locality Santa Barbara ChannelLocality Gaviota to Point ConceptionScale 1:20,000 Date of survey April 13, to May 13, 1985Instructions dated January 19, 1984 Project No. OPR-L100-FA-84, 85Vessel FAIRWEATHER 2020, 2023, 2024, 2025, 2026Chief of party Captain J.W. CarpenterSurveyed by LCDR Andreen, LT Otsubo, LT(jg) Timmons, ENS Hurst, ENS BrezinskiSoundings taken by echo sounder, ~~hand level, pole~~ Raytheon DSF 6000N and pneumatic wrist gaugeGraphic record scaled by FAIRWEATHER PersonnelGraphic record checked by FAIRWEATHER PersonnelVerification by R.N. Mihailov Automated plot by PMC Xynetics PlotterEvaluation by G.E. KaySoundings in fathoms ~~feet~~ at ~~MSL~~ MLLW and tenths of fathoms

REMARKS: Marginal notes in black were made during the evaluation and analysis
of H-10171 at the Pacific Marine Center, Nautical Chart Branch, Seattle,
Washington.

Separates are filed in the back of the accordion file.

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Notes in red in the D.R. were added during Examination.

STANDARDS CK'D 4-3-86 C. Loy
AWOIS and SURF ✓ RWD 4/86

RWW 8/14/93

MONTHLY PROGRESS SKETCH

OPR-L100-FA-85

SOUTHERN CALIFORNIA COAST

SANTA BARBARA TO POINT CONCEPTION

CAPT. JOHN W. CARPENTER, CMDG

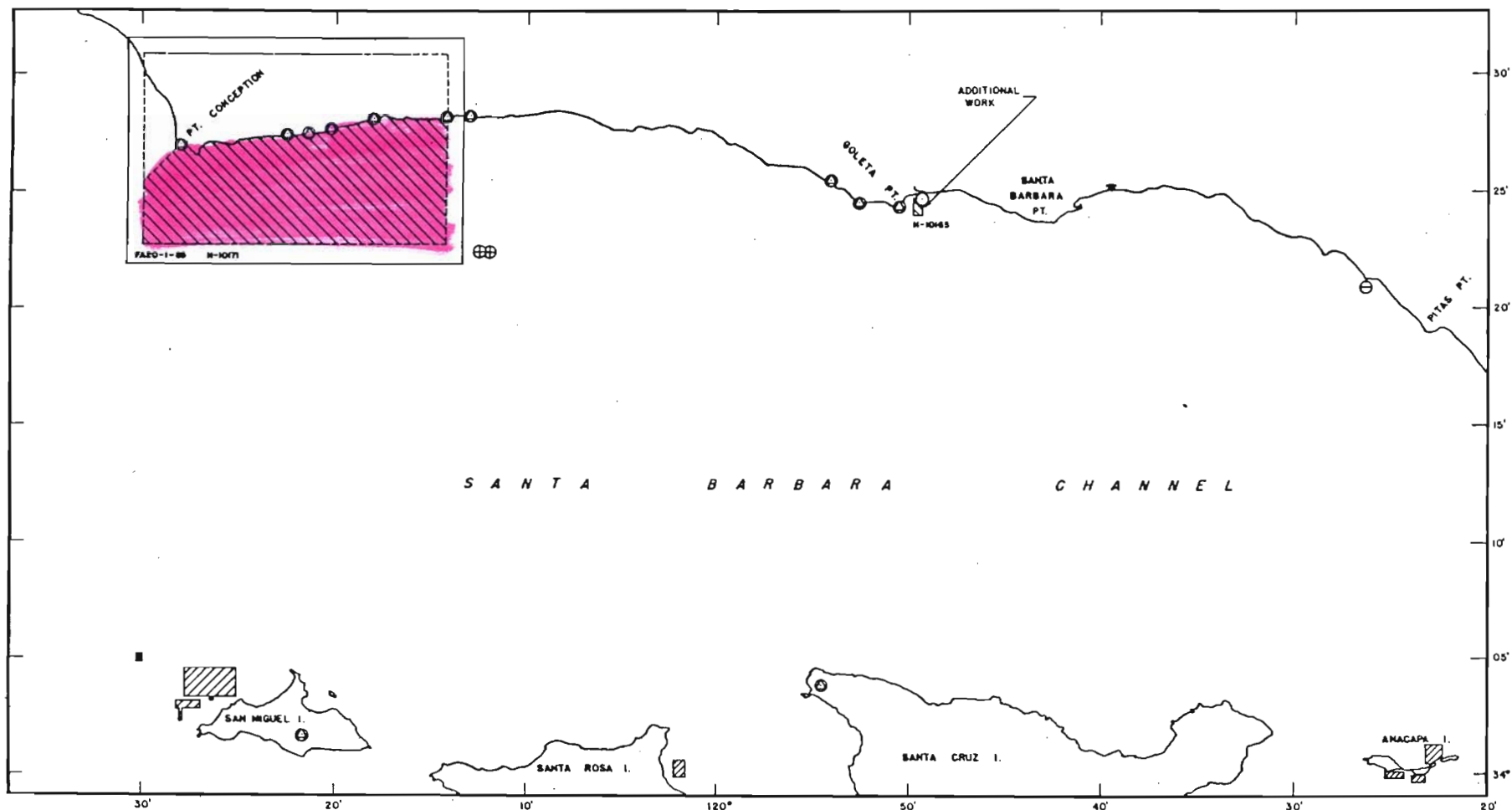
NOAA SHIP FAIRWEATHER S-220

APRIL - MAY 1985

FROM CHART 18720

- ⊕ SV/D - NANSEN CAST
- ⊙ STA RECOVERED
- ⊗ TIDE GAGE
- TEMPORARY POINT

	APRIL	MAY	
SQ NM SOUNDING LINE	58.8	0.4	
LNK SOUNDING LINE	68.0	28.6	
BOTTOM SAMPLES	55	0	
HYDRO CONTROL STATIONS	13	10	
SV/D - NANSEN CAST	2	0	
WATER SAMPLES ANALYZED	4	0	
TIDE GAGE INSTALLATIONS	1	0	
LNK S L VERIFICATION	0	0	
HYDROGRAPHY			
LNK SIDE SCAN SONAR/SQ NM	0	83.1	2.6
LNK MAGNETOMETER/SQ NM	0	44.8	0.2



A. Project

This hydrographic survey was conducted in accordance with Project Instructions, OPR-L100-FA-84,85 Southern California Coast, dated January 19, 1984, with Change No. 1, dated January 31, 1984; Change No. 2, dated August 2, 1984; Change No. 3, dated February 7, 1985; and Change No. 4, dated March 28, 1985. Also applicable are the PMC OORDER and the Hydrographic Manual (Fourth Edition). This survey was designated as sheet "D" in the Project Instructions. ✓

B. Area Surveyed

This is a basic survey which covers an area along the coast of Southern California on the north side of the Santa Barbara Channel between Gaviota and Point Conception. The northern and southern limits of the sheet are the coastline and latitude 34/22/42 N, respectively. The eastern limit is longitude 120/14/18 W. The western limit is a line bearing 235 degrees true from Government Point to longitude 120/30/00 W, then due south to latitude 34/22/42 N. ✓

All work on this survey was done between April 13 (JD 103), 1985 and May 13 (JD 134), 1985. ✓

C. Sounding Vessels

Jensen survey launches FA-3 (2023), FA-4 (2024), FA-5 (2025), and FA-6 (2026) were used to collect the hydrographic data for this survey. FAIRWEATHER (2020) and FA-5 (2025) were used to collect bottom samples. FAIRWEATHER (2020) conducted all SV/D casts. No unusual sounding configurations were used during this survey. ✓

D. Sounding Equipment and Corrections to Echo Soundings

FAIRWEATHER and her survey launches were equipped with dual beam Raytheon DSF-6000N echo sounders. Depths for diver detached positions were obtained using a pneumatic depth gauge or a Lietz fiberglass tape measure. Table 1 lists equipment, the vessel it was used by and date. ✓

Table 1
Echo Sounding Equipment

<u>Vessel</u>	<u>JD</u>	<u>Echo Sounder S/N</u>
FAIRWEATHER (2020)	115	B048N
FA-3 (2023)	103-106	B048N
	107-134	A121N

FA-4 (2024)	103-114 116-118	B049N B048N
FA-5 (2025)	104-117	A113N
FA-6 (2026)	103-120	B039N

The DSF-6000N echo sounder's internal TEST 1 and TEST 2 functions were performed daily at the beginning of hydrography and whenever the paper was changed. The echo sounding equipment was monitored continuously while on line. All hydrographic data was scanned at least twice to insert peaks and deeps between soundings and to ensure proper depth digitization. The effects of excess wave and swell action were adjusted at this time. ✓

Only a few problems were encountered with the DSF-6000N echo sounders during this survey. These are as follows:

One major problem encountered with the DSF-6000N echo sounder is that they cannot sound in waters less than approximately one fathom. As a result, the zero fathom curve and in some cases, the one fathom curve was not delineated on this survey. ✓

Another problem is the change in bottom depth that occurs if the gain control on the echo sounder is too low. The transmit power is regulated by the scale range (i.e., 0-8, 0-20, 0-40 fathoms, etc.) and the gain control can only adjust the receiving sensitivity. If the gain is low it will take longer for the transmit pulse to be received thus the bottom appears deeper than it actually is. This problem was not noticed until using bar check data with the SV/D casts to determine TRA values. On FA-4 (2024) bar checks were taken with the gain too low thus producing a smaller TRA than historically obtained using the DSF-6000N. (This showed the bar deeper than it actually was from the transducer). The amount of discrepancy noticed during data acquisition was approximately 0.07 fathoms however, when testing for this problem, a couple of tenths change in the bottom trace was seen. To eliminate this problem in the future, inshore hydrography and bar checks will be run with smaller range scales. ✓

On JD 107, the echo sounder A121N replaced B048N in FA-3 because internal machine noise created interference between the 0.5 and 2.0 fathom marks on the echogram. Between the noise interference and a bad ribbon cable, an unacceptable trace was produced for shallow water hydrography. ✓

On JD 116, B048N replaced B049N in FA-4 due to a bad cable leading to the speed adjustment knob. ○

FAIRWEATHER used the DSF-6000N echo sounder during bottom sampling. The port midships EDO transducer located on the centerline was used for all soundings acquired by the ship. Since this transducer is located directly

below the antenna, no ANDIST corrector was needed. For a sketch of transducer locations see figure 1, FAIRWEATHER Transducer Location Diagram.

Diver's detached position depths were obtained using the 3-D Instruments, Inc.'s pneumatic depth gauge (S/N 8302079N) and a Lietz fiberglass tape measure. Data acquisition using the pneumatic gauge consisted of the following procedure: The orifice of the gauge was attached to a 150 ft. air hose which was held in place at the least depth position by divers. A surface tender pressurized the system using air from a scuba tank three times and then recorded the average gauge value.

The pneumatic gauge was calibrated on April 5, 1984 by 3-D Instruments, Inc. and found to have an accuracy of 1/4 per cent of full scale (230 ft.). This calibration was confirmed by the Pacific Tide Party on March 19, 1985 using their tide gauge calibration equipment. In addition, daily system checks were performed to confirm accuracy standards. This check consisted of securing the orifice to a weighted tape and lowering it from the water surface to a maximum of 60 ft. At five foot increments, the gauge system was pressurized and the depth value recorded. Comparisons were made to the weighted tape following a method similar to that of bar checks.

FAIRWEATHER's survey launches were tested for settlement and squat on March 12, 1985 in Shilshole Bay, Seattle, WA. Measurements were conducted in accordance with section 4.9.4.2 of the Hydrographic Manual. It was determined that there were no applicable settlement and squat corrections for any launch when performing surveys in fathoms. For information on methods used for the settlement and squat tests, see Corrections to Echo Soundings Report, OPR-L100-FA-84,85. *Concur*

A settlement and squat test was not conducted for the FAIRWEATHER since this corrector is not applicable for her operating depths. FAIRWEATHER's TRA value of 2.3 fathoms is based on a mean draft of 13.8 feet.

Bar check data combined with the velocity corrections determined launch TRA values. With the exception of FA-4 (2024), all launches were determined to have a TRA of 0.3 fathom. As mentioned previously in this section, due to the gain control being too low, FA-4's (2024) bar check data showed a TRA value of 0.2 fathom. This value was rejected since nothing on the launch has been changed to produce a change in the TRA value and historically this launch had a TRA value of 0.3 fathom. The actual difference between the current TRA value and the established value was 0.07 fathom which caused it to change from 0.3 fathom to 0.2 fathom. The 0.3 fathom TRA value was used for all launches and was applied to the soundings on the final field sheets.

Wind and sea conditions occasionally made it necessary to visually average the depth profile to correct for heave action. When heave averaging was required, soundings were corrected in accordance with Section

*Small sheet was plotted with
0.3 fathom draft for all launches*

4.9.3.2 of the Hydrographic Manual. During this survey winds ranged from 0 to 60 knots and seas from 0 to 12 feet.

Velocity correctors were determined from two SV/D casts. Table II lists the date and location of the casts. One velocity table was determined for this survey from the average of the two casts. This correction was applied to all soundings plotted on the final field sheets. ✓

Table II
Velocity Casts

<u>Cast #</u>	<u>Date (JD)</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
1	105	34/22/12	120/12/36
2	119	34/22/12	120/11/54

Both velocity casts are located off of the sheet limits

The SV/D casts were performed using a Plessy Model 9040 Environmental Profiling System (S/N 5647). This instrument was calibrated at the Northwest Regional Calibration Center (NRCC) in February, 1985. An onboard PDP 8/e FOCAL computer program was used to convert the frequency readings of the SV/D system to engineering units for determination of sound velocity profiles. Two Nansen bottles, one at the surface and one at depth were also taken during the SV/D cast as a check on the Plessy system. These were not used for velocity computations. ✓

The reversing thermometers used with the Nansen bottle (S/N 61/2991, 5022, 6695, 6700, 16034, 16044) were calibrated at the NRCC in March, 1985. The Beckman salinometer (S/N 59265) was calibrated at the NRCC in March, 1985. ✓

TC/TI tapes were made in accordance with PMC OORDER, Appendix Q, dated April 13, 1984. Printouts of TC/TI tapes are included in Appendix D of this report. ✓

Predicted tide correctors were applied to the soundings plotted on the field sheets of this survey. The tide correctors used were from Los Angeles (Outer Harbor) station (#437) in Table 2 of the 1985 West Coast of North and South America Tide Tables with zone correctors from N/OMS121 applied. For further information, refer to the "Field Tide Note" that is included with the separates following the text. ✓

E. Hydrographic Sheets

All field sheets were plotted aboard FAIRWEATHER using PDP 8/e computers and Complot plotters. ^{Five} ~~Four~~ final field sheets were produced for this survey. The scale, size and base material for these are shown in Table III.

Table III
Hydrographic Sheets

Sheet	Scale	Skew, Width, Length	Base
1. FA 20-1-85	1:20,000	0, 21.5, 54	Mylar
2. Development "A"	1:10,000	0, 18, 18	Paper <i>AWD is #50693</i>
3. Development "B"	1:5,000	0, 19, 28	Mylar
4. Development "C"	1:5,000	0, 12, 8	Mylar

There were no irregularities in projection or scale. All hydrographic data from this survey will be forwarded to the Pacific Marine Center, N/MOP21, for verification and smooth plotting.

F. Control Stations

All horizontal control stations used on this survey were recovered and/or established by FAIRWEATHER personnel. All geodetic positions were based on the North American 1927 Datum. Conventional traverse and triangulation methods were used throughout this survey. No anomalies in control adjustment or in closures were encountered. All positions meet or exceed Third Order, Class 1 specifications. *Names and ages of stations were taken from the Master Station List and for WGS data found in the Horizontal Control Report.*

Stations used in support of this survey are shown in Table IV.

Table IV
Hydrographic Control Stations

Station Name	Signal Number
*+SANTA CRUZ WEST 2 RM 2 1956 r.d.m.	103
*+SAN MIGUEL 4 RM 5 1978 r.d.m.	104
*SURPRISE 1933 r.d.m.	110
*TANK 1933 r.d.m.	112
ANITA 2 1933 r.d.m.	162
SEAL 2 1933 r.d.m.	164
AUGUSTINE 3 CSCL d.m.	166
GATO 1933 r.d.m.	168
*CONCEPTION 1933 RM 3 1985 d.m.	178

r=recovered, m=monumented, d=described, n=not

+ = Stations located offshore, i.e., on islands

* = Stations located outside limits of the survey sheet

For additional information refer to the Horizontal Control Report,
OPR-L100-FA-84,85.

G. Hydrographic Positioning Control

Electronic positioning control for this survey was performed using the Motorola Mini-Ranger III and the Teledyne Hasting RAYDIST systems. Both were used in the range-range configuration, with the Mini-Ranger also used in the range-azimuth configuration. Table V lists all positioning equipment used in each vessel by date. ✓

Raydist Position Control

The Raydist stations were located offshore on the Channel Islands. The red Raydist site was placed on Santa Cruz Island (SANTA CRUZ WEST RM 2 1956, station number 103) and the Raydist green on San Miguel Island (SAN MIGUEL 4 RM 5 1978, station number 104). The stations were in operation from JD 102 to 120. ✓

The Raydist equipment was calibrated using three Mini-Ranger ranges with program RK 561. Calibrations were performed at the beginning and end of each day and whenever a loss or gain of lanes was suspected. Also, on-line calibration checks were performed using two Mini-Ranger rates regularly throughout the day. The daily beginning and ending correctors were averaged to produce a final corrector for processing. The mean difference between the daily beginning and final correctors was 0.09 of a lane with a maximum of 0.31 of a lane. ✓

Launch Raydist antennae were placed in the center of the vessels' stern, thus requiring an ANDIST correction of 4 meters. Raydist positioning was not used for hydrography obtained by the ship. ✓

Andist correction is negligible at 1:20,000 scale. Survey correction was not applied.

Throughout this project many problems were encountered with the Raydist launch equipment. Most of these difficulties were due to the deterioration of the instruments from usage and aging. Almost all the equipment required daily repairs. None of the Raydist problems degraded the quality of hydrography. When lane jumps occurred or the equipment malfunctioned, only data with confirming "on-line" Mini-Ranger checks were kept. All other data was rejected and rerun later. ✓

For a detailed account of the Raydist problems, refer to the Electronic Control Report, OPR-L100-FA-84,85. Since the Raydist positioning system was only used on this survey (H-10171) for the entire Spring project, all Raydist difficulties described in the Electronic Control Report pertain to H-10171. ✓

Mini-Ranger Position Control

Mini-Ranger baseline calibrations (BLC's) were performed two times for this survey. Beginning BLC's for console-R/T pairs 716-C1875, 80323-B1398, and 506042-B1212 were performed on JD 66, 1985 at Magnuson Park, Seattle WA, and for pair 703-B1108 at PMC, Seattle WA, on JD 72, 1985. The ending BLC's were accomplished on JD 140 and 141, 1985, at PMC for all console-R/T pairs except codes A and C on console-R/T pair 506042-B1212. Ending BLC's ✓

for these last two transponders were performed on JD 150 and 151, 1985 at PMC. Final Mini-Ranger correctors were determined by taking the mean of the beginning and ending BLC values. Refer to the Electronic Control Report, OPR-L100-FA-84,85 for more information. ✓

Non-critical systems checks were performed at the beginning and end of hydrography for each day unless prevented by weather or equipment failure. Critical calibration checks were performed weekly by theodolite intersection. Critical checks showed a mean variation of 1.3 meters and a maximum value of 7.0 meters from the baseline calibrations. ✓

Equipment problems encountered with the Mini-Rangers during this survey were:

Interference from transponders of the same code, set up by other organizations was experienced throughout the area. The solution was to replace affected codes with others that were not duplicated in the working grounds. ✓

An ending calibration could not be determined for code 5. This transponder failed after the completion of hydrography and before baseline calibrations could be performed. As a result, beginning BLC values for Code 5 were used as the final correctors. Also during final calibrations, Code B began to fail. Ending BLC values for Code B on consoles 703 and 506042 were rejected. Refer to the Electronic Control Report, OPR-L100-FA-84,84. ✓

Intermittently throughout the project, FA-6's Mini-Ranger console 703 would not update quicker than 4 to 30 seconds, or would completely freeze on one set of values. This would occur when the "hold" button was used. The problem was traced to the R/T unit B1108. The R/T unit was replaced after the final baseline calibrations were performed. ✓

In all cases, the Mini-Ranger R/T units were placed over the transducers on the launches which eliminated the the need to apply ANDIST correctors. ✓

No unusual weather conditions adversely affected positional accuracy of this survey. No hydrography was performed with weak or less than minimum control geometry. Signal strengths were recorded automatically or manually when on line, to insure that all hydrography run with less than minimum required signal strengths was plotted using time and course methods. ✓

Table V
Vessel Positioning Equipment

<u>Vessel</u>	<u>JD</u>	<u>MINIRANGER</u>		<u>RAYDIST</u>	
		<u>Console</u>	<u>Navigator</u>	<u>Transmitter</u>	<u>Interface</u>
FA (2020)	115,119	716/C1875	---	--	--

FA-3 (2023)	103-134	506042/B1212	021	28	22
FA-4 (2024)	103-118	B0323/B1398	119	96	90
FA-5 (2025)	104-114,	716/C1875	016	90	20
	116-117	716/C1875	016	90	20
FA-6 (2026)	103-120	703/B1108	018	83	19

H. Shoreline

All shoreline for this survey was taken from the Class III, registered manuscripts TP-00918 and TP-00919, scale 1:20,000. Comparison between the shoreline hydrography of H-10171 and the mean high water line on the manuscripts shows excellent agreement. The manuscripts are adequate for charting purposes.

In accordance with the Project Instructions Change No. 4, the inshore limits of hydrography was the safe limit for Type I launch operations where Raydist control was available. Thus, no shoreline verification was performed on this survey. Since the shoreline was unverified, it was transferred in blue ink on the final field sheet.

Shoreline transferred in black to smooth sheet. See Evaluation Report Section 2.

I. Crosslines

78.1 nautical miles of crosslines were run comprising 16.3% of the principle hydrography on this survey. The crosslines and main scheme hydrography are in excellent agreement, with all soundings agreeing to within one fathom. ✓

J. Junctions

Survey H-10171 junctions with one contemporary survey, FA-20-1-84, H-10161, scale 1:20,000, year 1984. All soundings in the junction area between H-10171 and H-10161 agree to within 1 fathom. ✓

K. Comparison with Prior Surveys

Comparisons were made between this survey and 1:20,000 scale copies of the five prior surveys: H-5626, scale 1:10,000, year 1933; H-5627, scale 1:10,000, year 1933; H-5746, scale 1:40,000, year 1933-34; H-5776, scale 1:120,000, year 1933-34; and H-5830, scale 1:40,000, year 1934. A detailed discussion of each comparison is given below. ✓

See Evaluation Report Section 6.

H-5626

Soundings from prior survey H-5626 were in excellent agreement with soundings from H-10171, with 99% of soundings agreeing to within one fathom. Of the three soundings that did not agree, one sounding was shoaler and two were deeper on H-5626 than comparable soundings on H-10171. ✓

H-5727

All soundings on H-5627 were found to agree to within one fathom with soundings on H-10171. ✓

H-5776

All soundings on H-5776 that are in common areas were found to be within two fathoms of soundings on H-10171. ✓

H-5746

Agreement to within two fathoms was found between 99% of the soundings on H-5746 and soundings on H-10171. Of the two soundings that did not agree, both are deeper on H-5746 than comparable soundings on H-10171. ✓

H-5830

99% of the soundings on H-5830 show agreement to within two fathoms of those on H-10171. Of the four that did not agree, ^{four} three are deeper and none is shoaler on H-5830 than comparable soundings on H-10171. ✓

All prior soundings discussed above which did not meet the general trends mentioned have been indicated on the 1:20,000 scale copies of the prior surveys. Soundings shoaler than those on H-10171 are indicated in red, while deeper soundings are indicated in blue. *These items were not available*

The limits of this survey contained ⁵24 AWOIS items. Four of these items, #50656, #50674, #50678 and #50691 were for information only and required no action. The other 20 items required some type of action and are listed in Table VI.

The following AWOIS items are submerged well heads that only required normal line spacing to be split in half for a minimum of a 250 meter radius of the stated position. The spacing for these areas was reduced from 180 meters to 90 meters. In all cases, it is recommended that these wells be retained on the chart. *Conserv*

Table VI
AWOIS Items - Submerged Wells

AWOIS No.	Latitude (N)	<i>AWOIS POSITION</i>		<i>AWOIS DEPTHS</i>	
		Longitude (W)	Depth (ft)	Height off bottom (ft)	
50648✓	34/25/44.00	120/22/33.00	61	17	
50650✓	34/25/54.70	120/22/35.71	63	15	
50651✓	34/25/56.00	120/23/18.00	69	17	
50652✓	34/25/46.00	120/23/17.00	101	17	
50653✓	34/26/06.00	120/23/16.00	49	17	
50654✓	34/25/47.00	120/22/31.00	77	17	
50655✓	34/25/48.00	120/22/54.00	92	17	
50657✓	34/25/59.00	120/23/13.00	63	17	
50658✓	34/25/41.00	120/22/48.00	101	17	
50659✓	34/25/54.00	120/23/05.00	69	17	
50660✓	34/25/43.00	120/22/36.00	95	17	
50665✓	34/26/39.55	120/16/19.75	102	11	
50666✓	34/25/54.00	120/22/22.00	61	17	
50669✓	34/26/07.00	120/23/09.00	53	17	
50671✓	34/26/16.00	120/23/18.00	40	17	
50672✓	34/26/10.00	120/23/19.00	46	17	
50673✓	34/26/05.00	120/23/11.00	42	17	
50676✓	34/26/15.00	120/23/01.00	63	17	
50682✓	34/25/58.00	120/23/20.00	66	17	
50687✓	34/25/50.00	120/22/29.00	63-	17	

Development "C"

Item #50693 is a reported rock pinnacle at latitude 34/24/24.00 N, longitude 120/20/30.00 W with a least depth of 4 fathoms. Survey requirements were to verify or disprove. The requirements were fulfilled by getting 100% bottom coverage with the DSF-6000N echo sounders for a radius of one mile around the reported position of the peak. No 4 fm rock pinnacle was found in this area. A least depth of 21.3 fm was obtained at latitude 34/25/14.6 N, longitude 120/20/54.5 W. It is recommended this 4 fathom rock be deleted from the chart. *Concur*

L. Comparison with Chart

The largest scale chart that covers the survey area is chart 18721, 7th edition, January 30, 1982, scale 1:100,000. Since the soundings on this chart are taken from prior surveys H-5626, H-5627, H-5746, H-5776 and H-5830, as indicated on the chart markup sheet, no comparison between H-10171 and chart 18721 was done. Refer to section K, Comparison to Prior Surveys, for this information. *See Evaluation Report section Hand 7*

Table VII lists all the diver investigations completed on this survey.

Table VII
Diver Investigations

Position No.	Item	Least Depth at MLLW (ft)	Fathoms at MLLW (corrected)	Latitude (North)	Longitude (West)
2494	Shoal <i>Diver L.D.</i>	35.1	<i>Reducted 8</i>	34/26/49.33	120/23/38.42
2495	Shoal	27.0	<i>4.5</i>	34/26/52.48	120/23/55.81
2496	Shoal	20.0	<i>3.3 RK</i>	34/26/54.76	120/24/19.07
6994	Metal Obstruction	58.1	<i>* 9' Obst</i>	34/26/07.43	120/23/19.65
6995	Metal Obstruction	55.8	<i>9' Obst</i>	34/26/07.84	120/23/21.75
6996	Shoal <i>(wellhead)</i>	35.1	<i>* 5.6</i>	34/26/33.06	120/24/41.16
6997	Shoal	30.7	<i>5.0</i>	34/26/41.66	120/24/07.00
6998	Shoal	28.8	<i>* 4.8</i>	34/26/44.79	120/24/02.16
6999	Rock	23.4	<i>3.9 RK</i>	34/26/45.72	120/24/13.75

* Exceeded shoal depths found, refer to Smooth Sheet

The only danger to navigation found in this survey was a metal obstruction (position number 6995) at latitude 34/26/07.84 N, longitude 120/23/21.75 W, least depth 55.8 ft. It should be noted that the depth given in the letter to the Coast Guard was found to be incorrect by 0.2 fathom. This change was not submitted to the Coast Guard. Refer to appendix J of this report, Danger to Navigation Correspondence, for more information. *(page 61) This feature is now 11.5m*

anchors located 800 meters west of the charted position as indicated on present survey.

This error became self-correcting with the application of real tides

*9.3 hour
-2
9.1 corrected*

M. Adequacy of Survey

This survey is complete and accurate to supersede all prior surveys within any common areas. No additional work is required.

N. Aids to Navigation

See Evaluation Report Section 7

There are no aids to navigation located within the limits of this survey however, the following oil platforms were located as landmarks to charts. Refer to the Horizontal Control Report, OPR-L100-FA-84,85 for positioning information.

Landmark	Surveyed Position
Helen	34/26/37.894 N 120/17/50.457 W
Herman	34/25/53.271 N 120/22/53.508 W

O. StatisticsVessels

<u>Item</u>	<u>2020</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>Total</u>
No. of Positions	9	1545 1444	768 4	58 47	1004 955	3216 3219
Total Nautical Miles	0	295.3	201.0	0	200.8	697.1
Total Square Miles	0	-	-	-	-	60.0
Detached Positions	0	9	0	0	13	22
Bottom Samples	9	0	0	49	0	58

No magnetic or current stations were established within the survey limits. FAIRWEATHER conducted two sound velocity casts. One tide station was established.

P. Miscellaneous

Bottom samples were collected and forwarded to the Smithsonian Institute, Washington DC. A small current of approximately 1.0 to 1.5 knots was observed throughout the survey area.

Q. Recommendations

None

R. Automated Data Processing

All range-azimuth and range-range hydrography was processed according to the Hydrographic Data Requirements Letter (appendix Q), dated April 13, 1984. Range-azimuth positioning was used for bottom samples only. All peaks, deeps, and sounding corrections for range-range hydrography were placed on a corrector tape.

Table VIII is a list of all programs used in acquiring and processing the data collected during this survey.

Table VIII

<u>Number</u>	<u>Program Name</u>	<u>Version Date</u>
RK 112	R/R Real Time Plot	4/23/84
RK 116	R/Az Real Time Plot	10/01/84
RK 201	Grid, Signal and Lattice Plot	4/18/75
RK 211	R/R Non Real Time Plot	2/13/84
RK 212	Visual Station Load and Plot	4/01/74
RK 216	R/Az Non Real Time Plot	2/12/84

RK 300	Utility Computations	10/21/80
RK 330	Reformat and Data Check	5/04/76
RK 360	Electronic Corrector Abstract	2/02/76
RK 362	RK 330 and AM 602 Combined	8/20/84
RK 407	Geodetic Inverse/Direct Computation	9/25/78
AM 500	Predicted Tide Generator	11/10/72
RK 530	Layer Corrections for Velocity	5/10/76
RK 561	H/R Geodetic Calibration	12/01/82
RK 562	Theodolite Calibration	9/10/74
AM 602	ELINORE - Line Oriented Editor	12/08/82
-----	FAIRWEATHER SV/D Program	-----

5. Referral to Reports

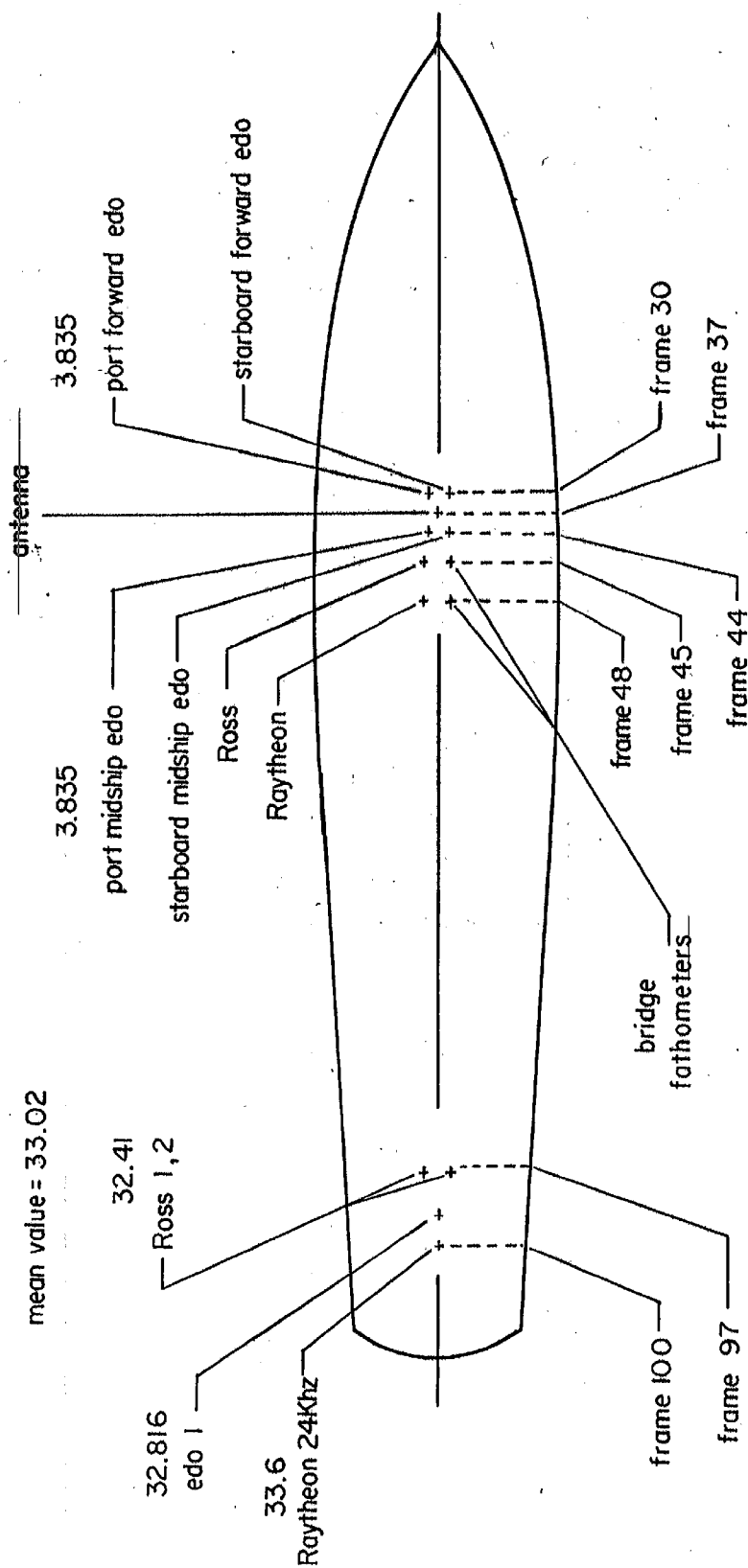
The following reports contain additional information pertaining to this survey and will be submitted separately from the descriptive report:

<u>Report</u>	<u>Date Submitted</u>
Horizontal Control Report, OPR-L100-FA-84,85	July, 1985
* { Electronic Control Report, OPR-L100-FA-84,85	July, 1985
* { Corrections to Echo Soundings Report, OPR-L100-FA-84,85	July, 1985
Coast Pilot Report, OPR-L100-FA-84,85	July, 1985

* Filed with the field records for H-10165

XWW
8/12/92

FAIRWEATHER TRANSDUCER LOCATION DIAGRAM, APRIL 1982



numerical values are distance in meters forward or aft of antenna

Figure 1

Approval Sheet

The final field sheets and the accompanying records have been reviewed for accuracy, completeness, compliance to project instructions and adherence to required standards and procedures. The Commanding officer monitored field work and inspected selected portions of the data on a daily basis. This survey is complete. The data is forwarded for final review and processing.

Submitted by:

Elizabeth A. Crozer

Elizabeth A. Crozer
Ensign, NOAA

Reviewed by:

Kathryn A. Andreen

Kathryn A. Andreen
Lieutenant Commander, NOAA
Field Operations Officer

Approved by:

John W. Carpenter

John W. Carpenter
Captain, NOAA
Commanding Officer



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

NATIONAL OCEAN SERVICE
NOAA Ship FAIRWEATHER
1801 Fairview Ave. E.
Seattle, WA 98102

May 6, 1985 1703-01.05:KAA

Commander
Eleventh Coast Guard District
400 Ocean Gate Blvd.
Long Beach, CA 90822

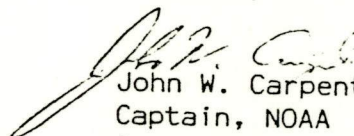
Dear Sir;

The following danger to navigation has been discovered by the NOAA Ship FAIRWEATHER during recent hydrographic survey operations in the area between Gaviota and Point Conception:

Obstruction, covered by 9.1 fathoms at Mean Lower Low Water. This is located at latitude 34/26/07.8 N, longitude 120/23/21.8 W at a distance of 3.1 miles from Government Point on a bearing of 098 degrees True. This obstruction should be shown on NOAA Charts No. 18720 and 18721.

If you have any questions or need additional information, please contact Nautical Chart Branch, Pacific Marine Center at (206)-526-6835.

Sincerely,


John W. Carpenter
Captain, NOAA
Commanding Officer

Note: This feature is shown at 506.72 and is located 816 meters west of the charted position - chart as indicated on present survey.

cc: N/CG222 - Chart Information Section
N/MOP21 - Nautical Chart Branch



CO
X
FL 0

T

RTTUZYUW RUWNTEB0042 1200210-UUUU--RUWNSUU.

ZNR UUUUU

R 080210Z MAY 85

FM NOAA6 FAIRWEATHER

TO CCGDELEVEN LONG BEACH CA

INFO NOAAADP SEATTLE WA

DMAHTC WASHINGTON DC//NVS//

ACCT CM-VCA

BT

UNCLAS

FA-PMC-030

1. OBSTRUCTION COVERED BY 9.1 FATHOMS AT MEAN LOWER LOW WATER
DISCOVERED: NOAA CHARTS NO. 18720 AND 18721: LATITUDE 34
DEGREES, 26 MINUTES, 7.8 SECONDS NORTH; LONGITUDE 120 DEGREES,
23 MINUTES, 21.8 SECONDS WEST; DISTANCE 3.1 NAUTICAL MILES,
BEARING 098 DEGREES TRUE FROM GOVERNMENT POINT.
2. LETTER CONTAINING SAME INFORMATION MAILED TO:
 - A. CCGDELEVEN LONG BEACH CA
 - B. (NOAA) N/CG222
 - C. (NOAA) N/MOP21

BT

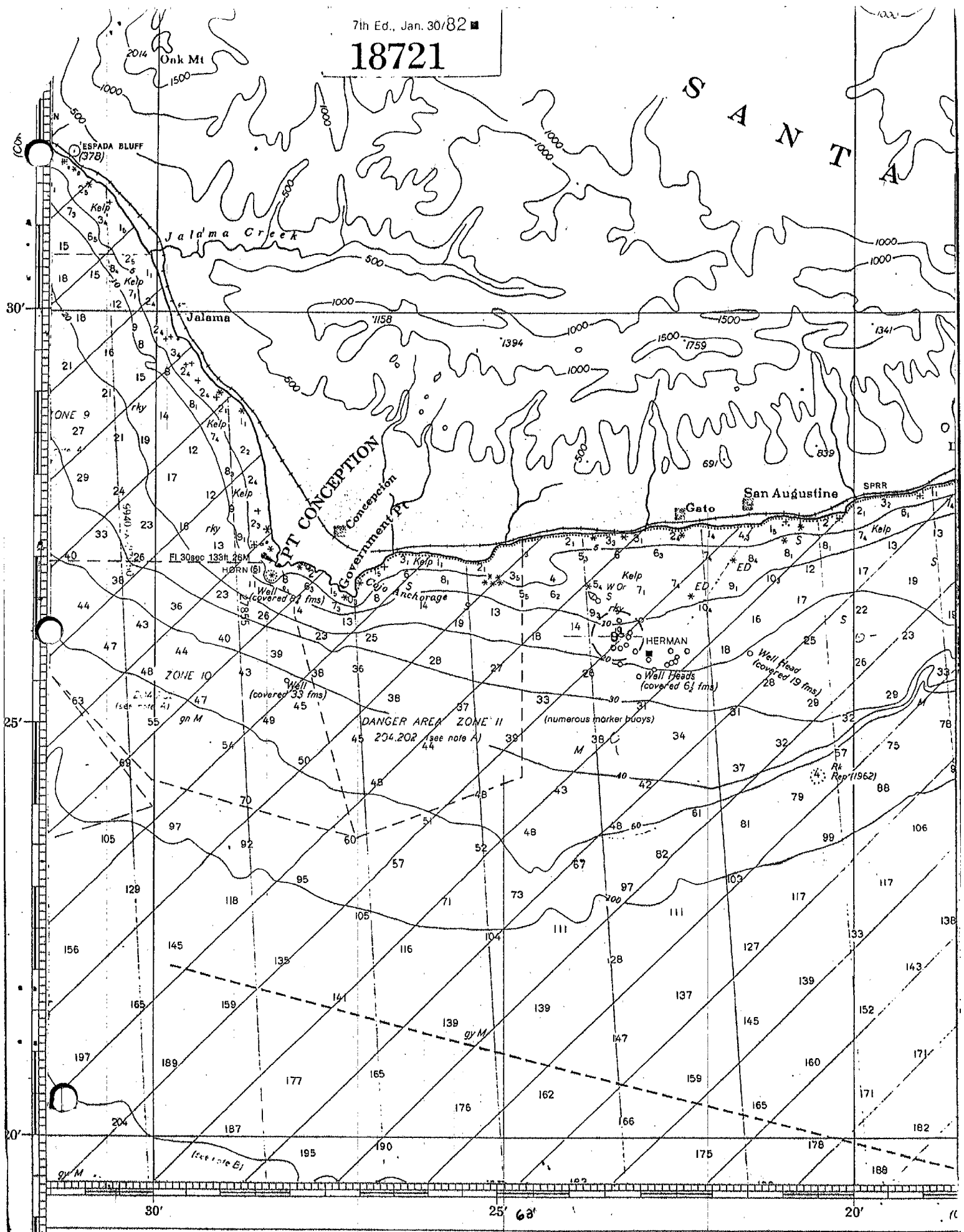
#0042

NNNN

TOO
NMC / 080535Z MAY 85
JWA / 6.226
6.2665 MAY RTTY

[Handwritten signature]

18721



Field Tide Note
OPR-L100-FA-84,85
Southern California

Los Angeles (Outer Harbor) served as the reference station for the predicted tides used as correctors on the supplemental field work for survey H-10165 and survey H-10171 as stated in the project instructions, OPR-L100-FA-84,85. The following tidal zone correctors were applied to the predicted tides from Los Angeles (Outer Harbor), as required by Section 5.9 of the Project Instructions:

Time Correctors:

High Water: +0 Hours 38 Minutes
Low Water: +0 Hours 36 Minutes

Height Ratio:

$0.94 \times \text{predicted tide from table} = \text{predicted tide for project area}$

These correctors were included in the tide package provided by N/OMS 121 at the beginning of the project. The controlling tide gauge was Rincon Island, California (station number 941-1270). Leveling and periodic maintenance of the primary gauge at Rincon Island are performed by Coast Survey Limited.

Predicted tide correctors were interpolated aboard FAIRWEATHER, using data from the 1985 West Coast Tide Tables and program AM 500 (Predicted Tide Generator), dated 10 November 1972.

All times of predicted and reported tides (from gauges) are expressed in Universal Coordinated Time (UTC). Predicted tides were acceptable for hydrography with no discrepancies in the data attributable to tide errors.

A back-up gauge (station number 941-1270B) was installed at the site of the primary gauge on Rincon Island (Lat. 32 20.9'N, Long. 119 26.6'W), for the purpose of providing controlling tidal data in case the primary gauge malfunctioned. This gauge was a Bristol Bubbler analog tide gauge (S/N 67A 40288) with a range of 0 to 20 feet. It was installed on April 8, 1985 (JD 98) and removed on May 5, 1985 (JD 121). The gauge was secured to the wooden dock across the road from the primary gauge, just above the existing tide staff. The orifice used was installed on October 4, 1984, and examined by divers on April 8, 1985 prior to it's being connected to the gauge. The orifice was secured to the bottom of the existing staff and, for this reason, no levels were run.

DATE: 07/08/85

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Marine Center: Pacific

OPR: L100

Hydrographic Sheet: H-10171

Locality: Santa Barbara Channel, Vicinity of Point Conception, CA

Time Period: April 13 - May 14, 1985


Tide Station Used: 941-1270 Rincon Island, CA

Plane of Reference (Mean Lower Low Water): 4.10 ft.

Height of Mean High Water Above Plane of Reference: 4.7 ft.

Remarks: Recommended Zoning:

- 1) Apply +15 minute time correction and x0.94 range ratio to all heights


Chief, Tidal Datums Section

GEOGRAPHIC NAMES

H-10171

Name on Survey	ON CHART NO. 18721 ON PREVIOUS SURVEY									
	A	B	C	D	E	F	G	H	K	
Cojo Anchorage										1
Drake										2
Gato										3
Government Point										4
Point Conception										5
Sacate										6
San Augustine										7
Santa Barbara Channel										8
California (title)										9
Gaviota										10
										11
										12
										13
										14
										15
										16
										17
										18
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										23
										24
										25

Approved:

Charles E. Harrington
Chief Geographer - N/C625

DEC 10 1986

HYDROGRAPHIC SURVEY STATISTICS

H-10171

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT
SMOOTH SHEET		1	SMOOTH OVERLAYS: POS., ARC, EXCESS		4
DESCRIPTIVE REPORT		1	FIELD SHEETS AND OTHER OVERLAYS		4
DESCRIP- TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR- GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS
ACCORDION FILES	2				
ENVELOPES					
VOLUMES	1				
CAHIERS					
BOXES					

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List): For OPR-L100-FA-84 includes the following reports (correction to

NAUTICAL CHARTS (List): echo sounder, Electronic Control, Horizontal Control

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET			2294
POSITIONS REVISED			22
SOUNDINGS REVISED			39
CONTROL STATIONS REVISED			0
	TIME-HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	33		33
VERIFICATION OF SOUNDINGS	64.5		64.5
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	56		56
COMPARISON WITH PRIOR SURVEYS AND CHARTS		59	59
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT	1	37	38
GEOGRAPHIC NAMES			
OTHER: Digitizing			15
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	154.5	96
Pre-processing Examination by K. Scott	Beginning Date 7/12/85	Ending Date 7/12/85	
Verification of Field Data by R.N. Mihailov	Time (Hours) 154.5	Ending Date 1/17/86	
Verification Check by S.A. Otsubo, B.A. Olmstead, J.S. Green	Time (Hours) 23.5	Ending Date 3/4/86	
Evaluation and Analysis by G.E. Kay	Time (Hours) 96	Ending Date 3/5/86	
Inspection by D.J. Hill	Time (Hours) 2.0	Ending Date 3/4/86	

PACIFIC MARINE CENTER
EVALUATION REPORT
H-10171

1. INTRODUCTION

H-10171 was accomplished by the NOAA Ship FAIRWEATHER in accordance with the following project instructions:

OPR-L100-FA-84, dated January 19, 1984
Change No. 1, dated January 31, 1984
Change No. 2, dated August 2, 1984
Change No. 3, dated February 7, 1985
Change No. 4, dated March 28, 1985

This is a basic hydrographic survey of the California coast between the town of Gaviota on the east and Point Conception on the west. The survey extends from the 100-fathom depth curve on the south to the limit of safe navigation for the survey vessels inshore (approximately the 2-fathom depth curve). Survey depths range from 186 fathoms near the southeastern limits to a minimum of 0.6 fathoms near the shore. The ocean bottom is comprised mostly of green sand and mud.

Predicted tides based on the Los Angeles (Outer Harbor) gage were used during field processing. Tide correctors used for the final reduction of soundings reflect hourly heights zoned from Rincon Island, California (941-1270).

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The revisions are contained in the final data listings.

A digital file for this survey has been generated and includes categories of information required to comply with N/CG2 Hydrographic Survey Guideline No. 23, Completion of Digital Hydrographic Surveys, September 7, 1983. Certain descriptive information, however, may not be included in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete information.

2. CONTROL AND SHORELINE

Hydrographic control and positioning are adequately discussed in sections F and G of the hydrographer's report and in the Horizontal and Electronic Control Reports for OPR-L100-FA-84,85.

Horizontal control stations used during hydrography are published positions on the North American Datum of 1927.

Applicable shoreline manuscripts are TP-00918 and TP-00919. These maps are registered Class III, and originate from photography dated October 1975 and March 1976. These maps were not field verified. Shoreline was transferred to the smooth sheet in black ink.

3. HYDROGRAPHY

Soundings at line crossings are in good agreement. The depth curves could be completely and adequately drawn, except the zero and one-fathom curve, where hydrographic operations ended because of the shallow water deficiencies of the DSF 6000N fathometer and the safe limit of Type 1 launch navigation, as directed by Project Instructions, Change 4, section 1.8. Delineation of the bottom configuration and the determination of least depths within the surveyed area are adequate.

4. CONDITION OF SURVEY

The hydrographic records and reports are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change 3, except as noted in the Preprocessing Examination Report, dated July 22, 1985, and: - not included in D.R.

Charted aids to navigation were neither verified or confirmed during the course of this survey, as required by Hydrographic Manual 4.5.13.3 and Project Instructions 4.2.2.1, 4.2.2.4.

5. JUNCTIONS

H-10171 junctions in the east with H-10161 (1984) 1:20,000. Soundings were transferred from H-10161 to effect an adequate junction. These soundings and the junction note "Joins" are shown in red ink.

There are no contemporary surveys to the west or south, however, a comparison with charted depths reveals good agreement with the present survey.

6. COMPARISON WITH PRIOR SURVEYS

H-5626 (1933) 1:10,000
H-5627 (1933) 1:10,000

Present survey soundings compare well with these prior surveys. Present depths are less than one fathom shoaler than the priors, indicating a very stable bottom. Alongshore features, rocks, ledges, soundings on rocks on the prior surveys were not investigated and therefore are not disproven. These features have been transferred to the smooth sheet. For identification, violet ink was used for H-5626 and brown ink was used for H-5627.

H-5746 (1933-34) 1:40,000
H-5776 (1933-35) 1:120,000
H-5830 (1934) 1:40,000

Present survey soundings compare well with these priors. Differences between these priors and the present survey are approximately one fathom in depths of 70 fathoms.

AWOIS items are adequately discussed in section K of the hydrographer's report.

With the transferring of features from H-5626 and H-5627 to the smooth sheet, H-10171 is adequate to supersede the above prior surveys within areas of common coverage.

7. COMPARISON WITH CHART

Chart 18721, 7th Edition, dated January 30, 1982; scale 1:100,000.

a. Hydrography - Charted information originates with the prior surveys discussed in section 6 of this report and miscellaneous sources.

Present survey depths are generally shoaler than the charted depths. In charted depths of 8 fathoms the present survey is 0.3 fathom shoaler. This trend continues and at a charted depth of 184 fathoms the present survey is 3 fathoms shoaler. The exception to the shoaling trend is found at latitude 34°26'30"N, longitude 120°22'00"W. The present 10-fathom curve turns inward toward the coast line 400 meters, then seaward again, thus portraying the area as a small underwater ravine.

AWOIS item #50672, wellhead charted at latitude 34°26'10.0"N, longitude 120°23'19.0"W, was confirmed by a dive investigation (position number #6995) at latitude 34°26'07.45"N, longitude 120°23'19.87"W. This new position is 81.6 meters west of the charted position. This AWOIS feature (50672) should be revised to the newly obtained position and charted accordingly. *do not concur*
The wellhead covered 9 fms located by the present survey does not confirm any of the charted wellheads.

The charted well heads, pipelines and aids to navigation come from non-NOS sources, as in the case with AWOIS #50693, a reported 4RK(1962), which comes from a letter from a private citizen.

Charted alongshore features were neither verified nor disproven during the course of this survey (reference Preprocessing Examination Report, dated July 22, 1985, Section II D). Prior survey shoreline features have been carried forward onto the smooth sheet. *-not included in D.R.*

Several rocks charted from unreviewed shoreline maps have been identified as erroneously charted (see chart markup of OPR-L100-FA-84, copy attached). *-copy not attached.* These rocks, listed below, should be removed from the chart:

<u>Feature</u>	<u>Latitude North</u>	<u>Longitude West</u>
rock	34°26'43" ✓	120°25'11"
rock	34°26'48" ✓	120°25'07"
rock	34°26'43" ✓	120°25'05"
rock	34°26'47" ✓	120°25'00"
rock	34°26'43" ✓	120°24'58"
rock	34°26'41" ✓	120°23'43"
rock	34°27'18" ✓	120°22'24"
rock ED	34°26'34" ✓	120°22'17"
rock ED	34°27'00" ✓	120°21'40"
rock	34°27'14" ✓	120°20'57"
rock	34°27'23" ✓	120°20'43"

Geographic names appearing on the smooth sheet have been plotted in accordance with this chart.

Except for the charted well heads, pipelines, and aids to navigation, H-10171 is adequate to supersede charted hydrography within the common area.

A Dangers to Navigation Report (copy appended) has been submitted to the Eleventh Coast Guard District and the Defense Mapping Agency from the NOAA Ship FAIRWEATHER on May 6, 1985. No additional dangers were identified during office processing.

b. Controlling Depths - There are no controlling depths within the limits of this survey.

c. Aids to Navigation - There is one fixed and one floating aid (privately maintained) within the limits of this survey as follows:

<u>1985 Light List Number</u>	<u>Name</u>	<u>Latitude North</u>	<u>Longitude West</u>
29	Point Conception Light	34°26' 55.360"	120°28'11.250"
516	Cojo Anchorage Special Purpose Buoy (private aid)	34°26.5'	120°23.6'

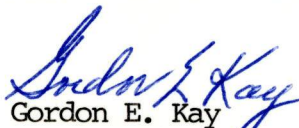
Neither of these aids were located or confirmed during the course of this survey. These aids should remain as charted.

8. COMPLIANCE WITH INSTRUCTIONS

H-10171 adequately complies with the project instructions as amended and noted in Section 1 of this report.

9. ADDITIONAL FIELD WORK

This is an adequate basic survey. Additional field work is not recommended.


Gordon E. Kay
Cartographer

This survey has been examined and it meets Charting and Geodetic Services standards and requirements for use in nautical charting. The survey is recommended for approval.


Dennis Hill
Chief, Hydrographic Section

ATTACHMENT TO DESCRIPTIVE REPORT FOR H-10171

I have reviewed the smooth sheet, accompanying data, and reports of this hydrographic survey. Except as noted in the Evaluation Report, the hydrographic survey meets or exceeds Charting and Geodetic Services (C&GS) standards, complies with instructions, and is accurately and completely represented by the smooth sheet and digital data file for use in nautical charting.

Rowan R. R. R. 3/10/86
Chief, Nautical Chart Branch (Date)

CLEARANCE:

N/MOP2:LWMordock

SIGNATURE AND DATE:

[Signature]

After review of the smooth sheet and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards with only the exceptions as noted above. The above recommendations are forwarded with my concurrence.

Robert L. Sandberg 3/10/86
Director, Pacific Marine Center (Date)



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

N/CG242:SRB

February 26, 1987

TO: N/CG24 - Roy K. Matsushige *RCM*
FROM: N/CG242 - *George K. Myers, Jr.*
George K. Myers, Jr.
SUBJECT: Examination of Hydrographic Survey H-10171 (1985), California, Santa Barbara Channel, Gaviota to Point Conception

Chief of Party J. W. Carpenter
Field Unit NOAA Ship FAIRWEATHER
Processed by Pacific Marine Center
Examined by S. R. Baumgardner

An examination of hydrographic survey H-10171 (1985) was accomplished to monitor the survey for adequacy with respect to data acquisition, conformance with applicable project instructions, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, smooth plotting, shoreline transfer, decisions made and actions taken by the evaluator, and the cartographic presentation of data.

Cartographic deficiencies and constructive comments are noted on a $\frac{1}{2}$ -scale copy of the survey smooth sheet which will be forwarded to the marine center. Digital data on magnetic tape were not available during the examination of this survey. Therefore, an inspection of a graphic plot from the certified tape was not performed.

In general, the survey was found to conform to National Ocean Service standards and requirements except as stated in the Evaluation Report and as follows:

1. The development of a charted 4-fathom rock, reported in 1962 (AWOIS item 50693), located in latitude $34^{\circ}24'24''N$, longitude $120^{\circ}20'30''W$, is not graphically represented on the smooth sheet.

Section 7.3.8.3 of the Hydrographic Manual requires that developments be smooth plotted to reflect the relative density of hydrography and be evident on an initial cursory inspection of the completed smooth sheet.

The development consisted of 50-meter line spacing for a radius of 1 nautical mile, or approximately 135 linear miles of hydrography.



With the exception of four soundings that depict a 21-fathom shoal in the vicinity of latitude 34°25.20'N, longitude 120°20.95'W, none of the above hydrography was plotted on the smooth sheet as the raw data listings were annotated "not to be smooth plotted."

These soundings should have been utilized in the processing of the smooth sheet in order to supplement main-scheme hydrography, support the hydrographer's area coverage statement, and meet the above Hydrographic Manual requirement.

2. The results of a development conducted to ensure that dangers did not exist in the area of an unsupported 25-fathom shoal sounding located along a crossline at latitude 34°24'57"N, longitude 120°21'40"W, was not documented in the Descriptive Report nor plotted on the smooth sheet as required. (See section 7.3.8.3 of the Hydrographic Manual.)
3. Numerous soundings were unnecessarily placed in excess during processing. Open areas on the smooth sheet where acquired valid soundings exist should be avoided.
4. Reference is made in the Evaluation Report to a Preprocessing Examination Report and a chart markup. These documents are not intended to be made a part of the final survey records and should not be referenced. The Evaluation Report should stand on its own.
5. A submerged rock, plotted in latitude 34°26'53"N, longitude 120°26'35"W on the smooth sheet, was not transferred accurately from H-5627 (1933), a prior survey. The correct position should be latitude 34°26'54"N, longitude 120°26'38"W, approximately 80 meters to the northwest.
6. Two rocks awash in violet ink, located in the vicinity of latitude 34°28'03"N, longitude 120°15'51"W, should be disregarded and charted as ledge from H-5626 (1933).
7. An islet, brought forward from H-5626 (1933), in latitude 34°28'06"N, longitude 120°16'10"W, should be charted as a rock awash. (See section 6.3.7.3 no. 3 of the Hydrographic Manual.)
8. The NOAA Form 76-155, "Geographic Names," was not approved by the Chief Geographer as required. (See Hydrographic Survey Guideline No. 22.) Approval was obtained during this examination.
9. A solid brown line inked in the vicinity of latitude 34°27.4'N, longitude 120°22.9'W depicting the existence of a high water feature on the smooth sheet is not shown on the prior survey, H-5627 (1933), the alleged source. This feature should be disregarded in charting.
10. Markings on a number of mooring buoys identified in the survey records are omitted on the smooth sheet of the present survey. However, mooring buoys plotted on the junctional survey, H-10161 (1984), are labeled. A consistent practice should be implemented to either include or omit available survey

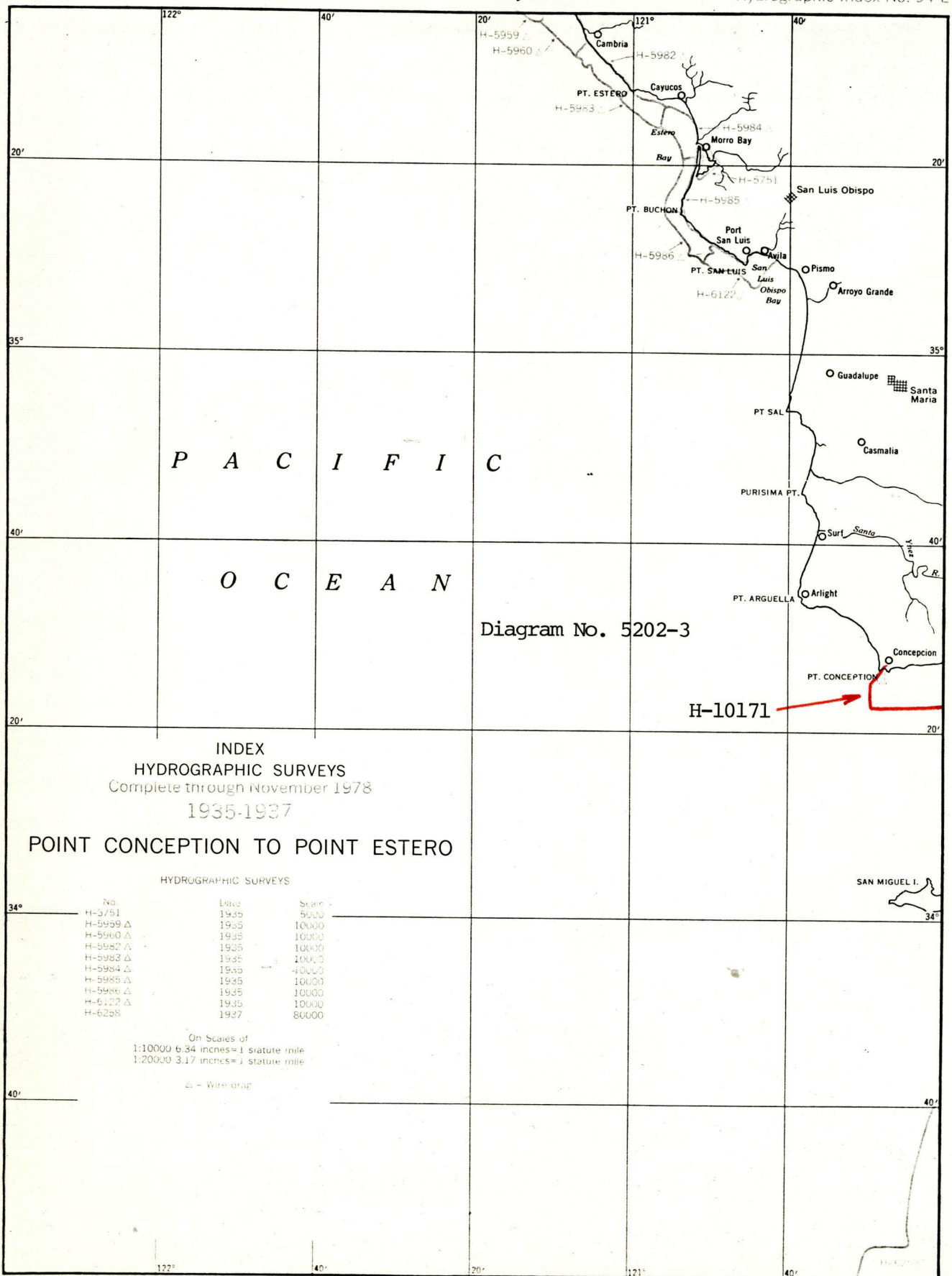
information; i.e., markings on mooring buoys, on smooth sheets during the processing of survey data.

11. Two buoys located at latitude $34^{\circ}26'48''\text{N}$, longitude $120^{\circ}25'00''\text{N}$ (detached position 6768) and latitude $34^{\circ}26'48''\text{N}$, longitude $120^{\circ}25'02''\text{W}$ (detached position 6769) are identified as spherical buoys in the sounding records, while remaining buoys in the area are specifically noted as mooring buoys. These two buoys, of which only one is shown on the smooth sheet and designated a mooring buoy, are considered to be as described by the hydrographer. Both buoys should have been plotted on the smooth sheet as diamond-shape symbols (cartographic code 212). The westerly buoy of the two is marked and should be labeled "HOSE" in black slanted letters on the smooth sheet as described in the survey records.

12. Low water features which fall outside the general limits of hydrography on the present survey were incorrectly transferred to the smooth sheet from contemporary shoreline maps and a prior survey. These features should have been omitted and appropriately shown on the adjoining survey, if applicable.

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Rockville, Maryland

Hydrographic Index No. 94 E



FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10171

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.

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