9068

9068

Chart Diagram # 526

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. PF-80-2-69 *Office No.* H-9068

LOCALITY

State CALIFORNIA

General locality South of San Nicolas Is.

Locality Cortes Bank

1969

CHIEF OF PARTY

E. A. Taylor, Cdr., USESSA

LIBRARY & ARCHIVES

DATE 1-5-74

USCOMM-DC 37022-P65

FORM C&GS-537 (5-66)

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REGISTER NO. H-9068

FIELD NO. PF-80-2-69

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State CALIFORNIA

General locality South of San Nicolas Island

Locality Cortes Bank

Scale 1:80,000 Date of survey 3/3/69 - 3/26/69

Instructions dated 13 January 1969 Project No. OPR-411

Vessel USC&GSS PATHFINDER

Chief of party Capt. E. A. Taylor, USESSA

Surveyed by Ship Personnel

Soundings taken by echo sounder, hand lead, pole Raytheon DE-723 & Precision Fathometer Recorder.

Graphic record scaled by Ship Personnel

Graphic record checked by Ship Personnel

Positions verified by Stanley H. Otsubo Automated plot by Gerber Digital Plotter PMC-EDP Branch

Soundings verified by Stanley H. Otsubo

Soundings in fathoms at MLLW

REMARKS:

Applied to stds 5-29-74

Exam for cat corr 5/31/74 CAB

USCOMM-DC 37009-P66

9068

DESCRIPTIVE REPORT
BATHYMETRIC SURVEY

USC&GSS PATHFINDER
E. A. TAYLOR, COMMANDING

OPR-411, 1969
Scale 1:80,000

A. PROJECT

The hydrography on this sheet was completed in accordance with the PROJECT INSTRUCTIONS: OPR-411, SOUTHERN CALIFORNIA, dated January 13, 1969.

B. AREA SURVEYED

This survey is approximately 60 nautical miles south of San Nicolas Island. The hydrography extends from Long. 118 58W to Long. 119 27W and from Lat. 32° 12N to Lat. 32° 38N. The major portion of this survey was completed from March 3 to March 26, 1969.

This survey is joined on the north by the contemporary survey PF 80-1-69 (H-9067) and on the west by the contemporary survey PF 80-3-69 (H-9068). In the north east sector of this survey is a contemporary survey PF 40-2-69 (H-9065) which covers Cortes Bank.

PF 80-2-69 is combined with PF 80-3-69 as H-9068

C. SOUNDING VESSEL

The entire survey was done by the ship PATHFINDER.

D. SOUNDING EQUIPMENT

The Raytheon DE 723 fathometer and the Precision Fathometer Recorder were used for this survey.

UNIT	SERIAL	MODEL
723-1	940	DE 723
PFR-2	22	PFR 195-1

E. SMOOTH SHEET

To be filled in by the smooth plotter at Pacific Marine Center.

F. CONTROL

Control for this survey was by LORAC B electronic navigation system. The following equipment was supplied by the U. S. Navy at Pt. Mugu, California.

F. CONTROL CONT.

UNIT	MODEL	SERIAL NO.	FIX NO.
Receiver	RU-125-14A	19	1-1650
Receiver	RU-125-14A	171	1651-1984
Indicator	RI-125-14AB	179	All
Recorder	RO-91/SSN	42	All

Eight of the ships officers received 8 hours of training in the theory and operation of LORAC B at the Pacific Missile Range Facility, Pt. Mugu, California.

Calibration was performed in the normal manner for electronic surveys, with sextant angles to San Nicolas Island and by calibrating at Cortes Bank buoy. Calibration was frequently checked.

G. SHORELINE

There was no shore line involved in the area of this survey.

H. CROSSLINES

Crosslines constituted 8.1 percent of the sounding lines run. The discrepancies of crosslines were resolved by scanning of the fathograms and careful replotting of soundings.

I. JUNCTIONS

There was good agreement between the soundings of PF 80-2-69, H-9068 and ajoining contemporary surveys.

J. COMPARISONS WITH PRIOR SURVEYS

Good agreement was obtained with prior surveys numbered H 6206 (1936) and H 6211. (1936)

K. COMPARSON WITH THE CHART

A comparison between PF 80-2-69, H-9068 and C&GS Chart 5101 (9th Ed. Jan 31/66) was made. This survey agrees very well with charted depths.

L. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede all prior surveys for charting.

M. AIDS TO NAVIGATION

There are two buoys within the limits of PF 80-2-69, H-9068 which are in the vicinity of Cortes Bank. These are a lighted whistle buoy 2CB and a red nun station keeping buoy. For a further description of them refer to the Descriptive Report PF 40-2-69. H-9065

N. STATISTICS

Bottom Samples...7 ✓
Oceanographic Station...1
Square Nautical Miles...625 sq. n. m.
Number of Fixes...1984 (1-1984) ✓
Nautical Miles of Sounding Lines...2539 n. m.
Nautical Miles of Magnetic Data...1900 n. m.

O. MISCELLANEOUS

None

P. RECOMMENDATION

None

Q. REFERENCES

Lorac Report-1969-USC&GSS PATHFINDER
Descriptive Report-PF 40-2-69, H-9065
Fathometer Report-1969-USC&GSS PATHFINDER *Not available at time of review.*
Annual Report-1969-USC&GSS PATHFINDER

Respectfully submitted
Richard S. Young
Richard S. Young
Lt(jg) USESSA

Approved and forwarded:

J. D. Stachelhaus
J. D. Stachelhaus
LT USESSA
Field Operation Officer
USC&GSS PATHFINDER

TIDE NOTE

The standard tide gage at Los Angeles, California served as the reference station to control hydrography, Hourly heights were furnished by the bureau headquarters. Time correction of +15 minutes and range ratio of .9 are to be applied to the Los Angeles tides.

Time	Draft	Initial	TRA	Day
1938	2.3	0.0	+2.3	62
0000	2.3	0.0	+2.3	63
0000	2.5	0.0	+2.5	70
1050	2.5	-2.4	+0.1	"
1239	2.5	0.0	+2.5	"
0000	2.5	0.0	+2.5	71
1758	2.5	-2.2	+0.3	"
1812	2.5	0.0	+2.5	"
1819	2.5	-2.2	+0.3	"
1852	2.5	0.0	+2.5	"
0000	2.4	0.0	+2.4	72
0403	2.4	-2.2	+0.2	"
0415	2.4	0.0	+2.4	"
0457	2.4	-2.2	+0.2	"
0532	2.4	0.0	+2.4	"
1854	2.4	-2.2	+0.2	"
1910	2.4	0.0	+2.4	"
0000	2.4	0.0	+2.4	73
0000	2.4	0.0	+2.4	74
2249	2.4	-2.4	0.0	"
2315	2.4	0.0	+2.4	"
0000	2.3	-2.4	-0.1	75
1501	2.3	-2.2	+0.1	"
0000	2.3	-2.2	+0.1	76
1354	2.3	0.0	+2.3	"
0000	2.3	0.0	+2.3	77
0922	2.3	-0.1	+2.2	"
1733	2.3	-0.2	+2.1	"
0000	2.3	-0.2	+2.1	78
1104	2.3	0.0	+2.3	"
0000	2.3	0.0	+2.3	79
0633	2.3	+0.1	+2.4	"
082832	2.3	0.0	+2.3	"
1529	2.3	-0.1	+2.2	"
1617	2.3	0.0	+2.3	"
0000	2.5	0.0	+2.5	83
0000	2.5	0.0	+2.5	84
2156	2.5	+0.1	+2.6	"
0000	2.5	+0.1	+2.6	85
0035	2.5	0.0	+2.5	"
0000	2.4	0.0	+2.4	86
0000	2.3	0.0	+2.3	93
1343	2.3	+1.0	+3.3	"
1404	2.3	0.0	+2.3	"
0000	2.5	0.0	+2.5	111

LORAC CALIBRATION

The Navy's LORAC electronic positioning equipment was installed aboard ship at Port Hueneme, California. The system was calibrated at dockside by scaling the appropiate lane count from a large scale Pacific Missile Range (PMR) sheet. The ship departed from Port Hueneme and sailed to the vicinity of San Nicolas Island where the calibration values were again determined by three point sextant fixes on the various objects listed below. The visual fixes were plotted on a PMR sheet of approximately 1: 27000 scale. The PMRsheet was of the same poor quality paper as the project boatsheets provided by PMR. A discrepancy was noted between the two calibration sites which was not resolved until a 1 : 10000 scale calibration sheet was ordered from PMC and the LORAC curves hand drawn on it. The discrepancy was resolved to be a combination lane loss during the ship's transit time from Port Hueneme and the poor quality-small scale PMR calibration sheet. After resolving the above mentioned problems the calibrations between the two sites agreed well.

A LORAC position was carried from San Nicolas Island to the lighted whistle buoy "2CB" located on Cortes Bank. This buoy was used frequently to determine whole lane count during the survey.

Control for Visual Fixes

	Lat.	Long.
Navigation Light(East end of San Nicolas Is.) obtained from PMR	33-13-50.07	119-26-03.47
Navigation Light(Northern side San Nicolas Is.) obtained from PMR	33-15-31.16	119-27-53.38
Radome " " "	33-14-50.79	119-31-26.66
Radar Dish " " "	33-14-06.59	119-29-35.45
San Nicolas Island Beacon (C&GS)	33-14-21.30	119-30-15.16

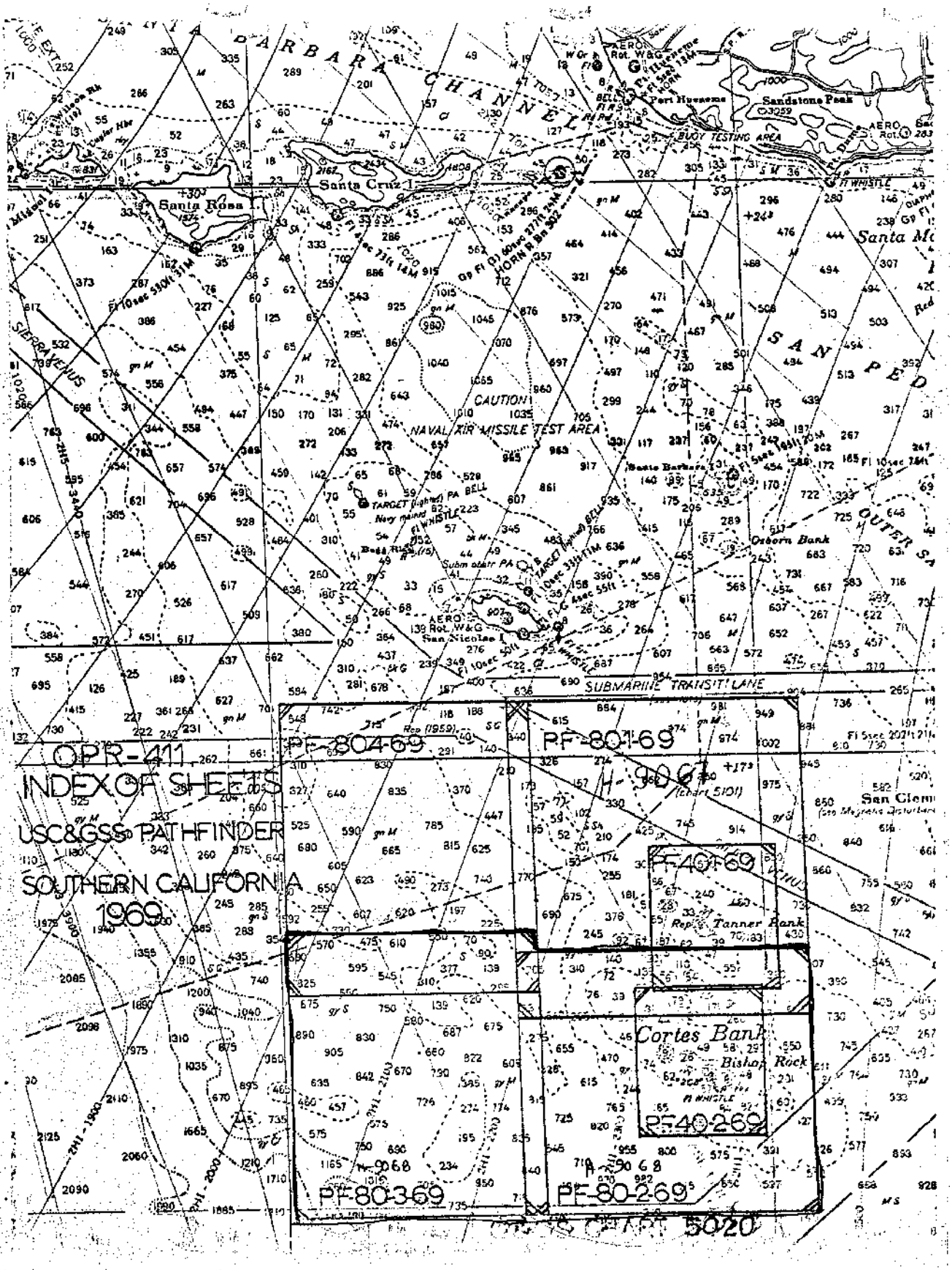
LORAC Calibration Values

Feb. 14, 045 day, 2245 time.	-0.14 Green	-0.24 Red
until		
Mar. 11, 070 day, 0131 time.	-0.04 Green	-0.32 Red
until		
Mar. 26, 085 day, 1725 time.	-0.09 Green	-0.13 Red
till completion		

A electronic control format-corrector tape was prepared combining the partial lane calibration corrections as listed above, the whole lane calibration errors resolved from the above mentioned discrepancy, logging errors found when checking the raw data tapes, and whole lane errors found by scanning the LOCAC brush chart records.

LORAC Station Positions and Frequencies

Reference Station (San Nicolas Island)	Lat.	33-14-40.718	1736.000 KC
	Long.	119-30-28.172	
	Elev.	859.03 ft.	
Red Station (R_2) (San Clemente)	Lat.	32-59-06.904	1784.685 KC
	Long.	118-33-11.376	
	Elev.	710.13 ft.	
Center Station (Pt. Mugu)	Lat.	34-05-21.351	1785.000 KC
	Long.	119-03-52.708	
	Elev.	6.92 ft.	
Green Station (R_1) (Point Drake)	Lat.	34-28-07.4604	1785.135 KC
	Long.	120-18-04.2304	
	Elev.	140.68 ft.	


OPR-411
INDEX OF SHEETS
USC&GS PATHFINDER
SOUTHERN CALIFORNIA
1969
PF-804-69
PF-801-69
PF-401-69
PF-402-69
PF-803-69
PF-802-69
H-9067
H-9068
SUBMARINE TRANSIT LANE
CAUTION!
NAVAL AIR MISSILE TEST AREA
SANTA BARBARA CHANNEL
Santa Cruz I.
Santa Rosa I.
San Nicolas I.
Santa Barbara I.
Osborn Bank
Tanner Bank
Cortes Bank
Bishop Rock
Sandstone Peak
Point Hueneme
BUOY TESTING AREA
SIERRA VENUS
OUTER
5020

APPROVAL SHEET

REGISTRY NO. (PF 80-2-69) H-9068

The hydrographic sheet has been examined and approved. The survey is considered complete and adequate for charting purposes and no additional field work is recommended.

E. A. TAYLOR
CAPT. USESSA
CMDG. SHIP PATHFINDER

9068

Diag. Cht. No. 526.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. PF-8Ø-3-69 *Office No.* H-9Ø68

LOCALITY

State CALIFORNIA

General locality So. of San Nicolas Is.

Locality

1969

CHIEF OF PARTY

E.A. Taylor, Cdr., USESSA

LIBRARY & ARCHIVES

DATE 1-5-74

USCOMM-DC 37022-P66

9068

FORM C&GS-537 (5-66)

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

H-9068

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.

PF-80-3-69

State CALIFORNIA

General locality South of San Nicolas Island

Locality Cortes Bank ~~& Bishop Rock~~

Scale 1:80,000 Date of survey 27 March-2 April 1969

Instructions dated 13 January 1969 Project No. OPR-411

Vessel Ship PATHFINDER

Chief of party Capt., E. A. Taylor, USESSA

Surveyed by Ship Personnel

Soundings taken by echo sounder, hand lead, pole Raytheon DE-723 & Precision Fathometer Recorder

Graphic record scaled by Ship Personnel

Graphic record checked by Ship Personnel

Positions verified by Stanley H. Otsubo Automated plot by Gerber Digital Plotter PMC-EDP Branch

Soundings verified by Stanley H. Otsubo

Soundings in fathoms at MLLW

REMARKS:

USCOMM-DC 37009-P66

Descriptive Report to Accompany

Hydrographic Survey H-9068 PF 80-3-69

1:80,000 Scale USC&GSS PATHFINDER

CAPT E. A. Taylor, Comdg.

A. PROJECT

This survey was completed in accordance with the Project Instructions OPR-411, Southern California dated 13 Jan. 1969.

B. AREA SURVEYED

This survey is approximately 40 nautical miles south of San Nicolas Island, California. The area of the survey extends from Lat. 32-12 N to 32-27 N and from Long. 119-27 W to 119-55 W. This area was surveyed from 27 March to 2 April, 1969.

C. SOUNDING VESSEL

The entire survey was performed by the Ship PATHFINDER.

D. SOUNDING EQUIPMENT

The precision Fathometer Recorders Model 195-1 Serial No. 001 (PFR-2) and Model 193 Serial No. 001 (PFR-1) were used in this survey. There were no apparent faults with the equipment which would effect the accuracy of the soundings.

E. SMOOTH SHEET

The smooth sheet will be plotted by the electronic plotter at the Pacific Marine Center from data tapes punched by ship's personnel.

F. CONTROL

The LORAC-B precision electronic control system was used for the entire survey. The U.S. Navy at Pt. Mugu, California supplied the following:

Receiver - Serial Number 171
Indicator - Serial Number 42
Recorder - Serial Number 173

Calibration was performed by taking visual sextant fixes on San Nicolas Island and plotting them on a calibration sheet of the Island.

G. SHORELINE

There was no shoreline within the limits of this survey.

H. CROSSLINES

Crosslines amounted to 12.6% of the regular system of sounding lines. No discrepencies were found that could not be explained by bottom roughness.

I. JUNCTIONS

The junctions with PF 80-2-69, H-9068 and PF 80-3-69 show very good agreement. PF 80-2-69 and PF 80-3-69 combined as H-9068.

J. COMPARISON WITH PRIOR SURVEYS

The survey junctions 1936 survey H#6211. There is generally good agreement in areas of smooth bottom. Areas of rapidly changing depth show poorer agreement due to the less accurate hydrophone positioning of the prior survey.

K. COMPARISON WITH THE CHART

There is generally fair comparison between this survey and the soundings plotted on C&GS Chart 5101. Any differences after smooth plotting will probably be explained on the basis of inferior sounding and positioning equipment used on the prior survey.

L. ADEQUACY OF SURVEY

The survey is considered adequate to supersede all prior surveys.

M. AIDS TO NAVIGATION

There are no aids to navigation withih the boundaries of this survey.

N. STATISTICS

Number of positions.....	1275
Nautical miles of sounding lines...	1674.9
Nautical miles of magnetics.....	1484.0
Square miles of hydrography.....	575
Number of bottom samples.....	5

O. MISCELLANEOUS

None

P.RECOMMENDATIONS

None

Q. REFERENCES TO REPORTS

LORAC Report - 1969, USC&GSS PATHFINDER
Fathometer Report - 1969, USC&GSS PATHFINDER
Annual Report - 1969, USC&GSS PATHFINDER

Not available at time of review.

Respectfully submitted,

David M. Wilson
LTJG USESSA

Approved and Forwarded

J. W. Stachelhaus
for
Joseph W. Dropp
LT USESSA
Field Operations Officer
USC&GSS PATHFINDER

TIDE NOTE

The standard tide gage at Los Angeles California was used as the reference station to control hydrography for this survey.

Hourly heights will be furnished by Bureau Headquarters upon which a + 15 minute correction and a 0.9 range ratio will be applied to the Los Angeles tides for the entire area surveyed.

Predicted tide corrections were not applied to boat sheet soundings for this sheet.

FORM CD-121 (5-63) ES. BY 206-10)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TO : Fathometer Corrections Officer
USC&GSS PATHFINDER

DATE: 12 May 1969

In reply refer to:
Data from Oceo. Sta.
#1, #2, and #3.

FROM : Oceanographic Officer
USC&GSS PATHFINDER

SUBJECT: Velocity Corrections for OPR-411 off of Southern California.

Serial temperature and salinity observations for the determination of velocity corrections were taken at three oceanographic stations:

Station #1 - 19 Feb 1969, Lat. 33°00.4'N, Long. 119°06.4'W.
Station #2 - 19 Mar 1969, Lat. 32°13.6'N, Long. 119°16.7'W.
Station #3 - 16 Apr 1969, Lat. 32°25.5'N, Long. 119°35.5'W.

Due to the fact that for any given depth it was found that the velocity correction difference between any 2 oceanographic stations was less than 0.5% of the depth, the following velocity corrections, determined at station #1 should be applied to the depth soundings on all boat sheets of OPR-411 for the entire working season, i.e., from 14 February 1969 through 24 April 1969.

Michael Kawka
Michael Kawka
LTJG USESSA

Greg Holloway
Greg Holloway
ENS USESSA

U. S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

Oceanographic Station #1

12 May 1969

Correction to Depth (fms)	Depth (fms)	Correction to Depth (fms)	Depth (fms)
0.0	4.6	5.5	400.0
+0.1	8.0	6.0	433.0
0.2	12.5	6.5	478.0
0.3	16.5	7.0	511.0
0.4	20.5	7.5	558.0
0.5	24.5	8.0	590.0
0.6	28.6	8.5	630.0
0.7	35.0	9.0	661.0
0.9	44.8	9.5	702.0
1.1	56.1	10.0	731.0
1.3	67.5	10.5	770.0
1.5	79.8	11.0	802.0
1.7	92.2	11.5	830.0
1.9	101.3	12.0	853.0
2.0	122.5	12.5	881.0
2.5	159.0	13.0	906.0
3.0	192.0	13.5	933.0
3.5	240.0	14.0	958.0
4.0	283.0	14.5	986.0
4.5	317.0	15.0	1000.0
5.0	352.0		

Time	Draft	Initial	TRA	Day
0653	2.0	0.0	+2.0	86
0000	2.0	0.0	+2.0	87
0000	2.0	0.0	+2.0	88
0000	2.0	0.0	+2.0	89
0000	2.0	0.0	+2.0	90
0000	2.0	0.0	+2.0	91
0000	2.0	0.0	+2.0	92

The Navy's LORAC electronic positioning equipment was installed aboard ship at Port Hueneme, California. The system was calibrated at dockside by scaling the appropiate lane count from a large scale Pacific Missile Range (PMR) sheet. The ship departed from Port Hueneme and sailed to the vicinity of San Nicolas Island where the calibration values were again determined by three point sextant fixes on the various objects listed below. The visual fixes were plotted on a PMR sheet of approximately 1: 27000 scale. The PMR sheet was of the same poor quality paper as the project boatsheets provided by PMR. A discrepancy was noted between the two calibration sites which was not resolved until a 1:10000 scale calibration sheet was ordered from PMC and the LORAC curves hand drawn on it. The discrepancy was resolved to be a combination lane loss during the ship's transit time from Port Hueneme and the poor quality small scale PMR calibration sheet. After resolving the above mentioned problems the calibration between the two sites agreed well.

A LORAC position was carried from San Nicolas Island to the lighted whistle buoy "20B" located on Cortes Bank. This buoy was used frequently to determine whole lane count during the survey.

Control for Visual Fixes

Navigation Light (East end of San Nicolas I.)

	Lat.	Long.
obtained from PMR	33-13-50.07	119-26-03.47

Navigation Light (Northern side San Nicolas I.)

	Lat.	Long.
obtained from PMR	33-15-31.16	119-27-53.39
Radome " " "	33-14-50.79	119-31-26.66
Radar Dish " "	33-14-06.59	119-29-35.45
San Nicolas Island Beacon (C&GS)	33-14-21.30	119-30-15.16

LORAC Calibration Values

From 2/14 day 045 time 2245 until	-0.171 Green	-0.262 Red
2/19 time 1140 day 850 until	-0.11 Green	" "
3/3 day 062 time 0747 until	-0.54 Green	" "
3/20 day 079 time 2200 until	-0.04 Green	" "
4/16 day 106 time 2215 until	-0.09 Green	-0.13 Red
4/21 day 111 time 2353 until completion of hydro	-0.31 Green	" "

APPROVAL SHEET

REGISTRY NO. H-9068 (PF 80-3-69)

This descriptive report has been examined and approved.

E. A. Taylor

E. A. TAYLOR
Capt. USESSA
USC&GSS PATHFINDER, Cmdg.

FORM # 1 — FIG. 15

PARAMETERS FOR DIGITAL COMPUTING
POLYCONIC PROJECTION

(1) PROJECT NO. CPR-411
(2) H NO. H-9068
(3) FIELD NO. PF-80-243-69
(4) REQUESTED BY [illegible]
(5) SHIP OR OFFICE [illegible]
(6) DATE REQUIRED
(7) VISUAL ☐
(8) ELECTRONIC ☒ (FILL OUT FORM #3)

(10) XKN (SP 5) DISTANCE FROM CMER TO EAST EDGE (NYX = 1) OR WEST EDGE (NYX = 0). 55,851.9 METERS

(11) YKN (SP 241) DISTANCE FROM EQUATOR TO SOUTH EDGE OF SHEET. 3,551,229.1 METERS

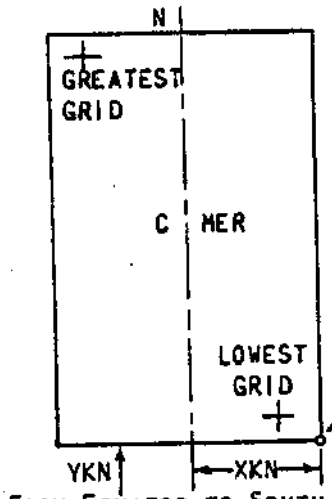
(12) CENTRAL MERIDIAN 119° 25' 00"

(13) SURVEY SCALE 1: 80,000

(14) SIZE OF SHEET (CHECK ONE) 36X54 ☐ 42X60 ☐ OTHER 36X60 ☐

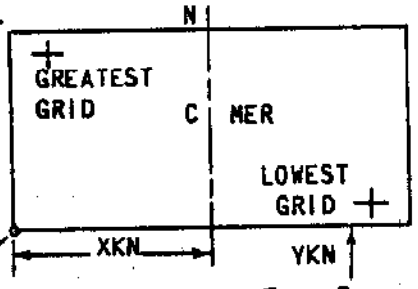
(15) NYX, ORIENTATION OF SHEET (CHECK ONE)

NYX = 1 ☐



FROM EQUATOR TO SOUTH EDGE OF SHEET

NYX = 0 ☒



FROM EQUATOR TO SOUTH EDGE OF SHEET

(9) PLOTTER ORIGIN (CORNER OF SHEET)

LATITUDE 32° 05' 30"
LONGITUDE 120° 00' 30"

GRID LIMITS

(16) GREATEST LATITUDE 32° 40' 00"
(17) LOWEST LATITUDE 32° 10' 00"
(18) DIFFERENCE ° ' "

(PROJECTION LINE INTERVAL, PAGE 4 HYDRO MANUAL)

(19) 05' 00"
(20) 6 YSN

(21) GREATEST LONGITUDE 120° 00' 00"
(22) LOWEST LONGITUDE 118° 50' 00"
(23) DIFFERENCE 01° 10' "

(24) 05' 00"
(25) 14 XSN

H — 9068
Field No. DF-80-243-69
Date — 2/25/70

~~HYDROGRAPHIC PLOTTER CARDS~~

PARAMETER CARD II

			1	2	3	4	5	6	7	8	9	10
Semi major axis of the earth	6,378,206.4	RDA	6	3	7	8	2	C	6	4	0	7
			11	12	13	14	15	16	17	18	19	20
X Constant- Distance from central meridian to origin of plotter SP 5	meters	YXN	5	5	8	5	2	9	0	0	0	5
			21	22	23	24	25	26	27	28	29	30
Y Constant - Distance from equator to origin of plotter SP 241	meters	YXN	3	5	5	1	8	2	9	1	0	7
			31	32	33	34	35	36	37	38	39	40
Central Meridian of Projection	1 1 9 2 5 0 0 0 0	CMR	4	2	9	9	0	0	0	0	0	6
			41	42	43	44	45	46	47	48	49	50
Plotter Scale/Survey Scale	130498.6876 1: 80000	SCA	1	3	1	2	3	3	6	0	0	0
North/south axis of sheet - to correspond to (Y axis - 0) X axis - 1) of plotter		NYX										51 0
Feet/Fathom indicator	0 - feet 1 - fathom	FOF										52 1
								53	54	55	56	57
H Identification No.		JN						0	9	0	6	8
											5H	59
FOF - 1		YR									6	9

PARAMETER CARD III

			1	2	3	4	5	6	7	8	9	10
Lowest Lat. Intersection	3 2 1 0 0 0 0 0	YST	1	1	5	8	0	0	0	0	0	6
			11	12	13	14	15	16	17	18	19	20
Lowest Long. Intersection	1 1 8 5 0 0 0 0 0	XST	4	2	7	8	0	0	0	0	0	6
			21	22	23	24	25	26	27	28	29	30
Difference between Grid	0 5 0 0 0 0	DXY	3	0	0	0	0	0	0	0	0	3
											31	32
Interval (Long)		XSN									1	4
											33	34
Interval (Lat)		YSN									0	6

Computed
Punched
Checked
Date

APPROVAL SHEET

The smooth sheet has been inspected, is complete, and meets the requirements of the General Instructions for automated surveys and the Hydrographic Manual. (Note: All exceptions are listed in the Verifier's Report)

Examined and approved,

James S. Green
Supervisory Cartographic Technician

Approved and forwarded,

Walter F. Forster, LCDR, NOAA
Chief, Processing Division
Pacific Marine Center

VERIFIER'S REPORT

H-9068

This sheet was constructed and plotted at Pacific Marine Center, Seattle, Washington. Information relating to this will be noted under the heading by the number and letter as on the Verifier's Report, C&GS Form 946A.

PART I DESCRIPTIVE REPORT

F. Control

8-15-74 19 new control d/c by hand to be included w/survey records

The hyperbolic grid arcs on this survey (PF-8Ø-2-69 and PF-8Ø-3-69) were plotted by the U.S. Navy. All subsequent recomputations performed by Pacific Marine Center were generated by the utilization of a special program involving the conversion of the latitude and longitude of the various positions into the necessary x - y values. As a result, smooth hyperbolic grid arcs are not plotted on the smooth position number overlay.

PART II SHORELINE AND SIGNALS

Offshore orientation, no shoreline required for this project.

PART III JUNCTIONS

Junction was made with H-9067, 1969. Sounding discrepancies caused by irregular bottom (2 to 5 fathoms) at various crossings. Generally good agreement prevailed between adjoining contemporary survey (H-9067). Junction with H-9065, 1969 is complete but because of the scale difference, the junction is not in good agreement.

PART VII CURVES

The depth curves were inspected by Richard Lynn, Cartographic Technician.

Respectfully submitted,

Stanley H. Otsubo
Cartographic Technician

Addendum to Verifier's Report

PART XI NOTES TO THE REVIEWER

PF-8Ø-2-69 and PF-8Ø-3-69 were combined into registry number H-9Ø68. You are referred to the Descriptive Report for PF-8Ø-2-69 for additional information on this survey.

Respectfully Submitted,

Stanley H. Otsubo
Cartographic Technician

FORM C&GS-712
(3-9-64)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

August 1, 1969

[redacted] Pacific Marine Center

Plane of reference approved [redacted] for two Tide Tape Printouts, OPR 411

HYDROGRAPHIC SHEET

Locality: Vicinity of Santa Cruz Island, California

[redacted] 1969

Plane of reference is mean lower low water

Tide Station Used (Form C&GS-681):

Los Angeles (Berth 60)

Height of Mean High Water above Plane of Reference at the working grounds is as follows:

4.3 feet

Remarks

J. M. Symons
Chief, Tides and Currents Branch

USCOMM-DC 6680-P64

GEOGRAPHIC NAMES

Survey No. H-9068

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
BISHOP ROCK										1
CORTES BANK										2
PACIFIC OCEAN										3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
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										19
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										21
										22
										23
										24
										25
										26
										27

Approved by:
Chas E Harrington
Staff Geographer
20 Aug. 1974

NOAA FORM 77-27
(9-72)
(PRESC. BY HYDROGRAPHIC MANUAL 20-2, 6-94, 7-13)

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

HYDROGRAPHIC SURVEY STATISTICS

HYDROGRAPHIC SURVEY NO. H-9068

PF 80-213-69

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1 ✓	BOAT SHEETS	2 ✓
DESCRIPTIVE REPORT	1 ✓	OVERLAYS	4 ✓

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	Brush Tape PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES			1 box ✓			
CAHIERS	1 ✓					
VOLUMES	16 ✓					
BOXES			1 ✓		1 ✓	

T-SHEET PRINTS *(List)*

SPECIAL REPORTS *(List)*

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				
POSITIONS CHECKED		3272	4	
POSITIONS REVISED		245	0	
DEPTH SOUNDINGS REVISED		660	43	
DEPTH SOUNDINGS ERRONEOUSLY SPACED		----	0	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		----	0	
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS			1	
JUNCTIONS		92	8	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		292	8	
SPECIAL ADJUSTMENTS		97	24	
ALL OTHER WORK		181	73	
TOTALS		662	114.0	

PRE-VERIFICATION BY	BEGINNING DATE	ENDING DATE
VERIFICATION BY Stanley H. Otsubo, Cart. Tech.	BEGINNING DATE 13 June 1972	ENDING DATE 13 Dec. 1973
REVIEW BY R. D. Sanocki	BEGINNING DATE 13 August 1974	ENDING DATE 13 September 1974

Inspected by D.J. Romesburg 41 hrs 9-27-74 Posted KHC 12-75

* U.S. G.P.O. 1972-769-562/439 REG.#6

REGISTRY NO. _____

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

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

CARDS CORRECTED

DATE_____ TIME REQUIRED_____ INITIALS_____

REMARKS:

REGISTRY NO. _____

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

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

MAGNETIC TAPE CORRECTED

DATE_____ TIME REQUIRED_____ INITIALS_____

REMARKS:

H-9068

Items for Future Presurvey Reviews

The bottom in the survey area is relatively stable. The shoal areas of less than 11 fathoms in the vicinity of latitude 32°28.6', longitude 119°12.8' should be investigated for least depth.

Resurvey Cycle Information

Position Index Lat.	Long.	Bottom Change Index	Use Index	Resurvey Cycle
321	1190	0	0	50 years
321	1191	0	0	50 years
321	1192	0	0	50 years
321	1193	0	0	50 years
321	1194	0	0	50 years
321	1195	0	0	50 years
321	1200	0	0	50 years
322	1190	0	0	50 years
322	1191	1	0	50 years
322	1192	1	0	50 years
322	1193	0	0	50 years
322	1194	0	0	50 years
322	1195	0	0	50 years
322	1200	0	0	50 years
323	1190	0	0	50 years
323	1191	0	0	50 years
323	1192	0	0	50 years
323	1193	0	0	50 years
323	1194	0	0	50 years
323	1195	0	0	50 years
323	1200	0	0	50 years

OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9068 FIELD NO. PF-80-2-69
PF-80-3-69

California, South of San Nicolas Island, Cortes Bank

SURVEYED: March 3 through April 2, 1969

SCALE: 1:80,000 PROJECT NO.: OPR-411

SOUNDINGS: EDO-UQN with PFR and DE-723 Depth Recorders CONTROL: LORAC-B

Chief of Party ..... E. A. Taylor
Surveyed by ..... J. W. Bricker
..... D. A. Danner
..... M. Kawka
..... K. E. Lilly, Jr.
..... R. M. Mathis
..... H. D. Nilson
..... D. W. Wilson
..... R. S. Young
Automated Plot by ..... Gerber Digital Plotter (PMC)
Verified by ..... S. H. Otsubo
Reviewed by ..... R. D. Sanocki
..... Date: September 13, 1974
Inspected by ..... D. J. Romesburg

1. Description of the Area

This survey covers a rectangular area of the Pacific Ocean south of San Nicolas Island, California. The survey extends west from longitude 118°58' to longitude 119°55' and north from latitude 32°12' to latitude 32°37'.

The bottom in this area is very irregular, as it contains numerous sea mounts, canyons, and ridges. Cortes Bank, a prominent shoal oriented in a northwest-southeast direction, rises to depths of less than 5 fathoms in the northeast area of the survey. Maximum survey depths of 1300 fathoms and greater are recorded in the southwest.

The bottom is composed primarily of mud and sand, with some gravel, broken shells, volcanic rock, and coral.

2. Control and Shoreline

The origin of the control is given in the Descriptive Report.

There is no shoreline shown within the limits of the survey.

3. Hydrography

A. Depths at crossings are in good agreement.

B. The usual depth curves were adequately delineated. Brown supplementary depth curves were added at 50-fathom intervals to correspond with charting practices and to better define the bottom configuration. Additional dashed curves were added to emphasize important bottom features.

C. The development of the bottom configuration and investigation for least depths are considered adequate except for that portion of the survey where depths less than 50 fathoms would have been more effectively developed at a larger scale and at one-half the line spacing.

4. Condition of the Survey

The survey records, automated plotting, Descriptive Report, and verification are adequate and conform to the requirements of the Hydrographic Manual, as amended by the Instruction Manual - Automated Hydrographic Surveys, except as follows:

A. A shoal area in the vicinity of latitude 32°28.8', longitude 119°12.9' with depths less than 11 fathoms was surveyed at a line spacing of 400 meters. This spacing is considered too great to satisfy requirements for least depth determination. Consequently, a 9.2-fathom least depth obtained by H-6207 (1936) in latitude 32°28.75', longitude 119°12.88' and a 9.7-fathom sounding 0.1 mile westward were brought forward to supplement the present survey.

B. Electronic control arcs were not constructed and labeled on the Position Number Overlay.

C. The combination of surveys PF-80-2-69 and PF-80-3-69 into H-9068 (1969) created a situation where position numbers were duplicated on the Position Number Overlay. It would have been less confusing if the positions were renumbered in chronological and consecutive order.

D. An abstract prepared by the hydrographer, separated by vessel, showing the daily consecutive position numbers used, and all dates on which hydrography was accomplished as specified in section 4-7 of the Instruction Manual - Automated Hydrographic Surveys was not included in the Descriptive Report.

E. Form No. 3 required by section 14-6, paragraph 3.C of the Instruction Manual - Automated Hydrographic Surveys was not submitted with the Descriptive Report.

F. The Fathometer Report - 1969 USC&GSS PATHFINDER was not forwarded to the Rockville office.

G. Additional excess plot overlays were not made when the density of soundings plotted obscured the legibility of other excessed depths.

H. Stamp 42a on the smooth sheet incorrectly identified the reference station as SAN CLEMENTE. The correct station identification was determined by the reviewer to be LORAC ANTENNA SCI, 1964.

I. The following discrepancies in the accounting of field records were noted:

(1) A sounding volume containing position numbers 1272-1514 for PF-80-2-69 was filed with the records of H-9065 (1969).

(2) The raw data printouts were not forwarded with the survey records.

(3) The Precision Fathometer Recorder trace for positions 365 to 369 of PF-80-2-69, Julian Day 072, were not included in the survey records.

(4) Brush recordings for position numbers 730-1503 and 1546-1559 of PF-80-2-69 were not included in the survey records. Brush recordings for position numbers 1504-1545 were filed with the survey records for H-9065(1969).

J. Positions 1500 to 1503 (PF-80-2-69) in the junctional area with H-9065 (1969) were determined to be displaced to the west. An adjustment of one lane (Red + 1) to the east brought the depths into substantial agreement with those of H-9065 (1969). Therefore, positions 1500 to 1503 were rejected on the present survey.

K. The frequency of obtaining bottom samples on Cortes Bank and other areas with depths less than 100 fathoms is not in accordance with section 1-42 of the Hydrographic Manual.

5. Junctions

An adequate junction was effected with H-9067 (1969) on the north. H-9254 (1971), which junctions to the east, was not available at the time of this review and will subsequently be discussed in the review of that survey. A butt junction was effected with H-9065 (1969) which covers Bishop Rock and vicinity within the limits of the present survey. H-9065 (1969), because of its larger scale and greater development, supersedes the present survey in the common area. There are no contemporary surveys to the west and to the south of the present survey; however, present survey depths are in harmony with those charted in these areas.

6. Comparison with Prior Surveys

H-6120 (1935), 1:80,000
H-6206 (1936), 1:40,000
H-6207 (1936), 1:20,000
H-6208 (1936), 1:80,000
H-6209 (1936), 1:200,000
H-6211 (1936), 1:80,000

These earlier surveys, taken together, comprise the most recent coverage of the present survey area. A comparison of the above prior surveys with the present survey reveals only minor differences considering the density of development, depths, and distance offshore. These differences can be attributed to survey methods and equipment used during the prior surveys, particularly the Radio Acoustic Ranging system used to control the prior surveys. Maximum positional discrepancies of 500 meters were encountered between the present and prior survey data. The present survey's closer system of sounding lines better defined the bottom configuration in this area.

The present survey was supplemented by selected bottom samples from H-4267 (1923) and Ad. Work (1928), H-4549a (1925), and H-4551a (1926) in addition to bottom samples from the above prior surveys, along with the soundings previously discussed in section 4A of this review.

With the addition of the preceding items, the present survey is adequate to supersede the prior surveys within the common area.

7. Comparison with Chart 5020, 15th Ed., December 1, 1973, and 5101, 18th Ed., October 6, 1973

A. Hydrography

Most of the charted hydrography originates with the previously discussed prior surveys which require no further consideration. The 253-fathom sounding (Rep. 1973) charted in latitude 32°31', longitude 119°31' on Chart 5020 originates with Navy Notice to Mariners No. 43 of 1973. The method of positioning and depth determination is unknown. This sounding is apparently misplotted as it falls in present survey depths of 683 fathoms and is approximately 2.5 nautical miles west of a submerged ridge with comparable depths.

The present survey is adequate to supersede the charted hydrography within the common area.

B. Aids to Navigation

There are no aids to navigation located on the present survey.

8. Compliance with Instructions

The survey adequately complies with the Project Instructions, except for the line spacing requirement of paragraph 12 for depths under 20 fathoms and the leadline soundings requirement of paragraph 13 to verify least depths where possible hazards to navigation may exist.

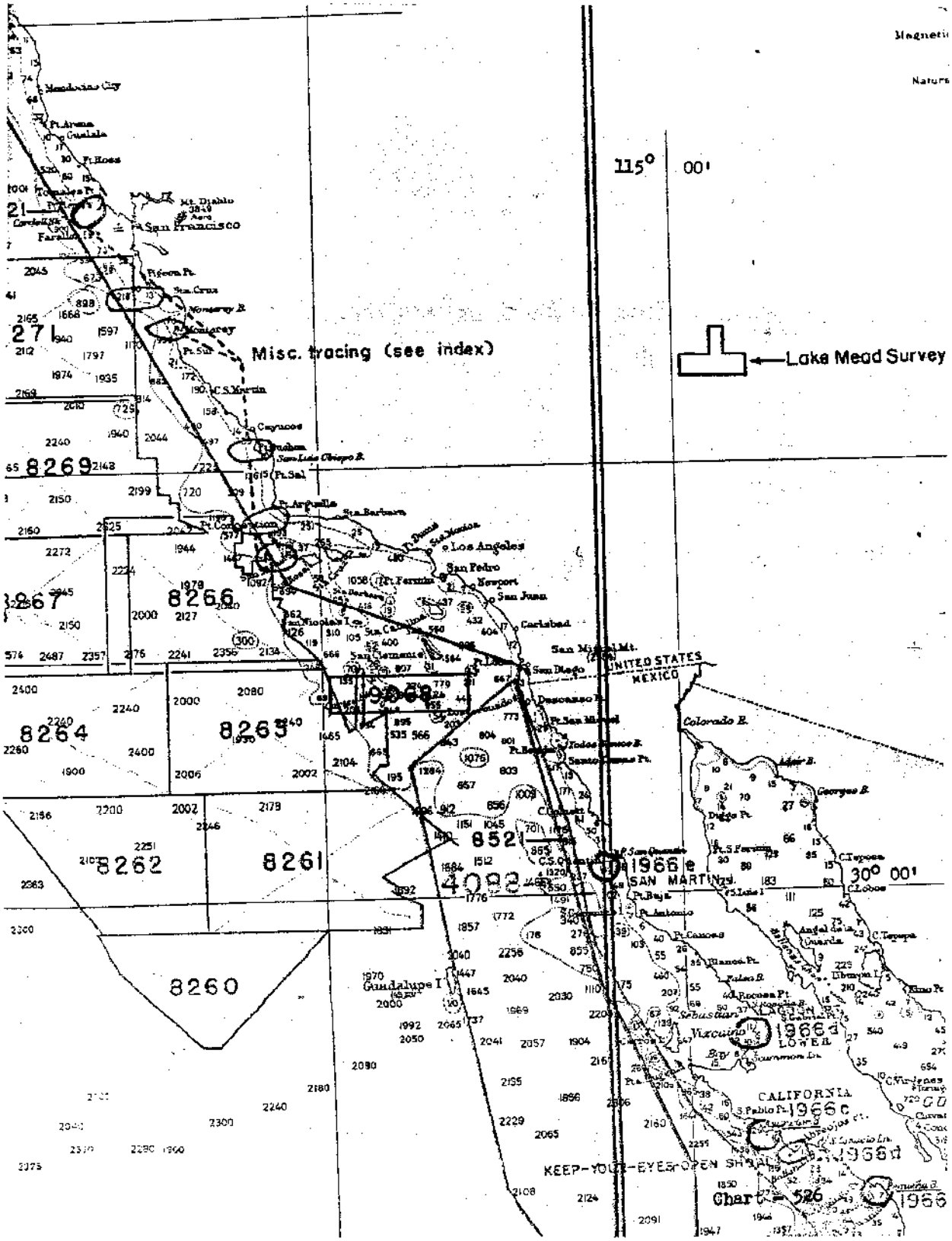
9. Additional Field Work

This survey is considered to be a good basic survey. However, at an opportune time it would be desirable to split the 400-meter sounding lines for the development of least depths in the area previously discussed in section 4A of this review.

Examined and Approved:

R. H. Houlton
Chief
Marine Chart Division

Robert C. Munson
Associate Director
Office of Marine Surveys and Maps


115° 00'
Misc. tracing (see index)
Lake Mead Survey
8269
8266
8267
8264
8265
8262
8261
8260
8521
4082
1966e
1966d
1966c
30° 00'
SAN MARTIN
Guadalupe I
CALIFORNIA
KEEP YOUR EYES OPEN
Chart - 526
1966
UNITED STATES
MEXICO
San Francisco
Los Angeles
San Diego
Colorado R.

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

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9068

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
5101	1/12/76	D Curtis	Full Part Before After Verification Review Inspection Signed Via
			Drawing No. Critical Corrs.
			Part.
9000	9/8/76	M. D. Lain	~~Full Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. No corr.
18740	5-15-79	Hamilton	Full ~~Part Before~~ After Verification Review Inspection Signed Via
(5101)		5-16-79 RAS	Drawing No. 45
18022	5-16-79	Hamilton	Full ~~Part Before~~ After Verification Review Inspection Signed Via
(5020)			Drawing No. 40
18020	6-25-79	Hamilton	Full ~~Part Before~~ After Verification Review Inspection Signed Via
(5002)		1-17-80 RAS	Drawing No. 32 thru cht 18022
530	10-1-81	Farber	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. Revised thru chart 18020, dwg # 32
530	5/31/89	R.A. Lillis	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 34
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975.

USCOMM-DC 8858-P83

Appl'd chart 5101 after verification before review KDS 6-5-74
Appl'd chart 5020 - after verif. before review KDS - 7/1/74