

9114

Diag. Cht. No. 5101-3.

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. MA-40-4-70 Office No. H-9114

LOCALITY

State California

General locality Gulf of Santa Catalina

Locality Off Oceanside

1970

CHIEF OF PARTY

D. R. Tibbit

LIBRARY & ARCHIVES

DATE 1-9-73

9114

HYDROGRAPHIC TITLE SHEET

H-9114

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.

MA-40-4-70

State California

General locality Gulf of Santa Catalina
~~San Diego, California~~

Locality Off Oceanside
~~Gulf of Santa Catalina~~

Scale 1:40,000 Date of survey 6 April-4 May, 1970

Instructions dated 15 Dec 1969/10 May 1970 Project No. OPR-411

Vessel USC&GSS MCARTHUR (CSS-30)

Chief of party Donald R. Tibbit, CDR, USESSA

Surveyed by ^DW.M. Spillman, D.^MA. Wilson, J.C. Albright, T.C. Howell, III.,
R.C. Husted, M.E. Wagner, S.H. Otsubo

Soundings taken by echo sounder, hand lead, pole UQN, EDO Model #161, w/PFR #010 and
Rayethon DE723 #915

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Positions verified

~~XXXXXXXX~~ by Nicholas Lestenkof verified Automated plot by PMC - Garber Digital Plotter

Soundings ~~XXXXXXXX~~ by Nicholas Lestenkof

Soundings in fathoms ~~XXXX~~ at ~~XXXX~~ MLLW

REMARKS:

Chart

5101

5060

5020

5005

9000

Applied to stds 2/10/73

CRS

Descriptive Report

To Accompany

Hydrographic Survey H-9114 (MA 40-4-70)
(1970)

USC&GS Ship McARTHUR (CSS-30)

1970

Donald R. Tibbit, CDR, USESSA

Scale 1:40,000

A. PROJECT

Hydrography on this boat sheet was accomplished in accordance with Project Instructions, OPR-411, San Diego, California, dated 15 December, 1969 (CFS2 4060/01.2) and change #1 dated 10 March, 1970.

B. AREA SURVEYED

The area surveyed is in the Gulf of Santa Catalina East of San Clemente Island. H-9114⁽¹⁹⁷⁰⁾ (MA 40-4-70) extends from 30°55'N to 33°12'N and from the 20 fathom curve at the East edge (117°26'W at the Northern limit and 117°16'W at the Southern limit) to 117°50'W. Hydrography on this boat sheet was performed between 6 April, 1970 and 4 May, 1970.

C. SOUNDING VESSELS

All hydrography on this boat sheet was accomplished by the USC&GS Ship McARTHUR.

D. SOUNDING EQUIPMENT

Soundings for this boat sheet were taken with a UQN EDO Model #185, Serial No. 161 Depth Recorder Indicator and a Precision Fathometer Recorder, Model 193, Serial No. 010 (operated in the 400 fathom normal mode). The initial was set at 0.0 fathoms on the UQN at all times. Areas under 110 fathoms were developed with a Raytheon DE 723 Shoal Water Depth Recorder, Serial No. 915, with the initial set at 0.0 fathoms. Velocity corrections were obtained by meaning the results of three Nansen casts taken as follows:

02/24/70	Lat 32°36.2'N	Long 118°09.7'W	depth 1500 meters
03/31/70	Lat 32°32.5'N	Long 118°06.5'W	depth 500 meters
05/03/70	Lat 32°55.4'N	Long 117°38.6'W	depth 500 meters

The mean transducer draft for work on this boat sheet was determined to be 1.8 fathoms. Instrument error corrections were obtained from the results of a vertical cast comparison taken by the McARTHUR on 9 March, 1970. No phase, squat or settlement corrections were necessary. Tide reducers for the DE 723 developments were determined from actual tides at the standard tide gage at San Diego, California. The tide reducer tape for MA 40-4-70 and MA 40-2-70 is included with the data sent in for this boat sheet. For more detailed information on fathometer corrections see the Fathometer Correction Report OPR-411, 1970.

E. SMOOTH SHEET

The smooth sheet is to be plotted by the Gerber Plotter at the Electronic Data Processing Division, Pacific Marine Center using the following punched tapes:

Raw Data	DCU Format
DCU Corrector Tape	Single Indicator Corrector Tape
Velocity Corrections	Single Indicator Velocity Tape
Transducer Draft and Instrument Corrections	TC/TI Tape
Tide Correctors	Tide Tape

F. CONTROL

Hyperbolic Mode Hi-Fix, frequency 1799.6 khz, was used for control of this survey. Three shore stations were established to provide the Hi-Fix chain. The master station was located at Camp Pendleton, California on topo-station TORN, 1970 (established for this purpose - Latitude $33^{\circ}21'00.23''N$, Longitude $117^{\circ}31'27.83''W$). Slave station rate #1 (Red pattern on boat sheet) was located on RM #1 of tri-station OLD, 1899 at Pt. Fermin, California (Latitude $33^{\circ}43'12.937''N$, Longitude $118^{\circ}16'56.977''W$). Slave station rate #2 (Green pattern on boat sheet) was located at Pt. Loma, California on topo-station JUMP, 1970 (established for this purpose - Latitude $32^{\circ}42'24.48''N$ Longitude $117^{\circ}15'13.03''W$). More complete details on the establishment of the control stations comprising the Hi-Fix chain for OPR-411, 1970 can be found in the Traverse (Hi-Fix) Reports previously submitted by the USC&GS Ship DAVIDSON. Calibrations were performed on any of three 1:10,000 scale Mylar Sheets off Mission Bay, the South end of San Clemente Island, and Avalon Bay, Santa Catalina Island.

Control for calibration was by three point sextant fixes using triangulation on the sheets. Corrections for lane jumps or electrical malfunctions were logged with calibration corrections into the DCU

corrector tape. The Hi-Fix equipment operated well and calibration corrections were small.

G. SHORELINE

None.

H. CROSSLINES

1483.3 nautical miles of hydrography were run on this boat sheet, of which 129 nautical miles were crosslines. This amounts to 8.7% crosslines. There were no discrepancies at crossings.

I. JUNCTIONS *See Review.*

Good agreement was found between this boat sheet and its junctions with boat sheets MA 40-3-70 (H-9113)¹⁹⁷⁸ and DA 40-1-70 (H-9108)¹⁹⁷⁸ with only minor discrepancies which can be attributed to the fact that sounding corrections have not yet been applied to this boat sheet.

J. COMPARISON WITH PRIOR SURVEYS *See Review.*

There were no numbered pre-survey review items applicable to this boat sheet. Three prior surveys were undertaken in this area. H-6117 (1:40,000, 1935), H-6118 (1:80,000, 1937), and H-6119 (1:80,000, 1936) showed only fair agreement with this boat sheet. This disagreement is most likely due to the technology advancement in sounding and positioning equipment.

K. COMPARISON WITH CHARTS *See Review.*

This boat sheet was compared with soundings of C&GS Chart #5101 (14th Edition, 31 January, 1970, 1:234,270). The comparison revealed only a fair agreement, similar to the prior surveys, and since the chart soundings were taken from the prior surveys no further explanation is necessary.

L. ADEQUACY OF SURVEY *See Review.*

This survey is complete and adequate to supersede prior surveys of the area for charting.

M. AIDS TO NAVIGATION ✓

None.

N. STATISTICS

McARTHUR

Total Miles Hydrography	1483.3	
Total Miles Magnetics	1035.4	✓
Number of Positions	1912	✓
Bottom Samples	19	
Nansen Casts	3	
Total Square Miles	330.0	

O. MISCELLANEOUS

Raw data and smooth data tapes were logged in the DCU teletype print-out format with the parity bit disconnected. All corrector tapes were logged using a climatronics logger in conjunction with a Frieden Flexowriter Model SFD.

Depth curves were drawn *on the boat sheet* every 10 fathoms in depths to 110 fathoms and every 25 fathoms thereafter.

Depths of less than 110 fathoms were sounded with a DE 723 fathometer at 400 meter spacing.

The Varian Proton Magnetometer was towed during most of the survey. Total magnetic intensity was recorded on time on the raw data tape once each minute. An analog strip chart was also made and accompanied the field records (see Magnetics Report OPR-411, 1970).

The DE 723 fathogram for Positions 1561 - 1764 was destroyed. However, the position and sounding tape is intact and is included with the Field Records. *There were no serious discrepancies in depths with the junctional surveys in this area. Crossings and adjacent sounding lines agreed well within the survey.*
The Plotting Abstract is missing for Positions 1289 - 1338.

P. RECOMMENDATIONS

Project Instructions should require only the depth contour interval that is practical on the boat sheet. This would eliminate the problem of depth curve overdensity in areas of extreme bottom relief. ✓

Q. REFERENCE TO REPORTS

1. Pre-Survey Review, OPR-411, San Diego, California. ✓
2. Fathometer Correction Report, OPR-411, San Diego, California, 1970.
3. Hi-Fix Traverse Reports (DAVIDSON), OPR-411 San Diego, California. 1970.
4. Hi-Fix Report, OPR-411, San Diego, California, 1970. ✓
5. DCU Report, OPR-411, San Diego, California, 1970.
6. Magnetics Report, OPR-411, San Diego, California, 1970.

Submitted by,

Don M. Spillman

Don M. Spillman
Ensign, USESSA

APPROVED AND FORWARDED

Donald R. Tibbit

Donald R. Tibbit, Commander, USESSA
Commanding Officer, USC&GS Ship McARTHUR (CSS-30)

ENCLOSURES:

Tide Note
Abstracts of Corrections to Echo Soundings
Abstract of Hi-Fix Corrections
Abstract of Position Numbers
List of Basic Field Records
Approval Sheet

TIDE NOTE

TO ACCOMPANY
(1970)

H-9114 (MA 40-4-70)

TIDE STATION

San Diego Harbor

San Diego, California

LAT 32°42.8'

LONG 117°10.4'

PLANE OF REFERENCE

MLLW

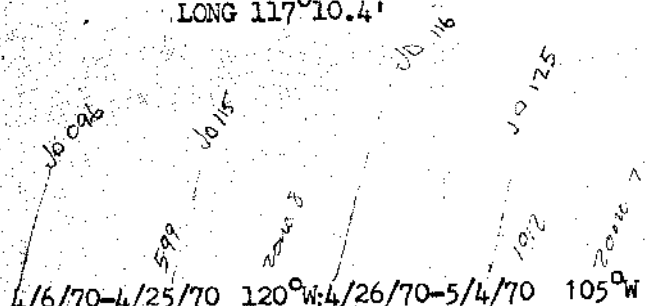
TIME MERIDIAN

TIME CORRECTION

HEIGHT CORRECTION

TIME OF COVERAGE

AREA OF COVERAGE



HIGH -0ⁿ12ⁿ LOW -0ⁿ06ⁿ

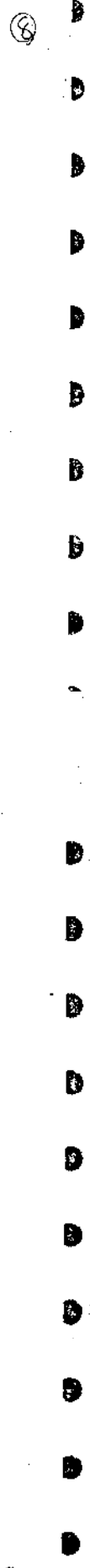
RATIO OF 0.92 ON SAN DIEGO

ENTIRE SURVEY

ENTIRE SURVEY

NOTE: SANDIEGO TIDES WERE CORRECTED TO POINT LOMA TIDES. ✓

See Tide Note for Hydrographic Sheet
Dated 12-5-72



BOATSHEET PAPER TAPE

TAPE CONTAINS: MA 40-4-70 # 9114

SNAME: McARTHUR YEAR: 1970

OPR: 411 LETTERS: 123

POSITIONS: TIDE TAPE

START DATE 123 TIME: 1900⁰⁰

END DATE 125 TIME: 0000⁰⁰

BOX _____ OF _____ BOXES

303 123 1970

140000 0 0006 - 123
 150000 0 0009
 160000 0 0018
 170000 0 0030
 180000 0 0043
 190000 0 0054
 200000 0 0060
 210000 0 0058
 220000 0 0049
 230000 0 0037
 000000 0 0020 - 124
 010000 0 0007
 020000 0 1003
 030000 0 1007
 040000 0 1005
 050000 0 0004
 060000 0 0014
~~070000 0 002~~ T.O.K
~~070000 0 002~~ T.O.K
 070000 0 0025 T.O.K
~~080000 0 003~~
 080000 0 0035
 090000 0 0039
 100000 0 0039
 110000 0 0033
 120000 0 0024
 130000 0 0015
 140000 0 0010
 150000 0 0009
 160000 0 0015
 170000 0 0026
 180000 0 0039
 190000 0 0051
 200000 0 0058
 210000 0 0058
 220000 0 0053
 230000 0 0043
 000000 0 0030 - 125

ABSTRACT OF TRANSDUCER DRAFT AND
INSTRUMENT CORRECTIONS TO ECHO SOUNDINGS

USC&GSS McARTHUR OPR-411 Southern California

Boatsheets: H-9111 (MA 40-1-70) H-9113 (MA 40-3-70)
H-9112 (MA 40-2-70) H-9114 (MA 40-4-70) ✓

These corrections are in fathoms and tenths and apply to
all soundings of the surveys. All corrections are positive.

Time	Corr	Vel.	Day	Tab.		
000000	0	0016	0001	049	000000	000000
002500	0	0000	0001	084	000000	000000
074000	0	0016	0001	084	000000	000000
162700	0	0020	0001	123	000000	000000
164000	0	0016	0001	124	000000	000000

ABSTRACT OF VELOCITY CORRECTIONS TO ECHO SOUNDINGS

USC&GSS McARTHUR OPR-411 Southern California

Boatsheets: H-9111 (MA 40-1-70) H-9113 (MA 40-3-70)
 H-9112 (MA 40-2-70) H-9114 (MA 40-4-70) ✓

Depth	Vel. Corr.	Vel. Tab.
000080	0 0000	0001 000 000000 000000
000150	0 0002	
000230	0 0004	
000330	0 0006	
000440	0 0008	
000550	0 0010	
000670	0 0012	
000780	0 0014	
000900	0 0016	
001020	0 0018	
001150	0 0020	
001270	0 0022	
001630	0 0025	
002930	0 0030	
004570	0 0050	
006220	0 0070	
007660	0 0090	
008990	0 0110	
010110	0 0130	
011140	0 0150	
012140	0 0170	

These corrections are in fathoms and tenths and apply to all soundings of the project. All corrections are positive.

TCTI

TCTI

Surveys

000000 0 0016 0001 049 000000 000000

002500 0 0000 0001 084 000000 000000

074000 0 0016 0001 084 000000 000000

162700 0 0020 0001 123 000000 000000

164000 0 0016 0001 124 000000 000000

7
6
5
4
3

HI - FIX MEANED LANE CORRECTORS

USCGSS M. ARTHUR OPR 411 SOUTHERN CALIFORNIA

FROM	TO	PATTERN I (RED) CORRECTION	PATTERN II (GREEN) CORRECTION
1205 2/18	0140 2/19 ✓	-0.08 ✓	0.00 ✓
0140 2/19	0900 2/19 ✓	-0.08 ✓	+0.50 ✓
0900 2/19	1104 2/27 ✓	+0.02 ✓	-0.02 ✓
0755 3/3	1230 3/26 ✓	+0.01 ✓	-0.02 ✓
1600 3/30	1645 4/20 ✓	+0.01 ✓	-0.09 ✓
1021 4/29	0614 5/5 ✓	+0.09 ✓	-0.10 ✓

All calibrations at San Clemente serve only as integral lane count checks and do not appear in correctors

Hi-Fix lane readings are "weighted" at Santa Catalina, one to four and three to one for patterns I & II respectively over those at Mission Bay

COMPUTED BY MEW

CHECKED BY TDH & JAW

HI-FIX

 ABSTRACT OF CALIBRATION CORRECTORS OPR 411, 1970
 USC & GSS McARTHUR

(13)

DATE	NO.	MISSION	CATALINA	CLEMENTE	TIME	MISSION	CATALINA	CLEMENTE	EQUIPMENT
2/18	1	- .09 ✓			1205 ✓	+ .01 ✓			
2/18	2	- .07 ✓			1230 ✓				
2/18	3	- .07 ✓			1245 ✓	- .01 ✓			
2/19	4			+ .04 ✓	0140 ✓			+ .50 ✓	HI-FIX MASTER STN. UPSET IN HIGH WIND .50 LANE ADDED II
2/20	5	- .11 ✓			1247 ✓	+ .06 ✓			
2/24	6	+ .01 ✓			1055 ✓	- .02 ✓			
2/25	7	+ .15 ✓			0651 ✓	- .09 ✓			
2/27	8	+ .03 ✓			1104 ✓	- .04 ✓			CHANGED SHIP RECEIVER A 268 REPLACED W/A 250
3/3	9	+ .04 ✓			0755 ✓	+ .01 ✓			
3/9	10	+ .02 ✓			1500 ✓	0.00 ✓			
3/11	11	+ .05 ✓			0930 ✓	- .09 ✓			
3/12	12			+ .16 ✓	0616 ✓			- .04 ✓	GNIO
3/12	13			+ .03 ✓	1320 ✓			+ .04 ✓	GNIO REPLACED IN RECEIVER A 281 (SHIP)
3/12	14			+ .15 ✓	1422 ✓			- .05 ✓	
3/13	15	+ .03 ✓			1315 ✓	- .01 ✓			
3/13	16	+ .02 ✓			1352 ✓	- .02 ✓			
3/16	17	0.00 ✓			1440 ✓	+ .01 ✓			
3/19	18	- .05 ✓			1032 ✓	0.00 ✓			PT LOMA STATION OFF THE AIR, REPAIRED
3/20	19	- .01 ✓			1604 ✓	- .04 ✓			
3/20	20			+ .11 ✓	1435 ✓			- .08 ✓	
3/26	21	+ .03 ✓			1230 ✓	- .01 ✓			REALIGNED ALL REC W MDU, MASTER TRANS REPAIRED
3/29	22				1542 ✓	- .55 ✓			CALIBRATION, DIALS BISECT NOT FOR HYDRO
3/30	23	+ .01 ✓			1600 ✓	- .03 ✓			
4/3	24		+ .06 ✓		0831 ✓		- .15 ✓		
4/6	25	- .05 ✓			1434 ✓	- .08 ✓			SLAVE I (NORTHERN) TRA BURNED OUT
4/9	26	- .02 ✓			0940 ✓	- .03 ✓			
4/17	27	- .03 ✓			1111 ✓	- .09 ✓			
REJECT	28								
4/20	29	+ .04 ✓			1524 ✓	- .04 ✓			REPLACED DRIVER AND REALIGNED
4/23	30	+ .09 ✓			1021 ✓	- .08 ✓			
5/1	31		+ .03 ✓		0605 ✓		- .14 ✓		
REF	32								
5/1	33	+ .11 ✓			1152 ✓	- .07 ✓			COMPUTED BY - MEW
5/2	34	+ .09 ✓			1439 ✓	- .01 ✓			CHECKED BY - T.M.W
5/5	35	+ .08 ✓			0614 ✓	- .11 ✓			

ABSTRACT OF POSITION NUMBERS ✓

ON H-9114 (MA 40-4-70)
 1970

<u>VESSEL</u>	<u>DATE</u>	<u>JULIAN DATE</u>	<u>POSITION</u>
McARTHUR	April 6	96	0001-0085
	April 7	97	0086-0184
	April 16	106	0185-0333
	April 17	107	0334-0443
	April 20	110	0444-0522
	April 21	111	0523-0599
	April 29	119	0600-0737
	April 30	120	0738-1023
	May 1	121	1024-1030
	May 2	122	1031-1124
	May 3	123 ✓	1125-1490
	May 4	124 ✓	1491-1912

NOTE: Hydrography from Position 1288-1888 was done using a DE 723 Fathometer ✓

LIST OF GEOGRAPHIC NAMES

GULF OF SANTA CATALINA

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

DATE CHECKED

CHECKED BY

FORM 733A
(8-23-60)

SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAMPLER	APPROX. PENETRATION	LENGTH OF TUBE	LENGTH OF CORE	FIELD DESCRIPTION	REMARKS (Mussel conditions, coarseness, silt, etc.; No. trigger core no.; date extended, disposition, etc.)	OBS. INIT.
		LATITUDE	LONGITUDE								
9000	5/1/70	33° 07.78'	117° 44.23'	420	-	1'	-	-	gnM fine gy S		
9001	5/1/70	33° 07.78'	117° 44.04'	440	-	1'	-	-	gnM fine gy S		
9002	5/4/70	32° 57.60'	117° 17.96'	21	-	1'	-	-	gnM fine gy S	SHIPEX + SAMPLER	
9003	5/4/70	32° 59.18'	117° 17.65'	18	-	1'	-	-	fine gy S		
9004	5/4/70	37° 00.24'	117° 18.52'	26	-	1'	-	-	gnM fine gy SMP		
9005	5/4/70	33° 01.54'	117° 18.47'	23	-	1'	-	-	gnM fine gy S		
9006	5/4/70	33° 02.54'	117° 19.06'	24	-	1'	-	-	gnM fine gy S		
9007	5/4/70	33° 03.70'	117° 19.36'	28	-	1'	-	-	gnM fine gy S		
9008	5/4/70	33° 04.86'	117° 20.10'	27	-	1'	-	-	gnM fine gy S		
9009	5/4/70	33° 05.92'	117° 20.60'	24	-	1'	-	-	gnM fine gy S		
9010	5/4/70	33° 07.26'	117° 21.06'	20	-	1'	-	-	gnM fine gy S		
9011	5/4/70	33° 08.28'	117° 21.88'	24	-	1'	-	-	bxM fine gy S		
9012	5/4/70	33° 09.06'	117° 22.90'	26	-	1'	-	-	bxM fine gy S		
9013	5/4/70	33° 09.90'	117° 23.86'	20	-	1'	-	-	bxM fine gy S		
9014	5/4/70	33° 10.20'	117° 25.20'	26	-	1'	-	-	bxM fine gy S		
9015	5/4/70	33° 11.15'	117° 26.30'	27	-	1'	-	-	bxM fine gy S		
9016	5/1/70	33° 07.60'	117° 34.04'	360	-	1'	-	-	bxM fine gy S		

MA-40-4-70

OPR-411

McARTHUR

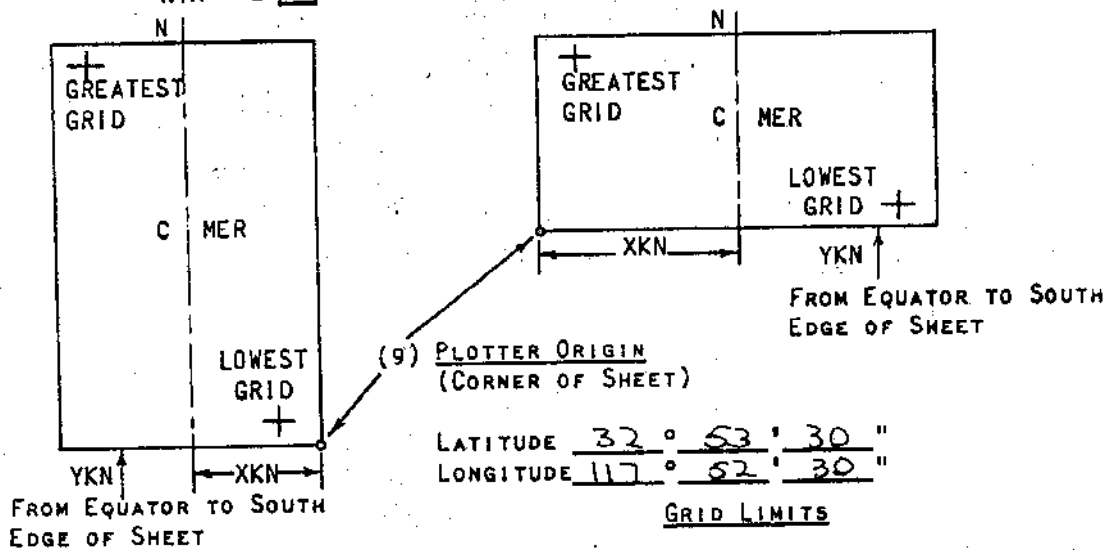
Use more than one line per sample if necessary.

FORM # 1

FIG. 15

**PARAMETERS FOR DIGITAL COMPUTING
POLYCONIC PROJECTION**

- (1) PROJECT No. OPR-411 (4) REQUESTED BY RE Moses
 (2) H No. 9114 (NA-40-4-70) (5) SHIP OR OFFICE DAVIDSON
 (3) ^{Sheet} FIELD No. 9114 (6) DATE REQUIRED 21 Mar. 1970
 (7) VISUAL (8) ELECTRONIC (FILL OUT FORM #3)
 (Hyperbolic)
 (10) XKN (SP 5) DISTANCE FROM CMER TO EAST EDGE (NYX = 1) 28,849.8 METERS
 OR WEST EDGE (NYX = 0). ⁸²⁵
 (11) YKN (SP 241) DISTANCE FROM EQUATOR TO SOUTH EDGE OF SHEET. 3,640,542.656 METERS
 (12) CENTRAL MERIDIAN 117° 34' 00" W
 (13) SURVEY SCALE 1: 40,000
 (14) SIZE OF SHEET (CHECK ONE) 36x54 42x60 OTHER
 (15) NYX, ORIENTATION OF SHEET (CHECK ONE):
 NYX = 1 NYX = 0



LATITUDE 32° 53' 30"
 LONGITUDE 117° 52' 30"

GRID LIMITS

- (16) GREATEST LATITUDE 33° 12' 00" (PROJECTION LINE
 (17) LOWEST LATITUDE 32° 54' 00" INTERVAL, PAGE 4
 (18) DIFFERENCE 0° 18' 00" HYDRO MANUAL)
 (19) 2' 00"
 (20) 9 YSN
 (21) GREATEST LONGITUDE 117° 52' 00"
 (22) LOWEST LONGITUDE 117° 14' 00"
 (23) DIFFERENCE 0° 38' 00"
 (24) 3' 00"
 (25) 19 XSN

LIST G.P. OF ALL STATIONS TO BE PLOTTED ON THIS PROJECTION ON THE BACK OF THIS FORM. (DEG., MIN., METERS)

Comp by JEA
 ✓ by Dms

EMT

LIST OF BASIC FIELD RECORDS

1 Boat Sheet ✓

15 Envelopes of Position and Sounding
Tape Printout and Corrector Tapes

15 Boxes Position and Sounding Tapes
and Corrector Tapes

1 Envelope Plotting Abstracts Form
C&GS 817

2 Envelopes DE 723 Fathogram

1 Envelope Magnetics Analog Record

8 Large Envelopes PFR Fathogram

2 Form 733M, Bottom Sample Log ✓

1 Form 1, Parameters for Digital ✓
Computing Polyconic Projection

1 Box TC/TI Tape (Forwarded with
MA 40-1-70)

1 Box Velocity Tape (Forwarded with
MA 40-1-70)

1 Box Tide Tape and Printout (to be for-
warded at a later date)

APPROVAL SHEET FOR

H-9114 (MA 40-4-70)
1970

Field work on this survey was accomplished under my general supervision. Frequent inspection of the field data and boat sheet were made by me as the survey progressed. The sounding records have been inspected by me and are approved. This survey is complete and adequate and is hereby approved.

Donald R. Tibbit

Donald R. Tibbit
Commander, USESSA
Commanding Officer
USC&GS Ship McARTHUR (CSS-30)

TIDE NOTE FOR HYDROGRAPHIC SHEET

120th meridian 12/5/72

~~Nautical Chart Division:~~ PMC.

Plane of reference approved in
~~volumes of sounding records for~~ Tide Tape printout.

HYDROGRAPHIC SHEET H 9114

Locality: Point Loma, Calif. ✓

Chief of Party: Period: 123-4 1970

Plane of reference is mean lower low water

Tide Station Used (Form C&GS-681): San Diego, Calif.

Height of Mean High Water above Plane of Reference is as follows: 4.6 feet

Remarks

P. H. A. [Signature]
Chief, Tides and Currents Branch

GEOGRAPHIC NAMES

Survey No. H-9114

Name on Survey	Source											
	A	B	C	D	E	F	G	H	K			
GULF OF SANTA CATALINA												1
LA JOLLA CANYON												2
PACIFIC OCEAN												3
												4
												5
												6
												7
												8
												9
												10
												11
												12
												13
												14
												15
												16
												17
												18
APPROVED BY												19
<i>A. J. Wright</i>												20
CHIEF GEOGRAPHER												21
												22
												23
												24
												25
												26
												27

PREPARED BY

C. E. Harting

CARTOGRAPHER

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9114

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET & PNO		1	BOAT SHEETS		1 ✓	
DESCRIPTIVE REPORT		1 ✓	OVERLAYS		3 ✓	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINT OUTS SHEETS	TAPE ROLLS	BUSINESS CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	8					
COPYING CAMIERS						
VOLUMES						
ENVELOPE BOXES			1	1	2	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		1939	24	
POSITIONS REVISED		30	12	
DEPTH SOUNDINGS REVISED		312	29	
DEPTH SOUNDINGS ERRONEOUSLY SPACED		—	—	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		—	—	
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		0	1	
JUNCTIONS		2	9	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		113	18	
SPECIAL ADJUSTMENTS		80	1	
ALL OTHER WORK		5	24	
TOTALS		200	6069	
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <i>Nicholas Lestenkof</i>	4/17/72		8/11/72	
REVIEW BY <i>R. D. Sanocki</i>	27 July 1974		13 August 1974	

inspected by *Fannie B. Houston August 20, 1974*
Carsten 8/22/74

Reg. No. 9114

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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 9-28-82 TIME REQ'D _____ INITIALS JAC

REMARKS:

H-9114

Information for Future Pre-Survey Reviews

The bottom in this area appears to be stable. Submarine canyons should be well developed.

<u>Position</u>	<u>Index</u>	<u>Bottom Change</u>	<u>Use</u>	<u>Resurvey</u>
<u>Lat.</u>	<u>Long.</u>	<u>Index</u>	<u>Index</u>	<u>Cycle</u>
325	1172	2	2	50 Years
325	1173	0	1	50 Years
325	1174	0	1	50 Years
325	1175	0	1	50 Years
330	1172	2	2	50 Years
330	1173	0	2	50 Years
330	1174	0	1	50 Years
330	1175	0	1	50 Years
331	1173	0	2	50 Years
331	1174	0	2	50 Years
331	1175	0	1	50 Years

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OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9114

FIELD NO. MA-40-4-70

California, Gulf of Santa Catalina, off Oceanside

SURVEYED: April 6 - May 4, 1970

SCALE: 1:40,000

PROJECT NO.: OPR-411

SOUNDINGS: EDO-UQN with PFR, and DE-723
Depth Recorders

CONTROL: Hi-Fix (Hyperbolic Mode)

Chief of Party	D. R. Tibbit
Surveyed by	J. C. Albright
.....	T. C. Howell
.....	R. C. Husted
.....	S. H. Otsubo
.....	D. M. Spillman
.....	M. E. Wagner
.....	D. M. Wilson
Automated Plot by	Gerber Digital Plotter (PMC)
Verified by	N. Lestenkof
Reviewed by	R. D. Sanocki
	Date: August 13, 1974
Inspected by	F. B. Powers

1. Description of the Area

This survey covers a rectangular area of the Pacific Ocean west of Oceanside, California. The survey limits extend to the west from depths along the 20-fathom curve to long. 117°50' and north from lat. 32°55' to lat. 33°12'.

In the northeast area of the survey a submarine canyon extends southwesterly into depths of 350 fathoms. Elsewhere, the slope from 20-fathom depths gradually descends to depths of 430 to 550 fathoms in the northwestern and southcentral areas of the survey respectively. In the southwestern area of the survey the bottom is somewhat irregular with several knolls evident.

The bottom is composed primarily of mud, sand, and some rocky areas.

2. Control and Shoreline

The origin of control is adequately covered in Part F of the Descriptive Report.

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

3. Hydrography

A. Depths at crossings are in good agreement with the exception of lines in the vicinity of lat. $33^{\circ}10.5'$, long. $117^{\circ}30'$ where rapid changes in the slope of the bottom occur. The relatively wide transducer beam used in the survey produced a trace that obscured the true bottom profile in this instance.

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

C. The development of the bottom configuration and investigation for least depths are considered adequate. However, more detailed development of several canyons deeply indenting the continental slope would have been desirable rather than relying on prior soundings for this information.

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 that the loss of fathograms for Positions 1561-1764 and loss of the Plotting Abstract for Positions 1289-1338 posed potentially serious difficulties and inconvenience in verification and review of the aforementioned data.

5. Junctions

Adequate junctions were effected with H-9248 (1971) on the southeast and H-9249 (1971) on the east. Junctions with contemporary surveys H-9108 (1970) on the south and H-9113 (1970) on the west are discussed in the reviews of those surveys. H-9250 (1971) and H-9251 (1971) on the east, H-9253 (1971) on the north, and H-9277 (1972) on the northwest which also junction with the present survey were not available at the time of this review and will be subsequently discussed in the reviews of those surveys.

6. Comparison with Prior Surveys

- A. H-289 (1851) 1:380,000
 H-1905 (1889) 1:20,000
 H-1906 (1889) 1:20,000
H-4366 (1924) 1:160,000

These surveys provide the earliest coverage of the present survey area. They have been compared with and are superseded in the common area by the surveys listed below. No further consideration of the above prior surveys is deemed necessary.

- B. H-4367 (1924) 1:40,000
 H-6117 (1935) 1:40,000
 H-6118 (1935-37) 1:80,000
H-6119 (1935-37) 1:80,000

These surveys, taken together, cover the area of the present survey. A comparison of the above prior surveys with the present survey reveals only minor differences. Isolated instances of differences of 30 or more fathoms in depths of 350 to 500 fathoms are attributed to survey methods and equipment used during the prior surveys. Generally, depths were found to be deeper on the prior surveys but differences did not exceed about 10 fathoms in 350 to 550-fathom depths.

Selected bottom samples from H-4367 (1924) and H-6117 (1935) were brought forward to supplement the present survey.

With the addition of the supplementary bottom samples the present survey is considered adequate to supersede the prior surveys within the common area.

7. Comparison with Chart 5060, 6th Ed., December 29, 1973
5101, 18th Ed., October 6, 1973

The charted hydrography originates with the previously discussed prior surveys which require no further consideration, supplemented by applications of soundings from the boat sheet (Bp-79287) and verified smooth sheet of the present survey.

A depth of 359 fms. charted in lat. 32°58.56', long. 117°35.37' on chart 5060 originates with the present survey. It was charted in error by 30 fathoms and should be revised to 389 fathoms.

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

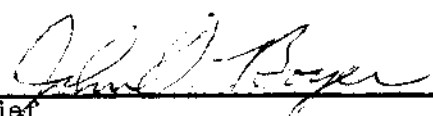
8. Compliance with Instructions

The survey adequately complies with the Project Instructions.

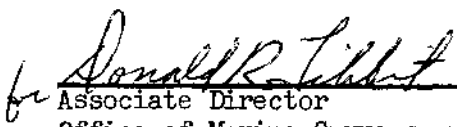
9. Additional Field Work

This is considered to be a very good basic survey and no additional field work is recommended.

Examined and Approved:



Chief
Marine Chart Division



Associate Director
Office of Marine Surveys and Maps

