

# 8920

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. PF-10-3-67 Office No. H-8920

### LOCALITY

State ..... California  
General locality ..... San Diego  
Locality ..... Mission Bay

1967

### CHIEF OF PARTY

G. L. Short

### LIBRARY & ARCHIVES

DATE ..... July 29, 1968

USCOMM-DC 37022-P66

8920

agH

22500

FORM C&GS-537  
(8-18-59)

U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

REGISTER NO.

**HYDROGRAPHIC TITLE SHEET**

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 10-3-67

State California

General locality San Diego

Locality Mission Bay

Scale 1:10,000 Date of survey 3/24/67 to 4/5/67

Instructions dated February 27, 1967 Project No. OPR-411

Vessel USC&GSS PATHFINDER

Chief of party G.L. Short

Surveyed by W.L. Bradly, A.C. Weymann, R.T. LeRoy, <sup>Wilson</sup> L.J. Ganzlinger

Soundings taken by echo sounder, hand lead, pole

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Protracted by \_\_\_\_\_ Automated plot by \_\_\_\_\_

Soundings penciled by \_\_\_\_\_

Soundings in ~~fathoms~~ feet at ~~MLLW~~ MLLW are true depths

REMARKS: \_\_\_\_\_

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*X.W. W.*

*J.J. G.*

Descriptive Report to accompany Hydrographic Survey  
H- 8920 Field No. PF 10-3-67

USC&GSS PATHFINDER

CDR G.L. Short Cmdg.

1967

Scale 1:10,000

A. PROJECT

The hydrography on this survey was completed in accordance with Project Instructions OPR-411, Southern California, dated 15 February, 1967 supplemented by Change No. 1 Supplement to Instructions dated 27 February, 1967.

B. AREA SURVEYED

This survey is a basic hydrographic survey of the Mission Bay area of Southern California. The hydrography extends from latitude  $32^{\circ}45'$  N to  $32^{\circ}48'$  N and longitude  $117^{\circ}12.5'$  W to  $117^{\circ}16'$  W. This survey was begun on March 24, 1967 and completed on April 6, 1967. Hydrography extended beyond the jetty 500 meters to determine if any shoaling had occurred beyond the jetty. The bottom of the bay was generally level and uniform because it had been dredged. There was one prior survey but the entire area has been dredged since so there was no comparison.

C. SOUNDING VESSELS

The entire survey was done with ML#4 and a Boston Whaler. The launch was used to run lines and the deepest hydrography.

The Boston Whaler was equipped with a 20 H.P. outboard motor, a small plotting table and a D.E. 723 Raytheon Fathometer installed with a transducer mounted on the side. Four people were aboard to run the hydrography, a coxswain, plotter and left angle, right angle, recorder and fathometer operator. The whaler was also used to construct signals on islands and in shallow areas where the launch could not land. The whaler was also used to run the shoreline and took most of the D.P.'s.

D. SOUNDING EQUIPMENT

The following model DE-723 Raytheon Fathometers were used.

<u>Serial No.</u>	<u>Vessel</u>	<u>Date</u>
935	ML #4	March 24- April 5, 1967
933	Boston Whaler	March 24- April 5, 1967

A lead line and sounding pole were used in the Boston Whaler on April 6, 1967. All soundings were in feet.

E. SMOOTH SHEET

Personnel of the Ship PATHFINDER are cutting punched tapes and processing the data for the electronic digital plotter at Pacific Marine Center to plot the smooth sheet.

F. CONTROL

Visual control was used throughout the entire survey. Advanced manuscripts were used to plot the control. Manuscript T-11877 compiled in 1964 and 1967 covered the entire area. Eight signals were located by sextant cuts. They are SAL, MAN, LEE, ORA, END, ARK, FUN and NAY. The cuts

are in Vol. 1 on page 49 for ARK; Vol. 1 page 63 for FUN, MAN, and LEE. All the angles are also written in ink on the manuscript. Signals SKI, RIO, AMY, NAT, and COP were located graphically with T-2 cuts, and plotted with a metal three arm protractor directly on manuscript T-11877. Copies of the abstract of directions is attached to the manuscript and also included in the descriptive report. Trouble was experienced with vandalism of signals and the large amount of people in the area, particularly over the first week of hydrography which was during the Easter Vacation period. Some of the signals were located on the boat sheet but never used because they were destroyed or lost and never rebuilt due to the short period of the time remaining.

G. SHORELINE

Shoreline was taken from ~~T-11877~~<sup>RS-858</sup>. The manuscript shoreline is adequate. No shoreline differences were discovered. Most of the bay had been dredged and the bottom was generally level. The depth dropped off relatively fast next to the shore in all areas except in the north end of Fiesta Bay where the area was of a swampy nature and a mud flat extended out in the bay. This area is shown on the boat sheet. ✓

H. CROSSLINES

Crosslines constitutes about 11.4% of the linear miles ✓

run. There were no major discrepancies in crossings.

I. JUNCTIONS

There were no contemporary junction surveys. ✓

J. COMPARISON WITH PRIOR SURVEYS

There was one prior survey but the entire area has been dredged since, so there was no comparison. ✓

K. COMPARISON WITH CHART

Chart #5060 published February 21, 1966 on Mission Bay is a 1:20,000 insert on the chart showing the entrance to San Diego Bay. Soundings are in fathoms. One discrepancy with the chart is a small amount of sand build-up inside the channel along the south jetty from sand transport. The least depth obtained in this area was 12 feet and close to the jetty in charted depths of 20 feet. ✓

L. ADEQUACY OF CHART

This survey is considered adequate and should supersede previous surveys due to its being twice the scale. ✓

M. AIDS TO NAVIGATION

There are lights on each jetty of the channel leading into the bay. The north jetty also has a fog horn located on it. There are marker buoys in the entrance of each cove and bay giving speed limit and are maintained by the city of San Diego Mission Bay Patrol. Many mooring buoys are located in the small bays and are located by dashed lines on the boat sheet marking limits of the mooring area. Entrance lights were being installed at the mouth of San Juan ✓

Cove and Santa Barbara Cove. Entrance lights already exist at the mouth of Quivira Basin as indicated on the chart.

N. STATISTICS

<u>Vessel</u>	<u>Positions</u>	<u>Linear miles</u>	✓
ML #4	827	83.3	
Boston Whaler	411	27.1	

Positions were rejected for ML#4 and <sup>there</sup> are no position numbers 1-19, 46, 47, 156-161, 177, and 210. The whaler has no position numbers 87-93, and 323. The fact that these were rejected was considered in the above statistics. Bottom samples were taken in accordance with the hydro manual and spaced approximately 2½ inches apart on the boat sheet. There were 38 bottom samples taken and these samples were not retained.

O. MISCELLANEOUS

The Mission Bay area is a large resort and recreational area that is quite commercialized. The City of San Diego has long range plans for the improvement of the area and thought of dredging the area to greater depths.

P. RECOMMENDATIONS

None from boat sheet.

Q. REFERENCES

Enclosed is a chart done by the Mission Bay Power Squadron. Also enclosed is a packet of brochures showing the facilities that are available in the Mission Bay area

and some photos showing various landmarks and points of interest in the area.

*Lowell J. Genzlinger*

Lowell J. Genzlinger  
ENS USESSA

*Pas. 225-246 contain typical questions  
trace not investigated by hand  
or other means for interpretation use  
RHC*



TIDE NOTE

A portable automatic tide gage at the Mission Bay Headquarters in Quivira Basin of latitude  $32^{\circ}45.7'$ <sup>← correction RPL</sup> ~~$46.3'$~~  and longitude  $117^{\circ}14.4'W$  was used for boat sheet control because of its convenience of location and type of record.

A bubbler tide gage at Crown Point of latitude  $32^{\circ}46.8'N$  and longitude  $117^{\circ}14.1'W$  was also operating continuously during the period when the hydrography was being done in Mission Bay. This was installed in the interior of Mission Bay as a back-up for the portable gage near the entrance.

The gages operated well with the exception of the bubbler orifice being moved 0.3 foot by an unknown cause during one weekend. This was corrected the next working day.

It was noted that there is some seiche action in Quivira Basin with a 20 minute period and height from the usual mean of about 0.1 feet.

TIDE NOTE FOR HYDROGRAPHIC SHEET

7/25/67

~~Marine Center District~~ Pacific Marine Center

Plane of reference approved ~~by~~ for  
~~volume of sounding records~~

HYDROGRAPHIC SHEET 8920

Locality: Mission Bay, California

Chief of Party: G. L. Short, 1967

Plane of reference is mean lower low water

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

Mission Bay (Quivira Basin)

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

4.7 feet

Remarks

  
Chief, Tides and Currents Branch

ML # 4

ABSTRACT OF TIDE CORRECTIONS  
(See instructions on reverse side)

U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

PAGE 1

OF 8

1. HYDRO. SURVEY NO:		2. FIELD NO.		3. SURVEY LOCATION			4. TIME MERIDIAN	
H- 8920		PF 10-3-67		MISSION BAY, S. CALIF.			120° W	
MO. DAY YR. OR DAY NO. (Date)	Pos. #	c. TIME		d. TIDE REDUCERS FT.	e. MACHINE ENTRY FMS.	f. TIDE STATION USED (As Form 687)	g. CORRECTION USED ZONE DESIGNATION	
		FROM	TO					
3/24/67	20	13:03:00	13:07:00	+0.6	60.6	QUIVIRA BASIN		
	23	13:10:00	13:14:00	+0.8	60.8	"	"	
	26	13:22:30	13:35:30	+1.0	60.7	"	"	
	32	13:43:00	14:29:00	+1.2	61.2	"	"	
	47	08:45:00	08:47:30	-4.4	55.6	"	"	
	49	08:48:00	09:01:30	-4.6	55.4	"	"	
	55	09:02:00	09:25:30	-4.8	55.2	"	"	
	67	09:26:00	10:01:30	-5.0	55.0	"	"	
	81	10:02:00	10:31:30	-4.8	55.2	"	"	
	95	10:32:00	10:38:00	-4.6	55.4	"	"	
	99	10:53:00	11:03:00	-4.4	55.6	"	"	
	106	11:08:30	11:18:30	-4.2	55.8	"	"	
	112	11:24:00	11:26:27	-4.0	56.0	"	"	
	115	11:29:12	11:40:30	-3.8	56.2	"	"	
	119	11:41:00	11:47:30	-3.6	56.4	"	"	
	120	15:15:30	15:17:30	0.0	60.0	"	"	
	122	13:04:30	13:09:30	-3.0	57.0	"	"	
	125	13:10:00	13:14:30	-2.8	57.2	"	"	
	128	13:39:30	13:41:30	-2.4	57.6	"	"	
	130	13:42:00	13:52:30	-2.2	57.8	"	"	
	137	14:09:00	14:21:30	-1.8	58.2	"	"	

1 to 19 not to be plotted on smoth sheet

5. CHECKED:

COMP BY: *CS*

APPROVED

Tides and Currents Branch

7/24/67

ABSTRACT OF TIDE CORRECTIONS  
(See instructions on reverse side)

1. HYDRO. SURVEY NO:		2. FIELD NO.		3. SURVEY LOCATION		4. TIME MERIDIAN	5. CORRECTION USED ZONE DESIGNATION
MO. DAY YR. OR DAY NO. (Date)	POSITION NUMBER	FROM	TIME FROM	TO	6. TIDE REDUCERS FT.		
H. 8920		PF 10-3-67	MISSION BAY CALIFORNIA			120° W	
3-28-67	142	1422	1422	1431 30	-1.6	58.4	QUIVIRA BASIN
"	146	1436	1436	1445	-1.4	58.6	"
"	152	1458	1458	1501	-1.2	58.8	"
"	Pos. #	156 to	161	rejected			"
"	162	152330	1534	-1.0	59.0		"
"	169	1538 08	1615	-0.8	59.2		"
3-29-67	189	0955	10030	-2.8	57.2		"
"	193	1008	101830	-3.0	57.0		"
"	198	1019	103130	-3.2	56.8		"
"	203	1042	104900	-3.4	56.6		"
"	220	113430	11:24:00		56.6		"
"	240	1243	12:42:30	-3.4	56.8		"
"	242	1341	1245	-3.2	57.2		"
"	247	1351	135030	-2.8	57.4		"
"	250	141230	142730	-2.6	57.6		"
"	256	1428	144530	-2.4	57.8		"
"	262	1452	150930	-2.2	58.0		"
"	268	1510	154030	-2.0	58.2		"
"	285	154730	155230	-1.8	58.4		"
				-1.6			Comp by d. ss.

APPROVED

Tides and Currents Branch 7/24/67

5. CHECKED

ABSTRACT OF TIDE CORRECTIONS  
(See instructions on reverse side)

ML #4

1. HYDRO. SURVEY NO.		2. FIELD NO.		3. SURVEY LOCATION			4. TIME MERIDIAN	5. CORRECTION USED ZONE DESIGNATION
H- 8920		PF 10-3-67		MISSION BAY, CALIF				
6. MO. DAY YR. OR DAY NO. (Date)	7. POSITION NUMBER	8. TIME		9. TIDE REDUCERS FT.	10. MACHINE ENTRY FMS.	11. TIDE STATION USED (As Form 682)	12.	
		FROM	TO					
3-30-67	289	1022 30	1024 30	-1.8	58.2	QUIVIRA BASIN		
"	292	1047 30	1051 30	-2.0	58.0	"		
"	295	1051 00	1101 30	-2.2	57.8	"		
"	296	1052		-2.4	57.6	"		
"	305	1113	1139 45	-2.6	57.4	"		
"	322	1140	1208	-2.8	57.2	"		
"	338	1313 30	1353 30	-2.6	57.4	"		
"	360	1400	1451	-2.4	57.6	"		
"	Position # 382		-385 not plotted			"		
"	386	1518	1522	-2.2	57.8	"		
"	391	1542	1611 30	-2.4	57.6	"		
3-31-67	409	1327	1332 30	-2.4	57.6	"		
"	413	1333	1421 30	-2.6	57.4	"		
"	441	1422	1602	-2.8	57.2	"		
	No Soundings	for Pos. 483-503 - Bottom Samples						
4-3-67	504	0926	0933 30	-1.2	58.8	"		
"	509	0934	0947 30	-1.0	59.0	"		
"	514	0948	1000 30	-0.8	59.2	"		
"	523	1001	1011 30	-0.6	59.4	"		
"	530	1012	1027 30	-0.4	59.6	"		
"	540	1028	1041 30	-0.2	59.8	"		
"	549	1042	1101 30	0.0	60.0	"		

Camp by d. S.J.

APPROVED

5. CHECKED

Tides and Currents Branch 7/24/67

PHL #4

ABSTRACT OF TIDE CORRECTIONS  
(See instructions on reverse side)

U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

1. HYDRO. SURVEY NO:		2. FIELD NO.		3. SURVEY LOCATION		4. TIDE REDUCERS FT.	5. MACHINE ENTRY FMS.	6. TIDE STATION USED (As Form 681)	9. CORRECTION USED ZONE DESIGNATION
MO. DAY YR. OR DAY NO. (Date)	POSITION NUMBER	FROM	TO	TIME	TIME MERIDIAN				
H-8920		PF 10-3-67			Mission Bay Calif				120°W
4-3-67	561	1102	1205			70.2	60.2	QUIRY BASIN	
"	604	1312	1323			90	60.6	"	
"	610	1324	1333			-0.2	59.8	"	
"	617	1348	1352			-0.4	59.6	"	
"	621	1355	1407			-0.6	59.4	"	
"	629	1408	1420			-0.8	59.2	"	
"	638	1421	1434			-1.0	59.0	"	
"	647	1440	1446			-1.2	58.8	"	
"	652	1447	1453			-1.4	58.6	"	
"	657	1502	1512			-1.6	58.4	"	
"	665	1515	1523			-1.8	58.2	"	
"	670	1528	1540			-2.0	58.0	"	
"	678	1555	1607			-2.4	57.6	"	
"	687	1608	1615			-2.6	57.4	"	
4-4-67	693	0911	0921			-2.2	57.8	"	
"	700	0923	0931			-2.0	58.0	"	
"	706	0934	0942			-1.8	58.2	"	
"	712	0956	1002			-1.4	58.6	"	
"	717	1005	1015			-1.2	58.8	"	
"	725	1016	1026			-1.0	59.0	"	
"	730	1027	1038			0.8	59.2	"	
"	736	1039	1052			-0.6	59.4	"	
"	746	1108	1108			-0.4	59.6	"	

Comp by J.S.S.

APPROVED

5. CHECKED

Tides and Currents Branch

7/24/67

UOL 6

ABSTRACT OF TIDE CORRECTIONS  
(See instructions on reverse side)

FORM 465-8502  
(9-64)  
USCGM-DC 6812-P64

1. HYDRO. SURVEY NO:  
H- 8920

2. FIELD NO.  
PF 10-3-67

3. SURVEY LOCATION  
MISSION BAY, CALIF.

4. TIME MERIDIAN  
120° W

5. MO. DAY YR. OR DAY NO. (Date)

6. POSITION NUMBER

7. FROM

8. TO

9. TIDE REDUCERS FT.

10. MACHINE ENTRY FT.

11. TIDE STATION USED (As Form 682)

12. CORRECTION USED ZONE DESIGNATION

5. MO. DAY YR. OR DAY NO. (Date)	6. POSITION NUMBER	7. FROM	8. TO	9. TIDE REDUCERS FT.	10. MACHINE ENTRY FT.	11. TIDE STATION USED (As Form 682)	12. CORRECTION USED ZONE DESIGNATION
4-4-67	747	1109	112230	-0.2	59.8	QUIVIRA BASIN	
"	756	1125	1148:30	0.0	60.6	"	
"	768	1138:00	1312	+0.2	60.2	"	
4-5-67	801	091930	092130	-2.8	57.2	"	
4	803	0922	0922:00	-2.6	57.4	"	
"	807	093630	093930	-2.4	57.6	"	
"	810	094930	094945	-2.2	57.8	"	
"	811	0950	095330	-2.0	58.0	"	
"	814	1001	1005	-1.8	58.2	"	
"	818	101130	1012:00	-1.6	58.4	"	
"	822	102415	103428	-1.4	58.6	"	
"	825	103950	104425	-1.2	58.8	"	
"	827	112950	1130	-0.4	59.6	"	
"	828	113545	114610	+0.2	59.8	"	
"	831	115020	120150	0.0	60.0	"	
"	835	120603	121340	+0.2	60.2	"	
"	832	122820	1229	+0.4	60.4	"	
						Comp by DJJ	

5. CHECKED

APPROVED

Tides and Currents Branch

7/24/67

ABSTRACT OF TIDE CORRECT. S  
 (See instructions on reverse side)

1. HYDRO. SURVEY NO: H-8920		2. FIELD NO. PF 10-3-67		3. SURVEY LOCATION MISSION BAY, CALIF.		4. TIME MERIDIAN 120° W	
a. NO. DAY YR. OR DAY NO. (Date)	b. POSITION NUMBER	c. TIME		d. TIDE REDUCERS FT.	e. MACHINE ENTRY MMG.	f. TIDE STATION USED (As Form 661)	g. CORRECTION USED ZONE DESIGNATION
		FROM	TO				
3/27/67	11	14:09:30	14:12:30	-0.8	56.2	QUIVIRA BASIN	
	14	14:14:30	14:24:00	-0.6	56.4	"	
	21	14:30:00	14:30:30	-0.4	58.6	"	
	22	14:50:30	14:59:00	-0.2	58.8	"	
	30	15:01:30	16:05:30	0.0	60.0	"	
3/28/67	68	10:23:30	11:04:50	-4.2	55.8	"	
	95	14:41:00	14:41:30	-4.0	55.6	"	
3/29/67	118	10:33:30	10:41:40	-3.2	56.8	"	
	123	10:46:30	11:37:30	-3.4	56.6	"	
	135	11:45:00	11:53:30	-3.6	56.4	"	
	138	13:32:00	13:50:00	-2.8	57.2	"	
	168	14:36:30	14:46:30	-2.2	57.8	"	
	173	14:47:00	15:06:00	-2.0	58.0	"	
	182	15:21:00	15:39:00	-1.8	58.2	"	
3/30/67	188	09:51:30	10:06:00	-1.4	58.6	"	
	194	10:07:30	10:13:00	-1.6	58.4	"	
	200	10:27:30	10:31:30	-1.8	58.2	"	
	203	10:32:00	10:50:30	-2.0	58.0	"	
	211	10:51:30	11:06:30	-2.2	57.8	"	
	223	11:28:30	11:39:30	-2.4	57.6	"	
	226	11:40:00	11:42:30	-2.6	57.4	"	

5. CHECKED BY: S.S.

APPROVED

Tides and Currents Branch

7/29/67



BOSTON WHALER  
ABSTRACT OF TIDE CORRECT. S  
(See instructions on reverse side)

U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

1. HYDRO. SURVEY NO: H-8920		2. FIELD NO. PF 10-3-67		3. SURVEY LOCATION MISSION BAY, CALIF.		4. TIME MERIDIAN 120° W	
a. NO. DAY YR. OR DAY NO. (Date)	b. POSITION NUMBER	c. TIME		d. TIDE REDUCERS FT.	e. MACHINE ENTRY FT.	f. TIDE STATION USED (As Form 681)	g. CORRECTION USED ZONE DESIGNATION
3/30/67	2269 ✓	13:38:00	13:58:00	-2.8 ✓	57.7 ✓	QUIVIRA BASIN	"
	237 ✓	14:01:30	14:35:28	-2.6 ✓	57.4 ✓	"	"
	248 ✓	15:03:00	15:37:30	-2.4 ✓	57.6 ✓	"	"
	261 ✓	15:38:00	16:04:45	-2.2 ✓	57.8 ✓	"	"
4/3/67	271 ✓	10:31:30	10:41:30	-0.2 ✓	59.8 ✓	"	"
	274 ✓	10:42:00	10:57:18	0.0 ✓	60.0 ✓	"	"
	284 ✓	11:22:00	11:22:30	+0.2 ✓	60.2 ✓	"	"
	290 ✓	14:06:30	14:07:30	-0.6 ✓	59.4 ✓	"	"
	291 ✓	14:08:00	14:20:30	-0.8 ✓	59.2 ✓	"	"
	296 ✓	14:21:00	14:27:13	-1.0 ✓	59.0 ✓	"	"
	306 ✓	15:03:00	15:06:00	-1.6 ✓	58.4 ✓	"	"
	308 ✓	15:17:30	15:20:00	-1.8 ✓	58.2 ✓	"	"
	312 ✓	15:33:00	15:40:00	-2.0 ✓	58.0 ✓	"	"
	316 ✓	15:42:00	15:51:30	-2.2 ✓	57.8 ✓	"	"
	320 ✓	15:54:00	15:57:00	-2.4 ✓	57.6 ✓	"	"
4/4/67	323 ✓	09:05:30	09:10:30	-2.4 ✓	57.6 ✓	"	"
	328 ✓	09:11:00	09:31:30	-2.2 ✓	57.0 ✓	"	"
	330 ✓	09:22:00	09:31:30	-2.0 ✓	57.8 ✓	"	"
	336 ✓	09:32:00	09:42:30	-1.8 ✓	58.2 ✓	"	"
	339 ✓	09:59:00	10:02:00	-1.4 ✓	58.6 ✓	"	"
	342 ✓	10:10:30	10:15:00	-1.2 ✓	58.8 ✓	"	"
	347 ✓	10:16:00	10:26:30	-1.0 ✓	59.0 ✓	"	"
		10:27:00	10:30:30	-0.8 ✓	59.2 ✓	"	"

APPROVED

5. CHECKED *L.S.S.*

COMP BY: *BD*

Tides and Currents Branch

7/24/67

4. TIME MERIDIAN  
120° W

9. CORRECTION USED  
ZONE DESIGNATION

BOSTON WHALER  
ABSTRACT OF TIDE CORRECTIONS  
(See instructions on reverse side)

3. SURVEY LOCATION  
MISSION BAY, CALIF.

2. FIELD NO.  
PF 10-3-67

1. HYDRO. SURVEY NO.  
H-8920

a. MO. DAY YR. OR DAY NO. (Date)	b. POSITION NUMBER	c. TIME		d. TIDE REDUCERS FT.	e. MACHINE ENTRY FT.	f. TIDE STATION USED (As Form 68J)	9.
		FROM	TO				
4/4/67	349	10:39:00	10:52:30	-0.6	59.4	QUINIA BASIN	
	354	10:53:00	11:08:30	-0.4	59.6	"	
	360	11:09:00	11:23:30	-0.2	59.8	"	
	364	11:24:00	11:47:30	0.0	60.0	"	
	370	11:48:00	11:53:30	+0.2	60.2	"	
4/5/67	372	09:12:00	09:15:30	-2.8	57.2	"	
	375	09:23:30	09:32:30	-2.6	57.4	"	
	379	09:33:00	09:41:30	-2.4	57.6	"	
	382	09:42:00	09:48:00	-2.2	57.8	"	
	386	09:53:00	09:58:00	-2.0	58.0	"	
	389	10:06:30	10:10:30	-1.8	58.2	"	
	392	10:11:30	10:14:30	-1.6	58.4	"	
	394	10:37:00	10:42:30	-1.2	58.8	"	
	397	10:56:00	10:58:30	-1.0	59.0	"	
	398	10:59:00	11:09:30	-0.8	59.2	"	
	402	11:10:00	11:21:30	-0.6	59.4	"	
	405	11:22:00	11:31:30	-0.4	59.6	"	
	408	11:31:00	11:38:30	-0.2	59.8	"	
4/8/67	412	09:41:30	09:44:30	-3.0	57.0	"	
	414	09:45:00	09:47:30	-2.8	57.2	"	
	416	10:04:00	10:04:30	-2.6	57.4	"	
	417	10:05:00	10:06:15	-2.4	57.6	"	

Tides and Currents Branch

APPROVED

COMP BY: [Signature]

5. CHECKED J.S.S.

7/24/67

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

*As shown in the current set form T-5*  
 CORRECTIONS IN FEET, FATHOMS

VELOCITY CORRECTIONS  
 U.S. Coast and Geodetic Survey  
 Ship **PATHFINDER ML\*4 & SKIFF**  
**GL SHORT** Comdg.  
 These corrections are to be used  
 between **March 24, 1967** and **April 5, 1967**  
 in the locality **MISSION BAY**  
**SAN DIEGO, CALIFORNIA**  
 for hydrographic surveys Nos. **H-8920**

0.0	+0.2	+0.4	+0.6	+0.8	+1.0	+1.2	+1.4	+0.0	4.0 ✓
								+0.2	11.5 ✓
								+0.4	18.5 ✓
								+0.6	26.0 ✓
								+0.8	33.5 ✓
								+1.0	41.0 ✓
								+1.2	48.0 ✓

DEPTH IN FATHOMS FEET

(For deep water add a 0 to these figures)

*Boston* LAUNCH TRA -0.3 INITIAL AT 2.1  
~~SKIFF~~ TRA -0.2 " " 1.0  
~~WATER~~

20  
30  
40  
50  
60  
70  
80  
90  
100  
110  
120  
130  
140  
150  
160  
170  
180  
190

One straight line velocity correction graph was made for the launch and skiff for the duration of the project. Each launch has a separate TRA factor to be used in conjunction with the velocity corrector.

Combined Velocity and TRA Correction  
PF-10-3-67 OPR-411  
Mission Bay, California

*Boston Whaler*

<u>ML#4</u>	<u>Depth</u>	<u>Correction</u>
-03.0-	+03.0ft	-0.3ft
03.1-	09.0	-0.2
09.1-	15.0	-0.1
15.1-	21.0	0.0
21.1-	27.0	+0.1
27.1-	33.0	+0.2
33.1-	39.0	+0.3

<u>Skiff</u>	<u>Depth</u>	<u>Correction</u>
-01.5-	+01.5ft	-0.2ft
01.6-	04.5	-0.1
04.6-	07.5	0.0
07.6-	10.5	+0.1
10.6-	13.5	0.2
13.6-	16.5	0.3
16.6-	19.5	0.4
19.6-	22.5	0.5
22.6-	25.5	0.6
25.6-	28.5	0.7
28.6-	31.5	0.8
31.6-	34.5	0.9
34.6-	37.5	1.0

*above tables appear to be a couple of + tenths in error - error disregarded*

## CORRECTORS

The only correctors applied to soundings for the boat sheet were for tides. These tide correctors were obtained by taking the hourly heights from the record on the portable automatic tide gage at Quivira Basin each day. Local Mean Time was used for the record of the tide gages.

A bar check was taken each morning and evening that hydro was run on both the Boston Whaler and ML #4 with the exception that bar checks could not be obtained on ML #4 on March 24, 27 and 28 at the end of the day as the batteries were dead and would not operate the fathometer. A corrector will be determined from these bar checks and averaged for the days that the checks seemed to be consistent. This corrector will comprise draft, instrument error as well as velocity correction.

### Velocity Corrections

Because a plot of the bar checks had slopes varying from 0.020 to 0.050 it was decided to make it a straight line function of the average temperature and salinity for the San Diego area from tables.

approx. temperature    59°F = 15°C  
approx. salinity        33.5 ‰

From Figure 87 of the Hydro Manual with depth 0-10 fathoms the velocity will be 1502 to 1503 meters per second. This will give a correction factor of about +0.027 from Table 17 of the Hydro Manual. This figure of +0.027 is the same as the slope of the velocity correction plot, and it seems to be a good average of the bar check data from ML#4 and skiff once the TRA corrections are taken out.

### Hydrographic Data

The bottom characteristics of the area are listed in the sounding volumes and on the boat sheet. The position numbers of the bottom samples are numbers 483 to 503 and 821 to 837.

The mooring buoys which are located in the sounding volumes are temporary buoys and a separate listing of them is not contained in this report.



SIGNAL LIST

<u>NAME</u>	<u>SOURCE</u>	<u>TYPE</u>
<u>BAY</u>	BAY POINT 1887, 1933	TRIANGULATION
<u>SOU</u>	MISSION BAY SOUTH JETTY LIGHT, 1962	
<u>NOR</u>	MISSION BAY SOUTH JETTY LIGHT, 1962	
<u>VOR</u>	VOR SAN DIEGO SAN 1962	
<u>SAN</u>	SAN DIEGO, UNIVERSITY OF SAN DIEGO, TOWER, CROSS, 1962	
<u>HIT</u>	SAN DIEGO, JUNIPERO SERRA MUSEUM, WHITE TOWER 1933-34	
ABE	T-11877	PHOTO-HYDRO
AIM	"	
ANN	"	
ARM	"	
BAH	"	
BAT	"	
BIG	"	
BUS	"	
BOY	"	
CAM	"	
CUT	"	
DOG	"	
EAT	"	
FAT	"	
FEZ	"	
FIT	"	
GAS	"	
GIN	"	
HEX	"	
HOW	"	
HUB	"	
ICE	"	
IVY	"	
JAY	"	
JIB	"	
KEY	"	
KID	"	
LAD	"	
LIP	"	
LOG	"	
MOO	"	
MUG	"	
MUM	"	
NOD	"	
NOW	"	
OLD	"	

## SIGNAL LIST (cont.)

<u>NAME</u>	<u>SOURCE</u>	<u>TYPE</u>
PAL	T-11877	PHOTO-HYDRO
PAR	"	
PIN	"	
PIE	"	
POI	"	
POO	"	
POT	"	
RAG	"	
RIG	"	
RIP	"	
SAD	"	
SOX	"	
TAP	"	
TOM	"	
TOY	"	
TUB	"	
VEX	"	
WAG	"	
WAN	"	
WAR	"	
WEE	"	
WOO	"	
YAK	"	
YET	"	
ZAG	"	
ZIG	"	
AMY	ABSTRACTS	T-2 HYDRO
COP	"	
NAT	"	
RIO	"	
SKI	"	
ARK	Vol. 1 pp 49 and 63	SEXTANT HYDRO
END	and on manuscripts	
FUN	for location of	
LEE	control	
MAN		
NAY		
ORA		
SAL		

Mission Bay Signals

NO.	LATITUDE			LONGITUDE			NAME
	DEG	MIN	MET	DEG	MIN	MET	
768	32	45	0656	117	15	0760	SOU
567	32	45	0925	117	15	0869	NOR
002	32	45	0711	117	15	0397	ABE
008	32	45	0763	117	15	0036	BAT
208	32	45	1006	117	15	0272	EAT
105	32	45	0813	117	14	1234	CAM
163	32	45	0868	117	14	0903	DOG
906	32	45	1061	117	14	0473	ZAG
429	32	45	1043	117	14	0627	KEY
907	32	45	1260	117	14	0651	WAR
607	32	45	1264	117	14	0678	PAR
806	32	45	1523	117	14	0223	TAP
380	32	45	1568	117	14	0663	HUB
632	32	45	1823	117	14	0116	PIE
335	32	45	1298	117	14	1075	GIN
635	32	45	1766	117	14	1503	PIN
238	32	45	1074	117	14	1389	FIT
422	32	45	1800	117	14	1143	LEE
704	32	45	1403	117	14	1426	SAL
312	32	45	1109	117	13	1561	ICE
430	32	45	1701	117	13	1045	JIB
905	32	45	1795	117	13	0948	WAN
055	32	45	1668	117	12	1498	ANN
209	32	46	0061	117	12	1313	FAT
075	32	46	0295	117	12	0977	ARM
733	32	46	0320	117	12	0774	RIG
329	32	46	0460	117	12	0648	HEX
229	32	46	0522	117	12	0981	FEZ
409	32	46	0799	117	12	1112	JAY
280	32	46	0815	117	12	1409	EVA
188	32	46	1142	117	12	1258	CUT
933	32	46	1345	117	12	1108	ZIG
307	32	46	0060	117	13	1197	GAS
668	32	46	0419	117	13	1096	POT
369	32	46	0392	117	13	0849	HOW
059	32	46	0591	117	13	0853	AMY
903	32	46	0721	117	13	0394	WAG
168	32	46	1228	117	13	0165	DOT
166	32	46	1356	117	13	0529	COP
867	32	46	1713	117	13	0738	VOR
737	32	46	1322	117	13	1398	RIO
705	32	46	0581	117	11	0592	SAN
338	32	45	1077	117	11	0867	HIT
436	32	46	0051	117	14	0580	LIP

NO.	LATITUDE			LONGITUDE			NAME
	DEG	MIN	MET	DEG	MIN	MET	
670	32	46	0121	117	14	0323	ORA
701	32	46	0253	117	14	0131	SAD
087	32	46	0532	117	14	0131	BUS
401	32	46	0476	117	14	0428	LAD
561	32	46	0360	117	14	0810	NOD
505	32	46	0249	117	14	1415	MAN
251	32	46	0608	117	14	1367	END
703	32	46	0552	117	14	1180	RAG
569	32	46	0794	117	14	1165	NOW
003	32	46	0994	117	14	1142	BAH
904	32	46	1183	117	14	1313	YAK
389	32	46	1303	117	14	1449	IVY
663	32	46	1431	117	14	1268	POI
736	32	46	1650	117	14	1442	RIP
769	32	46	1165	117	14	0535	SOX
869	32	46	1190	117	14	0265	TOY
009	32	46	1461	117	14	0244	BAY
829	32	46	1280	117	15	0040	VEX
641	32	46	1773	117	15	0010	OLD
585	32	44	1778	117	15	0787	MUM
285	32	47	0081	117	12	0996	FUN
069	32	47	0062	117	12	1505	BOY
035	32	47	0472	117	12	1071	AIM
928	32	47	0707	117	12	1413	YET
583	32	47	0660	117	12	0925	MUG
666	32	47	1019	117	12	1423	POO
509	32	47	1271	117	12	1070	NAY
922	32	47	1376	117	12	0843	WEE
865	32	47	1515	117	12	1036	TOM
604	32	47	1381	117	12	1482	PAL
508	32	47	0565	117	13	0008	NAT
743	32	47	0280	117	13	0605	SKI
880	32	47	0140	117	13	1391	TUB
879	32	47	1256	117	13	0811	TRY
566	32	47	0081	117	14	0512	MOO
463	32	47	0599	117	14	0715	LOG
033	32	47	0188	117	14	1345	BIG
431	32	47	0852	117	14	1308	KID
074	32	47	0906	117	14	1296	ARK
966	32	47	0604	117	15	0065	WOO



STATION <u>0 COP</u>						
INSTRUMENT		OBSERVER		COMP. BY		CHECKED BY
WILD T-2		LT. CMDR R. M. SUNDEAN		QMS WILHELM		<u>ENS. Atwell</u>
OBJECTS OBSERVED	TEL. D OR R	°	'	"	MEAN	DIRECTION
BAY POINT 1887	D	000	00	20		
	R	180	00	02	11.0	
VOR SAN DIEGO SAN 1962	D	055	13	53		
	R	235	13	49	51.0	
SKI	D	079	49	17		
	R	259	49	16	16.5	
SAN DIEGO UNIVERSITY <sup>of SAN DIEGO</sup> 1962	D	189	40	38		
TOWER CROSS 1962	R	009	40	35	36.5	
AMY	D	288	19	323		
	R	108	19	26	29.5	
RAG	D	335	24	46		
	R	155	24	46	46.0	
RIO	D	353	05	40		
	R	173	05	38	39.0	

USE THIS SPACE FOR ADDITIONAL DESCRIPTION OR SKETCH OF SUBSTITUTE STATION.

The above observed angles were graphically plotted on manuscript T-11877 to obtain the location of the signals.



TIDAL BENCH MARKS

Mission Bay Park

Lat. 32° 46' Long. 117° 14'

BENCH MARK 1 (1967) is a standard disk, stamped "1 1967" set in south side of square concrete manhole pad on Vacation Island, Ingraham Street, at north end of south Mission Bay Causway bridge, 40 feet west of street center line, 44 feet north of end lamp post on west bridge rail, at ground level, 6 feet west of San Diego Light and Power 3½ foot square sheet metal junction box.

BENCH MARK 2 (1967) is a standard disk, stamped "2 1967" set in southeast side of circular concrete pad around Bell Systems manhole on Quivira Road (around Quivira Basin), 0.15 miles southeast of intersection of Quivira Road and Ventura Boulevard, 38 feet southwest of road center line, 13½ feet south of fire hydrant, 10½ feet southwest of lamp post number 7.73.

BENCH MARK 3 (1967) is a standard disk, stamped "1 1967" set in top of storm drain pipe at Mission Bay Park Headquarters docks in Quivira Basin, 18 feet south of south side of south dock, in riprap bank about 2 feet below top of bank.

BENCH MARK 4 (1967) is a standard disk, stamped "4 1967" set in top of a yard light concrete base, 81 feet south of south edge of north dock of two, 12 feet west of driveway used to enter the Mission Bay Park Headquarters garage at Quivira Basin.



APPROVAL SHEET

REGISTRY NO. H-8920 (PF 10-3-67)

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.

*G.L. Short*

G.L. Short  
CDR. USESSA  
Cmdg. SHIP PATHFINDER

## NOTES TO THE ADDENDUM

This survey was verified by various officers of the Ship Pathfinder.

The smooth sheet and position number overlay were plotted by the Digital Plotter with all the finish work done manually by the Conventional Processing Branch. Considerable amounts of manual work were required on the mylar position number overlay in order to produce legible position numbers. On Form C&GS-946 the 236 (Manhours) under "ALL OTHER WORK"- includes the time spent by R. D. Lynn of the Processing Branch partially re-verifying the work done by various ships officers. Due to a shortage of personnel in the Electronic Processing Branch, during this period, the time required to punch, re-sort, and list the cards for the printouts, he has included in the above mentioned man-hours column for his portion of this work.

It was quite impossible for this office to come up with the manhours for pre- verification and verification as we cannot determine the number of hours spent by the ships officers.

A discrepancy with section (Q REFERENCES:) in the descriptive report has not been resolved as this office does not have any record as to having received the enclosed packet of available facilities or photos of points of interest.

There is a difference of 192 total positions between the print-out and the descriptive report. Position numbers were assigned to each sounding while running around curved shoreline in order to enable the Plotter to place the sounding in its correct location.

The Descriptive Report and Records seem to be in complete order.

Respectfully,  
*Richard D. Lynn*  
Richard D. Lynn  
Carto. Tech.

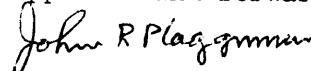
Approval Sheet

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

Examined and approved.

  
William M. Martin  
Supervisory Carto. Tech.

Approved and forwarded.

  
John R. Plaggmier CDR USESSA  
Chief Processing Division, PMC



**GEOGRAPHIC NAMES**  
Survey No. H-8920

Name on Survey

On Chart No.  
On Previous survey No.  
On U. S. quadrangle Maps  
From local information  
On local Maps  
P. O. Guide or Map  
Rand McNally Atlas  
U. S. Light List

A B C D E F G H K

Enchanted Cove											1
Fishermans channel											2
Hidden Anchorage											3
Hospitality Point											4
Mariners Basin											5
North Cove											6
Pacific Passage											7
Point Medanos											8
South Cove											9
Stary Point											10
Ventura Cove											11

12  
13  
14  
15  
16  
17  
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20

March 16, 1970

PREPARED BY

*Frank W. Pickett*  
CARTOGRAPHIC TECHNICIAN

APPROVED BY

*A. J. Wright*  
CHIEF GEOGRAPHER

21  
22  
23  
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25  
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27

# 8920

## Wk. of 1970

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 Special Investigation

Field No. .... Office No. H-8920

#### LOCALITY

State California

General locality Southern Calif.

Locality Mission Bay

1970

#### CHIEF OF PARTY

CDR Ray E. Moses

#### LIBRARY & ARCHIVES

DATE 10 APR 1970

USCOMM-DC 37022-P66

# 8920

## Wk. of 1970

Special Report  
Mission Bay Investigation  
OPR-411  
USC&GSS DAVIDSON

INTRODUCTION

An investigation of questionable fathogram traces on H-8920, Mission Bay, California, was conducted by personnel from the Ship DAVIDSON according to Item 23, Project Instructions: OPR-411, dated 15 December 1969. This work was done on the 12th and 13th of February 1970, and the 6th and 7th of March 1970. The work was broken up into (1) leadline and fathometer probing, (2) investigation by scuba diver, and (3) echo sounder development. Discussion is given below concerning each of the techniques of investigation along with some conclusions from the investigation.

LEADLINE/FATHOMETER/POLE PROBING

Two days, the 12th and 13th of February, were devoted to probing with a leadline, pole, and an echo sounder to hunt for submerged objects, shoals, and traces similar to those on the fathograms from H-8920. These techniques were used in all nine questionable areas. Traces similar to those on H-8920 did occur a few times; however, upon further investigation by the diver and by extensive probing, nothing was found.

INVESTIGATION BY DIVER

General searches of areas #2, #3, #4, #5, and #6 were made by a diver. Investigations were also made when traces similar to those on H-8920 occurred.

Due to poor visibility on Feb. 12, the diver performed more detailed searches on Feb. 13 and Mar. 6. These searches involved setting two anchors (attached to floats), approximately 100 feet apart. Each of the floats were located with three point fixes and a check angle. The two anchors were joined by a line running along the bottom. The diver attached a second line to anchor #1 and turned arcs around anchor #1. The line joining the anchors showed the diver when he had completed an arc around anchor #1. This search technique enabled the diver to conduct a thorough search of the areas even under conditions of poor visibility. Whenever there were objects on the bottom the line would hook the objects and guide the diver to them.

Detailed searches were made of areas 1, 2, 4, 5, 7, 8, and 9. Only small items less than one foot above the bottom were found. With the

exception of area #9, there was little bottom growth. In all cases the bottom was smooth and silty-sandy. Generally the visibility was less than 8 feet.

In the opinion of the diver there are no submerged objects or shoals in these areas as were indicated on the fathograms of H-8920. It is felt that these traces were the result of fish and floating debris. There are numerous flounders and rays in the bay. When the diver went under the transducer he was depicted on the fathogram as a spike rather than a detached object. If the water was deeper than 12 feet, and the diver was not near the bottom, he then showed up as a detached object on the fathogram.

ECHO SOUNDER DEVELOPMENT

Echo sounder development was run over several areas. Three-point fixes were used for control. Predicted tide reducers, based on Mission Bay Causeway, were used to reduce soundings to MLLW. Developments were run on the 6th and 16th of March. A 17-ft. whaler with a DE-723 fathometer, serial no. 1286 was used on 6 March 1970. The initial was set at two (2) feet. The draft of the transducer was two (2) feet. Lead-line comparisons showed that no velocity corrections were needed for the depths worked with this vessel. Launch DA-2 was used on the 16th of March with a DE-723 fathometer, serial no. 553. The initial was set at two (2) feet. The transducer draft is 2½ feet. One bar check was taken and recorded in volume #2. The results are as follows:

<u>True Depth</u>	<u>Fathometer</u>	<u>Difference</u>	<u>Correction</u>
6.0	6.9	+0.9	-0.9
12.0	12.8	+0.8	-0.8
18.0	18.7	+0.7	-0.7
12.0	12.8	+0.8	-0.8
6.0	6.9	+0.9	-0.9

Developments were run over all areas except area #1. No significant shoals were found. Reduced soundings on this survey are consistently deeper than the depths on the smooth plot of H-8920.

CONCLUSIONS

- (1) No large submerged objects or significant shoals were discovered in the areas that were investigated.
- (2) It is suspected that the spikes on the H-8920 fathograms were caused by fish, which are numerous in Mission Bay, and/or debris floating midwater.
- (3) Echo sounder developments show no significant shoals.





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

Special Report  
Mission Bay Investigation  
OPR-411  
USC&GSS DAVIDSON

The field work on this investigation was accomplished under my supervision. Inspections were made of the boat sheet and other records.

*Ray E. Moses*  
Ray E. Moses  
CDR USESSA  
Commanding Officer  
USC&GSS DAVIDSON

TIDE NOTE FOR HYDROGRAPHIC SHEET

June 5, 1970

~~Nautical Chart Division~~ R. H. Carstens

Plane of reference approved in  
2 volumes of sounding records for

HYDROGRAPHIC SHEET 8920

Locality: Mission Bay, California

Chief of Party: R. E. Moses 1970

Plane of reference is mean lower low water

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

San Diego

Height of Mean High Water above Plane of Reference, <sup>at the working grounds</sup> is as follows:

4.8 feet

Remarks

Tide reducers for March 6 (Day 65) have been revised and verified.

  
Chief, Tides and Currents Branch

OFFICE OF HYDROGRAPHY AND OCEANOGRAPHY

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8920

FIELD NO. PF-10-3-67

California -- San Diego, Mission Bay

SURVEYED: March 24, 1967, through April 5, 1967

SCALE: 1:10,000

PROJECT NO.: OPR-411

SOUNDINGS: DE-723 Fathometer  
Sounding Pole  
Lead line  
Diver

CONTROL: Sextant angles  
on shore signals

Chief of Party.....	G. L. Short
Surveyed by.....	W. L. Bradley
.....	A. C. Weymann
.....	R. T. LeRoy
.....	L. J. Genzlinger
.....	D. M. Wilson
Protracted by.....	Gerber Digital Plotter
Soundings Plotted by.....	Gerber Digital Plotter
Verified and Inked by.....	R. D. Lynn
Reviewed by.....	G. K. Myers
.....	Date: Nov. 20, 1970
Inspected by.....	R. H. Carstens

1. Description of the Area

Mission Bay is a recreational small craft harbor administered by the city of San Diego. A dredged channel leads from deep water in the Pacific Ocean to the highway bridge about 1.3 miles above the entrance. Quivira Basin and Mariners Basin are entered about 1 mile above the entrance. In April 1967 the controlling depths were 11 feet in the right quarter through the entrance with 18 feet at midchannel. Depths of 20 feet are in Quivira Basin and depths of 14-19 feet are in Mariners Basin. The inner bay has depths of about 7-11 feet. The inner bay has several marinas and many private docks and moorings.

A. A special investigation of this area was conducted in 1970 by the ship DAVIDSON in accordance with Project Instructions, OPR-411 dated December 15, 1969, for the purpose of clarifying questionable traces read from the fathograms. Results of this investigation are discussed in the Descriptive Report.

## 2. Control and Shoreline

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

The shoreline originates with the photogrammetric revision survey, R.S. 855, made from 1966 air photographs and a field edit apparently done in February 1968. The original source and an addendum to the Descriptive Report of T-11877 (1960-1962) pertaining to the 1968 field edit were not available at the time of the hydrographic review.

## 3. Hydrography

Depths at crossings are in good agreement and depth curves were adequately delineated. The 3-foot depth curve was added to more adequately delineate the bottom configuration.

The investigation of least depths is considered adequate. Soundings from the 1970 investigation did not add to the delineation of the bottom and have not been plotted on the smooth sheet. The boat sheet plot of these soundings is filed in the cahier of fathograms.

## 4. Condition of the Survey

The field plotting, sounding records, and Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual, supplemented by the Instruction Manual for Automated Hydrographic Surveys, except for the following:

A. Abstracts and records were not inserted in the Descriptive Report as follows:

(1) Parameter for Digital Computing Polyconic Projections (Form #1).

(2) Descriptive Report Data Record.

B. It is advantageous for signal code numbers to be appropriately applied with the signal name appearing on the smooth sheet. The code numbers were not added to the smooth sheet.

#### 5. Junctions

There are no contemporary surveys that join the present survey. However a comparison with adjoining charted depths shows good agreement.

#### 6. Comparison with Prior Surveys

H-567	(1856)	1:10,000
H-5665	(1934)	1:10,000

Since the prior survey of 1934, the entire area of Mission Bay has been dredged or subjected to filling in the development of this small craft harbor. Except in the prior natural channel the major portion of the water area uncovered at MLLW by 1-2 feet.

The present survey is adequate to supersede the prior surveys in the common area.

#### 7. Comparison with Chart 5060 (latest print date 1/13/69)

##### A. Hydrography

The charted hydrography originates with the verified smooth sheet. Specific mention is made of the following charted discrepancies found during the review of the survey:

- (1) The 1-fm curve charted in the vicinity of lat.  $32^{\circ}47.32'$ , long.  $117^{\circ}15.05'$  was revised during the present review and should be revised on the chart.
- (2) The 1-fm curve north of Santa Clara Pt. was revised during review.
- (3) The charted detached shoal features in the area west of Vacation Isle were disproved by the 1970 special investigation and should be revised to portray actual conditions.

A tabulation of depths revised during review which may affect charting is as follows:

<u>Present Depth</u> (feet)	<u>Location</u>	
	<u>Latitude</u>	<u>Longitude</u>
9	32°46.47'	117°14.58'
9	32°46.43'	117°14.56'
9	32°46.35'	117°14.50'
8	32°46.22'	117°14.40'
8	32°46.22'	117°14.38'
9	32°46.26'	117°14.39'
9	32°46.21'	117°14.37'
6	32°46.42'	117°14.47'
9	32°46.42'	117°14.53'
8	32°47.00'	117°14.61'
8	32°46.82'	117°13.77'
9	32°46.38'	117°13.75'
10	32°46.17'	117°14.35'

#### B. Topography

The charted topography originates with data previously discussed in Part 2 of this review with the exception of the pier located at lat. 32°45.75', long. 117°14.17' appearing on the survey in red and described in the records should be charted.

#### C. Aids to Navigation

The aids to navigation located on the present survey are in agreement with charted aids and adequately mark the features intended.


#### 8. Compliance with Project Instructions

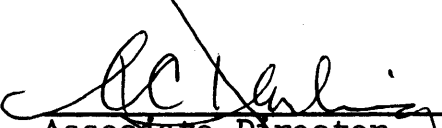
This survey adequately complies with Project Instructions.

#### 9. Additional Field Work

This survey is considered a very good, <sup>basic</sup> survey and no additional field work is recommended.

Examined and Approved:

  
 Chief  
 Marine Chart Division

  
 Associate Director  
 Office of Hydrography  
 and Oceanography

HYDROGRAPHIC SURVEY STATISTICS  
HYDROGRAPHIC SURVEY NO. H-8920

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT			
SMOOTH SHEET	1 + 1-Mylar	BOAT SHEETS	14 1/2 Boat sheet Tracing			
DESCRIPTIVE REPORT	1 + 1	OVERLAYS	1 mylar B.S. overlay			
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1					
VOLUMES	7 + 2					
BOXES						

T-SHEET PRINTS (List) ① T-11877

SPECIAL REPORTS (List) 11-Worksheets and 1-Chart by Mission Bay Power Squadron

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				1430
POSITIONS CHECKED				
POSITIONS REVISED				
DEPTH SOUNDINGS REVISED				
DEPTH SOUNDINGS ERRONEOUSLY SPACED				
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		NONE		
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS				
JUNCTIONS				
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS				
SPECIAL ADJUSTMENTS				
ALL OTHER WORK		236		
<b>TOTALS</b>			100 hrs.	
PRE-VERIFICATION BY <i>ships officers of ship Pathfinder</i>	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <i>various officers of ship Pathfinder &amp; R.D. Lynn</i>	19 Jan. 1968		22 July 1968	
REVIEW BY <i>George K. Meyer</i>	BEGINNING DATE		ENDING DATE	
			15 October 1969	

Reg. No. 11-8920

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

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

CARDS CORRECTED

DATE \_\_\_\_\_ TIME REQ'D \_\_\_\_\_ INITIALS \_\_\_\_\_

REMARKS:

*Changes were made to computer and plotter printouts, reflecting true depths based on critical examination of 1967 and 1970 work.*





