

9809

Diagram No. 5402-3

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic
Field No. DA-5-1-79 (NPGS)
Office No. H-9809

LOCALITY

State California
General Locality Monterey
Locality Monterey Harbor

19 79

CHIEF OF PARTY
CDR D.E. Nortrup

LIBRARY & ARCHIVES

DATE September 18, 1981

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

9809

AREA 5

CHTS:

18685 INSET } see Record of Application
18680 } to sign off
18010 }

HYDROGRAPHIC TITLE SHEET

H-9809

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.

DA-5-1-79 (NPGS)

State California

General locality Monterey

Locality Monterey Harbor

Scale 1:5000 Date of survey 26 Feb - 08 Mar 1979

Instructions dated 05 February 1979 Project No. S-L101-DA/NPS-79

vessel DAVIDSON Launch 1 (3131), DAVIDSON Launch 2 (3132), Skiff (3041)

Chief of party CDR Donald E. Nortrup, NOAA

Surveyed by LCDR Pickrell, LCDR Schnebele, LCDR Seidel, LCDR Yeager, Mr. Murdock (NOO)
Mr. VanNorden (NOO), Mr. Litts (DMA), ENS McDougal

Soundings taken by echo sounder, hand lead, ~~etc~~

Graphic record scaled by Survey personnel

Graphic record checked by Survey personnel

Positions verified
~~Plotted~~ by Bruce Alan Olmstead Automated plot by PMC Xynetics Plotter

Soundings
Verification by Bruce Alan Olmstead

Soundings in and tenths fathoms ~~1 feet~~ at ~~MLW~~ MLLW

REMARKS: This survey was conducted by students at the Naval Postgraduate School,
Monterey, CA, with the support of the NOAA Ship DAVIDSON as a part of the
Oceanography/Hydrography curriculum.

All recorded times are Zulu times

STANDARDS CE'D 1-4-83
C. Day

DESCRIPTIVE REPORT

A. PROJECT:

Project S-L101-DA/NPS-79 is a basic hydrographic survey of Monterey Harbor and approaches conducted in accordance with Project Instructions dated 05 February 1979, NOS Hydrographic Manual Fourth Edition, PMC OORDER, and PMC 1979 Data Requirements Letter. ✓

B. Area Surveyed:

The area surveyed is a portion of the southern extremity of Monterey Bay, California in the vicinity of Monterey Harbor and approaches. Except in the immediate vicinity of Point Cabrillo the survey area is bounded on the north by latitude 36° 37' 30" N and by the shoreline elsewhere. Triangulation station Mussel, ~~is~~ located on Point Cabrillo, was used as an electronic control site and approach to that point was limited to 400 meters. Included in the survey area are Monterey Harbor and the small-craft basin (marina). The survey was accomplished between 26 February and 08 March 1979.

See
Verifier's
Report
Sec. 1

C. Sounding Vessels:

The following vessels, and their corresponding EDP numbers, were used during the survey:

<u>Vessel</u>	<u>EDP Number</u>
DA-1	3131
DA-2	3132
Monark skiff	3041

The Monark skiff, vessel 3041, was outfitted with a Raytheon 719B shoal water echo sounder. The transducer was mounted over the side by a fixed bracket. The transducer depth was determined to be 1.5 feet by direct measurement. All depths obtained by the 719B echo sounder were observed and recorded in feet and converted to fathoms during plotting. ✓

The Raytheon 719B echo sounder features an operator adjustable speed of sound option. This adjustment was improperly set during much of the sounding operations. This problem and its rectification are addressed in the "Report on Corrections to Echo Soundings" submitted herewith.

D. Sounding Equipment and Corrections to Echo Soundings

The following sounding equipment was used in the course of the survey:

<u>Vessel</u>	<u>Echo Sounder</u>
3131	Ross 5000 Fineline s/n 1048
3132	Ross 5000 Fineline s/n 1080
3041	Raytheon DE719B S/n 6261

✓

A detailed account of the sounding equipment and corrections to echo soundings is contained in the "Report on Corrections to Echo Soundings" submitted herewith.

E. Hydrographic Sheets

The entire survey may be depicted on a single 1:5000 scale sheet incorporating the area between latitudes 36° 35' 31" N and 36° 38' 00" N and longitudes 121° 54' 31" W and 121° 49' 55" W.

Three field sheets were used in the course of the survey the limits of which are depicted on the attached sketches. Field sheets were prepared on a modified transverse mercator projection using the the PDP-8e computer and Houston Instruments DP-3 plotters in the survey launches. Parameter listings are included in the appendix to this report.

Sheet DA 5-1A-79 includes Monterey Harbor (inside the breakwater and Municipal Wharf #2) and the small boat basin. This sheet was plotted at an enlarged scale of 1:1200 for clarity due to the congested nature of the survey area. The 1:1200 scale corresponds with the scale of a copy of an aerial photograph of the harbor area acquired from the Monterey Public Works Department. This ~~photo~~ photo copy is being submitted with the data package. It should be noted that the area covered by this sheet is wholly included in the limits of sheet DA 5-1C-79 and that the survey complies with 1:5000 scale accuracy requirements. ✓

** Photo copy not received by Headquarters.*

Sheet DA 5-1B-79 includes the portion of the survey area lying north of the harbor and is plotted at a scale of 1:5000. Sheet DA 5-1C-79 depicts the portion of the survey area lying to the east of the harbor and is plotted at a scale of 1:5000.

Field records will be forwarded to Processing Division, Pacific Marine Center for smooth plotting.

F. Control Stations

Hydrography on sheet DA 5-1C-79 was controlled by range azimuth methods from existing third order horizontal control station Monterey Bay 4 CDH (1972). A Mini-Ranger transponder was located at the station (signal #109) and a T-1 theodolite at RM #2 (signal #305). The theodolite was initialed on intersection station KMBY Mast (1962) (signal #203).

Range azimuth controlled hydrography on sheet DA 5-1B-79 was from existing third order horizontal control station Mussel (1932). ✓
The Mini-Ranger transponder was located at RM #1 (signal #200) and a T-2 theodolite was located on the station mark (signal #107). The theodolite was initialed on intersection station Fort Ord Silver Water Tank (1972) (signal #206)

Hydrography on sheet DA 5-1A-79 and the very nearshore portion of sheet DA 5-1B-79 was controlled by visual sextant methods. Existing horizontal control stations used as visual signals were: American Can Co. Stack (1932) (signal #202), KMBY Mast (1962) (#203), Monterey Presidio Monument (1932) (#204), Breakwater Light USE (1937) (#205), Fort Ord Silver Water Tank (1972) (#206), Monterey County Disk (1978) (#301), and Del Monte USN Post Graduate School Tower (1953) (#302). Signals numbered 402, 404, 406, 408, 410, 412, 414, 416, 418, 424, 426, 428, and 430 were located by sextant resection, with check angle to existing horizontal control stations. Signals numbered 400, 420, and 422 were located by sextant intersection from existing horizontal control stations. See sounding volume #~~7~~⁴ for sextant angles and computations.

See
Verifier's
Report
Sec.2

Computations for the location of resection and intersection signals were first performed on a Texas Instruments TI-59 calculator with the surveying library module. This module calculates positions only in the state plane coordinate system. The positions were later recalculated and checked using a Fortran program written by LCDR Pickrell for the IBM 360/370. This program calculated geographic positions and MTM grid coordinates. Finally, geographic positions for signals 426, 428, and 430 were calculated on the PDP-8e.

G. Hydrographic Position Control

See preceding section for description of position control scheme.

Visual Control

Sextants were checked periodically during each survey day for index error and coincidence. The following index corrections have been applied to the logged data:

Julian Day No.	Sextant #		Sextant Index Corrector (min)		Sheet #
	Left	Right	Left	Right	
057	753	747	0.0	0.0	1A
058	753	747	0.0	0.0	1A
059	753	747	0.0	0.0	1A
059 (1829)	753	854	0.0	0.0	1A
064	T2987	747	0.0	0.0	1A
065	T2987	853	-2.0	-1.0	1A & 1B
066	T2987	753	-2.0	-2.0	1A
067	753	747	0.0	0.0	1A

Sounding vessels were equipped with Mini-Ranger systems as follow:

<u>Vessel</u>	<u>Console</u>	<u>R/T</u>
3131	721	707
3132	710	719

Vessel 3131 was used for range azimuth survey on sheet DA 5-1B-79 using code 4 with the transponder at an elevation of 10 meters. Vessel antenna height was 3 meters above waterline. T-2 theodolite s/n 14482 was used in conjunction with code 4. ✓

Vessel 3132 was used for range-azimuth survey on sheet DA 5-1C-79 using code 3 with the transponder at an elevation of 52 meters. Vessel antenna height was 3 meters above waterline. T-1 theodolite s/n 12881 was used in conjunction with code 3. ✓

Baseline calibration of the Mini-Ranger system was accomplished by NOAA Ship DAVIDSON prior to arrival in Monterey. An abstract of baseline correctors is submitted herewith. Daily calibration checks were performed throughout the survey by the intersecting range method. All calibration checks were within the ± 3 meter tolerance. Daily calibration check worksheets, a sketch of the calibration ranges, and calibration point range computations are submitted herewith. ✓

Electronic control correctors were applied as follows:

<u>Vessel</u>	<u>Julian Day</u>	<u>Corrector</u>
3132	057	-1.0
	058	-1.0
	059	-1.0
	061	-1.0
	064	-1.0
	065	-1.0
3131	061	+4.0

Mini-Ranger signal strength and stability were very good throughout the survey. Some interference was experienced by 3132 on day 058 from a baseline calibration being conducted in the survey area. Survey operations were terminated in deference to the calibration operation. ✓

No separate electronic control report is being submitted.

H. Shoreline

Shoreline detail as depicted on field sheets DA 5-1B-79 and DA 5-1C-79 originates with Class III Shoreline Manuscript TP-00443. The manuscript was provided at a scale of 1:10000 and was expanded to ✓

1:5000 by the Naval Postgraduate School photo lab. Transfer to the field sheets was direct from the expanded manuscript.

Although the aerial photography was flown in April 1978 the shoreline manuscript was not received until 12 March 1979, after the hydrography was done. With only two weeks remaining in the academic quarter there was insufficient time to accomplish the field edit. Field edit will be accomplished in the future but likely not until July of this year. ✓

The shoreline detail as depicted on the 1:1200 scale field sheet, DA 5-1A-79 originates with a single aerial photograph, a copy of which was obtained from the Public Works Department, City of Monterey. Transfer was direct and does not represent a photogrammetric compilation. The shoreline is included as a visual aid only. ✓

I. Crosslines

Crossline mileage constitutes 7.5% of the main scheme mileage. The agreement between crosslines and main scheme soundings was excellent throughout the survey. ✓

J. Junctions

There are no contemporary junction surveys.

See
Verifier's
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Sec. 5

K. Comparison with Prior Surveys

No formal presurvey review was prepared for this survey however the following items were identified as being of presurvey review interest:

Item #1	4 submerged obstructions and 2 hoppers	36° 36' 40" N 121° 53' 35" W
Item #2	Submerged pile ✓	36° 36' 27" N 121° 53' 22" W
Item #3	Submerged dolphin	36° 36' 17" N 121° 53' 21" W
Item #4	Pier ruins	36° 36' 17" N 121° 53' 32" W
Item #5	2 fathom shoal	36° 36' 46" N 121° 53' 31" W

Attempts were made to locate all of the above items but none were found.

Item #1 - The four submerged obstructions and 2 hoppers were once floating wooden hoding tanks for the now long gone sardine fishing and packing industry in Monterey. The Harbormaster reports that the last of the hoppers was removed from the area three to four years ago. ✓

leaving only the ten-inch pipelines which had run from the hoppers to the shore. No trace of the hoppers was found in their charted positions but three were located ashore (one as an attraction in a municipal park). It is recommended that the four submerged obstructions and two hoppers be removed from the chart. *concur*

Item #2 & Item #3 - No indication of either feature was encountered during the survey of the area. A diver search of limited extent was undertaken at each site ^{with} negative results. Circular searches of approximately 20 foot radius were centered about latitude 36° 36' 26.6" N, longitude 121° 53' 22.0" W and latitude 36° 36' 17.0" N and 121° 53' 21.1" W. The harbor master had no knowledge of these objects having ever been in existence and has not received any reports as to their existence. He advised that at one time Stanford University had installed a buoy at the site of the charted dolphin but that it has been removed leaving behind three 3000 pound Danforth anchors in the vicinity. It is recommended that both the submerged dolphin and the submerged pile be removed from the chart. *Submerged dolphin should be removed to submerged obstruction and submerged pile should be retained as charted* ✓

Item #4 - Pier ruins, consisting of small concrete footings, were found to exist inshore of the low water line. No indication of structural debris is in evidence. It is recommended that the ruins be removed from the chart. *No specific investigation can be found in the records. The two lines of sounding in this area were done at very close to high tide.* *Do not occur* ✓

Item #5 - The area of the supposed two fathom sounding was developed hydrographically. No indication of a shoal was discovered. Depth at the location is 10.7 fathoms and the bottom is regular. This shoal sounding has not appeared on any previous chart edition or prior survey and is probably the result of a cartographic error. It is recommended that the two fathom depth be superseded by this survey. *concur* ✓

This survey was compared with prior surveys H-8068, 1953-54 and H-5415, 1933.

Field sheet DA 5-1A-79 was compared with the 1:2500 subplan of H-8068. Agreement in the harbor area was excellent although the small boat basin has been constructed since the date of the prior survey. Included in the data package are plan drawings of "Marina Seawalls" constructed in 1978 and of the current berthing plans within the small boat basin (marina). ✓

DA 5-1B-79 compares very well with H-5415 in depths greater than 3 fathoms. Inshore of three fathoms the comparison is complicated by the rocky bottom and the lack of complete 0 and 1 fathom curves on either survey. The current survey indicates shoaling has occurred just north of the bend of the breakwater at 36° 36' 35" N and 121° 53' 35" W. The current survey indicates a peak of 7.8 fathoms at 36° 37' 20.0" N and 121° 53' 55.0" W which does not appear on the prior survey. *This survey has been superseded by H-8068 with the exception of a few inshore rocks and ledges.* ✓

DA 5-1B-79 compares well with H-8068. Again, shoaling just north of the bend in the breakwater is indicated. H-8068 is also lacking inshore development for a valid comparison. The 7.8 fathom peak cited above is shown as a 48 foot sounding. ✓

DA 5-1C-79 was compared with both prior surveys and the agreement was excellent throughout. There were no discrepancies of significance. ✓

L. Comparison with the Chart

The field sheets were compared with Chart 18685, 23rd Edition, 18 March 1978. The results of the comparison are as follows: ✓

DA 5-1A-79 was compared with the 1:10000 harbor inset of the chart. Overall agreement was very good with the following exceptions:

1. A submerged rock was located on day 064 at lat. $36^{\circ}36'26.5''$ N, long. $121^{\circ}53'32.4''$ W (position number 5248). The rock was clearly visible at low water and a lead line depth on the highest point was obtained. The reduced sounding is 0.25 fathom compared to charted depths in the vicinity of 1.5 and 2.2 fathoms. *Chart as shown on present survey.*
2. The charted 3 fathom sounding at lat. $36^{\circ}36'18.8''$ N, long. $121^{\circ}53'20.6''$ W was not found. Depths of 3.4 to 3.8 fathoms were recorded in the area. *Return charted 3 from misc.*
3. Presurvey review items 2, 3, and 4 were examined and the results reported in the preceding section of this report. ✓ *source*
4. The configuration of the piers in the small boat basin have been modified. See included berthing plan drawings. ✓
5. Depths in the small boat basin were found to be in excellent agreement with the charted soundings, with one exception. Where the chart shows "6 ft rep 1969" along the shoreline the depth was found to be 1.8 fathoms. *corrected*

DA 5-1B-79 compares very well with the chart in depths greater than 3 fathoms. The nearshore area compares fairly well but is complicated by the irregularity of the bottom topography. Chart shoal soundings that are not definitively disproven by this survey should continue to be charted due to the irregular nature of the bottom. ✓

A charted line of soundings ($8\frac{3}{4}$, $7\frac{1}{2}$, $5\frac{1}{2}$, and $4\frac{3}{4}$ fathoms) running ~~northeast~~ through about $36^{\circ}36'45''$ N and $121^{\circ}53'30''$ W appears to be a bad sounding line. These depths displace the general contour trends in the area. This feature does not appear on the current survey or on the prior surveys available for comparison. If the source of these soundings can be found and they prove to originate from a single sounding line, it is recommended that they be superceded by current survey soundings. *CONCERN*

Presurvey review item #1 was examined and the results reported in the preceding section of this report. ✓

DA 5-1C-79 compares very well with the chart with the exception of the two fathom sounding discussed in the preceding section (item #5).

N. Aids to Navigation

The following is a list of the floating aids to navigation in the survey area along with their charted and surveyed positions:

	<u>Charted Posn</u>	<u>Surveyed posn</u>
Lighted Bell "4"	36° 37' 28.1" 121° 53' 42.1"	36° 37' 28.1" 121° 53' 42.1"
White can "A"	36° 36' 27.6" 121° 53' 15.1"	36° 36' 27.33" 121° 53' 15.14"
White nun "B"	36° 36' 28.2" 121° 53' 16.9"	36° 36' 27.53" 121° 53' 16.91"
White can "D"	36° 36' 32.5" 121° 53' 31.0"	36° 36' 32.21" 121° 53' 31.48"

See
Verifier's
Report
Sec 8

The positions of the floating aids to navigation as determined by this survey compare well with the positions listed in the Light List (U. S. Coast Guard, 1979). The floating aids adequately serve the purpose for which they were established.

There are no bridges or cables over water in the survey area.

O. Statistics

<u>Vessel</u>	<u># of posn</u>	<u>LNM</u>	<u>SNM</u>	<u># Btm Samp</u>
3041	257	7.5	0.1	
3131	285	21.0	0.4	9
3132	1442	131.1	2.0	

P. Miscellaneous

Two privately maintained buoys are depicted on field sheet DA 5-1C-79. These buoys are used as sail boat racing buoys and as such are subject to movement and should not be charted. ✓

The special anchorage area inside the breakwater and wharf #2 is densely populated with private mooring buoys. Detached positions were obtained on only the largest and apparently most permanent of the buoys. A favorite anchor for private mooring buoys is reported to be several automotive engine blocks lashed together. The presence of these anchors, both active and abandoned, apparently causes no navigational hazards. ✓

Q. Recommendations

None ✓

R. Automated Data Processing

<u>Program Title</u>	<u>Program #</u>	<u>Version Date</u>
Visual Hydrolog	RK 175	3/13/75
Range-Azimuth Logger	FA 181	2/23/78
Grid, Signal, and Lattice Plot	RK 201	4/18/75
Visual Station Table Load and Plot	RK 212	4/1/74
Visual Position and Sounding Plot	RK 215	8/16/74
Range-Azimuth Position and Sounding Plot	RK 216	2/5/75
Utility Computations	RK 300	2/5/76
Data Reformat and Check	RK 330	5/4/76
Geodetic Direct and Inverse Computation	RK 407	10/23/75
Predicted Tide Generator	AM 500	11/10/72
Layer Corrections to Sounding Depths	RK 530	6/25/74
Elinore	AM 602	5/21/75

S. Referral to Reports

"Report on Corrections to Echo Soundings for the Survey of Monterey Bay, S- L101-DA/NPS-79" 16 March 1979

Respectfully Submitted:

John Murdock
John Murdock



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Naval Postgraduate School - Code 68Mi
Monterey, California 93940

Date: 15 August 1980

To: James Stringham, PMC Processing Division
Gerald B. Mills

From: ICDR Gerald B. Mills, NOAA

Subject: Chart Letter 1551

N/A
NO ACTION

The six items from Chart Letter 1551 dated 21 October 1979 and the field action taken are listed below.

Item 1. "Chart incorrectly labeled; chart represented as complete dock. 45 percent of dock is a breakwater constructed by Army Corps of Engineers." - The easternmost end of the Coast Guard Pier is 2.5 meters east of station 106 - MONTEREY (SCFAR) 1947. The remainder of the breakwater is made of very large irregularly shaped rocks.

N.A.

Item 2. "Chart doesn't show underwater obstruction. Obstruction is piling partly submerged only in very low low water. Could be a hazard to navigation for submarine moorage. Obstruction is located approx. 02 yards off pier." - The Naval Postgraduate School's research vessel ACANIA ties up at the indicated location of this obstruction. The master of ACANIA had no knowledge of such an obstruction. The Operations Officer for USCG GROUP MONTEREY (CWO Contratto) was then contacted regarding this item. He also had no knowledge of this object, nor did the Commanding Officer, LT R.I. Tyan. The originator of the chart letter, QML Carl C. Young, has been transferred and was not available for comment.

N/A

Recent refurbishment work was completed on the U.S. Coast Guard Pier and a type of underwater cutting device was used to remove old pilings, dolphins and beams in a *W* pattern which are visible in the photos east of the end of the pier. CWO Contratto stated that all pilings were cut flush with the

N/A

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harbor bottom and all debris was removed eliminating any hazard to navigation. One old substantial dolphin remains at latitude $36^{\circ}36'30.949''$ N and longitude $121^{\circ}53'21.704''$ W. It consists of 9 pilings (each 1' to 1.5' in diameter) connected with cables surrounding a concrete inner core. The dolphin projects approximately 10 feet above water level at high tide.

The dolphin's location was determined by theodolite intersection from stations USE MON (110), MONTEREY CO. DISK (301) and a newly located unmonumented station NE CORNER WHARF 2 (170). This new station was established to give good geometry to the intersection of the theodolite lines of position since lines from 110 and 301 were nearly parallel. The position of 170 was determined by traverse from 110 using a set of two T-2 observations and 30 distance measurements with a Model MRA-5 Tellurometer (azimuth from 110 to 170 - $115^{\circ}24'12.36''$, distance - 1185.202m). The traverse was closed on station 301 with a position check within 0.2 meters.

*Position
9000*

The position of station 170 is latitude $36^{\circ}36'21.179''$ N and longitude $121^{\circ}53'18.981''$ W. The azimuths from each station to the dolphin were as follows:

Azimuth from 110 to dolphin - $125^{\circ}25'03.6''$
Azimuth from 170 to dolphin - $167^{\circ}19'37.9''$
Azimuth from 301 to dolphin - $302^{\circ}57'51.7''$

Item 3. "Chart doesn't show new City of Monterey public boat landing ramp. Boat ramp was established approx. 1 year ago. Position approx. 20 yds. south of Coast Guard Pier Breakwater. A 60 ft. floating dock comes out directly off shore." - A letter was included with Chart Letter 1551 from Captain Posey requesting plans for the Coast Guard floating dock and the City of Monterey boat launching ramp. An ozalid print of the "As Built" drawing for the City of Monterey boat launching ramp is included with this data package. Position 9001 was taken at the easternmost end of the floating dock as indicated on the drawing. Position 9002 was taken at the western end of a concrete median in the boat ramp which is an extension of the floating dock. Four three-point fixes were taken for each position and are summarized below. Each angle is the horizontal angle (not the observed inclined angle) derived from the formula on page A-23 of the NOS Hydro Manual.

Position 9001

Stations	Left Angle	Right Angle	Latitude	Longitude
205/420/204	58°58.8'	77°38.5'	36°36'32.777"	121°53'33.155"
205/400/204	77°12.6'	59°27.1'	36°36'32.768"	121°53'33.189"
420/204/203	77°38.5'	87°17.3'	36°36'32.791"	121°53'33.214"
400/204/203	59°27.1'	87°17.3'	36°36'32.776"	121°53'33.224"
			36° 36' 32.778"	121° 53' 33.195"

Position 9002

Stations	Left Angle	Right Angle	Latitude	Longitude
205/420/204	55°16.7'	77°51.3'	36°36'32.998"	121°53'34.655"
205/400/204	73°40.9'	59°31.6'	36°36'32.984"	121°53'34.680"
420/204/203	77°51.3'	92°24.6'	36°36'33.003"	121°53'34.692"
400/204/203	59°31.6'	92°24.6'	36°36'32.987"	121°53'34.703"
			36 36 32.993	121 53 34.682

Item 4. "Chart doesn't show Coast Guard floating dock for C.G. small craft. The approx. length is 60 feet. Make ref. to enclosure 1 for exact position." - The dock when completed will be 214 feet long. A photo reduction was made of the Coast Guard plans since a permanent copy was not available. The westernmost three finger piers have not been started yet and no construction date is known. Positions were taken at the western extremity of the floating dock (position 9003), the southern tip of the westernmost existing short pier (position 9004) and the southern tip of the easternmost long pier (position 9005). Two fixes each were taken for positions 9003 and 9004 and four were taken for position 9005. (Insufficient signals precluded additional fixes for 9003 and 9004,) These are summarized below:

Position 9003

Stations	Left Angle	Right Angle	Latitude	Longitude
420/204/203	73°11.8'	85°50.9'	36°36'33.568"	121°53'32.195"
400/204/203	56°09.6'	85°50.9'	36°36'33.573"	121°53'32.193"
			36° 36' 33.570	121° 53' 32.194

Position 9004

Stations	Left Angle	Right Angle	Latitude	Longitude
420/204/203	74°18.3'	84°03.0'	36°36'33.184"	121°53'31.810"
400/204/203	57°00.8'	84°03.0'	36°36'33.191"	121°53'31.805"
			36 36 33.187	121 53 31.807

Let Let X

Position 9005

Stations	Left Angle	Right Angle	Latitude	Longitude
205/420/204	62°55.2'	72°39.2'	36°36'33.087"	121°53'30.394"
205/400/204	79°34.0'	56°00.0'	36°36'33.088"	121°53'30.397"
420/204/203	72°39.2'	80°17.1'	36°36'33.107"	121°53'30.441"
400/204/203	56°00.0'	80°17.1'	36°36'33.105"	121°53'30.442"
			36° 36' 33.097"	121° 53' 30.418"

Mean

Item 5. "Coast Guard station now occupies complete block vice corner." - No action required.

Item 6. "Not listed on chart a National Weather Service weather advisory tower is located at the end of the pier." - The tower is not visible in the photographs due to the close proximity of the photo centers and the skeletal structure of the tower. It is made of 1½ inch and 2½ inch angle iron beams and is used for displaying small craft and gale warnings to mariners. It is located exactly above station 301 (MONTEREY CO. DISK) and is 77.2 feet high (measured from the pier which is approximately 10 feet above high water). Lights are on the structure at the following heights above pier level (red - 20', white - 35', red - 50'). A sketch of the tower is on the following page

See Station 301

If there are any questions on this work please call me at 408-646-3131. I am returning the following material to you:

- (1) Photos 2366 and 2367
- (2) Paper copy of TP-00443
- (3) FPO plot paper
- (4) Chart 18685 - 24th edition, March 31, 1979

In addition, the following are included:

- (5) Ozalid "As Built" print of City of Monterey boat ramp and floating dock.
- (6) Copied photo reduction of U.S. Coast Guard print for small boat floating docks.
- (7) Three 35mm slides showing weather advisory tower and dolphin, U.S. Coast Guard floating docks and City of Monterey boat ramp and floating pier.

8/21/80
Jee

NOTICE TO MARINERS MARINE INFORMATION REPORT AND SUGGESTION SHEET

1551

Observer QML CARL G. YOUNG USCG

Ship's Name USCG GROUP MONTEREY Master/Commanding Officer LT. R.L. RYAN USCG

Mailing Address COMMANDING OFFICER, USCG GROUP MONTEREY 100 LIGHTHOUSE AVE. MONTEREY
CA. 93940 ATTN OPERATIONS DIVISION

Date of Observation 21 OCT 1979 Time of Observation (GMT) 1900GMT 21 OCT 79

Position: Lat. 36-36.30N Long. 121-53.20-30W

Charts affected (Nationality) 18685 CHARTLET Ed. No. 24TH

Corrected thru N.M. 36 of 19 79

(197)
②
file

Details of Information Reported (Continue on reverse side—Use additional sheets if necessary—include suggestions for improving navigational publications, charts, and services)

REF. ENCLOSER 1

- ① CHART INCORRECTLY LABELED CHART REPRESENTED AS COMPLETE DOCK. 45 PERCENT OF DOCK IS A BREAKWATER CONSTRUCTED BY ARMY CORPS OF ENGINEERS.
- ② CHART DOESN'T SHOW UNDERWATER OBSTRUCTION, OBSTRUCTION IS PILING PARTLY SUBMERGED ONLY IN VERY LOW LOW WATER. COULD BE A HAZARD TO NAVIGATION FOR SUBMARINE MOORAGE. OBSTRUCTION IS LOCATED APX. 02 YARDS OFF PIER.
- ③ CHART DOESN'T SHOW NEW CITY OF MONTEREY PUBLIC BOAT LOADING RAMP. BOAT WAS ESTABLISHED APX. 1 YEAR AGO. POSIT APX. 20 YDS SOUTH OF COAST GUARD PIER/BREAKWATER. A 60FT FLOATING DOCK COMES ONT DIRECTLY OFF SHORE.
- ④ CHART DOESN'T SHOW COAST GUARD FLOATING DOCK FOR C.G. SMALL CRAFT. THE APX. LENGTH IS 60FT. MAKE REF. TO ENCLOSER 1 FOR EXACT POSIT.

⑤ COAST GUARD STATION NOW OCCUPIES COMPLETE BLOCK VICE CORNER.

⑥ NOT LISTED ON CHART A NATIONAL WEATHER SERVICE WEATHER ADVISORY TOWER IS LOCATED AT THE END OF THE PIER.

AREA 5

Charts

✓ 18685

18680 N.C.

Nortrup

8-408-646-3131



JAMES W. DAILEY
CHIEF
NAUTICAL DATA SECTION

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY, C-322
ROCKVILLE, MARYLAND 20852

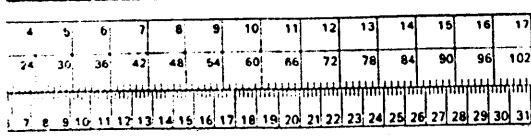
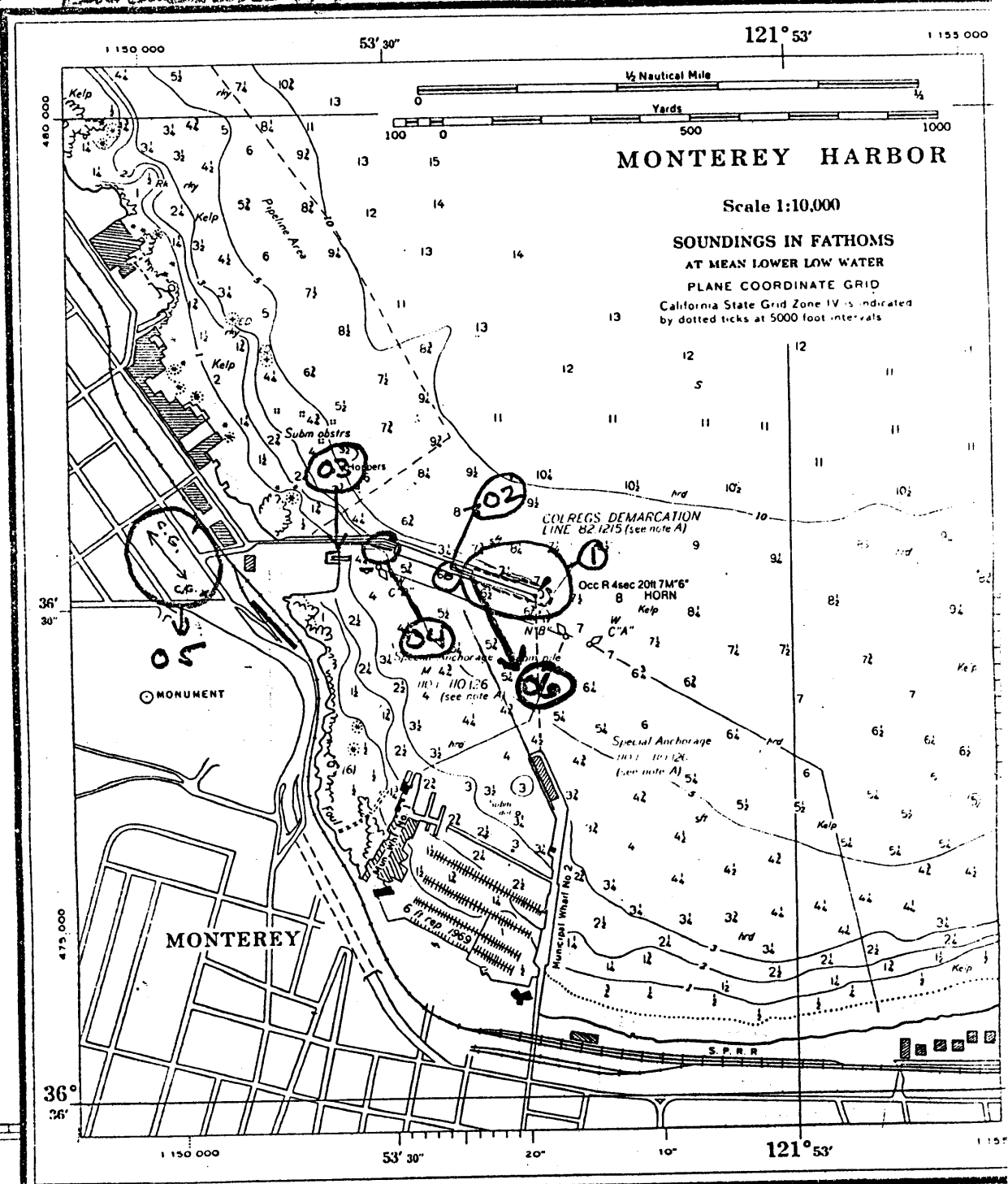
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1551

NOA 10 15

Enclosure D

AERO
Rot W&G



(Monterey Bay)
SOUNDINGS IN FATHOMS - SCALE 1:50,000

186
18685

APPROVAL SHEET

H-9809 (DA 5-1-79)

This survey was planned and executed by students at Naval Postgraduate School under my direction. NOAA Ship DAVIDSON bears no responsibility for any errors or deficiencies in the survey.

This survey is adequate to supercede prior surveys with the possible exception of the alongshore area (less than 3 fathoms) north of the Monterey Harbor breakwater. Prior surveys should be consulted in this area. The area is littered with offlying rocks and, in the absence of field edit data, all conservative data from both prior and contemporary surveys should be preserved. No additional hydrography is recommended.

This survey is incomplete in that no field edit was accomplished due to time constraints. It is recommended that field edit be accomplished. Current plans are for the accomplishment of field edit during the summer, 1979.

I personally inspected preliminary field sheets in progress and the final field sheets.

Approved for Forwarding:


Donald E. Nortrup
CDR, NOAA

LIST OF STATIONS

<u>STA</u>	<u>0</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>CRT</u>	<u>ELEV</u>	<u>F. KHZ</u>	<u>TYPE/NAME</u>	<u>SOURCE</u>
106	3	36 36 32177	121 53 24004	139			MONTEREY (SO FAR) SO FAR, 1947	
107	5	36 37 18151	121 54 11628	139	0010		MUSSEL, 1932	
108	7	36 36 23446	121 51 38833	139			SEASIDE 4, 1964	
109	2	36 37 31128	121 50 31728	250	0050		MONTEREY BAY 4 (CDH), 1972	
110	7	36 36 04686	121 52 35904	139			USE MON, 1978	
200	6	36 37 18056	121 54 11330	250	0010		MUSSEL 1932, RM # 1	
202	5	36 37 05210	121 54 10395	139		MONTEREY	AMERICAN CAN CO. STK., 1932	
203	5	36 36 56789	121 53 54678	139			KMBY MAST 1962 MONTEREY RADIO STATION KMBY MAST, 1962	
204	5	36 36 24782	121 53 48453	139			MONTEREY PRESIDIO MON. MONUMENT, 1932	
205	3	36 36 30675	121 53 19060	139			MONTEREY HARBOR LIGHT G, 1978 BREAKWATER LIGHT USE 1932	
206	7	36 37 56222	121 47 51950	139			FORT FF. ORD SILVER WATER TANK, 1972	
301	4	36 36 32141	121 53 23998	139			MONTEREY CO. DISK, 1978	
302	6	36 35 57647	121 52 32609	139			DEL MONTE USN PG-SGH-TWR-1953 ^{POST GRADUATE SCH} TOWER, 1953	
305	5	36 37 30966	121 50 31522	254 139	0050		MONTEREY BAY 4 CDH 1972, RM # 2	
400	5	36 36 13810	121 53 32200	252			Blue Light House	VOL IV P. 32
402	6	36 36 10140	121 53 28200	252			Light Pole #171	VOL IV P. 25

<u>STA</u>	<u>0</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>CRT</u>	<u>ELEV</u>	<u>F. KHZ</u>	<u>TYPE/NAME</u>	<u>SOURCE</u>
404	6	36 36 08180	121 53 24790	252			Light Pole #181	VOL.IV P.27
406	6	36 36 06950	121 53 21510	252			Flagpole @ Rogue Rest.	VOL.IV P.28
408	6	36 36 06850	121 53 19470	252			Light Pole # 88	VOL.IV P.29
410	6	36 36 08920	121 53 19100	252			Light Pole # 89	VOL.IV P.30
412	6	36 36 11810	121 53 18570	252			Light Pole # 729	VOL.IV P.21
414	7	36 36 13960	121 53 19470	252			Light Pole #837	VOL.IV P.24
416	7	36 36 15150	121 53 22060	252			Light Pole # 839	VOL.IV P.22
418	7	36 36 16290	121 53 24670	252			Light Pole # 841	VOL.IV P.23
420	6	36 36 18130	121 53 26340	252			Diving Bell	VOL.IV P.31
422	6	36 36 20750	121 53 19320	252			Wind Sock	VOL.IV P.33
424	5	36 36 34060	121 53 34150	252			C.G. Pier Light Pole	VOL.IV P.26
426	5	36 36 35188	121 53 40337	252			Beach	VOL.IV P.38
428	5	36 36 40504	121 53 43130	252			Rock	VOL.IV P.39
430	5	36 36 49572	121 53 46178	252			Restaurant	VOL.IV P.40

VELOCITY TABLE PRINTOUTS

MONTEREY BAY

DA-5-1-79

000022 0 0000 0001 001 313100 005179
 000066 0 0001
 000110 0 0002
 000154 0 0003
 000198 0 0004
 000242 0 0005
 000286 0 0006
 999999 0 0007

000022 0 0000 0002 001 313200 005179
 000066 0 0001
 000110 0 0002
 000154 0 0003
 000198 0 0004
 000242 0 0005
 000286 0 0006
 999999 0 0007

000023 0 0001 0003 001 304100 005179
 000045 0 0002
 000068 0 0003
 000090 0 0004
 999999 0 0005

000014 0 0000 0004 001 304100 005179
 000034 0 0001
 000054 0 0002
 000074 0 0003
 999999 0 0004

CORRECTORS TO ELECTRONIC POSITION CONTROL

<u>VESNO</u>	<u>JULIAN DAY</u>	<u>CORRECTOR (m.)</u>
3132	057	-1.0
	058	-1.0
	059	-1.0
	061	-1.0
	064	-1.0
	065	-1.0
3131	061	+4.0

✓
FIELD TIDE NOTE

Field reduction of soundings was based on predicted tides for San Francisco, California (Golden Gate) corrected to Monterey California. Daily Highs and lows for San Francisco were obtained from page 72 of the Tide Tables while correctors for Monterey were obtained from page 164 of the Tide Tables and are listed as follows:

<u>TIME</u>		<u>HEIGHT</u>	
High Water	Low Water	High Water	Low Water
-1hr 16 min.	-0hr 58min	-0.5 ft.	0.0

Heights were calculated and interpolated to 0.1 fathom increments by a PDP-8E computer utilizing program AM-500.

Smooth tide records will be obtained from records for the ADR gage operating in Monterey ^{Harbor} Bay in conjunction with NOS and the U.S. Naval Postgraduate School, Monterey, California. This gage has been in operation since 1967.

Gage location is Lat. 36 36.3 N., Lon. 121 53.3 W. and the time meridian for hydrography and predicted tide corrections was 0 W. (GMT).
Time meridian for hourly heights on ADR Gage at Monterey Harbor, California was 120 W.

Levels were run to the staff at the beginning and end of survey operations and the differences from staff to BM 3 on before and after runs were on the order of .002 ft., therefore the staff was assumed not to have moved during hydrography.

Level Records and NOAA form 77-12, "Tide Station Report", have been furnished to Tides and Water Levels Branch, C331.

Smooth tides for the period of hydrography have been requested by letter dated 16 March 1979. A copy of the letter requesting smooth tides was forwarded to CDR. Schaeffer for information purposes.

Smooth Tides were requested to be sent to Processing Division, Pacific Marine Center.

U.S. DEPARTMENT OF COMMERCE
June 20, 1979 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): 941-3450 Monterey, CA

Period: February 26 - March 7, 1979

HYDROGRAPHIC SHEET: H-9809

OPR: L 101

Locality: Monterey Bay, California

Plane of reference (mean lower low water): 3.07 ft.

Height of Mean High Water above Plane of Reference is
4.7 ft.

Remarks: Zone direct.

James E. Hubbard
Chief, Datums and Information Branch

GEOGRAPHIC NAMES

H-9809

Name on Survey

A ON CHART NO. 18685
 B ON PREVIOUS SURVEY NO.
 C ON U.S. QUADRANGLE MAPS
 D FROM LOCAL INFORMATION
 E ON LOCAL MAPS
 F P.O. GUIDE OR MAP
 G RAND McNALLY ATLAS
 H U.S. LIGHT LIST

T-SHEET
 KP-00443

DEL MONTE	X							X	1
MONTEREY	X							X	2
MONTEREY HARBOR	X							X	3
NEW MONTEREY								X	4
POINT ALONES	X							X	5
POINT CABRILLO	X							X	6
PACIFIC GROVE									7
SEASIDE									8
MONTEREY BAY									9
									10
									11
									12
									13
									14
									15
									16
									17
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									23
									24
									25

Approved,

Chas. E. Harrington

Geographer - N/C92x5

18 FEB. 1983

APPROVAL SHEET

FOR

SURVEY H-9809

- A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position print-out has been made. A new final sounding print-out has been made.
- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic Manual. Exceptions are listed in the verifier's report.

Date: April 13, 1981



Chief, Verification Branch

HYDROGRAPHIC SURVEY STATISTICS

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS & PRELIMINARY OVERLAYS	10
DESCRIPTIVE REPORT	1	SMOOTH OVERLAYS, POSSIBLE EXCESS	4

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS			1 Ran			
VOLUMES	4 Soundings					
BOXES			1 Pos. Soundings & Stat Plo			

T-SHEET PRINTS (List) Class I Manuscript TP-00443 (Enlarged 1:5,000, 1:1250)

SPECIAL REPORTS (List) Correction to Echo Sounders, No other reports submitted

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	PRE-VERIFICATION	VERIFICATION	TOTALS
POSITIONS ON SHEET			1780
POSITIONS CHECKED		1780	
POSITIONS REVISED		61	
SOUNDINGS REVISED		300	
SOUNDINGS ERRONEOUSLY SPACED		00	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		00	

TIME - HOURS

CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	06		
VERIFICATION OF CONTROL		10	
VERIFICATION OF POSITIONS		104	
VERIFICATION OF SOUNDINGS		119	
COMPILATION OF SMOOTH SHEET		90	
APPLICATION OF TOPOGRAPHY		05	
APPLICATION OF PHOTOBATHYMETRY		00	
JUNCTIONS		03	
COMPARISON WITH PRIOR SURVEYS & CHARTS		20	
VERIFIER'S REPORT		30	
OTHER			
TOTALS		381	

Pre-Verification by James S. Green	Beginning Date June 29, 1979	Ending Date June 29, 1979
Verification by Bruce Alan Olmstead	Beginning Date December 5, 1979	Ending Date February 24, 1981
Verification Check by James S. Green and James L. Stringham	Time (Hours) 31	Date March 19, 1981
Marine Center Inspection by HIT	Time (Hours) 14	Date June 1, 1981
Quality Control Inspection by Lisa Quintar	Time (Hours) 50	Date 15 JAN 1982
Requirements Evaluation by Robert W. DeLorenzo	Time (Hours) 4	Date Sept 15, 1983

G. Myers 24 hrs 1/14/82

REGISTRY NO. H-9809

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

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

MAGNETIC TAPE CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

PACIFIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO: H-9809

FIELD NO: DA-5-1-79 (NPGS)

California, Monterey, Monterey Harbor

SURVEYED: 26 February - 8 March 1979

SCALE: 1:5,000 (1:1,250 Inset)

PROJECT NO: S-L101-DA/NPS-79

SOUNDINGS: Ross 5000 Fineline
Raytheon DE 719B
Leadline

CONTROL: Range-Azimuth,
Sextant

Chief of Party.....CDR Donald E. Nortrup

Surveyed by.....LCDR A. J. Pickrell, LCDR
K. J. Schnebele, LCDR D. R.
Seidel, LCDR D. W. Yeager,
ENS E. McDougal, Mr. Murdock
(NOO), Mr. Van Norden (NOO),
Mr. Litts (DMA)

Automated Plot by.....PMC Xynetics Plotter

Verified by.....Bruce Alan Olmstead
February 24, 1981

I. INTRODUCTION

H-9809, (DA-5-1-79), was conducted in accordance with the methods of planning, executing and processing a hydrographic survey as defined by NOS. The Fourth Edition of the Hydrographic Manual sets forth these specific requirements. Project Instructions S-L101-DA/NPS-79 dated 5 February 1979, the PMC OORDER and the PMC 1979 Data Requirements Letter were used in supplementing the Hydrographic Manual; this, to compensate for the nature, locality and the unique characteristics of the project area. There are no changes to the Project Instructions. Hydrography was conducted from 26 February - 8 March, 1979. Photo-hydro support and field edit data was to be furnished by 1 March 1979. This material did not arrive until 12 March 1979. Consequently, field edit was not accomplished in conjunction with the hydrographic operations.

The initiation of this project derives from primarily a support of the Department of Oceanography, Naval Postgraduate School. This operation will serve as a facility by which students of NPS can conduct a basic survey of a portion of Monterey Bay. Additional justification for a basic survey in Monterey Bay stems from the fact that present charted information is compiled from prior survey work of 1933, 1954 and 1963. The new data will be used to update existing nautical chart coverage.

A special survey, H-9809 (DA-5-1-79) lies just southeast of Point Pinos and in the most southern extremity of Monterey Bay; Latitude 36°36'07"N to Latitude 36°37'35"N, Longitude 121°50'55"W to Longitude 121°54'00"W.

Depths of water generally range from 1 fathom along the shoreline to 27 fathoms 1.5 miles north of the municipal wharfs. Monterey Bay is primarily a resort harbor with some commercial activity and fishing. Prominent features in this area includes a 1700 foot breakwater, Municipal Wharf No. 1 (contains several restaurants and shops), Municipal Wharf No. 2 (1600 feet long, handles freight~~s~~ and supplies) and a small boat basin. Good anchorage is available south and southeast of the breakwater.

One tide gage, an ADR, operating in Monterey Bay on Municipal Wharf No. 2, was used to control the sounding reduction to Mean Lower Low Water. The Projection Parameters, Signal List and Electronic Corrector Abstract were amended during the verification process. All corrected data is listed in the smooth printouts to accompany the final PMC plot.

2. CONTROL AND SHORELINE

Existing Third Order Class I horizontal control stations were used to control the Range-Azimuth operations. Visual sextant operations employed existing Third Order Class I control stations and stations located by sextant resection and sextant intersection methods. These two systems of positional determination were used during launch operations. Specific information and documented methods of procedure are described in Parts F and G of the descriptive report. However, a few additional items warrant further discussion:

a. Sextant methods in establishing horizontal control stations should be conducted as outlined in Section 3.1.3.3 of the Hydrographic Manual. Three deficiencies are noted; (1) Fort Ord Silver Water Tank (Signal 206) which plots off the survey sheet was used numerous times for establishing hydrographic stations, (2) several stations located by sextant resection were used to locate other hydrographic signals (400, 420, 422) and (3) check angles were not always measured to a fourth station.

b. Established Third Order geodetic control data was provided for this operation. However, no recovery notes for these stations were generated. Apparently, the NPS group ran this survey based on the prior geographic positions and assumed no shifts in the horizontal or vertical datums. These Third Order stations were used exclusively in establishing supplemental control and in geodetically fixing launch hydrography.

Field edit on manuscript TP-00443 was accomplished in August 1979. There are three important aspects in the compilation of this data to the shoreline manuscript. First, photo-picked signals were established and used as additional control in determining positions of field edit. These stations were independent of the horizontal control established during hydrographic operations. Second, the tidal datum used in reducing the manuscript information to MLLW was processed independently of the hydrographic tide data. Third, additional alongshore and offshore detail from prior information had to be brought forward on to the smooth sheet to supplement the present survey work. Here, numerous rocks and ledge detail were added in color to the smooth sheet from H-5416 (1933) and H-8068 (1954). These prior surveys also provide

height information for several of the islets along the southern portion of Monterey Harbor. However, there are discrepancies of 6 - 9 feet between prior surveys concerning these features. The field editor did not provide height information on these islets during the present survey.

The Mean High Water Line was applied from Class I unreviewed manuscript TP-00443.

Dates of Photography

April 1978

Dates of Field Edit

August-September 1979, *Jagged symbol portrayed on inside of Northwaly breakwater is from photogrametric interpretation and is indistinguishable from breakwater itself. Per conversation with NCG-23. See Letter #15 Aug 80 para 4 included in Report.*
~~August 1980~~

3. HYDROGRAPHY

Soundings at crossings are generally .1 fathom to .2 fathom difference in depths less than 20 fathoms and one fathom or less in depths greater than 20 fathoms.

The bottom configuration was adequately developed. However, *the sections of the* 0 fathom and 1 ^{and 2} fathom depth curves are not defined satisfactorily. All other standard depth curves common to this sheet are adequately delineated. Determination of least depths is adequate with the exception of the following soundings;

- a. 5.2 fathoms Latitude 36°37'13"N, Longitude 121°53'54"W
- b. 1.5 fathoms Latitude 36°37'10"N, Longitude 121°53'56"W
- c. 2.7 fathoms Latitude 36°37'08"N, Longitude 121°53'55.5"W
- d. 5.2 fathoms Latitude 36°37'03"N, Longitude 121°53'42.5"W
- e. 1.0 fathoms Latitude 36°36'59"N, Longitude 121°53'49.5"W
- f. 1.7 fathoms Latitude 36°36'47.5"N, Longitude 121°53'41"W
- g. 4.7 fathoms Latitude 36°36'32"N, Longitude 121°53'19"W
- h. *3.6 fathoms* Latitude *36°36'43"N*, Longitude *121°53'37"W*

Conflicts between hydrography and the shoreline manuscript information concerns the following discrepancies;

The elevation of one

a. ~~two rocks~~ *two rocks* ~~awash, (1) at Latitude 36°36'59"N, Longitude 122°53'51"W, (2) at Latitude 36°36'28"N, Longitude 121°53'34.5"W,~~ *differs by six feet from the elevations on T-00443.* The height information from the hydrographic records was reduced using smooth tides and shown on the smooth sheet. ✓

b. two rocks located on the shoreline manuscript were compiled as PA (Position Approximate). These rocks were also located during hydrography as detached positions. The verifier smooth plotted these two rocks using hydrographic information and deleted the PA description. The positions of these features are:

- a. Latitude 36°36'47.5"N, Longitude 121°53'45"W (Position 5276)
- b. Latitude 36°36'43.5"N, Longitude 121°53'44"W (Position 5275)

4. CONDITION OF SURVEY

"PA" label appended to all rocks transferred from TP-sheet removed during quality control. Topo rock locations meet hydro survey accuracy standards.

The smooth sheet and accompanying overlays, hydrographic records and reports are adequate and conform to the requirements as stated in the Hydrographic Manual with the exception of:

a. The depth units plotted on the smooth sheet were not gathered in accordance with 1.5.5 of the Hydrographic Manual. "All depths measured by echo sounders for a hydrographic survey that will be smooth plotted in fathoms shall be recorded in fathoms and decimals. Project Instructions may specify that shoal water soundings be obtained in feet and tenths for surveys that will be smooth plotted in fathoms" (Rule 5). There is no letter appended to the descriptive report requesting the use of the 719B Fathometer which sounds only in feet.

b. A Horizontal Control Report was not submitted for this project. A Recovery Note (NOAA Form 76-96) must be generated for each station. Old descriptions must be verified in detail or corrected as necessary. See item b, Section 2, Control and Shoreline for further information. In addition, the following data was not forwarded with the field work; Electronic Control Report, Geographic Names List (NOAA Form 76-155), Non-floating Aids and Landmarks (NOAA Form 76-40) and a Pre-Survey Review.

c. Hydrographic stations located by sextant resection methods were used to locate other control stations. Signals 400, 420 and 422 were established using sextant intersection techniques involving other sextant derived stations. Additionally, sextant cuts should be observed from stations as close as possible to the new station. Section 3.1.3.3 of the Hydrographic Manual provides specific guidance concerning these practices.

d. The raw data printouts were annotated very poorly. Information not addressed included; signal strengths, azimuth or initial stations, daily calibrations and specifics for erratic lines of hydrography: i.e., bad rates, Mini-Ranger Interference, coxwain error and or avoiding small craft.

e. Hydrographic signals cut in by sextant are to be described on the smooth field sheet. A brief description in black ink under the signal shall be shown in parenthesis. Signals in water areas shall be fully described. Section 4.2.5 of the Hydrographic Manual provides specific guidance concerning these practices.

f. There are no fathograms for days 065 and 068 (Positions 5270-5276, 5299-5305, 5310 and 5355-5357). Although these positions are exclusively leadlines for shoal investigations; Section 4.5.9.2 of the Hydrographic Manual specifies that the echo sounder shall be in continuous operation and the graphic record properly annotated during the search.

g. The list of stations submitted in the descriptive report was not correct. Several station names were amended to agree with the geodetic data as documented on historical records (CPM1x1). Also, several station names were abbreviated in the control list.

h. The DE-719B Fathometer was improperly calibrated during several days of skiff (3041) hydrography. Generally, the calibrate line was 1 - 2 feet above or below the calibrate mark.

i. Project Instructions 4.5 states that the NPS group will be responsible for generating a Pre-Survey Review and to ensure the required investigations. The NPS group did not call for the latest Local Notice to Mariners or Chart Letters. Hence several critical items which appear on the 24th Edition of Chart 18685 did not get addressed.

5. JUNCTIONS

There are no contemporary junction surveys. However, if no contemporary surveys are available in stable bottom areas or areas where no noticeable changes have occurred, adequate junctions usually can be completed with recent noncontemporary surveys. These comprise surveys more than 1 year older than the survey being processed. (Section 7.3.12.5 of the Hydrographic Manual). Consequently, a butt junction was effected with H-8068 (1953-54). However, the lack of original records prevent the verifier from altering the prior survey soundings. The standard depth curves within the common area have been inked.

H-8068 (1953-54) considered prior survey.

6. COMPARISON WITH PRIOR SURVEYS

H-8068 (1953-54)
H-5415 (1933)

Generally, the bottom configuration and depths have remained unchanged in 26 years. There appears to be no evidence of either shoaling or deepening throughout the survey area. Only minor differences in depth are noted between the present and prior surveys. As such, the standard depth curves graphically display very little ~~evidence of consistency in either~~ accreting seaward or a movement shoreward. The shoreline area north of Municipal Wharf No. 2 is basically unchanged. Here, shoreline erosion since 1953-54 is not noticeable. However, many changes (essentially man-made) have occurred from the Municipal Wharf No. 2, southwest to Pt. Cabrillo. The more significant changes are as follows:

a. A new small boat marina has been constructed between Municipal Wharves No. 1 and No. 2.

b. New construction has progressed around the southern end of the 1700' breakwater. A Coast Guard floating dock (smallcraft) is being added and a public boat ramp has been established. Additionally, the shoreline in this area has been filled in reclaiming approximately 100 yds of the MHWL.

Coast Guard floating dock not addressed by hydrographer; however, miscellaneous data (Cl 155) (79)) contains information. Chart letter copy enclosed. See Verifier's Report Section 7b.

c. ~~The pier 50 meters southwest of Municipal Wharf No. 1 has been removed.~~ *See Quality Control comment in Descriptive Report, Section K, item 4.*

c. d. Several new structures along the shoreline have been added or deleted between Pt. Cabrillo and the breakwater.

Pre-Survey Review Item #5, a charted 2 fathom shoal at Latitude 36°36'46"N, Longitude 121°52'29"W ^{the appropriate 12 fathom sounding} originates from prior survey H-8068 (1953-54). Here, a compilation error was made during application of survey depths to the chart. The compiled sounding should be 12 fathoms. The verifier concurs with the hydrographer's statement as per Section K of the descriptive report. *Concur*
Depths in this area should be charted from the present survey.

Numerous rocks, ledges and soundings were brought forward from prior surveys H-8068 (1953-54) and H-5415 (1933) to supplement the present survey. With these additions and the other comments noted under this section, H-9809 (1979) is adequate to supersede the prior information within the common area.

7. COMPARISON WITH THE CHART

A chart comparison was made with Chart 18685, 23rd Edition, March 18, 1978 and the 1:10,000 inset for Monterey Harbor. The charted hydrography originates primarily with the previously discussed prior survey and several Corps of Engineers blueprints. The verifier recommends the following courses of action concerning several charted items:

a. Pre-Survey Review Items #1 thru #4 originate with unknown sources. Items #2, #3 and #4 are sufficiently disposed of in section K of the ship's descriptive report. The verifier concurs with the disposition of these items. PSR #1 merits further consideration. There was no apparent attempt to disprove the existence of these features by either a dive investigation or a developmental series of hydrographic lines. Although the Harbormaster reported these items to be removed, the verifier recommends retaining these features on the chart. *Do not concur. See Sec K of the Descriptive Report.*

b. Refer to Chart Letter 1551 and follow-up response by LCDR Gerald B. Mills, NOAA, for disposition of several charting discrepancies. Both documents are appended to the descriptive report.

c. H-9809 (1979) was completed between February and August 1979. The hydrography was done during the period February 26 and March 8. Field edit was not accomplished until August. Consequently, the verifier made a cursory inspection of the 24th Edition of Chart 18685 which was printed March 31, 1979. The following items were noted; (1) Several rocks awash were added from an unknown source. These rocks were found by the hydrographer on the present survey. The verifier recommends superseding these items with the current information. (2) Two critical items must be retained. These items are as follows;

(1) Latitude 36°36'47.5"W, Longitude 121°53'42"W - Sunken rock, existence doubtful. Possibly a 1.7 fathom sounding located on the

present survey. This sounding was cited as a deficient item for determination of a least depth. (See Section 3, Hydrography) *Do not concur Chart subm rock symbol, remove "ED"*

(2) Latitude 36°36'45.5"N, Longitude 121°53'39"W - Sunken rock, existence doubtful. This feature falls between lines of hydrography and has not been disproved. *Do not concur. Chart subm. rock symbol Remove "ED"*

With these items noted and addressed, the present survey is adequate to supersede the charted information.

a. Controlling Depths

There are no controlling depths within the limits of the present survey. *Present depths are in agreement with the charted depth note - 6ft rep 1969 - in the vicinity of*

b. Aids to Navigation *lat. 36°36.2'N, long. 121°53.45'W.*

The four floating aids and one fixed aid to navigation located on the present survey are in substantial agreement with the charted aids and adequately mark the features intended. *Concur*

8. COMPLIANCE WITH INSTRUCTIONS

The survey adequately complies with Project Instructions S-L101-DA/NPS-79, dated 5 February 1979. Exceptions to this statement have been addressed in Section 4, Condition of Survey.

9. ADDITIONAL WORK

H-9809 (DA-5-1-79) is a good basic survey. Additional field work can be accomplished by the current NPS group and should address the following items:

a. A thorough field edit of shoreline between the Municipal Wharf No. 1 and Pt. Cabrillo. Specifically, Latitude 36°36'15"N to Latitude 36°37'15"N, Longitude 121°53'33"W to Longitude 121°54'08"N.

b. The two sunken rocks (ED) that appear on the 24th Edition of Chart 18685. *Sunken rocks are not identified to be doubtful on TP-sheet.*

c. A dive investigation or hydrographic development of PSR Item 1. *Quality control agrees with hydrographer's statement that these objects should be expunged from chart. See Descriptive Report, Sec K.* Respectfully submitted,

Bruce A. Olmstead
Bruce A. Olmstead
Cartographic Technician
April 6, 1981

Examined and Approved:

J S Green
James S. Green
Chief, Verification Branch



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL OCEAN SURVEY
 Pacific Marine Center
 1801 Fairview Avenue East
 Seattle, WA 98102

July 13, 1981

OA/CPM3/JWC

TO: OA/CPM - Charles K. Townsend *[Signature]*
 FROM: OA/CPM3 -- John W. Carpenter *[Signature]*
 SUBJECT: PMC Hydrographic Inspection Team Report for Survey H-9809

This survey is a hydrographic survey of Monterey Harbor, Monterey, California. This survey was conducted by Naval Postgraduate School in 1979 in accordance with Project Instructions S-L101-DA/NPS-79 dated February 5, 1979.

It is the opinion of the inspection team that this survey should not have been registered since the Project Instructions were written for the purpose: "to make available the facilities with which the students may conduct a basic survey of a portion of Monterey Bay." This survey should have been treated the same as the multitude of past training surveys, as a training exercise. As a suggestion to preclude this from happening again, the following section should be added to the Standard Hydrographic Project Instructions:

1.10 Registry: Defines whether a registry number (or FE number) will be assigned to the survey by OA/C353.

Since the survey is in fact a registered survey and has been verified using the criteria of a basic survey and the deficiencies are documented in the verifier's report, the inspection team recommends it be approved and forwarded.

The inspection team finds H-9809 to be a basic survey adequate to supersede common areas of prior surveys and charted hydrography, *except as noted in the body of this report.* Administrative approval is recommended.

I generally agree with this HIT Recommendation. However, this should be a CPM 3 its of disclaimer.

[Signature]
 John W. Carpenter

[Signature]
 James M. Wintermyre

[Signature]
 James W. Steensland

[Signature]
 Stanley H. Otsubo



10TH ANNIVERSARY 1970-1980
National Oceanic and Atmospheric Administration

A young agency with a historic tradition of service to the Nation

ADMINISTRATIVE APPROVAL
H-9809

The smooth sheet and reports of this survey have been examined and the survey is adequate for charting and to supersede common areas of prior surveys.



Charles K. Townsend
Director
Pacific Marine Center

7/15/81
Date



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

C352:LQ

December 15, 1981

TO: Glen R. Schaefer *GRM*
Chief, Hydrographic Surveys Division

THRU: Chief, Quality Control Branch *gm*

FROM: *L. Quinlan*
L. Quinlan
Quality Evaluator

SUBJECT: Quality Control Report for Survey H-9809 (1979), California,
Monterey, Monterey Harbor

A quality control inspection of survey H-9809 was accomplished to monitor the survey for adequacy with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, sounding line crossings, smooth plotting, shoreline transfer, decisions made and actions taken by the verifier, and the cartographic presentation of data. Revisions and additions to the smooth sheet, plus helpful comments made to the verifier, are identified on a full-scale copy of the survey to be furnished the verifier. In general, the survey was found to conform to National Ocean Survey standards and requirements except as stated in the Verifier's Report and the HIT Report.

cc:
C351





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
CHARTING AND GEODETIC SERVICES
Rockville, Md. 20852

N/CG241:RWD

DEC 15 1983

TO: N/MOP - Charles K. Townsend

FROM: *for* N/CG2 - C. William Hayes *Sign R. Peters*

SUBJECT: Report of Compliance for Survey H-9809

The smooth sheet and Descriptive Report for survey H-9809 (1979), California, Monterey, Monterey Harbor, have been reviewed. This survey, except as noted in the Quality Control Report, dated December 15, 1981 (copy attached), and the Hydrographic Survey Inspection Team Report, dated July 13, 1981, is complete and adequate for the purposes intended and is in compliance with Project Instructions S-L101-DA/NPS-79, dated February 5, 1979.

Attachment

CC:
N/CG242 w/o att.



1.150.000

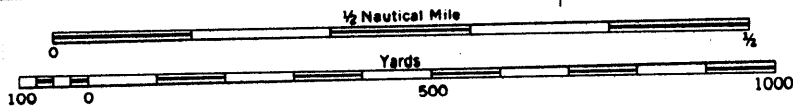
53° 30'

121° 53'

1.155.000

480.000

480.000

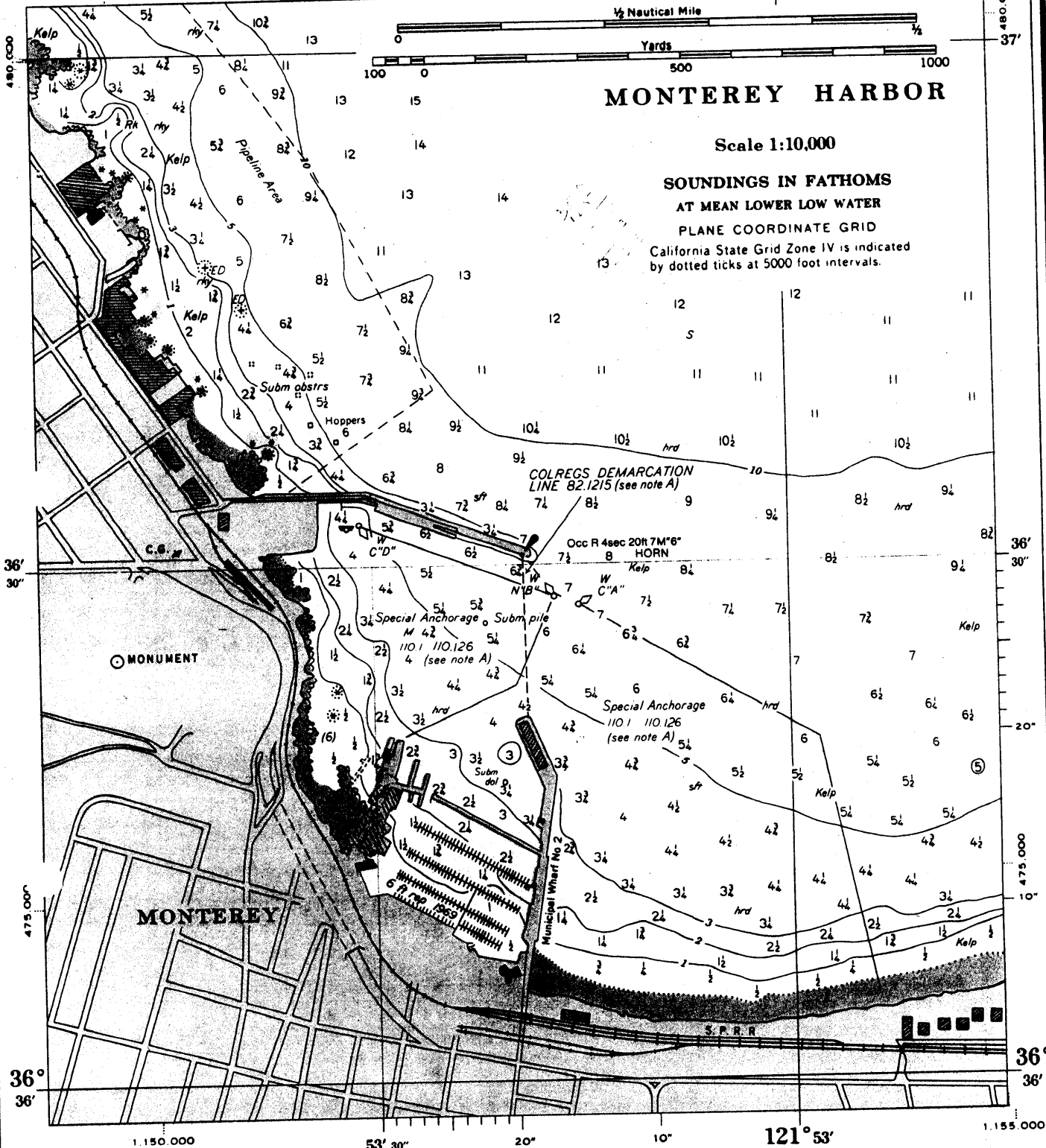


MONTEREY HARBOR

Scale 1:10,000

SOUNDINGS IN FATHOMS
AT MEAN LOWER LOW WATER
PLANE COORDINATE GRID

California State Grid Zone IV is indicated
 by dotted ticks at 5000 foot intervals.



36° 30'

20°

475.000

10°

36°

36'

MONTEREY

1.150.000

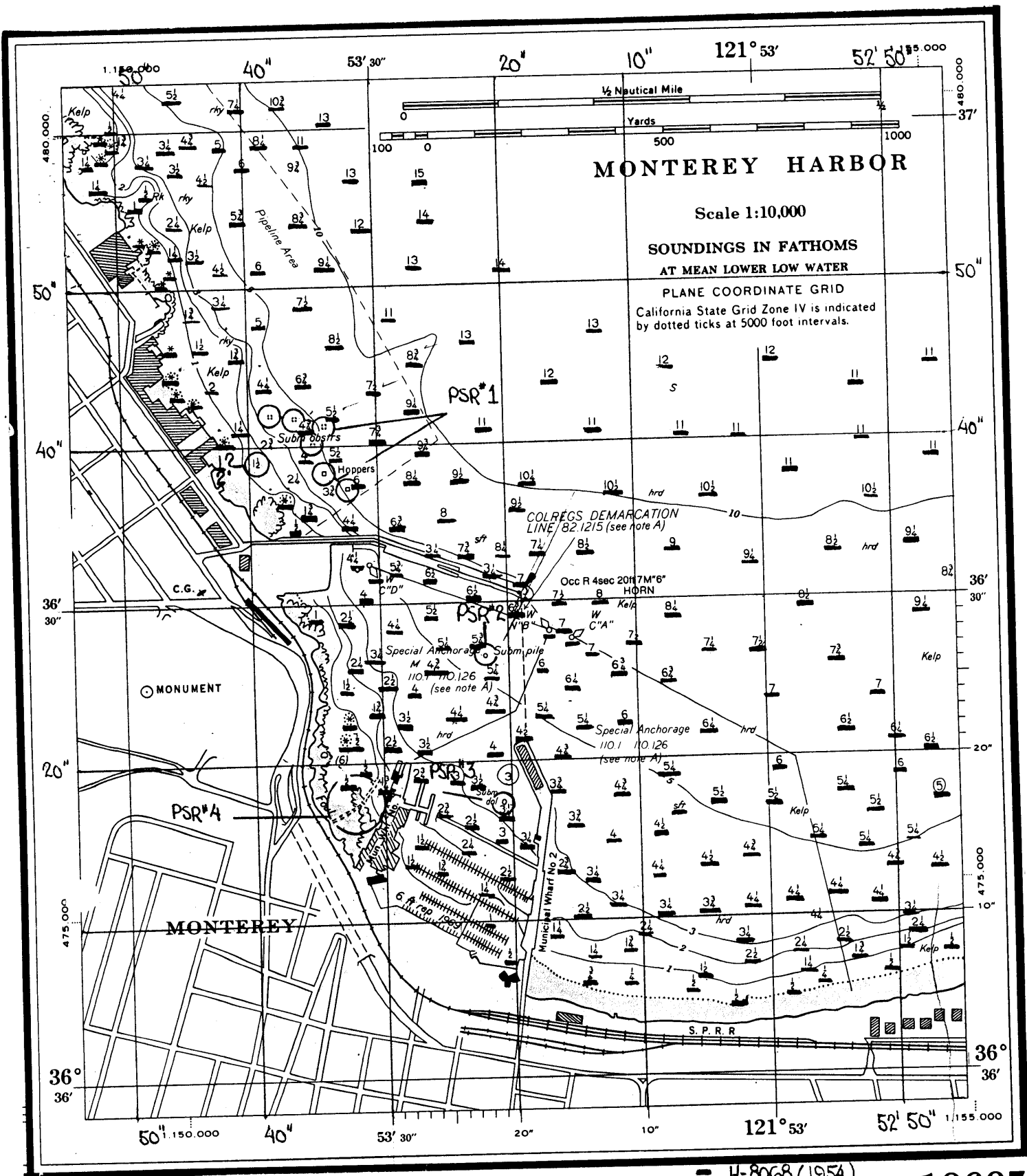
53° 30'

20°

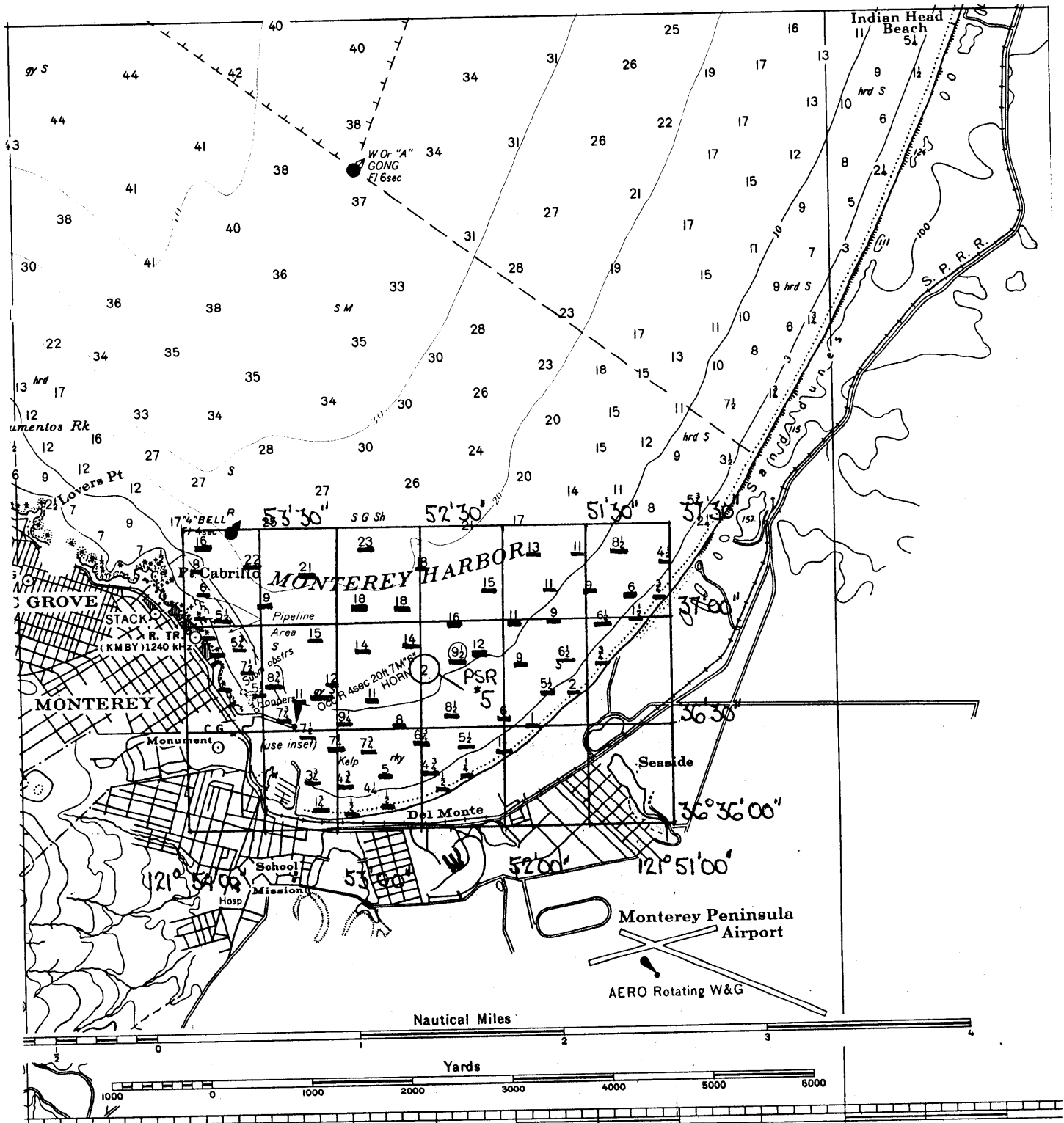
10°

121° 53'

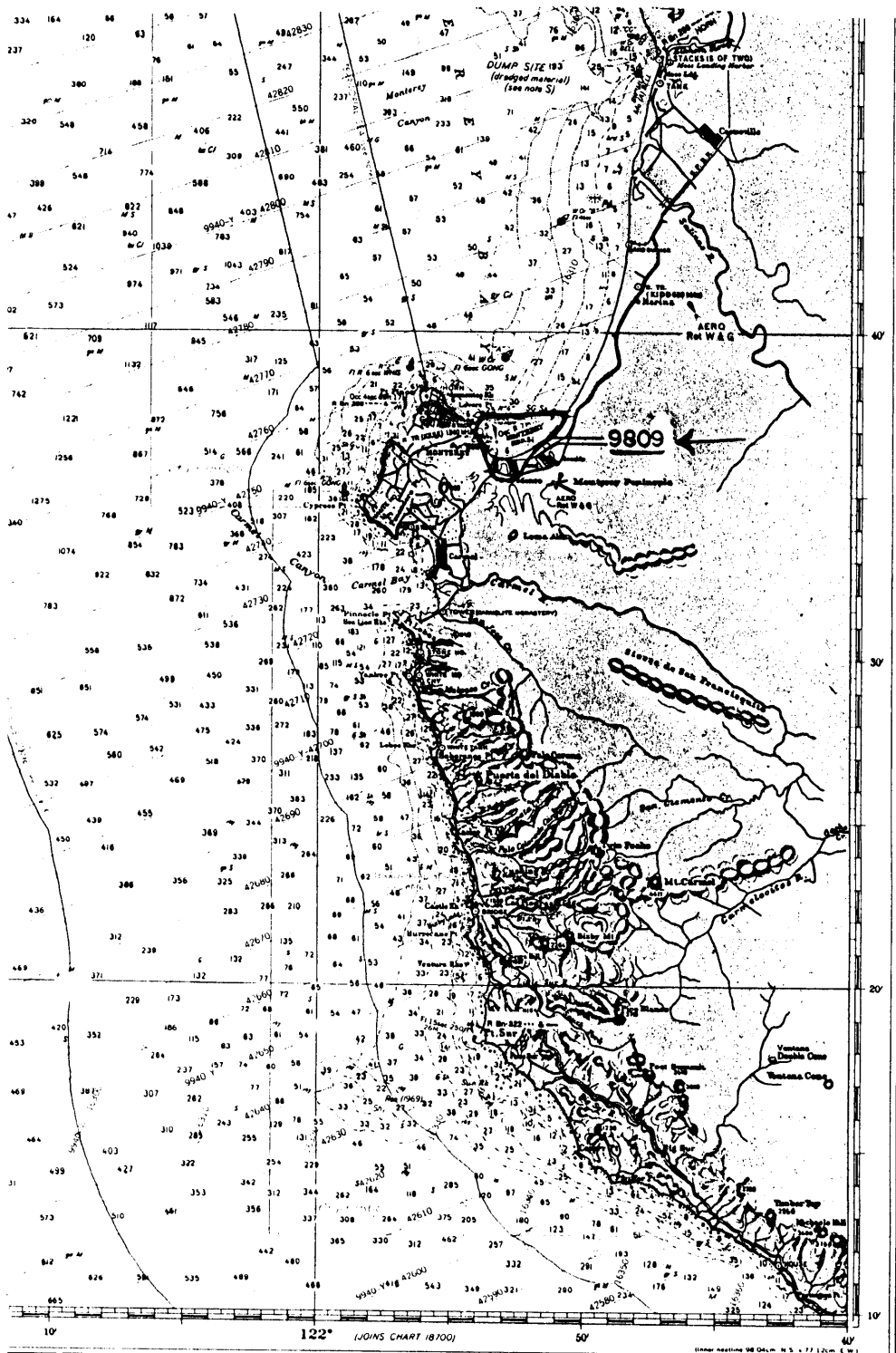
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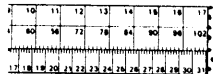
H-8068 (1954)
 H-5415 (1933)
 CE Blueprints (1963)
 (formerly C&GS 5403)
 18685
 SOUNDINGS IN FATHOMS - SCALE 1:50,000
 23rd Edition 1:10,000 6TK61-67



35' Monterey Bay 1:50,000 23rd Ed. ^{121.50'} Mar. 18/78



(3 Sheets)



(Point Sur to San Francisco)
SOUNDINGS IN FATHOMS - SCALE 1:710 668

18680
LORAN-C OVERPRINTED

LMA STOCK NO. 18680-18686

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9809

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 Rev

CHART	DATE	CARTOGRAPHER	REMARKS
18685	1/16/84	Jeff Stuart ✓	Full Part Before After Verification Review Inspection Signed Via Drawing No. 33
18680	1/17/84	Jeff Stuart	Full Part Before After Verification Review Inspection Signed Via Drawing No. 34
18010	1/19/84	JEFF Stuart	Full Part Before After Verification Review Inspection Signed Via Drawing No. 22 No Corr
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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