Return to Vault ... 864

9274

18740
18022?

Diag. Cht. No. 5101-4.

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

(HYDROGRAPHIC)

Type of Survey Hydrographic

Field No. RA-5-1-72

Office No. H-9274

LOCALITY

State California

General Locality Gulf of Santa Catalina

Locality Dana Point

1972

CHIEF OF PARTY
G. E. Haraden

LIBRARY & ARCHIVES

DATE 12-22-73

☆U.S. GOVERNMENT PRINTING OFFICE: 1974-763-098

9274

FORM C&GS-537 (5-66)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO. H-9274

FIELD NO. RA-5-1-72

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

State CALIFORNIA

General locality Gulf of Santa Catalina ~~Southern California Coast~~

Locality Dana Point ~~Mariner~~

Scale 1:5,000 Date of survey 22 - 29 March 1972

Instructions dated 7 January 1972 Project No. OPR-411-RA-72

Vessel NOAA Ship RAINIER, Launches RA-3 & RA-4

Chief of party Capt. G. E. Haraden

Surveyed by Lt. W. L. Stubblefield, Ens. J. R. Faris, Lt.(jg)M. L. Adams

Soundings taken by echo sounder, hand lead, ~~pole~~ DE-723, #253 (RA-3) & #819 (RA-4)

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Protracted by _____ Automated plot by PMC - Gerber Digital Plotter

Soundings penciled by _____

Soundings in ~~fathoms~~ feet at ~~mean low water~~ MLLW

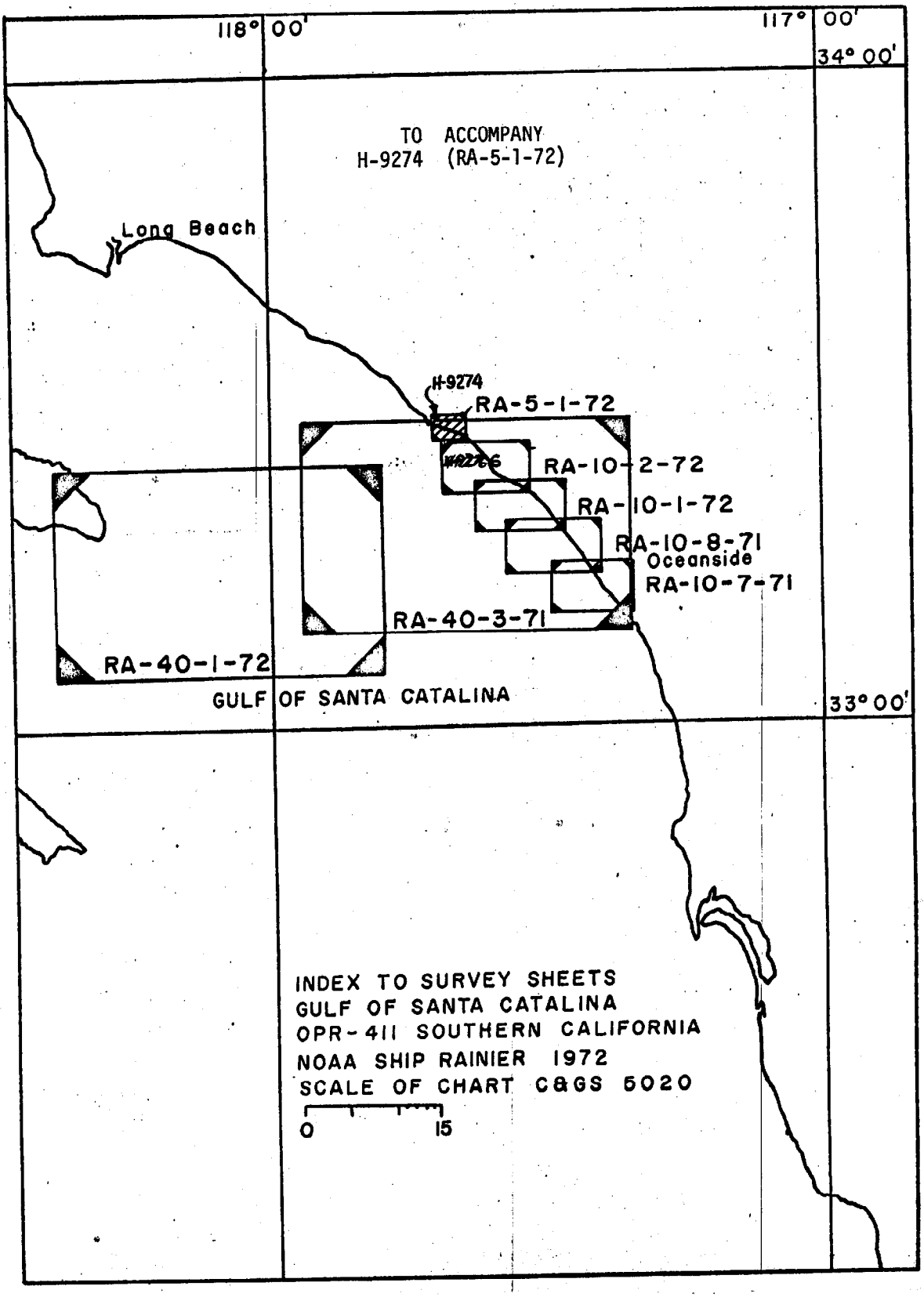
REMARKS: Survey H-9274 (RA-5-1-72) was plotted on the PDP 8/e Hydroplot/ Hydrolog System using AM 205 and visual data.

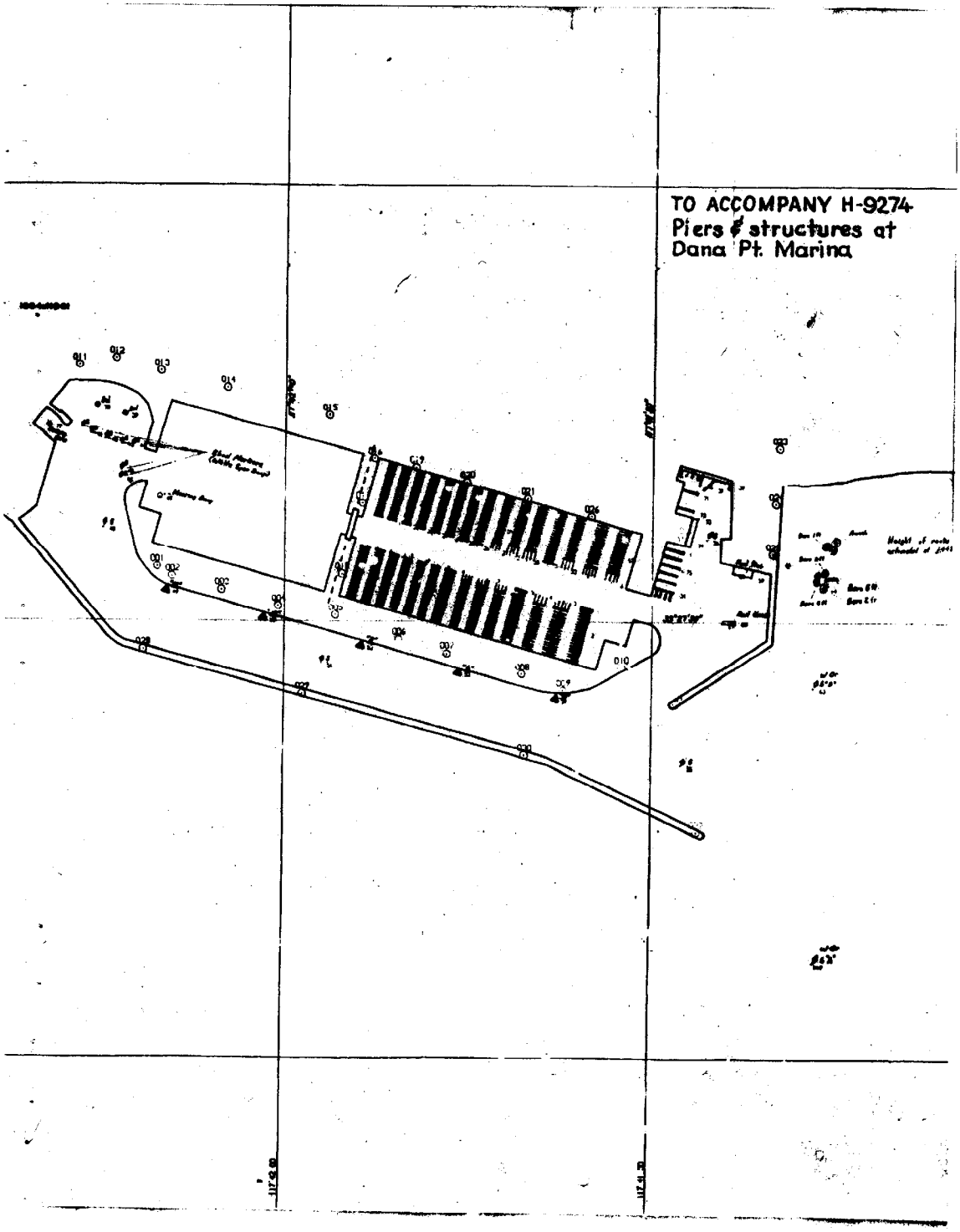
Positions and Soundings were verified by Matthew G. Sanders.

Applied to stds 6-6-74
CAS

Checked for critical corr To Aids HD 6/19/74

USCOMM-DC 37009-P66


118° 00'
117° 00'
34° 00'
TO ACCOMPANY
H-9274 (RA-5-1-72)
Long Beach
H-9274
RA-5-1-72
RA-10-2-72
RA-10-1-72
RA-10-8-71
Oceanside
RA-10-7-71
RA-40-3-71
RA-40-1-72
GULF OF SANTA CATALINA
33° 00'
INDEX TO SURVEY SHEETS
GULF OF SANTA CATALINA
OPR-411 SOUTHERN CALIFORNIA
NOAA SHIP RAINIER 1972
SCALE OF CHART C&GS 5020
0
15


TO ACCOMPANY H-9274
Piers & structures at
Dana Pt. Marina

DESCRIPTIVE REPORT

To Accompany Hydrographic Survey

H-9274 (Field No. RA-5-1-72)

Scale 1:5,000

1972

NOAA Ship RAINIER

G.E. Haraden, Commanding

A. PROJECT

This survey was conducted in accordance with PROJECT INSTRUCTIONS: OPR-411-RA-72 dated 7 January 1972. Subsequent changes to these instructions do not affect this survey.

B. AREA SURVEYED

This survey covers the Dana Point Marina and immediately adjacent waters on the Southern California Coast, and is bounded on the west by longitude 117° 42' 45"W, on the south by latitude 33° 27' 00"N, and on the east by longitude 117° 41' 00"W.

The survey began on 22 ~~February~~ March and was completed on 29 ~~February~~ March 1972. This marina was dredged ~~from dry land,~~ however, the offshore portion of the survey sheet is covered by prior survey H-5603, 1:10,000, 1934. There are no junctions with contemporary surveys *at this time.*

C. SOUNDING VESSEL

Sounding vessels were the NOAA Ship RAINIER's Bertram Launches RA-3 and RA-4. In addition, hand leadline soundings were taken in conjunction with detached positions by a survey party in a 16-foot skiff. All depths from detached positions were applied to the boat sheet by hand in blue ink.

D. SOUNDING EQUIPMENT

More than 95% of the soundings were recorded on Raytheon DE-723 fathometers numbers 253 in launch RA-3 and 819 in launch RA-4, which performed well throughout the survey. The remaining soundings were recorded from leadline observations at the ends of slips or other detached positions.

Fine arc and A-F checks were made at frequent intervals during the operation of the fathometers. The Transducer Correction (TRA) was obtained by summing the initial and phase corrections. Initial corrections were scanned from the fathograms and an abstract of correctors was prepared.

The fathometers were phased electronically prior to the survey and field phase comparisons verified that phase corrections were zero through out the survey. Correctors were merged into the Transducer Correction/Table Indicator (TC/TI) tape for automated processing (See Appendix).

Velocity Corrections were computed from bar checks obtained in the working area. The resulting velocity tables, which combine the actual vessel draft and the appropriate velocity correctors, were entered on tape and referenced in the TC/TI tape (See Appendix).

All leadline soundings were read directly to the nearest 0.1 fathoms in the field, and later converted to feet by the PDP 8/e System for plotting.

For further sounding correction information, see Special Report, Corrections to Echo Soundings, OPR-411, NOAA Ship RAINIER, 1972.

E. SMOOTH SHEET

The smooth sheet will be mechanically produced at PMC on a flatbed plotter from automated processing tapes provided by this vessel.

The boat sheet was produced aboard the RAINIER by the PDP 8/e Hydroplot/Hydrolog System and is a Modified Transverse Mercator Projection with the Central Meridian located at 118° 25' 00"W and the Control Latitude at 3,500,000 merers N. The projection was verified in the field. Positions were applied to the launch sheet at the end of each working day by the System's Complot Model DP-3-5 plotter and later smoothed where necessary before plotting on the final copy of the boat sheet. Two separate overlays were produced: One clarifying the location of all detached positions and the second showing the soundings associated with those positions as well as a development in the area of Lat 33° 27' 15"N, Long. 117° 41' 15"W. Selected detached position soundings were transferred to the final boat sheet copy by hand, in blue ink.

F. CONTROL

This survey was controlled by three point sextant fixes on visual objects. In addition, on J.D. 087-089, Hi-Fix Pattern II was used for left-right readout to aid the coxswain in holding course. A magnetic course was recorded corresponding to the pattern II arcs in the area. No Hi-Fix data was gathered.

With the exception of hydrographic signals 22, 31, and 32, all signals were located by intersection from Base Points established by a closed traverse. The traverse was extended from DANA POINT, 1884/1961 through Base Point C, to Base Point A, closing on SAN, 1933. Azimuth checks were completed and the resulting angular error distributed through the traverse azimuths. The resulting traverse computation closed within one part in 15,194. This error was distributed throughout the traverse in proportion to the lengths of the individual legs. Base Points B, A-Offset, and C-Offset, were established along the A-C traverse leg to provide a check on intersected positions. Signals were intersected from three Base Points and yielded side checks ranging from 1:8,500 to 1:1,250,000. Signal 23 was located with no check and signal 27; with a check by sextant resection. The three hydrographic signals were located by resection using sextant angles with a check angle.

Angular measurements were made with Wild T-2 theodolites and lineal measurements with either Tellurometers or steel tape. Angular measurements were made on each local object using three plate settings and a double reading of the micrometer. All tellurometer observations were completed using four Cavity Tune settings distributed over the normal 100 unit range and results were meaned in the normal manner. Meterological corrections were applied to all Tellurometer distances. All short distances were taped in both feet and meters to minimize the possibility of error. No permanent marks were set. All computations were performed in State Plane Coordinates (California zone 6) on the PDP 8/e computer. Where intersection azimuths approached 0° or 180°, triangle position computations were performed; avoiding the known inaccuracy of AM 406 in those regions. In these cases, side checks were commensurate with those mentioned above. All horizontal control data was forwarded to PMC on 20 April under transmittal RA-27-72.

A list of all signals established is included in the Separates Following Text.

G. SHORELINE

The shoreline shown on this survey was obtained from 1:10,000 scale manuscripts TP-00415 (1971-73) ~~and T-11864~~. Shoreline details were transferred from ~~these~~ the manuscripts using the enlarger at PMC. ~~Some difficulty was experienced with shoreline detail at the junction of the manuscripts~~. The more recent manuscript TP-00415 was assumed to be correct in the overlapping area. Visual three point fixes were used to establish the locations of facilities in the harbor area and the resulting positions are shown on the position overlay. All finger piers were compiled on the position overlay to reflect the correct number of slips available. No other changes to the shoreline compilation were necessary. The existence of the ledge shown in Lat. 33° 27' 35"N, Long. 117° 42' 20"W was verified. Also, the existence of the rock in Lat. 33° 27' 37"N, Longitude 117° 42' 26"W was verified when the launch struck it at position number 174. Detached positions were obtained to verify the rocks in Lat. 33° 27' 32"N, Long. 117° 41' 15"W, (See position overlay). Other features shown in blue were not verified during this survey.

In many cases, the low water line could not be verified due to steep incline of the riprap and concrete bulkheads in the marina; and the high surf in unprotected areas.

H. CROSSLINES

More than 15% of the main scheme miles run on this survey are crosslines. Comparisons of soundings at crossings are excellent and no adjustments are necessary. All crossings agree within one foot.

I. JUNCTIONS

None. See Review, item 5.

6

J. COMPARISON WITH PRIOR SURVEYS

Prior surveys were performed before extensive dredging and construction in the marina area. Therefore, comparisons with prior surveys in this area are not valid. Outside the marina, comparisons with prior survey H-5603(1934) & H-5604(1934) are good, agreeing within 2 feet. No adjustments are necessary. A development was run attempting to isolate the rock and shoal sounding of ½ fathom in Lat. 33° 27' 17"N and Long. 117° 41' 18"W (Pre-Survey Review, Item 7, Sheet 2 of 2, 11/10/69). The feature could not be found; however, the development yielded a shoal sounding of 13 feet on a sharp peak in Lat. 33° 27' 15"N, Long. 117° 41' 17"W. *This area is ~~superseded~~ covered by C of E survey BP-85669-Aug. 1972.* *See Review Item 7A-4*

K. COMPARISON WITH CHART

Selected soundings from the 1:20,000 scale inset of C&GS 5142, 10th Ed. Oct 30/71 have been transferred to the to the boatsheet. In ~~all~~ *most* cases, comparisons agree within 2 feet; no adjustments are necessary. As was mentioned under Section J. Comparison with Prior Surveys, the rock and half fathom shoal in Lat 33° 27' 17"N and Longitude 117° 41' 18"W were not found. No soundings are currently charted within the marina. *See Review Item 7A-1*

L. ADEQUACY OF SURVEY

The survey is considered complete and adequate to supersede prior surveys for charting.

M. AIDS TO NAVIGATION

Dana Point Outer Breakwater Light and Dana Point Inner Breakwater Light characteristics are currently correctly charted on the inset to C&GS 5142, 10th Ed., Oct 30/71 and are correctly listed in the Light List, Vol. III, (CG-162), 1971 updated NM 4/71. Five red triangular day markers have been established along the north edge of the main marina channel. They are numbered as follows:

Position Number	Marker Number
049	"12"
050	"10"
052	"8"
053	"6"
054	"4"

In addition, a square black day marker, numbered "1", is on the Outer Breakwater Light structure and a red triangular day marker, numbered "2", is on the Inner Breakwater Light structure. No additional non floating aids to navigation were observed in the area covered by the boatsheet. The aids mentioned above adequately serve the purposes of guiding mariners into the marina, marking the ends of the breakwaters, and guiding mariners through the channel to moorage.

The white and orange spar buoys shown on the inset to C&GS 5142 have been relocated as shown on the position overlay. Buoy "A" is now the southern buoy while buoy "B" is the northern buoy (these positions are currently reversed on C&GS 5142). In addition, several small white spar buoys have been established within the marina. These buoys bear no number designations, but do bear warnings to navigators as follows: *See Review Item 7-C-3*

Position Number	Buoy Information
036	5 MPH (Mid channel)
040	Shoal
041	Shoal
042	Shoal
043	Closed Area
044	Closed Area
045	Shoal
046	Shoal
048	5 MPH (Midchannel)
051	5 MPH (Midchannel)
055	5 MPH (Midchannel)

Two mooring buoys were also located; position numbers 47 and 77. None of the above buoys are lighted.

N. STATISTICS

VESSEL	MILES HYDRO	NO. POSITIONS
RA-3	30.9	340
RA-4	29.1	355
16' Skiff		78
Total	60.0	773

The sheet contains 1.10 square nautical miles. Fourteen bottom samples were obtained (See Appendix for log sheet).

O. DATA PROCESSING

Raw data for J.D. 082-087 was recorded in the field in sounding volumes. The data was later hand logged and converted to master tape format using program AM 330, on the PDP 8/e Hydroplot/Hydrolog System. Raw data for J.D. 088-089 was logged on time in the launch and later converted to master format by AM 330. After the initial plot, data tapes were edited to remove rejected data and corrector tapes were prepared using the standard PDP 8/e corrector tape format to correct soundings, include peaks and deeps, and correct errors in recorded angles or signal numbers.

Separate master tapes and corresponding corrector tapes were prepared for each vessel and day number.

Standard Formats as specified in the Instruction Manual, Automated Hydrographic Surveys, were used for the TC/TI and Velocity Correction tapes. Note: TRA corrector values and velocity table numbers shown on the Hydroplot/Hydrolog tapes are to be ignored for processing at PMC. The correct data is listed on the TC/TI tape.

Soundings displayed on the boat sheet have been reduced for predicted tides and an assumed launch draft of 2.0 feet.

P. RECOMMENDATIONS

It is recommended that Dana Point Marina be furnished a copy of the boat sheet as soon as possible.

NOAA FORM 76-40
(2-71)
PRESCRIBED BY
PHOTOGRAMMETRY INSTRUCTION NO. 64.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- ☐ FIELD INSPECTION
- ☒ FIELD EDIT
- ☐ COMPILATION
- ☐ FINAL REVIEW
- ☐ QUALITY CONTROL AND REVIEW

(See reverse for responsible personnel)

☒ TO BE CHARTED
☐ TO BE DELETED

ORIGINATING LOCATION: NOAA Ship RAINIER

DATE: 3/20/72

The following objects have (have not) been inspected from seaward to determine their value as landmarks:

JOB NUMBER: ~~PHX~~ OPR-411

STATE:

SURVEY NUMBER: ~~PXX~~ TP-00415

DATUM: NA-1927

CHARTING NAME	DESCRIPTION	POSITION LATITUDE ° ′	POSITION LATITUDE ″ D.M.METERS	POSITION LONGITUDE ° ′	POSITION LONGITUDE ″ D.P.METERS	METHOD AND DATE OF LOCATION (See instructions on reverse of this form) FIELD INSPECTION	COMPILATION	FIELD EDIT	CHARTS AFFECTED
Light List 363.10	Dana Point Outer Breakwater Light #1 ✓	33/ 27	15.64	117/ 41	26.38			F.4.c March 1972	C&GS 5101, 5142
Light List 363.20	Dana Point Inner Breakwater Light #2 ✓	33/ 27	24.37	117/ 41	28.04			F.3.a March 1972	C&GS 5101, 5142
	Day Beacon #4 ✓	33/ 27	24.74	117/ 41	37.89			F.4.c March 1972	C&GS 5142
	Day Beacon #6 ✓	33/ 27	26.55	117/ 41	45.83			F.4.c March 1972	C&GS 5142
	Day Beacon #8 ✓	33/ 27	28.42	117/ 41	53.82			F.4.c March 1972	C&GS 5142
	Day Beacon #10 ✓	33/ 27	30.27	117/ 42	01.76			F.4.c March 1972	C&GS 5142
	Day Beacon #12 ✓	33/ 27	32.14	117/ 42	09.73			F.4.c March 1972	C&GS 5142
					SEA				

TYPE OF ACTION	RESPONSIBLE PERSONNEL NAME	TITLE
1. Objects inspected from seaward	N.M. Franklin	☐ FIELD INSPECTOR ☒ FIELD EDITOR
2. Positions determined and/or verified		FIELD INSPECTOR
	R.B. Melby	FIELD EDITOR
		COMPILER
3. Forms originated by Quality Control and Review Group and final review activities		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR 'METHOD AND DATE OF LOCATION' SECTION

NOTE: 'Photogrammetric Positions' are dependent entirely, or in part, upon control established by photogrammetric methods.
'Field Positions' are determined by field observations based entirely upon ground control.

COLUMN TITLE

COMPILATION

FIELD INSPECTION AND FIELD EDIT

TYPE OF ENTRIES

Applicable to office identified and located objects only. Enter the number and date of the photograph used to identify the object.

1. New Position Determined–Enter the applicable data by symbols as indicated below:

F – Field
1. Triangulation
2. Traverse
3. Intersection
4. Resection
   a. Theodolite
   b. Planetable
   c. Sextant

P – Photogrammetric
1. Field identified
2. Theodolite
3. Planetable
4. Sextant

EXAMPLES:

F. 3.c

P.2

Immediately beneath the data described above, enter the following:

a. For 'Field Positions' enter the date of location.

b. For 'Photogrammetric Positions' enter the date of field work; and, if a photograph was used in locating the object or the object was identified on a photograph, enter the number of the photograph used.

2. Triangulation Station Recovered – Enter 'Triang. Rec. mo/day/yr.'

3. Position Verified – Enter 'Verif. mo/day/yr.'

* U.S. GOVERNMENT PRINTING OFFICE: 1971-769374/445 REG.#6

NOAA FORM 76-40
(2-71)
PRESCRIBED BY
PHOTOGRAMMETRY INSTRUCTION NO. 64.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- ☐ FIELD INSPECTION
- ☒ FIELD EDIT
- ☐ COMPILATION
- ☐ FINAL REVIEW
- ☐ QUALITY CONTROL AND REVIEW

(See reverse for responsible personnel)

☐ TO BE CHARTED
☒ TO BE DELETED

ORIGINATING LOCATION: NOAA Ship RAINIER

DATE: 3/20/72

The following objects have (have not) been inspected from seaward to determine their value as landmarks:

JOB NUMBER: XXXX OPR-411

SURVEY NUMBER: XXXXXXX TP-00415

STATE:

DATUM: NA-1927

POSITION

CHARTING NAME	DESCRIPTION	LATITUDE ° ′	LATITUDE ″ D.M.METERS	LONGITUDE ° ′	LONGITUDE ″ D.P.METERS	METHOD AND DATE OF LOCATION (See instructions on reverse of this form) FIELD INSPECTION	COMPILATION	FIELD EDIT	CHARTS AFFECTED
TOWER	Dana Pt. Richfield Tower 1932 (Tower destroyed)	33° 27.8′		117° 41.1′		3/20/72	71L1506	P.1	C&GS 5101
BLDG.	Destroyed	33° 27.3′		117° 40.0′		3/20/72	71L1506	P.1	C&GS 5101
12									NMC.

TYPE OF ACTION	RESPONSIBLE PERSONNEL	
	NAME	TITLE
1. Objects inspected from seaward	N.M. Franklin	☐ FIELD INSPECTOR ☑ FIELD EDITOR
2. Positions determined and/or verified		FIELD INSPECTOR
	R.B. Melby	FIELD EDITOR
		COMPILER
3. Forms originated by Quality Control and Review Group and final review activities		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR 'METHOD AND DATE OF LOCATION' SECTION

NOTE: 'Photogrammetric Positions' are dependent entirely, or in part, upon control established by photogrammetric methods.
'Field Positions' are determined by field observations based entirely upon ground control.

COLUMN TITLE

COMPILATION

FIELD INSPECTION AND FIELD EDIT

TYPE OF ENTRIES

Applicable to office identified and located objects only. Enter the number and date of the photograph used to identify the object.

1. New Position Determined–Enter the applicable data by symbols as indicated below:

F – Field
1. Triangulation
2. Traverse
3. Intersection
4. Resection
   a. Theodolite
   b. Planetable
   c. Sextant

P – Photogrammetric
1. Field identified
2. Theodolite
3. Planetable
4. Sextant

EXAMPLES:

F. 3.c

P.2

Immediately beneath the data described above, enter the following:

a. For 'Field Positions' enter the date of location.

b. For 'Photogrammetric Positions' enter the date of field work; and, if a photograph was used in locating the object or the object was identified on a photograph, enter the number of the photograph used.

2. Triangulation Station Recovered – Enter 'Triang. Rec. mo/day/yr.'

3. Position Verified – Enter 'Verif. mo/day/yr.'

* U.S. GOVERNMENT PRINTING OFFICE: 1971-769374/445 REG.#6

FORM C&GS 33M
(6-66)

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

U.S. DEPARTMENT OF COMMERCE
ESSA
COAST AND GEODETIC SURVEY

VESSEL: RA4 | PROJ. NO.: OPR 411 | YEAR: 72 | RA-5-1-72 | CHECKED BY: MLA | DATE CHECKED: 3/30/72

SERIAL NO.	DATE	SAMPLE POSITION LATITUDE N	SAMPLE POSITION LONGITUDE W	DEPTH (Fathoms) FT	WEIGHT OF SAMPLER	APPROX. PENETRATION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, dented cutter, stat. no., type of bottom relief i.e., slope, plain, disposition, etc.)	OBS INIT
-757	3/28/72	33/27/30	117/41/25	12.5	7 lbs				fn gn S ✓		
-758	"	33/27/34	117/41/42	9.0	"				fn gn S, Pb ✓		"
-759	"	33/27/37	117/41/56	9.8	"				fn gn S, Sh ✓		"
-760	"	33/27/41	117/42/08	9.4	"				fn gn S, Pb ✓		"
-761	"	33/27/36	117/42/15	14.0	"				fn gn S ✓		"
-762	"	33/27/29	117/42/02	24.0	"				fn gn S, Pb ✓		
-763	"	33/27/25	117/41/48	22.2	"				fn gn S ✓		
-764	"	33/27/21	117/41/31	17.7	"				fn gn & bk S ✓		
-791	3/29/72	33/27/22	117/41/11	18.0	"				fn gn S, Sh ✓		
-792	"	33/27/07	117/41/17	32.5	"				fn gn S, yl spk, worm ✓		
-793	"	33/27/08	117/41/37	37.0	"				fn gn S		
-794	"	33/27/11	117/42/00	40.0	"				fn gn S ✓		
-795	"	33/27/16	117/42/13	40.5	"				fn gn & bk S ✓		
-796	"	33/27/16	117/42/32	44.0	"				fn gn S, bk M ✓		

Use more than one line per sample if necessary.

24

USCOMM-DC 37019-

CORRECTIONS TO ECHO SOUNDINGS

a. TC/TI Tape

b. Velocity Table

TC/TI TAPE
SHEET RA-5-1-72
FATH #253 TRA
LAUNCH RA3 CORR. TABLE # Day
091315 0 0000 0013 082 000000 000000
083515 0 0000 0013 083 000000 000000

TC/TI TAPE
SHEET RA-5-1-72
FATH #819
LAUNCH RA4
113230 0 0000 0014 087 000000 000000
085045 0 0000 0014 088 000000 000000
091800 0 0000 0014 089 000000 000000

TC/TI TAPE
SHEET RA-5-1-72
LEADLINE
SKIFF
100500 0 0000 0000 082 000000 000000
111100 0 0000 0000 087 000000 000000

VELOCITY CORRECTOR TABLES IN FEET
RA-5-1-72

TABLE #14 Launch #4

```
DEPTH     CORR
000015 0 0012 0014 000 000000 000000
000125 0 0014
000210 0 0016
000305 0 0018
000385 0 0020
000470 0 0022
000560 0 0024
000650 0 0026
000730 0 0028
```

TABLE #13 Launch-3 - day-082&083

```
DEPTH     CORR
000040 0 0012 0013 000 000000 000000
000125 0 0014
000205 0 0016
000285 0 0018
000370 0 0020
000455 0 0022
000540 0 0024
000625 0 0026
000715 0 0028
```

TABLE #00

```
DEPTH     CORR
000001 0 0000 0000 000 000000 000000
000700 0 0000
```

SIGNAL TAPE LISTING
H-9274 (RA-5-1-72)

NO.	Latitude	Longitude	Description
001	33 27 3373	117 42 1040	LIGHT STANDARD - SINGLE WRAP
002	33 27 3308	117 42 0920	LIGHT STANDARD - DOUBLE WRAP
003	33 27 3213	117 42 0516	LIGHT STANDARD - SINGLE WRAP
004	33 27 3105	117 42 0053	LIGHT STANDARD - DOUBLE WRAP
005	33 27 3042	117 41 5591	LIGHT STANDARD - SINGLE WRAP
006	33 27 2877	117 41 5070	LIGHT STANDARD - DOUBLE WRAP
007	33 27 2784	117 41 4675	LIGHT STANDARD - SINGLE WRAP
008	33 27 2642	117 41 4065	LIGHT STANDARD - DOUBLE WRAP
009	33 27 2529	117 41 3720	LIGHT STANDARD - SINGLE WRAP
010	33 27 2691	117 41 3247	LIGHT STANDARD - DOUBLE WRAP
011	33 27 4764	117 42 1692	LIGHT STANDARD - SINGLE WRAP
012	33 27 4811	117 42 1387	LIGHT STANDARD - DOUBLE WRAP
013	33 27 4725	117 42 1020	LIGHT STANDARD - SINGLE WRAP
014	33 27 4610	117 42 0480	LIGHT STANDARD - DOUBLE WRAP
015	33 27 4424	117 41 5647	LIGHT STANDARD - SINGLE WRAP
016	33 27 4118	117 41 5274	LIGHT STANDARD - DOUBLE WRAP
017	33 27 3812	117 41 5375	LIGHT STANDARD - SINGLE WRAP
018	33 27 3328	117 41 5536	LIGHT STANDARD - DOUBLE WRAP
019	33 27 4057	117 41 4930	LEFT EDGE OF ROOF, BROWN BUILDING
020	33 27 3962	117 41 4519	LEFT EDGE OF ROOF, BROWN BUILDING
021	33 27 3847	117 41 4027	LEFT EDGE OF ROOF, BROWN BUILDING
022	33 27 1564	117 41 2638	DAY BEACON AND LIGHT - #1 (Hydro)
023	33 27 4201	117 41 1974	LIGHT STANDARD - SINGLE WRAP
024	33 27 3819	117 41 2001	LIGHT STANDARD - DOUBLE WRAP
025	33 27 3471	117 41 2023	LIGHT STANDARD - SINGLE WRAP
026	33 27 3728	117 41 3499	LEFT EDGE OF ROOF, BROWN BUILDING
027	33 27 2437	117 41 2804	DANA POINT INNER BREAKWATER LIGHT 2, 1972
028	33 27 2806	117 42 1152	B.P. "A", TWIST BANNER
029	33 27 2503	117 41 5853	B.P. "B", TWIST BANNER
030	33 27 2080	117 41 4036	B.P. "C", TWIST BANNER
031	33 27 3591	117 41 2737	FLAGPOLE - UNWRAPPED (Hydro)
032	33 27 3728	117 42 2257	SIGN - SOUTHERN MOST ON BREAKWATER (Hydro)
803	33 27 2561	117 42 4608	SAN JUAN ROCKS, HIGHEST, 1933
805	33 27 5110	117 42 3017	DANA POINT, BANNER, 1884/1961
806	33 27 3789	117 42 4092	SAN, BANNER, 1933

COMMAND?

11-5-75

SIGNAL PLOTTER CARDS

H-NO.		LATITUDE	LONGITUDE	X	Y	X	
09274	001	72 33273373	117421040	03504	04123		001
09274	002	72 33273308	117420920	03569	04081		002
09274	003	72 33273213	117420516	03788	04019		003
09274	004	72 33273105	117420053	04039	03949		004
09274	005	72 33273042	117415591	04289	03909		005
09274	006	72 33272877	117415070	04572	03802		006
09274	007	72 33272784	117414675	04786	03742		007
09274	008	72 33272642	117414065	05117	03650		008
09274	009	72 33272529	117413720	05304	03577		009
09274	010	72 33272691	117413247	05561	03681		010
09274	011	72 33274764	~~117424692~~ 01522		05023		011 → Long 1174216?2 Corrected 11-15-73 JK
09274	012	72 33274811	117421387	03316	05053		012
09274	013	72 33274725	117421020	03515	04997		013
09274	014	72 33274610	117420480	03807	04923		014
09274	015	72 33274424	117415647	04259	04803		015
09274	016	72 33274118	117415274	04461	04605		016
09274	017	72 33273812	117415375	04407	04407		017
09274	018	72 33273328	117415536	04319	04094		018
09274	019	72 33274057	117414930	04648	04565		019
09274	020	72 33273962	117414519	04871	04504		020
09274	021	72 33273847	117414027	05138	04429		021
09274	022	72 33271564	117412638	05891	02952		022
09274	023	72 33274201	117411974	06251	04658		023
09274	024	72 33273819	117412001	06236	04411		024
09274	025	72 33273471	117412023	06224	04186		025
09274	026	72 33273728	117413499	05424	04353		026
09274	027	72 33272437	117412804	05801	03517		027
09274	028	72 33272806	117421152	03443	03756		028
09274	029	72 33272503	117415853	04147	03560		029
09274	030	72 33272080	117414036	05133	03286		030
09274	031	72 33273591	117412737	05837	04264		031
09274	032	72 33273728	117422257	02844	04353		032
09274	803	72 33272561	117424608	01569	03597		803
09274	805	72 33275110	117423017	02432	05246		805
09274	806	72 33273789	117424092	01849	04392		806

POSITION ABSTRACT

Vessel	Julian Day	Position Numbers	
RA-3	082	101-163	
"	"	164	Rejected
"	"	165-272	
"	083	273-440	
RA-4	087	442-465	
"	"	466-467	Rejected
"	"	468-545	
"	088	546-709	
"	"	710-711	Rejected
"	"	712-764	
"	089	765-796	
16' Skiff	082	001-038	
"	087	039-078	

FORM # 2

PARAMETERS FOR DIGITAL COMPUTING

POLYCONIC PROJECTION

(1) Project No. 411

(2) H No. 9274

(3) Field No. RA-5-1-72

(4) Requested by _____

(5) Ship or Office PMC

(6) Date Required _____

(7) Visual ☒ (Pt.(0)) or Fathoms (1) ☐ (8) Electronic ☐ (fill out form #3)

(10) XKN (SP 5) Distance from CMER to East Edge (NYX = 1) or West Edge (NYX = 0). (Origin) _____ Meters

(11) YKN (SP 241) Distance from Equator to South Edge of Sheet. (Origin) _____ Meters

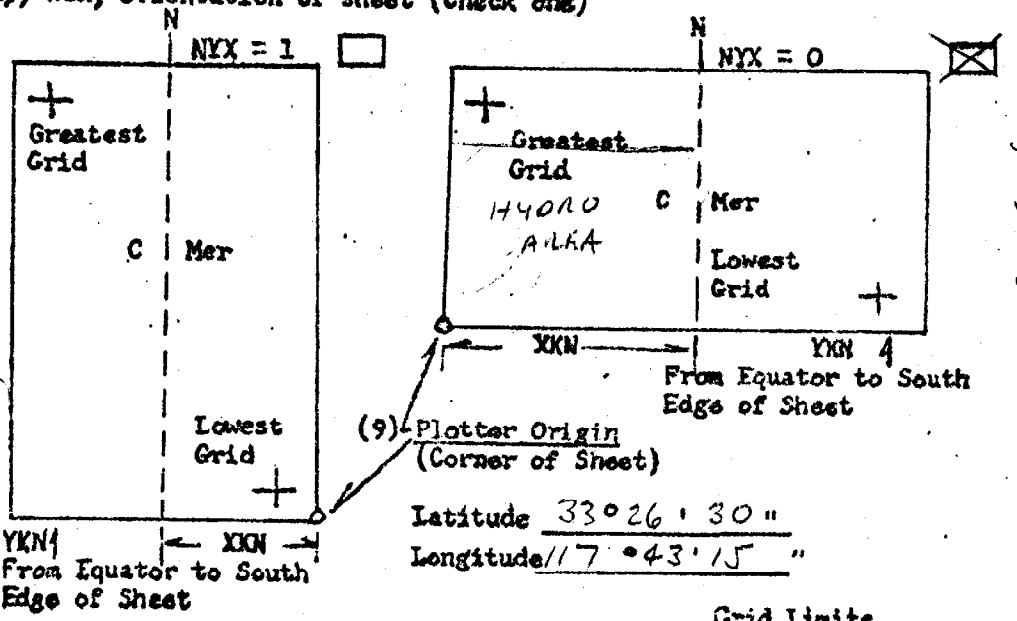
SOGS IN FEET

(12) Central Meridian 117° 42' 00"

(13) Survey Scale 1: 5000

(14) Size of Sheet (Check one) 36x60 ☐ 42x60 ☐ 36x30"

(15) NYX, Orientation of sheet (Check one)



LOOK FOR SURPLUS SMOOTH SHEET PAPER OR HALF SHEET WITH H-924

PLOT IN PLOTTER ORIGIN CENTER

(9) Platter Origin (Corner of Sheet)

Latitude 33° 26' 30"

Longitude 117° 43' 15"

	Grid Limits		
(16) Greatest Latitude	33° 28' 15"	(Projection Line Interval Page 4 Hydro Manual)	
(17) Lowest Latitude	33° 26' 45"		
(18) Difference	1' 30"	(19)	0' 15"
		(20)	06 YSN
(21) Greatest Longitude	117° 43' 00"		
(22) Lowest Longitude	117° 40' 45"	(24)	0.15"
(23) Difference	2' 15"	(25)	09 XSN

H 9274
Field No. RA-5-1-72
Date

HYDRO II AND III PARAMETER CARDS

PARAMETER CARD II

			RDA	XKN	YKN	CMR	SCA	MDX	FOF	JN	YR
Semi major axis of the earth	6,378,206.4	meters	6	3	7	8	2	0	6	4	0	7
X Constant- Distance from central meridian to origin of plotter SP 5		meters	1	9	3	7	2	2	6	0	0	4
Y Constant - Distance from equator to origin of plotter SP 2&3		meters	3	7	0	1	5	2	9	9	0	7
Central Meridian of Projection	117° 12' 00"		4	2	3	7	2	2	0	0	0	4
Plotter Scale/Survey Scale	*20498.6876 1: 5000		2	0	9	9	7	3	7	5	0	1
North/south axis of sheet - to correspond to (Y axis - 0) (X axis - 1) of plotter												0
Feet/Fathom indicator	0 - feet 1 - fathom											0
H Identification No.										7	7	4
											9	2

FOF - 1

PARAMETER CARD III

		YST	XST	DXI	XSN	YSN
Lowest Lat. Intersection	33° 26' 45.00"	2	0	4	0	6
Lowest Long. Intersection	117° 40' 45.00"	4	3	7	5	6
Difference between Grid	15.00"	1	5	0	0	4
Interval (Long)					0	9
Interval (Lat)					0	6

Computed
Punched
Checkdd
Date

PARAMETER TAPE LISTING H-9274 (RA-5-1-72)

****

```
DEST=119000
CLAT=3500000
CMER=118/25/00
GRID=15
PLSCL=5000
PLAT=33/26/50
PLON=117/43/00
MLAT=33/43/12.946
MLON=118/16/56.980
S1LAT=33/21/25.309
S1LON=118/21/50.721
S2LAT=33/14/57.267
S2LON=117/25/28.755
Q=1799.6
VESNO=2120
YR=72
```

APPROVAL SHEET

OPR-411

H-9274 (Field No. RA-5-1-72)

This boat sheet covers the Dana Point Marina and immediately adjacent waters. The fieldwork and data was examimed daily during the survey. The survey is considered adequate and no additional field work is recommended.

The boat sheet and accompanying records are approved for transmittal to PMC Processing Division.

G.E. Haraden

G.E. Haraden
CAPT., NOAA

APPROVAL SHEET

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

Examined and approved,

For: Richard D Lyman

James S. Green
Supervisory Cartographic Technician

Approved and forwarded,

Walter F. Forster

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

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

2/28/73

Processing Division: Pacific Marine Center

Hourly heights are approved for

Tide Station Used (NOAA form 77-12): Dana Point, California

Period: March 7 - 29, 1972

HYDROGRAPHIC SHEET: H-9253, H-9274, H-9275, H-9276

OPR: 411

Locality: Dana Point, southern California

Plane of reference (mean lower low water): 3.3 ft.

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

Remarks: Zoning instructions. Use Dana Point, California hourly heights direct.

8/20/73
PER HUBBARD USE SAN DIEGO
GAGE WITH -12 min AND X.92
FOR H-9253 (1971) WORK
(ALSO FOR H-9274 [illegible] [illegible] 1971)

Chief, Tides Branch

TIDE NOTE

H-9274 (RA-5-1-72)

The ADR Tide Gage installed by the RAINIER at Dana Point, California (Lat. 33° 27' 44"N, Long. 117° 42' 18"W) will be used to control this survey. Hourly heights are being furnished by this vessel. Missing data and the reduction to MLLW will be supplied by the Tides Branch in Rockville, Maryland. This gage operated on time meridian 120°W.

Predicted tides for the Point Loma subordinate station (No. 425, Lat. 32° 40'N, Long. 117° 14'W) were used to reduce boat sheet soundings and were obtained from the 1972 Tide Tables for the North American Coast. The predicted tide correctors were conviently obtained through the use of Digital Equipment Corporation PDP 8/e computer and programs AM 500 and AM 504.

12

GEOGRAPHIC NAMES

Survey No. H-9274

Name on Survey	On Chart No. A	On previous survey No. B	On U.S. quadrang. Maps C	From local information D	On local Maps E	P.O. Guide or Map F	Rand McNally Atlas G	U.S. Light List H	K	
CAPISTRANO BIGHT										1
DANA ~~COVE~~ POINT (city)										2
DANA POINT (Point)										3
DANA POINT HARBOR										4
DOHENY STATE BEACH										5
GULF OF SANTA CATALINA										6
~~SAN JUAN ANCHORAGE~~ C&H										7
SAN JUAN CREEK										8
SAN JUAN ROCK										9
										10
										11
										12
										13
										14
										15
										16
										17
					Approved					18
					Chas. E. Harrington					19
					Staff Geographer					20
					25 Nov 1974					21
										22
										23
										24
										25
										26
										27

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

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

HYDROGRAPHIC SURVEY STATISTICS

HYDROGRAPHIC SURVEY NO. H-9274

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET & PNO	1	BOAT SHEETS	1
DESCRIPTIVE REPORT	1	OVERLAYS	5 Box

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES			1			
CAHIERS	1					
VOLUMES	4					
BOXES						

T-SHEET PRINTS *(List)*

SPECIAL REPORTS *(List)*

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				773
POSITIONS CHECKED		773		
POSITIONS REVISED		38		
DEPTH SOUNDINGS REVISED		110		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		0		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		0		
	TIME (MANHOURS)			
Verification of Control	1	6		
Verification of Positions		20		
Verification of Soundings		88		
Smooth Sheet Compilation		55		
ALL OTHER WORK		20		
TOTALS	1	189	226	

PRE-VERIFICATION BY	BEGINNING DATE	ENDING DATE
VERIFICATION BY Matthew G. Sanders Matthew G. Sanders	BEGINNING DATE 17 Dec. 1973	ENDING DATE 10 May 1974
REVIEW BY F.P. Saulsbury	BEGINNING DATE	ENDING DATE 11-6-74

Insp.- D.J. Romesburg 11-19-74 Cartog 15 hr 1-31-95

Reg. No. H-9274

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:

H-9274

Items for Future Pre-Survey Reviews

Bottom and shoreline changes in this area are attributed to sedimentation and accretion created by the breakwater's effect on the alongshore currents.

Position Index Lat.	Long.	Bottom Change Index	Use Index	Resurvey Cycle
332	1175	3	2	50 Years

OFFICE OF MARINE SURVEYS AND MAPS

MARINE SURVEYS DIVISION

HYDROGRAPHIC SURVEY REIVEW

REGISTRY NO. H-9274 FIELD NO. RA-5-1-72

California, Gulf of Santa Catalina, Dana Point

SURVEYED: March 22 - March 29, 1972

PROJECT NO.: OPR-411-RA-72 SCALE: 1:5,000

SOUNDINGS: DE-723 Depth Recorders CONTROL: Sextant Fixes on Shore Signals

Chief of Party ..... G. E. Haraden
Surveyed by ..... W. L. Stubblefield
..... J. R. Farris
..... M. L. Adams
Automated Plot by ..... Gerber Digital Plotter (AMC)
Verified and Inked by ..... H. Clark
..... M. G. Sanders
Reviewed by ..... F. P. Saulsbury
Date: 11-6-74
Inspected by ..... D. Romesburg

1. Description of the Area

This inshore survey covers Dana Point Harbor and its environs. Situated south of Dana Point, Dana Point Harbor is maintained by dredging and protected by two large stone breakwaters.

The foreshore area to the east and west of the harbor are foul with rocks and kelp. Beyond these foul areas and offshore of the breakwaters, the bottom is smooth and gently slopes seaward except for some sharp rises of 3 to 10 feet.

The predominant bottom characteristic is fine sand. Kelp patches are found in this vicinity.

2. Control and Shoreline

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

The shoreline originates with advance photogrammetric manuscript TP-00415 of 1971-72.

3. Hydrography

A. Depths at crossings are in good agreement.

B. The usual depth curves, in general, were adequately delineated. Curves were not completely developed in inshore areas because of heavy surf and the foul nature of the bottom. The 24 ft. and 36 ft. depth curves were added to more adequately depict bottom configuration.

C. The development of the bottom configuration is considered adequate, except as indicated above.

The determination of least depths is considered adequate, except on the 13 ft. shoal in lat. 33°27'15", long. 117°41'17".

4. Condition of the Survey

The sounding records, automated plotting, Descriptive Report and field procedures are adequate and conform to the requirements of the Hydrographic Manual and the Instruction Manual-Automated Hydrographic Surveys, except as follows:

A. Least depths on shoals and questionable soundings in areas of heavy kelp were investigated by fathometer only. No attempt was made to verify or disprove their existence by hand lead, drift sounding or divers.

B. A jagged profile caused by rough seas and questionable traces from kelp necessitated extensive rescanning of fathograms by the reviewer.

C. A number of uneven interval pinnacles rising 3 to 7 feet above the bottom had not been scanned previously.

D. Several station symbols were revised and signal descriptions were added by the reviewer.

5. Junctions

Junctions with unverified surveys H-9276 (1972) on the south and H-9253 (1971) on the west will be discussed in the reviews of those surveys.

6. Comparison with Prior Surveys

A. H-1783 (1887)
H-1907 (1889)
H-1908 (1889)

These prior surveys have been considered in the reviews and are superseded by the surveys discussed below. Further consideration in the present review is considered unnecessary.

B. H-5603 (1934) 1:10,000
H-5604 (1934) 1:10,000

As these prior surveys pre-date extensive dredging and construction in the Dana Point Harbor area, this comparison concerns itself only with that portion of the survey falling outside of this area.

The comparison between prior and present survey depths in general revealed minor differences of 1 to 3 ft. with shoaler depths found on the present survey. Greater differences were noted off the end of the western breakwater. For example, least depths of 18-ft. are presently recorded on the shoal in lat. 33°27.25', long. 117°41.61' compared to 23 ft. on H-5603 (1934). In addition a 23-ft. sounding on the present survey in lat. 33°27.19', long. 117°41.56' falls in prior depths of 31 feet. These differences are attributed to the more detailed development and use of the modern

fathometer to record depths on the present survey versus earlier hand lead soundings. Some shoaling is evident by the seaward accretion of the shoreline east of Dana Point Harbor by approximately 100 meters.

With the addition of several soundings, rocks awash, and two bare islets carried forward from prior surveys, H-5603 (1934), the present survey is adequate to supersede the prior surveys within the common area.

7. Comparison with Chart 5142 (13th Edition - April 20, 1974)

A. Hydrography

The charted hydrography originates with the previously discussed prior surveys which need no further consideration supplemented by the application of soundings from Corps of Engineers blueprints 78834 (1970), 81629 (1971), 85669 (1972), and a copy of the boat sheet (BP-85286) of the present survey.

Attention is directed to the following:

(1) The rock awash (Pre-Survey Review Item #7) charted in lat. 33°27.29', long. 117°41.29' originates with H-1783 (1887). This item falls within a proposed dredging area with requested project depths of 15 feet. Present survey depths of 13-18 feet in this area, color photography of 1971, and a Corps of Engineers condition survey of August 1972, made subsequent to the present survey, indicate that the rock no longer exists and should be deleted from the chart.

(2) A dolphin charted in lat. 33°27.65', long. 117°41.4' originates with Bp 82698, a copy of the incomplete topographic manuscript TP-00415. This dolphin was removed from the subsequent advance manuscript following field edit and was not located on the present survey. It is recommended that the dolphin be deleted from the chart.

(3) The following soundings were charted from Bp 85669, A Corps of Engineers condition survey subsequent to the date of the present survey and should be retained on the chart.

a) 3¼ fm. sounding in lat. 33°27.56', long. 117°42.27'
b) 4¼ fm. sounding in lat. 33°27.49', long. 117°42.08'
c) 4½ fm. sounding in lat. 33°27.46', long. 117°42.01'

(4) A shoal sounding of 6 ft. has been reported in LNM 51 (1974) to fall in lat. 33°27.3', long. 117°41.27'. The sounding originates with a wire drag investigation reported in the Monthly Activities Report Sept-Oct. 1974 of the Ship FAIRWEATHER and should be charted.

Except as noted above the present survey is adequate to supersede the charted hydrography within the common area.

B. Topography

Existing finger pier structures within the Dana Point Harbor at the time of the survey are shown on an overlay accompanying the Descriptive Report.

C. Aids to Navigation

The charted aids to navigation agree with the present survey and adequately serve the purposes intended except for the following:

(1) The marker charted in lat. 33°27.6', long. 117°42.16' originates with Bp 82698, a copy of the incomplete topographic manuscript TP-00415. No marker was found at this position on the present survey and the marker was deleted from the field edited, advance topographic manuscript TP-00415.

(2) The markers charted in lat. 33°27.61', long. 117° 42.25' and in the vicinity of lat. 33°27.71', long. 117°42.25' from Bp 82698 were identified as privately maintained buoys on the present survey.

(3) The privately maintained white and orange spar buoys "A" and "B" charted in lat. 33°27.3', long. 117°42.21' and lat. 33°27.01', long. 117°41.28' respectively, originate with H.O. Notice to Mariners 6 of 1968. The

buoy designations as charted and listed in the Coast Guard Light List of 1972 were found to be reversed on the present survey and differ by as much as 260 meters with the charted positions.

(4) The two dolphins charted in the vicinity of lat. 33°27.75', long. 117°42.25' from Bp 82698 (1971) are private markers numbered "6" and "7" on the present survey.

8. Compliance with Instructions

This survey adequately complies with the project instructions except as indicated in items 3 and 4 of this review.

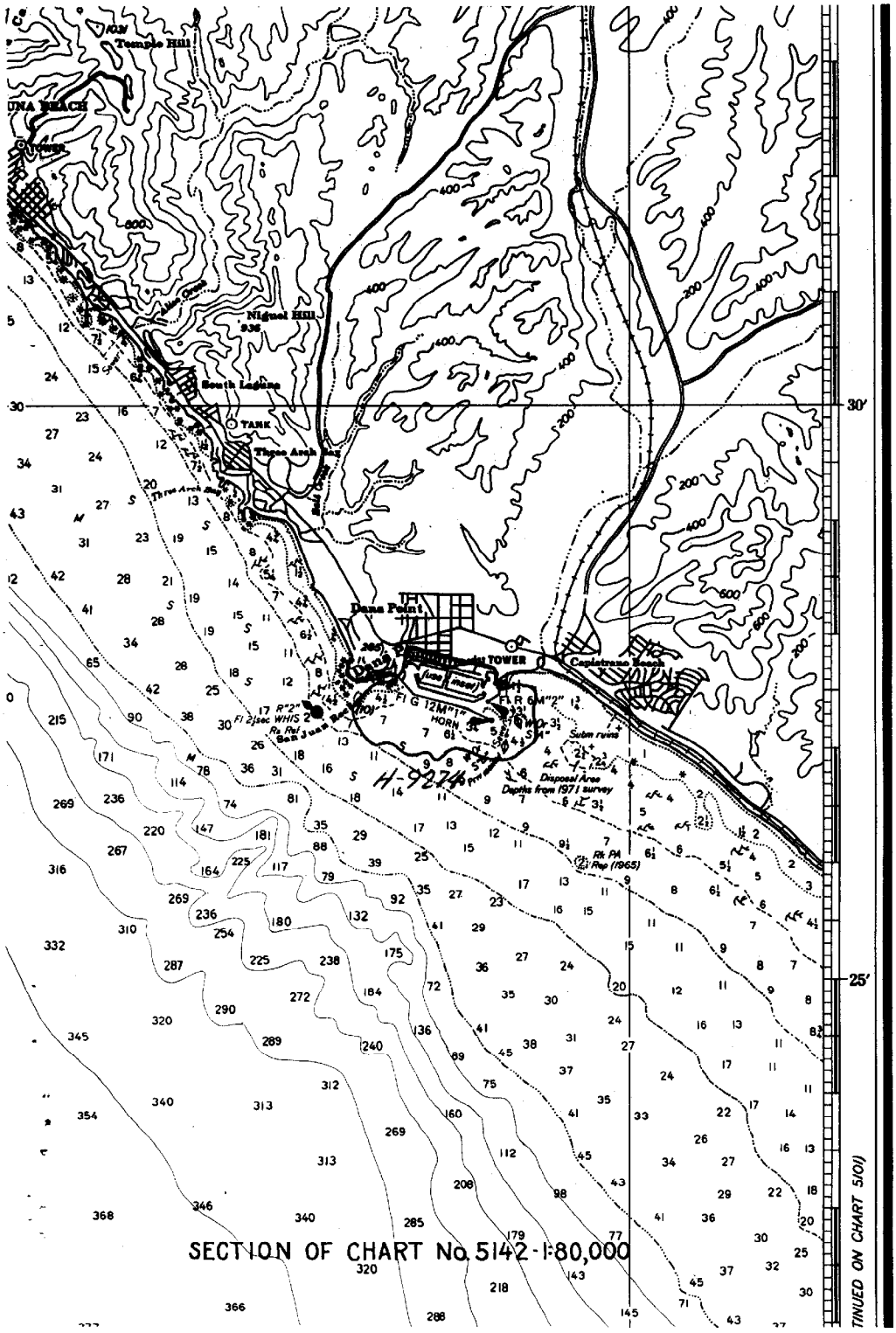
9. Additional Field Work

This is a good basic survey of the area except that heavy kelp traces compromised the accuracy of the shoal development at the entrance to the harbor. Supported by the wire-drag investigation by the Ship FAIRWEATHER which revealed a 6-ft. pinnacle in this vicinity the survey requires no additional field work.

Examined and Approved:

A. J. Peterson
Chief
Marine Surveys Division

R. H. Hamilton
Associate Director
Office of Marine Surveys and Maps



SECTION OF CHART No. 5142 - 1:80,000

18796
18740

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

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9274

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
5142	6-7-76	Gail Jones	Full ~~Part Before~~ After ~~Verification Review~~ Inspection Signed Via
	10-12-78	BH-ROS	Drawing No.
18774	3-17-78	Dick Killer	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 1
18740	11-9-79	Hamilton	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 45
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

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