

5831

U. S. COAST & GEODETIC SURVEY
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Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. Patton, Director

State: CALIFORNIA

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. 110
Hydrographic }

LOCALITY

Southern California Coast

North of Point San Luis

193 4

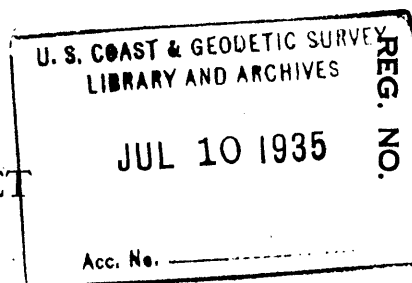
CHIEF OF PARTY

O. W. Swainson, H. & G. Engineer.

5831

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET



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. 110

REGISTER NO. **5831**

State California

General locality Southern California Coast

Locality North of Point San Luis 21

Scale 1 : 10,000 Date of survey Nov. 9, to Dec. 31, 19 34

Vessel PIONEER, VIRGINIA, Port and Stbd. Motorsailers.

Chief of Party O. W. Swainson,

Surveyed by O. W. Swainson, J. M. Smook, H. J. Healy, M. E. Wennermark, Rex Harwood.

Protracted by J. R. Jahn, H. J. Pulskamp (draftsmen)

Soundings penciled by M. E. Wennermark

Soundings in fathoms ~~feet~~

Plane of reference MEAN LOWER LOW WATER

Subdivision of wire dragged areas by _____

Inked by _____

Verified by A. Stiles

Instructions dated November 18, 1932., 19

Remarks: _____

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET FIELD NO. 110.

U.S.C. & G.S.S. PIONEER

O. W. Swainson, Commanding.

AUTHORITY

The hydrography on this sheet was done in accordance with instructions dated November 18, 1932, to the Commanding Officer of the PIONEER. The work in this general area has been designated Project No. 120.

LOCALITY

This sheet comprises a resurvey of the inshore area just north of Point San Luis. It joins sheet field No. 19 on the south, sheet field No. 54 on the west and sheet field No. 111 on the north. *and H 5748 on South West*

CONTROL

The control was by visual fixes on triangulation stations located in 1933 by Lieutenant Charles Pierce, and topographic stations located in 1934 by Harold Clarke, Surveyor.

SURVEY METHODS

The first few lines adjacent to the beach were executed by the launches. The lead line was used.

The area from the outer limits of the launch work out to about the 18 fathom curve was surveyed by the chartered launch VIRGINIA, R. Harwood, Surveyor, in charge. The leadline was used out to 10 or 12 fathoms. In greater depths the wire sounding machine was used. NOTE: Position numbers for this area are shown in brick red ink.

The ship executed the work outside the above area. The fathometer was used. Several comparisons, however, were taken with the wire. At these positions the wire soundings are plotted, accompanied by the fathometer sounding in parenthesis. NOTE: Carmine red ink was used to designate the ship work.

FATHOMETER CORRECTIONS

Fathometer corrections were computed jointly with those for sheets Nos. 111 and 112. They were obtained by many direct comparisons of the fathometer readings at vertical casts. Temperature and salinity corrections for sheet No. 54, which was done concurrently with sheets Nos. 110, 111, and 112, were used.

Detailed explanation of the fathometer corrections together with graphs accompany the report for sheet No. 112.

DISCREPANCIES

A 2-1/6 fathom sounding was recorded between position 45 and 46 H (VIRGINIA) at Latitude 35° 10.95', Longitude 120° 49.30'. The sounding was proved to be erroneous as shown on position 108J and has been rejected. The party felt around the area for 40 minutes with the leadline and recorded the shoalest sounding (7 fathoms, 1 foot).

In checking over the plotting of several positions of the ship hydrography it appeared that the right arm of the protractor, used in the smooth plotting was out of adjustment 5 to 8 minutes. Consequently the positions are plotted from 10 to 25 meters in error. In view of the fact that the bottom is comparatively even where this erroneous plotting is most marked the sheet was not replotted.

DANGERS

The most important danger on this sheet is Westdahl Rock, at Latitude 35° 08.86', Longitude 120° 46.92', with least depth of 3 fathoms from both the old and new survey. The rock is marked by a black can buoy 240 meters (262 yards) from the rock and bearing 228° True (SW by S). NOTE: Coast Pilot gives 450 yards distant. *see review, p 84*

Santa Rosa Reef lies 1/2 mile inshore from Westdahl Rock at Latitude 35° 09.35', Longitude 120° 47.28', with a least depth of 2-5/6 fathoms. The old survey shows 3 fathoms. The reef within the 10 fathom curve is quite large in extent, about 400 x 300 meters. It is marked by a small patch of kelp at the eastern end.

Other shoals:

Latitude	Longitude	Depth		Remarks
		New Survey	Old Survey	
35° 10.20'	120° 48.00'	6-1/6 ✓	8-3/4	Kelp.
35 10.53	120 47.66	2 ✓	5-3/4	
35 10.27	120 48.85	9-1/2 ✓	No sndg.	
35 10.20	120 48.38	9-3/4 ✓	do	
35 10.60	120 49.23	8-3/4 ✓	do	
35 10.70	120 49.55	9-1/4 ✓	do	
35 10.70	120 49.17	6-1/2 ✓	5-1/2	Kelp.
35 11.00	120 49.66	5-4/6 ✓	No. sndg.	Outer edge of kelp.

Coast Pilot

Inshore from a line joining the 5-4/6 fathom sounding above, and Δ Kel the area is generally foul. There are numerous shoals and sunken rocks and the area is generally marked with kelp.

COMPARISON WITH ADJOINING SHEETS

Junctions with adjoining sheets were satisfactory.

COMPARISON WITH PREVIOUS SURVEYS

Several important shoals on this sheet were compared individually with the same areas on previous surveys. These are discussed under DANGERS of this report.

In general, this survey agrees very well with sheet 1270. A small high water rock at Latitude 35° 09.6', Longitude 120° 46.2' is charted as bearing 6 feet at mean high water. This agrees with the Coast Pilot which discusses it under the name of "Lone Black Rock". This name could not be found elsewhere in the records.

The topographer and the hydrographer, however, are in agreement that the correct elevation is 2 feet. This discrepancy is also mentioned in the descriptive report for the topographic sheet.

The development on this sheet was much more complete than that on sheet 1606a. The two are in good agreement, however.

POSITION OF AIDS TO NAVIGATION

Light Whistle Buoy No. 3.

Pos. 127 b, S.M.S.,	(Nut	22° 29'	✓
	(Pier		
	(Obis	69 00	

This buoy is also discussed in the report for sheet field No. 19.

Black Can Buoy, Westdahl Rock.

Pos. 1 P, VIRGINIA	(Wale	45° 33'	Cuts:
	(Hill		Obis-Hill 38° 10'
	(Pile	43 40	Hill-Pecho 54 06.

Natural objects recommended for location of Westdahl Rock Buoy:

- Whaler's Island
- San Luis Obispo Lighthouse ✓
- Lone Black Rock
- Pecho Rock.

M. E. Wennemark
M. E. Wennemark,
Jr. H. & G. Engineer
U. S. C. & G. Survey.

Approved and forwarded:

O. W. Swainson
O. W. Swainson,
H. & G. Engineer,
Commanding PIONEER.

4

CHIEF OF PARTY'S REPORT OF INSPECTION
OF HYDROGRAPHIC SHEET AND RECORDS

This sheet was protracted by J. R. Jahn, draftsman. It was then turned over to Lieutenant (j.g.) M. E. Wennemark to check the protracting and plot the soundings.

The protracting was checked by laying the protective cover sheet over the boat sheet. All doubtful positions were checked or replotted. The plotting of several positions along the off-shore part of the sheet was also checked. This, however, is discussed under DISCREPANCIES of the report. The records were also examined and found to be complete.

Whenever there was any doubt the matter was brought to my attention for action.

It is unfortunate that the draftsman used practically the same color for three different sounding boats. However, it is not thought of sufficient importance to warrant the time and trouble of changing the colors.

The topographer noted many rocks with reference to mean high water, as that was the datum for his shore line. The water in this area is always more or less rough and consequently, the rocks noted as "awash at M. H. W.," etc., should be charted as covering rocks.

O. W. Swainson

O. W. Swainson,
H. & G. Engineer,
Chief of Party,
Commanding PIONEER.

STATISTICS

VESSEL	Stat. Mi. Sndg. Lines			Number of Soundings			Number of Positions		
	Hand lead	Wire	Fath.	Hand lead	Wire	Fath.	Hand lead	Wire	Fath.
PIONEER			174.6			4026			621
Stbd. MS	20.9			686			170		
Port MS	17.4			523			111		
VIRGINIA	100.9	164.1		2297	3494		697	1383	
Totals	139.2	164.1	174.6	3506	3494	4026	978	1383	621
GRAND TOTALS	477.9			11,026			2982		

FATHOMETER CORRECTIONS

Sheets Nos. 110, 111, & 112.

Sheets Nos. 110, 111, and 112 are inshore from sheet 54 and the work was done during the same period. The conditions of temperature and salinity were the same for all these sheets, hence the theoretical corrections are the same. The computation of the theoretical corrections is shown in the report of Fathometer Corrections, sheet No. 54.

Computation of Index Correction and the Final Fathometer Corrections is included in this report. A graph of the Final Corrections is included in the report for Sheet No. 110. In the table of Final Corrections, the corrections are shown to the nearest tenth fathom for every half fathom of depth to 25 fathoms. For depths of 25 1/2 fathoms to 100 fathoms the corrections are shown to the nearest half fathom.

For depths up to 25 fathoms, the fathometer corrections and tide reducers are entered in the sounding records to the nearest tenth fathom and the sum is reduced to the nearest half fathom and applied to the soundings.

The fathometer scale was uniform throughout.

ABSTRACT OF VERTICAL CASTS AND COMPUTATION OF INDEX CORRECTION

Sheet No. 110.

Table 1.

Date 1934	Pos'n.	V.C.	Big Oscillator		#3 Hyd.	Big Oscillator	
			#1 Hyd.	#5 Hyd.	Theor Cor'n	Fth. Rdg. + Th. Crn	I. C.
11/11	8B	32.0	30.2	31.0	+1.1	31.3	+0.7
		32.1	30.0	31.0	1.1	31.1	1.0
		32.1	30.0	30.8	1.1	31.1	1.0
	112B	24.1	23.0		1.0	23.0	1.1
		24.0	23.0		1.0	24.0	0 R
		24.0	22.5		1.0	23.5	0.5
11/21	40C	20.0	18.7	19.3	0.9	19.6	0.4
		20.2	18.5	19.2	0.9	19.4	0.8
11/26	33E	22.8	19.8		1.0	20.8	2.0 R
		23.0	20.2		1.0	21.2	1.8 R
		22.9	20.5		1.0	21.5	1.4
		23.0	20.6		1.0	21.6	1.4
		23.2	21.0		1.0	22.0	1.2
		23.5	21.3		1.0	22.3	1.2
		23.7	21.3		1.0	22.3	1.4
	148E	23.9	21.5		1.0	22.5	1.4
		35.3	32.7		1.1	33.8	1.5
		36.3	32.9		1.1	34.0	1.3
	156E	36.1	33.0		1.1	34.1	1.0
		28.4	27.0		1.1	28.1	+0.3
		28.4	27.0		1.1	28.1	+0.3
		28.0	27.0		1.1	28.1	-0.1 R
28.2		27.0		1.1	28.1	+0.1 R	
28.2		26.8		1.1	27.9	+0.3	
11/27	26F	29.8	28.0		1.1	29.1	0.7
		29.4	27.8		1.1	29.9	0.5
		29.4	28.0		1.1	29.1	0.3

Average I. C. Sheet 110 = 0.87
 " " " 111 0.85
 " " " 112 0.81

all three sheets average 0.84

8

COMPUTATION OF FINAL FATHOMETER CORRECTIONS
Sheets Nos. 110, 111, 112.

Table 2.

Depth	Theor. Cor'n.	I.C.	Final Cor'n.	Fath. Rdg.
7	-0.65	+0.84	+0.18	6.82
12	+0.33		1.22	10.78
17	0.82		1.66	15.34
22	1.01		1.85	20.15
32	1.14		1.98	30.02
42	1.17		2.01	39.99
52	1.10		1.94	50.06

See next page

FINAL FATHOMETER CORRECTIONS
Sheets Nos. 110, 111, 112.

Fath. Reading	Final Correction
8	+0.6
8½	0.8
9	0.9
9½	1.0
10	1.1
10½	1.2
11	1.2
11½	1.3
12 - 12½	1.4
13 - 14	1.5
14½ - 15	1.6
15½ - 17	1.7
17½ - 20½	1.8
21 - 25	1.9
25½ - 58	2.0

HYDROGRAPHIC SURVEY NO. 5831

Smooth Sheet 1

Boat Sheet 5

Sounding Records 11 Vols. _____

Descriptive Report Yes

Title Sheet Yes

List of Signals Yes in Vol. 1

Landmarks for Charts (Form 567) Yes

Statistics Yes

Approved by Chief of Party O. W. Swainson

Recoverable Station Cards (Form 524) Yes

Special Chart for Lighthouse Service No *
(Circular Nov. 30, 1933)

Remarks * See Desc. Rep. page 3 for list of objects

recommended for locating aids.

Field Records Section (Charts).

HYDROGRAPHIC SHEET NO. **5831**

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

Number of positions on sheet	2982
Number of positions checked	290
Number of positions revised	7
Number of soundings recorded	11,026
Number of soundings revised	62
Number of signals erroneously plotted or transferred	0

Date:

Verification by

A Stiles

Time: 67 hours.

Review by

R. J. Christman

Time:

Reviewer 13 1/2 hrs
Completing Ver. 12 " } 25 1/2 hrs
& corrections

Verification Report on - H 5831 - (1934)

Generally the records conformed to instructions ✓

The depth curves were completely drawn. ✓

The smooth sheet was checked with the boat sheet all positions showing possibility of error were checked. — no serious discrepancies were revealed. altho a number of soundings were changed to conform to records.

Only minor corrections were made with the field parties work.

Satisfactory comparison was made with Topo - sheet T 6286 - T 6287 - (1934) - ✓

Satisfactory junction was made with sheet H 5772 - (1934)

Junction with sheets H 5748 (1934) —

H 5774 (1934) - H 5832 - (1934) were not made. the sheets not being available at this time

Respectfully submitted

A Stiles

TIDE NOTE FOR HYDROGRAPHIC SHEET

July 26, 1935.

Division of Hydrography and Topography:

✓ Division of Charts: Attention: Mr. E. P. Ellis

Tide Reducers are approved in
11 volumes of sounding records for


HYDROGRAPHIC SHEET 5831

Locality North of Point San Luis, California.

Chief of Party: O. W. Swainson in 1934.
Plane of reference is mean lower low water reading.
2.6 ft. on tide staff at Port San Luis
14.6 ft. below B.M. 6

Height of mean high water above plane of reference is 4.5 feet.

Condition of records satisfactory except as noted below:


Chief, Division of Tides and Currents.

11. Superseding Old Surveys.

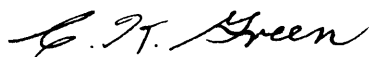
Within the area covered the present survey with indicated additions supersedes the following surveys for charting purposes:

- H- 290 (1851) in part.
- H-1270 (1875) in part, except as noted in par. 7b.
- H-1606a (1884) in part.

12. Reviewed by - R. J. Christman, September 17, 1935.

Inspected by - A. L. Shalowitz.

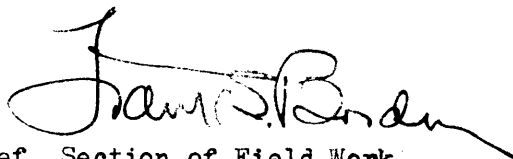
Examined and approved:



C. K. Green,
Chief, Section of Field Records.



Chief, Division of Charts.



Chief, Section of Field Work.



Chief, Division of H. & T.

Applied to drawing of Chart 5302 - Mar. 17, 1936 - J.W.
Applied to new compilation of Chart 5386, Aug. 1936, H.B.

" " " " " " 5387 Jan. 21, 1937 J.G.L.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5831 (1934) - FIELD NO. 110

North of Point San Luis, Southern California Coast, California
Surveyed in November - December, 1934
Instructions dated November 18, 1932 (PIONEER)

Hand Lead, Machine and Fathometer
Soundings.

3 Point Fixes on Shore Signals.

Chief of Party - O. W. Swainson.

Surveyed by - O. W. Swainson, J. M. Smook, H. J. Healy, M. E. Wennermark,
Rex Harwood.

Protracted by - J. R. Jahn, H. J. Pulskamp.

Soundings penciled by - M. E. Wennermark.

Verified and Inked by - A. Stiles.

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual.

The Descriptive Report satisfactorily covers all items of importance.

Duplicate copy of the Special Chart for the Lighthouse Service (Circ. Nov. 30, 1933) has not been received but the Descriptive Report lists objects suitable for locating the buoy marking Westdahl Rock which is the only floating aid within the area of this survey.

2. Compliance with Instructions for the Project.

The plan and extent of development are in accordance with the instructions for the project.

3. Shoreline.

The shoreline originates with topographic sheets T-6286 and T-6287 of 1934. Signals are recovered triangulation stations, topo. stations from the above sheets and one hyd. signal (Jet) from H-5772 (1934).

4. Sounding Line Crossings.

Depths at crossings of lines are in satisfactory agreement.

5. Depth Curves.

Within the limits of the survey the usual depth curves may be satisfactorily drawn including portions of the 2 and 3 fathom curves.

6. Junction with Contemporary Surveys.

Junctions with H-5832 (1934) to the northwest, H-5772 (1934) to the southeast and H-5774 (1934) and H-5748 (1934) offshore, are satisfactory. The area between the two northern lines of H-5748 (1933-34) is adequately and satisfactorily developed on H-3101 (1910).

7. Comparison with Prior Surveys.

a. H-290 (1851).

This is a small scale reconnaissance survey. All the information affecting the area of the present survey has been adequately covered by later surveys.

b. H-1270 (1875).

This survey, scale 1-10,000, is the inshore survey westward of Point San Luis. The depth agreement with the present survey is very good, but inside the 5 fathom curve the bottom is very irregular and a number of shoals from the old survey have been transferred to H-5831 (1934). The rocky detail along shore differs considerably. A number of rocks charted as bare rocks are now rocks awash or sunken rocks. They may have been broken down by the seas but probably some of the differences are due to the manner of representing them on the old survey. The 1934 survey with the indicated additions from the old survey should supersede the above survey for ordinary charting purposes but in any special, larger scale, chart the present survey may be supplemented by hydrography from the above survey but rocky details inshore should be taken only from H-5831 (1934).

c. H-1606a (1884).

This survey, scale 1-10,000, is practically an extension to the northwest of the survey considered under par. 7b and the same observations apply to it. On both old sheets, suspicious looking shoal soundings were checked against the original records before transferring to the 1934 survey. The above survey should be superseded by H-5831 (1934) for future charting purposes.

d. H-3101 (1910), H-3358 (1912).

The 1910 survey, scale 1-10,000, in addition to the regular hydrography, shows a combined sentry and wire drag survey of a part of the area southeast of Westdahl Rock. The agreement in depth between the two surveys is good and the present survey shows no depths inconsistent with the wire drag and sentry work.

The present survey shows a close development of the area under consideration and is considered adequate for charting purposes. See par. 6 of this review.

The 1912 survey, scale 1-20,000, covers the same area as the foregoing with regular wire drag survey. The one sounding (32 feet) that falls within the area of the present survey at lat. $35^{\circ} 09.2'$, long. $120^{\circ} 45.7'$ has been transferred to H-5831 (1934).

8. Comparison with Charts 5386 and 5302.

a. Hydrography.

Within the area of the present survey the chart is based on surveys discussed in the foregoing paragraphs and contains no additional information that needs consideration in this review.

b. Aids to Navigation.

The lighted whistle buoy #3 lat. $35^{\circ} 09.12'$, long. $120^{\circ} 44.76'$ was located in approximately the same position as charted.

Black buoy C1 (lat. $35^{\circ} 08.75'$, long. $120^{\circ} 47.05'$) was located about 200 meters closer to Westdahl Rock than charted. The buoy was replaced by a lighted buoy in June, 1935 (N. M. 25) and may have been placed on its old station.

Adopted position of buoy 245yds. south west of Westdahl Rock (See Chart Letter 560 of 1936).

9. Field Plotting.

The protracting and penciling of soundings were well done although a number of soundings were changed to conform to records.

In accordance with par. 152 of the Hydrographic Manual the soundings should have been plotted in feet. The soundings were not changed in the office and they have been inked in fathoms.

10. Additional Field Work Recommended.

The survey in general is satisfactory. If the 10 fathom shoal indication in lat. $35^{\circ} 09.07'$, long. $120^{\circ} 47.12'$ is not covered by the wire drag survey now in progress, additional hand lead development should be done in this vicinity.

covered
by
W.D.
1935

The buoy marking Westdahl Shoal has been changed since the survey was made. It ~~may be~~ desirable to determine the present location of this buoy. See par. 8b of this review.

25 Au 31 1935

E.A.S.