

5305

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. 11
Hydrographic }

5305

LOCALITY

California

Santa Barbara Island

1932

CHIEF OF PARTY

Robert W. Knox

5305

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

U. S. COAST & GEODETIC SURVEY
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SEP 22 1933

REG. NO.

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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. 11

REGISTER NO. 5305

State California

General locality Pacific Ocean California

Locality Around Santa Barbara I. Island

Scale 1:10 000 Date of survey July 9 to Oct 13, 19 32

Vessel chartered launch VIRGINIA I

Chief of Party Robert W. Knox

Surveyed by R W Knox

Protracted by John C. Mathisson, Kenneth Walker & C. L. Rasmusson

Soundings penciled by R W Knox

Soundings in fathoms feet

Plane of reference mean lower low water

Subdivision of wire dragged areas by _____

Inked by _____

Verified by _____

Instructions dated April 14, 1932, 19

Remarks: _____

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET No. 11

Scale, 1:10,000

SANTA BARBARA ISLAND

CALIFORNIA

INSTRUCTIONS DATED April 14, 1932

SURVEYED BY R.W. KNOX.

SURVEY METHODS: The area covered by sheet 11 was surveyed by the chartered launch VIRGINIA I. Standard survey methods were followed throughout the survey. During the greater part of the work only a hand sounding machine was available, and as depths were encountered up to 70 fathoms, soundings were spaced the maximum allowable. This machine was located aft, and the wire rigged over the stern.

DISCREPANCIES: Several discrepancies in the crossings of lines were discovered by the chief of party while plotting the soundings, but all were thought to be due to the character of the bottom, which is quite irregular near the beach. The soundings in the vicinity of position 6w in latitude $33^{\circ} 29'.3$, longitude $119^{\circ} 01'.55$ illustrate the point.

DANGERS AND SHOALS: There is a sunken rock, breaking in latitude $33^{\circ} 28'$, 1690 meters, longitude $119^{\circ} 03'$, 1030 meters. It is surrounded by extremely thick and heavy kelp. It is located by sextant cuts, having not been breaking while the topographic party was working in the vicinity. It is noted that the survey of 1879 placed this rock about 55 meters SSE of the position as determined by this party.

There are three patches of islets, breakers, etc., off the

continued:

the western side of the island, but as they are well within the kelp line, do not constitute a danger to navigation.

A small 20 fathom patch rises from an average depth of 30 fathom in latitude $33^{\circ} 30'$, longitude $119^{\circ} 03.7'$.

There is a considerable area of broken, uneven bottom about 1.2 miles northwest of the island with a least depth of 85 fathoms. Several of these shoal places are not marked by kelp.

An area of growing kelp in latitude $33^{\circ} 29.3'$, longitude $119^{\circ} 01.2'$ marked a 10 fathom shoal east of the north tangent of the island.

Two 15 fathom soundings were obtained in an average depth of about 20 fathoms in latitude $33^{\circ} 29.4'$, longitude $119^{\circ} 00.75'$. This shoal is not marked by kelp.

CHANNELS: There are no channels in the area covered by sheet 11. The survey of 1879 shows one sounding line between Gull Island and Santa Barbara Island, but at the season of the year when the present survey was accomplished, the kelp was too thick and heavy to pull through.

ANCHORAGES: The east side of the island affords safe anchorage for small craft in the prevailing summer winds, west and west southwest, although a swell making around either the north or south ends of the island makes it uncomfortable. Most of the small craft were observed to anchor off the northerly of the two bights. The bottom is hard sand and the VIRGINIA experienced difficulty in hanging on during several blows. The men-of-war/^{anchor}along and within the 30 fathom curve to the east and east southeast of the island. Most of the bottom specimens obtained in that area were fine grey sand. As many as

continued:

9 men-of-war have anchored in the lee of the island.

COMPARISON WITH PREVIOUS SURVEYS: The difference in position of the breaker west of the north end of the island has all ready been noted. The party was unable to check the $14\frac{3}{4}$ fathom sounding appearing on sheet 1459a, in latitude $33^{\circ} 28.2'$, longitude $119^{\circ} 03.5'$, where the depths are in the order of 35-39 fathoms.

The soundings of sheet 1459a were compared with the present work and with the exception noted above were found to agree as well as the character of the bottom would indicate.

It was found impossible to obtain soundings near the beach off the south and southwest sides of the island and in the large area northwest of the island, due to the extreme growth of kelp. One line was completed though not without endangering the launch, as the cooling system clogged, overheating and finally stopping the engine. The party had previously done considerable sounding in kelp, but the size and density of the plant observed in this vicinity surpasses anything seen by the writer. Generally speaking, the inshore soundings represent the edge of the heavy kelp beds, and they extend to the line of breakers.

PLOTTING: The shoreline was not transferred to the hydrographic sheet for a considerable time after the signals were plotted, and the draftsman doing the transferring neglected the distortion of the topographic sheet; the shoreline thereby is slightly in error, particularly in the northeast portion of the island.

Respectfully submitted
Robert W. Knox,
16 and J. Engle.

STATISTICS

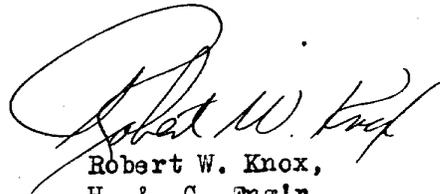
HYDROGRAPHIC FIELD SHEET NO 11

| Date | Vol | Day | St. miles sdgs | Positions | Soundings |
|--------|-------|-----|-------------------|-----------|-----------|
| Jul 9 | a1 | a | 22.2 | 126 | 212 |
| 10 | 1 | b | 19.2 | 176 | 306 |
| 11 | 1 & 2 | c | 17.0 | 149 | 232 |
| 12 | 2 | d | 3.1 | 28 | 45 |
| 13 | 2 | e | 8.5 | 77 | 187 |
| 14 | 2 | f | 17.7 | 139 | 247 |
| 20 | 2 & 3 | g | 16.7 | 139 | 173 |
| 21 | 3 | h | 18.6 | 206 | 291 |
| 22 | 3 | j | 8.0 | 116 | 206 |
| Oct 10 | 4 | l | 5.9 | 38 | 64 |
| 11 | 4 | m | 10.8 | 118 | 220 |
| 12 | 4 | n | 6.2 | 63 | 128 |
| 13 | 4 | p | 4.1 | 50 | 104 |
| totals | | | 148.0 | 1425 | 2415 |

APPROVAL OF CHIEF OF PARTY

Field sheet No. 11 and accompanying records have been inspected and approved by me. The field work was done under my direct supervision; the office work under my occasional supervision.

No additional work is considered necessary.



Robert W. Knox,
H. & G. Eng'r,
Chief of Party.

220

October 12, 1933.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 5305

Locality **Around Santa Barbara Island, California Coast**

Chief of Party: **Robert W. Knox in 1932**
Plane of reference is **mean lower low water reading**
2.8 ft. on tide staff at Santa Barbara Island
9.1 ft. below B. M. 1

Height of mean higher high water above plane of reference is 5.1 feet

Condition of records satisfactory except as noted below:

Hannamer
Acty Chief, Division of Tides and Currents

October 28, 1933.

Section of Field Records.
Report on Hydrographic Sheet No. 5305.
Around Santa Barbara Island.
Pacific Ocean
California

Surveyed July 9 to October 13, 1932.

Instructions dated April 14, 1932. Chartered launch Virginia I.

Chief of party - R. W. Knox

Surveyed by - R. W. Knox

Protracted by John C. Mathison, Kenneth Walker and C. L. Rasmussen

Soundings penciled by R. W. Knox

Verified and inked by W. L. Muller.

The protracting on this sheet was verified visually with checks being made where a difference appeared between the smooth sheet and the boat sheet. In every instance the smooth sheet was found to be correct. About forty positions were protracted.

There are several bad crossings on the sheet and positions at these points were verified. A list of these bad crossings follows.

| | | |
|--------------------|---------------|-----------------|
| Positions 12-13 H. | - Lat 33-29.4 | Long 119-04.2 - |
| " 56-57 F | - Lat 33-28.7 | Long 119-03.9 - |
| " 6-7 G | - Lat 33-27.3 | Long 119-02.1 - |
| " 58 N | - Lat 33-27.5 | Long 119-01.5 - |
| " 39-40 J | - Lat 33-29.5 | Long 119-04.2 - |

The records conform to the Hydrographic Manual.

The twenty and fifty fathom curves can be completely drawn.

The three, four and ten fathom curves can be partially
(over)

drawn.

The field plotting was complete and very well
done

William R. Muller.

SECTION OF FIELD RECORDS
Review of Hydrographic Sheet No. 5305.
Around Santa Barbara I., California. Surveyed in 1932.

Hand lead and machine soundings.
Instructions dated April 14, 1932. (R. W. Knox)

Chief of party - R. W. Knox.
Surveyed by - R. W. Knox.
Protracted by - J. C. Mathison, K. Walker, C. L. Rasmussen.
Soundings plotted by - R. W. Knox.
Verified and inked by - W. L. Mullen.

1. The records conform to the requirements of the Hydrographic Manual except that apparently no distinction was made in the records and sheet between the bottom abbreviation rk and rky. (Par. 160a). From a study of the soundings on which rk was entered, it was concluded that the rk was intended to represent a rocky condition of the bottom and not a sunken rock.
2. The plan, character and extent of the survey satisfy the specific instructions except that no recommendations were made in the descriptive report as to the retention or rejection on the chart of critical depths from the old survey. (Instructions Par. 8).
3. While there are some cases of bad crossings and poor agreement of soundings, most of these occur in places where the slope is steep and the bottom irregular. The general agreement of sounding lines is fairly good.
4. Depth curves can be drawn fairly completely except in the inshore areas where sounding lines could not be run on account of the density of the kelp.
5. The only junction is with the contemporary offshore sheet H. 5306. This is satisfactory.
6. Previous work.
 - (a) The survey of 1879, H. 1459a, is the only previous survey of this area.
 - (b) On the shoal in Lat. $33^{\circ}-29'.5$, Long. $119^{\circ}-04'.1$, there are a few slightly shoaler depths on the old work than were found on the new examination. The present charts show 7 fathoms on this shoal, H. 1459a shows a least depth of $7\frac{1}{2}$ fathoms and the least depth on H. 5305 is $8\frac{1}{2}$ fathoms. A few of the shoaler soundings from the old work were added to H. 5305 in green and the shoaler depths should be retained on the charts. It is noted that on H. 1459a the kelp line extends out to and around this shoal but the new work shows no kelp on this shoal.
 - (c) A 15 fathom sounding is shown on the charts in approximate Lat. $33^{\circ}-28'.2$, Long. $119^{\circ}-03'.5$. This sounding is recorded in the records of H. 1459a as $14\frac{3}{4}$ fathoms, rocky bottom. The field party ran several lines over the spot and also felt around the area but found no indication of rocky bottom and no depths under 35 fathoms. This sounding is thought to have been disproved and should be removed from the charts. (Approved by L.O.C.)
This
 - (d) A sounding of $27\frac{1}{4}$ fathoms, rocky bottom, is shown on H. 1459a, in Lat. $33^{\circ}-28'$, Long. $119^{\circ}-03'.7$. This sounding was the first sounding obtained

H. 5305 - 2.

after a lay off for lunch and the original entry has been changed in pencil in the record, leaving a doubt as to its correctness.

(e) Three lines were run in the vicinity without obtaining any depth under 42 fathoms and the $27\frac{1}{4}$ fm. sounding is believed to be incorrect. It is not shown on the present charts.

(f) There is a difference in the position of the sunken rock in approximate Lat. $33^{\circ}-28'.9$, Long. $119^{\circ}-03'.7$. The position as shown on H. 5305, should be accepted because it is determined by several cuts which intersect perfectly while the location on H. 1459a is by estimated distance and direction.
 Chart rock as rack awash with note "awash at MLLW" (for details, consult Rev. of T-4748, Par. 24) *aug. 21, 1934*
 H. 5305

(g) Several new shoals, not shown on the old survey, were located and are described in the descriptive report.

(h) It is recommended that the recent work, H. 5305, now become the basic survey for this area. However where blank spaces occur within the kelp line this survey may be supplemented by soundings from H. 1459a.

7. The ground on this sheet is thought to have been fairly well covered although soundings are spaced rather openly in the deeper areas in comparison with contemporaneous surveys using echo sounding or power driven equipment due to the fact that only a hand sounding machine was available. Shoal development is generally sufficient although the shoal $1\frac{1}{4}$ miles north $\frac{1}{2}$ west from the island might have been covered more intensely.

8. Additional work is not required.

9. Reviewed by - R. L. Johnston.

R. L. Johnston
Chief, Field Records Section.
J. S. Broder
Chief, Field Work Section.

Examined and approved:

W. S. ...
Chief, Charts Division.
G. ...
Chief, Division of H. * T.

Applied to drawing of Chart 5202 - Mar 1936 - L.M.Z.
" " " 510, May 1936 L.M.Z.