DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
R.S. Patton, Director

State: California

DESCRIPTIVE REPORT
Topographic Sheet No. A. 4748

LOCALITY
Santa Barbara Island

19.32.

CHIEF OF PARTY
Robert W. Knox
INSTRUCTIONS:

The survey was made in accordance with the DIRECTOR's instructions dated April 14th, 1932.

GENERAL DESCRIPTION:

Santa Barbara Island lies about 40 miles 250° true from Point Fermin and 21 miles 270° true from the western end of Santa Catalina Island; it is 1½ miles long in a north and south direction with a greatest width of 1 mile. The profile of the island from east or west is saddle shaped and has the appearance of two islands from a distance. The highest or southerly peak has an elevation of 635 feet; the northerly peak has an elevation of 562 feet. The northeastern point is marked by a white unattended lighthouse. The elevation of the light is 195 feet. The shores are bold and precipitous and offer no place for beaching a small boat. They are well marked by kelp which extends at irregular distances from the shore.

A rocky islet, 300 feet high and surrounded by kelp lies 1/3 miles southsouthwest from the southwestern point of the island. The northern face of the islet is steep. (gull Island on chart)

A smaller rock, 145 feet high, lies 150 meters offshore, about 1/2 mile westward from the northern point of the island.

To the westward thick kelp extends out for a distance of about a mile from the northwesterly point and has a rock awash in the outer and southern edge of the kelp.
The island is uninhabited, and is dry and barren except for a coarse growth of grass, ice plant and a scattering of cactus.

The island is believed by geologist to be of the Miocene age.

CHARACTER OF CONTROL:

Five triangulation stations, ( SANTA BARBARA ID., MER SLOPE, SOUTH-WEST RIDGE, S. B. ID. SOUTH BASE and S. B. ID. NORTH BASE ) of the survey of 1871 were recovered and used to locate subsidiary points along the top of the edge of the island by graphic triangulation. A point was also located on the shore, by graphic triangulation, and was used as a starting point for the traverse around the island.

METHODS:

The standard survey methods outlined in the Topographic Manual, Special Publication No. 144, were used throughout.

TRaverse:

A stadia traverse, starting and closing at HEN, circling the island, a distance of approximately 4.5 miles, was held rigid by frequent resections and check distances to the subsidiary points. The traverse closed without error.

COMPARISON WITH PREVIOUS SURVEY:

In general the size and shape of the island agrees with the survey of 1871. The largest discrepancy occurs in the shape and position of the northeastern section and north shore line where the old survey appears to have a lack of control points. The location of the high water line
along the southeast side of the island varies from about 70 meters inshore on the south shore to about 70 meters seaward on the east shore in what appears to be an unchangeable shore line. The extremities of the island and the highest points of the two off-lying rock islets as shown in the two surveys agree well. Agreement in the delimitation of the shore line is poor. Approximate sketching from stations on top of the island was apparently used in delimiting the shore line in the old survey. Large discrepancies were found in the elevations of identical or nearly identical points. All of the new elevations were reciprocally determined and check from two or more points. The following is a table of the differences in elevation of the principle points:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>Elevation Survey of 1871</th>
<th>Elevation Survey of 1932</th>
<th>Difference in Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Barbara</td>
<td>547'</td>
<td>635'</td>
<td>88'</td>
</tr>
<tr>
<td>S. W. Ridge</td>
<td>389'</td>
<td>459'</td>
<td>60'</td>
</tr>
<tr>
<td>Mer Slope</td>
<td>534'</td>
<td>584'</td>
<td>50'</td>
</tr>
<tr>
<td>South Base</td>
<td>275'</td>
<td>342'</td>
<td>67'</td>
</tr>
<tr>
<td>North Base</td>
<td>289'</td>
<td>358'</td>
<td>69'</td>
</tr>
<tr>
<td>20 m. SW of HI</td>
<td>517'</td>
<td>562'</td>
<td>45'</td>
</tr>
<tr>
<td>Middle ridge, approx. top</td>
<td>433'</td>
<td>483'</td>
<td>50'</td>
</tr>
</tbody>
</table>

The group of rocks, above high water and swash, off of the northwest point in Lat. 33° 28.3' differ in number and position from the previous survey. Differences in the position and number of rocks off of the west shore of the island in Lat. 33° 28.3' and Lat. 33° 28.0' and off of the north shore in Long. 119° 02.5' and Long. 119° 02.6' were also found. All new positions of rocks above high water were determined by a stadia distance and at least one direction. Rocks underwater were located usually by a cut and estimated distance. No breakers were noticed which would indicate the presence of any other rocks in these groups.
The existence of a rock awash approximately in Lat. 33° 29.9' Long. 119° 03.7' was verified and is located 265' true from OL0. The position was determined by intersecting sextant cuts from the hydrographic launch and a direction from AMER SLOPE. Two rocks, underwater, in Lat. 33° 29.2', Long. 119° 02.1' and not shown in the previous survey, were located by three intersecting cuts from plane table stations.

New positions of rocks, located by a stadia distance and direction, are located approximately 150 m. SSW of OL1; 30 m. SE of OL1; and 240 m. NE of OL1. None of these rocks are of any danger to navigation being all close to shore.

The small islet about 1/3 miles SW of the SW point of the island is in agreement with the previous survey on the location of the north and east shore line, but shows the southwest corner as extending about 130 m. farther SW than before besides a corresponding change in the south and west shore line of the islet. The elevation of the islet is 300' 6 or 43' higher than before. The location of the south and west shore line was determined by intersecting sextant cuts obtained from the hydrographic launch and the elevation determined by four vertical angles from plane table stations.

The rock 1/4 mile W of the north point of the island is larger and has an elevation of 145', 22' more than shown in the old survey.

The corral and house formerly on the east side of the island are no longer in existence. These are replaced by two abandoned houses, OL10A1 and one approximately 80m. up the draw from the landing on the east side.

Respectfully submitted,

[Signature]


Respectfully Forwarded,

[Signature]

Robert W. Knox, H. & G. E., Chief of Party
## PLANET-TABLE POSITIONS

<table>
<thead>
<tr>
<th>Hydro. Name</th>
<th>Lat. D. M.</th>
<th>Long. D. M.</th>
<th>D. P. M.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO</td>
<td>33 28</td>
<td>119 01</td>
<td>1530</td>
<td>See &quot;Description of Topo Station&quot; Card.</td>
</tr>
<tr>
<td>MID</td>
<td>33 28</td>
<td>119 02</td>
<td>758</td>
<td>do</td>
</tr>
<tr>
<td>SHAK</td>
<td>33 28</td>
<td>119 01</td>
<td>1151</td>
<td>Abandoned whitewashed shack on first bluff S of landing on East Shore.</td>
</tr>
<tr>
<td>HI</td>
<td>33 28</td>
<td>119 02</td>
<td>250</td>
<td>See &quot;Description of Topo Station&quot; Card.</td>
</tr>
<tr>
<td>LO</td>
<td>33 28</td>
<td>119 02</td>
<td>1213</td>
<td>do</td>
</tr>
<tr>
<td>LIT</td>
<td>33 29</td>
<td>119 01</td>
<td>1214</td>
<td>Lighthouse on N. E. point of island.</td>
</tr>
<tr>
<td>GUL</td>
<td>33 27</td>
<td>119 02</td>
<td>1312</td>
<td>Highest point of islet 1/3 mile SW of SW point. Elev. 300'.</td>
</tr>
<tr>
<td>STI</td>
<td>33 28</td>
<td>119 02</td>
<td>801</td>
<td>Center of the middle rock of three large rocks between GUL and the island.</td>
</tr>
<tr>
<td>Elev.</td>
<td>33 29</td>
<td>119 02</td>
<td>159</td>
<td>Highest point of rock ½ mile W of NE point.</td>
</tr>
</tbody>
</table>
STATISTICS

Topographic Sheet A – 1932

Area surveyed in square statute miles – 1.2
Statute miles of shore line surveyed – 7.6
Number of hydrographic stations located – 47
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

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

Field Letter  A

REGISTER NO. 4748

State  California

General locality  Pacific Coast

Locality  Santa Barbara Island

Scale 10,000  Date of survey  June 14th to 28th, 1932

Vessel  Launch and Shore Party

Chief of Party  Robert W. Knox

Surveyed by  William F. Melnate

Inked by  do

Heights in feet above M. W. to ground

Approximate contour interval 20 feet

Instructions dated  April 14th, 1932

Remarks:

U. S. COAST AND GEODETIC SURVEY
1931
REVIEW OF TOPOGRAPHIC SURVEY No. 4748 (1932)

Title (Par. 56) SANTA BARBARA ISLAND, Pacific Coast, Cal.

Chief of Party R.W. Knox Surveyed by W.F. Malnate Inked by W.F. M.

Ship Launch and Shore Party

Instructions dated Apr. 14, 1932 Surveyed in June 14 to 27, 1932

1. The survey and preparation for it conform to the requirements of the Topographic Manual. (Par. 7, 8, 9, 13, 16.)

2. The character and scope of the survey satisfy the instructions.

3. The control and closures of traverses were adequate. (Par. 12, 29.)

4. The amount of vertical control that the Manual specifies for contours-formlines was accomplished. (Par. 18, 19, 20, 21, 22, 23.)

5. The delineation of contours-formlines is satisfactory. (Par. 49, 50.)

6. There is sufficient control on maps from other sources that were transmitted by the field party to enable their application to the charts. (Par. 28.) None submitted.

7. High water line on marshy and mangrove coast is clear and adequate for chart compilation. (Par. 16a, 45, 44.)

8. The representation of low water lines, reefs, coral reefs and rocks, and legends pertaining to them is satisfactory. (Par. 36, 37, 38, 39, 40, 41.)

9. Rocks and other important details shown on previous surveys and on the chart were verified. (Par. 25, 26, 27.) Yes. For additional details see paragraph 24 below.

10. The span, draw and clearance of bridges are shown. (Par. 16a.)

11. Locations and elevations of summits are given. (Par. 19, 51.)

12. The tree line was shown on mountains. (Par. 16g.) The area covered by this survey is barren.

NOTE: Strike out paragraphs, words or phrases not applicable and modify those requiring it. Paragraph numbers refer to those in the Topographic Manual. Use reverse side for extending remarks.
Remarks for T-4748 (1932)

(a) Comparison with T-1180(1871).

Agreement of shore line and offshore features between this survey and T-4748 (1932) is unsatisfactory. Much of the detail shown on the old survey appears to have been sketched instead of relying on rod readings and azimuths. Elevations of common points on the new survey vary on an average 13 feet, with a maximum difference of (+)6 feet at the triangulation station Santa Barbara Island. These differences cannot be accounted for by assuming that elevation on the new survey was taken to the tops of trees for the island in 1871. In view of the fact that a portion of the detail on T-1180 (1871) is approximated and that the chief party of the new survey using more up-to-date methods was cognizant of this discrepancy and frequently rechecked his determinations, it is recommended that the new survey, T-4748 (1932) replace T-1180 (1871) in its entirety.

(b) Charted rock aroach in lat. 33° 53.9', long. 119° 13.7'.

This rock was first shown as a rock aroach on the chart of H-1459a (1879) during a tide of 3.4 feet (pos. 16c, red). It was shown on the topographical chart, T-1180 (1871) as a sunken rock confirmed by a note in with "rock aroach." The rock was identified by H-5305 (1932) as a rock and was located by the assistant cts. (pos. 43 and 45, red, during a tide of 3 feet) and one direction from above by the topographical party. The chart's report T-4748 (1932) refers to this rock as a rock aroach. A rock aroach accompanied by a note "rock aroach M.L.L.W. is believed to be more correct representation and has been so shown on H-5305 (1932).
13. The descriptive report covers all details listed in the Manual, in so far as they apply to this survey. (Par. 64, 65, 66, 67.)

14. The descriptive report also contains additional information required in aero-topography relative to type of photographs, method of compilation and type of ground control. *None submitted.*

15. The descriptions of recoverable stations and references to shore line were accomplished on Form 524. (Par. 29, 30, 57, 67 except scaling of DMs and DPs, 68.) *None submitted.*

16. A list of landmarks for charts was furnished on Form 587 and plotting checked. (Par. 10, 60.) *None submitted.*

17. The magnetic meridian was shown but the declination was not checked. (Par. 17, 52.)

18. The geographic datum of the sheet is North American and the reference station is correctly noted. (Par. 34.)

19. Junctions with contemporary surveys are adequate. No junctions with contemporary surveys are required.

20. Geographic names are shown on the sheet and are covered by the Descriptive report. (Par. 64, 66c.) *No names were shown. This island is so small that none appear to be required.*

21. The quality of the drafting is good. (Par. 31, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, 45, 46, 47, 48, 49, 50.)

22. No additional surveying is recommended.

23. The Chief of Party inspected and approved the sheet and the descriptive report after review by W.F. Mainate.

24. Remarks: See page 18 of this review.

Reviewed in office by Harold Winney Aug. 20, 1934

Examined and approved:

[Signatures]

Chief, Section of Field Records
Chief, Division of Charts

Chief, Division of Field Work
Chief, Division of Hyd. and Top.