DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: T. Hawaii

LOCALITY:

Hawaiian Islands

West Coast of Lanai Island

1931-32

CHIEF OF PARTY:

O. H. Swainson
Applied to compilation Chart 4120 - Feb 25, 1941 - JFS.
DESCRIPTION REPORT TO ACCOMPANY
TOPOGRAPHIC SHEET "F"
West Coast Lanai

AUTHORITY The area covered in this work was done in accordance with instructions dated August 19, 1930 for Project 69.

LIMITS This survey consists of the shore line from Cape Kaea to a junction with the southern part of T 4304 A', Kamalapau Harbor, and from a junction with the northern part of T 4304 A to a junction with T 3434, on the north side of Lanai. The scale used was 1 : 20,000.

GENERAL DESCRIPTION The coast line around Cape Kaea consists of low rocky bluffs behind which the land rises in steep slopes to the table land above. North of the Cape the bluffs rise rapidly to an elevation of approximately one thousand feet along Kaholo Pali, which is a dark, rocky, precipitous bluff and very prominent from offshore. A narrow beach, covered with boulders extends along the base of the bluff. From the Pali northward the bluff gradually diminishes in height until Kaumalapau Harbor is reached. This harbor affords an indifferent anchorage for small coasting vessels.

North of Kaumalapau the shoreline becomes more rugged with numerous indentations and bights. The bluffs are rocky and low, varying in height from fifty to two hundred feet until Five Needles are reached. The Five Needles are a group of detached pinnacle rocks, the highest of which is one hundred ten feet. They lie close to shore and are difficult to distinguish from offshore on account of the higher bluff behind them. Just inshore from the Needles is a prominent gulch.

For about three miles northwest of the Needles the rocky bluffs are of fairly uniform height, gradually diminishing until they do not exist.

From Keanapapa Point to Keena Point the shore line is very rugged with numerous rocks lying close to shore. Keena Point is low and rocky and hard to distinguish from the other points in the vicinity.

From Keena Point eastward the bluffs gradually become lower until only a few feet high, and at a distance of about one mile from the point there extends a narrow stretch of sand beach. Back of the beach the land rises gently to the table land. North of A Keena the coral reef that fringe the shore line along the north coast ends.

LANDMARKS The most prominent landmark on the southwest side of the island is the dirt and rock slide at the base of Kaholo Pali. Topographic station "Fun" marks the base of this slide. A Kaholo is on the highest point of the bluff above.

About a mile south of Keanapapa Point is a prominent greyish slide along the face of the bluff which is plainly visible offshore. This is marked by Slide.
CHARACTER OF CONTROL. The usual method of traverse was used wherever possible, tying in to established triangulation stations. In a few places between Α Kaena and Keamapapa Point it was found necessary to locate signals and set-up places by cuts taken on the ship, using a three point fix on triangulation stations, inasmuch as traverse was hardly possible along the base of the cliffs.

From Α Kaena, a traverse was run to Α Coe. An azimuth line was drawn on the sheet to Wireless pole at Kaunakakai, Molokai Island, and used for orientation.

CLOSING ERRORS OF TRAVERSE. All closing errors of the traverse run were within the allowable error. The following list shows the amount of errors which were errors in distance and adjusted proportionally. Due to large distortion of the sheet, readings had to be corrected while traversing.

<table>
<thead>
<tr>
<th>Station</th>
<th>Closing Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Α Kau → Α Kaena</td>
<td>15 meters</td>
</tr>
<tr>
<td>Α Manui → Α Nana</td>
<td>5 meters</td>
</tr>
<tr>
<td>Α Nana → Α Lost</td>
<td>0 meters</td>
</tr>
<tr>
<td>Α Lost → Ω Be (Located by ship)</td>
<td>5 meters</td>
</tr>
<tr>
<td>Ω Be → Α Nob</td>
<td>10 meters</td>
</tr>
<tr>
<td>Α Kaena → Α Coe</td>
<td>20 meters</td>
</tr>
<tr>
<td>Α Coe → Ω Nob</td>
<td>0 meters</td>
</tr>
</tbody>
</table>

JUNCTIONS WITH OTHER SURVEYS. This survey joined properly with previous surveys. It will be noted that no form lines have been shown on the sheet. Only elevations were taken to the top of the cliffs; as it would have been necessary to draw the form lines from offshore. However, numerous elevations and form lines as shown on the Geological Survey map of Lanai were verified from offshore; which indicated that the Geological Survey map was very complete.

LIST OF NEW NAMES. No new names were assigned. All the names shown on the sheet were taken from the topographic map of Lanai by the U. S. Geological Survey.

LIST OF PLANE TABLE POSITIONS

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ω Fun</td>
<td>20° - 45'</td>
<td>660</td>
<td>156° - 59'</td>
<td>35</td>
<td>Dirt and rocky slide at base of Kaholo Pali</td>
</tr>
<tr>
<td>Ω Slide</td>
<td>20° - 52'</td>
<td>810</td>
<td>157° - 05'</td>
<td>256</td>
<td>Greyish slide</td>
</tr>
</tbody>
</table>

Respectfully submitted,

Percy L. Bernstein,
Jr., H. & G. Engineer.

Approved and forwarded:

Chief of Party, C. & G. S.
REVIEW OF TOPOGRAPHIC SURVEY No. 4745

Title (Par. 56) West Coast of Lanai, Hawaiian Islands

Chief of Party—Surveyed by P. Bernstein—Inked by P. Bernstein


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.) Elevations of bluffs along shore line are shown, no other elevations are shown.

5. The delineation of contours—formlines—is satisfactory. (Par. 49, 50.) No contours/formlines are shown.

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.) You are requested that figures are made to topographic map of Lanai by the U.S. Geological Survey.

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.)

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

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

12. The base line was shown on mountain. (Par. 10g.)

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.
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 a topographic relative to type of photographs, method of compilation and type of ground control.

15. The descriptions of recoverable stations and references to shore line were accomplished on Form 524. (Par. 29, 30, 57, 67 except scaling of IMs and DP, 68.)

16. No list of landmarks for charts was furnished on Form 567 and plotting checked. (Par. 16d, e, 60.) Landmarks covered by Des. Report.

17. The magnetic meridian was shown and declination was checked. (Par. 17, 52.)

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

19. Junctions with contemporary surveys are adequate.

20. Geographic names are shown on the sheet and are covered by the Descriptive report. (Par. 64, 66k.)

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

24. Remarks:

Reviewed in office by R. J. Christman, Nov. 22, 1933

Examinied and approved:

[Signatures]

Chief, Section of Field Records

Chief, Section of Field Work

Chief, Division of Charts

Chief, Division of Hyd. and Top.
The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. F

REGISTER NO. 4745

State. TERRITORY OF HAWAIIAN IS.

General locality. LANA'I WW000

Locality. WEST COAST.

Scale. 1:25,000 Date of survey. Dec. - Feb. 1931, 1932.


Chief of Party. O. W. Swainson

Surveyed by. Percy L. Bernstein

Inked by. Percy L. Bernstein

Heights in feet above H.W. to ground to tops of trees

Contour. Approximate contour. Form line interval 30 feet

Instructions dated. August 19 1931

Remarks: 

650