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Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

....., Director

U. S. COAST AND GEODETIC SURVEY
L. & A.

State: Hawaiian Is. Acc. No.

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. ² 4703
Hydrographic }

LOCALITY

Kauai - E. Coast

Makahuena Pt. to Lehuawehe Bay

1927

CHIEF OF PARTY

Cl. Garner and F. G. Engle

GOVERNMENT PRINTING OFFICE

Book 1-57

Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: Hawaiian Islands

11-5613

DESCRIPTIVE REPORT.

11763

Hydro. Sheet No. 2

LOCALITY:

~~Kauai Islands~~ East Coast

~~Makahuena Point to Hanalei Bay~~ Alakukui Pt.

~~East coast of Kauai.~~

1927

CHIEF OF PARTY:

F. G. Engle

DESCRIPTIVE REPORT
to accompany
HYDROGRAPHIC SHEET NO. 2,
MAKAHUENA PT., TO HANAMAULU BAY KAUAI, T. H.
Commanding Officer's Instructions dated Nov., 23, 1926.

LIMITS: This sheet covers the inshore hydrography between Makahuena Point and Lehuawehe Bay east coast of Kauai. This sheet joins on the south with the South Coast of Kauai inshore sheet (scale 1:10,000) completed in 1926 and joins on the north with sheet No. 5 (1:20,000). For soundings in Nawiliwili and Hanamaulu Bays see field sheets 3 and 4.

SURVEY METHODS AND CONTROL: Control for this survey consisted of triangulation stations established by the field party and by previous surveys and of a series of topographic signals established on Topographic sheet A, 1:20,000, Topographic sheet B, 1:5,000 and sheet C, 1:2,500.

The ship hydrography was carried in as close as possible to shore and the launch hydrography carried from a juncture with the ship hydrography to as close to the beach as safety would permit. The outer limit of reefs and breakers was sketched in from the sounding launch while on the inshore sounding lines.

Tidal reducers for this sheet were obtained from a portable automatic gauge operated at Nawiliwili Bay.

GENERAL DESCRIPTION OF THE COAST: This subject is covered in the descriptive report accompanying Topographic Sheet A, Makahuena Point to Kapaa.

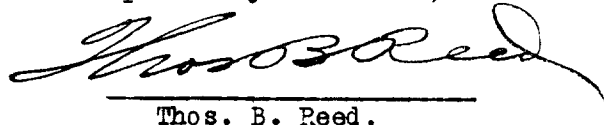
LANDMARKS: Hanamaulu mill Chimney is a high ^{black} steel stack, fairly prominent. Lihue Mill Chimney is a high prominent chimney. These two chimneys are the only two very prominent objects on this sheet except for the mountain peaks back from the shore and these are hard to distinguish between if unfamiliar with the island. The large ^{black} warehouse at Ahukini can be seen for a considerable distance off shore.

INSHORE DANGERS: Between signals DOT and TUB a reef which breaks in ordinary weather extends about 300 meters offshore. Between signals FIX and DIT is a reef extending about 150 meters offshore which breaks in ordinary weather. Between signals PUG and BY is another reef outlined by large breakers extending 600 meters from shore. The limit of the breakers on these three reefs was sketched from the sounding launch by the hydrographic party. No rocks awash were observed in these areas from the hydrographic launch although one was cut in by the Topographer off signal CAP. It is believed that there is about 1 fathom of water in these areas as they were breaking in fairly calm weather. From signal AT northward the dashed line shows the limit of breakers in smooth weather. The reef shown off signal POST breaks continually and is very shoal although no rocks awash were noted. The breakers in this vicinity are large and make up unexpectedly a considerable distance out from the edge of these reefs and an open boat is likely to be caught unawares by a large breaker and swamped while running in apparently open water off the edge of the reef as defined by the ordinary breaker line.

About 500 meters south east of signal SHO is a shoal on which a least depth of 16 feet was obtained. This area breaks in moderate weather.

ANCHORAGES: The two bays on this sheet Nawiliwili and Hanamaulu Bay were surveyed on separate large scale sheets. For anchorages etc., in these Bays see descriptive reports of Sheets 3 and 4. Lehuawehe Bay is a good anchorage for small craft and has protection from the North and West.

Respectfully submitted,



Thos. B. Reed.

Approved and Forwarded:



F. G. Engle,
Comdg. Officer
U.S.S. DISCOVERER.

STATISTICS SHEET NO. 2

EAST COAST KAUAI, SCALE, 1:20,000 - - - - - MAKAHUENA PT.,-- AHUKINI, KAUAI.

| <u>Date, 1927</u> | <u>:</u> | <u>Letter</u> | <u>:</u> | <u>Volume</u> | <u>:</u> | <u>Positions</u> | <u>:</u> | <u>Soundings</u> | <u>:</u> | <u>Miles Stat</u> | <u>:</u> | <u>Vessels</u> | |
|-------------------|----------|---------------|----------|---------------|----------|------------------|----------|------------------|----------|-------------------|----------|----------------|-------------------|
| Feb. | 18 | : | A | : | 1 | : | 117 | : | 499 | : | 49.9 | : | Ship |
| | 19 | : | B | : | 1 | : | 105 | : | 423 | : | 28.7 | : | " |
| Mar. | 2 | : | C | : | 1 & 2 | : | 77 | : | 470 | : | 27.5 | : | " |
| | 17 | : | a | : | 1 | : | 45 | : | 185 | : | 13.8 | : | Stbd. Motorsailer |
| | 18 | : | b | : | 1 | : | 51 | : | 245 | : | 12.6 | : | " " |
| May | 11 | : | c | : | 1 | : | 106 | : | 567 | : | 21.9 | : | " " |
| | 12 | : | d | : | 2 | : | 28 | : | 131 | : | 3.8 | : | " " |
| | 13 | : | e | : | 2 | : | 108 | : | 585 | : | 16.7 | : | " " |
| June | 13 | : | f | : | 2 & 3 | : | 131 | : | 472 | : | 24.4 | : | " " |
| | | | | Totals --- | | | 768 | | 3577 | | 199.3 | | |

(11)

January 28, 1928

J. H. H.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 4708

Locality: **KAUAI ISLAND, T. H.**

Chief of Party: **G. L. Garner, 1927.**

Plane of reference is **M L L W**

1.7 ft. on tide staff at **Hawiliwili Bay.**

2.3 " " " " " **Hanamaulu Bay**

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

G. H. H.

Chief, Division of Tides and Currents.

Report on H 4703

Chief of Party, Clem L. Garner and F. S. Engle
Surveyor, Clem L. Garner and Thos. B. Reed.

Protracted by, Thos. B. Reed
Soundings plotted by, Thos. B. Reed
Verified & issued by John S. Ladd

1. The records conform to the requirements of the general instructions.
2. The plan and character of development fulfill the requirements of the general instructions.
3. The sounding line crossing were adequate.
4. The usual depth curves could be drawn.
5. The field plotting was complete to the extent prescribed in the general instructions.
6. The following Topo signals were found to have been inaccurately plotted,
(signals Pat, ex, Was, White, Six, Gra, Whin
~~was~~.) The first 4 were plotted to conform to the Topo 4292 and the balance to conform to Topo. 4296. The new plotting of these signals resulted in

moving about 25 positions a distance of about 5 to 12 meters, as a whole the amount of the replotting did not materially affect the areas involved.

7. The junctions with adjacent sheets were not plotted as all the adjacent sheets involved were verified.

8. The character and scope of the surveying was very good and the field plotting very accurate with the exception of the signals previously mentioned.

John S. Ladd
in Charge

Dec. 6 1928

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

December 17, 1928.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4703

Makahuewa Pt. to Lehawehe Bay, East Coast Kauai

Surveyed in 1927.

Instructions dated November 23, 1926 (DISCOVERER)

Chief of Party, Clem L. Garner, F. G. Engle.

Surveyed by Clem L. Garner, T. B. Reed.

Protracted and soundings plotted by T. B. Reed.

Verified and inked by John G. Ladd.

1. The records conform to the requirements of the General Instructions.
2. The plan and character of development fulfill the requirements of the General Instructions with the following exceptions:
 - a. The sounding intervals were not uniform in several instances. (See remarks at end of report).
 - b. The time intervals between positions in several instances were too long. These will be mentioned later.
 - c. The course of the sounding line was changed without taking positions at the point where the change occurred, as at three soundings before positions 9b, Vol. 3 page 18 and between positions 72 and 73c, Vol. 2 page 27.
3. The plan and extent of development satisfy the specific instructions.
4. There were a few sounding line crossings, and those obtained showed good agreement.
5. The information furnished north of Nawiliwili Bay is sufficient for drawing in the depth curves starting with the two fathom curve, while to the southward the five and ten fathom curves can be drawn and the trend of the three fathom curve can be shown.

6. The usual field plotting was done by the field party and was found to be very good. The following information appears on topographic sheet No. 4296 but is not shown on the hydrographic sheet.
 - a. Reef awash at high water at Lat. $21^{\circ} 53'$, between signals Mit and Dit.
 - b. Rock awash at Lat. $21^{\circ} 52 \frac{1}{2}'$ near signal Car.
7. The office draftsman had to replot the following topographic signals which were found to be in error:- Pat, Ex, Was, White, Six, Gra, Whir and Wen. The first four were plotted to conform with topographic sheet No. 4292 and the balance to conform with topographic sheet No. 4296. The replotting of the signals resulted in moving about 25 positions a distance of from 5 to 12 meters, and did not materially affect the area involved.
8. No junctions with adjacent sheets have been shown on this sheet. It is joined on the north by H. 4705 which is unverified. The limits of the breakers, as shown on these sheets, disagree by about 40 meters. The junctions with 4597a, 4697 and 4702 appear to be very good. No. 4717 which joins it on the east is still unverified.
9. No further surveying is necessary to develop the area within the limits of the sheet.
10. Remarks:-
 - a. As mentioned under 2(a) there were several instances where the intervals between soundings were not uniform, as between positions 49 and 51 C, Vol. 2, pages 18 and 19; between 78 and 79 B, Vol. 1, page 50. This entailed some delay by causing the time to be divided into units so that the positions of the soundings could be checked.
 - b. There are many instances where positions were taken further apart than called for in the General Instructions as noted under 2(b), for example:- between positions 8 and 9 b, Vol. 3, page 18, time is 6 minutes and distance is 800 meters; between positions 47 and 48 C, Vol. 2 page 17, time is $7 \frac{1}{2}$ minutes and distance is 1100 meters; between positions 69 and 70 C time is 6 minutes and distance is 1200 meters.
 - c. The soundings between positions 78 and 79 B, Vol. 1 page 50 when plotted on the sheet made the soundings of 18 and 19 fathoms fall between soundings of about $8 \frac{1}{2}$ fathoms on each side of them. As the speed of the vessel, between these positions, had

been variable and as the soundings couldn't be plotted with any degree of certainty, the Chief, Section of Field Records authorized the rejection of them and a note to that effect was entered in the record.

11. Reviewed by J. M. Smock, December 10, 1928.

Approved:

Chief, Section of Field Records (Charts)

Chief, Section of Field Work (H. & T.)

Additional Report

H.4703,

Jan 18, 1929

Signals "Wal" and "Po" were replotted to conform to Topo. 4297. They had previously been checked with T.4296 which was same scale as H.4703 (1:20,000) and found to be correctly plotted. As T.4297 (scale 1:2500) was the large scale it was recommended by C.M.S. (Chief, section of F.R.) to accept its signals as the more accurate of the two topographic sheets.

The hydrographic work was replotted and made to conform to the new location of the two signals "Wal" and "Po".

John S. Lacey
Jr. Capt. Eng.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 4703

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

Number of positions on sheet . . 768.
Number of positions checked . 254.
Number of positions revised . . 38.
Number of soundings recorded . 3577.
Number of soundings revised . 225.
Number of signals erroneously
plotted or transferred 8.

Date: - - - Nov. 26 - - - 1928 - - - - -

Cartographer: - - - - - John G. Reed - - - - -

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4703

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.

C. & G. SURVEY
L. & A
DEC 30 1927
Acc. No.

Field No. 2

REGISTER NO. 4703

State Hawaiian Islands

General locality ~~Kauai Island~~ E. Coast

Locality Makahuena Point to ~~Hanalei Bay~~ Lehuawehe Bay

Scale 1:20,000 Date of survey Feb.¹⁸ to June¹³, 1927

Vessel DISCOVERER

Chief of Party Clem. L. Garner and F. G. Engle

Surveyed by Clem. L. Garner and Thos. B. Reed

Protracted by Thos. B. Reed

Soundings penciled by Thos. B. Reed

Soundings in fathoms -feet-

Plane of reference M L L W Staff Reading 1.6 ft.

Subdivision of wire dragged areas by

Inked by John S. Lee

Verified by " " "

Instructions dated November 23, 1926

Remarks:

Applied to court 4100

William 11/2/58