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Diag. Cht. No. 4117

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ..... Office No. 2670

LOCALITY

State Hawaii

General locality Hanapepe

Locality Bay

1904

CHIEF OF PARTY

H. D. King

LIBRARY & ARCHIVES

DATE .....

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Treasury Department,
U. S. COAST AND GEODETIC SURVEY.

O. H. Tittmann
Superintendent.

State: Ter. of Hawaii.

DESCRIPTIVE REPORT.

Hyd. C *Sheet No.* 2670.

LOCALITY:

Hanapepe Bay

1904.

CHIEF OF PARTY:

W. D. King, Aid

2670

Act. 2-12

Descriptive Report 1904

EDITOR ✓

Insp'r of Hyd'y. & Top'y. G. 4.13.04

FORM 65.—Field Letter.

Write me at: H. Sheet 2670 U.S.C. & G. Survey

Telegraph me at: Insp. of Mag. Work

My Express Office is COAST AND GEODETIC SURVEY

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March 28, 1904.

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SUPERINTENDENT

2—547

ACKNOWLEDGED
APR 30 1904
C. & G. SURVEY ARCHIVES

To the Superintendent,
Coast and Geodetic Survey,
Washington, D.C.

Sir,-

I have the honor to present to you a descriptive report of survey of Hanapepe Bay, Kauai, T.H., made by me in accordance with your instructions of Jan. 21, 1904.

I arrived in Honolulu via P.M.S.S. "Korea" on February 8, and set about providing myself with information concerning conditions at Eleele, the port of Hanapepe Bay. Consultation with Prof. Alexander, brought out the fact that of the triangulation stations, positions of which were furnished by the Office, one only, "Wahiawa" was available. But two additional, Puu o papai and Puu Lani, used by him in recent determination of Island of Niihau, were furnished me and proved of easy access and favorable position.

After making inquiries concerning boat and men at Eleele, I engaged three men and proceeded to Kauai on Feb. 11. Arrived at Eleele at 2:30 P.M. Feb. 12 and with some difficulty arranged for quarters for party.

The weather was at this time very bad and continued so during my entire stay at Eleele with few exceptions.

Two days were occupied with establishing tide-gauge and meting signals. The outline of Nawiliwili Bay and bold characters of shore line made the proper location of signals a difficult problem, which indeed was not successfully solved. It be seen at all from the bay, the signals must be placed close to the edge of the bluff, which position brought them all on the same circumference, or nearly so. This later caused seriously difficulty in the determination of many topographic and hydrographic positions.

From Feb. 16 to Feb 20 I was engaged on triangulation for determination of signals. This was done hurriedly and a little at a time as the weather permitted. Several times low hanging clouds prevented work after getting to station, and one violent

"Kona" carried away nearly all signals. Work was accepted which I should not have called sufficient under better weather conditions or for more extensive work.

After completing the triangulation three days of rather better weather were occupied with topography. This was practically limited to shore line as tall growing cane in every direction prevented stations at a distance from the shore without additional triangulation.

The topography was finished on Feb. 25 and on the next day I fitted out a boat for hydrography. This boat, the only one to be had in this vicinity, was a double ended pulling boat, 22 feet long, very heavy and with little room for working party in the bow-sheets. It proved however to be an excellent sea boat and handled well in the breakers. My boat crew was of native Hawaiians, good used to handle a boat if left to themselves, but understanding very little English. It was moreover impossible to get them to regulate their stroke to the needs of the hydrography, which made it always very difficult to judge distance by time. The men brought out from Honolulu did faithful work but were entirely ignorant of hydrographic methods. I was

much disappointed however in one man whom I had intended to use as observer or recorder. He however proved incompetent for either and Mr. Milburn undertook the trying task of recording and reading deff angle. This make-shift method was of course unsatisfactory to every one, but was apparently the only course, and it did the work.

The continued "kona" or southwesterly weather which had been annoying while on shore, now made hydrography always difficult and many days impossible. This bay lies entirely open to the southward and on several occasions the sea, never quiet, washed entirely over the Eleele landing and the tide-gauge. Along the northern and western shores of the bay heavy breakers prevented work close in shore at any time. Ships lying at the mooring buoys discharging supplies or loading sugar, were a serious hindrance to a part of the work, compelling the breaking of sounding lines and shutting out signals.

The hydrography was concluded on March 9. Under favorable weather conditions I should have extended development somewhat farther to sea, but continued rough weather made it seem advisable

to stop as soon as the absolutely essential work was complete. The hydrography done covers all the area sheltered by Upolu Point and extends to sea to about the 15 fathom curve.

Magnetic observations for declination at two different points on Feb. 25 and Mar. 5 and 8. On Mar. 25 a new index correction for Compass Declinometer #742 was determined from observations at Honolulu Magnetic Observatory.

On Mar. 11 I left Eleele for Honolulu and have since been engaged in completing records and accounts of field work.

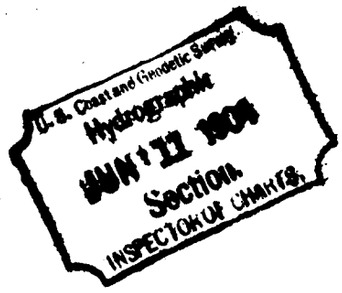
A progress sketch of work at Hanapepe Bay accompanies this report.

Respectfully yours.

Harold S. King. Asst. C. & G. S.

Chief of Party.

Report
on
Hydrographic Sheet
No. 2670,
Hanapepe Bay,
Island of Kauai,
H. I.
Aid King,
1904.



I redrew the shoreline, reprotracted and replotted the positions; also reduced the soundings. Positions were plotted thus:-

∠25a plotted with angles given.

∠26a not plotted.

∠27a, ∠28a and ∠29a not plotted.

∠7b plotted with ∠r and time.

∠10c plotted with "Old" instead of "Dock".

∠70c used angle 49-10 instead of 44-10, from "Hut" to "Cave".

∠79c swung on a line between ∠78c and ∠80c, as is near a circle.

∠24d not plotted.

∠29d plotted "Sand-Hut" with angle 41-48.

∠32d not plotted as is too uncertain.

∠43d plotted with aid of time.

∠44d plotted with "Jap"-"Sand" instead of "Old"-"Sand". with angles given.

∠46d and ∠47d not plotted as both about one circle.

∠11f plotted with 67-47 (Hut-Cave).

∠36f plotted with 22-27 (Cave-Lava).

∠45f plotted with 26-22 (Sand-Hut).

∠46f not plotted.

∠55f not plotted.

∠59f plotted with 25-56.

/87f plotted with 46-58, which is probably O.K.

/88f plotted with angles given.

/89f plotted on line between /88f and /90f with /r.

/12g not plotted,-wrong angle.

/26g plotted with "Old"-"Sand".

/41g plotted with "Cave".

/82g plotted with 85-00.

/86g plotted with (44-22) and (63-31).

F.M.Hart. (Signed).

The positions were numbered with black ink, necessitating the replotting of the work.

6/2/1904. Geo.L.Flower. (Signed).

Many of the position angles have been changed or corrected by the field party, and many others are evidently wrong. With so many discovered mistakes in angles, a doubt is thrown on all. 24 out of 56 ends of lines are without angles for positions.

Some lines had to be drawn on the supposition that the boat was running on a continuous course. Care was not taken to note the changes in course.

The lines cross well, generally, when the above circumstances are taken into account. The bottom is irregular with many abrupt changes, which may account in a measure for

the irregular curves.

F. C. Donn. (Signed).

Examination of the sounding records shows that the lead line corrections marked "+" or "-" indicated that lead line was short or long, respectively. As applied in the Office this correction was given the wrong sign and the lead line error was thereby doubled in the reduced soundings and not eliminated as intended.

Where soundings are reduced to tenths for tide and plotted to 1/4 ft. inside 12 ft. curve, as in this case, it appears rather inconsistent to use the "mean" of the leadline errors at beginning and end of day in making correction. Further, in using the "mean", the mid-day measurement of the line and any others should be included.

By direction of the Assistant in Charge the plotted soundings, reduced as stated, were not corrected. The generally poor character of the work and comparatively great depths made it appear unnecessary.

There is no reference to B.M.'s in the Tide Books. Other deficiencies in determination of signals, boat work, etc. have been noted elsewhere.

6/6/04. J. T. Watkins. (Signed).

In view of the foregoing reports as to the condition of this sheet, it is only fair to Mr. Hart, the draftsman who plotted the work, to state that there is absolutely nothing in the records, save a few notes on the fly leaf of one of the books, whereby to determine whether the leadline correction is to be applied to the line itself or to the depth of water. The general character of the work was so decidedly uncertain and unreliable that taking all this into consideration Mr. Hart has made as successful a plotting of this complicated sheet as could be expected of a more experienced draftsman, under the circumstances.

Respectfully,

Walter W. Underwood

Assistant and Chief, Drawing and Engraving Division.

applied to chart 4100 thru chart 4108 CRW. 11/3/58