

4913

Diag. Cht. No. 4115

4913

Form 504

**DEPARTMENT OF COMMERCE**  
U. S. COAST AND GEODETIC SURVEY

....., Director

State: Hawaiian Is.

---

**DESCRIPTIVE REPORT**

~~Topographic~~ } Sheet No. **7 4913**  
~~Hydrographic~~ }

---

LOCALITY

North Coast of Hawaii

Honokaa Landing

---

1928-9

---

CHIEF OF PARTY

K.T. Adams

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET NO. 7.

Territory of Hawaii.  
Honokaa Landing, Hawaii.  
Scale 1 - 2500.

AUTHORITY:

Instructions from the Director dated October 8, 1928. Modified instructions as of the Director's letter dated November 14, 1928.

PURPOSE:

A complete hydrographic survey of Honokaa Landing, Hawaii, T. H.

LIMITS:

The area to be limited to that which can be covered by a standard Watman sheet using a scale of 1 - 2500. The sheet reaches three quarters of a mile on each side of the Landing, and from one half to five eighths mile offshore.

SURVEY METHODS:

The work out to the 18 fathom curve was done by a sub-party working from the U. S. C. & G. S. S. GUIDE, using a whaleboat with oars, and sounding with a handlead.

The area from the 18 to the 35 fathom curve was done by a sub-party using the gig, and sounding with the hand machine.

The outer two lines were run by the ship using the red light fathometer method.

The personnel of the whaleboat party consisted of one officer, in charge, right angle, and plotting; one officer steering, and left angle; one recorder; one leadsman; and four oarsmen.

The personnel of the gig party consisted of one officer, in charge, right angle, and plotting; one officer left angle; one recorder; one engineer; one coxswain; and two seamen, handling the sounding machine.

On the ship the fathometer was read by the Commanding Officer; one officer plotting; one officer right angle; one officer left angle; one recorder; and the usual number of men in the engine room, and on the bridge.

The usual method of hand lead sounding was observed. The sounding lines were run parallel to the shore line. The lines run by the whaleboat were spaced 25 meters out to 12 fathoms, and from there on out 50 meters apart. Additional lines were run at places where the depth curves indicated shoaler water off the points.

Ranges were not available and the steering was done by a boat compass, but the courses cannot be used to plot with as much of the time the boat had to be headed from 10 to 45 degrees off the true course in order to make it good. It was almost impossible to run uniformly spaced lines.

The lines run by the gig, using the hand machine, were spaced approximately 175 meters.

The lines run by the ship, using the red light fathometer method, were spaced approximately 275 meters.

#### CONTROL:

The location of the signals was secured from Topography Sheet No. A, Honokaa Landing, Hawaii, T. H.

The signals were whitewashed cairns of stones, small flags, and a few natural objects. All signals were on the edge of the top of the cliffs, varying from 40 to 200 feet above the water level.

#### DESCRIPTION:

The area covered by this sheet is open sea. The coast runs nearly east and west with a slight northward slope on the western end of this sheet. No protection is afforded from the prevailing northeasterly winds. Protection is afforded from southerly winds.

The coast is all rocky, and with the exception of one place, between signals CHIM, and OIL, it is made up of steep rock cliffs varying from 40 to 200 feet. The coast has a number of rocky points extending out a short distance from the general line of the coast. At these points the cliffs have cracked off, and large masses of rock extend for short distances out into the water as sunken rocks , and rocks awash.

On calm or smooth days small boats can land just east of signal CHIM. It is necessary to use an anchor to hold the boat off on account of the surge. This is the only place on the sheet that the top of the cliffs can be reached from the water.

Altho the water is fairly deep up to the shore line it was impossible to sound closer to shore than a depth of from three to four fathoms on account of the surge and backwash.

The swells do not break except in bad weather until they reach the shore, with the exception of the foul areas opposite signal ROCK, to the west of signal CHIM, and off the points at signals TANK, ONE, TO, and SIX.

A very marked backwash was noted along the entire coast covered by this sheet. This backwash, and possibly current was noted out to the ten fathom curve.

The bottom out to the ten fathom curve is made up of large boulders with a very small amount of sand and coral. Beyond the ten fathom curve the bottom is still rocky but with considerable sand.

#### TIDAL DATA:

An attempt was made to establish a tide staff at Honokaa Landing but it could not be kept there.

The tidal data was secured from the automatic tide gauge located at Hilo, Hawaii, T. H.

#### ANCHORAGES:

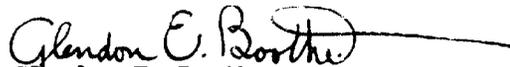
The area covered by this sheet is open sea. No protected anchorages are available. Vessels loading here anchor in twenty to twenty-five fathoms.

Three mooring buoys were temporarily in place off the Landing, as shown on the sheet, at the last date hydrography was done. These buoys are only temporary, and are privately established when a vessel is coming here, and are later removed. These buoys should not be shown on the chart, but a note to the above effect might be put on.

STATISTICS:

Statistics of the work are attached to this report.

Respectfully submitted,

  
Glendon E. Boothe,  
Jr. H. & G. Engr.

Approved, and forwarded.

  
K. T. Adams,  
H. & G. Engr.  
Chief of Party.

## STATISTICS FOR HYDROGRAPHIC SHEET NO. 7.

## Honokaa Landing, Hawaii.

DATE	DAY	STATUTE	NO. OF	NO. OF	BOAT	REMARKS.
	LETTER	MILES.	SOUNDINGS.	POSITIONS.	USED	
December	19,1928	a	1.6	48	13	Whaleboat Hand lead.
January	18,1929	b	6.9	497	172	" " "
"	19,1929	c	2.9	145	61	" " "
"	20,1929	d	5.7	401	160	" " "
"	21,1929	e	2.4	195	71	" " "
"	30,1929	a	2.4	94	94	Gig Hand Machine
February	26,1929	b	4.3	103	104	" " "
"	26,1929	f	3.4	424	121	Whaleboat Hand Lead.
April	17,1929	g	2.5	164	68	" " "
April	17,1929	A	3.2	----	21	Ship Fathometer (R.L.)
TOTAL		8	35.3	1971	785	3

TIDAL DATA

for

HYDROGRAPHIC SHEET NO. 7.

TERRITORY OF HAWAII.  
HONOKAA LANDING, HAWAII, T. H.

The tidal data was secured from the standard automatic tide gauge at Hilo, Hawaii, T. H.

The following value of MLLW on the present tide staff was determined and used:-

Elevation of bench mark F-2 above zero of tide staff - 12.36 ft.  
(Furnished by Mr. T. A. Jaggard, Volcanologist,  
in charge of the tide gauge at Hilo, Hawaii.)

Elevation of bench mark F-2 above MLLW - - - - - 9.05 ft.  
(Data furnished by Office under letter of  
October 5, 1928)

Value of MLLW on present tide staff - - - - - 3.31 ft.

The hourly heights as scaled from the tide roll were furnished by Mr. Jaggard. These values were corrected by using the value of 3.31 feet as determined, and the resulting values were used as the tide reducers for Sheet No. 7, Honokaa Landing, Hawaii.

TEMPERATURE CORRECTIONS FOR SHEETS 7 & 9 HAWAII

FMS	TEMP.	SUMS	MEAN	FACTOR	COR.	Assumed Vel. 820 fm/sec	
						Mean surf. temp. 23.20	
						Mean salinity 34.5	
						Fms.	Depth
10	23.3	46.5	23.25	.0235	.2	.2	10.00 to 12.50
20	23.15	69.65	23.22	.0234	.5	.3	12.50 to 15.00
30	22.80	92.45	23.11	.0232	.7	.4	15.00 to 17.50
						.5	17.50 to 22.50
40	22.50	114.95	22.99	.0230	.9	.6	22.50 to 27.50
						.7	27.50 to 32.50
50	22.15	137.10	22.85	.0227	1.1	.8	32.50 to 36.80
						.9	36.80 to 41.30
60	21.25	159.35	22.62	.0223	1.3	1.0	41.30 to 46.20
						1.1	46.20 to 50.80
70	20.40	178.75	22.35	.0217	1.5	1.2	50.80 to 55.80
						1.3	55.80 to 60.90
80	19.70	198.45	22.05	.0211	1.7	1.4	60.90 to 66.20
						1.5	66.20 to 71.70
90	19.00	217.45	21.74	.0205	1.8	1.6	71.70 to 77.60
						1.7	77.60 to 83.70
100	18.10	235.55	21.41	.0198	2.0	1.8	83.70 to 91.20
						1.9	91.20 to 97.50

Computed by F. L. G. 5/27/29  
 Checked by F. B. Q. 5/27/29

APPROVAL NOTE FOR HYDROGRAPHIC SHEET NO. 7.  
Honokaa Landing,  
Hawaii.

The finished hydrographic sheet and records have been examined by me and approved.

More than the usual supervision was had over the work as it was done. The work was all done by a detached party from the steamer GUIDE with the steamer remaining in the vicinity on account of the uncertainty of the weather. The boat sheet was examined each evening and discussed with the officer immediately supervizing the work.

The fathometer work was done under the direct supervision of the Commanding Officer, he, himself reading the fathometer. Temperatures for the reduction of soundings were obtained as follows: A surface and bottom temperature at about 20 fathoms was obtained on this date at Kukuihaele and the upper part of the temperature curve taken off the northwest coast of Hawaii was adjusted to fit these two temperatures and was used in the reduction of soundings.

*K. T. Adams*

K. T. Adams,  
H. & G. Engr.,  
Chief of Party.

# FIELD RECORDS

AUG - 29, 1929.

## REPORT ON SHEET No. 4913

CHIEF OF PARTY - K. T. ADAMS.

SURVEYED IN - 1928 & 1929.

PROTECTED BY - GEORGE W. LOVESEE.

SURVEYED BY { GLENDON E. BOOTH  
WALTER H. BAINBRIDGE  
K. T. ADAMS

VER. & INDEXED BY - W. H. BAMFORD.

SOUNDINGS PLOTTED BY - G. W. LOVESEE

- 1./ The records were found to 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 crossings were adequate.
- 4./ The usual depth curves were completely drawn from the work obtained on this survey.
- 5./ From position 106 d thru position 114 d - the position numbers were very much mixed up which necessitated the checking of each position - and changing

of the position numbers - Only about sixty percent of the bottom characteristics were penciled in - this requiring the office draftsman to supply the ones omitted.

6./ No regard was paid to the instructions regarding the changing of feet into fractions of fathoms and a line was used to separate the numerator & denominator of fractions - The no. bottom at 20 fathoms soundings ~~at~~ were extremely carelessly penciled and spaced.

Throughout the sheet - the penciling was very carelessly done and no attempt made to convert the soundings into the proper fractions of fathoms.

7./ There are no contemporary surveys in this vicinity.

3.

8./ The topographic station "T0"  
was used in the records  
as "TWO"

The lines connecting the  
positions were penciled so  
heavily that it was  
almost impossible to erase  
them.

Respectfully submitted

Warren H. Bamford

Section of Field Records  
Report on Hyd. Sheet No. 4913  
Honokaa Landing, North Coast of Hawaii  
Surveyed in 1928 and 1929

Instructions dated Oct. 8, 1928. (Guide)  
and Director's letter Nov. 14, 1928.

Chief of Party - K. J. Adams

Surveyed by - G. E. Boothe, H. H. Bainbridge, K. J. Adams

Protracted and plotted by - G. H. Lovesee

Verified and inked by - H. H. Bamford

1. The records conform to the requirements with the following omissions. On brown "a" day, the "stops" and "aheads" were not marked and the bottom characteristics were recorded in the "remarks" column. On the fathometer work, salinity was not entered

in the sounding record and the check marks after soundings to indicate vibration of middle read were omitted. (See page 112 & 113, Hydrographic Manual)

2. The plan and character of development conform to the requirements of the General Instructions.
3. The plan and extent of the survey satisfy the specific instructions.
4. On the work close inshore, the soundings do not cross very well, probably due to the uneven character of the bottom. Further off shore there are no cross lines.
5. The information is sufficient for drawing the usual depth curves, except for depths under five fathoms. These can not be completely drawn as the work could not be carried closer inshore.
6. There are no junctions with contemporary work.
7. The usual amount of field plotting was done by the field party. The protracting

was fairly well done with a few errors in numbering positions, but the plotting of soundings was carelessly done. The tables for converting feet to fractions of a fathom were not adhered to. (See verifier's report)

8. Character and scope of survey - good

9. No additional work is considered necessary.

Reviewed by R. L. Johnston Sept. 5, 1929.

A. M.

A. M. Sobieralski

Johnston

Sec. of Field Records.

EAK

August 13, 1929.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in  
volumes of sounding records for

HYDROGRAPHIC SHEET 4913

Locality: Honokaa Bay, Hawaii Island, T. H.

Chief of Party: K. T. Adams in 1928-1929.

Plane of reference is mean lower low water, reading  
5.3 ft. on tide staff at Hilo Bay, Hawaii Island.  
~~10. Below D.M.~~

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 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.

*H. A. Hammer*  
Chief, Division of Tides and Currents.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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.

Field No. 2

REGISTER NO. 4913

State Territory of Hawaiian Is.

General locality North Coast  
Island of Hawaii.

Locality Honokaa Landing.

Scale 1 - 2,500. Date of survey December 19, 1928. April 17, 1929.

Vessel U. S. C. & G. S. S. GUIDE.

Chief of Party K. T. Adams.

Surveyed by Glendon E. Boothe, Walter H. Bainbridge, & ship's Officers. *K.T. Adams*

Protracted by George W. Lovesee, Aid.

Soundings penciled by George W. Lovesee, Aid.

Soundings in fathoms fath

Plane of reference MLW.

Subdivision of wire dragged areas by

Inked by Warren H. Bamford.

Verified by W.H.B.

Instructions dated October 8, 1928. November 14th, 1928.

Remarks: Survey made by ship, gig, and whaleboat.

Hand machine sounding done from the gig by party in charge  
of Mr. Quinn.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 4913

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

Number of positions on sheet .885 . . .  
Number of positions checked 187 . . .  
Number of positions revised 22 . . .  
Number of soundings recorded .2148 . . .  
Number of soundings revised 338 . . .  
Number of signals erroneously  
plotted or transferred . . 0 . . . . .

Date: - Aug 29-1929 - - - - -  
Cartographer: - Warren H. Bamford - - - - -