

5011

Diag. Cht. No. 4115

Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

C. & G. SURVEY

APR 28 1930

Acc. No.

Hawaiian Is.
State Territory of Hawaii

11-5613

DESCRIPTIVE REPORT.

Hydrographic Sheet No. 10 5011

LOCALITY:

~~Island of Hawaii~~

Northwest Coast

Mahukana Harbor

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

1929

CHIEF OF PARTY:

K. T. Adams

5011

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO.

5011

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. 10

REGISTER NO. 5011

State ~~Territory of Hawaiian Is.~~

General locality N. W. Coast of ~~Island~~ of Hawaii

Locality Mahukona Harbor

Scale 1:5,000 Date of survey Feb. 11, 12, 13, 14, 23, 1929

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

Chief of Party K. T. Adams

Surveyed by W. H. Bainbridge

Protracted by J. N. Jones

Soundings penciled by J. N. Jones

Soundings in ~~fathoms~~ feet

Plane of reference M. L. L. W.

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated November 3, 1927

Remarks:

Descriptive Report

To Accompany

Hydrographic Sheet No. 10

Mahukona Harbor, Hawaii, T. H.

Scale 1:5,000

DATE OF INSTRUCTIONS: November 3, 1927. In these instructions, under topography, paragraph 8 states, "You will do such revision work at Mahukona as may be necessary to correct chart 4101". Under Hydrography, a part of paragraph 10 is as follows; "A detailed survey shall be made of each of the bays and roadsteads mentioned above and on the scale indicated for the topographic survey".

It is possible that this refers to paragraph 6 only, which gives a list of bays and roadsteads with scales to be used. But an examination of Chart 4101 showed that the soundings were not spaced as close as were required on more recent surveys, and as it took practically no more time to make a complete revision than it did to fill in the gaps on the old survey, the complete survey was made.

LIMITS: The hydrographic survey of Mahukona Harbor and approaches extends from $\frac{3}{4}$ mile south to $\frac{3}{4}$ mile north of the dock.

CONTROL: The customary types of small signals were used, located by topography. Topographic Sheet No F. Triangulation signals, North Day Beacon (PIL), South Day Beacon (OLD), and Mahukona Light (LIGHT), Warf Derrick (DER) were used as hydrographic signals.

SURVEY METHODS: The work was done by the usual whaleboat party.

All soundings were taken with the hand lead.

Four lines were run paralleling the shore, one as close in as was safe to go, in addition to the principal system of lines run normal to the shore on ranges out to the 15 fathom curve, in general. The average spacing of lines was 25 meters apart.

GENERAL INFORMATION: Mahukona Harbor is an open bight on the north west coast of Hawaii. It is the port for the Kahala sugar district on the north eastern coast. The port and district are connected by a narrow gauge railroad that ends at Mahukona.

The freight is conveyed between the dock and the ships which anchor

off in small boats.

At present the railroad company is maintaining nine mooring buoys in the harbor (shown on topographic sheet No. F).

Sugar and general freight are handled at the concrete dock at signal Der. Oil and gasoline are handled at the wooden dock at signal Ric.

The Harbor offers practically no protection except from light easterly and southwesterly winds. It is dangerous to go alongside with any but a light swell running.

Ships do not moor to the buoys overnight, but anchor off.

While the work was being done the GUIDE usually anchored $3/8$ mile 305° true from Mahukona Light House in 17 fathoms. During the period only the normal northeasterly trade winds were blowing out in the open, but at this anchorage the winds appeared greatly augmented, perhaps due to the topography of the north west end of the island. And the strong northerly current along this coast held the ship port side to the wind. The bottom was coral and sand. The combinations of conditions caused the anchor to drag sufficiently for it to be necessary to pick up the anchor and run in toward the shore once and sometimes twice daily.

LANDMARKS: From a distance the most prominent objects about the harbor are the red roofed sugar warehouse, one inshore and adjacent to the dock, the other about 75 meters north east of the landing derrick; and the white oil tanks about 100 meters north of the landing.

Approaching nearer, the North Day Beacon at the north end of the bight, the South Day Beacon and the Mahukona Light about 375 and 400 meters respectively south of the dock, all painted white, show up well. The day beacons are truncated cones about 15 feet in height and 12 feet across at the base. The two derricks at the dock show up when close in.

STATISTICS:

<u>Date</u> 1929	<u>Day</u>	<u>Volume</u>	<u>No. of Positions</u>	<u>No. of Soundings</u>	<u>Statute Miles</u>
Feb. 11	a	1	134	712	7.2
" 12	b	1	73	265	4.0
" 13	c	1	20	70	1.1
" 14	d	1	72	278	3.7
" 23	e	2	<u>126</u>	<u>482</u>	<u>6.9</u>
TOTALS			425	1807	22.9

Respectfully submitted,

W. H. Bainbridge

W.H. Bainbridge, Jr. H. & G. E.

Forwarded, Approved;

K. T. Adams

K.T. Adams,
Chief of Party,
Str. GUIDE.

TIDAL NOTES

Sheet No. 10, Mahukona, Hawaii, T.H.

February 1929

No tides were observed at Mahukona during the period of this survey. Honolulu tides were corrected to conditions at Mahukona, - time 30 minutes earlier and ratio of ranges 1.2. These corrections were obtained from previous observations as shown in the Tide Tables.

VERIFICATION REPORT

Hydrographic Sheet No. 10

This will certify that the completed smooth hydrographic sheet and records have been examined by me and are hereby approved.

Your attention is called to the fact that no shoreline was re-run by the topographer and therefore none appears on this sheet.

Your attention is also called to the fact that the topographer located the harbor mooring buoys and such locations as were obtained by the hydrographic party were only incidental. The locations of all buoys should be taken from the topographic sheet.

K. T. Adams

K. T. Adams,
Chief of Party,
Steamer GUIDE.

ECM
RAE

FOR FILES OF THE FIELD RECORDS SECTION

Division of Hydrography and Topography:

May 22, 1930.

✓ Division of Charts:

Tide Reducers are approved in
2 volumes of sounding records for

C

HYDROGRAPHIC SHEET 5011

Locality: Hawaii Island (Maunaloa Bay)


Chief of Party: K. T. Adams, in 1929

Plane of reference is mean lower low water, reading
ft. on tide staff ~~at~~ tabulations at Honolulu
3.5 ft. below B. M. 2

17.3

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.


Chief, Division of Tides and Currents.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. *5011*

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

Number of positions on sheet	<i>425</i>
Number of positions checked	<i>172</i>
Number of positions revised	<i>19</i>
Number of soundings recorded	<i>1807</i>
Number of soundings revised	<i>197</i>
Number of signals erroneously plotted or transferred	<i>—</i>

Date: *Nov. 3, 1930*

Cartographer: *Harold W. Murray*

SECTION OF FIELD RECORDS
REPORT ON SHEET No. 5011

CHIEF OF PARTY — K. J. Adams

DATE SURVEYED — Feb. 11-14 and 23, 1929

SURVEYED BY — W. H. Bainbridge

PROTRACTED BY — J. N. Jones

SOUNDINGS PLOTTED BY — J. N. J.

VERIFIED & INKED BY — Harold W. Murray

1. The records, plan and character of development conform to the general instructions.
2. The sounding line crossings are adequate except that a check line might be valuable on the extreme western portion of the work.
3. The usual depth curves can be completely drawn.
4. The general accuracy of the work is not as good as it might be. Nearly 11% of the time intervals had to be checked and changed.
5. Inasmuch as the soundings were recorded

in fathoms and plotted in feet, the reduced fathom soundings were changed to read in feet in the office that the error in mental reduction might be lessened while checking

6. The shore line was transferred in pencil and inked from a photostat of H-3098 (1910) after having been reduced in scale to 1:5000. On this sheet a new projection had to be laid down so as to agree with the projection on H-5011. Triangulation station, S. Day Beacon was used and values taken from Pub. #156, "Triangulation in Hawaii," 1930.

Prominent buildings and in particular the outline of the harbor were transferred from T-4473 (1929)

7. Attention might be called to signal "Iron" in lat. $20^{\circ} 11' 19''$ which according to the present shore line, is in the water. The topographical sheet gives no indications of land at this point. This may be accounted by the fact that the topo work is 20 years old. Note: please. Report for T-4473 records old wharf at this point. Signal is on old piling.

8. Numerous shoal soundings occur through
out the sheet which are shown by
corresponding arrows. In particular, a
sounding of 9½ ft occurs in lat. 20° 18' 45",
which is doubtless a coral head or reef.

9. No comparisons were made with adjacent or
related work as such is of an older date.

10. There are several discrepancies between the
positions of mooring buoys plotted on
T-4473 and H-5011. In lat 20° 11' 8", two
buoys are recorded within 15 meters of one
another. T-4473 records but one at this
location. Such may be the actual condition.

Only one buoy.
Used same position
R.L.G.

Respectfully submitted: Harold W. Murray
Nov. 5, 1930

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

March 21, 1931.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 5011

Mahukona Harbor, N.W. Coast of Hawaii

Surveyed in 1929

Hand lead soundings

Instructions dated November 3, 1927. (Guide)

Chief of Party - K. T. Adams

Surveyed by - W. H. Bainbridge

Protracted and Plotted by - J. N. Jones

Verified and inked by - H. W. Murray

1. The records are clear and well kept. They conform to the requirements except that on the lines run parallel to the shoreline, which were not run on ranges, the compass course should have been recorded.
2. The plan, character and extent of the survey satisfy the general and specific instructions.
3. The sounding line crossings are adequate and cross as well as may be expected as the area close inshore is quite broken.
4. The information is sufficient for drawing the usual depth curves with the exception of the 6 foot curve which may be partially drawn.
5. There are no junctions with contemporary work. The general agreement with the survey of 1910, H. 3098 is very good.

The shoreline and inshore rocks shown on this sheet, H. 5011, were taken from H. 3098. The shoal making off from signal Ric on the north side of Mahukona Harbor, was changed as the hydrography and also the boat sheet indicated the point of the shoal was further north than shown on H. 3098.

It is noted that the positions of the mooring buoys

located from the sounding lines differ somewhat from the positions as shown on T. 4473. These buoys are frequently taken up by the company which maintains them and are probably not in a fixed position.

The $9\frac{1}{2}$ foot sounding mentioned in the verifier's report, in Lat. $20^{\circ}10.75'$, is on the line between positions 63d and 64d. None of the soundings between these positions agree with the depths on adjoining lines and it seems probable that the course of the boat between these positions was not a straight line but a curve, which would make the soundings check. The three soundings between position 63d and position 64d were rejected.

6. The usual amount of field plotting was accomplished by the field party, but the spacing of soundings was not very accurately done.

7. Character and scope of surveying - very good.

Within its limits the survey is considered accurate and complete.

8. No additional work is necessary.

9. Reviewed by R. L. Johnston. December 9, 1930.

Approved:



Chief, Section of Field Records (CHARTS)



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

