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Form 504	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
....., Director	
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State: .....	
DESCRIPTIVE REPORT	
Topographic Hydrographic	Sheet No. 4473
LOCALITY	
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192	
CHIEF OF PARTY	

Applied to compilation 4140 Z.M.A. June 1941

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. Patton, Director

C. & G. SURVEY

L & A

JAN 21 1930

Acc. No.

State Ter. of Hawaii.

DESCRIPTIVE REPORT

Topographic

~~Hydrographic~~

Sheet No. F.

LOCALITY

Territory of Hawaii.

Northwestern end of the island of

Hawaii.

Mahukona Harbor.

1929.

CHIEF OF PARTY

K. T. ADAMS.

GOVERNMENT PRINTING OFFICE

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.

TOPOGRAPHIC TITLE SHEET

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.

State Territory of Hawaiian Islands

General locality NW. Coast of Hawaii  
Northwestern end of the island of Hawaii.

Locality Mahukona Harbor.

Scale 1 - 5,000. Date of survey February 11, 12, 13, 14 1929.

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

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

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

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

Heights in feet above ----- to ground to tops of trees

Contour, Approximate contour, Form line interval ----- feet

Instructions dated October 8th, 1928.

Remarks: Revision survey and location of hydrographic signals.

DESCRIPTIVE REPORT  
to accompany  
TOPOGRAPHIC SHEET NO. F.  
Scale 1-5,000.

Mahukona Bay, Hawaii, T. H.

Date of Instructions: October 8, 1928.  
Date of Survey: February 11,12,13,14, 1929.  
Chief of Party: K. T. Adams, H. & G. Engr.  
Topographer: Glendon E. Boothe, Jr. H. & G. Engr.

LIMITS:

This sheet consists of a revision of Chart No. 4101, and the location of signals for small boat hydrography.

CONTROL:

Control for this survey is based on the two triangulation stations, CAST 1910, and RIDGE 1910, inland, and the five triangulation stations, RAIL 1910, MAHUKONA HARBOR, NORTH DAY BEACON 1910; MAHUKONA HARBOR; WHARF DERRICK 1910; MAHUKONA HARBOR, SOUTH DAY BEACON 1910; and MAHUKONA LIGHT 1929, along the coast line.

METHODS:

The party consisted of one officer, and three men. The usual plane table method was used in this survey. In order that the hydrographic party might commence work as soon as practicable a party built the signals, and they were located before any other work was done by the topographic party.

The work was started at the triangulation station RAIL. Due to the number of triangulation stations available a close check was had on the work at all times. The signals located on the southern end of the sheet were checked by resection.

#### GENERAL DESCRIPTION:

Mahukona Harbor is an open bight on the northwestern end of the island of Hawaii, T. H. It is the port for the Kohala sugar district. The railroad ends here. Ships cannot go alongside the docks, but must anchor off. The cargoes are handled by small boats, from the ships to the docks. The two main sugar warehouses are connected to the dock by overhead conveyor belts for the handling of sugar. The north side of the dock is equipped with a steel derrick.

The small wooden dock on the north side of the harbor has a small wooden derrick. This dock is used, principally, for the handling of gasoline, and oil. It is equipped with pipe-lines. Small boats could not go alongside this dock, except in calm weather.

The main dock is on the southern side of the bight at Mahukona Harbor. It is of concrete construction. In moderate weather, small boats can go alongside it, along the south face of the north part of the dock, and the north face of the south part of the dock. The northern part of the dock is equipped with a large, steel derrick, and the conveyor belts come to it. The southern part of the dock has a small platform, roofed over, on it, for the handling of merchandise. Trucks can come on this part of the dock, from the connecting concrete road. The railroad connects to the northern part of the dock. A building containing the machinery to operate the derrick, is at the head of the dock. It is also used for the storage of miscellaneous articles. The building, which has the rear range light on it, is the main sugar warehouse. The large building north of it is a sugar warehouse. These two buildings are connected to the northern part of the dock by the conveyor belts.

The three, fixed red, lights are maintained by the sugar company. They are only shown on steamer nights. One light is on the northern end of the bight. The front range light is on the conveyor structure at the northern part of the dock, while the rear range light is on the roof of the large sugar warehouse east of the dock.

The long narrow building at the northeast end of the railroad yards, is a sugar warehouse for storing sugar. The other buildings are shops for the railroad equipment, and general repair work. The building where signal FLAG is located is the postoffice, and office.

Nine mooring buoys are located in the bay as shown on topographic sheet No. F. These buoys are placed by the sugar company, and are not permanent. They are taken up from time to time, and renewed, and are not necessarily put back in the same place.

Signal IRON is on the end of an old deserted dock. Only a few pilings are standing.

Only a few people live at Mahukona. The manager of the railroad and port, and employees of the railroad and sugar company. The laborers' quarters are hidden by the algeroba trees.

#### COMPARISONS AND CHANGES:

The shoreline on this sheet was not rerun, as no changes were found in it.

It was found that the square on Chart No. 4101, in which the town is located, is about 21 meters larger east and west, and  $7\frac{1}{2}$  meters larger north and south than it should be. Checking the plotting of the NORTH DAY BEACON, and the SOUTH DAY BEACON, on Chart No. 4101, it was found that the former was 39 meters to the east, and 13.5 meters to the south of its correct position, and the latter was 36.5 meters to the east, and 11.0 meters to the south of its correct position. A tracing of this square on Chart No. 4101 was made, and placed on topographic sheet No. F it was found that when the tracing was moved about 41 meters to the west, and about 12 meters to the north that the roads, and buildings, that had not been moved or rebuilt, coincided. Therefore the shoreline, and inshore detail on Chart No. 4101 should be moved about these amounts while the projection is held. It is assumed that the 1924-1927 adjustment of the Hawaiian triangulation caused this shift.

Many of the buildings have been torn down, and some added since the previous survey. The railroad tracks in the yard have been moved. They were rerun. On topographic Sheet No. F all buildings were relocated, that did not correspond to those on Chart No. 4101. A copy of Chart No. 4101 accompanies this topographic sheet. On it buildings are marked in red, that should be removed from the chart.

Mahukona Light has been changed three times - see report by Commanding Officer dated February 11, 1929.

Since the previous survey the main dock has been rebuilt twice. The last time it was rebuilt, it was made of concrete construction. In bad weather, solid water comes over it. In one storm, the iron-pipe railing was carried away.

The Standard Oil Company has a station at Mahukona, with the four oil tanks as shown on topographic sheet No. F inland, and the one large oil tank located on the edge of the sea wall. These tanks are all painted white.

#### LANDMARKS:

The most prominent landmarks are the NORTH DAY BEACON, a truncated cone, 15 feet in height, painted white, located near the shore at the north end of the bight; the SOUTH DAY BEACON, a truncated cone, 15 feet in height, painted white, located on the shore

at the south end of the bight; the MAHUKONA LIGHT, a white concrete structure, 20 feet in height, at the south end of the bight; and the warehouses at the harbor.

Coming in closer the steel derrick on the main dock; the large, white, oil tank on the north side of the harbor; and particularly the large, red roofed warehouse that the rear range light is located on show up prominently.

STATISTICS:

Statute miles of tracks - - - - -	0.7
Statute miles of area - - - - -	0.01
Working days - - - - -	4
Number of men in party - - - - -	3

Respectfully submitted,

*Glendon E. Boothe*  
Glendon E. Boothe,  
Jr. H. & G. Engr.  
U. S. C. & G. Survey.

Approved, and forwarded.

*K. T. Adams*

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



Location of signals on Topographic Sheet # F (Mahukona) T.H.  
(Distances in meters for half minute squares).

STATION	LATITUDE	METERS	LONGITUDE	METERS	DESCRIPTION
	0 ' "	(578.5)	0 ' "	(302.2)	
FAR	20-12-00	344.0	155-54-00	568.8	W.W. cairn
		(886.1)		(173.2)	
LAT	20-12-00	36.4	155-54-00	697.8	W.W. rock
		(179.4)		(170.6)	
NIK.	20-11-30	743.1	155-54-00	700.4	W.W. cairn
		(338.8)		(236.9)	
TES	20-11-30	583.7	155-54-00	634.1	W.W. cairn on big W.W. rock
		(542.3)		(285.5)	
BLU	20-11-30	380.2	155-54-00	585.5	W.W. rock
		(794.3)		(372.7)	
OUT	20-11-30	128.2	155-54-00	498.3	S.W. cor of small house
		(824.4)		(356.0)	
NED	20-11-30	98.1	155-54-00	515.0	W.W. rock on point
		(847.6)		(383.1)	
GAB	20-11-30	74.9	155-54-00	487.9	S.W. corner of shack on edge of cliff
		(857.8)		(411.9)	
SHACK	20-11-30	64.7	155-54-00	459.1	Seaward gable of tin roof
		(3.1)		(356.0)	
SAM	20-11-00	919.4	155-54-00	515.0	High W.W. rock on point
		(61.9)		(267.5)	
JEW	20-11-00	860.6	155-54-00	603.5	W.W. cairn on point
		(268.8)		(397.8)	
RED	20-11-00	653.7	155-54-00	473.2	North gable of red roofed engine barn painted green
		(609.2)		(382.0)	
IRON	20-11-00	313.3	155-54-00	489.0	End of old Iron-works dock
		(400.5)		(490.1)	
FLAG	20-11-00	522.0	155-54-00	380.9	White flagstaff on P.O. & office bldg.
		(458.4)		(450.5)	
HIC	20-11-00	464.1	155-54-00	420.5	Vertical member of wooden derrick
		(465.1)		(529.5)	
TEL	20-11-00	457.4	155-54-00	341.5	Telephone posts in R.R. tracks
		(588.4)		(477.8)	
COR	20-11-00	334.1	155-54-00	393.2	Center of large cement block
		(677.5)		(427.0)	
MOL	20-11-00	245.0	155-54-00	444.0	W.W. rocks on point
		(.40.9)		(401.0)	
PIT	20-10-30	881.6	155-54-00	470.1	W.W. cairn of rocks

Location of signals on topographic Sheet #F (Mahukona) T.H.  
(Distances in meters for half minute squares).

STATION	LATITUDE	METERS	LONGITUDE	METERS	DESCRIPTION
	0   '   "	(100.8)		(476.0)	
GIL	20-10-30	821.7	155-54-00	395.1	Big W.W. cairn
		(470.3)		(572.7)	
MIN	20-10-30	452.2	155-54-00	298.4	W.W. rocks
		(648.6)		(611.7)	
WAY	20-10-30	273.9	155-54-00	259.4	W.W. cairn of rocks
		(724.4)		(563.3)	
MAN	20-10-30	198.1	155-54-00	307.8	W.W. rocks
		(812.5)		(517.5)	
LAD	20-10-30	110.0	155-54-00	353.6	W.W. cairn of rocks
		(129.2)		(520.1)	W.W. cairn of rocks
SUE	20-10-00	793.3	155-54-00	351.0	on point
		(271.3)		(540.1)	Large W.W. rocks
BOB	20-10-30	651.2	155-54-00	331.0	on point

## DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

## LANDMARKS FOR CHARTS

February 14, 1929.

Honolulu, T. H. \_\_\_\_\_, 19\_\_

SUPERINTENDENT, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted:

K. T. Adams.

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Chief of Party.

Description.	Position.						Method of determination.	Charts affected.
	Latitude.			Longitude.				
	°	'	D. M. meters.	°	'	D. P. meters.		
Mahukona Harbor, North Day Beacon. White, truncated cone, 15 feet in height.	20	11	756.4	155	54	589.1	Adjustment 1924-1927. Old Hawaiian Triang.	4101 4115, 4116.
Vertical member, wooden derrick on dock (wooden)	20	11	464.1	155	54	420.5	" Topo.	4101.
Mahukona Harbor, Wharf Derrick. Vertical, steel member.	20	11	407.4	155	54	330.4	" Triang.	4101.
Mahukona Harbor, South Day Beacon. White, truncated cone, 15 feet in height.	20	11	60.9	155	54	460.8	" "	4101 4115, 4116.
Mahukona Harbor Light, 1929. White, concrete lighthouse, 20 feet in height	20	11	15.6	155	54	444.1	" "	4101 4115, 4116.

A list of objects which are of sufficient prominence for use on the charts, together with a description of the same, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report. The selection, determination, and description of these points are of primary importance.

The description of each object should be short, but such as will identify it; for example, standpipe, water tower, church spire, tank, tall stack, red chimney, radio mast, etc. Generally, flagstaves and like objects are not sufficiently permanent to chart.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4473

TOPOGRAPHIC TITLE SHEET

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Field No. F.

REGISTER NO. 4473

State Territory of Hawaiian Islands

General locality NW. Coast of Hawaii  
Northwestern end of the island of Hawaii.

Locality Mahukona  
Makona Harbor.

Scale 1 - 5,000. Date of survey February 11, 12, 13, 14 1928.

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

Chief of Party K. T. ADAMS, H. & G. ENGR.

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