

4472

Form 504	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
R.S. Patton., Director	
<div>C. &amp; G. SURVEY L &amp; A JAN 21 1930. Acc. No.</div>	
State: T. H.	
DESCRIPTIVE REPORT	
Topographic <del>Hydrographic</del>	Sheet No. c 4472
LOCALITY	
N. W. Coast of Hawaii	
Kawaihae	
1928	
CHIEF OF PARTY	
K. T. Adams U. S. G. Eng.	

GOVERNMENT PRINTING OFFICE

Applied to compilation	4167	J.M.A.	Mar. 1941
"	4140	J.M.A.	June 1941

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 Letter C

REGISTER NO.

4472

State TERRITORY OF HAWAIIAN ISLANDSGeneral locality N.W. COAST OF HAWAIILocality KAWAIHAEScale 1/5000 Date of survey NOV. 17th TO 23rd, 19 28Vessel STEAMER GUIDEChief of Party K.T. ADAMSSurveyed by V.M. GIBBENSInked by V.M. GIBBENS

Heights in feet above \_\_\_\_\_ to ground to tops of trees

Contour Approximate contour Form line interval \_\_\_\_\_ feet

Instructions dated NOVEMBER 3, 19 27

Remarks: \_\_\_\_\_

DESCRIPTIVE REPORT  
to accompany  
TOPOGRAPHIC SHEET NO. "C"  
Scale 1/5000

Kawaihae, Hawaii, T.H.

Date of Instructions: November 3, 1927.  
Date of Survey: November 17th to 23rd, 1928.  
Chief of Party: K.T. Adams, H & G Engineer.  
Topographer: V.M. Gibbens, Aid.

LIMITS:

This sheet consists of a complete shoreline survey from Latitude  $20^{\circ} 01'$  270 Meters to the north northwest including a detail survey of the Roadstead of Kawaihae, to Latitude  $20^{\circ} 03'$  812 Meters.

CONTROL:

Control for this survey was based on three triangulation stations, KAWAIHAE LIGHTHOUSE 1928, KAWAIHAE WIRELESS MAST 1913, and KAMALII<sub>2</sub>, 1928.

METHOD:

The topographic party consisted of one officer and three men. The usual planetable method was used in this survey. The topography was started by setting up the table at triangulation station KAMALII<sub>2</sub> 1928, and orienting with the aid of an azimuth line on the sheet, on triangulation station PUAKO; and cutting in all the signals that were visible along the shore line. About one fourth of the signals were visible from KAMALII<sub>2</sub>. The table was next set up at KAWAIHAE WIRELESS MAST orienting on PUAKO. From here I ran each way to the limits of the topography.

GENERAL DESCRIPTION:

KAWAIHAE is a small roadstead of about 7 or 8 families, all Hawaiians except for one family of Japanese. Nearly all the shipping is for the Parker Ranch. The Parker Ranch ships cattle out usually once a week and sometimes twice a week. Ships can not tie up to the Dock, but anchor off and the freight is taken to the dock in small boats.

From signal FAR to signal RAT, the shoreling is rocky

except for three or four short stretches of sand beach as shown on the topo sheet. There is a heavy growth of algeroba trees along the shoreline, and extending down to the waters edge in most places. From signal RAT to DOC the shoreline is low and sandy. When there is heavy southerly weather the swells run water into the road from signal TAL to LIL. From signal DOC to END the coast is rocky and steep in places.

LANDMARKS:

The most prominent Landmarks are:

1. The KAWAIHAE LIGHT HOUSE <sup>9</sup>  
Latitude  $20^{\circ} 02'$  1243.9 Meters, Longitude  $155^{\circ} 50'$  236 Meters. ✓
2. THE KAWAIHAE WIRELESS MAST.  
Latitude  $20^{\circ} 02'$  1189.4 Meters, Longitude  $155^{\circ} 50'$  179.0 Meters ✓
3. The Kawaihae Heiau, which is an old stone Hawaiian Heiau, on a knoll of about 50 or 60 ft elevation, 0.9 miles SSE of the Dock, and shows black against the green background.

Respectfully submitted,

*V.M. Gibbens*

V.M. Gibbens, Aid.

Approved.

*K.T. Adams*

K.T. Adams  
Commanding,  
Steamer Guide.

STATISTICS.

Statute miles at high waterline .....	4.0
Statute miles of road and trails.....	2.4
Statute miles of shoreline of ponds .....	0.3
Square statute miles of area .....	0.6
Working days .....	7
Number of men in party .....	3

List of Signals to Accompany Topo Sheet No. "C".  
Kawaihae, Hawaii.

STATION	LATITUDE	METERS	LONGITUDE	METERS	DESCRIPTION
	0   '   "	(1575.0)	0   '   "	(579)	
FAR	20 01	270.0	155-49	1164.9	White rag on rock
		(1538.0)		(762.5)	
SAM	20 01	307.0	155 49	981.4	Flag
		(1382.5)		(796.9)	
BAY	20 01	462.5	155 49	947.0	Flag
		(1176.0)		(738.4)	
NEW	20 01	667.0	155 49	1005.5	Flag
<del>WAT</del>		(1058.0)		(742.5)	
WAT	20 01	787.0	155 49	1001.4	Flag
		(876.5)		(805.9)	
MAY	20 01	968.5	155 49	938.0	W.W. on rock
		(741.0)		(846.4)	
BEL	20 01	1104.0	155 49	897.5	W.W. on tree
		(593.0)		(737.9)	
ERN	20 01	1252.0	155 49	1006.0	Flag
		(408.0)		(718.9)	
NEST	20 01	1437.0	155 49	1025.0	W.W. and Flag

List of signals to accompany Topo Sheet No. "C"  
Kawaihae, Hawaii.

STATION	LATITUDE	METERS	LONGITUDE	METERS	DESCRIPTION
	0	(748.0)	0	(1635.6)	
SAN	20 02	1098.0	155 50	108.0	W.W. tree
		(520.5)		(1742.5)	
CUR	20 02	1324.5	155 50	357.1	W.W. on rock
		(424.0)		(6294.1)	
PAT	20 02	1 421.0	155 50	449.5	W.W. carin and flag
		(268.5)		(1128.1)	
JET	20 02	1576.5	155 50	615.5	W.W. on rock
		(166.0)		(1103.6)	
HEN	20 02	1679.0	155 50	640.0	W.W. on rock
		(88.0)		(1019.0)	
MUR	20 02	1757.0	155 50	724.6	W.W. on rock
		(1738.5)		(919.5)	
PEP	20 03	103.5	155 50	824.1	W.W. on rock
		(1573.5)		(945.1)	
MAS	20 03	271.5	155 50	797.5	W.W. carin and flag
		(1509.5)		(901.6)	
GIN	20 03	335.5	155 50	842.0	W.W. rock
		(1394.0)		(733.3)	
BOY	20 03	451.0	155 50	1010.3	W.W. on rock
		(1331.0)		(590.6)	
HI	20 03	514.0	155 50	1153.0	W.W. carin and flag
		(1314.5)		(532.6)	
DOG	20 03	530.5	155 50	1211.0	W.W. on cliff
		(1273.0)		(527.6)	
CAT	20 03	572.0	155 50	1216.0	W.W. on cliff
		(1233.0)		(435.1)	
RUF	20 03	612.0	155 50	1308.5	W.W. on rock
		(1174.0)		(422.6)	
DUB	20 03	671.0	155 50	1321.0	W.W. on rock
		(1092.0)		(327.3)	
COP	20 03	753.0	155 50	1416.3	W.W. on rock
		(1032.5)		(343.3)	
END	20 03	812.5	155 50	1400.3	W.W. on rock
		(276.0)		(943.3)	
HEIAU	20 01	1569.0	155 49	800.5	Cross banner





IN REPLY ADDRESS THE DIRECTOR  
U. S. COAST AND GEODETIC SURVEY  
AND NOT THE SIGNER OF THIS LETTER

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

AND REFER TO NO. 82-DRM

WASHINGTON

SECTION OF FIELD RECORDS

Review of Topographic Sheet No. 4472

Vicinity of Kawaihae, Hawaiian Islands

Surveyed in 1928

Instructions dated November 3, 1927 (GUIDE)

Chief of Party, K. T. Adams

Surveyed by V. M. Gibbens

Inked by V. M. G.

The only cartographic problems raised by this survey is the lack of agreement in shoreline with the old surveys T. 3393 and T. 3422 surveyed in 1913. As the differences were not due to any natural changes or different interpretations of the same shoreline, the problem presented was of more than ordinary importance, particularly in view of the fact that the new survey was not controlled by a sufficient number of triangulation stations to permit closed traverses to be run. Furthermore, the large scale of the proposed chart would require that no marked discrepancies exist in the shoreline.

In the following paragraphs I have explained at great length my analysis of the situation in order that my treatment of the shoreline on T. 3422 between the new survey T. 4471 and T. 4472 will be justified. (See memo. attached to descriptive report, T. 3422.)

Comparison with T. 3393 Considerable time and study was spent in an attempt to reconstruct the situation in 1913 so as to enable the fitting of the new shoreline to the old. No absolute solution is possible, that is, one that would fit the conditions on the two old topographic sheets. There is no doubt that a great amount of confusion was occasioned by the fact that the position of Kawaihae Light sent by the office to the field party in 1913 was the position of the old light as it existed prior to 1906 (see descriptive report T. 3422 and page 203, Special Publication 156, "Triangulation in Hawaii".) and not the position of the light as it existed in 1913. The explanation given by the topographer on the 1913 survey as to adjustments made on T. 3393 and the reason therefor (see descriptive report T. 3422) are not entirely clear and leave room

for doubt as to just what happened, but since the shoreline on T. 3393 agrees very closely with the shoreline on the new survey except in the immediate vicinity of Kawaihae Light where there can be no doubt as to correctness of the new survey, no further comments are necessary regarding the comparison between these two sheets.

Comparison with T. 3422. The new survey shows a good agreement with the old work from the vicinity of the Lighthouse down to approximately lat.  $20^{\circ} 02'$ . From here there is an almost uniform difference of about 60 meters between the two, the old shoreline falling to the southeast of the new. It should be said that while the shoreline on the new survey was an open traverse from the wireless station at Kawaihae to the southern limit of the sheet, and might therefore be subject to some error, the fact that the same discrepancy noted above is also noted on the lower sheet in the vicinity of Puako (T. 4471) would tend to discredit the old survey rather than the new.

From a reading of the descriptive report, T. 3422 it would appear that the discrepancy between the positions of the lights mentioned above was discovered before topography was begun on this sheet and that the triangulation determination of the later light at Kawaihae was plotted on the sheet and then the shoreline run in. This, however, did not explain a 60 meter adjustment of the shoreline made by the field party for almost a mile south of Kawaihae. If the traverse began at Kawaihae and ran southward (this would have been the logical procedure and is borne out generally by the monthly report of occupation) no such discrepancy can be explained since the adjustment begins with the first setup. On the other hand, if the traverse began at  $\Delta$  Puako and ran northward, the topography in Puako Bay should agree with the new survey which, however, is not the case (see review T.4471). The conclusion which I have come to is, therefore, as follows:

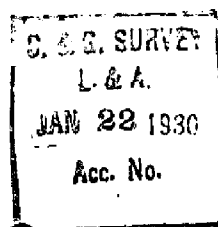
The topography on T. 3422 was begun at Kawaihae Light with the assumption that the light as it existed in 1913 was identical with the position obtained from the office, so that while distances were measured from the new light they were plotted on the sheet from the old light which was approximately 55 meters to the southeast of the new light. The result, of course, would be to shift everything bodily to the southeastward by this amount. The traverse from this erroneous position of the light was probably carried as far as  $\Delta$  Puako and it would have been expected that the discrepancy would have been picked up here in the traverse closure but no mention is made of this in the report. When the field party in 1913 relocated Kawaihae Light they found that it plots about 55 meters to the northwest of the position which they had on the topographic sheet. The shoreline and signals

were therefore shifted by this amount to the northwest, but why the shoreline for only a portion of the way was considered affected I do not know, unless it was thought the area in the vicinity of the light the most important one. The adjustments on the old topographic sheet of stations  $\odot$  Heiau and  $\odot$  Pai appear due to another cause since the correction here is not the same. Hence if the balance of the shoreline on T. 3422 that falls within the limits of T. 4472 were shifted about 55 meters to the northwest a good agreement is had between the two surveys. Furthermore, the position of  $\odot$  Heiau (a conspicuous ruins, the identity of which there can be no question) were shifted by this amount it would agree perfectly with the latest determination on T. 4472.

The old work on T. 3422 should therefore be superseded by the new work within the limits of the new work. If it is decided to add contours on the new large scale chart the contours as shown on the old survey between Puu Kamalii and the shoreline down to lat.  $20^{\circ} 02'$  can be used, since the position of this peak was adjusted by the field party and agrees closely with 1928 determination by triangulation. Below lat.  $20^{\circ} 02'$  the salient contours should be shifted to the northwest about 55 meters.

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REG. NO. 4472



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Field Letter C

REGISTER NO. 4472

State ~~TERRITORY OF~~ HAWAIIAN ISLANDS

General locality N.W. COAST OF HAWAII

Locality KAWAIHAE

Scale 1/5000 Date of survey NOV. 17th TO 23rd, 1928

Vessel STEAMER GUIDE

Chief of Party K.T. ADAMS

Surveyed by V.M. GIBBENS

Inked by V.M. GIBBENS

Heights in feet above \_\_\_\_\_ to ground to tops of trees

Contour Approximate contour Form line interval \_\_\_\_\_ feet

Instructions dated NOVEMBER 3, 1927

Remarks: \_\_\_\_\_

DEPARTMENT OF COMMERCE

AND REFER TO NO. 82-DEP

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WASHINGTON

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Comparison with T. 3400. The new survey shows several changes

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