11894 11895

11895 11894

Diag. Cht. No. 4116.

Form 504

U. S. DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Shoreline (Photogrammetric)

Project 21034

Field No. Ph-6012 Office No. T-11894 & T-11895

LOCALITY

State Hawaii

General locality Maui Island

Locality

1960-1962

CHIEF OF PARTY

H. J. Seaborg, Honolulu District Officer

M. J. Tonkel, Baltimore District Officer

LIBRARY & ARCHIVES

DATE

USCOMM-DC 5087

(1)

FORM C&GS-181a
(12-61)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT - DATA RECORD

T -11894 and T-11895

PROJECT NO. (II): 21034 (PH-6012)	
FIELD OFFICE (II): Honolulu District Office	CHIEF OF PARTY: H.J. Seaborg
PHOTOGRAMMETRIC OFFICE (III): Baltimore District Office	OFFICER-IN-CHARGE: Miller J. Tonkel
INSTRUCTIONS DATED (II) (III): 14 November, 1960 28 November, 1960 13 June, 1961 27 December, 1961 16 January, 1962 1 April, 1963	
METHOD OF COMPILATION (III): Kelsh Plotter	
MANUSCRIPT SCALE (III): 1:5,000	STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III): 1:5,000
DATE RECEIVED IN WASHINGTON OFFICE (IV):	DATE REPORTED TO NAUTICAL CHART BRANCH (IV):
APPLIED TO CHART NO.	DATE: / DATE REGISTERED (IV):
GEOGRAPHIC DATUM (III): Old Hawaiian	VERTICAL DATUM (III): ~~XXXXXXXXXXXXXXXXXXXXXXXXXXXX~~ M.H.W. *Elevations shown as (25) refer to mean high water* *Elevations shown as (5) refer to sounding datum* *i.e., mean low water or mean lower low water*
REFERENCE STATION (III): a. Survey T-11894 HAWEA (HGS), 1882 b. Survey T-11895 MALO 2, 1950	
LAT.: / LONG.:	☐ ADJUSTED ☐ UNADJUSTED
PLANE COORDINATES (IV): a. 244,469.34 499,201.95 b. 251,412.27 x = 508,663.69	STATE: Hawaii / ZONE: 2

ROMAN NUMERALS INDICATE WHETHER THE ITEM IS TO BE ENTERED BY (II) FIELD PARTY, (III) PHOTOGRAMMETRIC OFFICE, OR (IV) WASHINGTON OFFICE.
WHEN ENTERING NAMES OF PERSONNEL ON THIS RECORD GIVE THE SURNAME AND INITIALS, NOT INITIALS ONLY.

USCOMM-DC 16276-P

(2)

FORM C&GS-181b
(12-61)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT - DATA RECORD

T-11894 and T-11895

FIELD INSPECTION BY (II): J.C. Lajoye	DATE: 1961-1962
MEAN HIGH WATER LOCATION (III) (STATE DATE AND METHOD OF LOCATION): 10 October, 1960 Field Inspection (1961)	
PROJECTION AND GRIDS RULED BY (IV): R.A.C.	DATE Oct., 1960
PROJECTION AND GRIDS CHECKED BY (IV): J.D.C.	DATE Oct., 1960
CONTROL PLOTTED BY (III): D.M. Brant	DATE April, 1961
CONTROL CHECKED BY (III): H.P. Eichert	DATE April, 1961
RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III): W.A. Kuncis	DATE March, 1961
STEREOSCOPIC INSTRUMENT COMPILATION (III): PLANIMETRY J.D. Mc Evoy	DATE June, 1961
CONTOURS	DATE
MANUSCRIPT DELINEATED BY (III): J.D. Mc Evoy	DATE June, 1961
~~SCRIBING BY~~ (III): C.A. Lipscomb	DATE June, 1963
PHOTOGRAMMETRIC OFFICE REVIEW BY (III): D.M. Brant	DATE July, 1963
REMARKS:	

USCOMM-DC 16276B-P6

(3)

FORM C&GS-181c
(12-61)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT - DATA RECORD

T-11894 and T-11895

CAMERA (KIND OR SOURCE) (III):

C & GS Type "W" Camera

PHOTOGRAPHS (III)

NUMBER	DATE	TIME	SCALE	STAGE OF TIDE
Survey T-11894				
60 W 2601	10 Oct.,1960	09:02	1:25,000	0.5 Ft. above MHW.
60 W 2608	10 Oct.,1960	09:15	1:25,000	0.5 Ft. above MHW
Survey T-11895				
60 W 2609	10 Oct.,1960	09:16	1:25,000	0.5 Ft. above MHW

From predicted tide tables TIDE (III) Diurnal

	RATIO OF RANGES	MEAN RANGE	~~SPRING~~ RANGE
REFERENCE STATION: Honolulu, Hawaii		1.2	1.9
SUBORDINATE STATION: Lahaina, Hawaii		1.3	2.0
SUBORDINATE STATION:			

~~WASHINGTON OFFICE~~ REVIEW BY (IV): Donald M. Brant		DATE: February 1964
PROOF EDIT BY (IV):		DATE:
NUMBER OF TRIANGULATION STATIONS SEARCHED FOR (II): 3	RECOVERED: 3	IDENTIFIED: 3
NUMBER OF BM(S) SEARCHED FOR (II): None	RECOVERED: None	IDENTIFIED None
NUMBER OF RECOVERABLE PHOTO STATIONS ESTABLISHED (III): None		
NUMBER OF TEMPORARY PHOTO HYDRO STATIONS ESTABLISHED (III): 5		

REMARKS:

REPRODUCTION LOG

(4)

T-11894 and T-11895

COMPILATION RECORD	COMPLETION DATE	REMARKS
Survey T-11894		
1. Shoreline furnished for hydro.	Dec., 1961	Superseded
2. Shoreline and along shore details revised.	Dec., 1962	
3. Interior details added compilation complete.	June, 1963	
Survey T-11895		
1. Shoreline furished for hydro.	Dec., 1961	Superseded
2. Shoreline and along shore details revised.	Dec., 1962	
3. Interior details added compilation complete.	June, 1963	

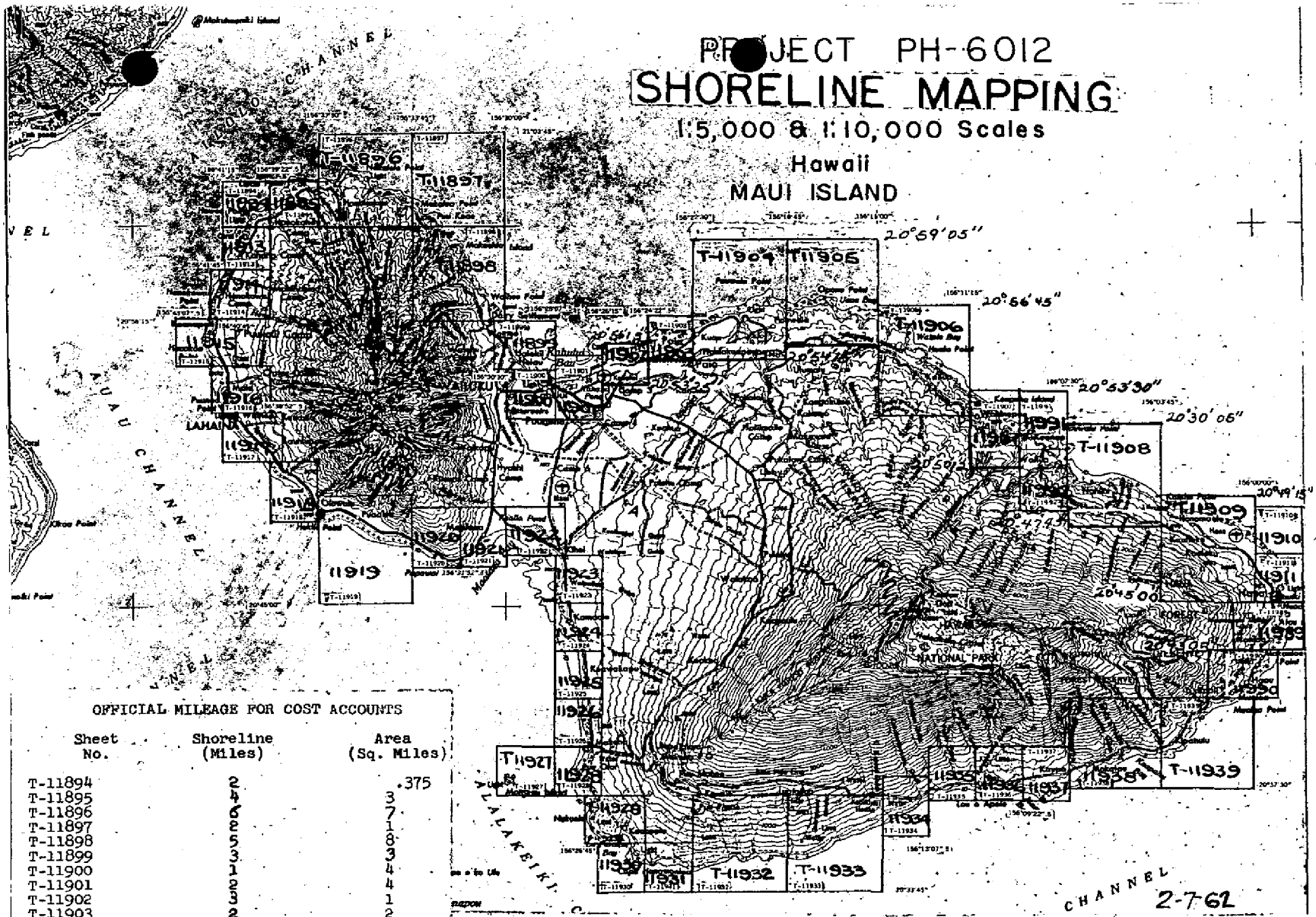
PROJECT PH-6012

SHORELINE MAPPING

1:5,000 & 1:10,000 Scales

Hawaii

MAUI ISLAND



OFFICIAL MILEAGE FOR COST ACCOUNTS

Sheet No.	Shoreline (Miles)	Area (Sq. Miles)
T-11894	2	.375
T-11895	4	3
T-11896	6	7
T-11897	2	1
T-11898	5	8
T-11899	3	3
T-11900	1	4
T-11901	2	4
T-11902	3	1
T-11903	2	2
T-11904	5	6
T-11905	5	4
T-11906	7	10
T-11907	7	8
T-11908	5	6
T-11909	5	16
T-11910	1	.25
T-11911	3	2
T-11913	27	3
T-11914	2	5
T-11915	3	2
T-11916	3	4
T-11917	27	3
T-11918	3	4
T-11919	4	6
T-11920	3	4
T-11921	[illegible]	[illegible]

OFFICIAL MILEAGE FOR COST ACCOUNTS

Sheet No.	Shoreline (Miles)	Area (Sq. Miles)
T-11922	3	3
T-11923	2	3
T-11924	3	3
T-11925	3	2
T-11926	3	1
T-11927	1	.04
T-11928	3	2
T-11929	5	3
T-11930	2	.25

OFFICIAL MILEAGE FOR COST ACCOUNTS

Sheet No.	Shoreline (Miles)	Area (Sq. Miles)
T-11931	3	2
T-11932	5	12
T-11933	5	8
T-11934	3	3
T-11935	3	4
T-11936	5	4
T-11937	5	4
T-11938	5	6
T-11939	5	3
T-11989	3	2
T-11990	3	3

SUMMARY TO ACCOMPANY

DESCRIPTIVE REPORT T-11894 and T-11895

Shoreline manuscripts T-11894 and T-11895 (1:5,000 scale) are two of 49 similar manuscripts in Project 21034 (Ph-6012) and are the northwesterly manuscripts in the project. They cover a part of the northwest shore of Maui Island, Hawaii.

This is a stereoscopic instrument project in advance of hydrographic surveys to be made in this area. The area is covered with panchromatic single lens 1:25,000 scale photography taken with the "W" camera in October, 1960. Photography was bridged to field identified control on the Zeiss Stereoplanigraph C-8 and compilation was done with the Kelsh Plotter (1:5,000 instrument scale).

The field operations preceding compilation included field inspection, the establishment of additional horizontal control for bridging and the identification of photo-hydro signals. The manuscripts were field edited.

The area of each shoreline manuscript is 01' 52.5" in latitude by 01' 52.5" in longitude.

Final compilation was done using method 3 of Photogrammetric Instruction 55, revised 20 May 1959. The registered copies of the 1:5,000 scale manuscripts (T-11894 and T-11895) will consist of a cronaflex (.007") positive.

FIELD INSPECTION REPORT
PROJECT 21034 (PH-6012)
Maui ISLAND, HAWAII

2. AREAL FIELD INSPECTION:

The area covered by this report encompasses the whole of the Island of Maui, second largest of the Hawaiian Islands. It is formed by two mountains with a fertile valley between, devoted to the cultivation of sugar cane and pineapple. The island is shaped like a Shinto priest in prayer with the head at the western end formed by the West Maui range of mountains and the body at the eastern end formed by Mt. Haleakala which rises over 10,000 feet above sea level.

The climate varies from the tropical rain forest at the eastern end of the island near Hana, to the barren lava fields along the south slopes of Mt. Haleakala. Rain seldom falls on the south coasts and thus the disintegration of the lava is a slow process.

Shoreline conditions vary from the stark lava bluffs around Mt. Haleakala and on the east side of the West Maui Range, to the sandy beaches along the valley between the mountains and on the western or lee shores of the island.

The area is cooled by trade winds from the north and east accentuated by the Venturi effect caused by the valley between the mountains and, in the exposed areas, waves beat continuously on the rocky cliffs. On the western shores around Lahaina and on Maalaea Bay, only a "kona" or southerly storm infrequently disturbs this peaceful area.

Kahului is the principal port on the island. It is protected by a breakwater and serves as a port of call for large ocean going vessels which bring in freight and load out processed pineapple and raw sugar. It is also the port of call for tug and barge service from Honolulu.

Photography was adequate for the identification of control and for field and shoreline inspection. In some areas which were cloud covered in the 1960 photography, 1962 reflight photographs which were furnished to the hydrographic party were secured and the shoreline and interior inspected and inked on those photos.

Shoreline inspection along the lava fields at the south side of the east portion of the island is somewhat sketchy. Areas that were impassable due to broken lava, large crevases, or lack of trails, were left to be inspected from a launch when one becomes available. The shoreline may be delineated at the edge of the lava but additional hydrographic signal sites must be selected from the seaward side.

Shoreline inspection in the beach areas was accomplished by walking along the high waterline, and delineating the waterline supported by measurements from prominent objects. Where it was possible, as in the case of low bluffs, the shoreline was inspected from the top of the bank. In the areas of high rocky bluffs and cliffs, it was not possible to get anywhere near the shoreline and inspection was carried out by leaning over the precipitous bluffs, which descend almost vertically to the high waterline. In every area except the sandy beaches mentioned, and even in the lava fields at the south portion of the island, the high waterline lies at the base of bluff and is confused by along shore rocks and breaking surf, and offshore reefs.

3. HORIZONTAL CONTROL

(a) The following marked or recoverable intersection stations were located by triangulation as nautical aids, aeronautical aids, or as additional photogrammetric control:

Kahului Harbor Entrance East Breakwater Light	d.n.m.
Kahului Harbor Entrance West Breakwater Light	d.n.m.
Kahului Harbor Entrance Range, Front Light	d.n.m.
Kahului Harbor Entrance Range, Rear Light	d.n.m.
Kahului Airport Control Tower, Beacon	d.n.m.
V O R OGG	d.n.m.
Lahaina Lighthouse	d.n.m.
E (USE)	d.m.
EAST POINT	d.m.
WEST POINT	d.m.

The following temporary stations were established for supplemental control of aerial photographs and were not marked:

APPLE (temp.)	STATE (temp.)
CAMP (temp.)	GROVE (temp.)
DITCH (temp.)	PAU (temp.)
MALAY (temp.)	POWER (temp.)

Pau and Power were established to determine a postion for Lahaina Lighthouse.

The following hydrographic signals were located by theodolite cuts either to establish signals in obscured areas or to provide a check on signal sites established by photogrammetric methods:

Hydro Sig. 2301	Hydro Sig, 2303	Hydro Sig. 2305
POL	CAN	MAY
RED	Hydro Sig. 2401	HAY
PAR	ABE	VON
BEG	CAR	NAHUNA 2
DAN	FAR	EVE
JOE	HAM	GOO

(b) There were no datum adjustments made by the field party.

(c) All control was either established by the Coast and Geodetic Survey or was tied to Coast Survey control by previous surveys.

(d) All stations required by the project diagram were recovered and identified except where specific permission was received from the Washington Office to substitute one station for another.

(e) Control adjacent to the shoreline and that within the area of photogrammetric coverage was searched for and Form 526 has been submitted for all stations. Stations outside the area covered by the photographs were not searched for due to heavy brush and undergrowth in the interior of the island.

(f) Control station identification cards were submitted for all stations required by the project diagrams.

4. VERTICAL CONTROL

Tidal bench marks at Kahului, Lahaina, Mala Wharf, Kihei, and Makena were searched for and recovered.

Tidal bench marks at Hana were searched for but due to changes in the area, they were not recovered.

No vertical points were required for stereoscopic mapping.

5. CONTOURS AND DRAINAGE

The area below the 15 foot contour on sheet T-11900 was contoured as required by the project instructions. The area was contoured using the photograph, a Wild T-2, and topo rod. Elevations for the contouring were established by closed loops from the tidal bench marks at Kahului Harbor.

Drainage is all intermittent. Natural drainage patterns have been interrupted by various drainage canals, reservoirs, and catch basins to supplement the irrigation systems of the various plantations. Only overflow water runs occasionally in the natural drainage gulches.

6. WOODLAND COVER

The woodland cover over the major part of the island is low brush although in the dry areas, keawe trees are clumped along the shore. Monkey pod, an ornamental tree, line the roads occasionally.

In the area covered by sheet T-11906 and easterly to sheet T-11939, which is in the rainy portion of the island, trees grow profusely. Types are eucalyptus, kukui, koa, mango, coconut and kamane with a heavy tropical undergrowth of guava and other brush.

7. SHORELINE AND ALONGSHORE FEATURES

(a) The mean high waterline was delineated on the photographs where it was possible to visit it. In areas of high bluff, inspection was done by viewing the area from the top of bluff. As in most cliff areas, there are many along shore rocks and high surf.

(b) The low waterline was not inspected.

(c) The foreshore in the bluff areas is confused due to many along shore rocks. The continuous surf along the north, east and south sides of the islands served to confuse the high waterline on the photographs. In the sandy areas of the western and northern shore, the beach is protected by a coral reef which was found by the hydrographer, and which is visible on the photograph. In the Kihei area, offshore rock piles, the remains of old fish pond walls, are visible on the photographs. Offshore rocky reefs are found in some areas and, where seen, were noted on the field photographs.

(d) Bluffs and cliffs form the largest portion of the shoreline, although Maui is represented as having more beach area than any other of the Hawaiian Islands. From a few miles north of Kahului to Honolua Bay the shore is composed of high cliffs and low rocky bluffs. From Honolua Bay, through Lahaina and slightly south of Olowalu the shore is low with sandy beaches between rocky headlands. From the beginning of the cliffs at the south end of the West Maui Range to Mc Gregor Point, the shore is again rocky and precipitous. At Maalaea, and continuing south past Makena to about a mile south of Puu Olai, the shore is protected and sandy with a few rocky projections which act as groins to hold the sand.

From the recent lava flow south of Puu Olai and continuing south and east toward Hana, the shoreline is rocky with bluffs ranging from 10 to 150 feet. In the area near Kaupo, Kipahulu, and Puuiki High vertical bluffs predominate. The only sand beach in the entire area is located several miles southeast of the village of Hana.

From Hana west to Kuau, or into sheet T-11903 the vertical cliffs range from 50 to 200 feet in height and there are no beach areas and no place to approach the high waterline from the beach side except at Keanae or Nahiku except by descending the vertical bluffs by ropes.

(e) Kahului Harbor, as mentioned in the Areal Description, is the principal and only commercial port in the island. It has recently been dredged, is well jettied and has wharfage and facilities for ocean going vessels.

Hana Harbor is partially protected by natural rock projections but is open to some trade directions. It was used as a stop for interisland steamer traffic, and prior to World War 2, when the sugar plantation at Hana was under cultivation, cargo was loaded out of this port. Since the discontinuing of steamer traffic between the islands, only an occasional fuel barge or fishing boat use the large concrete pier located here.

Mala Wharf, located a few miles north of Lahaina, was used to load sugar and pineapple during the days of steamer traffic but the large concrete wharf is in poor repair and has been closed by the Board of Harbor Commissioners.

Lahaina, once the seat of the Hawaiian kings, and the oldest town in the island, is the site of a protected small boat harbor. Fuel, food, and housing are available here.

Maalaea is the site of a small boat harbor used mainly by fishing boats. It is well jettied and fuel and supplies are available.

In the olden days, when steamers made the rounds of the island and water transportation was at its height, there were other places where cargo was unloaded by boom and where whaleboat landings were made. Principal among these were Nuu Landing, Kaupo, and Nahiku. These have now been abandoned and only the remains of the old concrete foundations and the old mooring bolts remain.

(f) There are no overhead or submarine cables in the area covered by the project.

(g) There are no other shoreline structures.

8. OFFSHORE FEATURES

No offshore rocks were actually visited by the photogrammetric party. It was noted on the field photographs that the hydrographic party be asked to determine the heights of offshore rocks. Where heights were indicated on photographs, they were estimated from shore.

9. LANDMARKS AND AIDS

Landmarks, nautical and aeronautical aids in Strips 1 to 7 were listed on Form 567 and forwarded with the field inspection photos. Other landmarks should be reported by the hydrographic party.

10. BOUNDARIES, MONUMENTS AND LINES

Investigation of boundaries, monuments and lines were not included in the instructions for the project.

11. OTHER CONTROL

No recovereable topographic stations were established. Where hydrographic or photogr~~aphic~~ metric control by geodetic methods was required, only temporarily marked stations were used.

In areas which were inaccessible to the field party, hydro signal sites were not selected. It was requested that the hydrographic party make a launch available to the photogrammetrist for the inspection of shoreline and selection of hydro signal sites in these areas.

12. OTHER INTERIOR FEATURES

Roads within the area adjacent to the shoreline were classified as dfl, ddl and sdl. Class 1 structures were not noted. Class 2 structures, churches and public buildings were noted.

The principal airport, Kahului Airport, is located about 3 miles east of Kahului Harbor. There is a paved airstrip at Hana used by DC 3 and small private aircraft. A small dirt strip is located at Kaanapali, about 6 miles north of Lahaina and is used by small private aircraft. The abandoned Naval Airstrip at Puu Nene is not used.

There are no bridges or cables over navigable waters. No trace was found of the shore ends of any submarine cables.

13. GEOGRAPHIC NAMES

No geographic names investigation was required by the project instructions.

14. SPECIAL REPORTS AND SUPPLEMENTAL DATA

There were no special reports, or supplemental data.

Respectfully submitted

John C. Lajoye

John C. Lajoye
Super. Sur. Tech.

8 September, 1962

PHOTOGRAMMETRIC PLOT REPORT
Maui Island, Hawaii
Project PH-6012
March 1961

21. Area Covered

The photogrammetric bridging for the western half of Maui Island is covered by this report. Seven strips of photographs were bridged to cover the following manuscripts:

Map Numbers	Scale
T-11894, 11895	1:5,000
T-11896 thru 11898	1:10,000
T-11899 " 11903	1:5,000
T-11904, 11905	1:10,000
T-11913 thru 11918	1:5,000
T-11919	1:10,000
T-11920 thru 11926	1:5,000
T-11928 " 11930	1:5,000

See attached sketches for layout of manuscripts, horizontal control stations, photographs and manuscript limits.

22. Method

Strips 1 thru 7 were bridged on the Zeiss Stereoplanigraph C-8 and adjusted using the IBM 650 computer. A discussion of each strip's bridging follows, including a tabulation of ~~the~~ adjustment of each strip:

STRIP NO. 1 - (Photographs 60-W-2302 thru 2313)

The area from Kahului Harbor northeastward to Opana Point is covered by manuscripts T-11900 thru T-11905. Part of this area is also covered by Obstruction Chart 762 which was bridged and compiled in 1958 using 1958 field-identified horizontal control. Many of these 1958 identifications were observed in this strip for two reasons: first to provide additional horizontal control to check this bridge adjustment, second to verify the bridging for OC 762.

The bridge adjustment at the eastern end of this strip was not good but acceptable for 1:10,000 scale mapping. A better adjustment will be made after new field-identification of "HAIKU 1950" has been received. The new data will give a better balance of control points for adjustment.

All horizontal control held with the exception of stations "Kahului Harbor Entrance East and West Lights, 1960". The error was due to the poor diapositive contrast and definition of these objects, (the white concrete bases blended with the light tone of the jetty). Since these lights were located by 1960 field surveys, the bridge positions were not needed.

STRIP NO. 2 (60-W-2617 thru 2628)

The area from Kahului Harbor northwestward to Nakalele Point is covered by manuscripts T-11896 thru T-11899. The southeastern end of this strip is covered by part of OC-762 and some of the 1958 field-identified control was also used on this strip in the same manner as in Strip No. 1. Stations "Kahului Harbor Entrance East & West Lights, 1960" were also observed in this bridge. The same contrast-definition problem and resulting error occurred on this strip as described in Strip 1.

Bridge position of Sub. Sta. "A" OLAI 2, 1950, disagreed by 15 feet from the field position, while S. S. "B" OLAI 2, 1950, which was a very poor stereo image, agreed with the field position. No explanation for this discrepancy could be found.

STRIP NO. 3 (60-W-2333 thru 2339)

The area from Puu Nene Airport southwestward along Maalaea Bay to Papawai Point is covered by manuscripts T-11920 thru T-11922.

It was necessary to use 1958 field-identified horizontal control to supplement the 1960 field-identified control for this strip (see paragraph 23, Adequacy of Control). Other than this, Strip 3 employed no unusual methods, the adjustment was good and the junction with Strips 6 and 7 was good.

STRIP NO. 4 (60-W-2606 thru 2613)

The area from Nakalele Point southwestward to Hawea Point is covered by manuscripts T-11894 thru T-11896.

This five-model bridge was first adjusted (straight-line method) to determine which control points would be used in final adjustment. Final adjustment (IBM 650) consisted of five adjustment points. This procedure was used to assure the best adjustment and the best junction with Strips 2 and 5.

STRIP NO. 5 (60-W-2593 thru 2601)

The area from Hawea Point southward to Lahaina Harbor is covered by manuscripts T-11913 thru T-11916.

Other than an office identification of "Mala, Baldwin Packers Pineapple Cannery Stack, 1950" no unusual methods were employed during the bridging or the adjusting of this strip.

STRIP NO. 6 (60-W-2346 thru 2356)

The area from Lahaina Harbor southeastward to Papawai Point is covered by manuscripts T-11917 thru T-11920.

Kelsh models could not be set to the first bridge points. Therefore, the strip was bridged a second time and these positions plotted on 1:5,000 scale test manuscripts. Models were then set on the C-8 Stereoplanigraph and scaled to the test manuscripts. All bridge points with high ground elevations (2000 ft. and higher) could not be held while holding bridge points with lower ground or sea level elevations.

As a result of the test manuscript procedure it was determined that Kelsh compilation could be accomplished by holding only those points on shoreline and those with medium ground elevations. This will result in manuscripts which contain photo-centers, bridge points near photo centers, bridge points along shoreline and the delineated planimetry between these points.

Research Branch, Division of Photogrammetry, has decided that much of this strip approaches the "Critical Surface Problem". That is, ground elevations equal to one-quarter of the flying height at one side of the model with zero elevations in the middle of the model (as is the case with some models of Strip 6) lying on a cylindrical surface containing the camera lens do not offer conditions for a unique stereoscopic solution.

The manuscripts compiled from Strip 6 will meet the accuracy requirements for hydrographic support provided the delineated areas are confined to that area from photo centers out to shoreline. A plethora of established horizontal control distributed along the strip also assures the accuracy of the manuscripts. The only area that should be field checked for accuracy is covered by T-11919 (1:10,000 scale). Otherwise there is at least one established horizontal control station in every other stereo model.

If it can be scheduled, another flight of photographs might be bridged, spaced such as to obtain better geometric conditions.

STRIP NO. 7 (60-W-2705 thru 2719)

The area from Puu Nene Airport southward along Maalaea Bay to Cape Hanamanioa is covered by manuscripts T-11922 thru T-11926 and T-11928 thru T-11930.

A small area of residual parallax (about 2½ feet at 1:12,000 instrument scale) occurred in the 1st and 9th models (running north to south). In the first model this was attributed to very poor diapositive definition. Several parallax solutions by different operators did not eliminate the residual parallax. The ninth model consisted of about 60% land and the residual parallax was confined to a small isolated area halfway between photo centers and the highest ground elevations of the model. As both of these models were thoroughly checked and the bridge adjustment gave no indication of error the bridge should be adequate for the compilation intended.

Using 1958 field-identified control (see paragraph 23) an additional model was bridged at the north end of this strip. This additional model with its two horizontal control points provided a better balance of control points and resulted in a good bridge adjustment.

23. Adequacy of Control

All horizontal control was adequate and complied with project instructions except control requested at the northeast end of Strip No. 3. Neither of two possible control stations were field-identified in 1960-61. But a 1958 field identification of "Wailuku East Base 1950, Sub Station" was available and used in lieu of a 1960-61 identification for this area. The 1958 field identified control marked on sketch with solid triangle.

The 1960-61 identification of horizontal control for Strip No. 7 was adequate and complied with project instructions. But an additional model (60-W-2705-06) was bridged by using two 1958 identified stations, see discussion of Strip No. 7 under paragraph "22 Method".

23. Adequacy of Control cont.

Three temporary horizontal control stations, with sub. points, were established to supplement existing horizontal control. These stations are not marked and cannot be recovered in the future, marked on sketch with circled triangle.

24. Supplemental Data

The 1960-61 field identification of horizontal control was supplemented with 1958 field identification. The 1958 identification was done on 1956 U. S. Navy photographs and used to bridge and compile OC 762. On Strips 1 and 2 (PH-6012) these 1958 identifications were used only as additional checks on the bridge adjustments. But on Strips 3 and 7 (PH-6012) the 1958 identifications were used in each bridge adjustment.

U.S.G.S. Quads (1954-57 editions) at 1:24,000 scale were used to level the first model of each strip that was bridged.

25. Photography

The photography was adequate for coverage and overlap, except as stated below. The diapositive definition was not good but was sufficient for bridging.

Strip six photographs were flown at 12,500 ft. above sea level but much of the higher ground elevations in this area range from 2000 to 4000 ft. This resulted in an unusual photogrammetric problem known as a "Critical Surface Problem", see brief discussion given in Paragraph 22 Method - Strip No. 6.

Submitted by:

Willard A. Kuncis
Willard A. Kuncis 5/1/61

Approved by:

Everett H. Ramey
by John D Perrow Jr.
Everett H. Ramey
Chief, Aerotriangulation Section

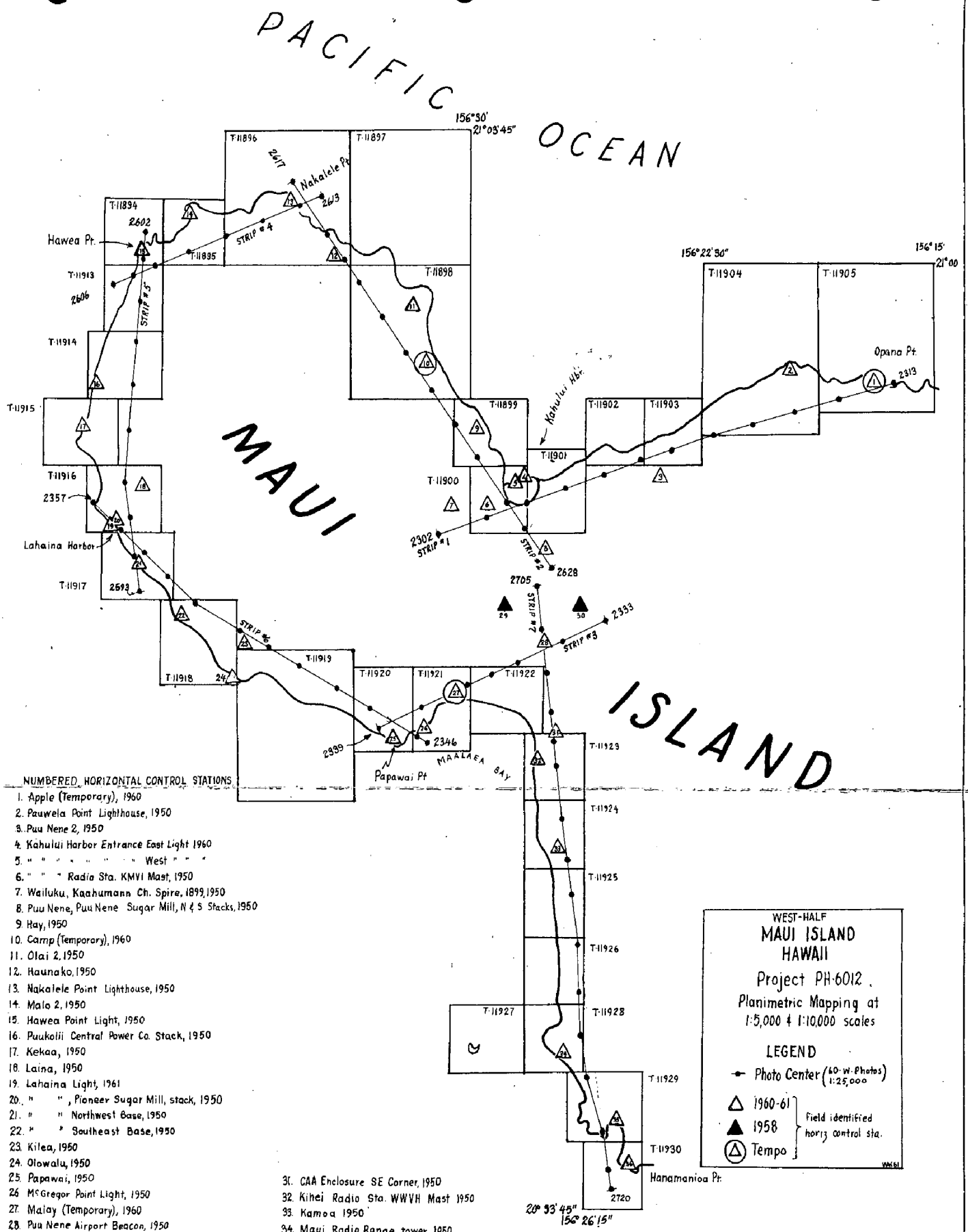
MAUI ISLAND, HAWAII - PH-6012

Strip No.	Models	Control Stations: Used in Adjustment	Control Stations: To Check Adjustment	Maximum Error: Feet-direction	Maximum Error: mm at 1:10,000	Maximum Error: mm at 1:5000	Mean Discrepancy to all control points (feet)
1	11	3	*14	14 West	0.41	0.82	4
2	11	5	**18	15 S. W.	0.45	0.89	4
3	6	4	3	5 N. E.	0.16	0.32	2
4	6	5	7	7 S. W.	0.21	0.42	4
5	7	4	***13	7 S. W.	N/A	0.42	3
6	9	7	(See discussion, Paragraph 22 - Strip No.6)				N/A
7	13	6	10	8 S. W.	N/A	0.48	4

*Ten of these stations lie in the western half of this strip.

**Fourteen of these stations lie in the last three models on the south end of this strip.

***Eight of these stations lie in the last three models on the south end of this strip.



NUMBERED HORIZONTAL CONTROL STATIONS

1. Apple (Temporary), 1960
2. Pauwela Point Lighthouse, 1950
3. Puu Nene 2, 1950
4. Kahului Harbor Entrance East Light 1960
5. " " " " " " West " " "
6. " " " Radio Sta. KMVI Mast, 1950
7. Wailuku, Kaahumanu Ch. Spire, 1899, 1950
8. Puu Nene, Puu Nene Sugar Mill, N & S Stacks, 1950
9. Hay, 1950
10. Camp (Temporary), 1960
11. Olai 2, 1950
12. Haunako, 1950
13. Nakalele Point Lighthouse, 1950
14. Malo 2, 1950
15. Hawea Point Light, 1950
16. Puukolii Central Power Co. Stack, 1950
17. Kekaa, 1950
18. Laina, 1950
19. Lahaina Light, 1961
20. " " , Pioneer Sugar Mill, stack, 1950
21. " " Northwest Base, 1950
22. " " Southeast Base, 1950
23. Kilea, 1950
24. Olowalu, 1950
25. Papawai, 1950
26. McGregor Point Light, 1950
27. Malay (Temporary), 1960
28. Puu Nene Airport Beacon, 1950
29. Maui South Base 1871, 1950
30. Wailuku East Base, 1950
31. CAA Enclosure SE Corner, 1950
32. Kihei Radio Sta. WWVH Mast 1950
33. Kamoa 1950
34. Maui Radio Range, tower 1950
35. Puu o Kanaloa 1950
36. Hanamanioa Pt Lighthouse, 1950

WEST-HALF
MAUI ISLAND
HAWAII

Project PH-6012.
Planimetric Mapping at
1:5,000 & 1:10,000 scales

LEGEND

Photo Center (60-W-Photos 1:25,000)

△ 1960-61
▲ 1958
(△) Tempo

Field identified horiz control sta.

WM 61

FORM 164
(4-23-54)

U.S. DEPARTMENT OF COMMERCE
DESCRIPTIVE REPORT

COAST AND GEODETIC SURVEY
CONTROL RECORD Plotted by _____ Date _____
Checked by _____ Date _____

MAP T- 11894 PROJECT NO. PH-6012 SCALE OF MAP 1:5,000 SCALE FACTOR 1.000

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR y-COORDINATE / LONGITUDE OR x-COORDINATE	DISTANCE FROM GRID IN FEET. OR PROJECTION LINE IN METERS FORWARD	(BACK)	DATUM CORRECTION	N.A. 1927-DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD	(BACK)	FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD	(BACK)
HAWEA (HGS)	P.C.	Old	244,469.34							
1882	17Zone2	Hawaiian	499,201.95							
HAWEA POINT	P.C.	"	244,412.75							
LIGHT, 1911	20		499,122.93							

1 FT. = .3048006 METER

COMM-DC-57843

COMPUTED BY: J.C. Richter DATE 10 July, 1962 CHECKED BY: D.M. Brant DATE 12 July, 1962

20

FORM 164
(4-23-54)

U.S. DEPARTMENT OF COMMERCE
DESCRIPTIVE REPORT

COAST AND GEODETIC SURVEY
CONTROL RECORD

Plotted by _____ Date _____
Checked by _____ Date _____

MAP T- 11895 PROJECT NO. PH-6012 SCALE OF MAP 1:5,000 SCALE FACTOR 1.000

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR y-COORDINATE / LONGITUDE OR x-COORDINATE	DISTANCE FROM GRID IN FEET, OR PROJECTION LINE IN METERS FORWARD	(BACK)	DATUM CORRECTION	N.A. 1927-DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD	(BACK)	FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD	(BACK)
MALO 2,	P.C.	Old	251,412.27							
1950	17	Hawaiian	508,663.69							

1 FT. = .3048006 METER

COMPUTED BY: J.C. Richter DATE 11 July, 1962 CHECKED BY: D.M. Brant DATE 12 July, 1962

COMM-DC-57843

COMPILATION REPORT
PROJECT 21034 (Ph-6012)
T-11894 and T-11895

31. DELINEATION

The Kelsh Plotter was used for delineation with photography taken in 1960.

Field inspection was adequate.

32. CONTROL

The identification, density and placement of horizontal control were adequate.

33. SUPPLEMENTAL DATA

None.

34. CONTOURS AND DRAINAGE

Contours - Inapplicable.

Drainage was not field inspected on surveys T-11894 and T-11895.

35. SHORELINE AND ALONGSHORE DETAILS

Shoreline inspection was adequate. Except for occasional reef limits and inspected rocks furnished by the field party, alongshore details were delineated from office interpretation of the photographs. The low water line (where shown) was delineated from office interpretation of the photographs.

36. OFFSHORE DETAILS

Details offshore were delineated from office interpretation of the photographs and are subject to verification by the hydrographer.

37. LANDMARKS AND AIDS

There is one non-floating aid on survey T-11894 which is recommended to be charted. Form 567 is submitted herewith. A copy of the Form 567 is bound in this report.

38. CONTROL FOR FUTURE SURVEYS

There are no Recoverable Topographic Stations on these surveys.

An "Incomplete" copy of these surveys showing the shoreline along with a set of ratio photographs with pass points and field identified photo-hydro signals was prepared and submitted for the use of the hydrographic party. These signals were removed from the final survey.

39. JUNCTIONS

Junctions are in agreement with adjoining surveys for T-11894 and T-11895. See project layout bound in this report.

40. HORIZONTAL AND VERTICAL ACCURACY

Refer to Photogrammetric Plot Report bound with this report.

41. through 45. Inapplicable.

46. COMPARISON WITH EXISTING MAPS

Comparison was made with the U. S. G. S. Honolua Quadrangle 1:24,000 scale, 1956.

The position of the platform shown on survey T-11895 in the vicinity of Honolua Bay and Lipoa Point (Lat. 21° 01.25' and Long. 156° 38.6') is believed to be the same position as the Water Tank shown on the quadrangle. Field photograph 60-W-2909 identifies the object as a platform.

47. COMPARISON WITH NAUTICAL CHARTS

Nautical Chart Number 4130, scale 1:80,000, published May 1928, 3rd edition December 1936, Revised April 23, 1962.

Items to be applied to nautical charts immediately: None.

Items to be carried forward: None.

Respectfully submitted,
25 September 1963

Donald M. Brant
Carto. (Photo.)

Approved and Forwarded:

Miller J. Tonkel
Cdr. C. & G. S.
Baltimore District Officer

T-11894

48. Geographic Names List

Fleming Beach

Hawea Point
Honokahua

Kapalua

Makaluapuna Point

Namalu Bay

Oneloa Bay

Pailolo Channel

Geographic Names Section
19 November 1963

T-11895

48. Geographic Names List

Honokahua Bay
Honokahua Stream
Honolua
Honolua Bay
Honolua Stream

Kahauiki Gulch

Lipoa Point

Makuleia Bay
Mokupea Gulch

Papua Gulch
Punalau Point

George N. Bass
Geographic Names Section
19 November 1963

(26)

FORM 182 (3-61)

50.

PHOTOGRAMMETRIC OFFICE REVIEW

T- 11894 & 11895

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

1. PROJECTION AND GRIDS ✓	2. TITLE ✓		3. MANUSCRIPT NUMBERS ✓	4. MANUSCRIPT SIZE ✓

CONTROL STATIONS	5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY ✓		6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (TOPOGRAPHIC STATIONS) None	
	7. PHOTO HYDRO STATIONS ✓	8. BENCH MARKS None	9. PLOTTING OF SEXTANT FIXES None	10. PHOTOGRAMMETRIC PLOT REPORT ✓
	11. DETAIL POINTS ✓			
ALONGSHORE AREAS (Nautical Chart Data)	12. SHORELINE ✓	13. LOW-WATER LINE ✓	14. ROCKS, SHOALS, ETC. ✓	15. BRIDGES None
	16. AIDS TO NAVIGATION ✓	17. LANDMARKS None	18. OTHER ALONGSHORE PHYSICAL FEATURES ✓	
	19. OTHER ALONGSHORE CULTURAL FEATURES ✓			
PHYSICAL FEATURES	20. WATER FEATURES ✓		21. NATURAL GROUND COVER ✓	
	22. PLANETABLE CONTOURS None		23. STEREOSCOPIC INSTRUMENT CONTOURS None	
	24. CONTOURS IN GENERAL None		25. SPOT ELEVATIONS None	
	26. OTHER PHYSICAL FEATURES ✓			
CULTURAL FEATURES	27. ROADS ✓	28. BUILDINGS ✓	29. RAILROADS None	
	30. OTHER CULTURAL FEATURES ✓			
BOUNDARIES	31. BOUNDARY LINES None		32. PUBLIC LAND LINES None	
MISCEL-LANEOUS	33. GEOGRAPHIC NAMES ✓		34. JUNCTIONS ✓	
	35. LEGIBILITY OF THE MANUSCRIPT ✓	36. DISCREPANCY OVERLAY None	37. DESCRIPTIVE REPORT ✓	
	38. FIELD INSPECTION PHOTOGRAPHS ✓		39. FORMS ✓	
	SIGNATURE OF REVIEWER Harold M. Brent		SIGNATURE OF SUPERVISOR, REVIEW SECTION OR UNIT Joseph W Vorasek	

40. FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT - Additions and corrections furnished by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted in remarks on reverse side.

SIGNATURE OF COMPILER C. A. Lipscomb	SIGNATURE OF SUPERVISOR Joseph W Vorasek

USE REVERSE SIDE FOR REMARKS

USCOMM-DC 25353-P61

(27)

(11927?) T-11904-11928

MAUI ISLAND, HAWAII
FIELD EDIT REPORT
PROJECT 21034 (PH-6012)
Strips 1, 2, 3, 4, 5, 6, and 7

The area covered by this report was divided into strips for the recovery of control and into T sheets for the inspection of the shoreline and the interior. For purposes of continuity, the sheets will be treated as individual T sheets beginning at the east end of the area covered by this report and continuing around the western end of the island to the southern end of strip 7. This is the area which was covered by the SURVEYOR during the short 1961 field season and the area covered by the PATHFINDER until the date of this report.

Field edit was accomplished in conjunction with the building of hydrographic signals and during hydrographic operations.

Beginning at the western side of sheet T-11905, which is part of the area presently being surveyed by the hydrographic party, and working toward the west, the shoreline and the interior were found to be in agreement with the advance manuscripts for sheets T-11904; T-11903 and T-11902. The shoreline for the most part is rocky and there is no erosion or construction along the high waterline. In sheet T-11901, the shoreline is lower and more sandy in character. There is constant erosion in winter due to the prevalent northeasterly storms and a rebuilding process during the calmer summer months. The shoreline shown on the field inspection photographs was inspected during February and represents the mean. No shorelineor interior changes were noted during the 1961 hydrography during May and June of 1961.

Dredging in the Kahului Harbor was contemplated during the 1961 season and the area covered by sheet T-11900 was deferred until 1962 when dredging operations were completed. During the dredging, an area to the south of the west jetty at Kahului Harbor was riprapped and filled with dredged material. This change in the shoreline of the harbor area will be located by theodolite and stadia board and forwarded in the near future.

North of Kahului Harbor, on sheet T-11899 the shoreline and the interior were found to be in agreement with that shown on the advance manuscript.

On sheet T-11898, the shoreline is composed of bluffs 75 to 200 feet high which drop straight to the waterline. On this sheet, an error was noted in the shape and size of Mokeehia Island. The advance manuscript showed this island much smaller than it is and of a different shape. This probably was caused by clouds on the photographs in the area, but the true size and shape was shown on an adjacent inshore photograph (not listed on the project index) and a note calling the attention of the compiler to the error was made on the manuscript. This data was turned over to the hydrographic party for transmission to Washington.

The small area in sheet T-11897 was included in the 1961 hydrography. The shoreline is a continuation of the steep rocky bluffs and the high waterline lies at the base of the cliffs. Offshore rocks were noted by the hydro party and compared with the advance manuscript.

Sheets T-11894, T-11895 and T-11896 are presently part of the 1962 hydrographic survey. Investigation of the shoreline and interior during the building of hydrographic signals revealed no deviation from the shoreline shown on the advance manuscripts. The shoreline in this area is rocky with few small sand beaches and is stable.

Sheets T-11913, T-11914, T-11915 and T-11916 were reviewed after the 1961 hydro work was completed and the advance manuscripts were found to coincide with the existing shoreline and interior. The shoreline, while low and sandy in some spots, showed no signs of erosion or building.

Advance manuscripts of sheets T-11917, T-11918 and T-11919 were compared with existing shoreline and interior and were found to be in good agreement. The shoreline in this sheltered area is low and sandy and showed no change from that delineated on the field photographs.

In sheets T-11920 and T-11921, the shoreline is at the base of steep rocky bluffs and no change from the delineated shoreline was noted during the 1962 hydrographic surveys.

Sheets T-11922 and T-11923, where the shoreline is low and sandy, were edited during 1961 and 1962 hydrographic operations. There was no change noted. This is a sheltered area, not exposed to trade winds and not liable, therefore, to erosion.

Sheets T-11924 and T-11925 or portions thereof, showed some deviation from the shoreline which was apparent on the field photographs. This eroded shoreline, due to a recent southerly storm, was delineated and was shown on the advance manuscripts. During hydrographic operations in this area during April and May of 1962, it was noted that the shoreline had built out to the line apparent on the field photographs. Investigation locally shows that this is a continuing process and it is felt that the eroded shoreline presently shown on the advance manuscripts more clearly represents minimum conditions.

Advance manuscripts T-11926 and T-11928 were reviewed during hydro operations during May of 1962. The shoreline and interior were found to be in agreement with that shown. One or two offshore rocks were found and delineated on the hydro sheet.

In general, except for the delineation of Mokeehia Island on sheet T-11898 the shoreline was found to be as shown on the manuscripts.

This is to be expected where the shoreline is composed of lava bluffs and protected sand beaches, and where the majority of the sheets fall along the lee side of the island. There is comparatively calm water and little wave action along the west side of the island and only an occasional "kona" or southerly storm disturbs the serene waters of the lee shore.

Respectfully submitted

John C. Lajoye
Super Sur. Tech.
Coast and Geodetic Survey

17 August, 1962
Kahului, Maui, Hawaii

REVIEW REPORT
T-11894 and T-11895
Shoreline
March 20, 1964

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS

Map Number	Date	Scale
3269	1912	1:20,000

Comparison was made between a copy of plane table survey 3269 and manuscripts T-11894 and T-11895. Differences are reported on the "Comparison Print" in blue notations.

Survey 3269 should be superseded by the manuscripts covered in this report for the construction of nautical charts.

63. COMPARISON WITH MAPS OF OTHER AGENCIES

See item 46 of the Compilation Report.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

Survey Number	Date	Scale
H-8685 (boat sheet)	May 1962	1:5,000

The manuscripts (T-11894 and T-11895) were compared with a bromide copy of hydrographic survey H-8685 (boat sheet). This hydrographic survey covers all of manuscript T-11894 and the western half (to Long. 156° 38.5') of T-11895. There are no other hydrographic surveys available at the time of this review.

There are differences in the high water line, foul lines and reef limits between the manuscripts (T-11894 and T-11895) and the hydrographic survey (H-8685 boat sheet). These differences are due to the fact that the boat sheet was made from the "Incomplete Manuscript" compiled without Field Inspection and with little or no detail shown beyond the high water line. The manuscripts were later revised with Field Inspection and classified "Advanced Manuscript".

T-11895:

There is a difference in the position and elevation of a rock awash on boat sheet H-8685 and an islet on T-11895 (Lat. 21° 0.9' and Long. 156° 38.8'). The rock awash on the boat sheet is approximately 0.7 mm southeast of the position of the islet delineated on the manuscript. Photogrammetric examination reveals that there is no rock visible on the photography (60-W-2608 and 2609, 1.8 ft. above MLLW) at the position shown on the boat sheet. The elevation of the islet was determined from Field Inspection (Field ratio 60-W-2609).

65. COMPARISON WITH NAUTICAL CHARTS

Chart Number	Scale	Edition	Date
4130	1:80,000	3rd	Dec. 30, 1936 Revised 4/23/62

Comparison was made with chart number 4130 and manuscripts T-11894 and T-11895.

A thorough comparison between the 1:5,000 scale manuscripts and the 1:80,000 scale chart was not feasible because of symbolization and displacement of features. The approximate position of charted features not shown on the manuscripts are noted on the "Comparison Print" in red notations. (Found to have been removed from the report (5/1/73)

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS

The manuscripts covered in this report comply with the instructions and meet the National Standards of Map Accuracy.

Respectfully submitted by,

Donald M. Brant

Approved and Forwarded:

Miller J. Tonkel
Cdr. C. & G. S.
Baltimore District Officer

Chief, Photogrammetric Branch

for Chief, Photogrammetry Division

Chief, Chart Division

(32)

NOTES TO VERIFIER
Project 21054 (Ph-6012)
T-11894 and T-11895
March 20, 1964

The manuscripts were compared with a bromide copy of hydrographic survey H-8685 (boat sheet). This hydrographic survey covers all of manuscript T-11894 and the western half (to Long. 156° 38.5') of T-11895. There are no other hydrographic surveys available at the time of this review.

There are differences in the high water line, foul lines and reef limits between the manuscripts (T-11894 and T-11895) and the hydrographic survey (H-8685 boat sheet). These differences are due to the fact that the boat sheet was made from the "Incomplete Manuscript" compiled without Field Inspection and with little or no detail shown beyond the high water line. The manuscripts were later revised with Field Inspection and classified "Advanced Manuscript".

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There is a difference in the position and elevation of a rock awash on boat sheet H-8685 and an islet on T-11895 (Lat. 21° 0.9' and Long. 156° 38.8'). The rock awash on the boat sheet is approximately 0.7 mm southeast of the position of the islet delineated on the manuscript. Photogrammetric examination reveals that there is no rock visible on the photography (60-W-2608 and 2609, 1.8 ft. above MLLW) at the position shown on the boat sheet. The elevation of the islet was determined from Field Inspection (Field photo 60-W-2609).

Respectfully submitted,

Donald M. Brant

Approved and Forwarded:

Miller J. Toskel
Cdr. C. & G. S.
Baltimore District Officer

Project 21034
T-11895
May 2, 1973

Four (4) rocks awash were deleted from survey T-11895. These rocks awash were in the Honolua Bay (approximate Lat. 21° 01' and Long. 156° 38' 30"). The rocks awash were deleted because no substantial evidence showed that they exist.

Donald M. Brant

Form 567
(10-15-58)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

TO BE CHARTED
~~TO BE REVISED~~
~~TO BE DELETED~~
} STRIKE OUT TWO

Maui Island, Hawaii 19 Feb. 1964

I recommend that the following objects which have ~~(have not)~~ been inspected from seaward to determine their value as landmarks be charted on ~~(delete from)~~ the charts indicated.

The positions given have been checked after listing by Donald M. Brant

Miller J. Tonkel
Chief of Party.

STATE Hawaii

CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION LATITUDE* ° ′	LATITUDE* ″ D.M. METERS	LONGITUDE* ° ′	LONGITUDE* ″ D.P. METERS	DATUM	METHOD OF LOCATION AND SURVEY No.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
Lt.	Hawea Point Light (HAWEA POINT LIGHT 1911)		21 00	22.594 694.8	156 40	09.257 267.3	Old Hawai-ian	Triang. T-1189	2/23/61			X	4130 4116

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and nonfloating aids to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

* TABULATE SECONDS AND METERS

USCOMM-DC 27126

(34)

(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

35

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. T-11894 & T-11895

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
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			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

FORM C&GS-8852 SUPERSEDES ALL EDITIONS OF FORM C&GS-978

USCOMM-DC 8558-P63