

11826

11826

FORM C&GS-504	
U.S. DEPARTMENT OF COMMERCE ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION COAST AND GEODETIC SURVEY	
DESCRIPTIVE REPORT	
Type of Survey	Shoreline(Photogrammetric)
Field No.	Office No. T-11826
LOCALITY	
State	Hawaii
General locality	Molokai
Locality	Pelekunu Bay
1961-1968	
CHIEF OF PARTY	
Allen L. Powell, Director, AMC	
LIBRARY & ARCHIVES	
DATE	

DESCRIPTIVE REPORT - DATA RECORD

T -11826

PROJECT NO. (II): PH-6201		
FIELD OFFICE (III): Honolulu, Hawaii		CHIEF OF PARTY H. J. Seaborg
PHOTOGRAMMETRIC OFFICE (III): Atlantic Marine Center		OFFICER-IN-CHARGE Allen L. Powell, Director, AMC
INSTRUCTIONS DATED (II) (III): Field April 25, 1962 Office Compilation May 31, 1962 " " , Amendment I December 14, 1962 " " Amendment II February 20, 1963 " " Amendment III January 8, 1964 " " Amendment IV April 24, 1967		
METHOD OF COMPILATION (III): Wild B-8 Plotter & Graphic		
MANUSCRIPT SCALE (III): 1:5,000		STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III): 1:15,000 Pantographed to 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): <i>High Water</i> MEAN SEA LEVEL EXCEPT AS FOLLOWS: Elevations shown as (25) refer to mean high water Elevations shown as (5) refer to sounding datum i.e., mean low water mean lower low water
REFERENCE STATION (III): MOKOHOLA (HGS) 1962 ✓		
LAT.: 21° 10' 28.954" (890.5m) ✓	LONG.: 156° 52' 42.164" (1216.3m) ✓	☒ ADJUSTED ☐ UNADJUSTED
PLANE COORDINATES (IV): Y = 305,638.9 ft. ✓ X = 427,868.5 ft. ✓		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.		

DESCRIPTIVE REPORT - DATA RECORD

FIELD INSPECTION BY (II):		DATE:
L. P. Van Scoy		August 1962
MEAN HIGH WATER LOCATION (III) (STATE DATE AND METHOD OF LOCATION):		
Wild B-8 Plotter, October 1962 Graphic, September 1961		
PROJECTION AND GRIDS RULED BY (IV):		DATE
A. E. Roundtree		6-15-62
PROJECTION AND GRIDS CHECKED BY (IV):		DATE
CONTROL PLOTTED BY (III):		DATE
Portland Photogrammetric Office		1965
CONTROL CHECKED BY (III):		DATE
Portland Photogrammetric Office		1965
RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III):		DATE
H. P. Eichert		December 1964
STEREOSCOPIC INSTRUMENT COMPILATION (III):	PLANIMETRY	DATE
	A. L. Shands *	9-13-67
	Reviewed by: C.H. Bishop	9-13-67
	CONTOURS	DATE
	Inapplicable	
MANUSCRIPT DELINEATED BY (III):		DATE
C.H. Bishop		10-9-67
SCRIBING BY (III):		DATE
B. Wilson		12-3-69
PHOTOGRAMMETRIC OFFICE REVIEW BY (III):		DATE
Compilation: C. H. Bishop		10-31-67
Field Edit: R. E. Smith		10-24-69
Scribing and stick up: R. E. Smith		12-23-69
REMARKS:		
* Stereoscopic compilation consisted of setting the models at 1:10,000 scale and dropping points common to the bridging photographs and hydro-graphic support photographs on a worksheet. These points were transferred by pantograph to the 1:5,000 scale manuscript and details compiled by graphic methods.		
Field edit by: Ronald L. Newsom		Date: Jan., April 1968

DESCRIPTIVE REPORT - DATA RECORD

CAMERA (KIND OR SOURCE) (III):

Wild RC-8 "W"

PHOTOGRAPHS (III)

NUMBER	DATE	TIME	SCALE	STAGE OF TIDE
62-W-1858	2 Oct. 1962	0847	1:25,000	0.8 ft. above MLLW
61 W 1003 thru 1006	24 Sept. 1961	1205	1:15,000	1.4 ft. above MLLW

TIDE (III) PREDICTED

Diurnal

	RATIO OF RANGES	MEAN RANGE	SPRING RANGE
REFERENCE STATION: Honolulu		1.2	1.9
SUBORDINATE STATION: Waimanalo	0.92	1.1	1.8
SUBORDINATE STATION:			

WASHINGTON OFFICE REVIEW BY (IV):

Leo F. Beugnot, Atlantic Marine Center

DATE:

Sept. 1970

PROOF EDIT BY (IV):

DATE:

NUMBER OF TRIANGULATION STATIONS SEARCHED FOR (II):

3

RECOVERED:

IDENTIFIED:

NUMBER OF BM(S) SEARCHED FOR (II):

None

RECOVERED:

IDENTIFIED

NUMBER OF RECOVERABLE PHOTO STATIONS ESTABLISHED (III):

None

NUMBER OF TEMPORARY PHOTO HYDRO STATIONS ESTABLISHED (III):

3

REMARKS:

T-11826

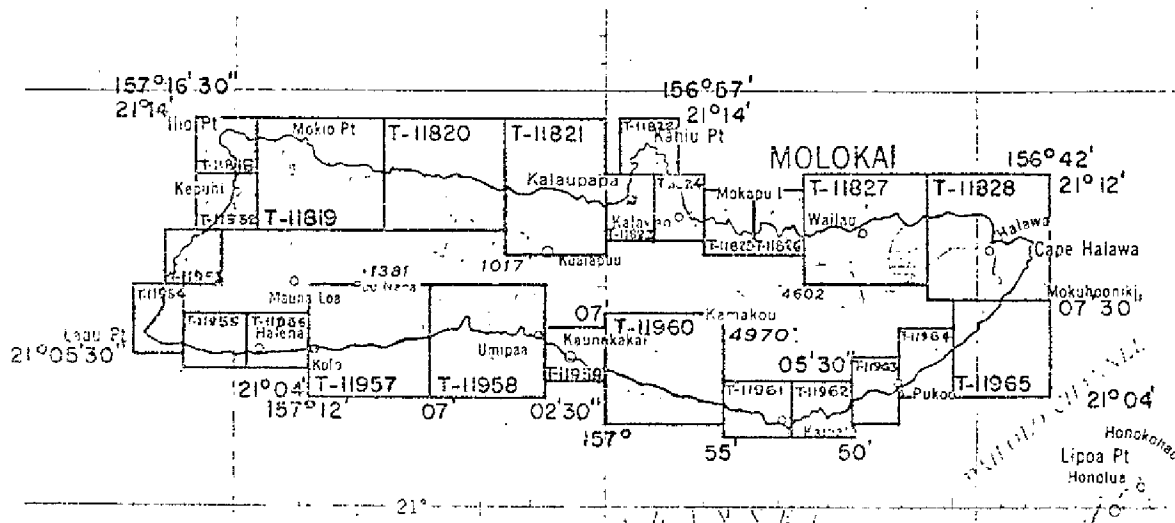
COMPILATION RECORD	COMPLETION DATE	REMARKS
Alongshore area for hydro	Sept. 1967	Superseded
Field edit applied compilation complete	June 1969	

PROJECT PH-6201

SHORELINE MAPPING

1:5,000 AND 1:10,000 SCALES

MOLOKAI ISLAND HAWAII



Official Mileage for Cost Accounts

Sheet No.	Shoreline Lin. Mi.	Area Sq. Mi.	Sheet No.	Shoreline Lin. Mi.	Area Sq. Mi.
11818	4	4	11952	3	3
11819	6	6	11953	3	3
11820	6	6	11954	2	2
11821	4	4	11955	3	3
11822	3	3	11956	3	3
11823	1	1	11957	6	6
11824	3	3	11958	5	5
11825	3	3	11959	3	3
11826	3	3	11960	6	6
11827	6	6	11961	3	3
11828	9	9	11962	4	4
			11963	3	3
			11964	3	3
			11965	3	3
Total			98		

SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT T-11826

Shoreline survey T-11826 is one of twenty-five similar surveys in project PH-6201. The surveys of this project cover the entire shoreline of Molokai Island. This survey covers that part of the north shore extending from Haupu Bay eastward to Waipu.

Field work preceding compilation consisted of identification of horizontal control, shoreline and field inspection and selection of photo-hydro signal sites. There were no fixed aids to navigation or landmarks for charts within the compilation limits.

Compilation was at 1:5,000 scale using the photography of 24 September 1961. Cronaflex copies of the manuscript along with ozalids and specially prepared photographs were subsequently provided for transfer of the shoreline to boat sheets, location of photo-hydro signals and field edit use.

The manuscript was a vinylite sheet 2 minutes 15 seconds in latitude by 2 minutes in longitude. After application of field edit, which was accomplished in December 1968, the manuscript was scribed and reproduced on cronaflex. Final review was in the Atlantic Marine Center in September 1970. One cronaflex positive and a negative of the final reviewed manuscript are forwarded for record and registry.

FIELD INSPECTION REPORT

Map Manuscripts
T-11952 thru 11965
T-11518 thru 11628

Project PH-6201

January - October 1962

2. AREAL FIELD INSPECTION

The area covered by this report encompasses the whole of the island of Molokai. This is the fifth largest of the group of islands that form the State of Hawaii. The island was originally formed by the eruption of two volcanos. One was located somewhere near the east end of the island and the other somewhere near the west end. Following these eruptions the numerous deep drainages were created by stream erosion and the ocean created the great cliffs along the north coast. A later eruption formed the Makenalua Peninsula on the north central coast. The Kaunakakai Crater remains as evidence of this eruption. The highest peak is Kamakou which is 4,958 feet above sea level.

The climate of the island varies considerably depending on the elevation and location in relation to the prevailing trade winds. The mean annual temperature at sea level is about 74 degrees. The temperature seldom varies more than 10 degrees except at the higher elevations. The yearly rainfall varies from about 7 inches around Kaunakakai to over 150 inches in the high mountain sections of the northeast.

The only port in use on the island is located at Kaunakakai. A small wharf connected to the shore by a long mole is used to load and unload barges, and serve small commercial and private boats. At one time a railroad connected the wharf to the area now known as Hoolehua Homesteads. It was abandoned soon after completion as the sugar plantation it was constructed to serve was a failure. The economy of the island is almost wholly dependant on the growing of pineapple and cattle ranching.

The wharf located at Kolo was used for a time to load pineapple from the Maunaloa area. It was later abandoned and since that time has been partially destroyed by fire. The wharf located at Kamalo is now in poor condition and seldomed used except by an occasional small fishing or pleasure boat. The wharf located at Pukoo is no longer in evidence. Located at Haleolon is a small harbor protected by a breakwater. This is a private harbor and is used to load sand and cinder barges for shipment to Oahu. A small private airstrip is located along the easterly breakwater.

Located on the Makenalua Peninsula is the small settlement of Kalanapapa. The settlement is maintained by the State of Hawaii, Department of Health for the treatment of Hansen's Disease (Leper^{sy}). Special permission must be obtained from the state before visiting this area. No facilities for serving the public are permitted on the peninsula. The U.S. Coast Guard maintains an isolated light station at the northern tip of the peninsula. The area is served by limited airplane service and supplies are brought in by barge at infrequent intervals. A small wharf protected by a short breakwater is located at the settlement. This area is isolated from the remainder of the island except for a foot trail that leads down the steep rocky cliffs from the top of the pali southwest of the settlement.

Shoreline around the island vary from the almost vertical rock cliffs along most of the north and east coast, to the narrow and relatively flat coastal areas along the south coast. Most of the south coast is protected by an offshore reef. A few sandy beaches are located along the south and west coasts. Most of the north coast is accessible only by boat and any landings there should be attempted with extreme caution.

Photography was adequate for the identification of horizontal control and shoreline inspection for most of the island. A few sections of the shoreline along the northeast coast of the island were in complete shadow from the most vertical cliffs.

The shoreline for the entire island was visually inspected at the mean high water noted on the field photographs. The shoreline along the north coast except for the Makenalua Peninsula was inspected by cruising offshore in a small boat. The work was difficult due to the small size of the boat, the rough seas, and strong winds. A few landings were made on the more prominent points along the northeast coast. The remainder of the island was inspected by walking the shoreline in the more accessible areas, and by observations from vantage points along bluffs and cliffs where the shoreline could not be otherwise visited. Scattered sections of the shoreline along the south coast were obscured by overhanging Keawe trees and dense growths of Mangrove trees.

3. HORIZONTAL CONTROL

(a) The following described intersection stations were located by traverse or triangulation as nautical aids, aeronautical aids, and landmarks.

Molokai Lighthouse
Molokai Airport Beacon
Waihuna, Aero Beacon Red Light
Kaulapuu, Aero Beacon Red Light

Molokai VOR (BKK)
 Pun Apalu, Tank
 Ilio Pt., Coast Guard Loran Mast
 Waiahewa, Aero Beacon Red Light
 Lani Pt. Light
 Kaunakakai Harbor, Entrance Range, Front Light
 Kaunakakai Harbor, Entrance Range, Rear Light

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

(c) WAIELI 2, 1945 was the only control station identified that was not established by the Coast and Geodetic Survey. This station was established by the Territory of Hawaii and can be considered as third order accuracy. The station was destroyed before it could be tied to the 1962 work. HELENA, 1962 which is located about a half mile west of this station was later identified. All other control stations identified were established by the Coast and Geodetic Survey or tied to by the geodetic party during the 1962 season. Many of the old stations could not be recovered and new stations had to be established to meet the control requirements.

(d) Control stations were positively identified in all areas indicated on the control diagram.

(e) All control stations within the limits of the project except for a few along the inaccessible northeast coast of the island were searched for. Part of this recovery was performed by the geodetic party located on the island. All station searched for were listed on Form 526 which was submitted to the Honolulu District Officer. A complete list of all stations reported lost on Form 526 would have to be obtained from the Honolulu District Officer or the Division of Geodesy. No stations that were listed as lost were identified for use in the plot.

(g) The quality of identification of each station or substitute station has been indicated on the control station identification card. None of the identification was considered to be sub-standard.

4. VERTICAL CONTROL

The only vertical control requirement was the recovery of all tidal bench marks in the project area and identification of one mark in each of the groups.

All tidal bench marks listed at Pukoo, Kamalo, Kaunakakai, and Kolo were searched for. A total of 18 bench marks were searched for. All marks were listed on Form 685 which was submitted to the Honolulu District Officer.

A total of 13 U. S. Geological Survey bench marks were searched for. These marks were used in conjunction with the tellurometer traverse work on the island and for use in determining the elevation of landmarks. All marks were listed on Form 685 which was submitted to the Honolulu District Officer.

5. CONTOURS AND DRAINAGE

Contours not applicable

Drainage is self evident on the photographs. All streams except for a few in the larger valleys of the northeast coast and near the east end of the south coast are intermittent. During the wet season there are dozens of waterfalls cascading from the tops of the cliffs and rims of the valleys of the northeast coast. Marsh areas have been indicated on the field photographs.

6. WOODLAND COVER

The mountainous areas of the northeast part of the island is covered with a dense growth of native ferns and hardwoods. A large stand of planted softwoods is located along the top of the pali in the north central part of the island. Keawe trees which were introduced to the island about 100 years ago cover most of the remainder of the island except for the cultivated areas. Along the mud flats of the south coast there are scattered stands of introduced Mangrove trees.

7. SHORELINE AND ALONGSHORE FEATURES

(a) The mean high water line was indicated on the photographs. Along some sections of the northeast coast the shoreline was obscured due to the shadows created on the photographs from the almost vertical cliffs. In some areas of the south coast the shoreline was partially obscured by low overhanging Kiawe trees. In most cases this overhang was less than 10 meters and the approximate correct location was indicated on the photographs. Also along the south coast there are scattered stands of Mangrove trees. In these areas the mean high water line was indicated as apparent shoreline.

The shoreline along the north, east, and small areas of the west and southwest coast contain many areas of alongshore rocks, projecting reefs and ledges, and almost vertical bluffs. These features combined with a normally heavy surf breaking along the shore tend to confuse the location of the mean high water line on the photographs.

Where possible especially along the beach areas and the more accessible sections of the coast the location of the mean high water line was determined by measurements to near by objects.

(b) The low water line was not indicated on the photographs.

(c) Where possible the character of the foreshore was indicated on the photographs.

(d) The north, east, and sections of the west and southwest coast is bordered by rocky cliffs. In some cases these cliffs are over 2000 feet high. Along most of the south coast, sections of the west coast, and the Moomomi area the land has a more gradual slope with a small relatively flat area adjacent to the coast.

(e) The only unnatural features to be found in the project area were located at Kalaupapa, Kamalo, Kaunakakai, Kolo, and Haleolono. All information regarding these features was indicated on the field photographs.

(f) Not applicable

(g) Along the south shore there are the remains of many fishponds. The stone walls for some of these have been completely leveled and for most of the others large sections of the walls have been leveled. The location of these fishponds is apparent on the photographs.

8. OFFSHORE FEATURES

Offshore rocks are located along many areas of the north, east, and sections of the west and southwest coast. Most of these rocks that are visible on the photographs are adjacent to the shore. In these areas it is probable that there are many rocks that are not visible on the photographs but are close enough to the surface of the water to consider the foreshore as being foul with submerged rocks. The height of many of the rocks along the shore were estimated at the time the shoreline was inspected.

A reef about 0.5 to 1.0 mile offshore is located along most of the south coast. Between the reef and the shore there are scattered areas of sand and many coral heads that project at low water.

9. LANDMARKS AND AIDS

(a) All charted landmarks were investigated by the field party. A total of 13 old landmarks were deleted from the charts and four old landmarks were retained. A total of 11 new landmarks were selected for charting. The old landmarks which were to be deleted were indicated on the sections of the charts on which they appeared. These sections of the charts will be submitted with the field records. All old landmarks that were retained and the new landmarks selected for charting were listed on Form 567, and the elevation for each landmark was determined by the field party.

(b) No interior landmarks were selected for charting.

(c) The geographic positions for the following charted aeronautical aids was determined by traverse or triangulation during the 1962 field season.

Molokai, Airport Beacon
 Waiahehewa, Aero Beacon Red Light
 Waihuna, Aero Beacon, Red Light
 Kualapuu, Aero Beacon, Red Light

The geographic position of one new aeronautical aid selected for charting was determined during the 1962 field season.

Molokai VOR (MKK)

All aeronautical aids to be charted were listed on Form 567 and the elevation for each aid was determined by the field party.

(d) The geographic positions of the following list of aids to navigation was determined by the field party during the 1962 season.

Molokai Lighthouse
 Laau Pt. Light
 Ilio Pt., Coast Guard Loran Mast
 Kaunakakai Harbor, Entrance Range, Front Light
 Kaunakakai Harbor, Entrance Range, Rear Light

All nautical aids to be charted were listed on Form 567 and the elevation for each aid was determined by the field party.

(e) Not applicable

10. BOUNDARIES, MONUMENTS, AND LINES

Not applicable

11. OTHER CONTROL

No recoverable topographic stations were established.

In all areas where identifiable objects could be found photo hydro sites were selected. In some cases it will be necessary to locate a more suitable location for the hydrographic signals from the selected photo hydro sites .

12. OTHER INTERIOR FEATURES

All roads in the project area were classified on the field photographs in compliance with the project instructions.

All public buildings with their function was indicated on the field photographs.

The main airport serving the island is located south of the Hoolehua Homestead area in the central section of the island. A small airport for use by small aircraft is located on the Makenalua Peninsula. A small private airstrip is located at Haleolon near the southwest end of the island.

No bridges or overhead cable crossings over navigable water are located in the project area. There are no submerged cables connecting the island with other areas.

13. GEOGRAPHIC NAMES

Not Applicable

Approved: **OCT 30 1962**
H. J. Seaborg
 H. J. Seaborg
 Capt., C & G S
 Honolulu District Officer

Respectfully submitted:
Leonard F. Van Scoy
 Leonard F. Van Scoy
 Supervisory Survey Technician
 Unit Chief, C & G S

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Aerotriangulation Report
PH-6201
Molokai, Hawaii
Strip 4

21. Area Covered

This report covers T-sheets 11821 and 11823 through 11828 along the Northeastern shore of Molokai Island.

22. Method

A horizontal bridge was run on the C-8 stereoplanigraph to provide control for compilation using photographs 62-W-1850 through 1865. The adjustment on the IBM 650 utilized four control stations with one station as a check. A supplemental straight line adjustment was made in the area of Strips #6 and #7.

23. Adequacy of Control

The horizontal control provided complied with project instructions in quantity but not in quality. Station Kikipua 2, 1962 was identified by only one sub-station and this point could not be positively identified. At station Mokohola 1962 two sub-stations plus the home station for Mokohola HGS (old station) were identified. Of these three points only Mokohola HGS (old station) was of any quality and it was doubtful. The adjustment of this strip holds all control within the accuracy of National Standards, however, tie points to Strips #6 and #7 plus a mathematical strain in the adjustment indicates a possible bad adjustment. In view of the above facts, it is requested that stations Kikipua 2, 1962 and Mokohola 1962 be re-identified and that T-sheets in this area be treated as preliminary sheets.

24. N.A.

25. Photography

The photography was adequate in coverage and overlay, however, the time of photography (09:45) along with the steep cliffs in the areas caused large and deep shadows. These shadows prevented picking points in many areas and caused considerable trouble in joining models.

15
-2-

26. In attempting to drop pass points for control of flight 62-W-1850 through 1865 it was found that due to shadows and extreme elevations only a few common points could be provided and these were along the shoreline. Since these points are insufficient to allow detailing by machine methods the shoreline must be delineated by graphic methods and additional points must be pricked by the hydro party.

Submitted by,

John D. Perrow, Jr.
John D. Perrow, Jr.
Cartographer

Approved by,

Henry P. Eichert

Henry P. Eichert
Chief, Aerotriangulation
Section

PH-6201
Molokai, Hawaii
Strip 4

NOTES TO COMPILER

This strip was recomputed on the adjusted control which is now available. The points in the northeastern area moved only 2-3 feet and the junction with Strip #1 showed no appreciable change. The new adjusted positions should be used in preference to those provided earlier.

COMPILATION REPORT
Map Manuscript T-11826
Project PH-6201

31. DELINEATION:

Two flights of photographs taken at different times and dates were used for compilation.

The bridging photographs were flown between 0830 and 0900 hours on January 19, 1962 at a scale of 1:25,000. These proved to be very inadequate for shoreline compilation. The flight line was considerably south of the shoreline; therefore, part of the shoreline was obscured by overhanging bluffs and much of it was in deep shadow, making identification of the mean high water line extremely difficult, if not impossible.

The photographs used for hydrographic support were flown around noon on September 24, 1961 at 1:15,000 scale. The line of flight was along the shoreline. The mean high water line was viewed from a better vantage point and in much better light than the bridging photographs.

Because of the range of elevation in the stereoscopic models exceeded the vertical range of the B-8 Plotter at 1:5,000 scale, the models could not be set and scaled to the manuscript. However, they could be set at 1:10,000 scale and this was done. The aerotriangulation control points were plotted at 1:10,000 scale on a clean sheet of mylar and the models scaled to this worksheet. Points common to the bridging photographs and the hydrographic support photographs were dropped and then transferred from the worksheet to the 1:5,000 scale manuscript by pantograph. The centers of the hydrographic support photographs were then located by resection and the mean high water line, shoreline details and photo-hydro points were compiled graphically.

32. CONTROL:

See Photogrammetric Plot Report by H. P. Eichert dated December 1964.

33. SUPPLEMENTAL DATA:

None.

34. CONTOURS AND DRAINAGE:

Contours are not applicable.

One stream was delineated a short distance back from the shoreline.

35. SHORELINE AND ALONGSHORE DETAILS:

Shoreline and alongshore details were compiled graphically from ratio prints of 1:15,000 scale photographs.

Field inspection was adequate for delineation of the mean high water line.

36. OFFSHORE DETAILS:

Offshore details are Mokolea Rock and Mokohola Island.

37. LANDMARKS AND AIDS:

38. CONTROL FOR FUTURE SURVEYS:

None.

39. JUNCTIONS:

Satisfactory junctions were made with T-11825 to the west and T-11827 to the east. There are no contemporary surveys to the north and south.

40. HORIZONTAL AND VERTICAL ACCURACY:

No statement.

46. COMPARISON WITH EXISTING MAPS:

Comparison was made with USGS Quadrangle KAMALO, HAWAII, ISLAND OF MOLOKAI, Scale 1:24,000 dated 1952.

47. COMPARISON WITH NAUTICAL CHARTS:

Comparison was made with Nautical Chart 4116, Scale 1:250,000, 12th edition, dated August 17, 1964.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY:

None.

ITEMS TO BE CARRIED FORWARD:

None.

Submitted by:

Charles H. Bishop

Charles H. Bishop
Cartographer
1 November 1967

Approved:

Allen L. Powell

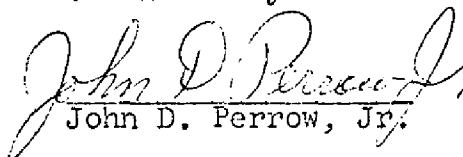
Allen L. Powell, Director, AMC

Job PH-6201
Molokai Island, Hawaii
Supplement to Compilation Report

Because of the extreme elevations encountered in models along the northeast shore of Molokai, it was impossible to compile the shoreline by normal methods on the B-8 plotters. The methods used are described in the Compilation Reports for PH-6201, T-11825, T-11826, and T-11827.

In order to verify this work, three models (62-W-1853-1854), (62-W-1855-1856), and (62-W-1856-1857) were set on the C-8 Stereoplanigraph, and scaled to the original bridge points. Shoreline detail, offshore rocks, etc. were checked and found to be of National Map Accuracy Standards. Only in model 62-W-1853-1854 was it necessary to hold only the four points nearer the shoreline. The two interior points were an extreme elevation, and were disregarded as probably in error, because the aerotriangulation adjustment used at that time did not include a simultaneous vertical adjustment.

Submitted by:


John D. Perrow, Jr.

Approved by:



Henry P. Eichert
Chief, Aerotriangulation Section

GEOGRAPHIC NAMES

FINAL NAME SHEET

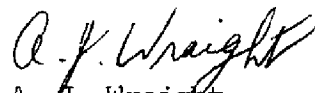
PH-6201

T-11826

Ananoio
Anokaiole
Haukio
Haupu
Haupu Bay
Hawaii (title)
Kaholaiki Bay
Kaneaimoa Point
Kapahu Point
Keawanui
Kipu
Lel^okoae
Mokohola Island

Mokolea Rock
Mokumanu
Molokai
Naninini
Pacific Ocean
Paueono
Pauonuakea
Pelekunu
Pelekunu Bay
Pelekunu Street^m
Umilehi Point
Waaula
Waipu

Approved by:



A. U. Wraight
Chief Geographer

Prepared by:



Frank W. Pickett
Cartographic Technician

49. NOTES FOR THE HYDROGRAPHER:

1. See FIELD EDIT OZALID.
2. Two flights of photographs taken at different times and dates were used for compilation.

The bridging photographs were flown at 1:25,000 scale on January 19, 1962. This flight was flown considerably south of the shoreline and the exposures were made around 0830 hours. Therefore, part of the shoreline is obscured by overhang and much of it is in deep shadow, making identification of the mean high water line extremely difficult, if not impossible.

The photographs used for hydro support were flown at 1:15,000 scale on September 24, 1961. This flight line was flown along the shoreline around noon. The mean high water line was viewed from a much better vantage point and in much better light than the bridging photographs.

Stereoscopic models of the bridging photographs could not be scaled to the 1:5,000 scale manuscripts. However, they could be scaled at 1:10,000 scale. This was done and points common to the 1:25,000 scale photographs and the 1:15,000 scale photographs were located. These common points were transferred to the 1:5,000 scale manuscripts. Centers of the ratio prints of the 1:15,000 scale photographs were located by resection, and the mean high water line and other details were compiled graphically.

3. There are no photo-hydro points on T-11825.
4. The following is a list of photo-hydro points shown on T-11826 and the cronapaque ratio prints for your use if they are still in existence:

<u>Point</u>	<u>Description</u>
2601	Offshore end of walkway.
2602	Lone 20 ft. lahalla tree.
2603	Lone lahalla tree.

PHOTOGRAMMETRIC OFFICE REVIEW

T- 11826

1. PROJECTION AND GRIDS CHB	2. TITLE CHB	3. MANUSCRIPT NUMBERS CHB	4. MANUSCRIPT SIZE CHB
CONTROL STATIONS			
5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY CHB	6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (Topographic stations) X		7. PHOTO HYDRO STATIONS CHB
8. BENCH MARKS X	9. PLOTTING OF SEXTANT FIXES X	10. PHOTOGRAMMETRIC PLOT REPORT Bridge - W. O.	11. DETAIL POINTS X
ALONGSHORE AREAS (Nautical Chart Data)			
12. SHORELINE CHB	13. LOW-WATER LINE CHB	14. ROCKS, SHOALS, ETC. CHB	15. BRIDGES X
16. AIDS TO NAVIGATION X	17. LANDMARKS X	18. OTHER ALONGSHORE PHYSICAL FEATURES CHB	19. OTHER ALONGSHORE CULTURAL FEATURES X
PHYSICAL FEATURES			
20. WATER FEATURES CHB		21. NATURAL GROUND COVER CHB	22. PLANETABLE CONTOURS X
23. STEREOSCOPIC INSTRUMENT CONTOURS X	24. CONTOURS IN GENERAL X	25. SPOT ELEVATIONS X	26. OTHER PHYSICAL FEATURES X
CULTURAL FEATURES			
27. ROADS X	28. BUILDINGS X	29. RAILROADS X	30. OTHER CULTURAL FEATURES X
BOUNDARIES			
31. BOUNDARY LINES X		32. PUBLIC LAND LINES X	
MISCELLANEOUS			
33. GEOGRAPHIC NAMES CHB		34. JUNCTIONS CHB	35. LEGIBILITY OF THE MANUSCRIPT CHB
36. DISCREPANCY OVERLAY X	37. DESCRIPTIVE REPORT CHB	38. FIELD INSPECTION PHOTOGRAPHS CHB	39. FORMS CHB
40. REVIEWER Charles H. Bishop C. H. Bishop 10/31/67		SUPERVISOR, REVIEW SECTION OR UNIT Albert C. Rauck, Jr. Albert C. Rauck, Jr.	
41. REMARKS (See attached sheet)			
FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT			
42. Additions and corrections furnished by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted under item 43.			
COMPILER A.L. Shands A. L. Shands 6/27/69 Rev. by: R.E. Smith 10/24/69		SUPERVISOR Albert C. Rauck, Jr. Albert C. Rauck, Jr.	
43. REMARKS Field edit applied from: Field photos 61-W-1003, 61-W-1004 and 61-W-1006 and on Field edit ozalid of T-11826			

Field Edit Report
To Accompany T 11826

USC&GSS McARTHUR

Ronald L. Newsom
CDR, USESSA
Commanding Officer

51 METHODS

Field Edit on Manuscript T 11826 was accomplished in conjunction with hydrography on boatsheets AR-20-1-68, H 8981, AR 20-4-68 H 8995 and AR 5-3-68, H 8983. The shoreline was inspected from launches and skiffs. The MLLW line was impossible to determine due to heavy swell. Field edit information was shown on three photos #61W1003, #61W1004, and #61W1006 in violet ink and on the field edit ozalid copy of T 11826 in violet ink. The photos were indexed on the field edit ozalid in violet.

52 ADEQUACY OF COMPILATION

Manuscript T 11826 was completely adequate for a hydrographic survey.

54 RECOMMENDATIONS

None

REVIEW REPORT T-11826

SHORELINE

SEPTEMBER 4, 1970

61. GENERAL STATEMENT

See Summary, which is page 6 of the Descriptive Report.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS

There was no registered topographic survey available for comparison purposes at the time of final review.

63. COMPARISON WITH MAPS OF OTHER AGENCIES

Comparison was made with U.S.G.S. KAMALO, HAWAII 7.5 x 8.5 minute quadrangle, 1:24,000 scale, edition of 1952. The two surveys are in good general agreement. The U.S.G.S. quadrangle is necessarily generalized because of its scale.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

Comparison was made with copies of boat sheets H-8983 (AR-5-3-68), H-8981 (AR-20-1-68) and H-8995 (AR-20-4-68). No major discrepancies were noted. All differences have been noted on the comparison print in purple.

65. COMPARISON WITH NAUTICAL CHARTS

A visual comparison was made with Chart 4130, 6th edition, revised February 10, 1969. The surveys appear to be in good general agreement with the exception that the chart shows no rocks close inshore to the mean high water line.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS

Please refer to the compilation report, pages 18 and 21 of the Descriptive Report.

Reviewed by:

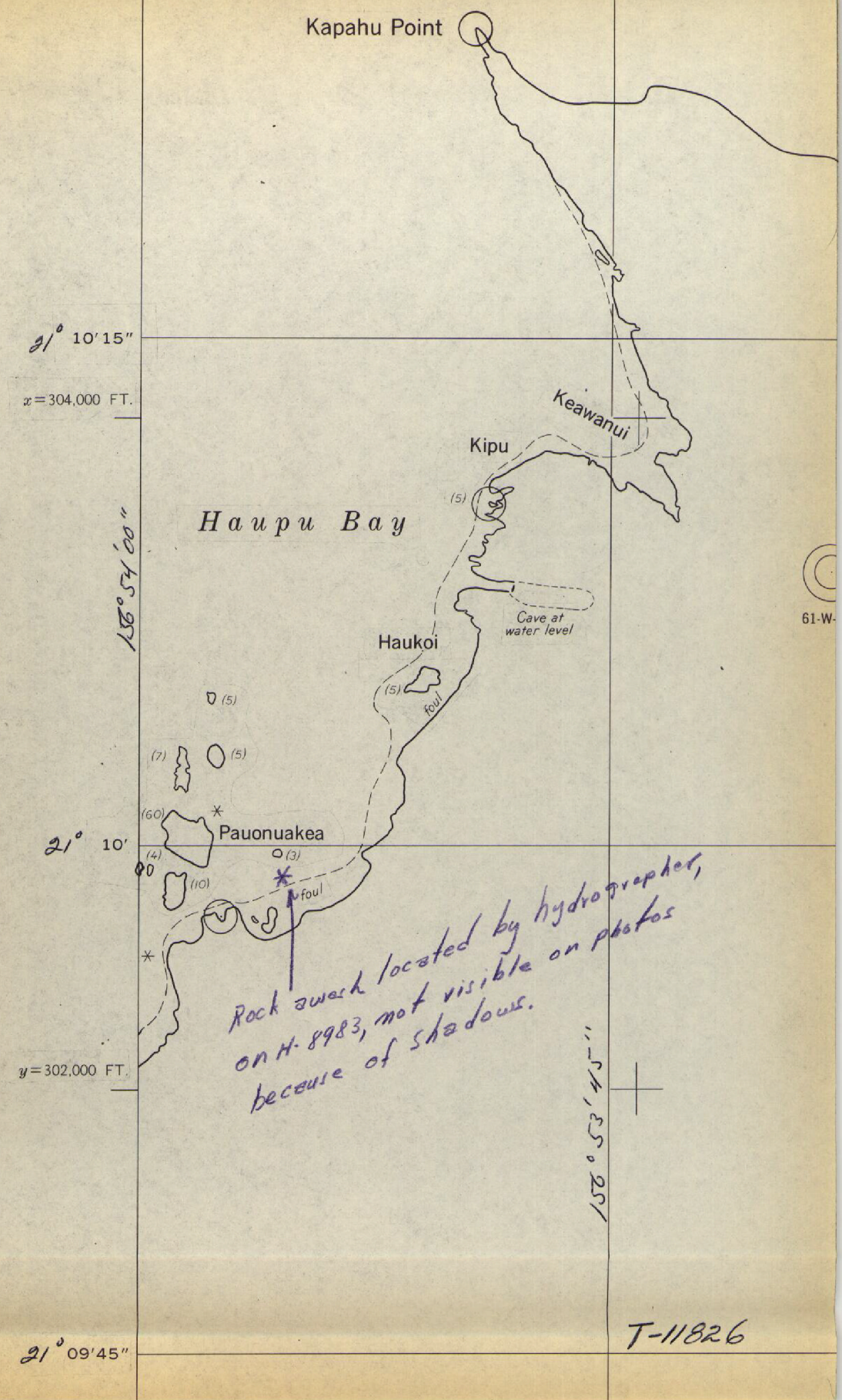
Leo F. Beugnet
Leo F. Beugnet
Cartographer

Approved by:

Allen L. Powell
Allen L. Powell, RADM, NOAA
Director, Atlantic Marine Center

Approved by:

Charles L. Hemm *Jack E. Luth*
Chief, Photogrammetric Branch Chief, Photogrammetry Division



Rock wreck located by hydrographer,
on H. 8983, not visible on photos
because of shadows.

T-11826

* awash MHW

Not on Boat sheet

Mokumanu

foul

(30)

Paueono

$21^{\circ} 16' 15''$

H a u p u

△ HAUPU

Not on Boat sheet

1006

61-W-1005

Waula

Pier

Pelek

Naninini

$158^{\circ} 53' 30''$

$158^{\circ} 53' 15''$

$21^{\circ} 09' 45''$

T-11826



21° 10' 15"

y = 304,000 FT.

156° 52' 15"

156° 52' 00"

21° 10' 00"

Ananoio



foul



(2)

(15)

(2)

foul



y = 302,000 FT.

Waipu

No rocks in this area are on
Boat sheet H-8995 (AR-20-4-68)

21° 09' 45"

T-11826