<table>
<thead>
<tr>
<th><strong>LOCALITY</strong></th>
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<tbody>
<tr>
<td><strong>State</strong></td>
<td>Hawaii</td>
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<tr>
<td><strong>General locality</strong></td>
<td>Molokai</td>
</tr>
<tr>
<td><strong>Locality</strong></td>
<td>Kahi Point</td>
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| **DATE** | 1968 |

**Chief of Party**
Allen L. Powell, Director, AMC
**PROJECT NO. (III):**

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 (III) (IV):**

II April 25, 1962  
III May 31, 1962  
III December 14, 1962, Amendment I  
III February 20, 1963, Amendment II  
III January 8, 1964, Amendment III

**METHOD OF COMPILATION (III):**

Kelsh Instrument

**MANUSCRIPT SCALE (III):**

1:5,000

**STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III):**

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

**REFERENCE STATION (III):**

Kahio, 1962

**LAT.:**

21°12'.56'82"

**LONG.:**

156°58'.17'87"

**ADJUSTED**

X UNADJUSTED

**PLANE COORDINATES (IV):**

STATE  
Hawaii

ZONE  
2

**VERTICAL DATUM (III):**

Mean Higher High Water  
Except as follows:

Elevations shown as (23) refer to mean high water  
Elevations shown as (5) refer to sounding datum  
i.e., mean low water or mean lower low water

**ROMAN NUMERALS INDICATE WHETHER THE ITEM IS TO BE ENTERED BY (III) 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.**

USCG-DC 35392-A-PG
**DESCRIPTIVE REPORT - DATA RECORD**

**FIELD INSPECTION BY (III):**
L. F. Van Scoy

**DATE:**
January
October 1962

**MEAN HIGH WATER LOCATION (III) (STATE DATE AND METHOD OF LOCATION):**

**PROJECTION AND GRIDS RULED BY (IV):**
A. E. Roundtree
2-2-65

**PROJECTION AND GRIDS CHECKED BY (IV):**
R. Glaser
2-10-65

**CONTROL PLOTTED BY (III):**
L. L. Graves
5-3-65

**CONTROL CHECKED BY (III):**
J. S. Place
5-3-65

**RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III):**
H. P. Eichert
Dec. 1964

**STEREOSCOPIC INSTRUMENT COMPILATION (III):**
Kelsh
D. N. Williams
5-5-65

**CONTOURS:**
Inapplicable

**MANUSCRIPT DELINEATED BY (III):**
J. L. Harris
6-14-65

**SCRIBING BY (III):**
B. Wilson
12-10-69.

**PHOTOMETRIC OFFICE REVIEW BY (III):**
Compilation J. L. Harris
Field Edit R. E. Smith
Scribing and stick up: B. Barge

**DATE:**
6-14-65
10-19-69
12-30-69

**REMARKS:**
Field edit by: R. L. Newsom
December 1969
**DESCRIPTIVE REPORT - DATA RECORD**

**CAMERA (KIND OR SOURCE) (III):**

CGGS Single Lens "W"

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>DATE</th>
<th>TIME</th>
<th>SCALE</th>
<th>STAGE OF TIDE</th>
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<td>61W-778 thru 780</td>
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<tr>
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Computed from predicted tide tables.

**TIDE (III):**

Diurnal

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<td>SUBORDINATE STATION:</td>
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<th>SPRING RANGE</th>
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**WASHINGTON OFFICE REVIEW BY (IV):**

*Leod Ferguson, Atlantic Marine Center*

**PROOFEDIT BY (IV):**

*August 1970*

**NUMBER OF TRIANGULATION STATIONS SEARCHED FOR (II):**

3

**RECOVERED:**

3

**IDENTIFIED:**

1

**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):**

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<td>Superseded</td>
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<td>Field edit applied</td>
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PROJECT PH-620
SHORELINE MAPPING
1/5,000 AND 1/10,000 SCALES
MOLOKAI ISLAND HAWAII

Official Mileage for Cost Accounts

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SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT T-11822

Shoreline survey T-11822 is one of twenty-five similar surveys in Project PH-6201. The surveys in this project cover the entire coast of Molokai Island, Hawaii. This survey covers a part of the Makanalua Peninsula which is located on the north shore of the island. See page 5 for the area of the survey within the project.

Field work preceding compilation consisted of identification of horizontal control, selection of photo-hydro signal sites, shoreline and field inspection, and identification of fixed aids to navigation.

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

The manuscript was a vinylite sheet 2 minutes in latitude by 2 minutes 30 seconds in longitude. The survey was field edited in December 1968. After application of field edit data, the survey was scribed and reproduced on cronaflex. Final review was in the Atlantic Marine Center in August 1970. One cronaflex positive and a negative of the final reviewed survey are forwarded for record and registry.
FIELD INSPECTION REPORT

Map Manuscripts
T-11962 thru 11965
T-11816 thru 11826

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 Makalawena Peninsula on the north central coast. The Kauhako Crater remains as evidence of this eruption. The highest peak is Kanahou which is 4953 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 highest 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 of the sugar plantation it was constructed to serve was a failure. The economy of the island is almost wholly dependent on the growing of pineapple and cattle ranching.

The wharf located at Koloa was used for a time to load pineapple from the Kaunaloa area. It was later abandoned and since that time has been partially destroyed by fire. The wharf located at Koloa is now in poor condition and seldom used except by small fishing or pleasure boats. The wharf located at Puleo is no longer in evidence. Located at Haleolona 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 Hakanalu Peninsula is the small settlement of Kalanipapa. The settlement is maintained by the State of Hawaii, Department of Health for the treatment of Hansen's Disease (Lepercy). 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 harbor 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 east coast. 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 on the mean high water noted on the field photographs. The shoreline along the north coast except for the Hakanalu 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 kahana 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.

Kolokai Lighthouse
Kolokai Airport Beacon
Maimuna, Aero Beacon Red Light
Kaulapuu, Aero Beacon Red Light
Kolokai VOR (N18)
Puu Apalu, Tank
Ilio Pt., Coast Guard Loran Mast
Waiahewahewa, Aero Beacon Red Light
Laau 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) WAIKIKI 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 third order accuracy. The station was destroyed before it could be tied to the 1962 work. HAENA, 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, Kamulo, Kaunakakai, and Kolo were searched for. A total of 13 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 625 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. Kauaʻi 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 Kauaʻi 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 cliffs. 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 Noomomi 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 Kalapana, Kameh, 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
Maiaheenahe, Aero Beacon Red Light
Waikuna, 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 (MCK)

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
Loau Pt. Light
Ilgo Pt., Coast Guard Loren 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 INFERIOR 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 Makanalua Peninsula. A small private airstrip is located at Haleolol 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 NOTES

Not Applicable

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

Respectfully submitted:
Leonard F. Van Scy
Supervisory Survey Technician
Unit Chief, C & GS
Photogrammetric Plot Report

Project 21044

Molokai, Hawaii

December, 1964

21. **Area Covered**

This report pertains to the remainder of the Island of Molokai. It covers surveys T-11818 thru T-11824.

22. **Method**

Three strips were bridged by analytic aerotriangulation. Strips 6 and 7 were at a scale of 1:15,000 and strip 8 at 1:25,000.

During the processing of the data for strip 8, distortions were evident at the eastern terminal. Model 2169-70 was eliminated from the bridge, and model 2170-2171 appeared to have distortions also in the center and north side although the two tie points on the south side of the model agreed well with strips 4 and 6. Fortunately these models were not needed as the area is adequately covered by strips 6 and 7.

23. **Adequacy of Control**

The failure of horizontal points in strip 8 to hold together beyond point 86110 and 11 was attributed at first to a possible datum difference. This could not be proved. When additional measurements and a study of the cantilever output indicated distortions in the bridge, this idea was discarded.

Although control point 10100 would not hold well with 86110 and 11 in strip 8, when 10100 was used as a terminal in strip 7, tie point 10403 agreed reasonably well with strip 8.

Control complied with project instructions and was adequate.

24. **Supplemental Data**

None

25. **Photography**

Photography was adequate with regard to coverage, overlap, and definition.

Respectfully submitted,

Henry P. Eichert, Acting Chief,
Aerotriangulation Section
AEROTRIANGULATION SKETCH
MOLOKAI ISLAND, HAWAII
PROJECT 21044.

LEGEND

▲ CONTROL USED IN ADJUSTMENT
△ CONTROL USED AS CHECK
⌂ TIE POINTS

(1) HAHAEULOA 2, 1962 Sub Pt A (103, 109) Sub Pt B (128, 11)
(2) POHAKUNUI, 1888 (101, 12) Sub Pt A (108, 108) Sub Pt B (100, 32)
(3) MOOMOMI, 1962 Sub Pt A (-16, 27) Sub Pt B (-33, 27)
(4) KAIHA (KAI) 1926 Sub Pt A (-50, 48)
(5) POU O KAIAK, 1915 Sub Pt A (-2, 20) Sub Pt B (67, 46)
(6) SAND 1950 (Sub Pt A -24, 17) Sub Pt B (120, 16)
(7) KAE O 1926 Sub Pt A (23, 9) Sub Pt B (40, 18)
(8) POU KAPELE, 1888 Sub Pt A (529, 12) Sub Pt B (44, 50)
(9) POWAI, 1962 Sub Pt A (101, 20)

Sub Pts for SAND 1950 were considered poor at the time of plate measurement.
AEROTRIANGULATION SKETCH
MOLOKAI ISLAND HAWAII
PROJECT 21044
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<th>SOURCE OF INFORMATION INDEX</th>
<th>DATUM</th>
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<th>LONGITUDE OR X COORDINATE</th>
<th>DISTANCE FROM GRID OR PROJECTION LINE IN METERS 1 PF. = 3048005 meter</th>
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**COMPUTED BY**

D. N. Williams

**DATE**

4-28-65

**CHECKED BY**

L.L.M.

**DATE**

4-29-65
31. **Delineation:**

Planimetry was compiled by the Kelsh instrument in accordance with field inspection.

32. **Control:**

Adequate supplementary control, based on identified horizontal control stations, was established by aerotriangulation.

33. **Supplemental Data:**

None.

34. **Contours and Drainage:**

Contours are not applicable.

No drainage was apparent in the area.

35. **Shoreline and Alongside Details:**

Field inspection was adequate for the delineation of the mean high water line. No low water line is shown. Approximate limits of ledges alongshore were delineated from office interpretation of the color photography where available.

36. **Offshore Details:**

None.

37. **Landmarks and Aids:**

One aid to navigation has been shown. Form 567 is submitted.
38. **Control for Future Surveys:**

None.

39. **Junctions:**

Satisfactory junctions were made with T-11823 and T-11824 to the south. The Pacific Ocean is on the west, north and east.

40. **Horizontal and Vertical Accuracy:**

46. **Comparison with Existing Maps:**

Comparison was made with the U.S.G.S. Kaunakakai, Hawaii quadrangle, scale 1:24,000, edition 1952.

47. **Comparison with Nautical Charts:**

Comparison was made with:

- Nautical Chart 4120, scale 1:80,000 at Lat. 21°01', 1st Edition, revised 2/4/63

- Nautical Chart 4130, scale 1:80,000 at Lat. 20°51', 3rd Edition, revised 4/23/62

Items to be Applied to Nautical Charts Immediately:

None.

Items to be Carried Forward:

None.

Approved:

Signature

P. A. Stark, CDR, C&GS
Portland Field Officer

Submitted:

Signature

James L. Harris
Cartographer
GEOGRAPHIC NAMES
FINAL NAME SHEET

PH-6201
T-11822

HAWAII (title)
KAHILI
KAHIU POINT
KA LAEA
KA LAE MAU
KALAEMILO
KAUPIKIAWA
KIIKOLU
LAE HOOLEHUA
MAKANALUA PENINSULA
MOLOKAI
NAMOKU
PACIFIC OCEAN
PAPALOA

Approved by:

A. J. Wraight
Chief Geographer

Prepared by:

F. W. Pickett
Cartographic Technician
49. NOTES FOR THE HYDROGRAPHER:

Refer to Field Edit Ozalid.

The following list of Hydro. Signal Sites with descriptions were furnished by the Field Inspector, dated August 30, 1962.

These are shown on the Manuscript and Cronapaque Ratio Prints for your use, if they are yet in existence.

2201 - NORTHEAST END, LOW STONE WALL
2202 - NORTHEAST GABLE, SMALL BEACH COTTAGE
2203 - PEAK GABLE, SMALL COTTAGE
2204 - SOUTHWEST GABLE, SMALL RED HOUSE
2205 - OLD SHIP ENGINE
**PHOTOGRAFMETRIC OFFICE REVIEW**

**T-11822**

<table>
<thead>
<tr>
<th>1. PROJECTION AND GRIDS</th>
<th>2. TITLE</th>
<th>3. MANUSCRIPT NUMBERS</th>
<th>4. MANUSCRIPT SIZE</th>
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<tr>
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**CONTROL STATIONS**

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<tr>
<th>5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY</th>
<th>6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (Topographic stations)</th>
<th>7. PHOTO HYDRO STATIONS</th>
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**BENCH MARKS**

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<tr>
<th>8. BENCH MARKS</th>
<th>9. PLOTTING OF SEXTANT FIXES</th>
<th>10. PHOTOGRAMMETRIC PLOT REPORT</th>
<th>11. DETAIL POINTS</th>
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<tr>
<td>NONE</td>
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**ALONGSHORE AREAS (Nautical Chart Data)**

<table>
<thead>
<tr>
<th>12. SHORELINE</th>
<th>13. LOW-WATER LINE</th>
<th>14. ROCKS, SHOALS, ETC.</th>
<th>15. BRIDGES</th>
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<tbody>
<tr>
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**AIDS TO NAVIGATION**

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<thead>
<tr>
<th>16. AIDS TO NAVIGATION</th>
<th>17. LANDMARKS</th>
<th>18. OTHER ALONGSHORE PHYSICAL FEATURES</th>
<th>19. OTHER ALONGSHORE CULTURAL FEATURES</th>
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**PHYSICAL FEATURES**

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<thead>
<tr>
<th>20. WATER FEATURES</th>
<th>21. NATURAL GROUND COVER</th>
<th>22. PLANETABLE CONTOURS</th>
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<tbody>
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**STEREOSCOPIC INSTRUMENT CONTOURS**

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<tr>
<th>23. STEREOSCOPIC INSTRUMENT CONTOURS</th>
<th>24. CONTOURS IN GENERAL</th>
<th>25. SPOT ELEVATIONS</th>
<th>26. OTHER PHYSICAL FEATURES</th>
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**CULTURAL FEATURES**

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<thead>
<tr>
<th>27. ROADS</th>
<th>28. BUILDINGS</th>
<th>29. RAILROADS</th>
<th>30. OTHER CULTURAL FEATURES</th>
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<tbody>
<tr>
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**BOUNDARIES**

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<th>31. BOUNDARY LINES</th>
<th>32. PUBLIC LAND LINES</th>
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**MISCELLANEOUS**

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<tr>
<th>33. GEOGRAPHIC NAMES</th>
<th>34. JUNCTIONS</th>
<th>35. LEGIBILITY OF THE MANUSCRIPT</th>
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**DISCREPANCY OVERLAY**

<table>
<thead>
<tr>
<th>36. DISCREPANCY OVERLAY</th>
<th>37. DESCRIPTIVE REPORT</th>
<th>38. FIELD INSPECTION PHOTOGRAPHS</th>
<th>39. FORMS</th>
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<tbody>
<tr>
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**REVIEWER**

<table>
<thead>
<tr>
<th>40. REVIEWER</th>
<th>SUPERVISOR, REVIEW SECTION OR UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>James L. Harris</td>
<td></td>
</tr>
</tbody>
</table>

**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
Rev. by: R. E. Smith
7/9/69

**SUPERVISOR**

Albert C. Rauck, Jr.
10/19/69

**REMARKS**

Field edit applied from:
Field edit ozalid & field photograph No. 61-W-779
Field Edit Report
To Accompany T 11822

USCGS McARTHUR

Ronald L. Newsom
CDR, USESSA
Commanding Officer

51 METHODS

Manuscript T 11822 was field edited by personnel aboard the USCGS McARTHUR in conjunction with the hydrography on boatsheets AR 10-2-68 (H 8975) and AR 5-1-68 (H 8976). Shoreline area inspection and all other acquisition of field edit material was accomplished from Launch AR 1. Heavy swell and an extremely rocky and jagged shoreline made delineation of the MLLW line impossible. Additions and corrections to the manuscript have been noted on the single field edit ozalid that was provided for T 11822 and then cross referenced and noted in violet ink on photo number 61W0779. No deletions on the field edit ozalid were necessary.

52 ADEQUACY OF COMPILATION

Manuscript T 11822 is complete and adequate for use in conjunction with this hydrographic survey. The area of this manuscript from the shoreline seaward was field edited.

54 RECOMMENDATIONS

It is recommended that the wreck shown on C&GS Chart #416 be repositioned at the location as indicated on the photo and field edit ozalid accompanying this report.
REVIEW REPORT T-11822

SHORELINE

AUGUST 19, 1970

61. GENERAL STATEMENT

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

62. COMPARISON WITH REGISTERED SURVEYS

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

63. COMPARISON WITH MAPS OF OTHER AGENCIES

Comparison was made with USGS KAUNAKAKAI, HAWAII, 9.5 to 7.5 minute quadrangle, 1:24,000 scale, edition of 1952. Because of the difference in scales of the two surveys, only a visual comparison was feasible. The surveys appear to be in good general agreement.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

Comparison was made with copies of boat sheets H-8976, AR-5-1-68 and H-8975, AR-10-2-68. Three changes were made in the location of the mean high water line during final review. These extend from Lae Hooluhia near latitude 21°13'02", longitude 156°58'06" southeastward to 21°12'48" - 156°57'57". These changes and all differences between the surveys have been noted on the comparison print in purple.

65. COMPARISON WITH NAUTICAL CHARTS

A visual comparison was made with Chart 4120, 3rd edition, dated October 14, 1968. The chart shows no rocks with the exception of those located near latitude 21°12'36", longitude 156°59'12".
The reef shown on the chart, on the west side of Makanalua Peninsula, appears to include a large part of the submerged portion.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS

This survey complies with instructions and meets the National Standards of Map Accuracy.

Reviewed by:

Leo F. Beugnet
Cartographer

Approved by:

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

Approved by:

Chief, Photogrammetric Branch
Jack C. Stahl
Chief, Photogrammetry Division
The rocks in this area are not on the boat sheet.

Foul area on boat sheet.

Wreck site = 4 ft.
Not visible on photographs

Not on boat sheet

Shoreline on boat sheet

21° 13' 00"

21° 12' 30"

Kaupikiawa

T-11822
control station of third-order or higher accuracy

izes the approximate mean high water.

metric methods, from aerial photographs

Aug. 1962
Dec. 1968
Dec. 1969
Aug. 1970

T=11822
I recommend that the following objects which have (have not) been inspected from seaward to determine their value as landmarks be charted on (deleted from) the charts indicated.

The positions given have been checked after listing by James L. Harris

P. A. Stark  
Chief of Party

<table>
<thead>
<tr>
<th>CHARTING NAME</th>
<th>DESCRIPTION</th>
<th>SIGNAL NAME</th>
<th>LATITUDE</th>
<th>LONGITUDE</th>
<th>DATUM</th>
<th>METHOD OF LOCATION AND SURVEY NO.</th>
<th>DATE OF LOCATION</th>
<th>CHARTS AFFECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molokai Light</td>
<td>Molokai Lighthouse</td>
<td></td>
<td>45°70'</td>
<td>20°54'</td>
<td>Old</td>
<td>Hawaii Triang. 8/30/62 x</td>
<td>4116</td>
<td>4120</td>
</tr>
</tbody>
</table>

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 1-55, 2-39, 6-36, 7-18 to 22 inclusive, and Fig. 79. 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