**DESCRIPTIVE REPORT**

<table>
<thead>
<tr>
<th>Map No.</th>
<th>TP-00067</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edition No.</td>
<td>1</td>
</tr>
</tbody>
</table>

**Job No.**
CM-7712

**Map Classification**
FINAL, FIELD EDITED MAP

**Type of Survey**
SHORELINE

**LOCALITY**

<table>
<thead>
<tr>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAWAI'I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Locality</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAWAI'I - NORTH COAST</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Locality</th>
</tr>
</thead>
<tbody>
<tr>
<td>KOLALELE LANDING</td>
</tr>
</tbody>
</table>

1977 TO 1981

**REGISTERED IN ARCHIVES**

**DATE**
### Descriptive Report - Data Record

**Photogrammetric Office**
Coastal Mapping Division, Norfolk, VA

**Officer-in-Charge**
Roy K. Matsushige

#### I. Instructions Dated

<table>
<thead>
<tr>
<th>Office</th>
<th>Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerotriangulation</td>
<td>Control</td>
</tr>
</tbody>
</table>

#### II. Datums

<table>
<thead>
<tr>
<th>Horizontal:</th>
<th>Old Hawaiian</th>
</tr>
</thead>
<tbody>
<tr>
<td>1927 North American</td>
<td>1927 North American</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vertical:</th>
<th>Other (Specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean High-Water</td>
<td></td>
</tr>
<tr>
<td>Mean Low-Water</td>
<td></td>
</tr>
<tr>
<td>Mean Lower Low-Water</td>
<td></td>
</tr>
<tr>
<td>Mean Sea Level</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Map Projection:</th>
<th>Grid(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transverse Mercator</td>
<td>Hawaii</td>
</tr>
</tbody>
</table>

#### III. History of Office Operations

<table>
<thead>
<tr>
<th>Operations</th>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Control and Bridge Points Method: Coradomat</td>
<td>S. Solbeck</td>
<td>Jan. 1979</td>
</tr>
<tr>
<td>5. Office inspection prior to field edit</td>
<td>F. Mauldin</td>
<td>July 1979</td>
</tr>
<tr>
<td>6. Application of field edit data</td>
<td>D. Butler</td>
<td>June 1982</td>
</tr>
<tr>
<td>8. Final review</td>
<td>J. Hancock</td>
<td>Sept. 1985</td>
</tr>
<tr>
<td>9. Data forwarded to photogrammetric branch</td>
<td>J. Hancock</td>
<td>Sept. 1985</td>
</tr>
<tr>
<td>10. Data examined in photogrammetric branch</td>
<td>P. Dempsey</td>
<td>Nov. 1985</td>
</tr>
</tbody>
</table>
1. COMPILATION PHOTOGRAPHY

<table>
<thead>
<tr>
<th>NUMBER AND TYPE</th>
<th>DATE</th>
<th>TIME</th>
<th>SCALE</th>
<th>STAGE OF TIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>77G5AASY-571-576</td>
<td>Mar.26,1977</td>
<td>10:18</td>
<td>1:30,000</td>
<td>0.7 ft. above M.L.L.W.</td>
</tr>
</tbody>
</table>

Mean range 1.6 ft.

REMARKS
Photography by American Aerial Survey, Inc. of Northern California Geodetic Survey

2. SOURCE OF MEAN HIGH-WATER LINE:

The mean high water line was compiled by instrument methods using the 1:50,000 scale photos and graphically using the 1:30,000 scale photos ratioed as follows:

571-576 x 1.50

3. SOURCE OF MEAN LOW-WATER OR MEAN LOWER LOW-WATER LINE:

None compiled.

4. CONTEMPORARY HYDROGRAPHIC SURVEYS (List only those surveys that are sources for photogrammetric survey information.)

<table>
<thead>
<tr>
<th>SURVEY NUMBER</th>
<th>DATE(S)</th>
<th>SURVEY COPY USED</th>
<th>SURVEY NUMBER</th>
<th>DATE(S)</th>
<th>SURVEY COPY USED</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-9986</td>
<td>Nov. 1981</td>
<td>Registered</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sept/Oct 82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. FINAL JUNCTIONS

<table>
<thead>
<tr>
<th>NORTH</th>
<th>EAST</th>
<th>SOUTH</th>
<th>WEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>No survey</td>
<td>TP-00068</td>
<td>No survey</td>
<td>TP-00066</td>
</tr>
</tbody>
</table>

REMARKS
## History of Field Operations

### 1. Field Identification

<table>
<thead>
<tr>
<th>Operation</th>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief of Field Party</td>
<td>R. Melby</td>
<td>Jan.-Feb.1978</td>
</tr>
<tr>
<td>Horizontal Control</td>
<td>R. Melby</td>
<td>Jan. 1978</td>
</tr>
<tr>
<td>Vertical Control</td>
<td>None</td>
<td>--</td>
</tr>
<tr>
<td>Landmarks and Aids to Navigation</td>
<td>None</td>
<td>--</td>
</tr>
<tr>
<td>Geographic Names Investigation</td>
<td>None</td>
<td>--</td>
</tr>
<tr>
<td>Photo Inspection</td>
<td>None</td>
<td>--</td>
</tr>
<tr>
<td>Boundaries and Limits</td>
<td>N.A.</td>
<td>--</td>
</tr>
</tbody>
</table>

### II. Source Data

#### 1. Horizontal Control Identified
- **Photo** identified
- **Photo Number**: 77GSAASY-392
- **Station Name**: OPHILALA, 1948 (Sub Pts A & B)

#### 2. Vertical Control Identified
- **None**

#### 3. Photo Numbers (Clarification of details)
- **None**

#### 4. Landmarks and Aids to Navigation Identified
- **None**

### 5. Geographic Names:
- **Report**
- **None**

### 6. Boundary and Limits:
- **Report**
- **None**

### 7. Supplemental Maps and Plans
- **None**

### 8. Other Field Records
- Form 76-53, 1 - Form 266, 1 - Form 269c and 1 - Field Operations Report.
**TP-00067**

**HISTORY OF FIELD OPERATIONS**

1. **FIELD INSPECTION OPERATION**

<table>
<thead>
<tr>
<th>OPERATION</th>
<th>NAME</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CHIEF OF FIELD PARTY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. HORIZONTAL CONTROL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. VERTICAL CONTROL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. LANDMARKS AND AIDS TO NAVIGATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. GEOGRAPHIC NAMES INVESTIGATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. PHOTO INSPECTION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. BOUNDARIES AND LIMITS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   | TYPE OF INVESTIGATION |        |        |
   | COMPLETE              |        |        |
   | SPECIFIC NAMES ONLY   |        |        |
   | NO INVESTIGATION      |        |        |

   | RECOVERED (Triangulation Stations) |        |        |
   | LOCATED (Field Methods) |        |        |
   | IDENTIFIED BY          |        |        |

   | J. Gordon | Nov. 1981 |

II. **SOURCE DATA**

1. HORIZONTAL CONTROL IDENTIFIED

<table>
<thead>
<tr>
<th>PHOTO NUMBER</th>
<th>STATION NAME</th>
</tr>
</thead>
</table>

   | None         | None         |

2. VERTICAL CONTROL IDENTIFIED

<table>
<thead>
<tr>
<th>PHOTO NUMBER</th>
<th>STATION DESIGNATION</th>
</tr>
</thead>
</table>

   | None         | None               |

3. PHOTOS NUMBERS (Clarification of details)

   | None         |                     |

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

<table>
<thead>
<tr>
<th>PHOTO NUMBER</th>
<th>OBJECT NAME</th>
</tr>
</thead>
</table>

   | None         |             |

5. GEOGRAPHIC NAMES:

<table>
<thead>
<tr>
<th>REPORT</th>
<th>NONE</th>
</tr>
</thead>
</table>

   | J. Gordon | Nov. 1981 |

6. BOUNDARY AND LIMITS:

<table>
<thead>
<tr>
<th>REPORT</th>
<th>NONE</th>
</tr>
</thead>
</table>

7. SUPPLEMENTAL MAPS AND PLANS

   | None         |                     |

8. OTHER FIELD RECORDS (Sketch books, etc. DO NOT list data submitted to the Geodesy Division)

   Field edit ozalid, 1 Field 76-40 form,
   One original Field Edit Report
I. MANUSCRIPT COPIES

<table>
<thead>
<tr>
<th>COMPILE STAGE</th>
<th>DATE</th>
<th>REMARKS</th>
<th>DATE MANUSCRIPT FORWARDED</th>
<th>MARINE CHARTS</th>
<th>HYDRO SUPPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field edit applied, compilation complete.</td>
<td>Oct. 1982</td>
<td>Class I manuscript. Superseded</td>
<td>None</td>
<td>Oct. 1982</td>
<td></td>
</tr>
</tbody>
</table>

II. LANDMARKS AND AIDS TO NAVIGATION

1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH

<table>
<thead>
<tr>
<th>PAGE</th>
<th>CHART NUMBER</th>
<th>CHART LETTER</th>
<th>NUMBER</th>
<th>DATE FORWARDED</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>31/1985</td>
<td>A landmark for charts</td>
</tr>
</tbody>
</table>

III. FEDERAL RECORDS CENTER DATA

1. Photographs
2. Computer Readouts
3. Control Station Identification Cards
4. Source Data (except for Geographic Names Report) as listed in Section II, NOAA Form 76-36C.

IV. SURVEY EDITIONS

<table>
<thead>
<tr>
<th>EDITION</th>
<th>SURVEY NUMBER</th>
<th>JOB NUMBER</th>
<th>TP.</th>
<th>PH.</th>
<th>DATE OF PHOTOGRAPH</th>
<th>DATE OF FIELD EDIT</th>
<th>TYPE OF SURVEY</th>
<th>MAP CLASS</th>
<th>DATE FORWARDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT

TP-00067

This 1:20,000 scale final shoreline map is one of eight maps that comprise project CM-7712, Hawaii Island, North Coast, Hawaii. The eight 1:20,000 scale maps are assigned as TP-00064 through TP-00070 and TP-00822.

The purpose of this map was to furnish data in support of hydrographic operations and to provide current shoreline data for marine charts.

This map portrays a portion of shoreline along the northern coast of Hawaii Island from Long. 155°17'45" to Long. 155°25'30".

Photo coverage for the project was adequately provided with panchromatic photography flown by a private contractor, American Aerial Survey, Inc., with the Zeiss RMKA 15/23 camera. Aerotriangulation/compilation photographs at 1:50,000 scale and supplemental compilation/photo-hydro support photographs at 1:30,000 scale were taken at various times from Dec. 1976 to March 1977.

Field work prior to compilation consisted of the recovery, establishment, and photoidentification of horizontal control necessary for aerotriangulation. This activity was completed February 1978.

Analytic aerotriangulation was adequately provided by the Washington Science Center in January 1979. This activity also included ruling the base manuscripts and providing ratio photographs for compilation.

Compilation by office interpretation of the mapping photographs was performed at the Coastal Mapping Section, Atlantic Marine Center in July 1979. Copies of the Class III manuscript and hydrographic support data were forwarded to the hydrographer for field edit. A copy of the Class III manuscript was also submitted to the Marine Charts Section.

Field edit for this map was performed in conjunction with hydrographic survey H-9986 by NOAA Ship RAINIER personnel in November 1981.

Application of field edit data was accomplished at the Photogrammetric Section, Pacific Marine Center in October 1982 and the manuscript was advanced to Class I. A copy of the Class I manuscript was forwarded to the Hydrographic Surveys Branch.

Final review was performed at the Atlantic Marine Center in August 1985. At this time a comparison was made with a registered copy of the contemporary hydrographic survey, H-9986, common to this map. There
were no significant differences. A final Chart Maintenance Print and Notes to Hydrographer Print were prepared and forwarded to Photogrammetry headquarters for distribution.

The Descriptive Report for this final field edited map contains all pertinent information used to produce this map. The original base manuscript and related data were forwarded to the Washington Science Center for final registration.
FIELD INSPECTION

TP-00067

There was no field inspection prior to compilation. Field work accomplished was limited to the recovery and photoidentification of the horizontal control necessary for the aerotriangulation of the project.
FIELD OPERATIONS REPORT
Projects CM-7712 & CM-7713
North and Southeast Coast, Island of Hawaii, Hawaii
January - February 1978

Area:
The two adjoining projects covers the southeast and northeast coast of the Island of Hawaii. The southernmost portion of the area is virtually a desert with little rainfall. The northeast coast is subjected to considerable rainfall and sugar cane fields are commonplace.

Except for a couple of small, isolated beaches, the shoreline is steep and rocky, where the lava flows reached the ocean.

Photography:
Panchromatic aerial photography was furnished the field unit for the photo-identification of the required horizontal control stations, necessary for the aerotriangulation. The photography was considered adequate for the field identification.

Horizontal Control:
All of the stations were reached by vehicle or short distance back packing.

Several sun azimuths were observed to determine the azimuth to substitute stations. Greenwich Mean Time was observed and recorded with short wave radio signals from WWVH and a digital watch. Time and observed zenith distances were recorded to permit either the time/azimuth or time/altitude method of computation.

Station HILINA USGS 1961 was photo-identified and a sun azimuth was observed. B.M. 139YY USGS was used as an intermediate azimuth point, in conjunction with the sun azimuth. The B.M. did not have a previous azimuth or position. The U.S.G.S. published data lists R.M.I. as 46°00' 26". A telephone conversation with the U.S.G.S. in Menlo Park, California confirmed the number 4 and 6 were transposed and the azimuth should read 64°00'26". The reference mark was used as a check angle.

Station PUU ULAULA was photo-identified using a sun azimuth and a stack. the stack is station PAHALA, KAU SUGAR CO STACK, 1977. An N.G.S. Geodetic Field Party was working in the area and a position of the stack should be available from Geodesy in the near future. However, the sun azimuth can be used to determine the azimuth to the sub-points.
The field-photo data was submitted to the Rockville office before this report was written to permit the aerotriangulation of the flightlines at the earliest date.

Two non-floating aids to navigation and one landmark for charts were located by triangulation/traverse methods. They have been entered and submitted on form 76-40 to C-3415.

Respectfully Submitted,

[Signature]

Robert B. Melby
Chief, PMC Photo Party
CPM 133
PHOTOMETRIC PLOT REPORT
Island of Hawaii, Hawaii
CM-7712

Jan. 2, 1979

AREA COVERED

The area covered by this report is the northern coast of the Island of Hawaii, excluding Hilo and its immediate surroundings. The area is covered by eight 1:20,000 scale manuscripts (TP-00064 through TP-00070 and TP-00822).

METHOD

Two strips of 1:50,000 scale black-and-white panchromatic photography were bridged by analytic aerotriangulation methods. Field identified control was provided.

Common points were located on the bridging photography and the 1:30,000 scale photography for ratio purposes.

Ratio prints have been ordered. The manuscripts were ruled on the Coradomat.

Adequacy of Control

The adjustment to ground of one strip in this project, as well as two strips on CM-7713 (the southeast coast), was not as good as expected. On strip one of CM-7713, the subpoints for Pulama, 1914 would not fit with the other control, being off by approximately 25 feet. Five stations were used to adjust this strip with a second degree curve. The largest residual error in the fit to the five stations was 3.5 feet which is considered reasonable.

On strips 2 and 4 of CM-7713 the intersection station, Honuopo, Hutchinson Sugar Co. Mill Stack, 1967, would not fit with the other control points. It was off approximately 16 feet. The fit to the other control points was good.

On strip one of this project the adjustment to ground is very poor, but no control points can be isolated as causing the poor adjustment. In the final adjustment, six control points were used to form a third degree curve. The largest residual error in the fit was six feet. Other control points were used as checks in this adjustment. The largest error of these was 16 feet and two were off by about 10 feet.

No apparent reason can be found for the discrepancies in the control for these two projects.
SUPPLEMENTAL DATA

USGS quads were used to provide vertical control for the job. Nautical charts covering this area were used to locate aids and landmarks.

PHOTOGRAPHY

The coverage, overlap, and quality of the photography proved adequate for the job.

Submitted by:

[Signature]

Stephen H. Solbeck

Approved and Forwarded:

[Signature]

Don O. Norman
Chief, Aeretriangulation Section
385100 PEPEKEO POINT LT., 1948
  sub point
385101 (-0.8 -3.0 )
  (-0.8 -4.0 )
336100 HONOKONA, 1877 The image on the photo
  is very poor and its lack of fit has to
  be ignored although it does seem to be
  too large.
337101 PUU OHAI, 1877 sub point
392141 PAAUILO STACK, 1948
392101 OPIHIILAIA, 1948 sub point A
  sub point B
392102 (+6.2 +3.6 )
  (+4.6 +1.4 )
394141 PAAUHAU, PAAUHAU SUGAR CO. STACK, 1913
397101 PUU MAUU NORTH, 1938 sub point A
  sub point B
397102 (-4.1 -2.5 )
  (-10.4 -2.3 )
402100 NIULII, 1913
403100 KAUHOLA POINT LT., 1948
403141 HIND STACK, 1948
403401 KOHALA MILL STACK, 1948
404141 CATHOLIC CHURCH WEST CROSS
  ON BELFRY, 1948
404101 KEALALEWA 2, 1948 sub point A
  sub point B
404102 (+3.1 +2.3 )
  (+1.0 +2.9 )
405141 LORAN A, TOWER, 1964
405142 LORAN C, TOWER, 1964
  (-1.5 +0.4 )
  (-4.1 +8.1 )
# DESCRIPTIVE REPORT CONTROL RECORD

<table>
<thead>
<tr>
<th>MAP NO.</th>
<th>JOB NO.</th>
<th>GEOGRAPHIC DATUM</th>
<th>ORIGINATING ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP-00067</td>
<td>CM-7712</td>
<td>Old Hawaiian</td>
<td>Coastal Mapping Div., A.M.C.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STATION NAME</th>
<th>SOURCE OF INFORMATION (Index)</th>
<th>AEROTRIANGULATION POINT NUMBER</th>
<th>COORDINATES IN FEET</th>
<th>GEOGRAPHIC POSITION</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPIHILALA (HGS 1881), 1948</td>
<td>201552</td>
<td>392100</td>
<td>Χ=20°02'40.827&quot;</td>
<td>φ=155°22'35.995&quot;</td>
<td>1255.4</td>
</tr>
<tr>
<td>PAAUPO STACK, 1948</td>
<td>201552</td>
<td>392141</td>
<td>Χ=20°03'15.155&quot;</td>
<td>φ=155°21'47.630&quot;</td>
<td>466.0</td>
</tr>
</tbody>
</table>

**COMPUTED BY**

**DATE**

**COMPUTATION CHECKED BY**

**DATE**

**LISTED BY**

**DATE**

**LISTING CHECKED BY**

**DATE**

**HAND PLOTTING BY**

**DATE**

**HAND PLOTTING CHECKED BY**

**DATE**

June 1982

**SUPERSEDES NOAA FORM 76-41, 2-71 EDITION WHICH IS OBSOLETE.**
COMPILATION REPORT
TP-00067

31 - DELINEATION

Delineation was by instrument methods using the Wild B-8 stereoplotter and the 1:50,000 scale black-and-white photographs; and graphically using the 1:30,000 scale black-and-white ratio photos that were processed for hydro support. Photograph quality and coverage were adequate for compilation.

32 - CONTROL


33 - SUPPLEMENTAL DATA

None.

34 - CONTOURS AND DRAINAGE

Contours are not applicable to the project. Drainage was delineated by the Wild B-8 stereoplotter and by office stereoscopic interpretation of the ratio photographs.

35 - SHORELINE AND ALONGSHORE DETAILS

Alongshore details were delineated by the Wild B-8 stereoplotter and by office stereoscopic interpretation of the ratioed photographs.

The mean high water line was office edited and refined by stereoscopic interpretation of the ratioed photographs.

36 - OFFSHORE DETAILS

No unusual problems.

37 - LANDMARKS AND AIDS

Within the limits of the manuscript, there was one charted landmark, which is triangulation, and it was verified photogrammetrically. There were no charted aids.
38 - CONTROL FOR FUTURE SURVEYS

None.

39 - JUNCTIONS

Refer to the Data Record Form 76-36B, item 5.

40 - HORIZONTAL AND VERTICAL ACCURACY


46 - COMPARISON WITH EXISTING MAPS

A comparison was made with 2 U.S.G.S. quadrangle maps: Honokaa, HA, and Kukaiau, HA, scales 1:24,000, dated 1957.

47 - COMPARISON WITH NAUTICAL CHARTS

Comparison was made with N.O.S. Chart No. 19320, scale 1:250,000, 12th edition, dated June 17, 1978.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY

None.

ITEMS TO BE CARRIED FORWARD

None.

Submitted by:

Joanne Roderick
Cartographer
Date: June 11, 1979

Approved:

Billy H. Rarree

Albert C. Rauck, Jr.
Chief, Coastal Mapping Section
ADDENDUM TO THE COMPILATION REPORT

TP-00067
CM-7712

FIELD EDIT

Two rocks on this manuscript exist outside of the breaker-limit line:

1) 20°04'09", 155°23'25"
2) 20°05'15", 155°25'28"

The field editor has made reference to seven compiled rocks which he states "should be considered as part of the foul zone", but he failed to submit any height data for them:

1) 20°02'18", 155°19'39"
2) 20°02'42", 155°20'18"
3) 20°02'46", 155°20'27"
4) 20°02'54", 155°20'47"
5) 20°03'18", 155°21'37"
6) 20°03'39", 155°22'10"
7) 20°04'18", 155°23'52"

The foul line was changed to "breakers" in order to remain consistent with project CM-7713, and the southern sheets in this project (TP-00822, TP-00070 and TP-00069) which were field edited in 1979 and 1980 respectively. The breakers are the result of surf action caused by submerged rocks and ledge, and they are indicative of the entire east coast of the island of Hawaii. Both of the terms "foul" and "breakers" describe a similar condition which is hazardous to navigation, and this limit line is where the hydrographer ended his inshore sounding lines.

Submitted by:

David P. Butler, Cartographer
GEOGRAPHIC NAMES

FINAL NAME SHEET

GM-7712 (Island of Hawaii - North Coast)

TP-00067

Alakaha Point
Hawaii (island)
Hikiau Falls
Kaala Stream
Kealakaha Stream
Koholalele Landing
Kukaiau
Paauilo
Pacific Ocean
Papaaloa Point
Popoloau Point

Approved:

Charles E. Harrington
Chief Geographer
Nautical Charting Division
FIELD EDIT REPORT

OPR-T126-RA-81

TP-00067
CM-7712

HAWAII ISLAND

NORTHEAST COAST OF HAWAII

17 NOVEMBER - 30 NOVEMBER 1981
**METHOD**

Field edit operations on TP-00067 began on November 17, 1981 (JD 321) and ended on November 30, 1981 (JD 334). Greenwich Mean Time was used to reference shoreline features. Shoreline west of 155° 23' W was done on foot, and east of it was done from a low-flying helicopter.

Violet ink was used on the master film ozalid for verifying features and for answering questions. Red ink was used to show changes made to the ozalid by the field editor. Green ink was used to show items deleted.

This field edit survey complied with Chapter 11, Manual of Coastal Mapping Field Procedure and the project instructions.

**ADEQUACY AND COMPLETENESS**

The manuscript, as amended by the field edit survey, is adequate and complete. The entire manuscript was field-edited.

**GEOGRAPHIC NAMES**

All names shown on the manuscript were the same that were used by the local people.

**MANUSCRIPT ACCURACY**

Direct visual comparison of the shoreline features with the discrepancy print and photos was the method of determining accuracy. Agreement was excellent except where noted.

**RECOMMENDATIONS AND MISCELLANEOUS COMMENTS**

The foul line depicted on the manuscript was found to be accurate except where noted on the T-sheet. An attempt was made by the field editor to draw an accurate surf line on the paper ozalid, but it was soon found that due to changing sea conditions the line varied too much from one day to the next for charting purposes. Kukaiau Stack, 1913, is listed as lost in the NGS records. This corrected manuscript should supercede all previous shoreline compilations.

Submitted by,  
James R. Gordon  
LTJG, NOAA  

Approved and Forwarded,  
Ralph L. Land  
CDR, NOAA  
Commanding
REVIEW REPORT
TP-00067
SHORELINE

61 - GENERAL STATEMENT

Final review for this final field edited map was accomplished at the Atlantic Marine Center in August 1985. For a schedule of the office and field operations, refer to the Summary included with this Descriptive Report.

62 - COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS

Not applicable.

63 - COMPARISON WITH MAPS OF OTHER AGENCIES

A comparison was made with the following 1:24,000 scale U.S.G.S. quadrangles:
Honokaa, Hawaii; dated 1957
Kukaiah, Hawaii; dated 1957.

64 - COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

A comparison was made with a registered copy of contemporary hydrographic survey H-9986, RA 20-7-81, 1:20,000 scale, field surveyed Nov. 1981 and Sept./Oct. 1982.

There were no significant differences.

65 - COMPARISON WITH NAUTICAL CHARTS

A comparison was made with the following NOS Chart: 19320, scale 1:250,000, 13th edition, July 10, 1982.

66 - ADEQUACY OF RESULTS AND FUTURE SURVEYS

This map complies with the Project Instructions, and meets the requirements for National Standards of Map Accuracy.
Submitted by,

Jerry L. Hancock  
Final Reviewer

Approved for forwarding,

Billy H. Barnes  
Chief, Photogrammetric Section, AMC

Approved,

J.A. Morales  
Chief, Photogrammetric Section, Rockville  
Ronald K. Brewe  
Chief, Photogrammetry Branch, Rockville
### Nonfloating Aids or Landmarks for Charts

**OPR Project No.**: T126-RA-81  
**Job Number**: CM-7712  
**Survey Number**: TP-00067  
**State**: Hawaii  
**Locality**: Hawaii - North Coast  
**Date**: June 1982

The following objects have been inspected from seaward to determine their value as landmarks:

<table>
<thead>
<tr>
<th>Charting Name</th>
<th>Description</th>
<th>Datum</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Method and Date of Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stack</td>
<td>(Paauilo, Stack, 1948)</td>
<td>Old Hawaiian</td>
<td>20 03</td>
<td>15.155 466.0</td>
<td>155 21</td>
</tr>
</tbody>
</table>

**Charts Affected**: 19320
By photogrammetric methods.

FIELD POSITIONS ARE DETERMINED BY FIELD OBSERVER.

EXAMPLE: F-2-6-7.

LOCATION AND DATE OF FIELD WORK. FIELD POSITIONS REQUIRES ENTRY OF METHOD OF

4. Association

3. Intersection

2. Traverse

1. Trilateration

L - Located

V - Visually

P - Photogrammetric

Enter the applicable data by symbols as follows:

1. NEW POSITION DETERMINED OR VERIFIED

FIELD

74H (C) 2982

EXAMPLE: P-B-A

GRAPH USED TO LOCATE OR IDENTIFY THE OBJECT.

DATE OF FIELD WORK AND NUMBER OF PHOTOGRAPHER.

B. Photogrammetric FIELD POSITIONS REQUIRES

FIELD (Continued)

INSTRUCTIONS FOR ENTRIES UNDER METHOD AND DATE OF LOCATION.

RESPONSIBLE PERSONAL

NAME

TYPE OF ACTION

ORGANIZATION

ACTIVITIES AND REVIEWS GROUP AND FINAL REVIEW FORMS ORIGINATED BY QUALITY CONTROL

REQUIRED OR REVIEWED QUALITY CONTROL AND REVIEW GROUP

RESPONSIBLE OR REPRESENTATIVE

David D. Butter, Cartographer

David J. Kneut, LtJG, NOAA

Ralph J. Land, CDR, NOAA

OBJECTS INSPECTED FROM SHARRED

OBJECT POSITIONS DETERMINED AND/or VERIFIED

FIELD (Continued)
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 Revie

<table>
<thead>
<tr>
<th>CHART</th>
<th>DATE</th>
<th>CARTOGRAPHER</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No.</td>
</tr>
</tbody>
</table>