

8721

Diag. Cht. No. 411602.

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT  
(HYDROGRAPHIC)

Type of Survey Hydrographic  
Field No. PF-10-4-63  
Office No. H-8721

LOCALITY

State Hawaii  
General Locality Maui - Northeast Coast  
Locality Opikoula Pt. to Keakulikuli Pt.

1963

CHIEF OF PARTY  
H. J. Seaborg

LIBRARY & ARCHIVES

DATE 10-22-70

8721

## HYDROGRAPHIC TITLE SHEET

H-8721

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form,  
filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

PF-10-4-63

State HAWAII

General locality Maui Island Maui - Northeast Coast  
Northwest coast of Maui

Locality NE coast of Maui Opikoula Point to Keakulike Pt.

Scale 1:10,000 Date of survey 12 March-11 April 1963

Instructions dated 25 Oct. '60, Supp. Inst. 1/9/62, 1/19/63

Vessel Ship PATHFINDER, Launch #1, #2

Chief of party H.J. Seaborg

Surveyed by H.J. Seaborg, S.L. Hollis, S.R. Kotler

Soundings taken by echo sounder, hand lead, XXX

Fathograms scaled by Launch and ship surveying crews.

Fathograms checked by Launch and ship surveying crews.

Protracted by S.Z. Bezuk & L.L. Reinke

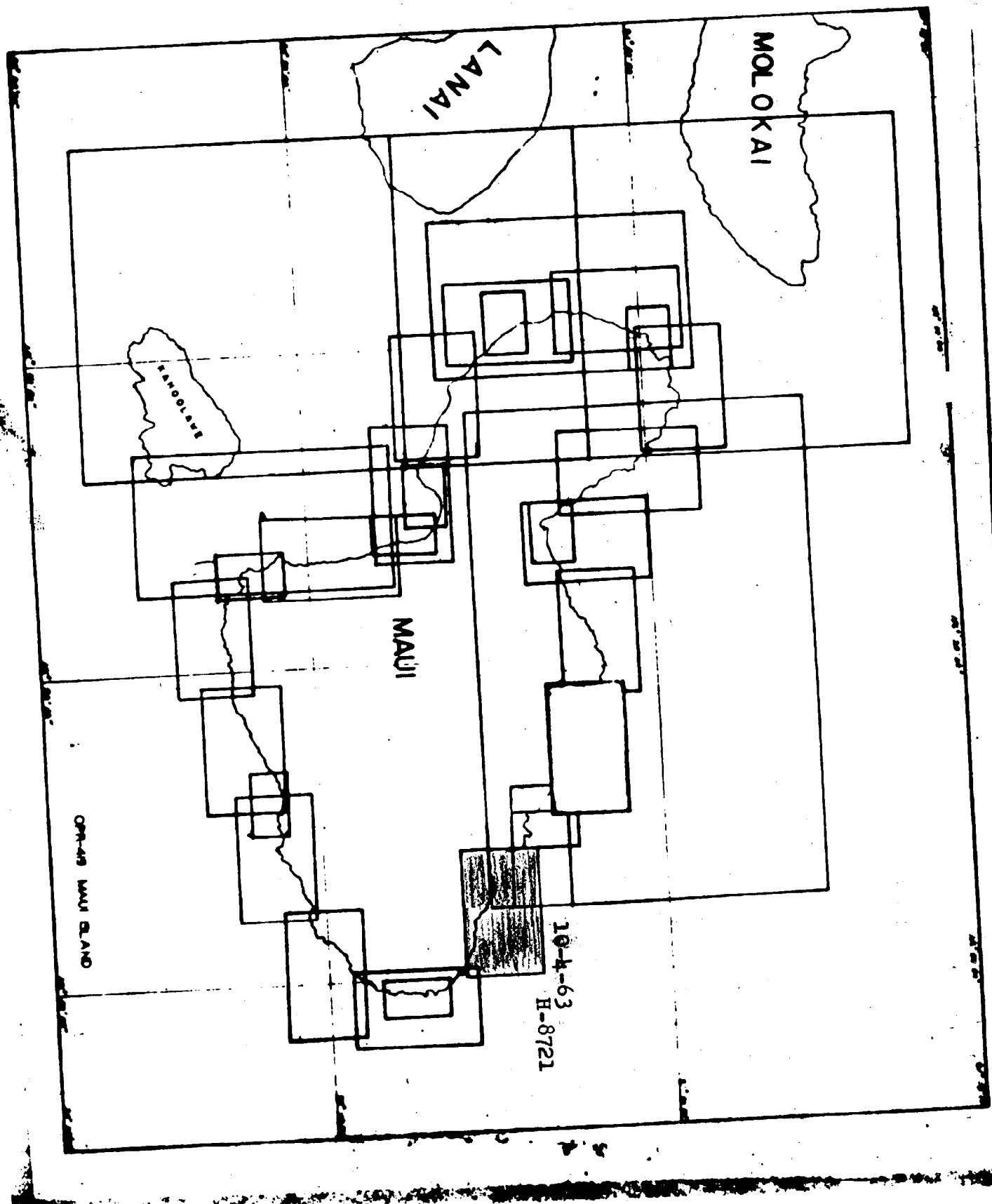
Soundings penciled by L.L. Reinke

Soundings in fathoms XXX at XXXX MLLW

REMARKS:

XWL 2/14/92

DJK



Descriptive Report to Accompany Hydrographic Survey H-8721 ✓  
(PF-10-4-63)

A. PROJECT: OPR-419 Instructions dated 25 Oct. 1960, Supplemental Instructions 1/9/62 and 1/19/63. ✓

B. AREA SURVEYED: Bounded on the East by a line from Lat.

20° 48' 00", Long. 156° 00' 40" to Lat. 20° 49' 00",  
Long. 155° 59' 30". ✓

Bounded on the North by a line from Lat. 20° 49' 00",  
Long. 155° 59' 30" to Lat. 20° 51' <sup>30"</sup>15", Long. 156° <sup>5</sup>04' <sup>00"</sup>20". ✓

Bounded on the West by a line from Lat. 20° 51' <sup>30</sup>15",  
Long. 156° <sup>05</sup>04' <sup>00</sup>20" to Lat. 20° 49' 45", Long. 156°  
05' 15". ✓

Bounded on the South by the coast of the Island of  
Maui. This area is North and West of Hana, Maui.

Hydrography was accomplished from 12 March to 11 April,  
1963. ✓

This survey adjoins contemporary surveys H-8719<sup>(1963)</sup> ✓ (PF-  
10-2-63) on the East and H-8720<sup>(1963)</sup> ✓ (PF-10-3-63) and H-8677<sup>(1962)</sup> ✓ on the  
West. ✓

C. VESSELS: Vessels used on this survey were the Ship PATH-  
FINDER (blue capitals), Launch #1 (blue lower case)  
and Launch #2 (purple lower case). ✓

D. SOUNDING EQUIPMENT: Raytheon type DE-723 survey fatho-  
meters were used in all vessels. Serial #557 in the  
ship, serial #140 in ML #1, and serial #141 in ML #2.  
A leadline and snapper cup was used for bottom samples

in the launches and the bathythermograph winch with an armed lead on the ship. Echo sounder corrections were obtained by scanning the fathogram for initial setting errors, daily bar checks, and velocity correction data from an oceanographic station at Lat. 21° 02' 30", Long. 156° 12' 30". ✓

E. SMOOTH SHEET: Transferred to Seattle Processing Office for completion. See addendum.

F. CONTROL: All photo-hydro stations were pricked through from T-11908<sup>(1960-1963)</sup> & T-11909<sup>(1960-1964)</sup>, both of which are advanced manuscripts. Additional signals RIP, BAR, & PIK were located by sextant cuts from the launch. Triangulation stations used were OPIKOULA (HGS-1877) 1950 (HTS-1929), HONOKOLANI <sup>2</sup> 1950, and KAPUKAULUA (HGS), 1878-1950 (HTS-1929).

G. SHORELINE: Shoreline was applied with the aid of blue line copies of T-11908<sup>(1960/1963)</sup> and T-11909<sup>(1960/1964)</sup>. All details were verified by the hydrographer. The low water line was not defined by soundings because of the normal heavy surf which prevented the sounding vessels from getting close to the beach. In addition, much of the shore is vertical bluff which descends abruptly into the sea. ✓

H. CROSSLINES: Approximately 9% crosslines were run and no discrepancies over 1.5 fms were noted, said discrepancies being caused by the prevailing NE swell. ✓

I. JUNCTIONS: Junctions listed in "B" are in agreement. ✓

J. COMPARISON WITH PRIOR SURVEYS: Comparison with prior survey #3519 (Jan-March, 1913 to Feb. 1914) indicates good agreement.

Charted positions at variance with source document (H-3516 (1913))  
See Review Sect. 6

1. 13-fathom <sup>(displaced)</sup> sounding at Lat. 20° 48' 50", Long. 156° 02' 20" was developed with a system of close lines and crosslines, 73 positions and not found. CONCUR-DELETE FROM CHART 10/11/74 MJE ✓

2. 21-fathom soundings at Lat. 20° 48' 40", Long. 156° 01' 30" was developed with a system of close lines and crosslines, 59 positions, and not found. CONCUR-DELETE FROM CHART 10/11/74 MJE ✓

3. 15-fathom <sup>(displaced)</sup> sounding at Lat. 20° 48' 25", Long. 156° 00' 50" was developed with a system of close lines and crosslines, 73 positions and not found. CONCUR-DELETE FROM CHART 9/30/74 MJE ✓

It is recommended that soundings referred to in J1, J2 & J3 be deleted from the chart and new depths from Survey H-8721 be incorporated. ✓

K. COMPARISON WITH THE CHART: As the scale of the chart is 1:250,000 and the scale of the boat sheet is 1:10,000, the comparison was as good as can be expected from this scale differential. ✓

C&GS Chart # 4116 / CHART 4116  
14th Ed July 7/69 / 16th Ed. SEPT. 15/73  
LATEST PRINT DATE  
(for Review)

L. ADEQUACY OF SURVEY: Survey is considered complete and adequate to supersede all prior surveys for the purpose of charting. ✓

M. AIDS TO NAVIGATION: None ✓

N. STATISTICS: ✓

Nautical miles of hydrography: 185.9  
Positions: 1483 ✓  
Total area surveyed (sq. naut. miles) 10.0  
Bottom samples: 30  
Tide Gages: 1 (Hana, Maui) ✓

O. MISCELLANEOUS: The bottom falls off more rapidly about 200-300 meters off the beach between the Longitudes of  $156^{\circ} 01' 10''$  West and  $156^{\circ} 02' 35''$  West than the surrounding area. ✓

P. RECOMMENDATIONS: It is recommended that small craft do not approach closer to the beach than the inshore hydrographic line as this area is foul and the surf is normally very heavy. ✓

Q. REFERENCES TO REPORTS: See attached memorandum. ✓

#### TIDE NOTE

Tide corrections were determined from the data furnished by a portable automatic tide gage located at Lat.  $20^{\circ} 45.6'N$ , Long.  $155^{\circ} 59.1'W$  on the pier at Hana Bay, Maui. MLLW is located at 0.7 ft. on the tide staff. The tide station is located in the 150 degree West time zone. Hourly heights were scaled by ship personnel, and the corrections determined from these heights.

Respectfully Submitted,

*Leland L. Reinke*

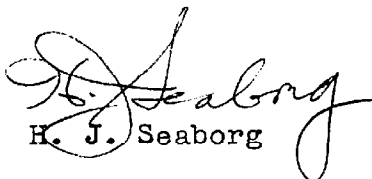
Leland L. Reinke  
Ens., USC&GS

APPROVAL SHEET

REGISTRY NO. H-8721 (PF-10-4-63)

The field work on this sheet was inspected where conditions permitted. The records and boat sheets have been examined and are approved.

The survey is considered complete and adequate for charting purposes and no additional field work is recommended.

A handwritten signature in dark ink, appearing to read 'H. J. Seaborg', is written over the printed name.

H. J. Seaborg

Commanding Officer

U.S.C. & G.S.S. Pathfinder



UNITED STATES GOVERNMENT

U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

# Memorandum

TO : Seattle Processing Office  
USC&GS Ship Base  
Seattle, Washington

DATE:

FROM : USC&GS Ship PATHFINDER

SUBJECT: Hydrographic Survey Report - Sheet (10-4-63)H-8721

The information for paragraph J was taken from the hydrographer's report and should be checked as the field records were turned over to the Seattle Processing Office prior to checking during the smooth plotting.

The 13, 21, and 15 fathom sounding appear to have been transferred from USC&GS chart ~~4116~~, 1:250,000 scale.

It is recommended that the development be inspected and appropriate recommendations included in the report.

*Leland L. Reinke*  
Leland L. Reinke

Ens., USC&GS

NOTES TO VERIFIER  
H-8719 and H-8721  
(Comparison with T-11909)

T-11909 was field edited (Ship PATHFINDER) in conjunction with hydrography (H-8719 and H-8721). Changes in the shoreline survey resulting from the edit were concerned only with foul lines. These changes were applied in the compilation office prior to production of the final map.

During the final review of T-11909 comparisons were made with copies of boat sheets PF-10-2-63 sheet cc (H-8719) and PF-10-4-63 (H-8721). Shorelines shown on the surveys were found to be in agreement. No additional comment was made.

Prior to registration, T-11909 was compared with BP-64431 (H-8719) and BP-64395 (H-8721) at the Washington office. Soundings have been carried inshore of the edited foul line; \* and some rocks located near the shoreline survey foul line are not shown on the hydro surveys. For the present the above hydro survey information will not be considered to constitute an edit - the information will not be applied to T-11909.

If in the opinion of the hydro survey reviewer, hydrography was sufficiently developed (and/or sounding volumes contain applicable references) to consider the information an edit, the shoreline survey will be corrected.

\* Foul line adjusted on H-8719  
Smooth sheet to conform to  
hydrography. Rocks transferred to  
smooth sheet from the final  
shoreline manuscript during  
hydro review.

GEOGRAPHIC NAME LIST

KALAHU PT.

KAPUKAULUA PT.

KEAKULIKULI PT.

MAUI ISLAND

OPIKOULA PT.

PUKAULUA PT.

PACIFIC OCEAN

# LIST OF SIGNALS

| <u>NAME</u>                              | <u>ORIGIN</u>                     |
|--|-----------------------------------|
| AMY                                      | Pricked through T-11908           |
| ARK                                      | " " T-11909                       |
| BAR                                      | Sextants cuts Vol. 1 p.43         |
| BAT                                      | Pricked through T-11908           |
| BOY                                      | Photo point 0904 T-11909          |
| COO                                      | Pricked through T-11908           |
| DOG                                      | " " "                             |
| FOE                                      | " " "                             |
| GAS                                      | " " "                             |
| HAG                                      | Photo point 0909 T-11909          |
| HONOKOLANI 2, 1950                       | Triangulation                     |
| IVY                                      | 1878-1950 Pricked through T-11909 |
| KAPUKAULUA (HGS) ( <del>HTS 1929</del> ) | Triangulation                     |
| ONA                                      | Photo point 0906 T-11909          |
| ONE                                      | Pricked through T-11908           |
| OPIKOULA (HGS) ( <del>HTS 1929</del> )   | 1877-1950 Triangulation           |
| PAL                                      | Photo point 0801 T-11908          |
| PIK                                      | Sextant cuts Vol. 1 p.43          |
| PIL                                      | Photo point 0910 T-11909          |
| RIP                                      | Sextant cuts Vol. 1 p.42          |
| SAM                                      | Pricked through T-11908           |
| SAW                                      | " " T-11909                       |
| TWO                                      | " " T-11908                       |

TIDE NOTE FOR HYDROGRAPHIC SHEET

July 16, 1964

Seattle Regional Office

~~Nautical Chart Division:~~

Plane of reference approved in  
6 volumes of sounding records for

HYDROGRAPHIC SHEET 8721

Locality: N. E. Coast, Maui Island  
Hawaiian Islands

Chief of Party: H. J. Seaborg, 1963

Plane of reference is mean lower low water

Tide Station Used (Form C&GS-681): Hana, Hana Bay, Maui Island

Height of Mean High Water above Plane of Reference is as follows: 2.0 feet

Remarks

J. M. Symons

Chief, Tides and Currents Branch

# TIDE CORRECTIONS

|          |      |       |          |      |       |
|----------|------|-------|----------|------|-------|
| 12 March |      |       | 4 April  |      |       |
| from     | to   | corr. | from     | to   | corr. |
| 1000     | 1100 | -0.1  | 0700     | 0800 | -0.1  |
| 1100     | 1227 | -0.2  | 0800     | 1100 | -0.2  |
| 1227     | 1400 | -0.3  | 1100     | 1500 | -0.3  |
| 1400     | 1700 | -0.4  | 1500     | 1700 | -0.2  |
|          |      |       | 1700     | 1800 | -0.1  |
| 14 March |      |       | 5 April  |      |       |
| 0800     | 0940 | -0.1  | 0700     | 0942 | -0.1  |
| 0940     | 1221 | -0.0  | 0942     | 1142 | -0.2  |
| 1221     | 1415 | -0.1  | 1142     | 1500 | -0.3  |
| 1415     | 1600 | -0.2  | 1500     | 1642 | -0.2  |
|          |      |       | 1642     | 1800 | -0.1  |
| 26 March |      |       | 6 April  |      |       |
| 0700     | 0720 | -0.2  | 0700     | 1029 | -0.1  |
| 0720     | 0900 | -0.1  | 1029     | 1145 | -0.2  |
| 0900     | 1020 | -0.0  | 1145     | 1620 | -0.3  |
| 1020     | 1138 | -0.1  | 1620     | 1737 | -0.2  |
| 1138     | 1200 | -0.2  | 1737     | 1800 | -0.1  |
| 27 March |      |       | 9 April  |      |       |
| 0900     | 1100 | -0.0  | 0800     | 0828 | -0.1  |
| 1100     | 1211 | -0.1  | 0828     | 1029 | -0.0  |
| 1211     | 1310 | -0.2  | 1029     | 1144 | -0.1  |
| 1310     | 1400 | -0.3  | 1144     | 1300 | -0.2  |
| 29 March |      |       | 10 April |      |       |
| 1000     | 1308 | 0.0   | 0900     | 1100 | 0.0   |
| 1308     | 1440 | -0.1  | 1100     | 1224 | -0.1  |
| 1440     | 1547 | -0.2  | 1224     | 1325 | -0.2  |
| 1547     | 1600 | -0.3  | 1325     | 1400 | -0.3  |
| 1 April  |      |       | 11 April |      |       |
| 0800     | 1130 | -0.2  | 0800     | 0900 | -0.1  |
| 1130     | 1500 | -0.1  | 0900     | 1100 | 0.0   |
| 2 April  |      |       |          |      |       |
| 0900     | 1500 | -0.2  |          |      |       |
| 3 April  |      |       |          |      |       |
| 0800     | 1200 | -0.2  |          |      |       |
| 1200     | 1300 | -0.3  |          |      |       |
| 1300     | 1630 | -0.2  |          |      |       |
| 1630     | 1700 | -0.1  |          |      |       |

:

CORRECTIONS  
to  
HYDROGRAPHIC SOUNDING VOLUMES

Method to be employed during 1963 field season

| Depth,<br>fms. | Fathometer Read<br>to nearest,<br>fms. | Corrections Applied<br>to nearest,<br>fms. | Correction<br>Interval                 |
|----------------|--|--|--|
| 0-11           | 0.1                                    | 0.1  | $\frac{1}{2}$ above<br>to              |
| 11-31          | 0.2                                    | 0.1  | $\frac{1}{2}$ below                    |
| <hr/>          |  |  |  |
| 31-101         | 0.5                                    | 0.2  | $\frac{1}{4}$ to $\frac{3}{4}$<br>rule |
| 101-150        | 1.0                                    | 0.5  | See Hydro<br>Manual,                   |
| 150-600        | 2.0                                    | 1.0  |  |
| 600-1800       | 5.0                                    | 2.0  | Sec. 5-100,<br>101, 102.               |

Above corrections apply to:

1. Velocity correction
2. Tide correction
3. Initial correction
4. Draft and instrument error correction

# USC&GS SHIP PATHFINDER

OSS-30

H. J. Seaborg, Cmdg

## VELOCITY CORRECTIONS

Hawaiian Islands

OPR-419

Maui Island

To be applied to all hydrography accomplished during the 1963 season.

| RANGE              | CORR. | RANGE              | CORR. |
|--------------------|-------|--------------------|-------|
| FROM - TO<br>(fms) | (fms) | FROM - TO<br>(fms) | (fms) |
| 0.0 - 2.9          | +0.0  | 50.0 - 53.5        | +2.2  |
| 3.0 - 5.3          | 0.1   | 54.0 - 58.0        | 2.4   |
| 5.4 - 7.5          | 0.2   | 58.5 - 63.0        | 2.6   |
| 7.6 - 9.5          | 0.3   | 63.5 - 67.5        | 2.8   |
| 9.6 - 11.6         | 0.4   | 68.0 - 72.0        | 3.0   |
| 11.8 - 14.0        | 0.5   | 72.5 - 76.5        | 3.2   |
| 14.2 - 16.2        | 0.6   | 77.0 - 81.5        | 3.4   |
| 16.4 - 18.4        | 0.7   | 82.0 - 86.5        | 3.6   |
| 18.6 - 20.8        | 0.8   | 87.0 - 91.5        | 3.8   |
| 21.0 - 23.0        | 0.9   | 92.0 - 96.5        | 4.0   |
| 23.2 - 25.2        | 1.0   | 97.0 - 102         | 4.2   |
| 25.4 - 27.4        | 1.1   | 103 - 114          | 4.5   |
| 27.6 - 29.6        | 1.2   | 115 - 128          | 5.0   |
| 29.8 - 31.0        | 1.3   | 129 - 144          | 5.5   |
| 31.5 - 36.0        | 1.4   | 145 - 172          | 6.0   |
| 36.5 - 40.5        | 1.6   | *174 - 230         | 7.0   |
| 41.0 - 45.0        | 1.8   | 232 - 296          | 8.0   |
| 45.5 - 49.5        | 2.0   | 298 - 388          | 9.0   |
|                    |       | 389 - 540          | 10.0  |

\* values from this depth onward are based on values from 1962 velocity curve.



# GEOGRAPHIC NAMES

Survey No. H-8721

| Name on Survey   | A<br>On Chart<br>No. | B<br>On previous survey<br>No. | C<br>On U. S. quadrangle<br>Maps | D<br>From local<br>information | E<br>On local Maps | F<br>P. O. Guide or Map | G<br>Rand McNally Atlas | H<br>U. S. Light List | K  |
|------------------|----------------------|--------------------------------|----------------------------------|--------------------------------|--------------------|-------------------------|-------------------------|-----------------------|----|
| ✓ HAWAII (State) |                      |                                |                                  |                                |                    |                         |                         |                       | 1  |
| ✓ KALAHU POINT   |                      |                                |                                  |                                |                    |                         |                         |                       | 2  |
| ✓ KAPUKAULUA PT  |                      |                                |                                  |                                |                    |                         |                         |                       | 3  |
| ✓ KEAKULIKULI PT | ✓                    |                                |                                  |                                |                    |                         |                         |                       | 4  |
| ✓ MAMAALAWA PT   | ✓                    |                                |                                  |                                |                    |                         |                         |                       | 5  |
| ✓ MAUI           |                      |                                |                                  |                                |                    |                         |                         |                       | 6  |
| ✓ OPIKOULA PT    | ✓                    |                                |                                  |                                |                    |                         |                         |                       | 7  |
| ✓ PACIFIC OCEAN  |                      |                                |                                  |                                |                    |                         |                         |                       | 8  |
| ✓ PAIPAIA PT     | ✓                    |                                |                                  |                                |                    |                         |                         |                       | 9  |
| ✓ PUKAULUA PT    | ✓                    |                                |                                  |                                |                    |                         |                         |                       | 10 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 11 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 12 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 13 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 14 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 15 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 16 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 17 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 18 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 19 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 20 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 21 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 22 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 23 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 24 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 25 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 26 |
|                  |                      |                                |                                  |                                |                    |                         |                         |                       | 27 |

Approved  
Chas E. Hamington  
Staff Geographer  
25 Nov. 1974

HYDROGRAPHIC SURVEY STATISTICS  
HYDROGRAPHIC SURVEY NO. H-8721 (PF. 10-4-63)

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

| RECORD DESCRIPTION |               | AMOUNT               | RECORD DESCRIPTION                       |            | AMOUNT            |                                |
|--------------------|---------------|----------------------|--|------------|-------------------|--------------------------------|
| SMOOTH SHEET       |               | 1                    | BOAT SHEETS                              |            | 2                 |                                |
| DESCRIPTIVE REPORT |               | 1                    | OVERLAYS<br><i>in descriptive report</i> |            | <del>None</del> 3 |                                |
| DESCRIPTION        | DEPTH RECORDS | HORIZ. CONT. RECORDS | PRINTOUTS                                | TAPE ROLLS | PUNCHED CARDS     | ABSTRACTS/<br>SOURCE DOCUMENTS |
| ENVELOPES          |               |                      |  |            |                   |                                |
| CAHIERS            | 1             |                      |  |            |                   |                                |
| VOLUMES            | 6             |                      |  |            |                   |                                |
| BOXES              |               |                      |  |            |                   |                                |

T-SHEET PRINTS (List)

*T-11908 ; T 11909*

SPECIAL REPORTS (List)

OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

| PROCESSING ACTIVITY                                    | AMOUNTS          |                                       |                                   |        |
|--|------------------|---------------------------------------|-----------------------------------|--------|
|  | PRE-VERIFICATION | VERIFICATION                          | REVIEW                            | TOTALS |
| POSITIONS ON SHEET                                     |                  |                                       |                                   | 1483   |
| POSITIONS CHECKED                                      |                  | 670                                   |                                   |        |
| POSITIONS REVISED                                      |                  | 9                                     |                                   |        |
| DEPTH SOUNDINGS REVISED                                |                  | 85%                                   | 65                                |        |
| DEPTH SOUNDINGS <i>re spaced</i><br>ERRONEOUSLY SPACED |                  | 100% ?                                |                                   |        |
| SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED             |                  | None                                  |                                   |        |
|  | TIME (MANHOURS)  |                                       |                                   |        |
|  |                  |                                       |                                   |        |
| TOPOGRAPHIC DETAILS                                    |                  | 3                                     | 30                                |        |
| JUNCTIONS  |                  | 5                                     | 12                                |        |
| VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS         |                  | 12                                    | 30                                |        |
| SPECIAL ADJUSTMENTS                                    |                  | —                                     | 12                                |        |
| ALL OTHER WORK   |                  | 104                                   | 54                                |        |
| TOTALS   |                  | 124                                   | 138 + 34 = 172                    | 141    |
| PRE-VERIFICATION BY                                    |                  | BEGINNING DATE                        | ENDING DATE                       |        |
| VERIFICATION BY <i>Comelius A. J. Pauer</i>            |                  | BEGINNING DATE <i>April 5th, 1969</i> | ENDING DATE <i>April 29, 1969</i> |        |
| REVIEW BY <i>Mark A. Duise</i>                         |                  | BEGINNING DATE <i>9/26/74</i>         | ENDING DATE <i>10/30/74</i>       |        |

*Inspector X. W. Wellman - 32 E 1/2 14 1/2 60 hrs 2-16-77*

8-16-76 USCOMM-DC 6641-P64

# Approval Sheet

This smooth sheet has been inspected and meets the requirements of the Hydrographic Manual. (Note: Exceptions are noted in the verifier's report.)

Examined and Approved

*Richard D. Lynn*

Richard D. Lynn  
Cartographic Tech.

Approved for Forwarding

*William M. Martin*

William M. Martin  
Supervisory Carto. Tech.

Approved and Forwarded

*K. William Jeffers*

K. William Jeffers, CDR, NOAA  
Chief, Processing Division, PMC

H-8721

Items for Future Presurvey Reviews

There are no noteworthy differences between the prior and present surveys.

| <u>Position Index</u> |              | <u>Bottom Change<br/>Index</u> | <u>Use<br/>Index</u> | <u>Resurvey<br/>Cycle</u> |
|-----------------------|--------------|--------------------------------|----------------------|---------------------------|
| <u>Lat.</u>           | <u>Long.</u> |                                |                      |                           |
| 204                   | 1561         | 1                              | 1                    | 50 years                  |
| 205                   | 1561         | 1                              | 1                    | 50 years                  |

OFFICE OF MARINE SURVEYS AND MAPS

MARINE SURVEYS DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8721

FIELD NO. PF-10-4-63

Hawaii, Maui - Northeast Coast, Opikoula Point to Keakulikuli Point

SURVEYED: March 12 - April 11, 1963

SCALE: 1:10,000

PROJECT NO.: OPR-419

SOUNDINGS: Echo Sounder DE-723

CONTROL: Sextant Fixes on  
Shore Signals

|                             |                              |
|-----------------------------|------------------------------|
| Chief of Party .....        | H. J. Seaborg                |
| Surveyed by .....           | H. J. Seaborg                |
| .....                       | S. L. Hollis                 |
| .....                       | S. R. Kotler                 |
| Protracted by .....         | S. Z. Bezuk and L. L. Reinke |
| Soundings Plotted by .....  | L. L. Reinke                 |
| Verified and Inked by ..... | C. A. J. Pauw                |
| Reviewed by .....           | M. J. Friese                 |
|                             | Date: October 30, 1974       |
| Inspected by .....          | K. W. Wellman                |

1. Description of the Area

This survey covers an area along the northeastern coast of Maui from Opikoula Point to Keakulikuli Point in the vicinity of latitude 20°48'00", longitude 156°00'00". The bottom slopes relatively uniformly from the rocky shoreline to maximum depths of 290 fathoms about 1.5 miles offshore in the southeastern portion of the the survey area and depths exceeding 200 fathoms about 2 miles offshore in the northwestern portion of the survey. The bottom consists of rock, shell, coral, and lava inshore and sand and mud offshore.

2. Control and Shoreline

The source of control is stated in part F of the Descriptive Report.

The shoreline originates with the reviewed photogrammetric manuscripts T-11908 (1960-1963) and T-11909 (1960-1964).

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### 3. Hydrography

A. Sounding line crossings are in good agreement.

B. The 10-fathom and deeper depth curves are adequately delineated. However, inshore depth curves are not complete as heavy surf prevented safe passage in proximity to the shore. Except as noted above, the development of the bottom configuration and the investigation of least depths are considered adequate.

### 4. Condition of Survey

A random check of the sounding volumes revealed inconsistencies between the velocity correctors applied and the corresponding correctors found in the table of velocity corrections provided in the Descriptive Report. The velocity correctors actually utilized were found in a table contained in a special report (Special Report #138 (1963): Velocity Corrections - Hawaiian Islands). A copy of this more detailed table of velocity correctors has been added to the Descriptive Report. The table of velocity correctors originally included in the Descriptive Report is considered to be superseded and has been appropriately annotated and stored in the cahier with the hydrographic field records.

With the above addition, the field plotting, sounding records, and reports are adequate and conform to the requirements of the Hydrographic Manual.

### 5. Junctions

An adequate junction was effected with H-8719 (1963) to the southeast. The junctions with H-8677 (1962) and H-8720 (1963) on the northwest are considered in their respective reviews. No contemporary surveys junction with the present survey on the northeast; however, depths are in general harmony with the charted depths in this area.

### 6. Comparison with Prior Surveys

|        |           |          |
|--------|-----------|----------|
| H-3516 | (1913)    | 1:20,000 |
| H-3519 | (1913-14) | 1:60,000 |

A comparison between the present and prior surveys reveals variable differences in depths of 1 to 4 fathoms on the present survey throughout much of the area. These differences are attributed to less accurate survey methods employed on the prior surveys.

Several soundings and rocks awash were brought forward to supplement the present survey development. With these additions, the present survey is adequate to supersede the prior surveys in the common area.

7. Comparison with Chart 4116, latest print date September 15, 1973A. Hydrography

The charted hydrography originates with the previously discussed prior surveys which require no further consideration, supplemented by the partial application of the verified smooth sheet of the present survey.

The present survey is adequate to supersede the charted hydrography within the common area.

B. Aids to Navigation

There were no charted aids to navigation within the area of the present survey.

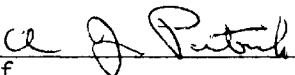
8. Compliance with Instructions

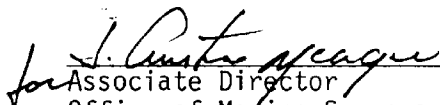
This survey adequately complies with the Project Instructions.

9. Additional Field Work

This survey is an adequate basic survey and no additional field work is required.

Examined and Approved:

  
Chief  
Marine Surveys Division

  
Associate Director  
Office of Marine Surveys  
and Maps

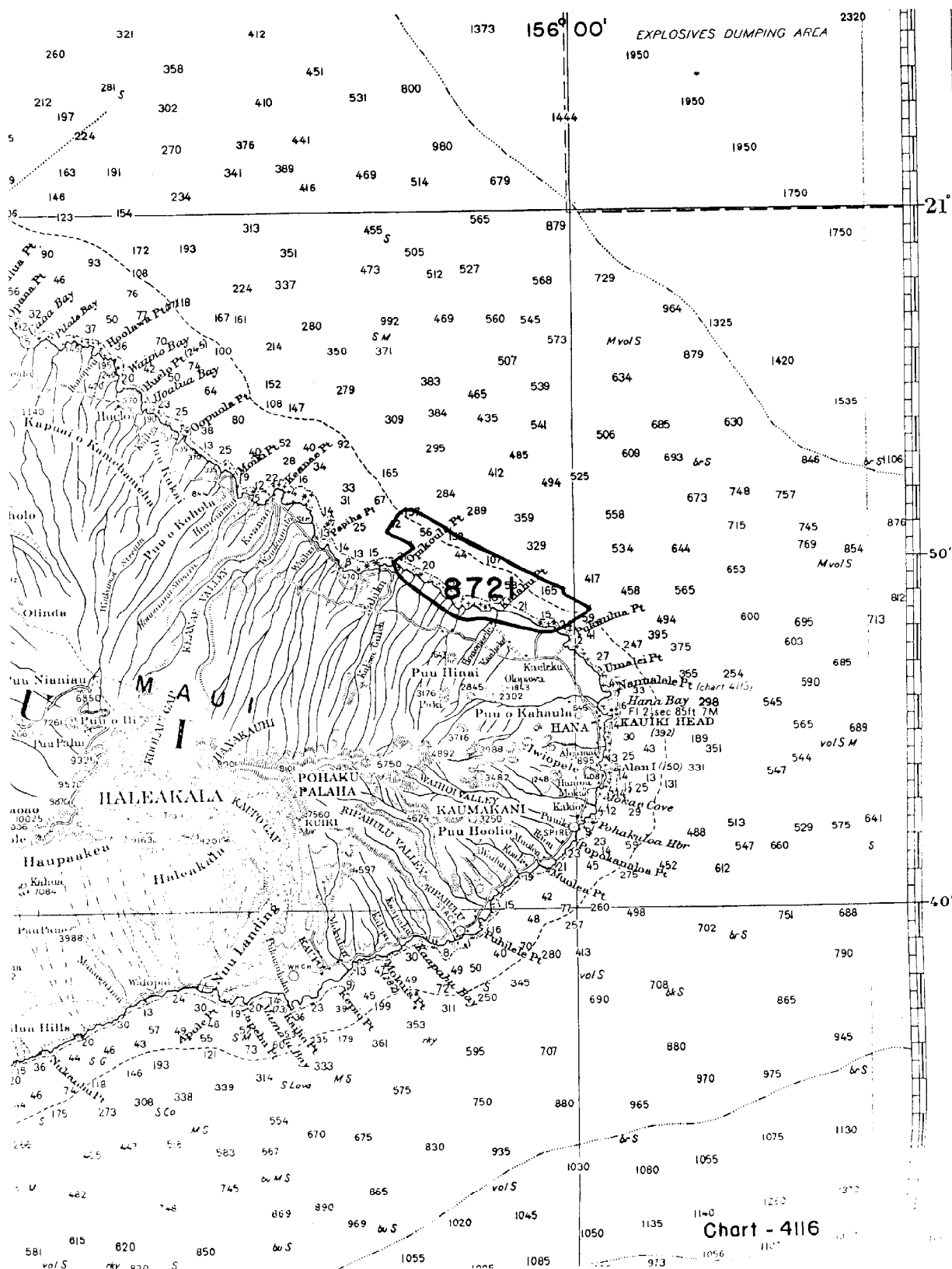


Chart - 4116



# RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8721

## INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.

2. In "Remarks" column cross out words that do not apply.

3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

| CHART                              | DATE     | CARTOGRAPHER     | REMARKS  |
|------------------------------------|----------|------------------|--|
| 4116                               | 4-1-71   | J.A. Graham      | <del>Full Part Before</del> After Verification <sup>Before</sup> Review Inspection Signed Via<br>Drawing No. 16 App'd miss critical correction only.                                     |
| 4179                               | 5/10/71  | J.H. Hillan      | <del>Full Part Before</del> After Verification <sup>Before</sup> Review Inspection Signed Via<br>Drawing No. 9 No critical correction at this time remained thru 4116 #16                |
| 4102                               | 1/27/72  | J.A. Graham      | <del>Full Part Before</del> After Verification <del>Review</del> Inspection Signed Via<br>Drawing No. #28 Examined for critical corrections only thru chrt. 4116 dwg #16                 |
| 4180                               | 3/15/72  | E. Frey          | <del>Full Part Before</del> After Verification <del>Review</del> Inspection Signed Via<br>Drawing No. 11 Examined for critical corrections only thru chrt 4102 dwg #28                   |
| 4115                               | 7/5/73   | C.J. Forbes      | <del>Full Part Before</del> After Verification <del>Review</del> Inspection Signed Via<br>Drawing No. App'd thru 4116 #16  |
| 4116                               | 5/6/75   | H.G. Borawski    | <del>Full Part Before</del> After Verification <del>Review</del> Inspection Signed Via<br>Drawing No. 17 <del>App'd</del> App'd Several Soundings  |
| 4102                               | 9/10/75  | Naitor           | <del>Full Part Before</del> After Verification <del>Review</del> Inspection Signed Via<br>Drawing No. Exam thru 4116, No corr  |
| 4179                               | 8/10/75  | HAUSMAN          | <del>Full Part Before</del> After Verification <del>Review</del> Inspection Signed Via<br>Drawing No. Exam thru 4102 No corr   |
| 4180                               | 7/15/76  | KANIS            | <del>Full Part Before</del> After Verification <del>Review</del> Inspection Signed Via<br>Drawing No. EXAMINED Review + Chrt 4116 For critical corrections - only critical corr. Applied |
| 4116                               | 12-10-76 | Sage             | <del>Full Part Before</del> After Verification <del>Review</del> Inspection Signed Via<br>Drawing No. #19. Revised part of shoreline & 10 fm curve, added edge & rocks awash.            |
| 19004<br>(4102)<br>(4180)<br>19013 | 3/17/80  | Stembel          | Fully applied signed survey thru 19340 (4116)  |
| 19013                              | 8/27/80  | J. Bailey        | Fully app'd. thru Dwg 19004 <sup>(4102)</sup> #33  |
| 19010                              | 5-2-91   | K.R. Foster      | Fully applied thru chrt 19013-#18<br>Dwg #17-19010   |
| 19340                              | 6/5/97   | Donald Pottinger | Fully applied <del>Chrt</del> application adequate   |