

8717

Diag. Cht. No. 4116-2

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-10-5-62
Office No..... H-8717

LOCALITY

State HAWAII
General Locality NORTH COAST OF MAUI
Locality OPANA POINT TO OOPUOLA POINT

1962-63

CHIEF OF PARTY
H. J. Seaborg

LIBRARY & ARCHIVES

DATE August 28, 1970

2128

HYDROGRAPHIC TITLE SHEET

H-8717

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-10-5-62

State Hawaii

General locality Maui Island North Coast of Maui Island

Locality North Side of Maui Island Opua Point to Opuola Point

Scale 1:10,000 Date of survey 9/26/62, 2/28/63-3/12/63
25 Oct 60, supplements dated

Instructions dated 3/14/61, 1/9/62, 1/3/63 Project No. OPR-419
SHIP PATRFINDER Launches

Vessel MI#1, MI#2, MI#3, MI#4

Chief of party Capt. H.J. Seaborg

Surveyed by ^{R.A.}LTJG Trauschke, ^{S.R.}ENS Peterson, ^{R.J.}LTJG Lewis, ^{S.R.}LTJG Kotler, ^{R.K.}LTJG Hanson,
^{R.A.}ENS Rader *R.A. Rader*

Soundings taken by echo sounder, ~~hand lead, etc.~~

Graphic record scaled by Launch Personnel

Graphic record checked by Launch Personnel

Protracted by ENS Maurice L. Geiger Automated plot by _____

Soundings penciled by ENS Conrad E. Huss
and tenths

Soundings in fathoms 1 ~~524X~~ at MEWC MLLW

REMARKS:

Descriptive Report to Accompany
Hydrographic Survey H-8717(PF-10-5-62) 1963
Maui Island, Hawaii

Scale: 1:10,000

Harold J. Seaborg
Capt., USC&GS
Comdg. Ship Pathfinder

A. Project

Hydrographic Survey H-8717 is part of Project OPR-419. The basic instructions are dated 25 October 1960, and the supplemental instructions are dated 14 March 1961, 9 January 1962, and 3 January 1963.

B. Area Surveyed

Survey H-8717 covers an area off the north central coast of Maui Island and is bounded approximately as follows:

- On the North by Lat. 20° 58' 00"
- On the South by Lat. 20° 53' 30"
- On the West by Long. 156° 18' 00"
- On the East by Long. 156° 10' 00"

The survey was conducted on 26 September 1962, and between 28 February and 12 March 1963. It joins the following prior surveys:

1. Hydrographic Survey No. 3515
1:20,000; February 1913
2. Hydrographic Survey No. 3518
1:60,000; January-March, 1913

It junctions on the west with contemporary survey H-8682 (PF-10-3-62); on the east with contemporary survey H-8720 (PF-10-3-63); and on the north with contemporary survey H-8677 (PF-40-1-62).

C. Sounding Vessels

All work completed on this sheet was done by Launch PF-1 (blue lower case letters, Raytheon Fathometer #140), Launch PF-2 (violet lower case letters, Raytheon Fathometer #141), Launch PF-3 (green lower case letters, Raytheon Fathometer #143), and Launch PF-4 (brown lower case letters, 808 Fathometer #68).

D. Sounding Equipment

The soundings were taken with Raytheon Fathometers No. 140, 141, 143, and with 808 Fathometer #68. Depths ranged from one to seventy fathoms on the "a" and "b" scales of the fathometers. Bar checks were taken daily.

E. Smooth Sheet

The smooth sheet projection was ruled 19 June 1963 in the Washington Office. Diagonals were checked after the sheet was received by the Pathfinder and before the control was plotted.

F. Control

All hydrography was visually controlled. Most of the control stations are photo-hydro stations which were identified on the photographs, located on the manuscripts and transferred to the Boat and Smooth Sheets. Procedures were in compliance with the Hydrographic Manual and with Photogrammetry Instructions No. 45, Revised. There are two triangulation stations, and two hydro signals were located by sextant cuts. A list of the signals is included in this report. Photo-manuscripts T-11905 and T-11906 were used for photo-identified signals and for application of shoreline.

G. Shoreline

Shoreline detail was transferred from the advanced manuscripts listed in F. The shoreline was found to be accurate. The low-water line was not defined because of the sharp drop off and the small tidal range. Also, the shoreline is generally foul and breakers prevented the operation of a launch close to the shoreline.

H. Crosslines

Crosslines comprised 14% of the soundings. The crossings were in good agreement and no significant discrepancies were noted.

I. Junctions with Contemporary Surveys

Hydrographic Survey H-8717 is in good agreement with Hydrographic Survey H-8720. Boat sheet soundings from H-8720 were used as the smooth sheet was not completed. No comparison could be made with the other contemporary surveys mentioned in paragraph B.

J. Comparisons with Prior Surveys

Survey H-8717 was compared with Surveys 3515 and 3518. The soundings in 3518 were usually about 5% deeper than those of H-8717, probably due to ~~the velocity~~ error in the lead line measurement of the old survey. Survey 3515 is in good agreement with H-8717.

K. Comparison with Chart

This Hydrographic Survey is in good agreement with C&GS Chart 4116.

L. Adequacy of Survey

This survey is considered complete and adequate to supersede all prior surveys for charting purposes.

M. Aids to Navigation

There were no aids to navigation on this survey.

N. Statistics

ML#1	138 positions	14.7 nautical miles
ML#2	87 positions	12.0 nautical miles
ML#3	942 positions	114.7 nautical miles
ML#4	94 positions	7.5 nautical miles
	37 bottom samples	
	8 square nautical miles	

O. Miscellaneous

In the Comparison with Prior Surveys, Survey 3518 was indicated as being about 5% deeper than the present survey. Survey 3518 was a lead line survey, and in such a survey the assumption is made that the lead line aligns itself with the gravity field. Oftentimes this is not the case. The lead line may be slack, or "bowed," due to a current where the sounding is being taken, which would result in a reading deeper than that which is actually the case. Also, the line is often thrown so that it is angled slightly forward or aft of the sounding vessel - which would cause a deeper reading.

The probable reason that Survey 3518 showed this error and Survey 3515 didn't is that 3515 is an inshore survey, and in shoaler waters the lead line is more easily controlled.

Respectfully submitted,

Conrad E. Huss

Conrad E. Huss
Ensign, USC&GS

TIDE NOTE FOR HYDROGRAPHIC SHEET

July 17, 1964

Seattle Regional Office

~~NATIONAL CENTER OF OCEANOGRAPHY~~

Plane of reference approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET 8717

Locality: Maui Island, Hawaii

Chief of Party: A.A. Wardwell, 1962
H.J. Seaborg, 1963

Plane of reference is mean lower low water

Tide Station Used (Form C&GS-681): Kahului Harbor, Maui Island

Height of Mean High Water above Plane of Reference is as follows: 1.9 feet

Remarks

J. M. Symons

Chief, Tides and Currents Branch

Tide Note

PROJECT OPR-419 USC&GSS PATHFINDER HYDROGRAPHIC SURVEY
H-8717, PF-10-5-62

Corrections for tides were determined from tides observed with a standard automatic tide gage located on pier #2, Kahului Harbor (Lat. 20-54-53N, Long. 156-28-15W). No correction was made for range or time. Mean lower low^{WATER} is at 2.0 feet on the tide staff. The tide station is in the 150 degree time meridian, and the hourly heights of the tide were furnished by the Washington Office.

TIDE CORRECTORS

Reference station: Kahului, Maui

26 September 1962

0600-0850 -0.1
0851-0950 -0.2
0951-1118 -0.3

28 February 1963

0800-0920 -0.1
0921-1300 0.0

1 March 1963

~~0800~~-0936 -0.1
0937-1300 0.0

8 March 1963

1200-1638 -0.1
1639-1800 0.0

9 March 1963

0800-1047 0.0
1048-1600 -0.1

Note:

The tide data for March 10, 11, and 12, 1963, can not be found. and for this reason has not been included in this report. However, this information had been previously entered and checked in the sounding volumes.

ABSTRACT OF CORRECTIONS
TO ECHO SOUNDINGS

Launch #3 Feb. 28, 1963 Day Letter "a" Fathometer #143

True Depth	Fath. Depth	Diff.	Velocity Correction	Preliminary Echo Corr.	Final Echo Correction
1.0	0.5	+0.5	0.0	+0.5	
2.0	1.5	+0.5	0.0	+0.5	
4.0	3.5	+0.5	+0.1	+0.4	0.5
2.0	1.5	+0.5	0.0	+0.5	
1.0	0.5	+0.5	0.0	+0.5	

March 1, 1963 Day Letter "b"

1.0	0.8	+0.2	0.0	+0.2	
2.0	1.7	+0.3	0.0	+0.3	
4.0	3.7	+0.3	+0.1	+0.2	0.3
2.0	1.7	+0.3	0.0	+0.3	
1.0	0.7	+0.3	0.0	+0.3	

March 8, 1963 Day Letter "c"

1.0	1.7	+0.7	0.0	+0.7	
2.0	1.7	+0.3	0.0	+0.3	
4.0	3.6	+0.4	+0.1	+0.3	0.3
2.0	1.7	+0.3	0.0	+0.3	
1.0	0.5	+0.5	0.0	+0.5	

March 9, 1963 Day Letter "d"

1.0	0.7	+0.3	0.0	+0.3	
2.0	1.6	+0.4	0.0	+0.4	
4.0	3.6	+0.4	+0.1	+0.3	0.4
2.0	1.6	+0.4	0.0	+0.4	
1.0	0.6	+0.4	0.0	+0.4	

March 10, 1963 Day Letter "e"

1.0	0.7	+0.3	0.0	+0.3	
2.0	1.6	+0.4	0.0	+0.4	
4.0	3.6	+0.4	+0.1	+0.3	0.3
2.0	1.6	+0.4	0.0	+0.4	
1.0	0.7	+0.3	0.0	+0.3	

March 11, 1963 Day Letter "f"

True Depth	Fath. Depth	Diff.	Velocity Correction	Preliminary Echo Corr.	Final Echo Correction
1.0	0.8	+0.2	0.0	+0.2	
2.0	1.6	+0.4	0.0	+0.4	
4.0	3.6	+0.4	+0.1	+0.3	0.3
2.0	1.8	+0.2	0.0	+0.2	
1.0	0.7	+0.3	0.0	+0.3	

March 12, 1963 Day Letter "g"

True Depth	Fath. Depth	Diff.	Velocity Correction	Preliminary Echo Corr.	Final Echo Correction
1.0	0.6	+0.4	0.0	+0.4	
2.0	1.6	+0.4	0.0	+0.4	
4.0	3.6	+0.4	+0.1	+0.3	0.3
2.0	1.8	+0.2	0.0	+0.2	
1.0	0.6	+0.4	0.0	+0.4	

Launch #4 March 9, 1963 Day Letter "a"

Hand Sounding Machine for B.S.

March 10. 1963 Day Letter "b"

Hand Sounding Machine for B.S.

March 11. 1963 Day Letter "c" Fathometer #68

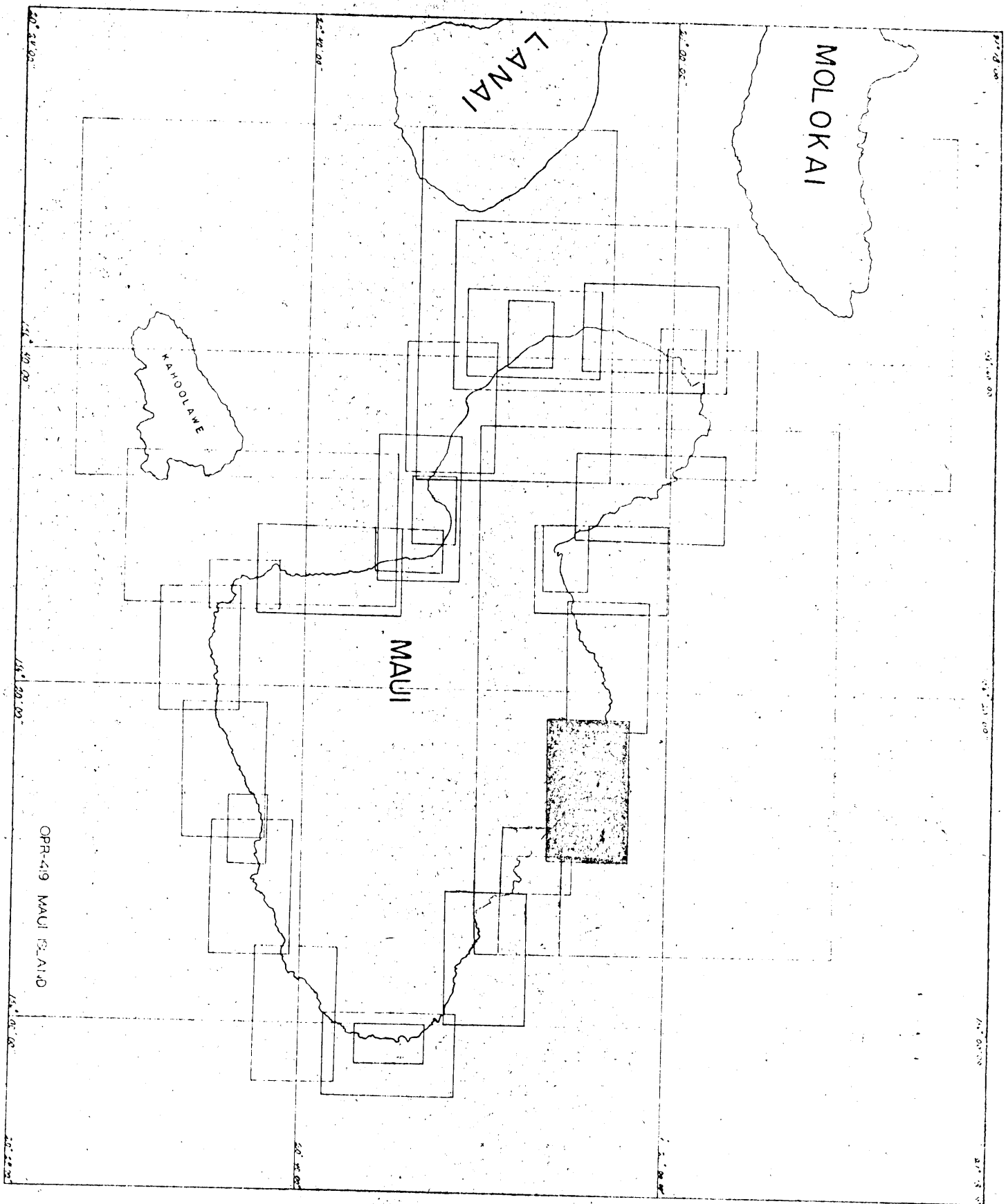
True Depth	Fath. Depth	Diff.	Velocity Correction	Preliminary Echo Corr.	Final Echo Correction
1.0	0.5	+0.5	0.0	+0.5	
2.0	1.6	+0.4	0.0	+0.4	
4.0	3.4	+0.6	+0.1	+0.5	
5.0	4.5	+0.5	+0.1	+0.4	0.5
4.0	3.4	+0.6	+0.1	+0.5	
2.0	1.5	+0.5	0.0	+0.5	
1.0	0.5	+0.5	0.0	+0.5	

All depths in fathoms.

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List of Stations on H-8717(PF-10-5-62)

ALP	T11905	0501
AXE	T11906	
BAG	T11905	
BAR	T11906	0606
BOX	T11905	
BUS	T11906	
COO	T11906	
COW	T11906	
DEW	T11905	
DOG	T11906	
DON	T11905	
ELO	HUELO 2(HTS), 1950	
ERG	T11906	
ESS	T11905	0502
FOG	T11906	
GOB	T11905	
GRO	GROVE (TEMP), 1961	
GUS	T11906	
HIS	T11906	
HUE	T11906	0602 Hawaiian Church Steeple
ICE	T11905	
IRK	T11905	
IVY	T11905	
JAP	T11906	
JOE	T11906	
LAD	T11906	
MAN	T11906	0603
MOO	T11906	
ORE	T11906	
OUT	T11906	
PIN	T11906	
POT	T11906	
RAT	T11906	
RED	T11905	
RIP	T11906	0604
RUB	T11906	
RUM	T11906	
SOK	T11906	
STY	T11906	
TEE	T11905	
TER	T11905	
TIP	T11905	
TOP	T11905	
USE	T11905	
WAX	T11906	
WOO	Hydro. Vol.I, ML#3, pg. 26.	
YAM	T11906	
ZIG	Hydro. Vol.II, ML#3, pg. 25	



OPR-419 MAUI ISLAND



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Geographic Names List

Project OPR-419, USC&GSS PATHFINDER, Hydrographic Survey
H-8717, PF-10-5-62

✓ HALEHAKU PT.

✓ HONOKALA PT.

✓ HONOPOU PT.

HUELO PT.

✓ KAPUKAAMAUI PT.

✓ KEAL^{II}~~Y~~ PT.

MAUI ISLAND~~✓~~

OPANA PT.

PILALE BAY

UAOA BAY

✓ PAPANUI O KANE

✓ WAIPIO BAY

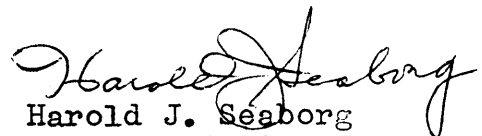
OOPUOLA PT.

APPROVAL SHEET

Registry No. H-8717 (PF-10-5-62)

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

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


Harold J. Seaborg
Captain, C&GS
Comdg., Ship PATHFINDER

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NOTES TO THE VERIFIER
H-8717
PH-6012 (Survey T-11905)
Maui Island, Hawaii

No discussion of a comparison with contemporary Hydrographic Survey H-8717 is included in the Final Review Report for T-11905; however, a note on the "Comparison Report" accompanying the shoreline survey indicates that a comparison was made with a copy of the survey boat sheet (PF-10-5-62).

The note applies to an existing minor difference between the surveys in MHW line located at 20° 56.45' latitude and 156° 16.1' longitude. Since the field edit report, submitted by the Commanding Officer Ship PATHFINDER, stated that no changes resulted from the field edit of T-11905, the difference apparently results from one of the following: (a) an error in transferring the shoreline from T-11905 to the boat sheet; (b) a change in boat sheet shoreline made during hydrography; (c) a re-interpretation of MHW on T-11905, subsequent to forwarding the preliminary manuscript for use in hydrography.

Please notify the Washington Office, Photogrammetry Review Group, in the event the discrepancy results from a change made during hydrography.

The reviewed photogrammetric manuscript T-11905 was accepted as the final authority for the delineation of the MHW line discussed above. X.W.W.

J. M. Blankenship
Photometry Div.

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NOTES TO THE VERIFIER
H-8717 (PF-10-5-62)
PH-6012 (Survey T-11906)
Maui, Hawaii

The final review report for T-11906 (side heading 64) mentions comparison with boat sheet PF-10-5-62 (sheet B). No discrepancies were noted.

Prior to registration, the final manuscript was compared with bromide copies (A, B, and C) of the subject boat sheet. A number of discrepancies exist. Data examined in an attempt to resolve the discrepancies consisted only of the Field Edit Sheet - no field edit report was submitted by the field party; and, the existence of field edit photographs is not indicated by transmittal record.

Discrepancies noted on the field edit sheet have been accounted for on the final copy of the shoreline survey. A change in foul line - the only item noted by the edit party requiring a change in boat sheet information - is not reflected on the bromide copies examined.

Numerous rocks shown on T-11906 are not shown on the subject bromide copies.

Two nonexistent, large, bare rocks are depicted on the boat sheet copies. These "rocks" are actually zeros in five digit hydro signal numbers shown on the shoreline survey. The symbols are located at 20° 54.2' latitude and 156° 12.44' longitude; and 20° 55.06' latitude and 156° 13.6' longitude.

GEOGRAPHIC NAMES

Survey No. H-8717

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
Halehaku Point											1
Honokala Point											2
Honopou Point											3
Huele Point											4
Kapukaamui Point											5
Kealii Point											6
Maui Island											7
Opana Point											8
Papamui o Kane											9
Pihale Bay											10
Uaea Bay											11
Waipio Bay											12
Oopuola Point											13
KAHALAU	✓										14
HOALUA BAY	✓										15
HANEHOI POINT	✓										16
HANAWANA POINT	✓										17
MOKU O KAU	✓										18
MOKUPAPA POINT	✓										19
HOOLAWA POINT	✓										20
HOOLAWA BAY	✓										21
MAKAIWA BAY	✓										22
MANAWAI POINT	✓										23
PUNIAWA POINT	✓										24
											25
											26
											27

PREPARED BY

Joseph W. Roberts
CARTOGRAPHIC TECHNICIAN

APPROVED BY

Chas. E. Hoadley
14 Nov. 1977
C. J. Wright
CHIEF GEOGRAPHER

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-8717 (PF 10-5-62)

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS		3	
DESCRIPTIVE REPORT		1	OVERLAYS			
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	0					
CAHIERS	1					
VOLUMES	7					
BOXES						
T-SHEET PRINTS (List) <u>T-11905, T-11906</u>						
SPECIAL REPORTS (List)						

OFFICE PROCESSING ACTIVITIES

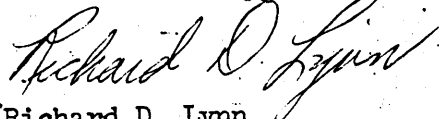
The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS			TOTALS
	PRE-VERIFICATION	VERIFICATION	REVIEW	
POSITIONS ON SHEET				1246
POSITIONS CHECKED		478	2	
POSITIONS REVISED		62	0	
DEPTH SOUNDINGS REVISED		22	36	
DEPTH SOUNDINGS ERRONEOUSLY SPACED		208	5	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		0		
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		5	20	
JUNCTIONS		7	6	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		8	5	
SPECIAL ADJUSTMENTS		0		
ALL OTHER WORK		143	56	
TOTALS		163	87	
PRE-VERIFICATION BY <u>Fbs</u>	BEGINNING DATE <u>8-11-68</u>		ENDING DATE <u>9-27-68</u>	
VERIFICATION BY <u>Cornelius A.J. Pauw</u>	BEGINNING DATE <u>Feb 25-69</u>		ENDING DATE <u>March 12</u>	
REVIEW BY <u>Kenneth W. Wellman</u>	BEGINNING DATE <u>6-17-74</u>		ENDING DATE <u>7-8-74</u>	

Approval Sheet

The 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
Cartographic Technician

Approved for Forwarding



William M. Martin
Superv. Cartograph Tech.

Approved and Forwarded



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

H-8717

Items for Future Presurvey Reviews

The 7.1-fathom sounding located at latitude 20°56.6', longitude 156°15.16' should be specifically investigated at an opportune time in the future.

<u>Position Index</u>		<u>Bottom Change</u>	<u>Use</u>	<u>Resurvey</u>
<u>Lat.</u>	<u>Long.</u>	<u>Index</u>	<u>Index</u>	<u>Cycle</u>
205	1562	1	1	50 years

OFFICE OF MARINE SURVEYS AND MAPS

MARINE SURVEYS DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8717

FIELD NO. PF-10-5-62

Hawaii, North Coast of Maui, Opana Point to Oopuola Point

SURVEYED: September 1962; February-March 1963

SCALE: 1:10,000

PROJECT NO.: OPR-419

SOUNDINGS: Echo Sounders DE-723 and 808,
Hand Sounding Machine

CONTROL: Sextant Fixes on
Shore Signals

Chief of Party	H. J. Seaborg
Surveyed by	R. A. Trauschke
.....	S. R. Peterson
.....	R. J. Lewis
.....	S. R. Kotler
.....	R. K. Hanson
.....	R. A. Rader
Protracted by	M. L. Geiger
Soundings Plotted by	C. E. Huss
Verified and Inked by	C. A. J. Pauw
Reviewed by	K. W. Wellman
	Date: July 8, 1974
Cursory inspection made--survey	G. K. Myers
processing considered complete	November 22, 1977

1. Description of the Area

This survey covers the area along the northeastern coast of Maui from Opana Point in the vicinity of latitude 20°57', longitude 156°17' to Oopuola Point in the vicinity of latitude 20°54', longitude 156°12'.

The bottom slopes moderately from the rocky shoreline to general depths of 50 to 60 fathoms located approximately 1 mile from shore.

Predominant bottom characteristics of the area are rocky, coral, sand, shells, and mud. Foul areas exist along the entire coastline.

2. Control and Shoreline

The source of control is given in the Descriptive Report.

The shoreline originates with reviewed photogrammetric surveys T-11905 of 1960-62 and T-11906 of 1960-63.

3. Hydrography

- a. Depths at crossings are in good agreement.
- b. The usual depth curves are adequately delineated, except in areas within the 10-fathom depth curve. Here, heavy surf and the existence of foul areas precluded a development of the curves.
- c. The delineation of bottom configuration except in areas near shore are, in general, adequate except as follows:
 - (1) Additional development and hand lead verification of a 7.1-fathom depth at latitude $20^{\circ}56.61'$, longitude $156^{\circ}15.16'$ would have been desirable.
 - (2) Additional development would have been desirable off the numerous rocky points to determine the extent and least depths of shoals protruding out into deep water.

4. Condition of Survey

The field plotting, sounding records, and Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual except for the following:

- a. The verifier did not complete the Shoreline and Control section (part II, items 4 and 5) of the Verifier's Report.
- b. The Abstract of Correctors to Echo Soundings, included in the Descriptive Report, was inadequate for determining correctors to be applied over the full range of depths that cover the area of the present survey.
- c. Foul limits delineated on the boat sheet and addressed in the Descriptive Report to be superseded by a subsequent field edit of T-11906 were erroneously inked on the smooth sheet during verification.
- d. According to present review requirements, all curves are shown on the deep side of their respective soundings. Because curves on the verified smooth sheet were drawn through the center of sounding values rather than along the deep side, approximately 50 percent of the depth curves were revised by the reviewer.

5. Junctions

An adequate junction was effected with H-8682 (1962) on the west. The junctions with H-8677 (1962) on the north and east and H-8720 (1963) on the south were considered during their respective reviews.

6. Comparison with Prior Surveys

H-3515	(1913)	1:20,000
H-3518	(1913)	1:60,000
T-3272	(1912)	1:20,000

These surveys cover the area of the present survey. A comparison between the present and prior surveys reveals present depths to be generally 1 to 5 fathoms shoaler throughout much of the area. An exception to this pattern is noted in the southeastern portion of the present survey, in the vicinity of the 50-fathom curve, where present soundings are 2 to 5 fathoms deeper than prior depths. These differences can be attributed to the less detailed and less accurate methods employed on the prior surveys.

The depth curves and shoreline follow the same general delineation as those on the prior surveys.

A sounding and several rocks not disproved by the present survey have been carried forward to supplement the present hydrography. With these additions, the larger scale and more completely developed present survey is adequate to supersede the prior surveys in the common area.

7. Comparison with Chart 4116 (Latest print date, September 15, 1973)

a. 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.

Attention is directed to the 30-fathom depth charted in latitude 20°57.70', longitude 156°17.10' which originates with an unascertainable source. This sounding is considered to have been charted in error from the verified smooth sheet.

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

b. Aids to Navigation

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

8. Compliance with Instructions


This survey adequately complies with the project instructions.

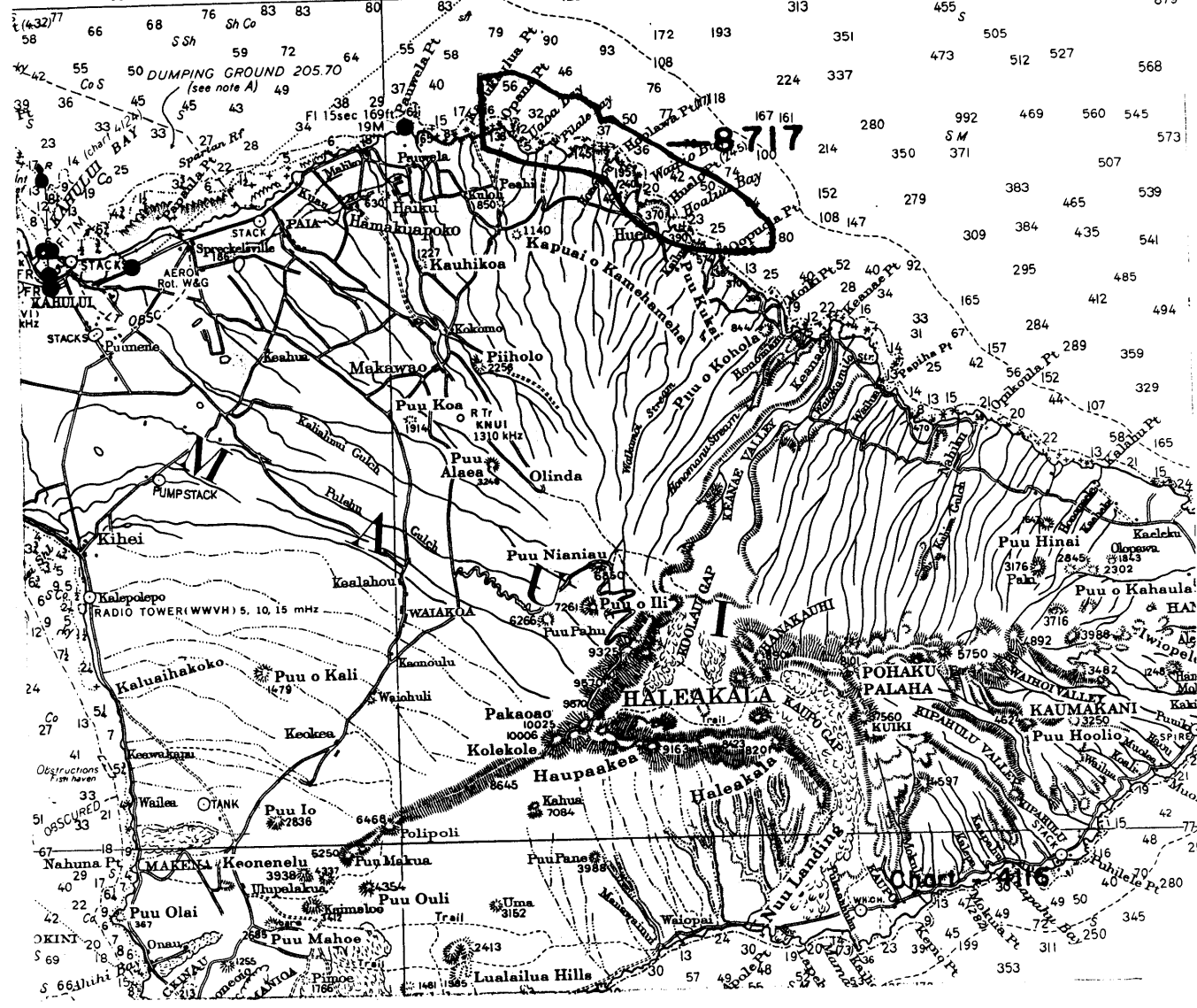
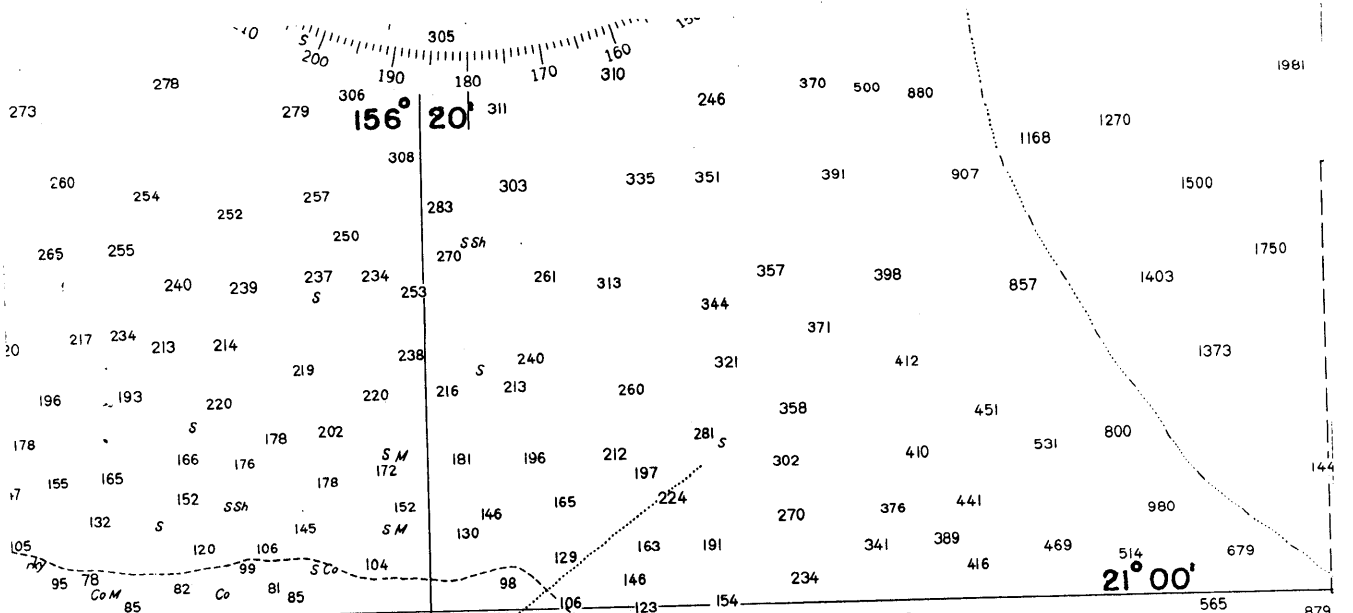
9. Additional Field Work

This is an adequate basic survey; however, further development of the shoal discussed in section 3.c. is recommended.

Examined and Approved:


Chief
Marine Surveys Division


Associate Director
Office of Marine Surveys
and Maps



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8717

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	Full Part Before After Verification ^{Before} Review Inspection Signed Via Drawing No. 16 Added misc critical corrections only
4179	5/10/71	S.B.S. Hillon	Full Part Before After Verification ^{Before} Review Inspection Signed Via Drawing No. 9 No critical correction at this time thru chart 4116 & 16
4102	1/26/72	J.A. Graham	Full Part Before After Verification Review Inspection Signed Via Drawing No. 28 Examined for critical corrections only thru chart 4116 & 16. No correction.
4180	3/15/72	E. Frey	Full Part Before After Verification Review Inspection Signed Via Drawing No. 11 Examined for critical corrections only thru chart 4102 & 28. No corrections.
4116	4-27-75	J.J. Borawski	Full Part Before After Verification Review Inspection Signed Via Drawing No. App'd Two (2) Soundings
4102	9/10/75	Nator	Full Part Before After Verification Review Inspection Signed Via Drawing No. Revised 1 sng thru 4116
4179	10/1/75	HAUSMAN	Full Part Before After Verification Review Inspection Signed Via Drawing No. Revised (1) sng thru 4102
4180	4/19/76	KANIS	Full Part Before After Verification Review Inspection Signed Via Drawing No. EXAMINED Review & Chart 4116 for critical corrections - only critical corrections applied
4116	7/10/79	KANIS	Full Part Before After Verification Review Inspection Signed Via Drawing No. EXAM for critical corr - no corr
19340 (4116)	5-1-89	Ed Martin	(Full Part Before) (After) Verification Review Inspection Signed Via Drawing No. 24 in full
19004	12-5-90	R. A. Lella	Fully Applied thru 19340 Dwg. # 36
19013	4-26-91	K.R. Foster	Fully Applied thru chart 19004. Dwg 18.
19010	5-1-91	K.R. Foster	Fully Applied thru chart 19013 Dwg 17.