

8826

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-10-7-63
Office No. H-8826

LOCALITY

State HAWAII
General Locality MAUI
Locality KAMILO POINT TO POPOKANALOA
POINT

1963-65

CHIEF OF PARTY
H. J. SEABORG

LIBRARY & ARCHIVES

DATE NOV. 10, 1970

8826

HYDROGRAPHIC TITLE SHEET

H-8826

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-10-7-63

State Hawaii

General locality Maui Island

Locality Southeast Coast Kamilo Point to Popokanaloa Point

Scale 1:10,000

12 Oct 1963, 19 March 1965

Date of survey 20, 26, 27 March 1964

Original dated 25 Oct 1960

Instructions dated Sup. dated 3 Jan 1963 and Project No. OPR-419

17 Dec 1963

Vessel PATHFINDER, Launch #3 in 1963-64, Launches #2, 3, & 4 in 1965

Chief of party CAPT H. J. Seaborg, USC&GS

1963 - 1964 - H. J. Seaborg, S. L. Hollis, R. H. Houlder, M. L. Geiger

Surveyed by W. L. Newton, F. L. Woodcock, 1965 - F. L. Woodcock, R. K. Woodruff,

O. K. MacIntosh Jr., R. V. O'Connell, G. E. Rorvig, R. H. Kerley

Soundings taken by echo sounder, ~~hand level, etc~~

Graphic record scaled by Various Personnel

Graphic record checked by Various Personnel

Protracted by Ship's Officers

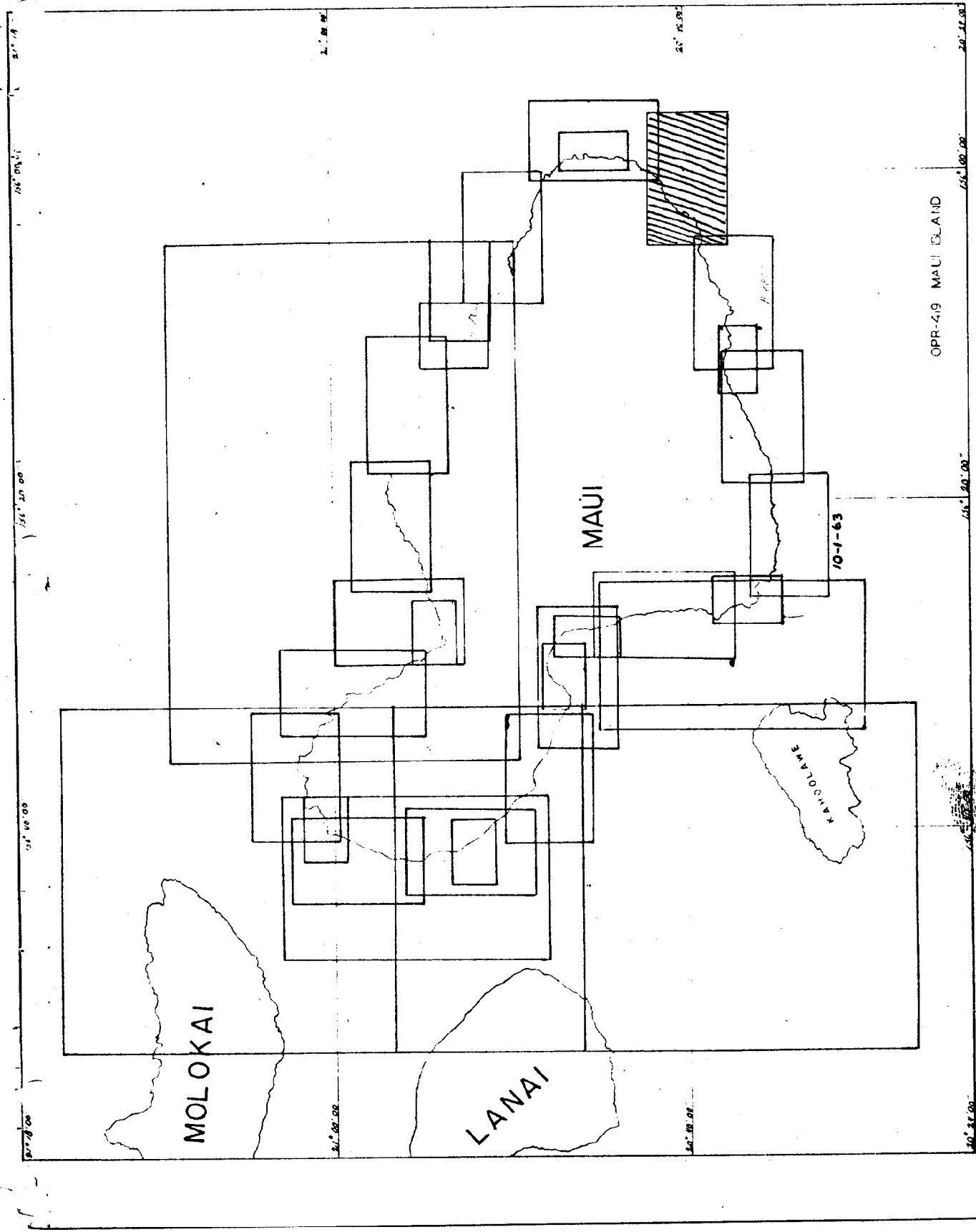
Automated plot by _____

Soundings penciled by N. Lestenkof - Seattle, Processing Office

Soundings in fathoms, ~~XXXXXX~~ and tenths at MLLW

REMARKS: An unsigned Field Report for the 1963 survey work and a
collection of unsigned notes to the smooth plotter for 1964
and 1965 work formed the primary basis for this report.

XWW 2/14/72



MOLOKAI

LANAI

MAUI

KAHOOLOAWE

70-1-63

OPR-419 MAUI ISLAND

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-8826 (PF-10-7-63)
SOUTHEAST COAST, MAUI ISLAND, HAWAII

Scale 1:10,000
October 1963
March 1964
March 1965

H.J. Seaborg CAPT USC&GS
Commanding USC&GSS PATHFINDER
L.F. Woodcock CAPT USC&GS
Commanding USC&GSS PATHFINDER

A. PROJECT

This survey is part of Project OPR-419 with original instructions dated 25 October 1960, and supplemental instructions dated 3 January 1963 and 17 December 1963; revised instructions dated 9 November 1964; and amended instructions 15 February 1965.

B. AREA SURVEYED

This survey covers the area along the south-east coast of Maui Island between Kaapahu Bay and Popokanaloa Point.

This sheet limits are as follows:

On the north by Latitude $20^{\circ}42'00''N$

On the south by Latitude $20^{\circ}37'00''N$

On the east by Longitude $155^{\circ}58'00''W$

On the west by Longitude $156^{\circ}05'00''W$

This sheet junctions with the following contemporary surveys:

H-8719⁽¹⁹⁶³⁾ (PF-10-2-63) on the northeast and H-8825⁽¹⁹⁶³⁾ (PF-10-6-63)

on the southwest. This survey is covered and/or joins the

following prior surveys:

Registry No. H-3516 scale 1:20,000 surveyed Feb, March 1913

Registry No. H-3517 scale 1:20,000 surveyed Feb, March 1913

Registry No. 3519 scale 1:60,000 surveyed Jan-March 1913
Feb 1914

The coast line is generally rugged with numerous high cliff areas. The foreshore abounds with many rocks. An unimproved road follows this coast line through sparsely populated cattle grazing lands.

C. SOUNDING VESSELS ✓

All the hydrography was accomplished by the Ship PATHFINDER and its launches in parts of three years, Oct. 1963 - March 1965.

In 1963 & 1964 PATHFINDER - Blue Capital Letters
In 1964 Launch No. 3 - Green Lower Case Letters
In 1965 Launch No. 2 - Purple Lower Case Letters
In 1965 Launch No. 3 - Orange Lower Case Letters
In 1965 Launch No. 4 - Brown Lower Case Letters

NOTE: Launch No. 3 hydrography is shown in green for both 1964 and 1965 seasons on the boatsheet. The 1965 work was changed to orange on the smooth sheet and in the sounding volumes.

Bottom samples were obtained by the Ship PATHFINDER, Launch No. 2 and 4.

D. SOUNDING EQUIPMENT ✓

Raytheon DE-723 sounding units were used by all vessels as listed. In very deep water, PDR fathometer was used by the Ship PATHFINDER only on C day.

<u>Year</u>	<u>Vessel</u>	<u>Day Letter</u>	<u>Type Echo Sounder</u>	<u>No.</u>
1963	PATHFINDER	A	Raytheon DE-723	557
1964	PATHFINDER	B & C	"	"
1964	PATHFINDER	D	"	"
"	"	C	PDR	151
1964	Launch No. 3	a and b	Raytheon DE-723	140
1965	Launch No. 2	a	"	552
1965	Launch No. 3	a, b, and c	"	141
1965	Launch No. 4	a, b, and c	"	145

The velocity corrections were determined graphically from data obtained from standard Nansen Bottle casts using both protected and unprotected thermometers. A calibration velocity of 800 fathoms per second was assumed.

The initial of the echo sounders on the launches was set at 0.0 depth, and any fluctuation from this setting was entered in the record volumes as the initial correction. The fathometer correction was determined from standard bar check data by comparing the actual or measured depth with the depth reading on the fathometer. Bar checks were taken either once or twice a day at depths of 1.0, 2.0 and 4.0 fathoms.

E. SMOOTH SHEET

The smooth sheet was hand constructed, checked and inked by ship's personnel. The hydrographic positions were plotted by the Ship's personnel. The soundings were penciled by Seattle, Processing Office personnel.

F. CONTROL

Standard methods of transferring photo-hydro signals to the boat and smooth sheets were employed. Signals on T-11938 and T-11939 (both to the scale 1:10,000) were pricked through; signals on T-11990 (to the scale 1:5,000) were scaled and plotted by Geographic Position distances. The triangulation stations were plotted directly from the G.P.'s.

In 1965 the location of signal JOE was re-established about 60 meters inshore from its 1963-64 position. This new signal is called JOE 2. Signals BAD, DOT, DAY, DID, TEL and WHO were established in 1965.

G. SHORELINE

The shorelines were transferred using the blue line prints of T-11938⁽¹⁹⁶⁰⁻⁶³⁾ and T-11939⁽¹⁹⁶⁰⁻⁶³⁾ (both to the scale of 1:10,000). In the northeast portion of this survey, the shoreline originates from T-11990⁽¹⁹⁶⁰⁻⁶³⁾ (to the scale 1:5,000) which was reduced to 1:10,000 scale. Shoreline features were verified, and notes made on the boat sheets. High surf conditions prevented delineation of the low water line. Revised foul lines shown in black on boat sheet and transferred from boat to smooth sheet.

H. CROSSLINES

Over 10% of the hydrographic lines run are crosslines. On the smooth sheet, crosslines are in good agreement throughout this survey. No unusual adjustments were made by the smooth plotter to achieve crossline agreement.

I. JUNCTIONS

Junctions with the contemporary surveys H-8719 (1963) and H-8825 (1963⁻⁶⁵) are in good agreement and have been completed. Except for alignment of depth's curves, no corrections or adjustments were made by the smooth plotter or verifier to achieve these excellent junctions. See ~~note appended regarding small correction required on H 8825.~~

J. COMPARISON WITH PRIOR SURVEYS

With very few exceptions, the soundings of Registry No. H-3516 and H-3517, both to the scale of 1:20,000 and both surveyed Feb-March 1913, compare favorably with the contemporary hydrography. Registry No. 3519 surveyed in 1913⁻¹⁴ to the scale of 1:60,000 also compares well except for the soundings which are definitely disproved by the modern survey. These are as follows: "34" fathoms at Latitude 20°40'50" Longitude 156°00'40", this sounding appears 10 fathoms too deep and should read "24" fathoms. "84" fathoms at Latitude 20°39'15" Longitude 156°01'18", this sounding appears 20 fathoms too shoal and should read "104" fathoms. "70" fathoms at Latitude 20°39'00" Longitude 156°01'32", this sounding appears 20 fathoms too shoal and should read "90" fathoms.

No pre-survey items were listed.

Because the prior surveys approach the beach closer than do the 1963 surveys, many of the inshore soundings from the prior surveys should be retained for charting.

These retained soundings frequently disprove the present placement of the limit line as now shown on the smooth sheet. No attempt was made to correct the limit line, because the paper prints of the prior surveys are distorted and hence make accurate placement of individual soundings most difficult.

K. COMPARISON WITH THE CHART *(This is a boat sheet comparison)* ✓

This survey was compared to Chart No. 4116 14th Ed. July 7, 1969. Because of the small scale of the chart, the comparison is not quite adequate. There is one depth of 70 fathoms at Latitude 20°39'00" Longitude 156°01'32": this is an apparent error and should be corrected to read 90 fathoms.

L. ADEQUACY OF SURVEY ✓

This survey H-8826 is adequate to supersede all prior surveys for charting and is complete except for the inshore soundings and limit lines as previously mentioned in paragraph J of this report. *(see Review item 6)*

M. AIDS TO NAVIGATION ✓

There are no aids to navigation on this survey.

N. STATISTICS ✓

Vessel	No. of Positions	Miles of Sndg Lines	No. of Bottom Samples
PATHFINDER	316	89.5	15
Launch No. 2	30	3.8	12
Launch No. 3	642	90.1	--
Launch No. 4	<u>252</u>	<u>34.1</u>	<u>19</u>
Total	1240	217.5	46

C-DAY Ship B/S 10/7/63

HYDRO ✓

The soundings as recorded may have a maximum displacement error of 15 sec. along the sounding line.

Position marks on the fathogram (723) were not marked accurately as to time, due to inexperience of the fathometer reader. As there could be no particular mark or time that could be held as a constant or an accurate starting point for scanning, the soundings were entered based on equal spacing over known time between fixes. And as a result of this, some soundings could possibly be in error by 15 seconds, although it is felt that maximum probable error is closer to 7 seconds, and this is only the worst case.

The decision not to rerun the day's work was based on weather difficulties in the area concerned, satisfactory crossings made during this day's work, and the rough bottom and extremely steep slopes (which made use of the PDR imperative) which made displacement by 7 sec. (max) probable.

Author Unknown

October 7, 1963

Charles R. McIntyre

8 January 1965

Photo-hydro stations PAL, BAG, and ZOO were transferred by scaling from a 1:5,000 manuscript (11990) to the 1:10,000 smooth sheet.

Some course changes, when plotted, gave no indication of the ship's path, and therefore were either disregarded or decreased in magnitude to make the line feasible.

Due to numerous and large course changes before pos. 32A and through to Pos. 35A (L $20^{\circ} 41' 20''$; $\lambda 155^{\circ} 57' 50''$) the hydro line plotted is the ship's path as best could be determined. The maximum error possible is about 30 meters. Since this line is the project limits it is recommended that this portion of the line be rerun if possible.

The shoal in L $20^{\circ} 41' 27''$; $\lambda 155^{\circ} 59' 17''$ has been developed somewhat with the least depth of 11 fathoms. There is, however, an area of about 125 meters which has not been covered. More development is needed here. Junctional sheet has shallowest depth of 10^3 fathoms.

0. MISCELLANEOUS

None.

Compiled by:

Cornelius A. J. Pauw
Cornelius A. J. Pauw

LIST OF STATIONS ON H-8826 (PF-10-7-63)

<u>NAME USED IN HYDROGRAPHIC SURVEY</u>	<u>ORIGIN OF STATION</u>
AHUULA, 1950	-----Triangulation
ART	T-11938
ASP	T-11939
BAD	T-11939
BAG	T-11990
BEE	T-11938
CON	T-11938
DAD	T-11939
DAY	T-11939
DID	T-11939
DOG	T-11938
DOT	T-11939
ELI	T-11938
FAG	T-11939
FAL	T-11939
FIG	T-11939
GAY	T-11939
KIPAHULU CATHOLIC CHURCH, 1950	T-11939 Triangulation
KIPAHULU OLD SUGAR MILL, STACK, 1950	T-11939 Triangulation
KIPAHULU PROTESTANT CHURCH, HGS, 1881	T-11939 Triangulation

HOT	T-11939
ICE	T-11939
JOE	T-11939
JOE 2	T-11939
KID	T-11939
KIT	T-11939
LOO	T-11939
MAKALIIHANAU (HGS)(HTS 1950) 1878	-----Triangulation
MOM	T-11939
MOPUA (HGS), 1881, 1950	T-11939 Triangulation
MUOLEA, 1950	T-11990
OAF	T-11939
OHAI (HGS) 1877	T-11939 Triangulation
QUO	T-11939
PAL	T-11990
POL	T-11939
POHUE, 1950	T-11990
RAT	T-11939
ROC	T-11939
ROC	T-11938
SAP	T-11939
TEL	T-11939
TOE	T-11939
VAL	T-11939
WHO	T-11939
ZOO	T-11990

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 (fms)	(fms)	FROM - TO (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 - 220	7.0
41.0 - 45.0	1.8	222 - 296	8.0
45.5 - 49.5	2.0	298 - 355	9.0

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

USC&GSS PATHFINDER
OSS-30
H.J. Seaborg, Comdg.

VELOCITY CORRECTIONS
Hawaiian Islands
Maui and Lanai Islands

To be applied to all hydrography accomplished in February and
March 1964.

Correction to Depth

+0.0 fm	3.0 fm
0.1	5.5
0.2	7.5
0.3	10.0
0.4	12.0
0.5	14.4
0.6	16.4
0.7	19.0
0.8	21.0
0.9	23.2
1.0	25.4
1.1	27.6
1.2	30.0
1.3	32.0
1.4	36.5
1.6	41.0
1.8	45.5
2.0	50.0
2.2	54.5

Correction to Depth

+2.4 fm	58.5 fm
2.6	63.0
2.8	67.5
3.0	72.0
3.2	76.5
3.4	81.0
3.6	85.5
3.8	90.5
4.0	96.0
4.2	100.0
4.4	104.0
4.5	111.0
5.0	122.0
5.5	144.0
6.0	190.0
7.0	310.0
8.0	366.0
9.0	400.0

USG&GSS PATHFINDER
Capt. L. F. Woodcock, Comdg.

Velocity Corrections

Hawaiian Islands - 1965

Corrections to be applied to Sheet Nos. PF 10-6-63,
PF 10-7-63, and PF 10-2-63.

<u>Correction</u>	<u>To depth</u>
+0.1 fathoms	3.1-5.3 fathoms
0.2	7.8
0.3	10.0
0.4	12.1
0.5	14.2
0.6	16.3
0.7	18.3
0.8	20.5
0.9	22.9
1.0	25.0
1.1	27.4
1.2	32.0
1.4	36.5
1.6	41.0
1.8	45.8
2.0	50.3
2.2	54.8
2.4	59.4
2.6	63.8

TIDE NOTE

Project OPR-419 USC&GSS PATHFINDER
H-8826 (PF-10-7-63)

The tide station used for this entire sheet was the portable gage located in Hana Bay, Maui; Latitude $20^{\circ}45'35''N$, Longitude $155^{\circ}59'07''W$. The height of MLLW on the staff was 0.7 feet. The time meridian used was $150^{\circ}W$. No correction heights were computed in the field. Height of MLLW was supplied by the Washington Office.

TIDE NOTE FOR HYDROGRAPHIC SHEET

November 10, 1966

~~Nautical Chart Division:~~ Pacific Marine Center

Plane of reference approved in
10 volumes of sounding records for

HYDROGRAPHIC SHEET 8826

Locality: Hana Bay, Maui Island, Hawaii

Chief of Party: H. J. Seaborg, 1963-64
L. F. Woodcock, 1965

Plane of reference is mean lower low water

Tide Station Used (Form C&GS-681):

Hana Bay

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

2.0 feet

Remarks

J. M. Symons
Chief, Tides and Currents Branch

GEOGRAPHIC NAMES
Survey No. H-8826

Name on Survey	Source of Name											
	A	B	C	D	E	F	G	H	K			
Ahole Rock												1
Alenuihaha Channel												2
Kaapahu Bay												3
Kākanani Point												4
Kamilo Point												5
Kauakiu Point												6
Keawa Bay												7
Kukui Bay												8
Kulepeamao Point												9
Kuloa Point												10
Laupapa Rock												11
Maulili Bay												12
Muelea Point												13
Oahu Point												14
Ohai Point												15
Pailoa Point												16
Papaloa Bay												17
Piilani Papa												18
Pepokanāloa Point												19
Puhilele Point												20
Waiānana Bay												21
Waiūa Cove												22
Moku Papa												23
AWAPAEWAA BAY												24
KAUAKIO BAY												25
MAUI												26
												27

PREPARED BY

Frank W. Libbott
CARTOGRAPHIC TECHNICIAN

APPROVED BY

R. Joseph Wright
C. Hammit
2-9-77
CHIEF GEOGRAPHER

H-8826 (PF-10-7-63)
SMOOTH PLOTTER'S NOTES

D. SOUNDING EQUIPMENT ✓

Stylus arm corrections were applied to A and B scales of all vessels. Table for Raytheon DE-723 stylus arm correctors is attached to this report. The percentages of stylus arm corrections are entered in the sounding volumes for each day and the corrections combined with the draft correctors.

E. SMOOTH SHEET ✓

About 5% of the hydrographic positions were adjusted to fit surrounding depths and crossings as well as make good time and course.

G. SHORELINE ✓

Rocks, awash and sunken, near signal HOT were transferred directly from boat sheet. These rocks were located by estimated distances and hydro cuts.

K. COMPARISON WITH CHART ✓

This survey was compared with Chart No. 4116, 14th Ed. July 7, 1969. This chart should be updated and particularly should show the 10 fathom shoal at Latitude $20^{\circ}41'27''$ and Longitude $155^{\circ}59'12''$ verified to read 10^2 fathoms. This sounding originates with survey H-8719 (1963) the junction sheet, and is substantiated by this survey.

Respectfully submitted,

N. Lestenkof
N. Lestenkof

PHTHOMETER STYLUS ARM

SHORT ARM POSITIVE CORRECTION
 LONG ARM NEGATIVE CORRECTION

0.5%

UNIT	COR.
0 - 5.2	0.0 <i>Pos</i>
5.0	0.1
45.0	0.2
50.0	0.3

1.0%

UNIT	COR.
0 - 2.5	0.0 <i>Pos</i>
12.5	0.1
22.5	0.2
32.5	0.3
42.5	0.4
50.0	0.5

1.5%

UNIT	COR.
0 - 1.4	0.0 <i>Pos</i>
2.2	0.1
14.2	0.2
21.6	0.3
28.3	0.4
37.7	0.5
41.6	0.6
45.3	0.7
50.0	0.8

2.0%

UNIT	COR.
0 - 1.3	0.0 <i>Pos</i>
6.3	0.1
11.3	0.2
16.3	0.3
1.3	0.4
26.3	0.5
31.3	0.6
36.3	0.7
41.3	0.8
46.3	0.9
50.0	1.0

2.5%

UNIT	COR.
0 - 1.0	0.0 <i>Pos</i>
5.0	0.1
9.0	0.2
13.0	0.3
17.0	0.4
21.0	0.5
25.0	0.6
29.0	0.7
33.0	0.8
37.0	0.9
41.0	1.0
45.0	1.1
49.0	1.2
50.0	1.3

3.0%

UNIT	COR.
0 - 0.9	0.0 <i>Pos</i>
4.2	0.1
7.5	0.2
10.8	0.3
14.2	0.4
17.5	0.5
20.8	0.6
24.2	0.7
27.5	0.8
30.8	0.9
34.2	1.0
37.5	1.1
40.8	1.2
44.2	1.3
47.5	1.4
50.0	1.5

STYLUS ARM ERROR SHOULD BE COMPUTED TO THE NEAREST HALF PERCENT.

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

Cornelius A. J. Pauw
Cornelius A. J. Pauw
Cartograph Technician

Approved for Forwarding

William M. Martin
William M. Martin
Superv. Cartograph Tech.

Approved and Forwarded

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

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-8826 (PF-10-7-63)

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						
CAHIERS	1					
VOLUMES	10					
BOXES						
T-SHEET PRINTS (List) <u>T-11938, T-11939</u> XXXXXXXXXX						
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				1240
POSITIONS CHECKED		470		
POSITIONS REVISED		58		
DEPTH SOUNDINGS REVISED		67		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		60 approx		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		12		
JUNCTIONS		19		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		92		
SPECIAL ADJUSTMENTS				
ALL OTHER WORK		116		
TOTALS		239	142	
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <u>Clorence R Lehman</u>	29 April, 1969		11 June 1969	
REVIEW BY <u>Fannie B Lewis & Kris Larson</u>	12-26-72		2-2-73	

Curry Insp: H.K. Myers 46 hrs 9/8/77 app. HK Myers 4 hrs 4/27/81

H-8826

Information for Future Presurvey Reviews

No noteworthy bottom changes have occurred in the area of the present survey.

<u>Position Index</u>		<u>Bottom Change Index</u>	<u>Use Index</u>	<u>Resurvey Cycle</u>
<u>Lat.</u>	<u>Long.</u>			
203	1560	1	1	50 years
204	1560	1	1	50 years
203	1561	1	1	50 years
204	1561	1	1	50 years

OFFICE OF MARINE SURVEYS AND MAPS
MARINE SURVEYS DIVISION
HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8826

FIELD NO. PF-10-7-63

Hawaii, Maui, Kaapahu Bay to Popokanaloa Point

SURVEYED: October 12, 1963; March 20-27, 1964; and March 19, 1965

SCALE: 1:10,000

PROJECT NO.: OPR-419

SOUNDINGS: Raytheon DE-723 Depth Recorder,
Precision Depth Recorder

CONTROL: Visual Fixes on
Shore Signals

Chief of Party	H. J. Seaborg
Surveyed by	H. J. Seaborg, S. L. Hollis
.....	R. H. Houlder, M. L. Geiger
.....	W. L. Newton, F. L. Woodcock
.....	R. K. Woodruff, O. K. MacIntosh, Jr.
.....	R. V. O'Connell, G. E. Rorvig
.....	R. H. Kerley
Protracted by	Ship's Officers
Soundings Plotted by	N. Lestenkof (PMC)
Verified and Inked by	C. R. Lehman
Reviewed by	K. A. Larson, F. B. Powers
	Date: February 2, 1973
Cursory inspection made--survey	G. K. Myers
processing considered complete	September 8, 1977

1. Description of the Area

The area covered by this survey lies along the southeast coast of Maui between Popokanaloa Point and Kamilo Point. Hydrography extends about 2 1/2 miles from shore to depths of greater than 500 fathoms.

Many rocks are found inshore. Foul areas extend along the entire coastline. The bottom is characterized by a moderate slope in depths of less than 50 fathoms. However, in deeper depths the gradient of the slope is more abrupt.

Some foul and rocky areas are found offshore within the 10-fathom depth curve. Predominant characteristics of the area are sand, shells, and coral.

2. Control and Shoreline

The origin of control is adequately described in the Descriptive Report.

The shoreline originates with final reviewed photogrammetric manuscripts T-11938, T-11939, and T-11990 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 curve. Here the existence of foul areas precluded a development of the curves.

c. The development of the bottom configuration was not adequate in portions of the inshore areas. Prior soundings and rocks were brought forward to complete the coverage for bottom delineation. The adequacy of the investigation of least depths is generally good.

4. Condition of Survey

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

a. Sounding volumes for the PATHFINDER erroneously indicated MRV (middle reed vibrating) as a check of the DE-723 Echo Sounder motor speed.

b. Excessive strays noted at regular intervals on fathograms submitted with Launch 4 records are considered to be due to inherent defects of the sounding machine.

5. Junctions

Adequate junctions were effected with H-8719 (1963) on the north and with H-8825 (1963-65) on the west. No contemporary surveys junction with the present survey on the south and east. However, present survey depths in those areas are in general harmony with charted depths.

6. Comparison with Prior Surveys

a.	H-3516	(1913)	1:20,000
	H-3517	(1913)	1:20,000

These surveys cover the inshore areas of the present survey. A comparison between prior and present depths reveals good agreement, except in random

areas of 20-fathom depths. Here, present soundings are 1-3 fathoms less than prior depths. These differences are mainly attributed to a lack of control on the prior surveys.

Some soundings, rocks, and one bottom characteristic were carried forward from the prior surveys. With these additions, the present survey is adequate to supersede the prior surveys in the common area.

b. H-3519 (1913-14) 1:60,000

This smaller scale survey covers the offshore portion of the present survey. The lack of development precludes a detailed comparison between prior and present depths. However, it is evident that the general character of the bottom configuration has remained the same.

A few soundings were carried forward to the present survey. With these additions, the present survey is considered adequate to supersede the prior survey in the common area.

7. Comparison with Chart 4116 (latest print date, 15th Ed., August 7, 1971)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys which require no further consideration, supplemented by depths from the boat sheet and unverified 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 are no aids to navigation within the area of the present survey.

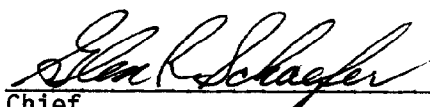
8. Compliance with Instructions


This survey adequately complies with the project instructions.

9. Additional Field Work

This survey is considered to be a good basic survey and no additional work is recommended.

Examined and Approved:


Chief
Hydrographic Surveys Division


Associate Director
Office of Marine Surveys
and Maps

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8826

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	4-5-71	J.A. Graham	Full Part Before After Verification ^{Before} Review Inspection Signed Via Drawing No. 16 App'd misc critical corrections only
4179	5/10/71	S.H. Hillman	Full Part Before After Verification ^{Before} Review Inspection Signed Via Drawing No. 9 No critical corr at this time demanded thru 4116 #16
4102	1/27/72	J. Graham	Full Part Before After Verification Review Inspection Signed Via Drawing No. 28 App'd for misc critical corr only thru chrt 4116 dwg #16
4180	3/15/72	E. Frey	Full Part Before After Verification Review Inspection Signed Via Drawing No. 11 App'd for misc. critical corrs only thru chrt 4102 dwg #28
4115	7/12/73	C.S. Forbes	Full Part Before After Verification Review Inspection Signed Via Drawing No. 4116 #16 App'd two soundings, and revised 100 fm curve
4102	11/15/73	C.S. Forbes	Full Part Before After Verification Review Inspection Signed Via Drawing No. Revised 100 fm curve thru 4115, dwg 12 No correction
4116	6-5-75	H.J. Braucher	Full Part Before After ^{Verification} Review Inspection Signed Via Drawing No. App'd Two Soundings
4115	8/9/75	Nator	Full Part Before After Verification ^{REVIEW} Inspection Signed Via Drawing No. App'd three sndgs 254, 361 thru 4116. Added 70, 77, revised 100 curve to make chrts agree.
4102	9/3/75	Nator	Full Part Before After Verification Review Inspection Signed Via Drawing No. Revised sndgs thru 4116
4000	9/3/75	Kanis	Full Part Before After Verification Review Inspection Signed Via Drawing No. Revised thru chart 4102
4179	8/29/75	HAUSMAN	PART AFTER REVIEW REVISE 1 Sounding thru 4102
4180	9/23/76	KANIS	Part Applied after review - for critical corrections - thru Chart 4116

