

8677

Diag. Cht. No. 4116-2.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE  
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. PF-40-1-62 Office No. H-8677

LOCALITY

State Hawaii

General locality Offshore North Coast Maui I.

Locality Opikoula Point to Nakalele Point

1962

CHIEF OF PARTY

A. L. Wardwell

LIBRARY & ARCHIVES

DATE May 20, 1963

USCOMM-DC 37022-P66

8677  
2298

HYDROGRAPHIC TITLE SHEET

H-8677

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 40-1-62

State HAWAII

General locality OFFSHORE NORTH COAST MAUI ISLAND  
~~MAUI ISLAND~~

Locality NORTH SIDE MAUI ISLAND OPIKOULA POINT TO NAKALELE POINT

Scale 1:40,000 Date of survey 7 Sept. - 6 Oct. 1962

Instructions dated 25 Oct. 1960, 9 Jan. 1962

Vessel USC&GS SHIP PATHFINDER

Chief of party A. L. WARDWELL, CAPT., C&GS, COMDG.

Surveyed by A.L. WARDWELL, D.W. WHIPP, R.F. IANIER, L.L. POSEY, C.W. MATHISSON, R.A.  
TRAUSCHKE

Soundings taken by echo sounder, ~~EGGSOND~~

Fathograms scaled by SHIP'S PERSONNEL

Fathograms checked by SHIP'S PERSONNEL

Protracted by ENS. M. L. GEIGER, ENS. S. Z. BEZUK

Soundings penciled by ENS. M. L. GEIGER

Soundings in fathoms ~~XXXX~~ at ~~XXXX~~ MLLW

REMARKS:

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WS

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY H-8677 FIELD NO. PF 40-1-62

NORTH SIDE MAUI, MAUI ISLAND

HAWAIIAN ISLANDS

SCALE: 1:40,000

Arthur L. Wardwell  
Captain, C&GS  
Comdg., Ship PATHFINDER

7 SEPTEMBER - 6 OCTOBER 1962

A. PROJECT

Project OPR-419, Instructions dated 25 October 1960 and 9 January 1962 and amended instructions dated 14 March 1962. ✓

B. AREA SURVEYED:

The area surveyed is off the north side of Maui Island. It junctions on the north with the project limits, on the west with PF-10-4-62 H-8683, on the south with SU-10-4-61 H-8579, SU-10-1-61 H-8576, PF-10-3-62 H-8682, PF-10-5-62 H-8717, and PF-10-3-63 H-8720, and on the east with PF-10-4-63 H-8721. Surveying operations were begun on 7 September 1962 and were completed 6 October 1962. ✓

C. SOUNDING VESSELS:

All sounding was done by the Ship PATHFINDER (blue upper case letters). ✓

D. SOUNDING EQUIPMENT:

Raytheon Survey Fathometers, Model 723, were used throughout the survey. Fathometer Serial No. 145 was used on A, B, C, D, E, ~~F~~, H, and J days of hydrography and Serial No. 140 was used on G day. Velocity corrections were determined from an oceanographic station observed on 25 April 1962 at Lat.  $21^{\circ} 01.2' N$  and Long.  $157^{\circ} 03.5' W$  (see page 10 in appendix). ✓

E. SMOOTH SHEET:

The smooth sheet projection was made by the projection ruling machine in the Washington office. ✓

F. CONTROL:

All hydrography was visually controlled. Most of the control stations are second- or third-order triangulation with a few photo-hydro signals which were transferred from their respective manuscripts. Photo manuscripts used were T-11898, T-11902, T-11903, T-11904, T-11905, and T-11906. ✓

G. SHORELINE:

No shoreline was used in this survey. ✓  
The shoreline was added during review.

H. CROSSLINES:

Approximately 10% crosslines were run. No large discrepancies were encountered at crossings and minor ones can be attributed to the irregular bottom.

I. JUNCTIONS:

Since the Smooth Plots of the sheets listed in B were not available, the soundings at junctions on the boat sheets were compared with the boat sheet of this survey and no discrepancies were noted.

J. COMPARISON WITH PRIOR SURVEYS:

The new survey was compared with the following prior surveys: Hydrographic Survey No. 3518, January - March 1913, 1:60,000; Hydrographic Survey No. 3519, January - March 1913 and February 1914, 1:60,000; Hydrographic Survey No. 3514, January 1913, 1:20,000; and Hydrographic Survey No. 4917, March - April 1929, 1:5,000.

Hydrographic Survey No. 3518 covered almost the entire area of the new survey and agreement within two fathoms was found to exist in general. Locations where differences of more than two fathoms occurred are:

Lat.	Long.	Prior Survey	Smooth Plot
20° 56.4'	156° 26.3'	Between 28 and 31 fathoms	25 fathoms
20° 56.6'	156° 13.6'	38 fathoms	<del>40</del> <sup>3</sup> fathoms
20° 56.6' <sup>5</sup>	156° 13.5'	41 fathoms	<del>52</del> <sup>46</sup> fathoms
20° 57.6'	156° 23.6'	General Area	
20° 57.8'	156° 23.6'	General Area	
20° 58.0'	156° 22.2'	General Area	
20° 58.0'	156° 26.0'	General Area	
20° 58.5'	156° 28.7'	42 fathoms	53 fathoms
20° 58.6'	156° 19.5'	General Area	
20° 59.0'	156° 26.7'	69 fathoms	58 fathoms
21° 01.2'	156° 32.2'	General Area	

A line on the prior survey extending from 20° 57.2' to 20° 58.1' 156° 13.8' 156° 15.5'

In general the sounding on the Smooth Plot are 10 - 20 fathoms deeper than the Prior Survey

*Some lines are obviously displaced. Some soundings obviously in error due to method (tube soundings). All are superseded by the present survey.*

Most of the differences between this prior survey and the smooth plot can no doubt be attributed to the irregular bottom; however, it seems that there might have been an error in the line mentioned as the last item above.

Hydrographic Survey No. 3519 junctions with the new survey at its east end. The soundings at this junction are in good agreement.

Hydrographic Survey No. 3514 covers a small area of the new survey between Long. 156° 27.0' and Long. 156° 30.0'. In the area covered by H. S. No. 3514 and the new survey an agreement within two fathoms was found to exist in general. Locations where differences of more than two fathoms occurred are as follows: Prior surveys superseded.

Lat.	Long.	Prior Survey	Smooth Plot
20° 56.4'	156° 27.8'	17 fathoms	22 fathoms
20° 56.4'	156° 27.9'	17)	21
20° 57.1'	156° 28.7'	42	31
20° 57.6'	156° 28.0'	35)	44
20° 57.8'	156° 28.0'	36)	46
20° 57.9'	156° 28.0'	37)	48
20° 58.1'	156° 28.8'	43	48
20° 58.1'	156° 29.5'	32)	42
20° 58.3'	156° 29.8'	32)	40

Prior lines obviously in error. Prior soundings are superseded.

The greater detail of the prior survey (1:20,000) combined with the irregularity of the bottom are most likely the reasons for all the discrepancies listed.

H. S. 4917 makes a satisfactory junction with the new survey.

K. COMPARISON WITH THE CHART:

The new survey was divided into two areas for comparison with current charts with the dividing line being the meridian of 156° 18.0'. West of this line the largest scale chart of the area is C&GS 4124, 1st Edition, 11 May 1946, Revised 27 February 1961, 1:30,000. This chart and the new survey compared fairly well in general; however, the following noteworthy discrepancies were found.

Lat.	Long.	Chart	Smooth Plot
20° 58.9'	156° 22.0'	56 fathoms	70 fathoms
20° 58.7'	156° 22.2'	56 fathoms	66 fathoms
20° 58.0'	156° 26.4'	General Area	
20° 56.4'	156° 26.3'	31 fathoms	25 fathoms
21° 00.5'	156° 31.8'	General Area - Chart 5 - 20 fathoms shoaler than smooth plot	

The charted soundings originated from sources superseded by the present survey.

From 20° 58.2' to 20° 59.0' 156° 29.6' to 156° 30.5' The area between these two points is 8 - 12 fathoms shoaler on the chart than on the smooth plot.

The irregularity of the bottom is no doubt the reason for the minor discrepancies; however, no explanation can be rendered relative to the major discrepancies. *Largely faulty tube soundings*

The largest scale chart of the area east of the 156° 18.0' meridian is C&GS 4116, 11th Edition, 16 April 1941, Revised 11 June 1962, 1:250,000. In general this chart and the new survey compared fairly well although a close comparison was not possible because of the small scale of the chart. Only one large discrepancy was noted and it is as follows:

Lat.	Long.	Chart	Smooth Plot
20° 58.1'	156° 15.6'	46 fathoms	Between 66 and 69 fathoms

This 46 fathom sounding is in the area of the sounding line that is listed as the last item under discrepancies between the new survey and H. S. No. 3518.

*46 is faulty tube sdg.*

L. ADEQUACY OF SURVEY:

This survey is complete and adequate to supersede prior surveys. ✓

M. AIDS TO NAVIGATION:

The following is a list of the Aids to Navigation which appear on PF-40-1-62 H-8677 and were found to be in agreement with the Light List (1963) and the geographic positions published by the Coast and Geodetic Survey. ✓

- NAKALELE POINT LIGHT
- KAHULUI HARBOR ENTRANCE RANGE FRONT LIGHT
- KAHULUI HARBOR ENTRANCE EAST BREAKWATER LIGHT
- KAHULUI HARBOR ENTRANCE WEST BREAKWATER LIGHT
- KAHULUI AERO LIGHT
- PAUWELA POINT LIGHT
- WAIHEE CHURCH, YELLOW SPIRE, 1912
- WAIHEE MILL STACK (CHIMNEY), 1912
- WAILUKU SUGAR COMPANY MILL, STACK, 1912
- KAHULUI, RADIO STATION KMVI, MAST, 1950
- PAIA SUGAR MILL, STACK, 1912

N. STATISTICS:

STATISTICS FOR PF-40-1-62 ✓

<u>Date</u>	<u>Day Letter</u>	<u>Miles Sdg. Line</u>	<u>No. of Pos.</u>	<u>No. of Bottom Samples</u>
7 Sept.	A	43.6	95	
8 "	B	78.8	138	
9 "	C	30.2	66	
24 "	D	81.9	134	
25 "	E	43.9	91	7
26 "	F	48.6	79	
27 "	G	43.5	82	
5 Oct.	H	28.4	60	5
6 "	J	7.7	16 <sup>4</sup>	2
<b>TOTALS</b>		<b>406.7</b>	<b>761</b>	<b>14</b>

This survey covers an area of 57.0 square nautical miles of hydrography.

Respectfully submitted,

*Maurice L. Geiger*

Maurice L. Geiger  
Ensign, C&GS

Approved and forwarded,

*H. J. Seaborg*

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

TIDE NOTE

PROJECT OPR-419 USC&GSS PATHFINDER HYDROGRAPHIC SURVEY H-8677, PF 40-1-62 ✓

Corrections for tides were determined from tides observed with the standard tide gage at Kahului, Maui and a portable automatic tide gage at Hana, Maui (Lat.  $20^{\circ} 45' 35''$  N, Long.  $155^{\circ} 59' 07''$  W). The Kahului gage was used west of the  $156^{\circ} 15'$  meridian and the Hana gage east of this meridian. No correction was made for range or time. Mean lower low water is 2.0 ft. on the Kahului staff and 0.7 ft. on the Hana staff. Both tide stations are in the 150 degree time meridian.

GEOGRAPHIC NAME LIST

PROJECT OPR-419 USC&GSS PATHFINDER HYDROGRAPHIC SURVEY H-8677, PF 40-1-62

~~No shoreline on sheet; no geographic name list.~~

Shoreline and names <sup>with red check mark thus (✓),</sup> shown on the Geographic Names form (pages 14 and 15), were added during Review.



DRAFT CORRECTIONS  
SHIP PATHFINDER  
1962

SHEET PF 10-4-62

Day	Corr.
A	+ 0.4
B	0.4
C	0.4

SHEET PF 20-1-62

Day	Corr.
A	+ 0.4
B	0.5
C	0.4
D	0.4
E	0.4
F	0.4
G	0.4

SHEET PF 20-2-62

Day	Corr.
A	+ 0.3
B	0.3
C	0.4
D	0.4
E	0.4
F	0.4
G	0.4
H	0.4

SHEET PF 40-1-62

Day	Corr.
A	+ 0.4
B	0.4
C	0.4
D	0.5
E	0.5
F	0.5
G	0.4
H	0.5
J	0.5

SHEET SU 40-1-61

Day	Corr.
A	+ 0.3
B	0.3
C	0.5
D	0.4

SHEET SU 40-2-61

Day	Corr.
A	+0.4
B	0.3
C	0.4

Note: All corrections in fathoms.

LEADLINE COMPARISON  
SHIP PATHFINDER  
DE - 723 # 140  
1962

Midship draft = 14.9 ft. = 2.48 fm. Initial set at 2.0 fm.

Velocity correction = +0.7 if fathomster reading is above 15.2 fm.  
= +0.5 if fathomster reading is below 15.2 fm.

Leadline	Fath.rdg.	Corr. Fath.Rdg.	Correction for instrument error
16.20	15.1	16.08	+ 0.12
16.30	15.2	16.18	0.12
16.35	15.3	16.48	- 0.13
16.20	15.3	16.48	0.28
16.35	15.3	16.48	0.13
16.40	15.4	16.58	0.18
16.45	15.4	16.58	0.13
16.45	15.3	16.48	0.03
16.40	15.3	16.48	0.08
16.40	15.3	16.48	0.08
			Sum = - 0.81
			Mean =
			- 0.081 = - 0.1

Note: This fathomster was used for one day only, 27 Sept.  
The instrument error correction has been included in the tabulated  
value of draft correction for G day, PF 40-1-62, which was 27 Sept.  
All readings and corrections in fathoms.

LEADLINE COMPARISON  
SHIP PATHFINDER  
DE-723 # 145  
1962

Midship draft = 15.1 ft. = 2.5 fm. Initial set at 2.0 fm.

Velocity correction = + 0.5 fm.

Leadline	Fath.rdg.	Corr. fath.rdg.	Instrument error
14.5	13.6	14.6	+ 0.1
14.5	13.6	14.6	+ 0.1
14.5	13.5	14.5	0.0
14.5	13.5	14.5	0.0
14.8	13.5	14.5	0.0
14.8	13.5	14.5	0.0
14.5	13.6	14.6	+ 0.1
14.6	13.7	14.7	+ 0.1
14.8	13.8	14.8	0.0
14.8	13.7	14.7	- 0.1

Mean instrument error = + 0.09 Therefore the correction for instrument error is small enough to neglect.

Corr. fath.rdg. = Fath.rdg. + velocity corr. - Initial + Midship draft.

Instrument error = Corr. fath.rdg. - leadline

All readings and corrections in fathoms.

USC&GSS PATHFINDER, OSS-30  
A. L. Wardwell, Cmdg

VELOCITY CORRECTIONS  
Hawaiian Islands  
OPR-419  
Maui Island

To be applied to all Hydrography accomplished during the  
1962 Season.

FROM	RANGE		CORR.	FROM	RANGE		CORR.
	-	TO	(Fms)		-	TO	(Fms)
	(Fms)				(Fms)		
0.0	-	3.0	+ 0.0	98.3	-	101.6	+ 4.3
3.1	-	5.2	+ 0.1	101.7	-	106.7	+ 4.5
5.3	-	7.5	+ 0.2	106.8	-	112.1	+ 4.7
7.6	-	9.6	+ 0.3	112.2	-	118.1	+ 4.9
9.7	-	11.8	+ 0.4	118.2	-	124.2	+ 5.1
11.9	-	15.2	+ 0.5	124.3	-	130.2	+ 5.3
15.3	-	19.6	+ 0.7	130.3	-	137.0	+ 5.5
19.7	-	24.0	+ 0.9	137.1	-	143.5	+ 5.7
24.1	-	28.4	+ 1.1	143.6	-	151.5	+ 5.9
28.5	-	32.7	+ 1.3	151.6	-	161.5	+ 6.1
32.8	-	37.3	+ 1.5	161.6	-	185.0	+ 6.5
37.4	-	41.6	+ 1.7	185.1	-	211.8	+ 7.0
41.7	-	46.0	+ 1.9	211.9	-	241.8	+ 7.5
46.1	-	50.4	+ 2.1	241.9	-	276.0	+ 8.0
50.5	-	55.0	+ 2.3	276.1	-	316.0	+ 8.5
55.1	-	59.7	+ 2.5	316.1	-	364.0	+ 9.0
59.8	-	64.3	+ 2.7				
64.4	-	69.2	+ 2.9				
69.3	-	74.1	+ 3.1				
74.2	-	78.9	+ 3.3				
79.0	-	83.8	+ 3.5				
83.9	-	88.7	+ 3.7				
88.8	-	93.6	+ 3.9				
93.7	-	98.2	+ 4.1				

Comp: SRK  
Chkd: SRP  
Typed: JLB  
Chkd: LLP

Tide Correctors Sheet PF-40-1-62 H-8677 Reference Station:

Kahului Maui

ZONE: 156°15' to 156°36'

MLLW on Staff:  
2.0 ft.

No time or range factors

7 September 1962	8 September 1962	9 September 1962
0500 - 0600 -0.2	0500 - 0727 -0.2	0500 - 0815 -0.2
0601 - 1700 -0.4	0728 - 1700 -0.4	0816 - 1648 -0.4
24 September 1962	25 September 1962	6 October 1962
0600 - 0913 -0.2	0500 - 0940 -0.2	0600 - 1443 -0.4
0914 - 1700 -0.4	0941 - 1700 -0.4	1444 - 1800 -0.2

Tide Correctors Sheet PF-40-1-62 H-8677 Reference Station:

Hana Maui

ZONE: Hana T.G. to 156°15'

MLLW on Staff:  
0.7 ft.

No time or range factors

26 September 1962	27 September 1962	5 October 1962
0800-1008 -0.2	0800 - 1050 -0.2	0700 - 1129 -0.4
1009 - 1650 -0.4	1051 - 1712 -0.4	1130 - 1800 -0.2
1651 - end -0.2	1713 - 1800 -0.2	

Computed; L.L.P. S.Z.B.  
 Checked: S.Z.B. L.L.P.  
 Typed: L.L.P.  
 Checked: R.A.T.

LIST OF STATIONS ON H-8677 (PF 40-1-62)

NAME USED IN HYDROGRAPHIC SURVEY	ORIGIN OF STATION
AIR	AIRPORT CONTROL TOWER
BUS	T - 11906
CAM	T - 11898
DON	T - 11905
EAS	KAHULUI HARBOR ENTRANCE EAST BREAKWATER LIGHT
ELO	HUELO 2, 1959
ENT	KAHULUI HARBOR ENTRANCE RANGE, FRONT LIGHT
ESS	TRAVERSE ON T - 11905
GAR	WAILUKU, WAILUKU SUGAR CO. MILL, STACK, 1931
GRO	GROVE, (TEMP.)
HUE	T - 11906
IRE	WAIHEE SPERE, 1912
KAH	KAHAKULOA, 1929
KIN	T - 11902
LIG	PAUWELA POINT LIGHTHOUSE, 1950
MIL	WAIHEE MILL STACK, 1912
NAK	NAKALELE POINT LIGHT, 1950
NEN	PUUNENE 2, 1950
OPI	OPIKOULA, 1877
ORE	T - 11906
PAI	PAIA SUGAR MILL, STACK, 1912
PAU	PAUWALU, 1877 - 1912
RAD	KAHULUI RADIO STATION KMVI, MAST, 1950
RED	RED, 1961
RIP	T - 11898
ROC	T - 11904
WAD	T - 11902
WES	KAHULUI HARBOR ENTRANCE WEST BREAKWATER LIGHT
YAM	T - 11906

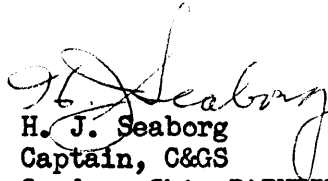
APPROVAL SHEET

H-8677 (PF 40-1-62)

All field work on the above area was accomplished during the 1962 field season under the supervision of Captain A. L. Wardwell.

The smooth sheet was plotted during the 1963 field season under my command and has been examined and approved.

This survey area is considered complete and adequate for charting purposes and no additional work is recommended.

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

GEOGRAPHIC NAMES  
Survey No. H-8677

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
HAWAII	✓										1
MAUI ISLAND	✓										2
(TIME BOX)											3
											4
<del>Opaha Point</del>	✓										5
<del>Usoa Bay</del>	✓										6
<del>Kealii Point</del>											7
<del>Pilale Bay</del>	✓										8
<del>Halehaku Point</del>											9
<del>Honopou Point</del>											10
<del>Hoolawa Point</del>	✓										11
<del>Honokata Point</del>											12
<del>Mokupepa Point</del>											13
<del>Waipio Bay</del>	✓										14
<del>Huelo Point</del>	✓	✓									15
<del>Hoakua Bay</del>	✓										16
<del>Makaiwa Bay</del>											17
<del>Oopuola Point</del>	✓										18
<del>Keopuka Rock</del>											19
<del>Moiki Point</del>	✓										20
<del>Honomanu Bay</del>											21
<del>Naaailua Bay</del>											22
<del>Keanae Point</del>	✓	✓									23
<del>Pauwahu Point</del>											24
<del>Papiha Point</del>	✓										25
<del>Wairohue Bay</del>											26
<del>Opikoula Point</del>	✓	✓									27

~~Keopuka Rock~~  
~~Keopuka Rock~~

Names not lettered  
on survey have been  
crossed out.

Names approved  
5-14-73  
A. J. Whright  
Chief Geographer, NOS



GEOGRAPHIC NAMES

H-8677 ✓

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
	ON CHART NO. 4124	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP ATLAS	GRAND MCNALLY	U.S. LIGHT LIST			
Nākalele Point ✓	✓										1
<del>Poelua Bay</del>	✓										2
<del>Papanalahoa Point</del>	✓										3
<del>Mokolea Point</del>	✓										4
<del>Kahakuloa Bay</del>	✓										5
Kahakuloa Head ✓	✓										6
<del>Hakuhē Point</del>	✓										7
<del>Moikeehia Island</del>	✓										8
<del>Makawana Point</del>	✓										9
<del>Hulu Islets</del>	✓										10
Waihee Point ✓	✓										11
<del>Waiehu Point</del>	✓										12
<del>Nehe Point</del>	✓										13
Kahului Bay ✓	✓										14
<del>Kahului Harbor</del>	✓										15
<del>Hobron Point</del>	✓										16
<del>Kaa Point</del>	✓										17
<del>Papaula Point</del>	✓										18
<del>Kapukaulua Point</del>	✓										19
<del>Mahiko Bay</del>	✓										20
Pauwela Point ✓	✓										21
<del>Puniawa Point</del>	✓										22
<del>Kapuaiaaka Bay</del>	✓										23
											24
											25

Names approved  
5-14-73  
A. J. Wraight  
Chief Geographer, NOS

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8677

Records accompanying survey: Smooth sheets .1...; boat sheets ...1.; sounding vols. ...3...; wire drag vols. ....; Descriptive Reports ...1...; graphic recorder envelopes .4...; special reports, etc. ....

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

Number of positions on sheet ...761...; Number of positions checked ...14...; Number of positions revised ...1...; Number of soundings revised (refers to depth only) .....; Number of soundings erroneously spaced .....; Number of signals erroneously plotted or transferred .....; Topographic details Time .....; Junctions Time .....; Verification of soundings from graphic record Time ...4 hours...; Special adjustments Time .....

Verification by Allan H. Schugell Total time 30 hours Date 8/2/65

Reviewed by Kenneth W. Wellman Time 166 hrs Date 5-23-73

Insp D. R. Engle 27 8-28-73

ENC

TIDE NOTE FOR HYDROGRAPHIC SHEET

June 19, 1963

Nautical Chart Division: R. H. Carstens

Plane of reference approved in  
3 volumes of sounding records for

HYDROGRAPHIC SHEET 8677

Locality Maui Island, Hawaii

Chief of Party: A. L. Wardwell, (1962)

Plane of reference is mean lower low water, reading

2.0 ft. on tide staff at Kahului, Maui Island, Hawaii

9.3 ft. below B. M. 2 (1929)

0.7 ft. on tide staff at Hana, Maui Island, Hawaii

10.0 ft. below B. M. 1 (1962)

Height of mean high water above plane of reference is as follows:

West of Longitude 156° 15' 1.9 ft.

East of Longitude 156° 15' 2.0 ft.

Condition of records satisfactory except as noted below:

*J. M. Symons*  
Chief, Tides and Currents Branch

OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8677

FIELD NO. PF-40-1-62

Hawaii, Offshore North Coast Maui Island Opikoula Point to Nakalele Point

SURVEYED: September 7, thru October 6, 1962

SCALE: 1:40,000

PROJECT NO.: OPR-419

SOUNDINGS: DE-723 Echo Sounder

CONTROL: Sextant fixes on shore signals

Chief of Party .....	A. L. Wardwell
Surveyed by .....	A. L. Wardwell
.....	D. W. Whipp
.....	R. F. Lanier
.....	L. L. Posey
.....	C. W. Mathisson
.....	R. A. Trauschke
Protracted by .....	M. L. Geiger
.....	S. Z. Bezuk
Soundings plotted by .....	M. L. Geiger
Verified and inked by .....	A. K. Schugeld
Reviewed by .....	K. W. Wellman
.....	Date: May 23, 1973
Inspected by .....	D. R. Engle

1. Description of the Area

This offshore survey parallels the north coast of Maui Island from long. 156°04'00" to long 156°34'00" and extends from a minimum of ½ mile offshore to a maximum of 4 miles offshore. The bottom, generally consisting of fine sand and coral, slopes gradually away from shore reaching depths of 50 fathoms 3 to 4 miles offshore in Kahului Bay area, and more rapidly in the remaining area reaching depths of 100 fathoms about 2 to 3 miles offshore. The maximum depth found was 235 fathoms in the extreme southeastern part of the survey.

## 2. Control and Shoreline

The source of control is given in the Descriptive Report.

The shoreline, applied during review for orientation, originates with the following reviewed photogrammetric surveys:

T-11896	1960/62	T-11904	1960/62
T-11897	1960/62	T-11905	1960/62
T-11898	1960/61	T-11906	1960/63
T-11899	1960/61	T-11907	1960/62
T-11900	1960/61	T-11991	1960/63
T-11901	1960/61	T-11992	1960/63
T-11902	1960/61	T-11908	1960/63
T-11903	1960/61		

## 3. Hydrography

- A. Depths at crossings are in good agreement.
- B. The usual depth curves are adequately delineated.
- C. The development of the bottom configuration and investigation of least depths are adequate.

## 4. Condition of the Survey

The field plotting, records, and reports are adequate and conform to the requirements of the Hydrographic Manual.

## 5. Junctions

Adequate junctions were effected with H-8683 (1962) on the west, H-8579 (1961), H-8576 (1961), H-8682 (1962), H-8717 (1962), and H-8720 (1963) on the south, and H-8721 (1963) on the east. No contemporary surveys junction with the present survey on the north; however, depths are in general harmony with the charted depths in this area.

Junctions with H-8576, H-8682, and H-8717 had not been made by the verifier and were completed during the review of the present survey.

## 6. Comparison with Prior Surveys

- A. H-2460 (1899-1900) 1:40,000  
H-3519 (1913-14) 1:60,000

These surveys lack sufficient information in the overlapping areas for comparison of any value. The hydrography in the common area is superseded by the present survey.

- B. H-3514 (1913) 1:20,000  
H-3518 (1913) 1:60,000

These prior surveys cover most of the area of the present survey. A comparison between the present and prior surveys reveals variable differences both shoaler and deeper with some areas showing only minor differences. The fifty-fathom curve is concomitantly affected by the random depth differences between the present and prior surveys. It was not considered judicious to retain any of the shoaler prior survey soundings due to their questionable accuracy. As for example the 46 fathoms charted in lat.  $20^{\circ}58.1'$ , long.  $156^{\circ}15.6'$  from H-3518 which falls in 67 fathoms on the present survey. This is a tube sounding on a section of line containing other tube soundings which are all discredited by present depths. The depth differences, including those noted in the Descriptive Report, can be attributed to the less accurate methods employed on these prior surveys rather than changes in the bottom. The present survey is adequate to supersede the prior surveys within the common area.

- C. H-4917 (1929) 1:5,000

This large-scale prior survey reveals no significant differences with present depths and is superseded by the present survey.

7. Comparison with Chart 4124 (latest print date April 15, 1972)  
Chart 4116 (latest print date August 7, 1971)

A. Hydrography

Most of the charted hydrography originates with the previously discussed prior surveys which require no further consideration supplemented by the partial application of H.O. Chart 5248 and the boat sheet and unverified smooth sheet of the present survey. No important differences were noted between the charted depths and the present survey depths. No conflicts were noted between the present survey depths and the wire-drag clearances delimited on Chart 4124 from U.S. Navy surveys.

With the exception of the charted wire-drag clearances, the present survey is adequate to supersede the charted hydrography within the common area.

B. Aids to Navigation

The fixed aids to navigation on the present survey are in substantial agreement with the charted position and adequately mark the features intended. There were no floating aids to navigation within the survey area.

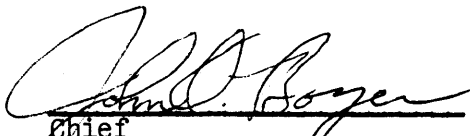
8. Compliance with Project Instructions


This survey adequately complies with the project instructions.

9. Additional Field Work

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

Examined and Approved:

  
Chief  
Marine Chart Division

  
Associate Director  
Office of Marine Surveys  
and Maps

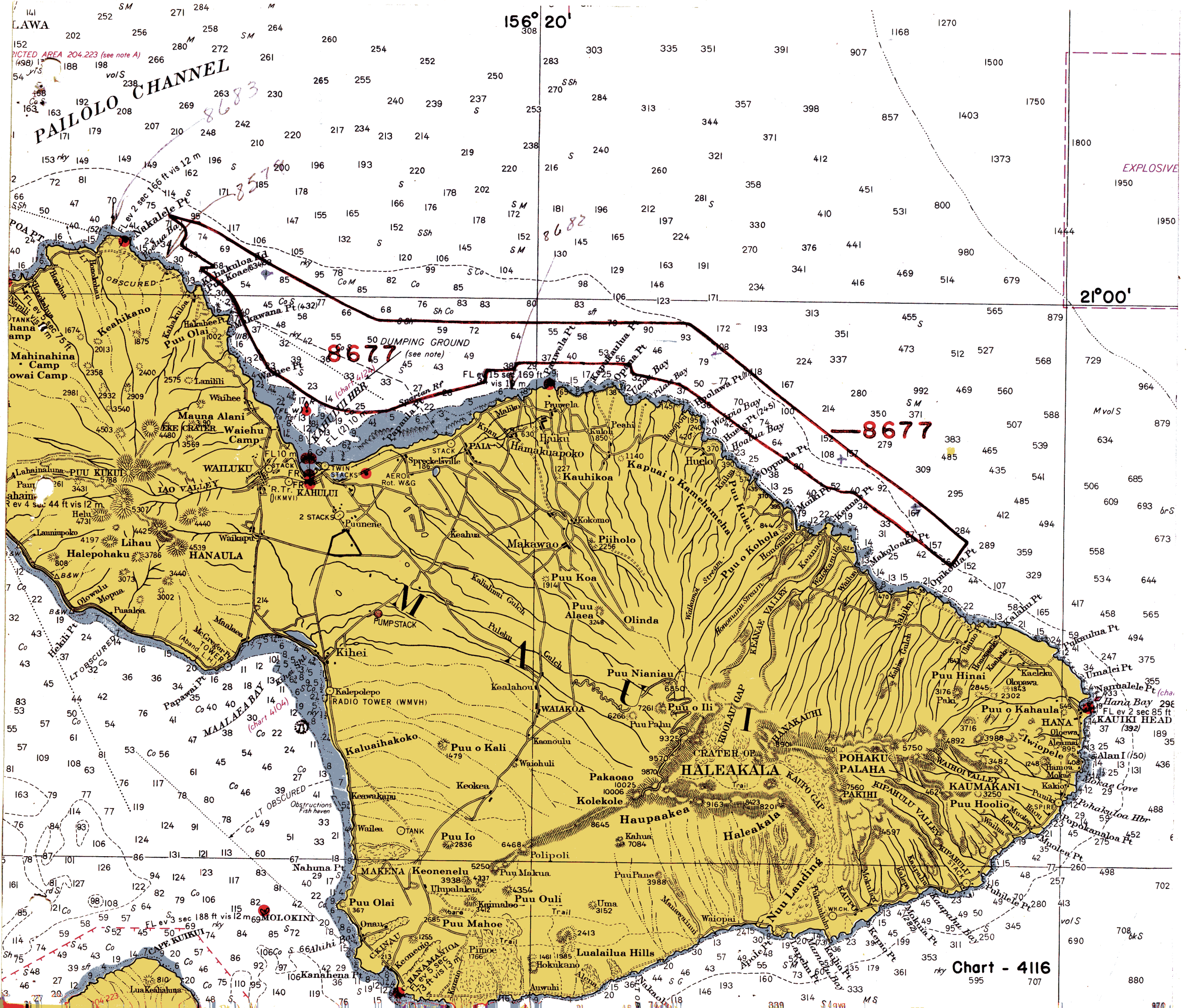
H-8677

Items for Future Presurvey Review

This area reflects no predominant pattern of change since the time of the prior surveys. Differences in depths noted are attributed to the different survey methods used rather than to a change in the bottom.

Position Lat.	Index Long.	Bottom Change Index	Use Index	Resurvey Cycle
210	1564	0	1	50 yrs.
210	1563	0	1	50 yrs.
205	1564	0	1	50 yrs.
205	1563	0	1	50 yrs.
205	1562	0	1	50 yrs.
205	1561	0	1	50 yrs.





**PAILOLO CHANNEL**

156° 20'

21° 00'

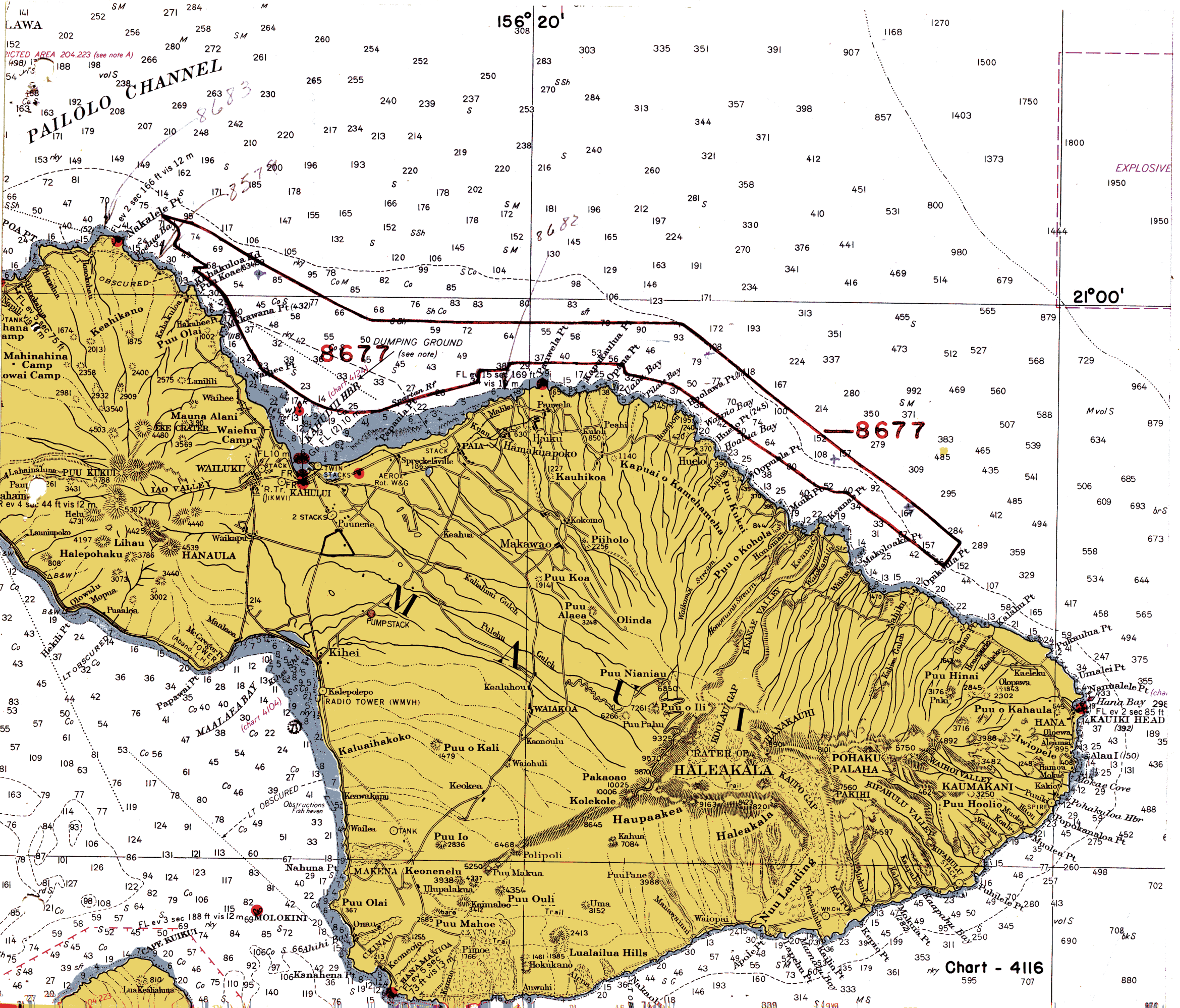
EXPLOSIVE

8677

8682

8677

Chart - 4116



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8677

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
4124	2/25/64	George Myers	Full <del>Part Before</del> After Verification Review Inspection Signed Via Drawing No. <del>18</del> 11 14 ✓ RCD
<del>4130</del>	<del>3-3-64</del>	<del>G.R.</del>	
4130	3-3-64	G.R. Johnson	<del>Full Part Before After</del> Verification Review Inspection Signed Via Drawing No. 14 cht 4124 No Corr.
4116	3-3-64	G.R. Johnson	<del>Full Part Before After</del> Verification Review Inspection Signed Via Drawing No. 11, cht 4130, in part. No Corr. 14, cht 4124, in part.
4102	3/31/64	G.R. Johnson	<del>Full Part Before After</del> Verification Review Inspection Signed Via Drawing No. 13, cht #4116
4180	9-10-64	Ken Brogny	<del>Full Part Before After</del> Verification Review Inspection Signed Via Drawing No. #13 cht 4116
4124 EXT	1-29-45	Ken Brogny	Full <del>Part Before</del> After Verification Review Inspection Signed Via Drawing No. <del>Part</del> FULL - JWC 11/3/26
412A	5-15-74	C.S. Forbes	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. Revised hydro throughout area Part
4130	5-15-74	C.S. Forbes	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. Revised hydro throughout area Part
4116	5-16-74	C.S. Forbes	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. Revised hydro throughout area Part
4180	5-17-74	C.S. Forbes	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. Revised hydro throughout area
4102	9/1/76	Nator	Part After Inspection Revision thru 4116
4116	12-13-77	Lager	Examined. Revised 27 fm to 24 fm no other completed - signed corrections. Consider final application
19004 (4102)	3/17/80	Stembel	Fully applied signed survey through 19340 (4116)