8579

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. SU-10-4-61 *Office No.* H-8579

LOCALITY

State Hawaii

General locality Maui Island

Locality Mokolea Pt. to Waihee Pt.

1961

CHIEF OF PARTY

W. R. Porter

LIBRARY & ARCHIVES

DATE 2-8-62

USCOMM-DC 37022-P66

8579

Form 537
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

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

REGISTER No. H-8579

Field No. SU-10-4-61

State Hawaii

General locality Maui Island

Locality ~~North Side~~ Mokolea Pt. to Waihee Pt.

Scale 1 : 10,000 Date of survey 18 May 1961 - 15 June 1961

Instructions dated 25 October 1960

Vessel Launch No. 4 of USC&GSS SURVEYOR

Chief of party CAPT Wilbur R. Porter

Surveyed by LCDR J. B. Watkins Jr., LTJG B. M. Keltner

Soundings taken by ~~echo sounder~~, graphic recorder, ~~hand lead~~

Fathograms scaled by Ship's personnel

Fathograms checked by Ship's personnel

Protracted by LTJG B. M. Keltner

Soundings penciled by ENS G. M. Cole, LTJG B. M. Keltner

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW

REMARKS:

U. S. GOVERNMENT PRINTING OFFICE 16—66520-1

WW

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SURVEY H-8579 (Field No. SU-10-4-61)

SCALE: 1:10,000 1961 CAPT W. R. PORTER
Comdg.
USC&GSS SURVEYOR

A. PROJECT:

This survey is part of Project OPR-419. The original instructions were dated 25 October 1960 and amended on 14 March 1961.

B. AREA SURVEYED:

This survey is located in the Hawaiian Islands along the North~~east~~ coast of Maui Island. The coast is generally rugged and rocky. The survey covers the area along the coast from 20 56' 30" to 21 01' 30" and varies in width from one-half mile to one and one-half miles. The survey began on 18 May 1961 and ended on 15 June 1961. Junction was made with survey H-8576 (1961). Also with H-8617 (1962) and H-8683 (1962)

C. SOUNDING VESSEL:

All soundings were taken from Launch No. 4 of the Ship SURVEYOR.

D. SOUNDING EQUIPMENT:

All soundings were taken by 808 type fathometer No. 55 with the exception of the rock investigation in Lat. 20 59' 42", Long. 156 32' 07", which was accomplished with a leadline. Echo sounder corrections were determined from bar checks and phase comparisons. No faults were apparent in the operation of the equipment.

E. SMOOTH SHEET:

The Polyconic projection was made in the Washington Office with a ruling machine.

F. CONTROL:

The survey was controlled entirely by visual fixes. The locations of signal sites were determined from incomplete photogrammetric manuscripts T-11897, T-11898, and T-11899. Additional signal sites were determined by radial plot, for

stations GAB, RIP, PIN, GAY, JIM, HOW, ZOO, POP, NOB, BAD, QUO, and END, TAN, NOT, RAG, VAL.

Sta tions TAG and TIT were located by sextant cuts. Sta tion CAM was located by sextant angle and taped distance. Several signals were elevated (max 100 ft.) and required inclined angle corrections during review.

G. SHORELINE:

Shoreline details were obtained from the photogrammetric manuscripts listed under Section F.*

The shoreline of Mokeehia Island that appears on the incomplete photogrammetric manuscript T-11898 was found to be incorrect. The correct shoreline of Mokeehia Island was obtained from Photo No. 60 W 2494.*

Due to the presence of large swells and breakers, the low water line is not defined by soundings. *The shoreline was applied from Final Reviewed Shoreline (Photogrammetric) manuscripts during verification and review.

H. CROSSLINES:

The percentage of crosslines run was 17.5%. All crossings were checked and no excessive discrepancies were found.

I. JUNCTIONS:

This survey makes a junction with H-8576 (1961). This junction was examined and no excessive discrepancies were found.

J. COMPARISON WITH PRIOR SURVEYS:

The islet listed in the presurvey review which falls about 100 meters east of Mokeehia Island in Latitude 20° 59.43', Longitude 156° 31.59' was not found during the survey. Sounding lines were run on either side of the reported location of the islet and no indication of an islet was found. *It is recommended that this feature be deleted from the chart.* Islet has been deleted from chart 4124.

The results of this survey were compared with the following prior surveys:

SURVEY	YEAR	SCALE
H-~~8513~~ 3513	1913	1:20,000
H-~~8514~~ 3514	Jan. 1913	1:20,000
H-~~8518~~ 3518	Jan.- Mar. 1913	1:60,000
H-4917	Mar.- Apr. 1929	1:5,000

The general agreement between new and old surveys was found to be very satisfactory.

K. COMPARISON WITH THE CHART:

This survey was compared with Chart 4124 (Revised 2/27/61). Agreement between this survey and Chart 4124 was found to be very good. No new dangers to naviga tion were revealed by this survey.

L. ADEQUACY OF SURVEY:

This survey is complete and adequate for charting.

N. STATISTICS:

Total number of positions:	1333
Total nautical miles of sounding lines	130.0
Total area in square nautical miles	5.0
Number of magnetic stations (HAK 1912-1950)	1
Number of bottom samples	18

Q. REFERENCES TO REPORTS:

1. Special Report - Corrections to Echo Soundings, mailed 12 July 1961
2. Coast Pilot Notes, mailed 2 October 1961
3. Special Report - Oceanography, mailed 25 October 1961

Respectfully submitted,

Billy M. Keltner

Billy M. Keltner,
LTJG, C&GS

✓ APPROVAL SHEET

This smooth sheet and all accompanying records have been inspected by me and are approved. I consider this survey adequate and complete, and no additional field work is recommended.

Wilbur R. Porter
CAPT., C&GS
USC&GSS SURVEYOR, Comdg.

✓ LIST OF SIGNALS ON H-8579 (SU-10-4-61)

Name used in Hydrographic Survey	Origin of Station
✓ADD	Waihee Mill Stack, 1912
✓BAD	T-11898
✓BAM	T-11898
✓BAT	T-11899
✓CAM	Vol. IV, pg. 71
✓EBB	T-11899
✓END	T-11897
✓GAB	T-11898
✓GAY	T-11898
✓HAK	HAK, 1912-1950
✓HAY	HAY, 1912-1950
✓HEM	T-11899
✓HOW	T-11898
✓JIM	T-11898
✓JOE	T-11899
✓KAH	Kahakuloa (HGS)(HTS 1929),1882-1950
✓NOB	T-11897
✓NOT	T-11898
✓OFF	T-11898
✓OLAI	OLAI 2, 1950
✓PEP	Waihee Church, Yellow Spire, 1912
✓PIN	T-11898
✓POP	T-11897
✓QUO	T-11897
✓RAG	T-11898
✓RED	~~RED, 1960~~ T-11898
✓RIP	T-11898
✓TAG	H-8576
✓TAN	T-11898
✓TIT	~~T-11898~~ Hydro, located by sextant cuts
✓VAL	T-11898
✓WET	T-11898
✓YAH	~~YAH, 1960~~ T-11898
✓ZOO	T-11898

APPENDIX "A"

OPR 419

✓ LAUNCH FATHOMETER FINAL FATHOMETER CORRECTIONS

FATH. NO.	MEAN INDEX CORR (FMS) (1) (From Sheet A)	INITIAL CORRECTION (FMS) (2)	FINAL BAR CHECK CORR (FMS) (3)	
67	0.0	-0.1	-0.1	
116	-0.2	-0.1	-0.3	
55	-0.2	-0.1	-0.3	Launch # 4
72-S	+0.1	-0.1	0.0	
26	-0.1	-0.1	-0.2	

APPENDIX A

PROJECT OPR-419 - HAWAIIAN ISLANDS

LAUNCH FATHOMETER INDEX CORRECTIONS

FATH. NO. (808)	(1) BAR CHECK DEPTH FMS	(2) FATHOMETER DEPTH FMS	(3) BAR CHECK CORR (1-2)	(4) VELOCITY CORR FMS	(5) INDEX CORR (3+4)	
67	2	2.051	-0.05	0	-0.05	
	4	3.929	+0.07	-0.1	-0.03	AVE = 0.0
	6	5.782	+0.22	-0.2	+0.02	
	8	7.683	+0.32	-0.3	+0.02	
116	2	2.118	-0.12	0	-0.12	
	4	4.100	-0.10	-0.1	-0.20	AVE = -0.2
	6	5.969	+0.03	-0.2	-0.17	
	8	7.873	+0.13	-0.3	-0.17	
55	2	2.16	-0.16	0	-0.16	
	4	4.08	-0.08	-0.1	-0.18	AVE = -0.2
	6	5.95	+0.05	-0.2	-0.15	
72-S	2	2.012	-0.01	0	-0.01	
	4	3.838	+0.16	-0.1	+0.06	AVE = +0.1
	6	5.662	+0.34	-0.2	+0.14	
	8	7.488	+0.51	-0.3	+0.21	
26	2	2.2	-0.2	0	-0.2	
	4	4.0	0	-0.1	-0.1	AVE = -0.1
	6	5.9	+0.1	-0.2	-0.1	
	8	7.8	+0.2	-0.3	-0.1	

NOTES:

Sheet A-COLUMN No. 2 shows the average of all Fathometer readings at each corresponding Bar Check Depth listed in Column No. 1. The final average correction is shown in Column No. 5.

SHEET A1 - INITIAL CORRECTION: The Initial for each Launch Fathometer was kept at 0.5 FM. During the entire project. The actual Transducer Depth on all Launches was measured as 0.4 FMs, therefore, a constant initial correction, Column No. 2 (-0.1 FM) was applied.

The final Bar Check Correction, Column No. 3, was entered in the record volumns as a constant for each fathometer. this correction was entered in the sounding volumn under the heading LEADLINE.

Layer Fm.	Depth Fm.	Mid Depth	Temp °C	Sal	Velocity at temp	Corrections Sal	Corrections Pres	Velocity Theo	Corr Fact	Total Corr
	2									0.00
5		4.5	25.3	35.2	1532.4	+0.2	+0.2	1532.8	+4771	+0.24
5	7	9.5	25.2	35.1	1532.2	+0.1	+0.3	1532.6	+4757	+0.48
5	12	14.5	25.2	35.0	1532.2	0.0	+0.5	1532.7	+4764	+0.71
5	17	19.5	25.2	35.0	1532.2	0.0	+0.6	1532.8	+4771	+0.95
5	22	24.5	25.1	35.0	1531.9	0.0	+0.8	1532.7	+4764	+1.19
5	27	29.5	25.0	35.0	1531.7	0.0	+1.0	1532.7	+4764	+1.43
5	32	34.5	24.7	35.1	1531.0	+0.1	+1.1	1532.2	+4730	+1.67
5	37	39.5	24.5	35.3	1530.5	+0.3	+1.3	1532.1	+4723	+1.90
5	42	44.5	24.0	35.6	1529.2	+0.6	+1.4	1531.2	+4662	+2.14
5	47	49.5	23.6	35.7	1528.2	+0.7	+1.6	1530.5	+4614	+2.37
5	52	54.5	23.0	35.7	1526.7	+0.7	+1.8	1529.2	+4525	+2.59
5	57	59.5	22.5	35.7	1525.4	+0.8	+1.9	1528.1	+4450	+2.81
5	62	64.5	21.9	35.7	1523.8	+0.8	+2.1	1526.7	+4354	+3.03
5	67	69.5	21.4	35.7	1522.5	+0.8	+2.2	1525.5	+4272	+3.25
5	72	74.5	21.1	35.6	1521.7	+0.7	+2.4	1524.8	+4225	+3.46
5	77	79.5	20.8	35.6	1520.9	+0.7	+2.6	1524.2	+4184	+3.67
5	82	84.5	20.4	35.6	1519.8	+0.7	+2.7	1523.2	+4115	+3.87
5	87	89.5	20.1	35.5	1519.0	+0.6	+2.9	1522.5	+4067	+4.08
5	92	94.5	19.9	35.5	1518.4	+0.6	+3.1	1522.1	+4040	+4.28
3	97	98.5	19.6	35.5	1517.6	+0.6	+3.3	1521.5	+3998	+4.40
20	100	110	19.2	35.4	1516.4	+0.4	+3.6	1520.4	+3923	+5.18
20	120	130	18.2	35.3	1513.6	+0.3	+4.3	1518.2	+3773	+5.94
20	140	150	17.0	35.2	1510.0	+0.2	+4.9	1515.1	+3561	+6.65
20	160	170	15.2	35.1	1504.4	+0.1	+5.6	1510.1	+3220	+7.29
20	180	190	11.8	34.9	1493.1	-0.1	+6.4	1499.4	+2488	+7.79
	200									

Form No. J-100-5

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

CORRECTIONS IN FEET FATHOMS

Page

10 18 14 18 22 26 ° Temperature °C

34 35 36 37 ° Salinity

VELOCITY CORRECTIONS

U.S. Coast and Geodetic Survey

Ship SURVEYOR

W.R. PORTER Comdg.

These corrections are to be used

between MAY 19 61 and JUNE 19 61

in the locality MAUI ISLAND, HAWAII

for hydrographic surveys Nos. ALL SHEETS

FOR PROJECT OPR-419

S

T

T

S

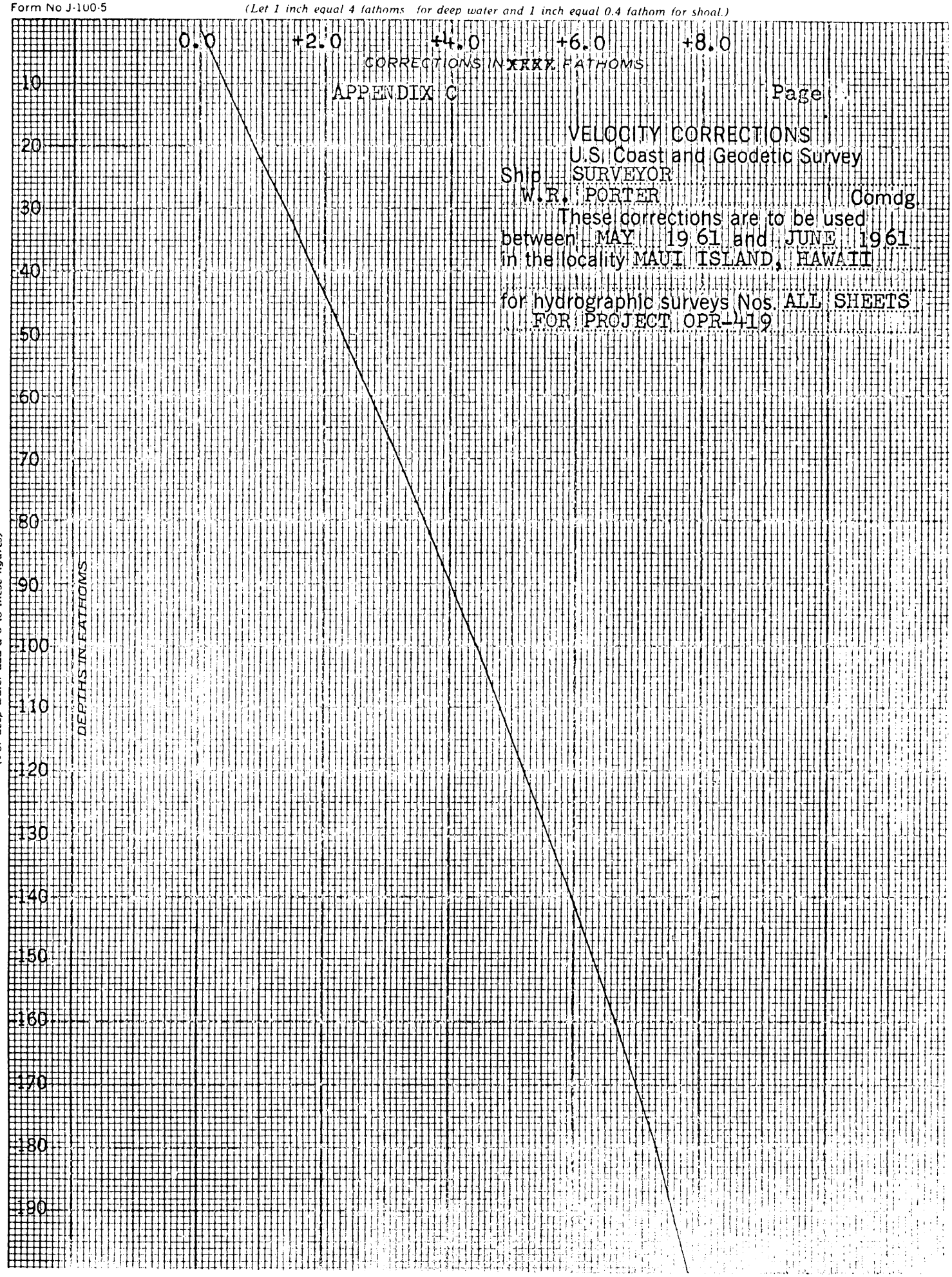
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

DEPTHS IN FATHOMS

(For deep water add 0 to these figures)

Form No J-100-5

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)



APPENDIX C Page

VELOCITY CORRECTIONS
U.S. Coast and Geodetic Survey
Ship SURVEYOR
W.R. PORTER Comdg.
These corrections are to be used
between MAY 1961 and JUNE 1961
in the locality MAUI ISLAND, HAWAII
for hydrographic surveys Nos. ALL SHEETS
FOR PROJECT OPR-419

(For deep water add a 0 to these figures)

APPENDIX "C"

PROJECT OPR 419

TABULATED VELOCITY CORRECTIONS

ALL LAUNCHES				SHIP			
Recorded Depth (FMS)			Vel. Corr. (FMS)	Recorded Depth (FMS)			Vel. Corr. (FMS)
0.0	-	2.0	0.0	0.0	-	18.0	0
2.1	-	4.0	+0.1	18.1	-	40.0	+1
4.1	-	7.0	+0.2	40+	-	60	+2
7.1	-	9.0	+0.3	60+	-	84	+3
9.1	-	11.0	+0.4	84+	-	109	+4
11.1	-	13.0	+0.5	109+	-	135	+5
13.1	-	16.0	+0.6	135+	-	163	+6
16.1	-	18.0	+0.7	163+	-	195	+7
18.1	-	21.0	+0.8				
21+	-	23	+0.9				
23+	-	24	+1.0				
24+	-	27	+1.1				
27+	-	29	+1.2				
29+	-	31	+1.3				
31+	-	33	+1.4				
33+	-	36	+1.5				
36+	-	38	+1.6				
38+	-	40	+1.7				
40+	-	42	+1.8				
42+	-	44	+1.9				
44+	-	47	+2.0				
47+	-	49	+2.1				
49+	-	51	+2.2				
51+	-	52	+2.3				
52+	-	55	+2.4				
55+	-	57	+2.5				

TIDE REDUCERS

SHEET FIELD NUMBERS: SU-10-1-61, SU-10-4-61

RANGE FACTOR: None

TIME FACTOR: None

GAGE LOCATION: Kahului, Maui

CORR.	FROM	TO
	30 APRIL	
0.0	-0700	0910
-0.1		1035
-0.2		1130
-0.3		1225
-0.4		1400
-0.5		1540
-0.4		1700+
	1 MAY	
0.0	0700	0950
-0.1		1105
-0.2		1205
-0.3		1300
-0.4		1420
-0.5		1635
-0.4		1800
	2 MAY	
-0.1	-0700	0735
0.0		1030
-0.1		1140
-0.2		1245
	3 MAY	
-0.1	-0700	0800
0.0		1120
-0.1		1240
	4 MAY	
-0.2	-0500	0645
-0.1		0845
0.0		1150
-0.1		1300+
	5 MAY	
-0.2	-0500	0745
-0.1		1030
0.0		1230
-0.1		1300+
	8 MAY	
-0.1	-0500	0800
-0.2		1300
	9 MAY	
-0.1	-0500	0810
-0.2		1300+
	10 MAY	
-0.1	-0500	0520
0.0		0650
-0.1		0835
-0.2		0900
	11 MAY	
0.0	0500	0700
-0.1		0900
-0.2		1025
-0.3		1230
-0.4		1300+
	12 MAY	
-0.1	-0500	0525
0.0		0840
-0.1		1000
-0.2		1050
-0.3		1200
-0.4		1300+
	13 MAY	
-0.1	-0500	0525
0.0		0925
-0.1		1025
-0.2		1120
-0.3		1225
-0.4		1300+

CORR.	FROM	TO
	15 MAY	
-0.1	0500	0630
0.0		1015
-0.1		1120
-0.2		1220
-0.3		1300+
	16 MAY	
-0.1	0500	0640
0.0		1025
-0.1		1135
-0.2		1245
-0.3		1300+
	17 MAY	
-0.1	0500	0630
0.0		0820
-0.1		1010
-0.2		1100+
	18 MAY	
-0.2	0600	0630
-0.1		1240
-0.2		1300+
	4 JUNE	
-0.2	-0600	1020
-0.1		1325
-0.2		1510
-0.3		1605
-0.4		1700+
	5 JUNE	
-0.2	-0600	1600
-0.3		1800+
	7 JUNE	
-0.1	-0500	0615
-0.2		0845
-0.3		1300+
	8 JUNE	
-0.1	-0600	0700
-0.2		0900+
	9 JUNE	
-0.1	-0500	0750
-0.2		0810
-0.3		1030
-0.4		1525
-0.3		1600+
	11 JUNE	
-0.1	-0600	0900
-0.2		1005
-0.3		1100+
	13 JUNE	
-0.2	0500	0540
-0.1		1025
-0.2		1125
-0.3		1215
-0.4		1320
-0.5		1500+
	14 JUNE	
-0.2	-0500	0600
-0.1		1035
-0.2		1140
-0.3		1245
-0.4		1350
-0.5		1400+
	15 JUNE	
-0.1	-0700	1120
-0.2		1220
-0.3		1310
-0.4		1400+

FORM 197
(3-16-55)

GEOGRAPHIC NAMES

Survey No. H-8579

Name on Survey	A On Chart No. 4124	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K BGN	
~~Hakuhee Point~~	x	✓								1
Hulu ~~Island~~ Islets	x	✓							x	2
Kahakuloa(settlement)	x	✓								3
Kahakuloa Bay	x	✓							x	4
Kahakuloa Head	x	✓							x	5
Makawana Point	x	✓								6
Maui Island	x	✓							x	7
Mokolea Point	x	✓								8
Waiehu Point	x	✓								9
Waihee Point	x	✓								10
Waihee Reef	x	✓								11
~~Makeehia~~ I	X									12
Kahului(tide sta.)	x									13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

George Ely Baer
Geographic Names Section
6 April 1962
15 Mar 1974
C. E. Hamilton

TIDE NOTE

The tide gage used for this survey was the standard automatic tide gage located at Kahului, Maui, Hawaii, latitude 20° 54', longitude 156° 28'. The height datum of the gage was 2.0 feet below MLLW. No corrections for differences in time or height were applied. The hourly heights were furnished by the Washington Office. The time meridian used was 150° W.

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. Apr. 1950

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys:~~ May 14, 1962

Division of Charts: R. H. Carstens

Plane of reference approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 8579

Locality Mokolea Pt. to Waihee Pt., Hawaii

Chief of Party: W. R. Porter (1961)
Plane of reference is mean lower low water reading
2.0 ft. on tide staff at Kahului Harbor, Maui Island, Hawaii
9.3 ft. below B. M. 2 (1929)

Height of mean high water above plane of reference is: 1.9 feet.

Condition of records satisfactory except as noted below:

J. M. Symons
Chief, Tides and Currents Branch

~~Chief, Division of Tides and Currents.~~

U. S. GOVERNMENT PRINTING OFFICE 877933

Form 946

Hydrographic Surveys (Chart Division)

✓ HYDROGRAPHIC SURVEY NO. ..8579..

Records accompanying survey: Smooth sheets ...1...;

boat sheets ...1...; sounding vols. ...4...; wire drag vols. .....;

Descriptive Reports ...1...; graphic recorder envelopes ...2...;

special reports, etc. 1 Cahier - 17 folders, Velocity Correction ~~Data filed with H-8578; Bluelines 11897,11898 and Cronaflex Pos. 11897, 11898 & 11899~~ INCOMPLETE MANUSCRIPTS

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

Number of positions on sheet		1333
Number of positions checked		562
Number of positions revised		50
Number of soundings revised (refers to depth only)		139
Number of soundings erroneously spaced		147
Number of signals erroneously plotted or transferred		2
Topographic details	Time	8hrs.
Junctions	Time	16hrs.
Verification of soundings from graphic record	Time	40hrs.
Special adjustments	Time	16hrs.

Verification by W.J. Stephens / D.R. Engle Total time 80hrs / 13 hrs Date 11-25-70 / 11-25-70

Reviewed by R.D. Sanschi Time 291 Date 1-15-73

Inspected by D.R. Engle 44 3-14-74

Cartous 29 3/29/74

OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8579 FIELD NO. SU-10-4-61

Hawaii, Maui Island, Mokolea Point to Waihee Point

SURVEYED: May 18, 1961 thru June 15, 1961

SCALE: 1:10,000 PROJECT NO.: OPR-419

SOUNDINGS: 808 Depth Recorder, leadline CONTROL: Sextant fixes on shore signals

Chief of Party	W. R. Porter
Surveyed by	J. B. Watkins, Jr.
	B. M. Keltner
Protracted by	B. M. Keltner
Soundings Plotted by	G. M. Cole
	B. M. Keltner
Verified and Inked by	W. J. Stephens
Reviewed by	R. D. Sanocki
	Date: Jan. 15, 1973
Inspected by	D. R. Engle

1. Description of the Area

This survey covers that portion of the north coast of Maui Island from Mokolea Point to Waihee Point and extends from the shoreline to about 1½ miles offshore. The bottom is steep and irregular in the inshore areas where there are numerous rocks, reefs, and pinnacles. It drops rapidly from the shoreline to depths of 10 fathoms in an average of 300 meters, except in the extreme southern part of the survey where the 10-fathom curve falls 3/4-mile offshore. Beyond the 10-fathom curve the bottom is smoother and slopes gradually to maximum depths of about 55 fathoms in about a mile.

The bottom in general is hard and is composed of sand, coral, and broken shells.

2. Control and Shoreline

The source of the control is given in the Descriptive Report. Signals RED and YAH, mistakenly identified as triangulation stations were revised to topographic stations. They had been established by photogrammetric methods and verified by theodolite cuts. Signals EBB and JOE had been misplotted during processing and had to be revised by the verifier in order to plot the sounding lines controlled by these signals. Hydrographic signal TIT, located by sextant cuts from the launch, is considered to be of questionable accuracy.

The shoreline originates with final reviewed shoreline (Photogrammetric) manuscripts T-11897 (1960-62), T-11898 (1960-61),and T-11899 (1960-61).

3. Hydrography

A. Depths at sounding lines crossings are in adequate agreement.

B. The usual depth curves were adequately delineated with the exception of inshore curves which could not be developed because of the foul nature of the inshore areas and the dangerous surf conditions.

Dashed and brown curves have been added to emphasize important soundings.

C. The development of the bottom configuration and determination of least depths are considered adequate except for the following:

(1) Inshore development mentioned in Paragraph B above.

(2) A holiday in the junctional area of this survey and H-8576 (1961) off Waihee Reef.

(3) An 18-fathom shoal indication found in surrounding depths of 22 to 24 fathoms of water in lat. 20°59.67', long. 156°31.79' was not developed.

D. The following rocks awash originate with the boat sheet of the present survey and are not recorded in the field records:

(1) Three rocks awash in the vicinity of lat. 21°00.3', long. 156°33.0',

(2) A rock awash in lat. 20°58.72', long. 156°31.73'.

4. Condition of the 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. Several control stations were erroneously applied to the smooth sheet, requiring adjustment and replotting of numerous fixes during verification and review (see Par. 2).

B. A large area was left undeveloped on both this survey and H-8576 in their junctional area.

C. A large speed error, although obvious on the fathogram at positions 11b thru 13b was not corrected prior to office verification.

D. Many intermediate soundings, although shoaler than the regular interval soundings, were not scanned prior to office verification and review.

E. Several signals were elevated to such a degree that corrections as large as 6^{o} were necessary in order to accurately plot the inclined angle. The positions of lines significant to the bottom configuration were revised during review.

5. Junctions

Adequate junctions were effected with H-8576 (1961) on the southeast, H-8677 (1962) on the northeast, and H-8683 (1962) on the northwest.

6. Comparison with Prior Surveys

A. H-2460 (1899-1900) 1:40,000
H-3513 (1913) 1:20,000
H-3514 (1913) 1:20,000
H-3518 (1913) 1:60,000

These prior surveys cover the area of the present survey. Comparison of the prior and present surveys reveals general agreement except in the extreme northern part of the survey area where differences of as much as five fathoms are noted. This disagreement is attributed to the different methods of surveying, prior tube soundings versus present fathometer soundings, rather than a change in the bottom.

Several soundings were carried forward from H-3514 to supplement the inshore hydrography of the present survey.

The three rocks awash charted in the vicinity of lat. 20°58.75', long. 156°31.58', originate with H-3514 (1913) where they are described as being "covered by 3 to 4 feet of water and breaking occasionally in a moderate sea." These rocks were not investigated by the hydrographer although indications of shoaling in the area were found by sounding lines in the proximity. The three rocks awash were brought forward to the present survey.

The pinnacle rock charted in lat. 20°59.7', long. 156°32.12' as "Awash at Low Water" originates with H-3514 where it is described as being covered by a foot or two of water and seldom breaking. On the present survey, the least depth of this rock was determined by hand lead to be 0.9 fathom. It is recommended that this rock be charted in accordance with the present survey information.

Two islets in lat. 20°57.65', long. 156°31.17' originating with H-3514 were not located on the present survey. Both the hydrography and the photography were accomplished at high tide and the islets were not evident. These two islets have been carried forward to the present survey as rocks awash.

The submerged rock charted in lat. 20°57.44', long. 156°30.98' from H-3514 is in error. H-3514 shows this to be a rock awash about 40 meters west of the charted position. This rock awash was not investigated on the present survey. It has been carried forward to the present survey and should be charted accordingly.

With the addition of the above items, the present larger scale and more comprehensive survey is adequate to supersede the prior surveys in the common area.

7. Comparison with Chart 4124 (5th Ed. April 15, 1972)

A. Hydrography

The charted hydrography originates with the previously discussed prior surveys which require no further consideration, supplemented by partial application of the boat sheet and smooth sheet of the present survey and contemporary junctional surveys prior to verification.

Attention is directed to the following:

(1) A 4 3/4 fathoms was charted in lat. 20°59.44', long. 156°32.05' from an erroneous sounding on the pencilled smooth sheet of the present survey. The sounding was revised during verification and should be deleted from the chart.

(2) Two islets charted in lat. 21°00.56', long. 156°33.44' originate with USGS Quadrangel KAHAKULOA, Hawaii (1955). Neither the present nor the prior surveys show islets in this area. The islets are considered to be discredited.

(3) The 6 fathoms charted in lat. 20°59.38', long. 156°31.58' from the pencilled smooth sheet of the present survey is in error. The sounding was revised to 16 during verification and should be deleted from the chart.

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

B. Aids to Navigation

There are no charted aids to navigation within the area of this survey.

8. Compliance with Instructions

The present survey adequately complies with the Project Instructions.

9. Additional Field Work

This survey is considered to be an adequate basic survey and no additional field work is recommended.

Examined and Approved:

Chief
Marine Chart Division

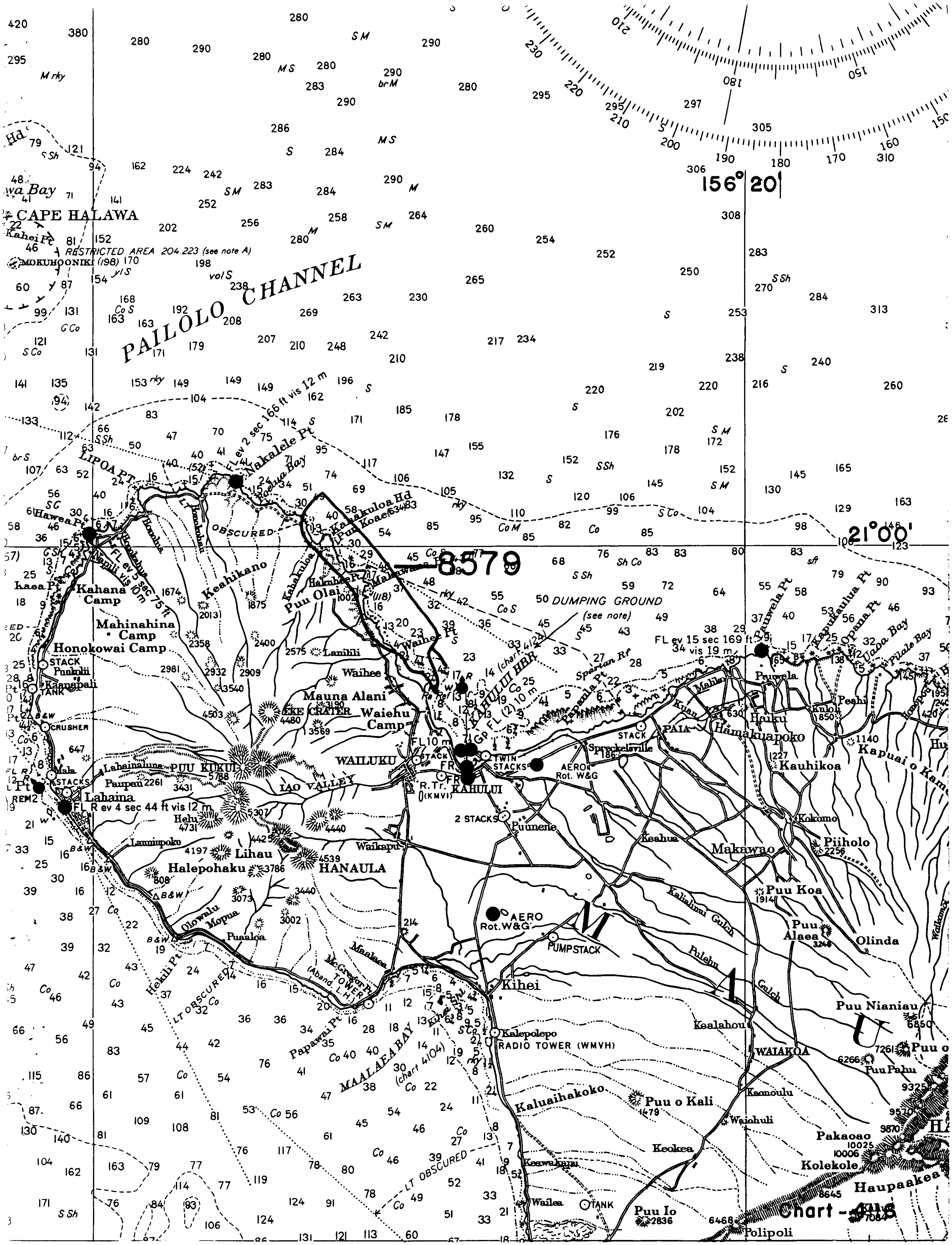
Associate Director
Office of Marine Surveys
and Maps

H-8579 (1961)

Information for Future Pre-Survey Reviews

The bottom in the survey area is stable. A sounding of 18 fathoms found in lat. 20°59.67', long. 156°31.79' falls in surrounding depths of 22 to 24 fathoms. This area should be investigated on future surveys to determine the extent and least depth of this feature.

Position Index		Bottom Change	Use	Resurvey
Lat.	Long.	Index	Index	Cycle
205	1563	1	1	50 Years
205	1564	1	1	50 Years
210	1564	1	1	50 Years


PAILOLO CHANNEL
CAPE HALAWA
Kahei Pt
RESTRICTED AREA 204.223 (see note A)
MOKUHOONIKI (198)
156° 20'
21°00'
LIPOA PT
Nakalele Pt
FL ev 2 sec 166 ft vis 12 m
OBSCURED
Kahakuloa Hd
Puu Koae (634)
Hawea Pt
Kahana Camp
Mahinahina Camp
Honokowai Camp
Keahikano
Puu Olai
Waihee Pt
Waihee
Lanilili
Mauna Alani
EKE CRATER
Waiehu Camp
8579
DUMPING GROUND (see note)
KAHULUI HBR
Spartan Rf
Papaula Pt
Pauwela Pt
FL ev 15 sec 169 ft 34 vis 19 m
Pauwela
Haiku
Hamakuapoko
PAIA
Spreckelsville
Kuau
Kapuai o Kama
Kauhikoa
STACK
Puukolii
Kaanapali
TANK
CRUSHER
PUU KUKUI
Lahainaluna
Paupau 2261
IAO VALLEY
WAILUKU
KAHULUI
TWIN STACKS
AERO Rot. W&G
R. Tr. (KMVI)
2 STACKS
Puunene
Lahaina
FL R ev 4 sec 44 ft vis 12 m
Launiupoko
Lihau
Halepohaku
HANAULA
Waikapu
Keahua
Makawao
Kokomo
Piiholo
Puu Koa
Puu Alaea
Olinda
Kalialinui Gulch
Pulehu Gulch
AERO Rot. W&G
PUMPSTACK
M
A
U
Olowalu
Mopua
Puaaloa
Hekili Pt
LT OBSCURED
McGregor Pt
Maalaea
Kihei
Kealahou
WAIAKOA
Puu Nianiau
Puu Pahu
Kalepolepo
RADIO TOWER (WMVH)
Papawai Pt
MAALAEA BAY
(chart 4104)
Kaluaihakoko
Puu o Kali
Kaonoulu
Waiohuli
Keokea
Pakaoao
Kolekole
Haupaakea
Keawakapu
Wailea
TANK
Puu Io
Polipoli
Chart-4116

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8579

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
2-19-62	4124	Earl M. Brogonje	Before ~~After~~ Verification and Review deleted Island
			E of Mokeehia I & Buried 7½ sdgs to 6¼ No other sig Corr.
2-20-62	4130	Earl M. Brogonje by MR	Before ~~After~~ Verification and Review Examined - No Corr.
3-31-62	4102	J. J. Streifler	Before ~~After~~ Verification and Review
			Examined only
5-3-62	4179	J. J. Streifler	Before ~~After~~ Verification and Review
			Examined only
5/18/62	4124	J. P. Weir	Before ~~After~~ Verification and Review Partially applied
5/19/62	4116	J. P. Weir	Before ~~After~~ Verification and Review Exam. no correction
9-10-64	4180	EM Brogonje	Before ~~After~~ Verification and Review Exam
			No Corr thru Chart 4116 Dwg # 13
1-9-65	4124	EM Brogonje	Before ~~After~~ Verification and Review completely
			applied in red. over PART App'd
1/6/74	4124	M. D. Kain	~~Before~~ After Verification and Review + Signature
			critical corrections only
3/28/75	4130	M. D. Kanis	~~Before~~ After Verification and Review + Signature
			EXAMINED for inshore corrections only.
6-2-75	4116	H. J. Borawski	Examined Signed Survey Thru Chart.
			4130! Critical Corr. Only!
4/1/76	4180	M. D. Kain	Examined Descriptive Report - Applied critical
			corrections thru Chart 4116
9/27/79	19342	Oren F. Stumbel	Fully applied signed survey to Dwg #19
	(4124)		
6/13/83	19347 (4130)	[illegible]	Fully appl'd after Inspect. + signed). Dwg No. 20
			Full appl'd hydro through chart 19342 Dwg No 19 in common area.

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

NOAA FORM 75-96
(10-83)

U.S. DEPARTMENT OF COMMEI
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRA

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8579

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
19340	4-21-89	ED MARTIN	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 24, THRU CHART 19347
19004	10-31-90	R. A. Lillis	Full ~~Full Part Before~~ After Marine Center Approval Signed Via ~~Adequately~~
			Drawing No. 36 ~~category I~~
19013	4-26-91	K.R. Foster	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 18 Thru Cht 19004.
19010	5-1-91	K.R. Foster	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 17 thru cht 19013.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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