8889

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-10-5-66

Office No. H-8889

LOCALITY

State ..... HAWAII

General Locality ..... LANAI

Locality ..... NORTHEAST COAST

1966

CHIEF OF PARTY
G. L. SHORT

LIBRARY & ARCHIVES

3-25-68

DATE .....

☆ U.S. GOV. PRINTING OFFICE: 1975—668-353

8889

FORM C&GS-537 (5-66)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO. H-8889

FIELD NO. PF-10-5-66

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

State: Hawaii

General locality: Lanai Island

Locality: Northeast Coast

Scale: 1; 10,000 Date of survey: 3/15/66 to 7/27/66

Instructions dated: 10/25/60 12/6/65 5/13/66 5/26/66 Project No.: OPR 419

Vessel: Ship Pathfinder and launches 1, 2 & 3 Ship Surveyor

Chief of party: Cdr. G.L. Short Capt. V.R. Sobieralski

Surveyed by: ~~Various ship's personnel~~ E.M. Gelb, M.G. Kenny, R.H. Kerley, L.T. Lynch, L.L. Posey, G.L. Short, E.T. Smith, R.M. Sundean, N.E. Taylor

Soundings taken by echo sounder, ~~hand lead pole~~

Graphic record scaled by: Various personnel

Graphic record checked by: Various personnel

Protracted by: Automated plot by: Gerber Digital Plotter P.M.C. Seattle, Wash.

Soundings penciled by:

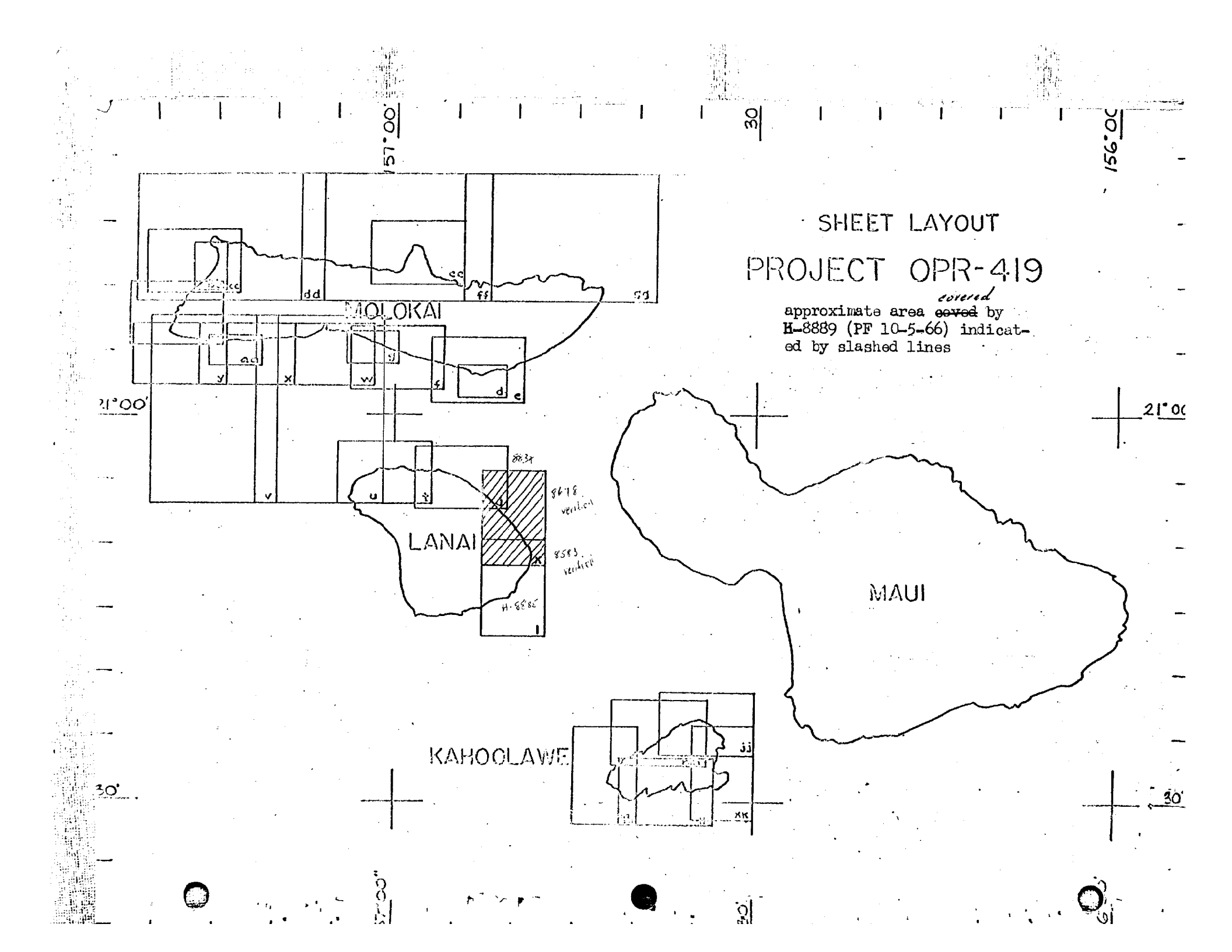
Soundings in fathoms and tenths ~~feet~~ at ~~MLW~~ MLLW

REMARKS: This sheet was transferred to the Ship Surveyor on 31 May 1966 for completion of hydrography.

Agreement to details 9/26/79

F.T.G.

USCOMM-DC 37009-P66


157°00'
30
156°00'
SHEET LAYOUT
PROJECT OPR-419
covered
approximate area ~~covered~~ by H-8889 (PF 10-5-66) indicated by slashed lines
MOLOKAI
LANAI
MAUI
KAHOOLAWE
21°00'
30'
8834
8478 vertical
8583 vertical
H-8886

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY
H-8889 (FIELD NUMBER 10-5-66)

USC&GSS PATHFINDER
G. L. SHORT, COMMANDING

1966

SCALE 1:10,000

A. PROJECT

The hydrography on this sheet was accomplished as part of project OPR-419-HAWAIIAN ISLANDS. Original instructions for the project were issued to the Ship SURVEYOR on October 25, 1960. Hydrography for this sheet was begun during Spring 1966 by the Ship PATHFINDER under the latest supplemental project instructions issued December 6, 1965. The sheet was not completed by the PATHFINDER but is to be transferred to the SURVEYOR for completion at a later date. Ship Pathfinder and Launches 1,2,3 — March 15-Apr. 28, 1966
Ship Surveyor — July 7-27, 1966

B. AREA SURVEYED

This survey covers the northeast coast of Lanai and extends along the shoreline from latitude 20° 49' 00" to 20° 55' 30" N. The sheet is bounded on the east and west by the meridians 156° 47' 30" W and 156° 52' 00"W respectively. This sheet is junctioned with the following contemporary surveys:

Field No. (Reg. No.)	Junctions	Scale	Year
PF 10-2-66	H-8886 on South	1:10,000	1966
~~PF 10-8-66~~ SU-40-2-61	H-8583 on Southeast	~~1:10,000~~ 1:40,000	~~1966~~ 1961-62
PF 20-1-65 (H-8834)	on North	1:20,000	1965
PF 20-1-62 (H-3673)	on East	1:20,000	1962
AR 10-4-68 (H-8998)	on Northwest	1:10,000	1968

C. SOUNDING VESSELS

Vessel	Color	Day Letter
Pathfinder	BLUE	UPPER CASE
ML#1	blue	lower case
ML#2	purple	lower case

D. SOUNDING EQUIPMENT

The following models DE-723 Raytheon Fathometers were used on this survey:

Serial No.	Vessel	Days	Used to depths (fm)
551	PATHFINDER	A-E	54
145	ML#1	A-C	25
935	ML#2	a,b	30
490	ML#2	c,d	24
552	ML#3	a	18

The initial on launch echo sounders was set at 0.0. Deviations from this setting were entered as initial corrections in the sounding volumes.

Daily bar checks were taken on the launchs. The bar checks were taken from the one to four fathom range.

Five oceanographic stations were observed to obtain salinity, density, and temperature data at various depths to a maximum of 600 meters.

E. SMOOTH SHEET

To be plotted. See the recommendation in section I of this report.

F. CONTROL

Control for this survey consisted of photo identified locations of signals; many were office identified pass points.

The following advanced manuscripts were used in photo hydro control on this sheet.

Manuscript No.	Date Photos	Field Inspection	Compilation Date	
T-11968	1960	1962	Oct. 11, 1963	Reviewed 1964
T-11969	1960	1962	Oct. 16, 1963	Reviewed 1964
T-11970	1960	1962	Oct. 18, 1963	Reviewed 1964

The following signals were rebuilt or modified between the dates of March 22-26: DOT, FLY, GAL, HER, ICE, JAR, MOP, OLD, PIT, RAG, SIC. There is no doubt whatsoever in the mind of the party that rebuilt the above signals that they were rebuilt on the exact location of the original signals.

The following is a statement by the hydrographer of sheet PF-10-5-66: Ship hydro lines in the N. E. corner of the sheet have poor time and course continuity. This is due to weak control. The signals were checked by cuts, which are shown on pages 8 and 9, volume 1, and pages 50 and 51, volume 7. All except DOT and FLY checked out perfectly. The intersection of the cuts to these signals were small triangles close to the photogrametric point. It was decided to trust the photogrametry rather than the poor cut intersections.

G. SHORELINE

Shoreline was transferred to the Boat Sheet by means of blue line copies of the advanced manuscripts listed in section F above.

A large coral reef of up to one quarter mile in breadth rims the entire shoreline of Lanai covered by sheet H-8889 PF-10-5-66. Hydrography was carried only to the offshore limits of the coral reef and foul areas. The outer perimeter of the reef was thus defined and verified; The actual shoreline was not.

H. CROSSLINES

Crosslines are in good agreement with other hydrography. There are to date 7.75 nautical miles of crosslines on sheet PF-10-5-66. Crosslines constitute 3.65% of the total miles of sounding lines run.

I. JUNCTIONS

Good agreement exists with the junction sheet to the north (H-8834) except at the north-east corner of PF-10-5 H-8889 -66. Perhaps this is a result of poor visual

control due to the great distance from shore. 4 miles

No comment can be made about the junction to the east (H-8678) until the hydrography of sheet PF-10-5-66 is completed.

RECOMMENDATION - The Boat Sheet extends from longitude 156° 47' 30"W to 156° 52' 30"W. The limits of the Boat Sheet do not follow an adequate overlap area for a junction with H-8678. It is therefore recommended that the Smooth Sheet be shifted to the east i.e., the western most meridian be made 156° 52' 00" (the eastern most meridian being 156° 47' 00").

J. COMPARISON WITH PRIOR SURVEYS

In general, soundings from the survey H-3582 agree with the current survey. Prior soundings from H-3653 in the northern portion of sheet PF-10-5-66 do not agree. The H-3653 soundings are selected shoals which fall between the hydro lines of sheet PF-10-5-66. It is recommended that additional hydrography be run to investigate and develop these shoal areas.

K. COMPARISON WITH CHART

Reasonable agreement exists between PF-10-5-66 and the C&GS chart 4130 (scale, 1:80,000).

L. ADEQUACY OF SURVEY

Sheet PF-10-5-66 is incomplete; further ship hydrography is needed.

M. AIDS TO NAVIGATION

Original work March 15 - Apr 28, 66 by the Pathfinder; Addition work July 7-27, 66 by the surveyor

There are no floating aids to navigation within the limits of this sheet; neither are there any unofficial aids to navigation in existance in this area.

N. STATISTICS

Vessel	Nautical Miles Sounding line	No. of Positions	Square Naut. Mi.
PATHFINDER	89.0	517	
ML#1	41.3	280	
ML#2	81.9	567	
Total	212.2	1364	14

Twenty-seven bottom samples were taken; five detached positions were other than bottom samples.

O. MISCELLANEOUS

None

P. RECOMMENDATIONS

Refer to the sections I and J of this report.

Steve M. Erickson
ENS., USESSA

LIST OF SIGNALS USED

Signal Name	Origin of Signal
ANT	T-11970
BOB	"
CON	"
DOT	"
END	"
FLY	T-11969
GAL	"
HER	"
ICE	"
JAR	"
KEN	"
LAD	"
MOP	"
NOR	"
OLD	"
PIT	"
RAG	T-11968
SIC	"
YEA	T-11970
ZIG	Vol 2 pg. 4

SIGNAL TABLE

PF-10-5-66 H8889

Latitude and Longitude of signals scaled from applicable T-sheet manuscripts.

NAME	CODE	LATITUDE			LONGITUDE			Origin
		°	'	"	°	'	"	
YEA	001	20	48	32.72N	156	48	33.20W	T-11970
ZIG	002	20	49	03.61	156	48	31.23	Vol 2 pg. 4
ANT	003	20	49	27.38	156	48	32.37	T-11970
BOB	004	20	49	44.16	156	48	41.18	"
CON	005	20	50	06.70	156	48	58.47	"
DOT	006	20	50	22.63	156	49	08.58 ~~12.31~~	"
END	007	20	50	47.15	156	49	21.58	"
FLY	008	20	51	00.72	156	49	29.02	T-11969
GAL	009	20	51	16.52	156	49	46.04	"
HER	010	20	51	32.00	156	49	54.58	"
ICE	011	20	51	50.34	156	50	15.05	"
JAR	012	20	52	05.79	156	50	29.71	"
KEN	013	20	52	20.19	156	50	47.49	"
LAD	014	20	52	32.26	156	51	02.91	"
MOP	015	20	52	43,87	156	51	14.25	"
NOR	016	20	52	50.18	156	51	26.67	"
OLD	017	20	53	08.13	156	51	39.31	"

SIGNAL TABLE CONTINUED

PF 10-5-66 H8889

NAME	CODE	LATITUDE ° ' "	LONGITUDE ° ' "	Origin
PIT	018	20 53 21.07N	156 51 56.37W	T-11969
RAG	019	20 53 37.74	156 52 12.70	T-11968
SIC	020	20 53 49.12	156 52 27.71	"
	233	20 55 00.00	156 52 00.00	Grid pt.
	234	20 55 00.00	156 52 30.00	"
	235	20 56 00.00	156 52 30.00	"

DATE	DRAFT(ft) mdshps	DRAFT(fms) mdshps	DRAFT CORRECTIONS INITIAL	FATH. INSTR. CORR.	DRAFT CORR. +
Feb. 27	15.0	2.5	2.0	-0.1	0.4
Mar. 12	14.7	2.4	2.0	-0.1	0.3
13	14.5	2.4	2.0	-0.1	0.3
15	14.3	2.4	2.0	-0.1	0.3
16	14.3	2.4	2.0	-0.1	0.3
17	13.9	2.3	2.0	-0.1	0.2
23	15.0	2.5	2.0	-0.1	0.4
24	14.9	2.5	2.0	-0.1	0.4
26	14.8	2.5	2.0	-0.1	0.4
27	14.7	2.4	2.0	-0.1	0.3
28	14.4	2.4	2.0	-0.1	0.3
29	14.2	2.4	2.0	-0.1	0.3
30	14.2	2.4	2.0	-0.1	0.3
Apr. 6	15.1	2.5	2.0	-0.1	0.4
7	15.0	2.5	2.0	-0.1	0.4
8	15.0	2.5	2.0	-0.1	0.4
9	14.9	2.5	2.0	-0.1	0.4
11	14.5	2.4	2.0	-0.1	0.3
12	14.4	2.4	2.0	-0.1	0.3
13	14.3	2.4	2.0	-0.1	0.3
14	14.2	2.4	2.0	-0.1	0.3
21	14.7	2.4	2.0	-0.1	0.3
22	14.6	2.4	2.0	-0.1	0.3
23	14.5	2.4	2.0	-0.1	0.3
24	14.4	2.4	2.0	-0.1	0.3
25	14.2	2.4	2.0	-0.1	0.3
26.	14.0	2.3	2.0	-0.1	0.2
27	13.8	2.3	2.0	-0.1	0.2
28	13.7	2.3	2.0	-0.1	0.2

U.S.C. & G.S.S. PATHFINDER
G.L. SHORT, COMDG.
1966

Velocity corrections to be applied to all 1966 hydrography on sheets

~~PF 5-1-65~~, PF 10-5-65, PF 10-1-66, PF 10-2-66, PF 10-3-66, PF 10-4-66, PF 10-5-66, PF 10-6-66, PF 10-7-66, PF 10-8-66, PF 20-1-66, PF 20-2-66.

TO DEPTH fath	CORRECTION fath	TO DEPTH fath	CORRECTION fath
0.0 - 3.0	0.00	72.6 - 77.2	3.2
3.1 - 5.3	0.1	77.3 - 82.0	3.4
5.4 - 7.8	0.2	82.1 - 86.7	3.6
7.9 - 10.0	0.3	86.8 - 91.3	3.8
10.1 - 12.3	0.4	91.4 - 95.8	4.0
12.4 - 14.5	0.5	95.9 - 100.5	4.2
14.6 - 16.8	0.6	100.6 - 112	4.5
16.9 - 19.5	0.7	113 - 125	5.0
19.6 - 21.5	0.8	126 - 140	5.5
21.6 - 23.8	0.9	141 - 158	6.0
23.9 - 26.0	1.0	159 - 178	6.5
26.1 - 28.3	1.1	179 - 200	7.0
28.4 - 31.6	1.2	201 - 232	7.5
31.7 - 36.2	1.4	233 - 273	8.0
36.3 - 41.0	1.6	274 - 320	8.5
41.1 - 45.3	1.8	321 - 368	9.0
45.4 - 50.0	2.0	369 - 418	9.5
50.1 - 54.5	2.2	419 - 460	10.0
54.6 - 59.0	2.4	461 - 495	10.5
59.1 - 63.5	2.6	496 - 527	11.0
63.6 - 68.0	2.8	528 - 558	11.5
68.1 - 72.5	3.0	559 - 584	12.0

LAUNCH
ECHO CORRECTIONS

PF 10-5-66

Vessel	Date	Day	corrector 0-31fms	correctors 31- fms
ML #1	3/17/66	a	0.4fm	0.4fm
..	4/13/66	b	0.3	0.2
..	4/22/66	c	0.4	0.4
ML #2	3/16/66	a	0.4	0.4
..	3/17/66	b	0.3	0.2
..	4/12/66	c	0.3	0.2
..	4/13/66	d	0.5	0.4

APPROVAL SHEET

H-8889 PF 10-5-66

The field work on this survey was inspected where conditions permitted.

The records and boat sheet have been examined and approved.

The sheet was not complete when transferred to the Ship SURVEYOR for additional field work.

G L Short

G. L. Short
Comdg., Ship PATHFINDER

ADDENDUM TO DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SURVEY H-8889

(FIELD NUMBER 10-5-66)

USC&GSS SURVEYOR

V. R. SOBIERALSKI, COMMANDING

A. PROJECT

In addition to the instructions mentioned, hydrography was completed by the Ship SURVEYOR under supplemental project instructions issued 13 May, 1966 and 26 May, 1966.

B. AREA SURVEYED

No additional comments necessary.

C. SOUNDING VESSELS

Vessel	Color	Day Letter
SURVEYOR	PURPLE	UPPER CASE

D. SOUNDING EQUIPMENT

The following DE 723 Raytheon Fathometers were used on the Ship SURVEYOR portion of this survey:

Serial No.	Vessel	Days	Used to depths (fm)
138	SURVEYOR	A-F	All readings (all less than 250)
144	"	D	"

The initial was set at 2.5 fathoms. Velocity corrections were the same as those used by the PATHFINDER; a copy of which is enclosed. Velocity corrections were not entered in the sounding volumes, they will be applied during electronic data processing.

E. SMOOTH SHEET

The smooth sheet is to be plotted by the Electronic Data Processing Center (E.D.P.C.), P.M.C.

F. CONTROL

Same as used by PATHFINDER.

G. SHORELINE

Not applicable to SURVEYOR's portion of this sheet.

H. CROSSLINES

There are 33.6 miles of crosslines or better than 11% of the total miles of Ship hydrography.

I. JUNCTIONS

The junctions with the PATHFINDER work and the junctions with adjacent sheets are adequate.

J. COMPARISON WITH PRIOR SURVEYS

After the development in the northern portion of the sheet had been accomplished as per suggestion in the PATHFINDER'S DESCRIPTIVE REPORT, the comparison was adequate.

K. COMPARISON WITH CHART

Adequate agreement exists between this sheet and the C&GS chart 4130 (scale 1:80,000).

L. ADEQUACY OF SURVEY

Evaluation will have to await smooth plotting by E.D.P.C., PMC.

M. AIDS TO NAVIGATION

Not applicable.

N. STATISTICS

Vessel	Nautical Miles of Sounding Line	Number of Positions	Square Naut. Miles
SURVEYOR	196.7	745	5.5

Seventeen (17) additional bottom samples.

O. MISCELLANEOUS

None.

P. RECOMMENDATIONS

None.

James L. Ogg

James L. Ogg
LTJG, USESSA

Approved and forwarded

Norman E. Taylor

Norman E. Taylor, CAPT, USESSA
Commanding Officer
USC&GSS SURVEYOR

TIDE NOTE

The Kamalo Harbor, Molokai gage controlled hydrography by the SURVEYOR. The staff and gage were relocated on the same pier used by the PATHFINDER. MLLW above staff zero was 5.2 feet.

TIDE NOTE

H-8889 (1966)

Hydrography on PF 10-5-66 was controlled by a portable tide gage installed at Kamalo Harbor, Molokai (latitude 21° 03.0', longitude 156° 52.5'). Elevation of MLLW above staff zero is 2.2 feet.

TABLE OF POSITION NUMBERS AND COMPUTER PLOTTER NUMBERS

VESSEL	Vol.	POSITION NO.	COMPUTER PLOTTER NO.
PATHFINDER LAUNCH 1	3	1 "a" to 118 "a"	0001 to 0118
"	3,6	1 "b" to 142 "b"	0119 to 0260
"	6	1 "c" to 20 "c"	0261 to 0280
PATHFINDER LAUNCH 2	2	1 "a" to 140 "a"	0281 to 0420
"	2,4	1 "b" to 124 "b"	0421 to 0544
"	4	1 "c" to 74 "c"	0545 to 0618
"	4	1 "d" to 229 "d"	0619 to 0847
PATHFINDER LAUNCH 3	8	1 "a" to 9 "a"	0848 to 0856
PATHFINDER SHIP	1	1 "A" to 102 "A"	0857 to 0958
"	1	1 "B" to 198 "B"	0959 to 1156
"	7	1 "C" to 190 "C"	1157 to 1346
"	7	1 "D" to 5 "D"	1347 to 1351
"	7	1 "E" to 16 "E"	1352 to 1367
SURVEYOR SHIP	9	1 "A" to 109 "A"	1368 to 1476
"	9,10	1 "B" to 247 "B"	1477 to 1720
"	10	1 "C" to 81 "C"	1721 to 1801
"	10	1 "D" to 106 "D"	1802 to 1907
"	11	1 "E" to 108 "E"	1908 to 2015
"	11	1 "F" to 94 "F"	2016 to 2109

SHIP SURVEYOR

DRAFT CORRECTIONS

DATE	TRANSDUCER DRAFT	APPARENT DRAFT *		INITIAL SETTING	DRAFT CORRECTION
	ft.	ft.	fms.	fms.	fms.
7 July	16.5	15.5	2.6	2.5	+0.1
8 July	16.5	15.5	2.6	2.5	0.1
24 July	16.5	15.5	2.6	2.5	0.1
25 July	16.5	15.5	2.6	2.5	0.1
26 July	16.5	15.5	2.6	2.5	0.1
27 July	16.5	15.5	2.6	2.5	0.1

* See memorandum October 1, 1962, SETTING OF INITIAL ON DE-723 SURVEY FATHOMETER.

U.S.C. & G.S.S. PATHFINDER
G.L. SHORT, COMDG.
1966

Velocity corrections to be applied to all 1966 hydrography on sheets

~~PF 5-5-65~~, PF 10-5-65, PF 10-1-66, PF 10-2-66, PF 10-3-66, PF 10-4-66, PF 10-5-66, PF 10-6-66, PF 10-7-66, PF 10-8-66, PF 20-1-66, PF 20-2-66.

TO DEPTH fath	CORRECTION fath
0.0 - 3.0	0.00
3.1 - 5.3	0.1
5.4 - 7.8	0.2
7.9 - 10.0	0.3
10.1 - 12.3	0.4
12.4 - 14.5	0.5
14.6 - 16.8	0.6
16.9 - 19.5	0.7
19.6 - 21.5	0.8
21.6 - 23.8	0.9
23.9 - 26.0	1.0
26.1 - 28.3	1.1
28.4 - 31.6	1.2
31.7 - 36.2	1.4
36.3 - 41.0	1.6
41.1 - 45.3	1.8
45.4 - 50.0	2.0
50.1 - 54.5	2.2
54.6 - 59.0	2.4
59.1 - 63.5	2.6
63.6 - 68.0	2.8
68.1 - 72.5	3.0
72.6 - 77.2	3.2
77.3 - 82.0	3.4
82.1 - 86.7	3.6
86.8 - 91.3	3.8
91.4 - 95.8	4.0
95.9 - 100.5	4.2
100.6 - 112	4.5
113 - 125	5.0
126 - 140	5.5
141 - 158	6.0
159 - 178	6.5
179 - 200	7.0
201 - 232	7.5
233 - 273	8.0
274 - 320	8.5
321 - 368	9.0
369 - 418	9.5
419 - 460	10.0
461 - 495	10.5
496 - 527	11.0
528 - 558	11.5
559 - 584	12.0

Form CD-121A (6-63) (Prev. by A.O. 206-10) UNITED STATES GOVERNMENT

Memorandum

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

TO : The Commanding Officer
USC&GS Ship PATHFINDER
1801 Fairview Avenue, East
Seattle, Washington 98102

DATE: August 11, 1966

In reply refer to:
C3312-155-CSS 8

FROM : Chief, Tides Section
Oceanography Division

SUBJECT: Tidal data, OPR-419

Requested hourly heights are enclosed. Honolulu tabulations are furnished in lieu of Kaumalapau observations. The Kaumalapau record showed evidence of a shifting datum and had to be discarded. MLLW, computed from level records, is 1.9 ft. above staff zero.

Mean lower low water at the other stations is:

Kamalo	2.2 ft. on staff No. 1
Kaunakakai	3.2 ft. on staff

Reference to new staff at Kamalo and requested July observations at Honolulu will be furnished as soon as possible.

Martha A. Winn

Martha A. Winn

Enclosures

FORM C&GS-712
(3-9-64)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

9/6/67

[redacted] Pacific Marine Center

Plane of reference approved in 2 sheets, Form 8502
[redacted]

HYDROGRAPHIC SHEET 8889

Locality: Molokai, Hawaii

Chief of Party: G. L. Short & V. R. Sobieralski (1966)

Plane of reference is mean lower low water

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

Kamalo, Molokai, Hawaii at lat. 21°03.0', long. 156°52.'
Tide Sta. outside boundaries of H-8889.

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

1.6 feet

Remarks

J. M. Symons
Chief, Tides and Currents Branch

FORM 197
(3-16-55)

GEOGRAPHIC NAMES

Survey No. H-8889

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
Halepalaoa Landing.				✓						1
Hawa Point.										2
Hawela Point.				✓						3
Hi Point.				✓						4
Keamuku.				✓						5
Kikoa Point.				✓						6
~~Lamo Point~~				✓						7
Lanai.				✓						8
Makaiwa Point.				✓						9
Nahoke Point.				✓						10
Waiakapuaa Point.				✓						11
Lamo Point										12
Kalakala.				Names approved						13
Auau Channel.				May 9, 1968						14
				Frank W. Pickett						15
										16
										17
										18
										19
										20
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										22
										23
										24
										25
										26

Approval Sheet

The smooth sheet has been inspected, is complete, and meets the requirements of the General Instructions for automated surveys and Hydrographic Manual. (Note: All exceptions are listed in the verifier's report).

Examined and approved.

William M. Martin

William M. Martin
Supervisory Carto. Tech.

Approved and Forwarded.

John R Plaggmier

John R. Plaggmier CDR USESSA
Acting Chief Processing Division, PMC

FORM C&GS-946
(REV. 11-68)
(PRESC. BY HYDROGRAPHIC MANUAL 20-2. 6-94, 7-13)

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

HYDROGRAPHIC SURVEY STATISTICS

HYDROGRAPHIC SURVEY NO. 8889

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS	2
DESCRIPTIVE REPORT	1	OVERLAYS	~~1~~ 4

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	1-Combined with Printouts					
CAHIERS						
VOLUMES	11					
BOXES						

T-SHEET PRINTS *(List)*

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				
POSITIONS CHECKED		2109		
POSITIONS REVISED		120		
DEPTH SOUNDINGS REVISED		351		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		13		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		0		
	TIME (MANHOURS)		✓Myers time only	
TOPOGRAPHIC DETAILS			8	
JUNCTIONS		24	6	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		48	17	
SPECIAL ADJUSTMENTS			25	
ALL OTHER WORK		33	20	
TOTALS	486	105	96	

PRE-VERIFICATION BY		BEGINNING DATE	ENDING DATE
VERIFICATION BY	A.E. Eichelberger	BEGINNING DATE 10/24/67	ENDING DATE 3/15/68
REVIEW BY	D.H. Benson — time & date not available George Myers	BEGINNING DATE est. 4/61	ENDING DATE Mar. 13, 1970
Inspection	J.F. Gallahan — April 20, 1977 – 55 hrs.		

USCOMM-DC 36271-P65

Reg. No. H-8889

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE_____ TIME REQ'D_____ INITIALS_____

REMARKS:

1. Hydrographic Data Form attached for soundings to be added to automated records.
2. Only hydrographic data listed on the survey are bottom samples.

H-8889

Information for Future Presurvey Reviews

This is a good basic survey and the bottom is considered adequately developed on the present survey.

The shoreline south of Haua Point has receded noticeably since the earliest surveys of 1914.

Position Index		Bottom Change Index	Use Index	Resurvey Cycle
Lat.	Long.			
205	1565	2	1	50 years
205	1570	2	1	50 years
204	1565	2	1	50 years

OFFICE OF MARINE SURVEYS AND MAPS

MARINE SURVEYS DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8889 FIELD NO. PF-10-5-66

Hawaii, Auaua Channel, Northeast Coast of Lanai Island

SURVEYED: March 15-April 28, July 7-27, 1966

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

SOUNDINGS: DE-723 Depth Recorder CONTROL: Visual Fixes on Shore Signals

Chief of Party	G. L. Short (PATHFINDER)
	V. R. Sobieralski (SURVEYOR)
Surveyed by	E. M. Gelb, M. G. Kenny
	R. H. Kerley, L. T. Lynch
	L. L. Posey, G. L. Short
	F. T. Smith, R. M. Sundean
	N. E. Taylor
Automated Plot by	Gerber Digital Plotter (PMC)
Verified by	A. E. Eichelberger
Reviewed by	D. H. Benson
	G. K. Myers
	Date: March 13, 1970
Inspected by	J. T. Gallahan

1. Description of the Area

This survey off the northeast coast of Lanai Island covers an area from latitude 20°49' north to latitude 20°55'30" and from longitude 156°51'30" eastward to longitude 156°47'30". The survey inshore boundary is the reef which extends about 350 meters off the shoreline. In addition to the reefs, the foreshore area is foul with stones and wall ruins. Depths range from 1/2 to 56 fathoms. Coral, broken shell, and sand are the predominant bottom characteristics of the area.

2. Control and Shoreline

The source of control is adequately covered in part F of the Descriptive Report and the Signal Table list.

The shoreline originates with final reviewed photogrammetric manuscripts T-11968, T-11969, and T-11970 of 1960-62. The mean high water line is

shown for guidance only; the true position is shown on the topographic sheets previously mentioned.

3. Hydrography

a. Depths at crossings are in good agreement.

b. The usual depth curves were adequately developed except for the lesser depth curves which could not be completely defined due to the foul nature of the inshore area.

c. The development of the bottom configuration and investigation for least depths are considered adequate. However, the charted 17-fathom shoal at latitude 20°55.18', longitude 156°49.72' which originates with H-5297 (1931-32) should have been more fully investigated.

4. Condition of Survey

The sounding records, smooth plotting, Descriptive Report, and printouts are adequate and conform to the requirements of the Hydrographic Manual and the Instruction Manual - Automated Hydrographic Surveys, except that numerous depths were added during verification to decrease the excessive intervals between soundings obtained by the ship.

5. Junctions

Adequate junctions were effected with the following verified surveys:

H-8834 (1965) on the north
H-8998 (1968) on the northwest
H-8678 (1962) on the east
H-8886 (1966) on the south
H-8583 (1961-62) on the southeast

6. Comparison with Prior Surveys

a.

H-2459	(1900)	1:60,000	(reconnaissance survey)
H-3582	(1914)	1:20,000	
H-3653	(1914)	1:60,000	

These prior surveys taken together cover the area of the present survey. H-2459 (1900), a reconnaissance survey, lacks sufficient reliable information for an adequate comparison of cartographic value with the present survey.

While there are areas of agreement, in general a comparison of prior and present depths beyond the 5-fathom depth curve reveals variable differences of 1-4 fathoms, while inshore 1-to 2-fathom differences exist. Likewise, a comparison between the prior surveys reveals such inconsistencies in overlapping areas. Differences can be attributed to the different surveying methods used, scale differences, and the irregularity of the bottom.

The shoreline for distances of 1 mile south of Haua Point and 1/2 mile south of Halepalaoa Landing has receded 75-100 meters and 50-65 meters respectively.

The present survey is considered adequate to supersede the prior surveys in the common area.

b. H-5297 (1931-32) 1:40,000

A comparison of soundings reveals good agreement, considering apparent inconsistencies due to the irregular bottom and the use of early model depth recorders in the prior survey.

A 17-fathom shoal depth at latitude 20°55.18', longitude 156°49.72' which was not discredited has been carried forward to the present survey. With this addition the present survey is adequate to supersede the prior survey in the common area.

7. Comparison with Chart 4130, latest print date January 30, 1971

a. Hydrography

The charted hydrography originates partly with previously discussed prior surveys which require no further consideration. The remaining depths are from the boat sheet (Bp-70016-17) and the verified smooth sheet of the present survey.

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

b. Aids to Navigation

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

8. Compliance with Instructions

This survey adequately complies with the project instructions.

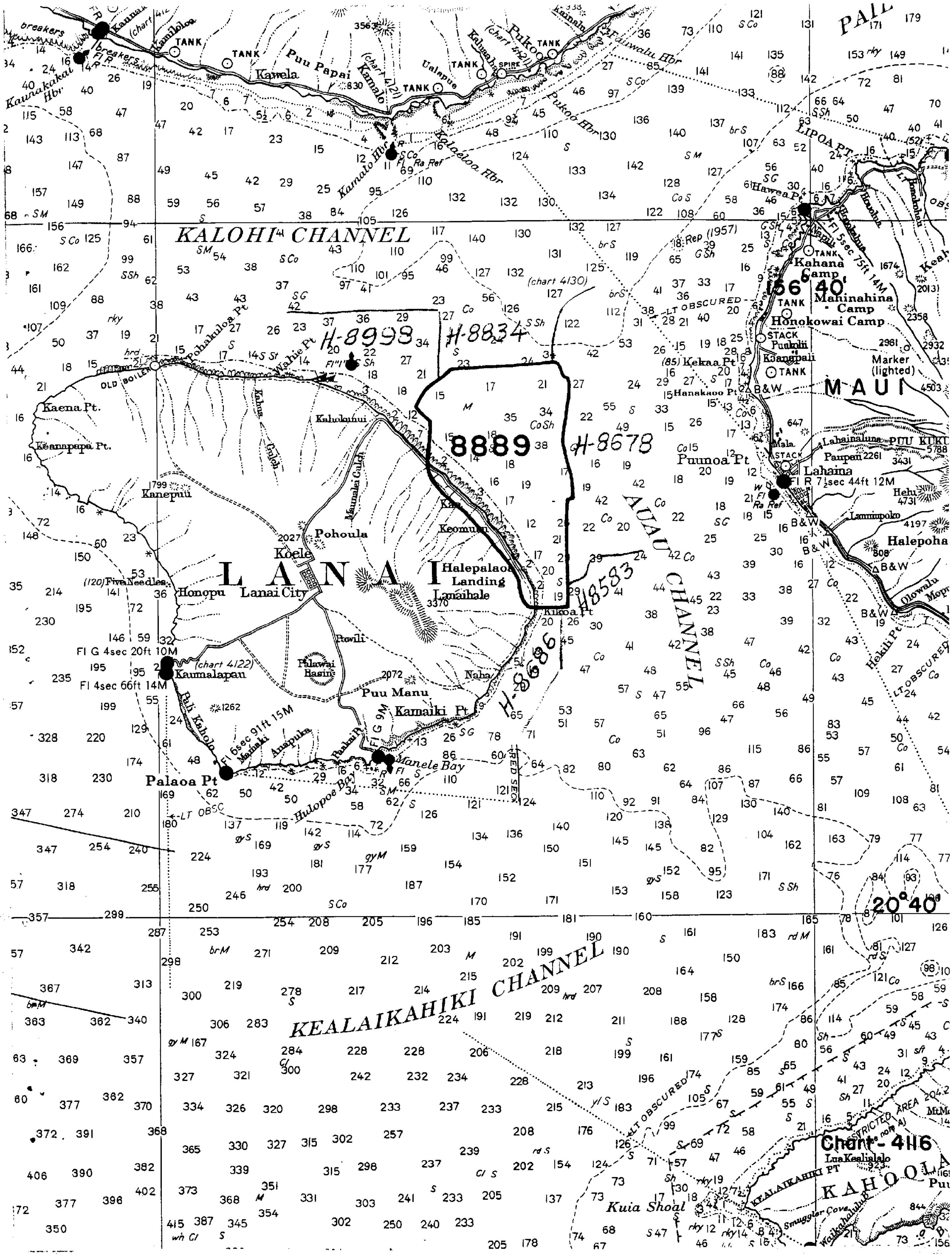
9. Additional Field Work

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

Examined and Approved:

Chief
Marine Surveys Division

Associate Director
Office of Marine Surveys
and Maps


KALOHI CHANNEL
AUAU CHANNEL
KEALAIKAHIKI CHANNEL
LANAI
MAUI
KAHOOLA
8889
H-8998
H-8834
H-8678
H8583
H-8686
Chart - 4116
(chart 4130)
(chart 4122)
(chart 4121)
156° 40'
20°40'
Kaenapa Pt.
Keanapapa Pt.
Kanepuu
Pohakuloa Pt
Wahie Pt
Kahua Gulch
Kaluakahui
Maunalei Gulch
Pohoula
Koele
Lanai City
Five Needles
Honopu
Halepalaoa Landing
Lanaihale
Keomuku
Kikoa Pt
Naha
Palawai Basin
Puu Manu
Kamaiki Pt
Manele Bay
Hulopoe Bay
Kaumalapau
Pali Kaholo
Palaoa Pt
OLD BOILER
Kawela
Puu Papai
Kamalo
Kamalo Hbr
Kalaeloa Hbr
Pukoo
Pukoo Hbr
Kaunakakai Hbr
Ualapue
Lipoa Pt
Hawea Pt
Kahana Camp
Mahinahina Camp
Honokowai Camp
Kekaa Pt
Hanakaoo Pt
Puunoa Pt
Lahaina
Lahainaluna
Paupau
Launiupoko
Halepoha
Olowalu
Hekili Pt
Marker (lighted)
Kuia Shoal
Smuggler Cove
Kealaikahiki Pt
LT OBSCURED
RESTRICTED AREA
Fl R 7½sec 44ft 12M
Fl G 4sec 20ft 10M
Fl 4sec 66ft 14M
Fl 6sec 91ft 15M
Fl 5sec 75ft 14M
Rep (1957)

FORM C&GS-8352
(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 8889 ~~(Category I)~~

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
4102	6/10/68	O. Svendsen	~~Full~~ Part Before ~~After~~ Verification Review Inspection Signed Via
(19004)			Drawing No. 26 (2nd Proof) Exam. No corr.
4116	4/24/69	O Chapman	~~Full~~ Part ~~Before~~ After Verification ~~Review Inspection~~ Signed Via
(19340)			Drawing No. Exam. NO. Corr
4180	1-22-70	Irene Beeler	~~Full~~ Part ~~Before~~ ~~After~~ Verification Before Review Inspection Signed Via 4116
(19013)			Drawing No. 15 Exam; No Corr
4102	2/14/70	O. Svendsen	~~Full~~ Part ~~Before~~ After Verification Before Review Inspection Signed Via
(19004)			Drawing No. 27 thru Chart 4116 Drg# 15
4001	2/25/70	J Stuart	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via
(19007)			Drawing No. Examined only for critical Corr. No revision
4130	6 Nov 70	B. Dugan	~~Full~~ Part ~~Before~~ ~~After~~ Verification Before Review after Inspection Signed Via
(19347)			Drawing No. 14 Examined for critical corrections & added numerous sdgs.
4102	1-11-73	C.J. Forbes	~~Full~~ Part ~~Before~~ After Verification Review before Inspection Signed Via
(19004)			Drawing No. Examined for critical corrections only. No corrections
4130	3/28/75	M. D. Kanis	~~Full~~ Part Before ~~After Verification Review~~ Inspection Signed Via
(19347)			Drawing No. EXAMINED for reef areas only
4116	5-29-75	H.J. Borawski	~~Full~~ Part ~~Before~~ After ~~Verification~~ Review ~~Inspection Signed Via~~
(19340)			Drawing No. Revised Reef Areas + Added 2 Rocks Awash
4180	7/20/76	M. D. Kanis	~~Full~~ Part ~~Before~~ After Verification Review I~~nspection Signed~~ Via
(19013)			Drawing No. Examined thru Chart 4116
4180	7/12/78	[illegible]	Part after Signature
(19013)	6/13/83	Lochom	Fully appl'd after Signed No 20. Fully appl'd hydro to chart
~~19347~~ (4130)			
19347	2-20-90	Ed Martin	Consider Adequatly applyd no further processing required, Drg# 22
19007	4-11-91	K.R. Foster	Fully applied after Verification Review Via Drg #15
19013	4-17-91	K.R. Foster	Fully applied after Verification Review Via Drg #18 thru Cht 19004.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975.

USCOMM-DC 8558-P63

19010 ✓ 4-30-91 KR. Foster Fully applied after verification & review from chk 19013: ~~chk~~ Drug #17.

19004 5/18/98 Jon Lobenstine Adequately applied; no Further processing req'd.