8834

Diagram No. 4116-2

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. PF-20-1-65

Office No. H-8834

LOCALITY

State Hawaii

General Locality South of Molokai

Locality Kalohi Channel

19 65

CHIEF OF PARTY
CAPT L. Woodcock

LIBRARY & ARCHIVES

DATE October 21, 1970

☆U.S. GOV. PRINTING OFFICE: 1980—766-230

8834

FORM C&GS-537
(8-15-59)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REGISTER NO.
H-8834

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-20-1-65

State Hawaii

General locality ~~Kalohi Channel~~ South of Molokai

Locality Kalohi Channel

Scale 1:20,000 Date of survey 9-15 April 1965

Instructions dated Nov. 9, 1964 Project No. OPR-419

Vessel U.S.C.&G.S.S. Pathfinder

Chief of party L.F. Woodcock, Capt., U.S.C.& G.S.

Surveyed by Ship's Personnel

Soundings taken by echo sounder, hand lead, pole

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Protracted by Matthew G. Sanders Automated plot by

Soundings penciled by N. Lestenkof

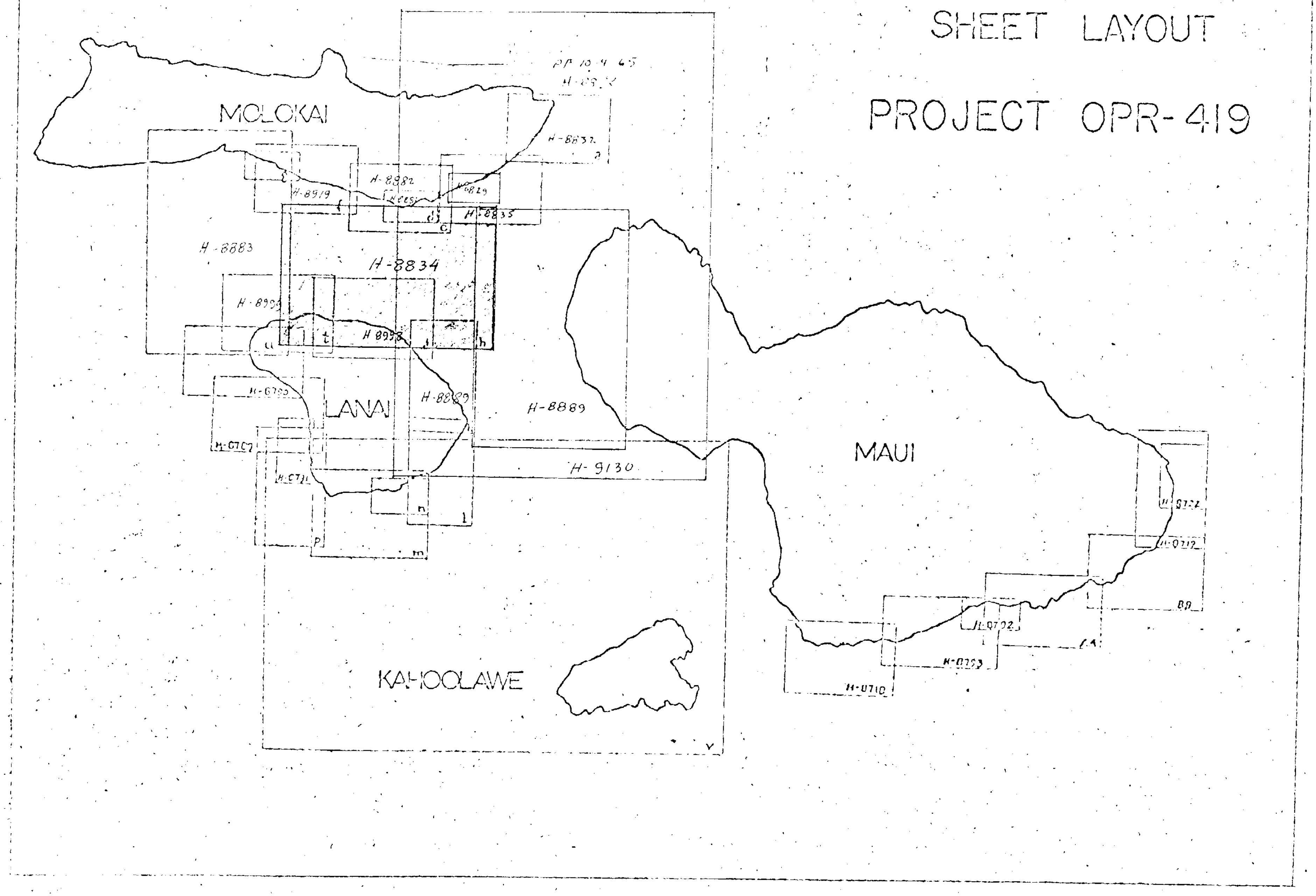
Soundings in fathoms feet at MLW MLLW

REMARKS: All times are in GMT.

AWOIS/SURF 12/13/85 AAA

SHEET LAYOUT

PROJECT OPR-419



DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY H-8834 (PF-20-1-65)

1:~~4~~20,000 scale USC&GSS PATHFINDER

CAPT L. F. Woodcock, Comdg.

A. PROJECT

This survey is part of project OPR-419, with instructions dated 9 November 1964. ✓

B. AREA SURVEYED

The area surveyd is that which lies between Molokai and Lanai Islands ✓ known as Kalohi Channel. The northern and southern limits are those islands respectively. The western limit is 157° 02' W, and the eastern limit is 156° 52' W. There is an additional portion to the southeast connected to the above mentioned area by about six sounding lines. The northern and southern limits of this portion are N, and 20° 55.5' N; the eastern and western limits are 156° 51' W and 156° 47'W.

It was necessary to use an oversized sheet in order to junction with the northeast boat sheet of Lanai. This is in the locality of the above mentioned southeast portion of the survey which extends beyond the three inch border on the southern limits for this junction.

This survey junctions with the following prior and contemporary surveys:
SEE PARA. 4 of REVIEW.

Area	Reg. No.	Scale	Date	
N	H-5310	1:20,000	1930-31	CONSIDERED PRIOR SURVEYS SEE PARA 5 of REVIEW.
~~NE~~	~~H-5311~~	~~1:20,000~~	~~1931~~	
S&E	H-3653	1:60,000	1914	
N	H-8882 (PF 10-5-65)	1:10,000	1965	

✓

D. SOUNDING EQUIPMENT

The Raytheon Survey Fathometer model 723, Serial no. 551, was used throughout the survey. The Precision Depth Recorder, serial no. 151 was run for a good portion of "F" day, and a short time on "G" day for the purpose of checking the "723" and filling when it was not functioning.

Velocity corrections were obtained from an Oceanographic Station ✓ observed on 9 April 1965, at Lat. 20° o2.0' N, Long. 156° 46.4' W. Corrections were determined graphically, assuming a calibration velocity of 800 fms/sec. A copy of these corrections is attached to this report.

C. SOUNDING VESSEL

All soundings were by the Ship PATHFINDER. Position numbers and day ✓ letters (CAPITALS) are in blue ink.

E. SMOOTH SHEET

For smooth plotter.

F. CONTROL

The visual method of control was used with photo-hydro and triangulation points. Two triangulation stations were the only signals used on Lanai Island. On Molokai, one triangulation station plus six photo located tanks were used. All photo points were scaled off (DMS and DPS), and thence their geographic positions plotted on the boatsheet. These points were scaled off either a 1:5,000 or 1:10,000 Advance Manuscript and plotted on the 1:20,000 boatsheet. Centers of tanks on the manuscripts were estimated.

The following photogrammetric compilations were used for the transfer of signals:

T-11961	1:5,000	Advance manuscript completed 8/10/62
T-11959	1:5,000	Advance manuscript completed 1/22/63
T-11960	1:10,000	Advance manuscript completed 1/23/63
T-11962	1:5,000	Advance manuscript completed 8/10/62
T-11963	1:5,000	Advance manuscript completed 8/10/62
T-11964	1:5,000	Advance manuscript completed 8/10/62

G.. SHORELINE

H. CROSSLINES

I. JUNCTIONS

J. COMPARISON WITH PRIOR SURVEYS

K. COMPARISON WITH CHART

L. ADEQUACY OF SURVEY

For above paragraphs, ~~G through L~~ Review see PMC report.

M. AIDS TO NAVIGATION

Three sextant angle cuts were taken on the red buoy off Kamalo Harbor. These may be found in the volume containing positions #92, 96, and 99 "A" day. This is the Ra, Ref "2" red buoy located at Long. 156°52'44" and Lat 21°02'00".

N. STATISTICS

1. Nautical miles of sounding line - 412.3
2. Positions - 1235
3. Total area surveyed (sq. naut. miles) - approx. 62 naut. miles
4. Bottom samples - 13
5. Oceanographic Stations - Not on this sheet 1

Charles R. McIntyre

Q. REFERENCES TO REPORTS

1. Fathometer report 1965
2. Oceanographic report 19

ADDENDUM TO DESCRIPTIVE REPORT
PF 20-1-65, H-8834

Smooth Sheet:

The smooth sheet furnished by the Washington Office was 36 by 60 inches, and proved to be too small to accomodate the control for this survey. A new sheet was programmed for the Seattle plotter, and a 42 by 60 inch sheet with grid intersection and triangulation control points was furnished by LCDR Mobley in early November, 1965. The grid was then inked, and the control plotted by LTJG R. V. O'Connell. No record of the DMS and DPS scaled from the manuscripts for boat sheet plotting of control could be found, so the positions of the seven photo hydro points were rescaled by RVO, and checked by QMS Day. The results are summarized on the following page. Control was plotted by RVO, and checked by ENS Fidel T. Smith ✓

Positions 1A through 228A and 1B through 50B have been protracted, pricked, and inked by RVO. (Position numbers have not been inked.) All protracting was done with metal 3-arm protractor #5364 which was checked and adjusted by ENS L. Larese-Casanova on October 25, 1965. This protractor was again checked on 6 December, and found to be free of error. I highly recommend that the plotting be completed with this instrument or one of comparable quality. <u>In no event should any of this plotting be attempted with a plastic protractor</u>. A large proportion of the fixes on this sheet are extremely weak, and demand more than ordinary smooth plotting procedures. This is especially true on the western and southeastern parts of the survey. ✓

A-Day (9 April 1965): ENE winds of 20 to 30 knots have caused distinct elongation of west-trending lines, and a corresponding shortening of east-trending lines. The ship's speed-made-good at full ahead in each case is 14.0 and 10.5 knots, respectively. Most positions plotted well, although several had to be plotted on one angle, time, and course. A record of all changes is in the sounding volume.

B-Day (10 April): ENE winds persist, but at lesser strength, and the effect is less noticeable. Positions 38 B and 39 B plot on course, but short with no indication of a change in speed in either the sounding volume or ship's log.

QMS Douglas A. Bal continued smooth plotting commencing with position 51B. ✓

Submitted:

Richard V. O'Connell
LTJG, USESSA

TRANSMITTAL SHEET

H-8834

PF-20-1-65

The field work, completion and examination of records and plotting of smooth sheet were completed under preivous commanding officers. The assembling of data in this descriptive report and transmittal of records to the Pacific Marine Center have been effected by this Command.

✓

by Direction

G. L. Short
Cdr. U.S.E.S.S.A.
Comdg. PATHFINDER

H-8834 (PF-3-65)

List of Stations

Name	Origin
ANA	KUAHUA BEACH SHIPWRECK STERNHOUSE FLAGPOLE, 1962
BM27M	BM27M (USGS), 1962
CAN	T-11960
HONOWAE	HONOWAE, 1962
KAI	T-11960
KAM	T-11961
PUU	PUU PAPAI, 1915-62
SHIP	AWALUA BEACH SHIPWRECK FOREWARD MAST, 1962
SIL	T-11962
TAN	T-11964
VER	T-11962
WES	T-11959

4/9/65

Velocity corrections to be applied to Pf-10-3-65, and PF-10-4-65, and PF-20-1-65, CMR-419.

Corrections to Depth:

0.1	5.0
0.2	7.7
0.3	10.0
0.4	12.0
0.5	14.2
0.6	16.6
0.7	18.8
0.8	21.2
0.9	23.3
1.0	25.5
1.1	27.7
1.2	29.9
1.3	32.2
1.4	36.6
1.6	41.3
1.8	46.1
2.0	50.7
2.2	55.2
2.4	59.8
2.6	64.6
2.8	69.4
3.0	74.2
3.2	78.8
3.4	83.8
3.6	88.8
3.8	93.8
4.0	98.8
4.2	103.8

FILE COPY

TIDE NOTE

The Kamalo tide station used for this survey is the portable gage located on the warf in Kamalo Harbor, Molokai Island at Latitude 21°02.9' N and Longitude 156°52.6' W. In 1965, the height on the tide staff at MLLW is 0.00 feet and at MHW 1.60 feet.

The plane of reference was checked and approved by the Division of Tides and Currents on 10/31/66.

It is assumed that: no corrections for time or height were applied to the observed tides.

The time meridian used is 150°W.

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

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

November 20, 1966

~~[illegible]~~ Pacific Marine Center

Plane of reference approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 8834

Locality: L. F. Woodcock, 1965

Chief of Party: mean lower low water

Plane of reference is

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

Kamalo Harbor

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

1.6 feet

Remarks

J. M. Symons
Chief, Tides and Currents Branch

USCOMM-DC 6680-P64

NOAA FORM 76-155
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

GEOGRAPHIC NAMES

SURVEY NUMBER

H-8834

Name on Survey	A ON CHART NO.	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	
AWALUA										1
KALAELOA HARBOR										2
KALOHI CHANNEL										3
KALUAAHA										4
KAMILOLOA										5
KAMALO										6
KAMALO HARBOR										7
KAWELA										8
LANAI										9
LAE WAHIE										10
MOLOKAI										11
PAILOLO CHANNEL										12
PAOPAO POINT										13
POHAKULOA POINT										14
PUKOO										15
PUKOO HARBOR										16
UALAPUE										17
HAWAII (TITLE)										18
										19
										20
					Approved:					21
										22
					Charles E. Harrington					23
					Chief Geographer - N/CG245					24
					8	APRIL	1985			25

NOAA FORM 76-155 SUPERSEDES C&GS 197

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

William M. Martin

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

FORM C&GS-946
(REV. 11-65)
(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. 8834

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS	1
DESCRIPTIVE REPORT	1	OVERLAYS	None

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1					
VOLUMES	4					
BOXES						

T-SHEET PRINTS (List) T-11959; T-11960; T-11961; T-11962; T-11963; T-11964

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				1203
POSITIONS CHECKED		264		
POSITIONS REVISED		73		
DEPTH SOUNDINGS REVISED		59		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		30		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		8		
JUNCTIONS		11		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		107		
SPECIAL ADJUSTMENTS		—		
ALL OTHER WORK		95		
TOTALS		221	81	

	BEGINNING DATE	ENDING DATE
PRE-VERIFICATION BY		
VERIFICATION BY Vincent F. Flor	April 13, 1969	May 13, 1969
REVIEW BY L. Quinlan	12 JUN 81	July 1981

inspected by S. Baumgardner 65 hrs Jan. 12, 1984   Examined 3/28/85 G. Myers

USCOMM-DC 36271-P65

REGISTRY NO. H-8834

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE______________ TIME REQUIRED______________ INITIALS________

REMARKS:

NAUTICAL CHARTING DIVISION

HYDROGRAPHIC SURVEYS BRANCH

MODIFIED HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8834 FIELD NO. PF-20-1-65

Hawaii, South of Molokai, Kahohi Channel

SURVEYED: April 9-15, 1965

SCALE: 1:20,000 PROJECT NO.: OPR-419

SOUNDINGS: DE-723 Depth Recorder, Precision Depth Recorder

CONTROL: Visual Fixes on Shore Signals

Chief of Party .... L. F. Woodcock
Surveyed by .... Ship's Personnel
Verified and Inked by .... V. F. Flor
Reviewed by .... L. Quinlan
Date: July 27, 1981
Inspected by .... S. Baumgardner
Date: January 12, 1984
Examined by .... G. K. Myers
Date: March 28, 1985

1. Control and Shoreline

The control is adequately discussed in part F of the Descriptive Report.

The shoreline originates with the following photogrammetric shoreline maps:

Reviewed Class I

T-11959 (1960-67) T-11960 (1960-67)

Reviewed Class II

T-11961 (1961-62) T-11964 (1960, 61, 62)
T-11962 (1960-61) T-11966 (1960)
T-11963 (1960-61) T-22967 (1960)
T-11968 (1960)

The mean high waterline is shown for guidance only as its true position is shown on the topographic manuscripts previously mentioned.

Coral reef and other topographic information outside the MHL should be disregarded. See inshore hydrographic surveys for the final delineation of this data.

2. 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 least depths are considered adequate.

3. Condition of Survey

The field work, survey records, plotting, shoreline transfer, Descriptive Report, cartographic presentation of data, and decisions and actions taken by the verifier conform to National Ocean Service standards and requirements except as stated below:

a. Numerous bottom characteristics were incorrectly described on the smooth sheet by the verifier.

b. Junctions were not adequately completed during verification.

c. In many instances, the depth curves drawn on the smooth sheet were not drawn to best represent the true bottom configuration. The most obvious misrepresentations were revised during review.

4. Junctions

Adequate junctions were accomplished with H-8883 (1966) on the west, H-8919 (1966-67) and H-8882 ((1965) on the north, H-9130 (1961-62) on the northeast, and H-8678 (1962) on the southeast. Junctions with H-8889 (1966), H-8998 (1968), and H-8999 (1968), all on the south, were accomplished during their respective reviews.

5. Comparison with Prior Surveys

H-3653	(1914)	1:60,000
H-5310	(2930-31)	1:20,000
H-5299	(1930-32)	1:80,000

These surveys taken together cover the entire area of the present survey. A comparison between the present and the prior surveys reveals a relatively stable bottom with minor differences of ±1 to 2 fathoms. These differences are attributed to the irregular nature of the bottom and to differences in survey methods.

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

6. Comparison with Chart 19351 (4120) (latest print date November 6, 1976)
19347 (4130) (latest print date May 5, 1979)

a. Hydrography

The charted hydrography originates partially with the previously discussed prior surveys which require no further consideration. The remaining charted depths are from the boat sheet of the present survey.

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

b. Aids to Navigation

There is one charted aid to navigation within the limits of the present survey and it adequately marks the charted feature intended.

7. Compliance with Instructions

This survey adequately complies with the project instructions.

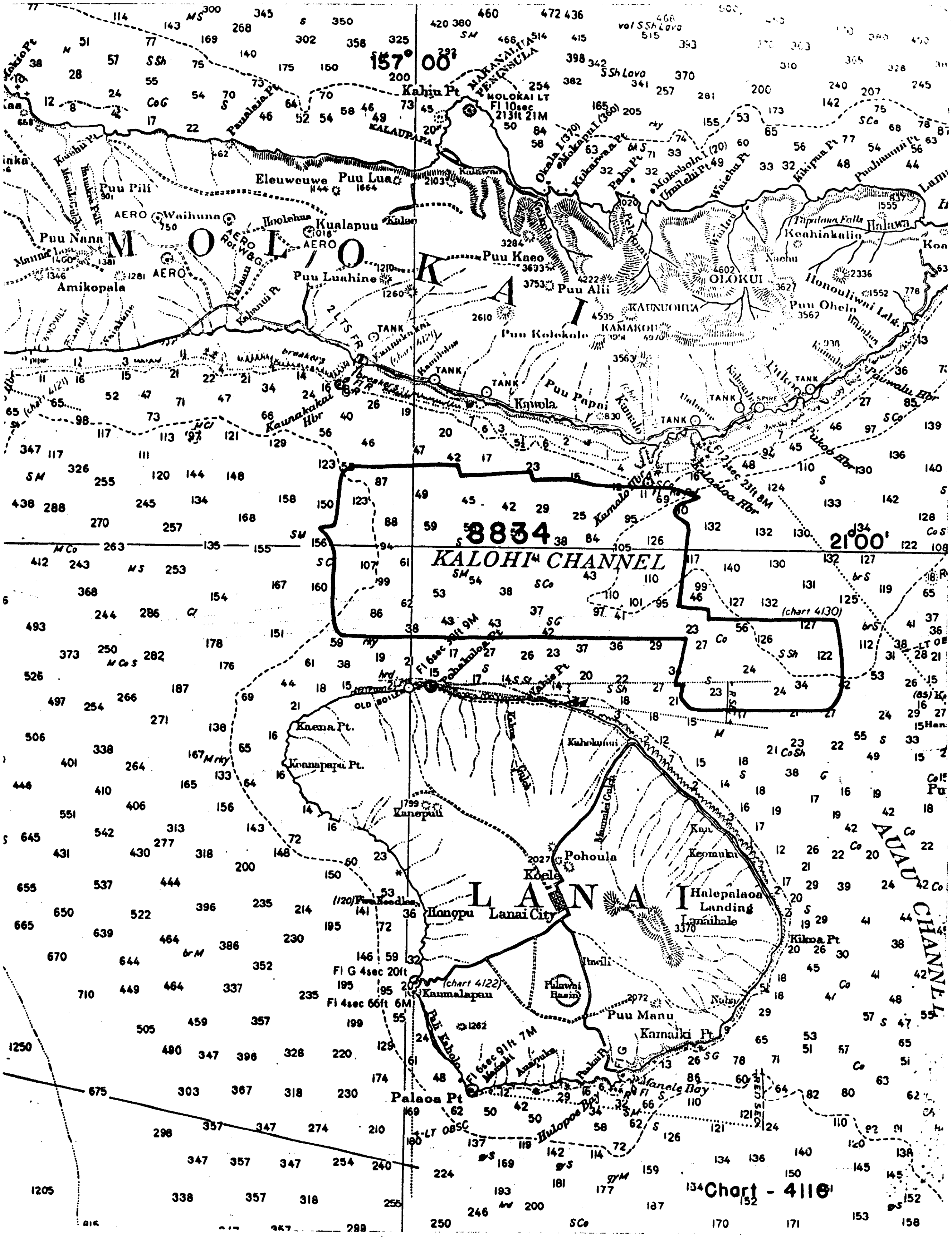
8. Additional Field Work

This is a good basic survey and requires no additional field work.

Examined and Approved:

Roy K. Matsushige
Chief
Hydrographic Surveys Branch

J. Austin Yeager
Chief
Nautical Charting Division



157° 00'
MAKANALUA PENINSULA
Kahiu Pt
MOLOKAI LT
Fl 10sec 213ft 21M
KALAUPAPA
Puu Pili
Eleuweuwe
Puu Lua
Waihuna
Kualapuu
Puu Nana
Amikopala
M O L O K A I
Puu Kaeo
Puu Luahine
Puu Alii
OLOKUI
KAMAKOU
Puu Kolekole
Puu Ohelo
Halawa
Keahiakalio
Kaunakakai Hbr
Kawela
Puu Papai
Pukoo Hbr
8834
KALOHI CHANNEL
21°00'
(chart 4130)
Fl 6sec 39ft 9M
Kaena Pt.
Kaunapapa Pt.
Kanepuu
Pohoula
Koele
L A N A I
Lanai City
Honopu
Halepalaoa Landing
Lanaihale
Kikoa Pt
Fl G 4sec 20ft
(chart 4122)
Kaumalapau
Fl 4sec 66ft 6M
Palawai Basin
Puu Manu
Kamaiki Pt.
Fl 6sec 91ft 7M
Palaoa Pt
Hulopoe Bay
Manele Bay
AUAU CHANNEL
Chart - 4116

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8834

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
4130	1-12-71	E. Frey	~~Full~~ Part ~~Before~~ After Verification before Review Inspection Signed Via Drawing No. Revised some sdgs & depth curves. (Critical corr only)
4120	3-25-71	J.A. Graham	~~Full~~ Part ~~Before~~ After Verification Before Review Inspection Signed Via Drawing No. 9 Applied critical corrections only thru cht. 4130 dwg. #14X
4116	3-25-71	J.A. Graham	~~Full~~ Part ~~Before~~ After Verification Final Review Inspection Signed Via Drawing No. 16 App'd misc critical corrections thru cht. 4120 dwg #9
4179	5/10/71	J. McMillan	~~Full~~ Part ~~Before~~ After Verification before Review Inspection Signed Via Drawing No. 9 No critical corr at this scale at this time thru 4116 #16
4000	9/1/71	C.S. Forbes Jr.	~~Full~~ Part ~~Before~~ After Verification ~~Review Inspection Signed Via~~ Drawing No. No critical corrections, examined thru chart 4179, dwg # 9
4102	1/27/72	J. Graham	~~Full~~ Part ~~Before~~ After Verification ~~Review Inspection Signed~~ Via Drawing No. 28 App'd for critical corr. only thru cht. 4116 dwg. #16
4180	3/15/72	E. Frey	~~Full~~ Part ~~Before~~ After Verification ~~Review Inspection Signed~~ Via Drawing No. 11 App'd for critical corrections only thru cht 4102 dwg # 28
4000	9-19-77	H. Sager	Full ~~Part Before~~ After Verification ~~Review Inspection Signed~~ Via Drawing No. 15, Examined Thru Chart 4102 Drwg #31 No corrections at this scale CAT I
4102	10-31-77	C.S. Forbes	Full ~~Part Before~~ After Verification ~~Review Inspection Signed~~ Via ~~Drawing No.~~ Consider application as final, No additional corrections!
4179	12-05-77	C.S. Forbes	Full ~~Part Before~~ After Verification ~~Review Inspection Signed Via~~ ~~Drawing No.~~ Consider application as final. No additional corrections.
4116	12-22-77	M. Sager	Full - after verification - No corrections - consider final application CAT I
19351	9/25/81	R.S. Howe	Full app'd after Verification — final application
19007	3-23-83	Simmons	Consid. fully app'd thru 19010 #12. No Corr.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975. USCOMM-DC 8558-P63