

8835

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-10-3-65 Office No. H-8835

LOCALITY

State HAWAII

General locality MOLOKAI ISLAND

Locality SE COAST, KALAELOA ISLAND

TO WAIALUA

19.65

CHIEF OF PARTY

CAPT. L.F. WOODCOCK

LIBRARY & ARCHIVES

DATE 9/30/70

8835

1005

HYDROGRAPHIC TITLE SHEET

H-8835

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

FIELD NO.

PF-10-3-65

State HAWAII

General locality MOLOKAI ISLAND

Locality SE COAST, KALAELOA HARBOR TO WAIALUA

Scale 1:10,000 Date of survey Mar 25 - Apr 15, 1965

Instructions dated 9 Nov 1964 Project No. OPR-419

Vessel USC&GSS PATHFINDER; LAUNCHES 2 (with skiff), 3, and 4

Chief of party L.F. Woodcock, CAPT, USESSA

Surveyed by L.F. Woodcock, J.M. Wintermyre, R.K. Woodruff, G. Rorvig

Soundings taken by echo sounder, hand lead, pole and sounding pole

Graphic record scaled by Ship's personnel

Graphic record checked by Ship's personnel

Protracted by Matthew G. Sanders Automated plot by _____

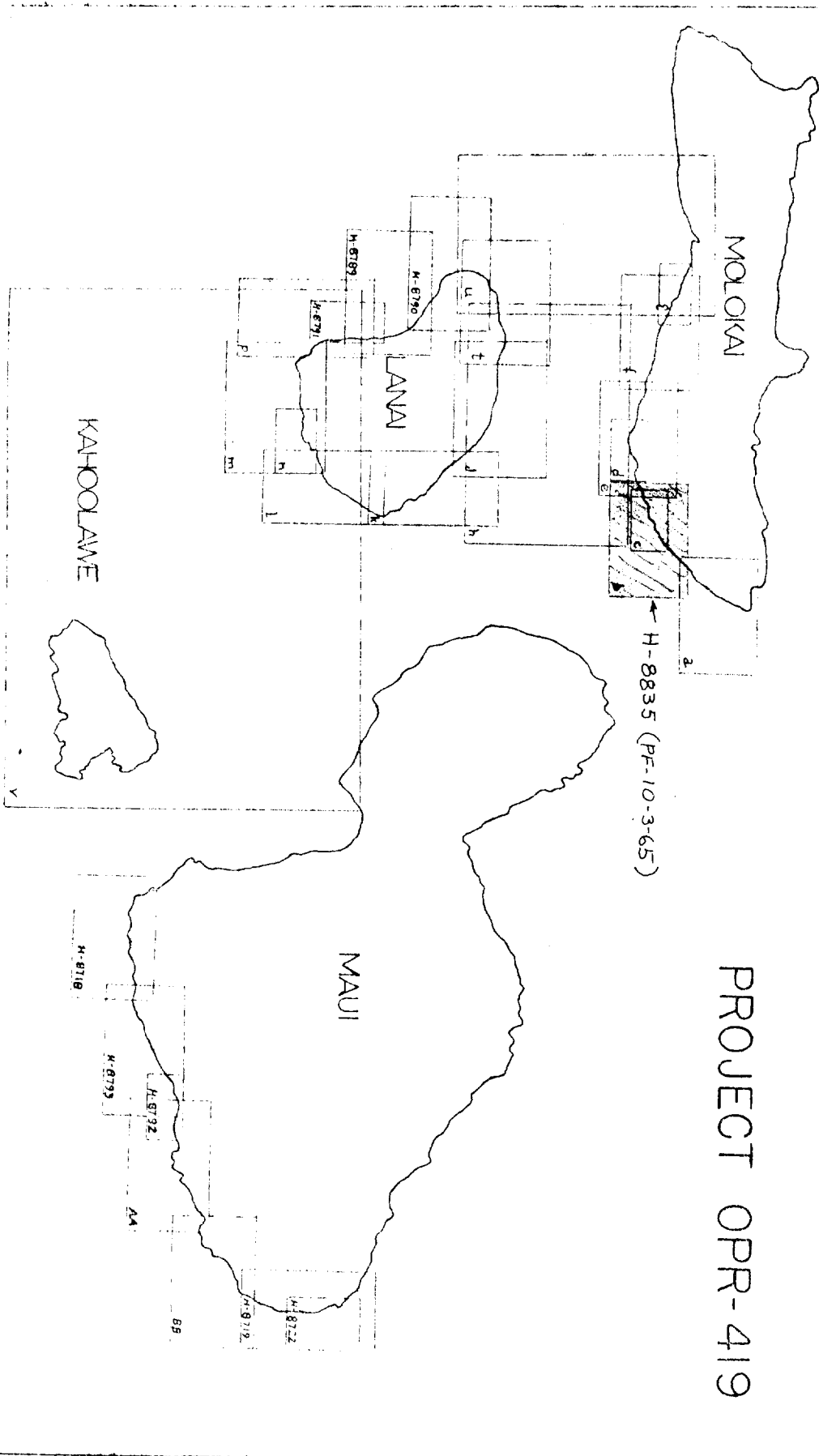
Soundings penciled by Matthew G. Sanders

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

REMARKS: _____

SHEET LAYOUT

PROJECT OPR-419



DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-8835 (PF 10-3-65)
1:10,000
USC&GS SHIP PATHFINDER, L. F. WOODCOCK, COMDG.
1965
KALAELOA HARBOR TO WAIALUA, MOLOKAI ISLAND, HAWAII

A. PROJECT

Hydrographic Survey H-8835 (PF 10-3-65) was accomplished under OPR-419, according to instructions dated November 9, 1964.

B. AREA SURVEYED

This survey was performed on the southeast coast of Molokai Island, from Kalaeloa Harbor to Waialua. The western limit was $156^{\circ} 50.5' W$, and the eastern limit was $156^{\circ} 49.0' W$. The north and south limits were $21^{\circ} 06.0' N$ and $21^{\circ} 02.0' N$, respectively. The survey was accomplished on the following dates: March 25, 26, 29, and April 10 through 15. This survey junctions with the following surveys:

REC#	FIELD NO.	SCALE	DATE
H-9130	SU-40-1-61	1:40,000	1961
a/-H-8832	PF 10-4-65	1:10,000	1965
c/-H-8829	PF 5-2-65	1:5,000	1965
e/-H-8882	PF 10-5-65	1:10,000	1965

C. SOUNDING VESSELS

The Ship PATHFINDER, ML #2 (with skiff), ML #3, and ML #4 were used to obtain soundings for this survey. The color code was as follows:

PATHFINDER	upper case letters - blue
ML #2 (with skiff)	lower case letters - violet
ML #3	lower case letters - green
ML #4	lower case letters - brown

D. SOUNDING EQUIPMENT

All echo soundings were obtained using the Raytheon DE-723 fathometers. The following is a list of the dates, vessels and fathometer numbers used:

VESSEL	RECORDER NO.
PATHFINDER	4-14-65 thru 4-15-65 551
ML #2 (with skiff)	4-11-65 thru 4-13-65 552
ML #3	3-29-65, and 4-10-65 thru 4-13-65 141
ML #4	3-25-65 thru 3-26-65, and 4-13-65 145

The soundings were obtained by means of a sounding pole when conducting skiff work. The velocity and instrument corrections were determined from bar check and Nansen bottle casts. These results are presented in the appendix.

There were no apparent difficulties encountered in the operation of the equipment which would affect the accuracy of results. On several days the jagged profile was caused by very large swells.

E. SMOOTH SHEET

To be completed by smooth plotter.

F. CONTROL

Visual control was used throughout the survey. The signals were located by photogrammetric methods. The signals were transferred from Advance Manuscripts (1:5,000) T-11962, T-11963, T-11964 by scaling them to the boatsheet (1:10,000). Also, signals were transferred directly from Advance Manuscript (1:10,000) T-11965. Triangulation station KUMIMI 2, 1962, was plotted using dms and dps. Because the station was so close to the boundary of the sheet, there was no check dms.

G. SHORELINES

The source of shoreline detail is that described in section F. Any changes have been noted on the boatsheet. The reef line was not verified because of breakers. The approximate breaker line is indicated on the boatsheet by a broken black line.

H. CROSSLINES

The crosslines amounted to about 10% of the sounding lines. Two discrepancies were noted on the boatsheet--a 2-fathom discrepancy at Latitude $21^{\circ} 02' 46''$ N, Longitude $156^{\circ} 49' 21''$ W, and a 4-fathom discrepancy at Latitude $21^{\circ} 05' 05''$ N, Longitude $156^{\circ} 45' 30''$ W. These are possibly due to the relief of this area. *discrepancies were resolved see smooth plotter's Notes*

I. JUNCTIONS

Junctions are made with contemporary surveys PF 10-4-65, PF 10-5-65 (not yet complete), and PF 5-2-65. The junctions were found to be in satisfactory agreement. The junction with H-9130 (SU-40-1-61) is incomplete.

J. COMPARISON WITH PRIOR SURVEYS

In comparing with the only available prior survey, H-5311, it was found that the prior survey was 1.8 fathoms deeper. The larger discrepancies were in deeper water. There were two deeps found in this survey that were not shown on the prior survey. They are located at Latitude $21^{\circ} 02.55'$ N, Longitude $156^{\circ} 49.8'$ W, and Latitude $21^{\circ} 02.7'$ N, and Longitude $156^{\circ} 49.55'$ W.

K. COMPARISONS WITH THE CHART

A comparison was made with the only chart covering the area, C&GS chart 4130, dated August 31, 1964, and scale of 1:80,000. In general, soundings under 5 fathoms were in satisfactory agreement with those from the chart.

In depths from 5 to 30 fathoms there is satisfactory agreement between soundings on the boatsheet and the chart in the area west of Longitude 156° 47' 30" W. East of this there appears to be 1 to 5 fathom differences, the greater discrepancy being in the deeper water. It could be possible that part of this lies in transferring the soundings to the boatsheet. The scale of the chart prohibited the use of the Saltzman projector in transferring soundings from the chart.

L. ADEQUACY OF SURVEY

This survey is considered to be complete and adequate to supercede prior surveys for charting purposes.

M. AIDS TO NAVIGATION

There were no aids to navigation within the limits of this survey.

N. STATISTICS

VESSEL	NO. POSITIONS	MILES SNDG. LINES	B.S.
PATHFINDER	46	10.4	--
ML #2	218	16.2	7
ML #3	552	73.9	--
ML #4	329	45.1	19
	<u>1145</u>		

O. MISCELLANEOUS

Limited hydrography was accomplished on the inshore side of the breakers with a skiff and sounding pole. Where possible the reef line was delineated and is shown on the boatsheet.

P. RECOMMENDATIONS

No additional work is recommended in the area covered by this survey.

Q. REFERENCE TO REPORTS

For additional information the following reports may be consulted:

1. Season's Report, Ship PATHFINDER 1965 (forwarded November 12, 1965)
2. Fathometer Report, 1965 Field Season, Ship PATHFINDER (forwarded November 1, 1965)

Respectfully submitted
James M. Wintermyre
 James M. Wintermyre, LTJG, USN

REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY H-8835 (PF 10-3-65)

APPROVAL SHEET

SHEET NUMBER H-8835 (PF 10-3-65)

The field work on this sheet was inspected where conditions permitted.
The boatsheet and field records have been examined and approved.



G. L. Short
CDR USN
Commanding
Ship PATHFINDER

REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY H-8835 (PF 10-3-65)

TIDE NOTE

Tide corrections were determined from data obtained with a portable gage at Kamalo Harbor (Latitude $21^{\circ} 02.9''$ N, Longitude $156^{\circ} 52.6'$ W). The Washington Office computed MLLW to be 2.4 feet on the tide staff. The time was referenced to the 150th meridian west. Hourly heights were scaled by ship's personnel.

TIDE NOTE FOR HYDROGRAPHIC SHEET

October 24, 1966

~~Nautical Chart Division:~~ Pacific Marine Center

Plane of reference approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET 8835

Locality: Kamalo Harbor, T. H.

Chief of Party: L. F. Woodcock, 1965

Plane of reference is mean lower low water

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


Chief, Tides and Currents Branch

H-8835

GEOGRAPHIC NAMES

The following geographic names are penciled on the Smooth Sheet:

KAAPEAHINA POND

KALAELOA HARBOR

KALUAALA

KAPUKAPUAHAKEA

KEAWANUI FISHPOND

KIHALOKO FISHPOND

KUPEKE FISHPOND

KULAALAMIHI FISHPOND

MOLOKAI ISLAND

NIAUPALA FISHPOND

PAILOLO CHANNEL

PAUWALU HARBOR

PIPIO FISHPOND

PUKOO

PUKOO FISHPOND

PUKOO HARBOR

UALAPUE

UALAPUE FISHPOND

WAIHILAHILA FISHPOND

WAIALUA

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

Velocity Corrections

Hawaiian Islands - 1965

Corrections to be applied to Sheet Nos. PF 10-3-65,
PF 10-4-65, PF 10-5-65, and PF 20-1-65.

<u>Correction</u>	<u>To depth</u>
+0.0 fathoms	2.5 fathoms
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
4.4	108.8
4.5	115
5.0	128
5.5	141
6.0	153
6.5	166
7.0	179
7.5	191

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

ECHO CORRECTIONS

Launch #2

<u>Date</u>	<u>Day</u>	<u>Correction</u>	
		<u>0-31 fms</u>	<u>31-101 fms</u>
3-23	a	0.3 fm	0.2 fm
3-26	b	0.2	0.2

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

ECHO CORRECTIONS

Launch #3

<u>Date</u>	<u>Day</u>	<u>Correction</u>	
		<u>0-11 fms</u>	<u>over 11 fms</u>
3-29	a	0.3 fm	0.2 fm
4-10	b	0.3	0.2
4-11	c	0.3	0.2
4-12	d	0.3	0.2
4-13	e	0.3	0.2

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

ECHO CORRECTIONS

Launch #4

<u>Date</u>	<u>Day</u>	<u>Correction</u>	
		<u>0-31 fms</u>	<u>31-101 fms</u>
3-25	a	0.3 fm	0.2 fm
3-26	b	0.4	0.4
4-13	c	0.3	0.2

REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY H-8835 (PF 10-3-65)

LIST OF SIGNALS

<u>NAME</u>	<u>TYPE SIGNAL</u>	<u>SOURCE</u>
ABE	Photo-Hydro	T-11963
ASS	"	T-11964
BAN	"	T-11964
BAT	"	T-11963
BLU	"	T-11963
BOB	"	T-11963
BOX	"	T-11964
BUG	"	T-11962
COR	"	T-11965
DOG	"	T-11963
GAB	"	T-11964
LUV	"	T-11964
MAT	"	T-11964
MIMI	Triangulation	KUMMI 2, 1962
NOK	Photo-Hydro	T-11963
NUT	"	T-11965
PIN	"	T-11963
PIP	"	T-11965
RAT	"	T-11962
RED	"	T-11963
ROC	"	T-11964
ROX	"	T-11962
SIL	"	T-11962
SUB	"	T-11963
TAN	"	T-11964
TIP	"	T-11965
TOP	"	T-11964
VER	"	T-11963
WAT	"	T-11964
ZAP	"	T-11962
ZOO	"	T-11963
LAK = LUK	"	T-11962

H-8835 (PF-10-3-65)

SMOOTH PLOTTERS NOTES

E. SMOOTH SHEET

The smooth sheet projection and control signals were printed upon the smooth sheet by the PMC digital plotter. The projection lines were inked by hand as were the signal symbols and names by PMC personnel.

The soundings were pencilled by PMC personnel, after adding corrections for spiking, stylus arm length, and conversions from feet to fathoms in the sounding volumes. Evidence of spiking was detected on 'a' day Launch #3, 29 March 1965. A straight line graph was drawn and a correction table compiled to compensate for spiking errors.

The table is:

0 to 9 fms	0 fathoms correction
9 - 10 fms	0.1 fathoms
10 - 11 fms	0.2 fathoms
11 - 12 fms	0.3 fathoms
etc.	

The spiking correction was subtracted from the raw soundings. Evidence of spiking was similarly corrected on 'C' day Launch #3, April 11, 1965 from position 40 through 45 and 88C-92C. Sometimes by merely reading the "Tops of spiking" on the fathograms, good agreement was accomplished.

All fathograms were checked for stylus arm lengths. Where necessary, correction were applied; the percentage of correction being entered in the Sounding Volumes at the beginning of each day. Stylus arm correctors were entered in the draft column.

The pole soundings recorded in feet by Launch #2 on the 11, 12 and 13 of April 1965, were converted to fathoms and entered in the office column of the sounding volumes.

F. CONTROL

Signal MIMI, triangulation station KUMIMI 2, 1962 was plotted on a temporary "Dog-ear" from Geographic Position Computations.

Topographic station LAK was not on the list of signals furnished to the digital computer section. It was plotted manually by scaling from manuscript T-11962 on 1:5,000 scale. On T-11962 the station name is spelled LUK. The boatsheet H-8835 show LAK, so do the sounding records for H-8835. LAK was added to the list of signals.

H. CROSSLINES

Crosslines are adequate and in agreement on the smooth sheet. Discrepancies mentioned in the ship's report under section H have been resolved.

Respectfully submitted,


Mathew G. Sanders

GEOGRAPHIC NAMES

Survey No. H-8835

Name on Survey	Source of Information										
	A	B	C	D	E	F	G	H	K		
Kaapeahina Fishpond											1
Kalaeloa Harbor											2
Kaluanaha (village)											3
Kapukapuahaakea (village)											4
Keawarui Fishpond											5
Kihaloa Fishpond											6
Kulalalamihi Fishpond											7
Kupeke Fishpond											8
Melokai Island											9
Ni'zurua Fishpond											10
Pailolo Channel											11
Pauwahu Harbor											12
Pipio Fishpond											13
Pukoo (village)											14
Pukoo Fishpond											15
Pukoo Harbor											16
Ualapue (village)											17
Ualapue Fishpond											18
Waihilahila Fishpond											19
Waiata											20
Waiialua (village)											21
											22
											23
											24
											25
											26
											27

PREPARED BY

Joseph W. Wright

CARTOGRAPHIC TECHNICIAN

A. Joseph Wright

APPROVED BY

CHIEF GEOGRAPHER

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. *H-8835(PF-10-4-65)*

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		<i>1</i>	BOAT SHEETS		<i>2</i>	
DESCRIPTIVE REPORT		<i>1</i>	OVERLAYS			
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	<i>1</i>					
VOLUMES	<i>7</i>					
BOXES						

T-SHEET PRINTS (*List*) *T-11962 ; T 11963 ; T 11964 ; T 11965*

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				<i>1145</i>
POSITIONS CHECKED		<i>582</i>		
POSITIONS REVISED		<i>60</i>		
DEPTH SOUNDINGS REVISED		<i>319</i>		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		<i>77</i>		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		<i>8</i>		
JUNCTIONS		<i>24</i>		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		<i>53</i>		
SPECIAL ADJUSTMENTS				
ALL OTHER WORK		<i>114</i>		
TOTALS		<i>199</i>		
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <i>Clarence R Lehman</i>	BEGINNING DATE <i>Jan 21, 1970</i>		ENDING DATE <i>March 27, 1970</i>	
REVIEW BY	BEGINNING DATE		ENDING DATE	

H-8835 (PF-10-3-65)

VERIFIER'S NOTES

The reef lines were not inked because they are in need of revision. See report for H-8829 under section G. SHORELINE of the ship's report; also see Verifier's Note also labeled section G. SHORELINE. The hydrography conflicts with the reef limits as delineated on the manuscripts. See note by hydrographer on Boatsheet "b" H-8835 (PF-10-3-65) which reads: Not a well defined reef -- but it is foul and shoal with large coral heads - (large swells). Revision could best be done with the aid of photographs. No photographs were available in the Seattle Processing Office. The reefs for H-8829 on 1:5,000 scale should be done first and reduced to 1:10,000 scale for use on this survey. The remaining reef lines to the scale 1:10,000 on this survey should be merged and adjusted to match reefs transferred from H-8829.

In addition to the spiking corrections made by the smooth plotter - further corrections were applied on "e" day Launch #3, April 13, 1965, by the verifier. These additional corrections resulted in better agreement at the crosslines.

Respectfully submitted,




Clarence R. Lehman


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. Pauw
Cartograph Technician

Approved for Forwarding


William M. Martin
Superv. Cartograph Tech.

Approved and Forwarded


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

VERIFIER'S REPORT
HYDROGRAPHIC SURVEY, H 8835

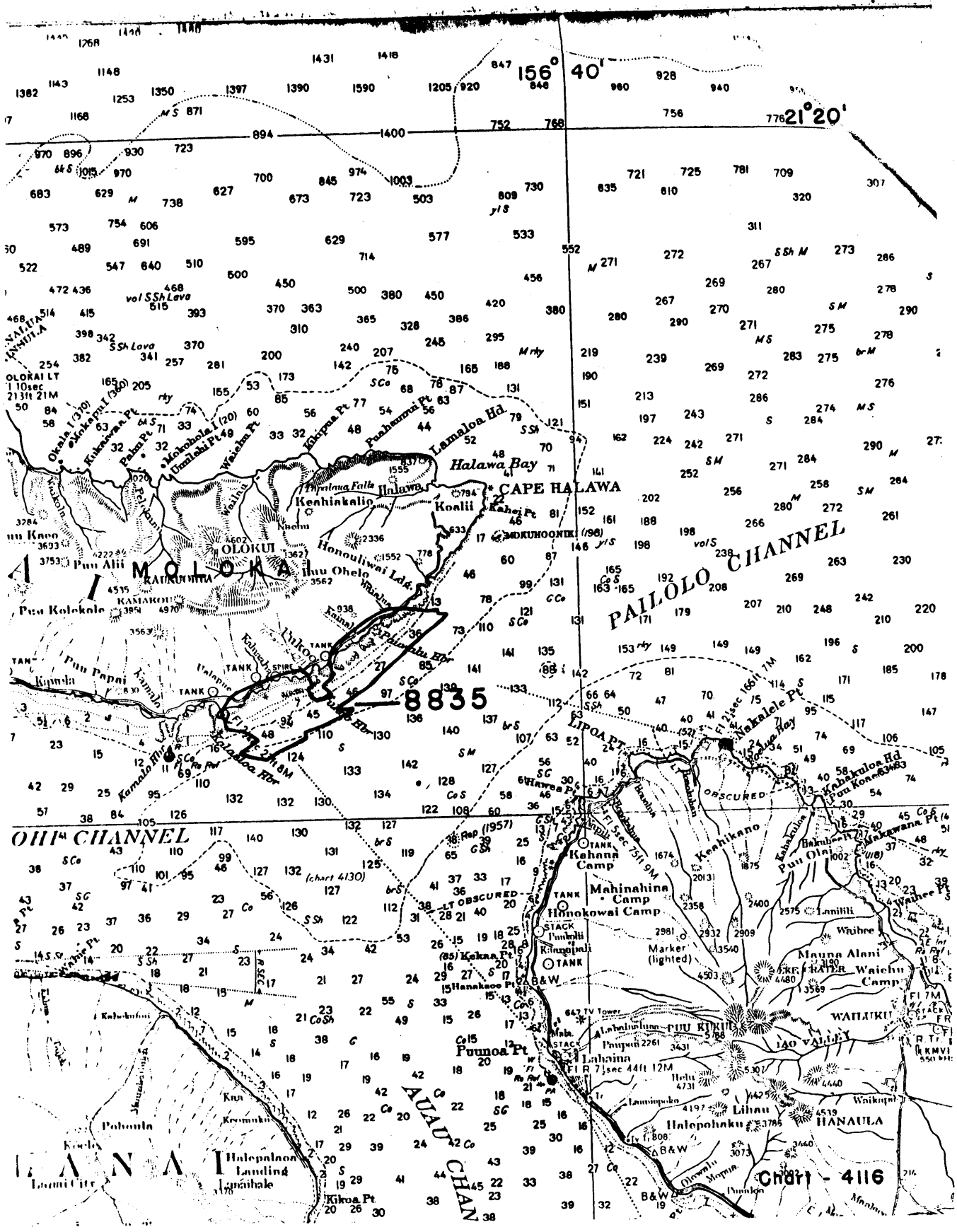
INSTRUCTIONS - This form serves to identify items of a check list in verification together with items which are separately reported to the Reviewer. The form is not to be forwarded to the Reviewer. A report, which is prepared for the Reviewer, should identify items by number and letter and will be filed in the Descriptive Report until the survey is reviewed.

CL - Check List Items: should be checked as having been completed during the verification processes.

R - Report Item: This column refers to those items reported to the reviewer and is used to indicate the items discussed.

Part I - DESCRIPTIVE REPORT	CL	R	Part III - JUNCTIONS (Continued)	CL	R
<p>Note: The verifier should first read the Descriptive Report for general information and problems.</p> <p>1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None</p>	✓		<p>10. Junctions with contemporary surveys were satisfactory except as follows: Remarks Required: -- Consider conditions after adjustments have been made; note adjustments made. Make special notes of Butt junctions and areas which are SUPERSEDED, except H-8882 (1965) incomplete to date</p>	✓	
<p>2. Soundings originating with the survey and mentioned in the Descriptive Report have been verified and checked in soft black pencil, including latitude and longitude, together with position identification. Remarks Required: -- None</p>	✓		<p>Part IV - VOLUMES 11. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken and exceptions noted in the volumes. Remarks Required: -- None</p>	✓	
<p>3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None</p>	✓		<p>12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following: (a) rocks ✓ Coral awash * (a) (b) line turns ✓ ok (c) position values of beginning and ending of lines — ok (d) bar check or velocity correctors ✓ ok except some correction for shall depths. (e) time recording ✓ ok (f) notes or markings on fathograms ✓ ok (g) was reduction of soundings accurately done? Well done except for meaning of wave action & values for Spiking - c-day Vol #3 (h) was scanning accurate? ✓ ok for most part. (i) were peaks at uneven intervals missed? ✓ yes, some missed (j) were stamps completed? ✓ yes ok (k) references to adjacent features ✓</p>		
<p>Part II - SHORELINE AND SIGNALS 4. Source of shoreline signals Remarks Required: -- List all surveys T-11962, T-11963, T-11964, T-11965 a. Give earliest and latest dates of photographs Oct 1960 & Sept 1961 b. Field inspection date May 1962 c. Field Edit date d. Reviewed-Unreviewed</p>	✓				
<p>5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.</p>	✓				
<p>6. The plotting of all triangulation stations, topographic stations and hydrographic signals has been checked and noted in processing stamp No. 42 on the smooth sheet. Remarks Required: -- None</p>	✓				
<p>7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still unidentified.</p>	✓		<p>Part V - PROTRACTING 13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None</p>	✓	
<p>Part III - JUNCTIONS Note: Make a cursory comparison preliminary to inking soundings in area of overlap.</p> <p>8. All junctions of contemporary or overlapping sheets were transferred in colored ink and overlapping curves were made identical. Remarks Required: -- None except for H-8882</p>	✓		<p>14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None</p>	✓	
<p>9. The notation in slanted lettering "JOINS H---- (19)" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None</p>	✓		<p>15. All detached positions locating critical soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None</p>	✓	

Part V - PROTRACTING (Continued)	CL	R	Part VIII - AIDS TO NAVIGATION	CL	R
16. The protracting was satisfactory except as follows: Remarks Required: -- Refers to protracting in general except for specific faults repeated often, or faults in control information, which required considerable replotting or adjustments.	✓		26. All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. Remarks Required: -- Conflicts of any nature listed. <i>none</i>		
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number. <i>Sheet of Longitude, protractor Jan 21st 1970</i>	✓		27. All floating aids listed in the Descriptive Report should be verified and checked in soft black pencil, including latitude and longitude and position identification. Remarks Required: -- None <i>none</i>		
Part VI - SOUNDINGS			Part IX - BOATSHEET		
18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	✓		28. The boat sheet was constantly compared with the smooth sheet with reference to notes, position of sounding lines and supplemental information. Remarks Required: -- None	✓	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.	✓		29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.	✓	
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	✓		Part X - GENERAL		
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	✓		30. All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None	✓	
22. The smooth plotting of soundings was satisfactory except as follows: Remarks Required: -- Refer to legibility, errors in spacing, and errors in numbers - but not to errors in scanning.	✓		31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	✓	
Part VII - CURVES			32. Degree, minute-values and symbols have been checked; also electronic distance arcs have been properly identified and checked on the smooth sheet. Remarks Required: -- None	✓	
23. The depth curves have been inspected before inking. <i>CAJP</i> Remarks Required: -- By whom was the penciled curves inspected. <i>by this verifier</i>	✓		33. The bottom characteristics are adequately shown. Remarks Required: -- None	✓	
24. The low-water line and delineation of shoal areas have been properly shown in accordance with the following: a. From T-Sheet in dotted black lines ✓ b. From soundings in orange ✓ c. Approximate position of sketched curve is dashed orange ✓ d. Approximate position of shoal area not sounded in black dashed ✓ Remarks Required: -- None	✓		Part XI - NOTES TO THE REVIEWER <i>Note: Reef symbol needs improvement;</i> 34. Unresolved discrepancies and questionable soundings. <i>Reef Location needs verification with photos.</i>		
25. Depth curves were satisfactory except as follows: (This statement should not refer to the manner in which the curves were drawn). Remarks Required: -- Indicate areas where curves could not be drawn completely because of lack of soundings. For some inshore areas a general statement is sufficient.	✓		35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.		
			36. Supplemental information.		
Verified by <i>Clarence R Lehman</i>			Date <i>March 27, 1970</i>		



156° 40'

21° 20'

8835

Chart - 4116

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8835

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	1-8-71	E. Frey	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>Appd critical corrections only. Revised 5 soundings</i>
4116	4-15-71	<i>J.A. Shoham</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>16 App'd misc corrections thru chart 4130 dwg #14x</i>
4179	5/10/71	<i>J.H. Milton</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>9 No critical corr at this time examined thru #116 #16</i>
4102	1/27/72	<i>J. Shoham</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>28 App'd for critical corr. only thru chart 4116 dwg #16</i>
4180	3/15/72	E. Frey	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>11 App'd for critical corrections only thru chart 4102 dwg #28</i>
4130	3/28/75	<i>M.D. Kania</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>EXAMINED for reef AREAS ONLY</i>
4102	10/31/77	<i>C.S. Forbes</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>Consider application as final. No additional corrections.</i>
4179	12/5/77	<i>C.S. Forbes</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No.
4116	12-22-77	<i>M. Sager</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>19 THRU CHART 4130 & Verified survey No corrections - Consider final application.</i>
			Full Part Before After Verification Review Inspection Signed Via Drawing No.