

8882

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-10-5-65..... Office No. H-8882

LOCALITY

State ..... HAWAII

General locality ..... ~~MOLOKAI ISLAND~~ S. COAST

Locality ..... Approaches to Kamalo  
South East Coast of  
and Kalaeloa Harbors  
Molokai Island

19.65, 1966, 1967

CHIEF OF PARTY

L.F. Woodcock, G.L. Short,  
V.R. Sobjeralski, R.L. Newsom

LIBRARY & ARCHIVES

DATE ..... 1-7-74

8882

*Charts* 4121 Exam. V. 11 4-11-71-100F  
4116 Exam. V. 11 4-11-71-100F  
4130 Exam. V. 11 4-12-74-100F  
4120 Exam. V. 11 4-12-70-100F  
4180 Exam. V. 11 4-11-71-100F  
4102  
4179 Exam. V. 11 4-11-71-100F  
4001 Exam. V. 11 4-11-71-100F

HYDROGRAPHIC TITLE SHEET

H-8882

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-10-5-65

State HAWAII

General locality MOLOKAI ISLAND - S. COAST

Locality Approaches to Kamalo and Kalahele Harbors  
South East Coast of Molokai Island

Scale 1:10,000

Date of survey 14 April - 16 April 1965

6 Dec 1965 15 March - 27 April 1966

26 JULY 1965

Instructions dated Original 25 Oct 1960, Revised 9 Nov 1964

OPR-419

Vessel USC&GSS PATHFINDER

*see other  
Title sheets*

Chief of party L.F. Woodcock, CAPT USESSA; G.L. Short, CDR, USESSA

*Sobranalski*

Surveyed by G.E. Rorvig, O.R. MacIntosh, L.T. Lynch, E.M. Gelb, L.M. Larese-Casanova

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

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Positions verified

~~checked~~ by Virginia L. Davis

Automated plot by PMC

Gerber Digital  
Plotter

verified

Soundings ~~checked~~ by A.E. Eichelberger

*and tenths*

Soundings in fathoms 1 fmk at XXXX MLLW

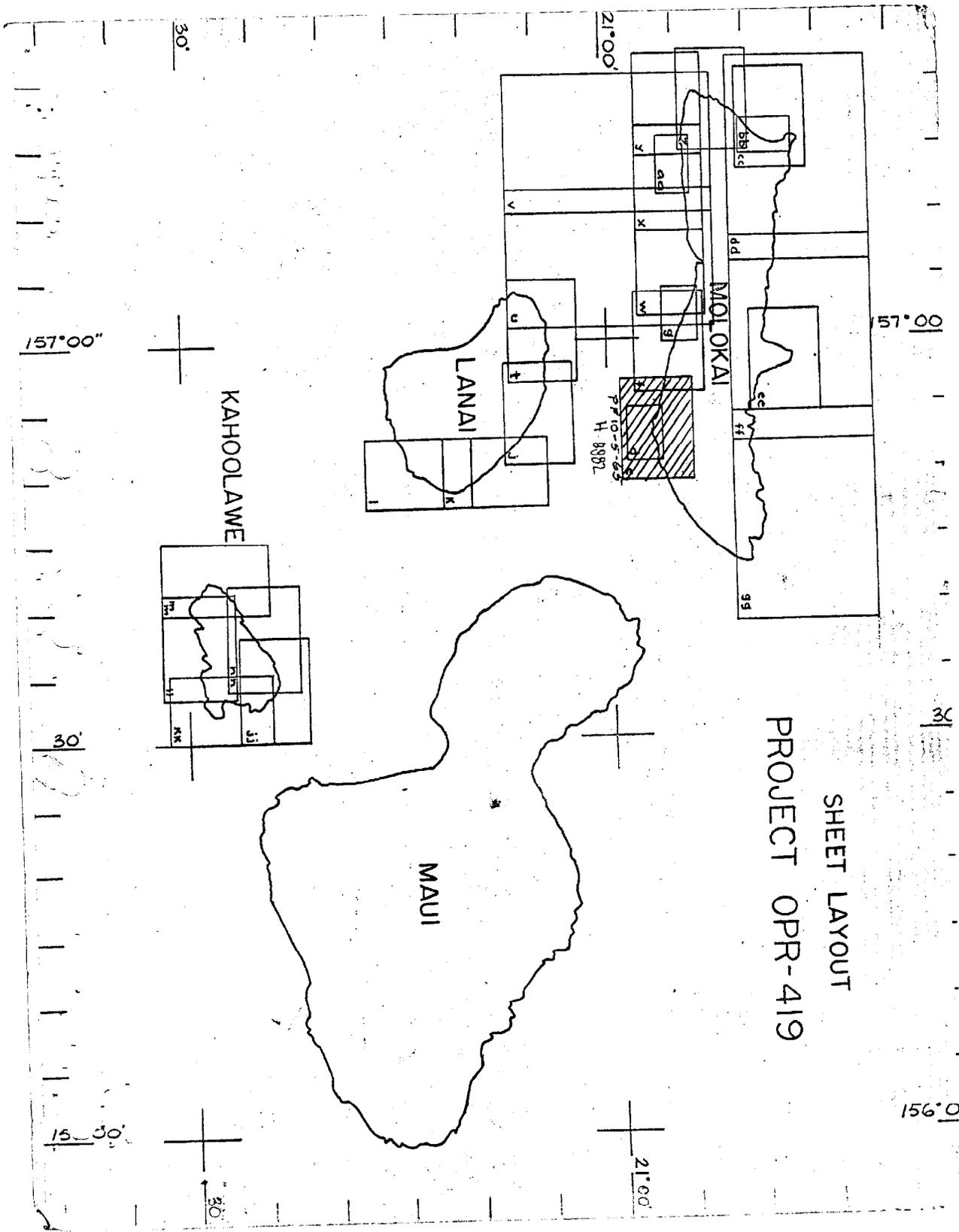
REMARKS:

*Applied to stels 4/4/74*  
*MS*

*chart  
4116  
4121*

*(ADP)*

*Area 6*



SHEET LAYOUT  
PROJECT OPR-419

MAUI

LANAI

MOLOKAI

KAHOOLOWE

57'00"

156'0"

21'00"

157'00"

30'0"

30'

15'30"

21'00"

30'

Descriptive report to accompany Hydrographic Survey  
H-8882 (field No. PF 10-5-65)

USC&GSS PATHFINDER

L.F. Woodcock, Comdg. 1965

G.L. Short, Comdg 1966

Scale 1:10,000

A. PROJECT

The hydrography on this sheet is being accomplished as part of Project OPR-419 - Hawaiian Islands (original instructions dated 25 October 1960). It was started by the USC&GSS PATHFINDER in 1965 under REVISED INSTRUCTIONS: PROJECT OPR-419-MAUI, MOLOKAI, LANAI, AND KAHOO LAWE ISLANDS, HAWAII dated 9 November 1964. The work was continued during the PATHFINDER's 1966 season under REVISED INSTRUCTIONS: PROJECT OPR-419-HAWAIIAN ISLANDS dated 6 December 1965. The sheet was not finished in 1966 and is to be transmitted to the USC&GSS SURVEYOR for completion at a later date.

B. AREA SURVEYED

This survey, along the South coast of Molokai, extends along the generally east-west shoreline from longitude 156°50'00"W to 156°57'00"W. The sheets north-south boundaries are from latitude 21°01'30"N to 21°06'00"N. It is bounded on its three offshore sides by contemporary surveys and completely surrounds another contemporary in-shore harbor survey. These junctions are as follows:

<u>Junction Area</u>	<u>Sheet No.</u>	<u>Scale</u>	<u>Year</u>
Enclosed by this sheet	H- <u>8881</u> (PF5-3-65)	1:5,000	1965, 1966
West	H- <u>8919</u> (PF10-8-66)	1:10,000	1966, 1967 (incomplete)
East	H-8835 (PF10-3-65)	1:10,000	1965
South	H- <u>9130</u> (SU40-1-61)	1:40,000	<u>1961-62</u>
South	H-8834 (PF20-1-65)	1:20,000	1965

### C. SOUNDING VESSELS

During the 1965 season PATHFINDER Motor Launch No. 3 was used exclusively on this sheet. During the 1966 season Motor Launches number 1 and 2 were used. The colors assigned to these launches were as follows:

ML#1	blue	small case day letters
ML#2	violet	small case day letters
ML#3	green	small case day letters

### D. SOUNDING EQUIPMENT

All soundings to date were made with the DE-723 type echo sounder with (Raytheon) ~~and~~ standard hand lead soundings at bottom sample locations. The instruments used were as follows:

<u>Launch</u>	<u>DE-723 Serial No.</u>	<u>Dates used</u>
ML# 1	145	all 1966 work
ML# 2	940	all 1966 work
ML# 3	141	all 1965 work

All fathometers had a calibrated velocity of 800 ft/sec. Velocity corrections for soundings were obtained by standard serial temperature and density observations at near-by oceanographic stations.

The initial on all fathometers was set at 0.0 fms and corrections applied for variations from this setting.

Draft corrections were obtained by taking bar checks at 1, 2, and 4 fathoms. These bar checks were taken twice daily, weather and sea conditions permitting.

E. Smooth SHEET To be completed by smooth plotter

#### F. CONTROL

was

Control used for this survey is triangulation and photohydro signals located on advance manuscripts T-11960 through T-11963. T-11960 is a 1:10,000 scale manuscript from which the signals were pricked directly onto the boat sheet. The other sheets (T-11961, 62, & 63) are 1:5,000 scale sheets from which the signals were scaled onto the boat sheet. In addition to photo-hydro signals, located by standard photogrammetric techniques in the field, many signals used on this sheet were office identified and located photocontrol points..

#### G. Shoreline

Shoreline for this survey was provided by the same manuscripts mentioned under section (F). A definite shoreline inspection has not been carried out at this time. The completing hydrographer is directed to section (L) of this report (ADEQUACY OF SURVEY). There he will find recommendations concerning the need for adequately delimiting the reef-line.

#### H. CROSSLINES

To date  
At this point crosslines have been run on all sections of the sheet. These would seem to be sufficient for the completion on the sheet, but a final evaluation of crossline coverage should be made by the hydrographer completing the sheet. In general the crossline agreement is good to excellent except in areas of rapidly changing bottom.

X\* JUNCTIONS

J. COMPARISON WITH PRIOR SURVEYS

K. COMPARISON WITH THE CHART

The incompleteness of this survey makes it impossible to effectively comment on the above three ~~phases~~ categories at the present time. Comment should be added by the completing hydrographer and smooth plotter. ✓

L. ADEQUACY OF THE SURVEY

At the present time this survey is approximately 80 % complete. ✓  
The following prepared statement accounts for the unsurveyed reef areas on this sheet:

M. AIDS TO NAVIGATION

Non-Floating aids: Two silver tanks appear on this boat sheet <sup>✓</sup>  
which ~~could be used~~ <sup>already appear on chart 4130.</sup> as aids to navigation. They were both used  
as hydrographic signals on this survey. The G.P.'S of each (scaled  
from the boat sheet) are as follows :

Signal SIL lat 21°03'48"  
lon 156°50'20"

signal Ver lat 21°04'11"  
lon 156°50'01"

Floating aids: One floating aid to navigation appears in  
the area covered by this sheet. It is a red buoy marking the  
entrance to Kamalo Harbor ( off shore of signal KAM). Its  
location and description are covered in the descriptive report  
of the in shore hydrographic survey of Kamalo Harbor.  
H-~~888~~1 ( PF 5-3-65).

N. STATISTICS

<u>Year</u>	<u>Vessel</u>	<u>No. of Pos</u>	<u>Mi. sdg. lines</u>	<u>D.P.'s</u> ✓
1965	ML#3	<del>914</del> 431	56.5	1
1966	ML#1	<del>284</del> 279	35.1	12 Bottom samples
1966	ML#2	<del>148</del> 142	19.3	-----

O. MISCELLANEOUS

To be completed by smooth plotter

P. RECOMMENDATIONS

To be completed by hydrographer finishing this sheet and by  
smooth plotter.

Q. REFERENCES TO REPORTS

To be completed by smooth plotter.

It is believed that a photogrammetric survey is well suited to delineating the multiple hazards of a coral reef.

Three days of skiff hydrography on sheet PF 5-3-65 using a sounding pole did not contribute significantly to the delineation of the bottom configuration. Danger therefore exists in misinterpretation of the navigability of the reef area surveyed, as extensive coral heads rising close to the surface dot the inshore areas.

On the third day when skiff hydrography was attempted, fresh tradewinds caused choppy water making it very difficult to work--the boatsheet and all equipment was drenched with spray.

For the reasons given, survey of the shallow inshore areas on this sheet by standard hydrographic methods is not considered feasible or economical.

It is recommended that the reef area delineation for this sheet be from the color photographic coverage of the area.

TIDES REPORT - OPR-419 - HAWAII 1966

Three tide gages were installed in Hawaii this year. Their respective locations are as follows:

- a. Kaunakakai, Molokai Island
- b. Kamalo, Molokai Island
- c. Kaunalapau, Lanai Island

a. The gage at Kaunakakai Harbor served to control the shorean hydrography of sheets IF 20-1-66 and PF 20-2-66. The gage run continuously for a period of 44 days with a loss of data of five hours. The loss was attributed to the failure of winding the chart drive. The missing data was inferred from a comparison of predicted with actual tides. Two new tidal bench marks were established at Kaunakakai. Levels were run to these bench marks as well as to the old ones. A preliminary height of MLLW above the staff zero was determined. This value should be confirmed by the Washington Office. The determination was as follows:

		APRIL 20	APRIL 26	MEAN
El. of BM above staff zero	BM#2	8.338	NONE	
El. of BM above MLLW		5.450		
El. of MLLW above staff zero		<u>2.888</u>		2.888
	BM#4	8.672	NONE	
		5.750		
		<u>2.922</u>		2.922
	BM#5	8.558	8.559	
		6.310	6.310	
		<u>2.248</u>	<u>2.249</u>	2.248

		APRIL 20	APRIL 26	MEAN
El. of BM above staff zero	BM#6	8.930	8.931	
El. of BM above MLLW		NONE	NONE	
El. of MLLW above staff zero				
	BM#7	9.348	9.347	
		NONE	NONE	

The value corresponding to the height of MLLW above staff zero was 2.9'.

B. The gage at Kamalo Harbor controlled the hydrography of sheets PF 5-3-65, PF 10-5-65 and PF 10-5-66 of Molokai. In addition it also controlled PF 10-2-66 and PF 10-5-66 of Lanai. For the Molokai sheets only one day of data was missing. It corresponds to the day in which the tide gage was removed. Three days of data were missing for the Lanai work. All of them occur before and after the operating period of the gage. The gage operated for 44 days; occasionally the chart drive was allowed to run down with no effect on the collection of data. The missing data will be obtained from the Washington Office. At this station levels were run to five tidal bench marks. The height of MLLW above the staff zero was determined as follows:

		MARCH 14	APRIL 26	MEAN
El. of BM above staff zero	BM#1	6.651	6.679	<del>6.665</del>
El. of BM above MLLW		4.280	4.280	
El. of MLLW above staff zero		<u>2.371</u>	<u>2.399</u>	2.385
	BM#3	8.227	8.288	
		5.890	5.890	
		<u>2.337</u>	<u>2.398</u>	2.368
	BM#5	5.036	5.052	
		2.660	2.660	
		<u>2.376</u>	<u>2.392</u>	2.384

		MARCH 14	APRIL 26	MEAN
El. of BM above staff zero	BM#6	7.821	7.865	
El. of BM above MLLW		5.480	5.480	
El. of MLLL above staff Zero		<u>2.341</u>	<u>2.385</u>	2.363
	BM#7	5.806	5.829	
		3.340	3.340	
		<u>2.466</u>	<u>2.489</u>	2.478

The height of MLLW above staff zero was found to be 2.4ft. This value will be confirmed by the Washington Office.

c. Hydrography of sheets PF 10-1-66, PF 10-3-66, PF 10-4-66, PF 10-6-66 and PF 10-7-66 of Kahoolawe was controlled by the tide gage at Kaunakakai. Unfortunately very little data of any value was obtained from this gage. The gage operated for 63 days. Only 19 days of data were necessary. Five days were obtained. The failure to gather tide data at this station can only be attributed to the incompetence of the observer, and to the failure of apparatus used. It has been recommended on the Report of Tide Station that the observer at Kaunakakai be not hired again should that need arise. The missing data will be obtained from the Washington Office. Levels were run to four tidal bench marks. Reference is made to the letter dated 9 April 1966 for the vertical displacement of BM #1. The determination of the height of MLLW above the staff zero was as follows:

		FEBRUARY 25	APRIL 22	MEAN
El. of BM above staff zero	BM#1	17.146	17.177	
El. of BM above MLLW		11.570	11.570	
El. of MLLW above staff zero		<u>5.576</u>	<u>5.607</u>	5.596
	BM#2	14.215	14.230	
		12.470	12.470	
		<u>1.745</u>	<u>1.760</u>	1.752
	BM#5	35.556	35.647	
		33.840	33.840	
		<u>1.716</u>	<u>1.807</u>	1.762
	H.T.	17.198	17.231	
		15.480	15.480	
		<u>1.718</u>	<u>1.751</u>	1.734

The height of MLLW above the staff zero was determined to be 1.7 ft.  
This value will be confirmed by the Washington Office.

Leonard Larose-Casanova  
Ensign, USESSA

- 5 -

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.

UNITED STATES GOVERNMENT

# Memorandum

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

TO : Chief, Processing Division  
Pacific Marine Center

DATE: September 15, 1967

In reply refer to:  
C3311-121-MCFOE

FROM : Chief, Datum Planes Section  
Oceanography Division

SUBJECT: Verified Tide Reducers, H.S. 8882

In response to your memorandum of September 11, 1967,  
there are enclosed verified tide reducers and approved  
Form 712 for H.S. 8882.

  
L.C. Wharton

Enclosures



BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

**ABSTRACT OF TIDE CORRECTIONS**  
(See instructions on reverse side)

U.S. DEPARTMENT OF COMMERCE  
ESSA  
AST AND GEODETIC SURVEY

1. HYDRO. SURVEY NO. H- 8882		2. FIELD NO. PF-10-5-65		3. SURVEY LOCATION S.E. Coast Molokai Is., Hawaii		4. TIME MERIDIAN 150 W	
a. NO. DAY YR. OR DAY NO. (Date)	b. POSITION NUMBER	c. TIME		d. TIDE REDUCERS FT.	e. MACHINE ENTRY FMS.	f. TIDE STATION USED (As Form 687)	g. CORRECTION USED ZONE DESIGNATION
		FROM	TO				
4/14/65 (104)		073000	103700	0.0		Portable tide gage at Kamalo Harbor, Molokai Is. MLLW above staff zero 2.2 ft. (See att. memo)	
		114900	122900	-0.1			
( 15/65 (105)		123615	141000	-0.2		(Actual times of hydrography listed)	
		141030	141700	-0.3			
4/16/65 (106)		073715	075230	0.0		1965 Pathfinder work	
		085415	101945	+0.1			
		102000	105800	0.0			
		115430	130015	-0.1			
		130030	143015	-0.2			
		143030	144900	-0.3			
		072300	084030	0.0			
		085200	102700	+0.1			

*Remove this  
File. Tide corrector  
sheets need penultimate*

Tides and Currents Branch 9/13/67

APPROVED

5. CHECKED

## INSTRUCTIONS FOR PREPARATION AND SUBMITTAL

The information entered on this form shall be derived from associated tide records and together with those records be forwarded to the Washington Office for administrative approval by Tides and Currents Branch, Marine Data Division, Office of Oceanography.

### Instructions by item number.

1. Enter the survey number
2. Enter the field number.
3. Enter the survey locality.
4. Enter the time meridian used.
5. Checked: Enter field approval  
Approved: Indicate Washington Office approval.

### Instructions by columns (letters):

- a. Enter the day of the year. A coded entry must be identifiable in the Washington Office.
- b. Enter the position number of the sounding line where the reducer is to first apply.
- c. Enter the time in hours and minutes that the reducer listed in "d" is used.
- d. Enter the tide reducer necessary to correct the sounding to the plane of the reference.

The value entered by the field personnel shall be certified by the Washington Office, or corrected and returned to the originator. Only approved information can be entered into the smooth (edited) tape.

- e. Enter the tide value from the previous column (Tide reducer) applied to a tide base of +60.0.

Example:

$$\begin{array}{r} +60.0 \\ - 3.1 \text{ (from column d.)} \\ \hline +56.9 \text{ (into column e.)} \end{array}$$

This summed value shall be punched into the paper tape.

- f. Enter the origin of the tidal record from which the reducers in column "d" were derived. The entry must be identical with the terminology expressed in form 681.
- g. Enter the additional information used to determine the corrections: Ratio of Range, ± time necessary to correct for the gage position, and zone designation.

1. HYDRO. SURVEY NO: H- 8882		2. FIELD NO. PF-10-5-65		3. SURVEY LOCATION S.E. Coast Molokai Is., Hawaii		4. TIME MERIDIAN 135 W	
a. MO. DAY YR. OR DAY NO. (Date)	b. POSITION NUMBER	c. TIME		d. TIDE REDUCERS FT.	e. MACHINE ENTRY FMS.	f. TIDE STATION USED (As Form 681)	g. CORRECTION USED ZONE DESIGNATION
		FROM	TO				
3/15/66 (074)		100845	151630	-0.1		Portable tide gage at Kamalo Harbor, Molokai Is. No tide note available for 1966 work by Pathfinder. MLLW above staff zero assumed to be same as 1965 work (2.2 ft.)  (Actual times of hydrography listed)	
4/14/66 (104)		101330 132200	115830 154930	-0.1 -0.2			
4/23/66 (113)		093700 125815	125800 135330	0.0 -0.1			
4/24/66 (114)		101000	114530	0.0			
4/25/66 (115)		113600	123330	0.0			
4/26/66 (116)		092830	111930	0.0			
4/27/66 (117)		102015	130730	-0.1			

Tides and Currents Branch 9/13/67

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4. Enter the time meridian used.
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- a. Enter the day of the year. A coded entry must be identifiable in the Washington Office.
- b. Enter the position number of the sounding line where the reducer is to first apply.
- c. Enter the time in hours and minutes that the reducer listed in "d" is used.
- d. Enter the tide reducer necessary to correct the sounding to the plane of the reference.

The value entered by the field personnel shall be certified by the Washington Office, or corrected and returned to the originator. Only approved information can be entered into the smooth (edited) tape.

- e. Enter the tide value from the previous column (Tide reducer) applied to a tide base of +60.0.

Example:

$$\begin{array}{r} +60.0 \\ - 3.1 \text{ (from column d.)} \\ \hline +56.9 \text{ (into column e.)} \end{array}$$

This summed value shall be punched into the paper tape.

- f. Enter the origin of the tidal record from which the reducers in column "d" were derived. The entry must be identical with the terminology expressed in form 681.
- g. Enter the additional information used to determine the corrections: Ratio of Range, ± time necessary to correct for the gage position, and zone designation.

**ABSTRACT OF E CORRECTIONS**  
(See instructions on reverse side)

1. HYDRO. SURVEY NO.		2. FIELD NO.		3. SURVEY LOCATION			4. TIME MERIDIAN	
H. 8882		PT-10-5-65		S.E. Coast Molokai Is., Hawaii			150 W 135 W	
a. MO. DAY YR. OR DAY NO. (Date)	b. POSITION NUMBER	c. TIME		d. TIDE REDUCERS FMS. FT.	e. MACHINE ENTRY FMS.	f. TIDE STATION USED (As Form 681)	g. CORRECTION USED ZONE DESIGNATION	
		FROM	TO					
7/24/66 (205)	Note:	142300	150300	-0.2		Portable tide gage at Kamalo Harbor Molokai Is. MLLW above staff zero 5.2 ft.		
7/25/66 (206)	Note:	135 W time 092400	meridian after 7/24/66 155120	-0.3		(Actual times of hydrography listed)		
7/26/66 (207)		091330 102500 133500 152400	102440 115620 141720 154920	-0.3 -0.4 -0.3 -0.2		1966 Surveyor work		

Tides and Currents Branch 9/13/67

APPROVED

5. CHECKED

## INSTRUCTIONS FOR PREPARATION AND SUBMITTAL

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The value entered by the field personnel shall be certified by the Washington Office, or corrected and returned to the originator. Only approved information can be entered into the smooth (edited) tape.

- e. Enter the tide value from the previous column (Tide reducer) applied to a tide base of +60.0.

Example:

$$\begin{array}{r} +60.0 \\ - 3.1 \text{ (from column d.)} \\ \hline +56.9 \text{ (into column e.)} \end{array}$$

This summed value shall be punched into the paper tape.

- f. Enter the origin of the tidal record from which the reducers in column "d" were derived. The entry must be identical with the terminology expressed in form 681.
- g. Enter the additional information used to determine the corrections: Ratio of Range,  $\pm$  time necessary to correct for the gage position, and zone designation.

GEOGRAPHIC NAMES LIST

KALAELOA HARBOR

KALOHI CHANNEL

KAMALO HARBOR

MOLOKAI ISLAND

21

ECHO CORRECTIONS

Laundh #3

1965

Hawaiian Islands

Sheet No.	Date	Day	Correction	
			0-31 fms	31-101 fms
PF 10-4-65	3-27	a	+0.3 fm	+0.2 fm
	3-28	b	0.3	0.2
PF 10-5-65	4-14	a	+0.3 fm	+0.2 fm
	4-15	b	0.3	0.2
	4-16	c	0.3	0.2

Kamishak Bay, Alaska

Sheet No.	Date	Day	Correction	
			0-31 fms	31-101 fms
PF 20-2-65	6-23	a	+0.4 fm	+0.4
	6-24	b	0.3	0.2
	6-25	c	0.4	0.4
	7-6	d	0.3	0.2
	7-7	e	0.4	0.4
	7-12	193	0.3	0.2
	7-15	196	0.4	0.4
	7-18	199	0.4	0.4
	7-22	203	0.4	0.4
	7-23	204	0.3	0.2
	7-24	205	0.3	0.2
	8-6	f	0.3	0.2
	8-7	219	0.3	0.2
	8-10	g, 222	0.3	0.2
	8-21	h	0.3	0.4
8-22	j	0.3	0.2	
8-26	k	0.3	0.2	
PF 20-3-65	7-13	194	+0.3	+0.2
	7-21	202	0.3	0.2
	8-4	216	0.3	0.2
	8-5	217	0.3	0.2
	8-8	220	0.3	0.2
	9-24	267	0.3	0.2
PF 40-2-65	7-14	195	+0.3	+0.2
	8-8	220	0.3	0.2

10-5-65

Vessel

1966

Echo Corrections

1501

Sheet No.

Date Day

0-31 fms

31-101 fms

ML#1	PF 10-5-65	3/15/66	a	+1.4 ✓	+1.4 ✓
"	"	4/14/66	b	+1.3 ✓	+1.2 ✓
"	"	4/24/66	c	+1.2 ✓	+1.2 ✓
"	"	4/26/66	d	+1.2 ✓	+1.2 ✓
"	"	4/27/66	e	+1.3 ✓	+1.2 ✓

		4/23/66	a1	+1.3 ✓	+1.2 ✓
ML#2	PF 10-5-65	4/25/66	b	+1.4 ✓	+1.4 ✓
		<del>4/23/66</del>	<del>a1</del>		

ML#3	PF 10-5-65	4/14/66		+1.3 ✓	+1.2 ✓
		4/15/66		+1.4 ✓	+1.4 ✓
		4/16/66		+1.3 ✓	+1.3 ✓

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	64.5
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

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

Velocity corrections to be applied to all 1966 hydrography on sheets

PF 5-3-65, 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	CORRECTION	TO DEPTH	CORRECTION
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

List of Stations on H- 8882 (PF10-5-65)

Name used in hydrographic Survey		Origin of Station	
		Manuscript	Office identified photo point number
ACE	004	T-11960	
ART	009	T-11960	
BAD	021	T-11962	6201
BAT	006	T-11960	
	$\phi$ 21° 53.78 $\lambda$ 156° 55.91		
BAT	031	T-11963	
BLU	034	T-11963	6304
BOB	022	T-11963	6303
BOX	003	T-11960	6004
BUG	027	T-11962	
CAN	001	T-11960	
COW	002	T-11960	6005
DAD	015	T-11961	
DOG	030	T-11963	
HUB	008	T-11960	6002
KAM	018	T-11961	
LUK	023	T-11962	
MAX	005	T-11960	
NOT	010		
PUU	013	PUU <del>PAPAI</del> PAPAI, 1915	
RAT	028	T-11962	
RED	033	T-11963	

ROX	025	T-11962	
SAM	022	T-11962	
SET	014	T-11961	
SIL	024	T-11962	
SIN	019	T-11961	
TIP	007	T-11960	6003
TOO	016	T-11961	
<del>WAX</del> VER	029	T-11962	
<del>WAX</del> WAL	012	T-11961	
<del>WXX</del> WAT	020	T-11962	
<del>ZAK</del> WIT	017	T-11961	
<del>ZXX</del> ZAP	026	T-11962	
ZOO	011	T-11961	

ADDENDUM  
HYDROGRAPHIC TITLE SHEET  
COVERING WORK BY THE SURVEYOR

H-8882

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-10-5-65

State HAWAII

General locality Molokai Island - S. Coast

Locality South East Coast of Molokai Island Approaches to Kamalo and Kalaeloa Harbors

Scale 1:10,000 Date of survey 24-26 July 1966

Instructions dated 13 & 26 May 1966 Project No. OPR-419

Vessel USC&GSS SURVEYOR - Launch 3

Chief of party V. Ralph Sobieralski

Surveyed by W.L. Mobley

Soundings taken by echo sounder, ~~Hand Lead, etc.~~

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Protracted by \_\_\_\_\_ Automated plot by PMC - Gerber Digital Plotter

Soundings penciled by \_\_\_\_\_

Soundings in fathoms ~~Feet~~ at ~~MLLW~~ MLLW \_\_\_\_\_

REMARKS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SUPPLEMENT TO  
DESCRIPTIVE REPORT  
PF-10-5-65  
H- 8882

A. Project

The SURVEYOR'S work on this project is covered under Revised Project Instructions dated 13 May 1966, and 26 May 1966. ✓

B. Sounding Vessel and Equipment

Surveyor launch #3 (Blue lower case letters).  
All soundings were taken with Raytheon DE-723 fathometer #939. Corrections for draft taken from bar checks, and applied to the soundings are as follow; ✓

from 0.0 to 3.0 fm +0.2 fm  
3.1 to 5.0 fm +0.3 fm  
5.1 to depth +0.4 fm

C. Control

Control was from rebuilt signals located by the PATHFINDER earlier in the 1966 season. ✓

D. Statistics

ML #3 34.7 miles 22<sup>5</sup> positions ✓

E. Miscellaneous

The SURVEYOR'S launch operated in the vicinity of this sheet for only three days, therefore no additional information can be added to that contained in the Descriptive report prepared by the PATHFINDER. All hydrographic data for this sheet has been logged by the SURVEYOR for smooth plotting by PMC Electronic Data Processing Division. Velocity Corrections used by the PATHFINDER are applicable to the SURVEYOR'S work on this sheet.

PF-10-5-65 H-8882

F. Logging Information

All data obtained to date on this sheet has been logged by the SURVEYOR in accordance with PMC Memorandum CF2 4060/03.2.

Latitude<sup>s</sup> and Longitude<sup>s</sup> of hydrographic signals was obtained from T-Sheet manuscripts.

<u>NAME</u>	<u>CODE</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	
CAN	001	21°04' 33.75"N	156°57' 47.07" W	T-11960
COW	002	00.75	07.385	T-11960
BOX	003	21 03 58.05	156 56 43.65	T-11960
ACE	004	52.20	20.20	T-11960
MAX	005	50.34	13.96	T-11960
BAT	006	46.86	156 55 54.45	T-11960
TIP	007	45.89	39.77	T-11960
HUB	008	45.59	32.28	T-11960
ART	009	35.68 35.68	03.08	T-11960
NUT	010	32.06	156 54 37.10	T-11960
ZOO	011	27.80	28.61	T-11961
WAL	012	26.66	06.82	119 81
BUU	013	57.94	08.52	POU PAPPY 1915
SET	014	18.54	156 53 46.52	T-11961
DAD	015	06.86	30.31	"
TOO	016	00.00	08.76	"
WIT	017	21 02 59.49	156 52 50.99	"
KAM	018	53.35	37.10	T-11961
SIN	019	21 03 08.49	29.65	T-11961
WAT	020	12.17	156 51 08.07	T-11962
BAD	021	20.03	156 52 00 990	"
SAM	022	24.16	156 51 45.79	"
LUK	023	35.54	21.13	"
HAT(SIL)	024	47.08	20.26	"
ROX	025	07.51	06.93	"
ZAP	026	21.85	01.39	"

(3)

PF-10-5-65 H-8882

<u>NAME</u>	<u>CODE</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	
BUG	027	21°03'25.56"	156°50'37.75"	T-11962
RAT	028	21 03 24.32	21.89	T-11962
VER	0029	21 04 11.12	00.73	T-11963
DOG	030	21 03 45.36	156 49 54.10	"
BAT	031	53 53.65	34.64	"
BOB	032	21 04 01.30	30.07	"
RED	033	14.08	23.38	"
BLU	034	07.09	12.51	T-11963

(4)

PF-10-5-65 H-8882

Table of Position Numbers and Computer Plotter Numbers

VESSEL	COMPUTER PLOTTER NUMBER
PATHFINDER ML#1	0001 thru 0280
PATHFINDER ML#2	1001 thru 1142
PATHFINDER ML#3	2001 thru 2430
SURVEYOR ML#3	3001 thru 3225
<i>McArthur ML#1</i>	4001 " 4041

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

PATHFINDER  
SURVEYOR 1966

Velocity corrections to be applied to all 1966 hydrography on sheets

PF 5-3-65, 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	CORRECTION	TO DEPTH	CORRECTION
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

177  
-1  
pr

SUPPLEMENT TO DESCRIPTIVE REPORT

To Accompany

Hydrographic Sheet H-8882 (PF-10-5-65)

USC&GSS McARTHUR

LCDR Ronald L. Newsom, Cmdg.

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A. PROJECT

This sheet is a part of Project OPR-419. BMC requested in Memo CFS2 4060/02, dated 9 October 1967, that the McARTHUR fill in a few splits needed for completion of the sheet.

The splits were on the west end of the sheet, between 55°30'W. longitude, and 56830'W. longitude. All work was accomplished on 2 November 1967.

B. SOUNDING VESSEL & EQUIPMENT

All soundings were taken from Launch ARI, using a DE-723 fathometer, Serial #931. The maximum depth was 23 fathoms.

C. CONTROL

All hydrography was controlled using three-point sextant fixes using signals previously built and located by the PATHFINDER. All soundings agreed with soundings from previous work. The position numbers are in red ink.

D. STATISTICS

Miles of Sounding Lines - - - - - 4.0 n.m.

Number of Positions - - - - - 39<sup>41</sup>

E. REFERENCE TO REPORT

Refer to Descriptive Report for Boat Sheet H-8882, (PF-10-5-65) for further information.

Respectfully submitted:

*Richard A. Sundholm*

Richard A. Sundholm  
LT(jg), USESSA  
USC&GSS McARTHUR CSS-30

Approved & Forwarded:

*Ronald L. Newsom*

Ronald L. Newsom  
LCDR, USESSA  
Commanding Officer

Appendix I

Tide corrections for PF-10-5-65 were taken from records of the tide gauge at Kamalo Harbor on Molokai Island. Only one corrector was required for this survey due to its short duration. The tide corrector used was .1 fm.

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

CORRECTIONS IN FEET, FATHOMS

FORM CGS-117  
(11-66)

U.S. DEPARTMENT OF COMMERCE  
ESSA  
COAST AND GEODETIC SURVEY

VELOCITY CORRECTIONS

Ship MSARTHUR  
LCOR. R. L. NEWSOM Comdg.  
 These corrections are to be used  
 between 1967 and 1967  
 in the locality SOUTH COAST OF  
MOLOKAI ISLAND, HAWAII  
 for hydrographic surveys Nos. PF-10-B-66

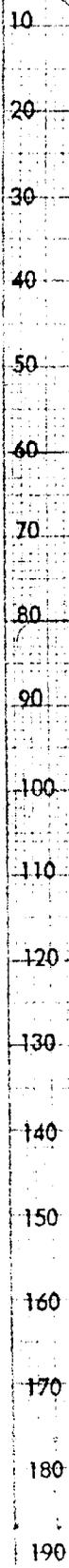
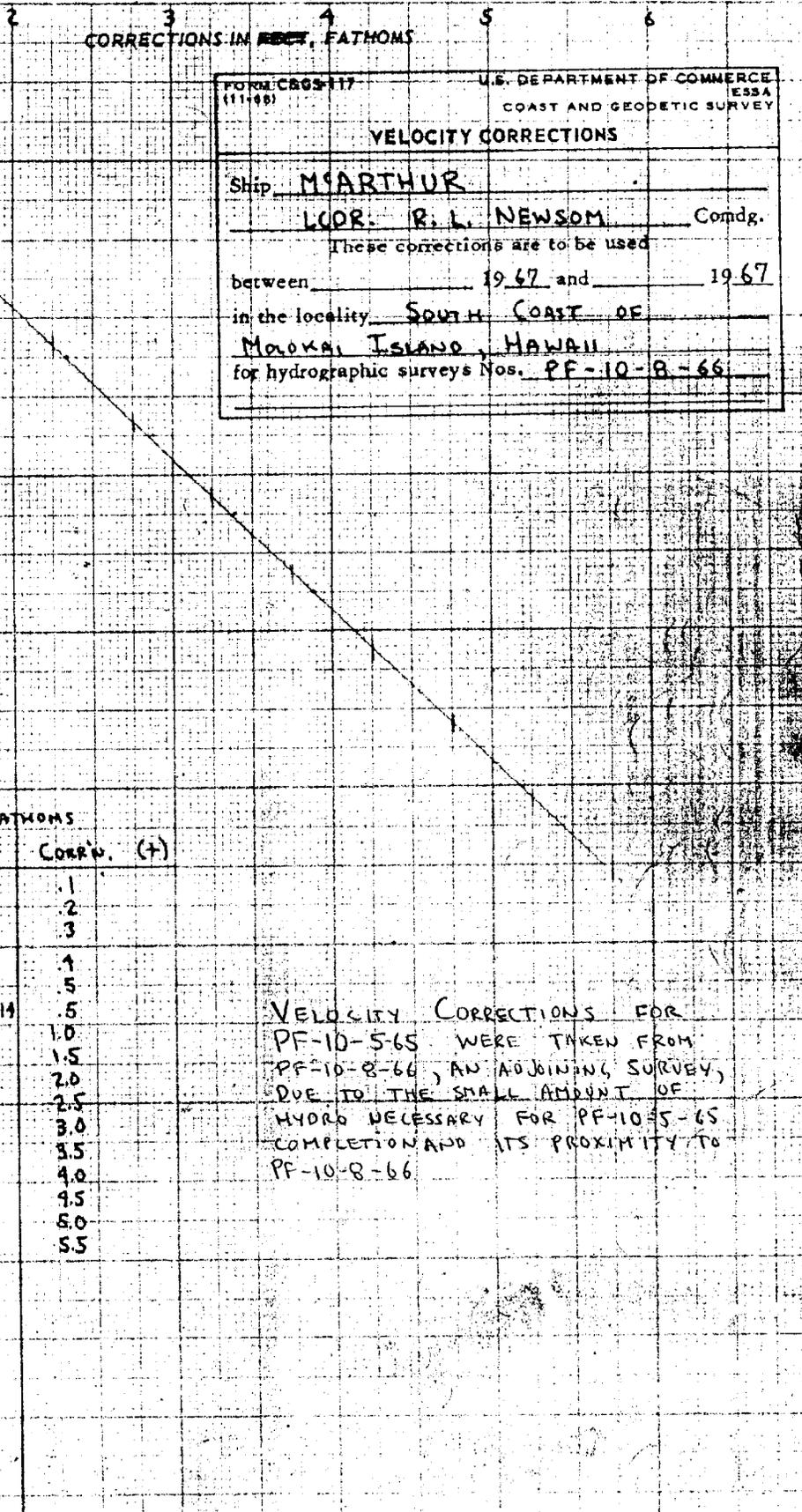
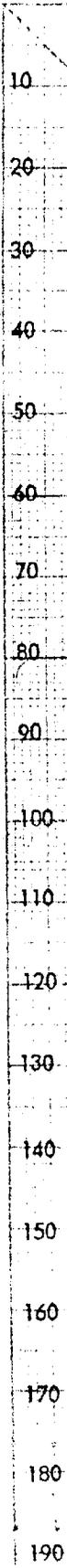
(For deep water add a 0. to these figures)

DEPTHS IN FATHOMS

FATHOMS

DEPTH	CORR. (+)
0-2.0	.1
2.1-4.0	.2
4.1-6.0	.3
6.1-8.0	.4
8.1-10.0	.5
<del>11-14</del> 11-14	.5
15-24	1.0
25-33	1.5
34-43	2.0
44-53	2.5
54-62	3.0
63-72	3.5
73-82	4.0
83-92	4.5
92-101	5.0
102-111	5.5

VELOCITY CORRECTIONS FOR  
 PF-10-5-65 WERE TAKEN FROM  
 PF-10-8-66, AN ADJOINING SURVEY,  
 DUE TO THE SMALL AMOUNT OF  
 HYDRO NECESSARY FOR PF-10-5-65  
 COMPLETION AND ITS PROXIMITY TO  
 PF-10-8-66



H 8882

TC/TI

PF-Launch # 3

Combined Draft, Stylus and Initial Corr'n

Time	Corr'n	Day	Yr
07 00 00	0004	104	1965
07 46 00	0005		
07 46 15	0004		
07 47 00	0005		
07 47 30	0004		
07 48 30	0003		
07 50 15	0002		
07 50 30	0003		
07 50 45	0004		
07 51 30	0005		
07 51 45	0004		
07 52 30	0005		
07 54 45	0004		
07 55 00	0005		
07 55 15	0004		
07 58 30	0003		
08 14 15	0004		
08 17 15	0005		
08 17 45	0004		
08 18 30	0005		
08 19 00	0004		
08 20 00	0005		
08 20 15	0004		

*Reviser - file  
in cabinet or  
with printouts*

PF- Launch# <sup>8882</sup> 3

08 20 45 0005

08 21 45 0004

08 22 30 0005

08 22 45 0004

08 26 00 0003

08 28 00 0004

08 30 45 0005

08 31 15 0004

08 32 30 0005

08 32 45 0004

08 33 15 0005

08 33 30 0003

08 35 45 0004

08 36 15 0005

08 36 30 0004

08 37 15 0005

08 38 30 0004

08 40 45 0003

08 43 30 0004

08 45 45 0005

08 46 45 0004

08 47 30 0005

08 48 00 0004

08 48 30 0005

08 48 45 0003

8882  
PF - Launch #3

08 59 30 0002

08 59 45 0004

09 00 30 0003

09 01 30 0004

09 02 00 0005

09 02 30 0004

09 03 45 0005

09 04 15 0004

09 07 00 0003

09 10 15 0004

09 12 00 0005

09 12 15 0004

09 13 45 0005

09 14 15 0004

09 15 00 0003

09 15 30 0004

09 16 15 0005

09 16 30 0003

09 18 15 0004

09 18 45 0003

09 19 30 0004

09 20 00 0005

09 20 30 0004

09 21 30 0005

09 22 00 0004

8882

PF - Launch #3

092415	0004	100900	0002
092430	0003	100915	0003
092630	0004	101015	0004
092645	0003	101100	0005
092700	0004	101115	0003
092815	0005	101300	0002
092830	0004	101315	0004
093030	0005	101345	0003 <sup>2</sup> -1
093100	0004	101415	0003 <sup>1</sup>
093115	0005	101430	0004 <sup>3</sup>
093145	0003	101445	0005 <sup>4</sup>
093300	0004	101500	0004 <sup>3</sup> -1
093330	0003	101530	0004
		101630	0005
093415	0004	101700	0004
093445	0005	101745	0005
093530	0004	101815	0004
093600	0005	101900	0003
093630	0004	102000	0004
093730	0005	102045	0003
093800	0004	102415	0004
093915	0003	102500	0005
100600	0004	102530	0004
100630	0005	102545	0005
100700	0004	102600	0004
100815	0003	102630	0003

PF-Launch#3 8882

10 27 00	0004	11 57 45	0004
10 28 15	0005	11 59 15	0003
10 29 15	0003	12 00 45	0004
10 30 15	0002	12 01 00	0005
10 30 30	0005	12 01 15	0004
10 30 45	0003	12 03 00	0005
10 31 45	0002	12 03 15	0004
10 32 00	0004	12 03 45	0003
10 32 15	0005	12 08 15	0005
10 32 30	0004	12 08 30	0004
10 33 15	0005	12 08 45	0005
10 33 45	0004	12 09 00	0004
10 35 00	0003	12 10 15	0005
11 50 15	0004	12 11 45	0004
11 50 30	0003	12 12 30	0005
11 51 00	0005	12 13 00	0003
11 51 15	0004	12 16 30	0002
11 51 45	0005	12 16 45	0004
11 52 00	0004	12 17 45	0003
11 53 00	0005	12 18 45	0002
11 53 45	0003	12 18 30	0005
11 54 15	0004	12 19 30	0004
11 56 00	0005	12 20 15	0005
11 56 15	0003	12 20 30	0004
11 57 15	0002	12 20 45	0005

PF Launch #3 8882

12 31 00	0004	12 54 45	0004
12 26 30	0003	12 55 30	0003
12 27 45	0004	12 55 45	0004
12 28 30	0005	12 56 15	0003
12 28 45	0004	12 57 00	0004
12 37 00	0003	12 57 45	0005
12 38 30	0004	12 58 00	0004
12 42 30	0003	12 59 00	0005
12 43 00	0004	13 00 00	0003
12 43 30	0003	13 16 00	0004
12 44 15	0004	13 19 15	0005
12 44 30	0005	13 19 30	0004
12 44 45	0004	13 20 30	0005
12 46 30	0005	13 21 00	0004
12 46 45	0004	13 21 45	0003
12 47 00	0005	13 44 30	0004
12 47 15	0003	13 46 30	0003
12 47 30	0004	13 57 00	0004
12 48 30	0005	13 57 30	0003
12 49 00	0004	18 00 00	0002 - 104 1265
12 50 15	0003		
12 51 00	0004		
12 52 45	0005		
12 53 00	0004		
12 53 30	0003		

H-8882

PF Launch # 3 Combined Draft, Stylus and Initial Corr'n

Time	Corrn	Day	Year	Time	Corrn	Day	Year
0700 00	0003	105	1965	0700 00	0003	106	1965
07 42 15	0004			074630	0002		
07 42 45	0003			0751 15	0003		
07 44 45	0004			0754 00	0002		
0745 00	0003			08 36 15	0003		
0749 30	0004			09 00 00	0004		
07 50 00	0003			09 35 00	0002		
07 52 00	0004			09 56 15	0003		
08 54 15	0003			09 57 45	0002		
09 02 00	0004			10 00 00	0003		
09 05 00	0003			10 05 00	0002		
09 14 15	0004			10 19 00	0003		
09 17 00	0003			10 30 00	0002	106	1965
09 25 15	0002						
09 27 45	0003						
09 53 00	0002						
09 54 45	0003						
10 00 00	0004						
10 09 45	0003						
10 55 00	0002						
12 03 15	0003						
14 44 00	0002						
14 50 00	0003	105	1965				

H-8882

PATHFINDER

Launch #1 Draft, Stylus and Initial Carrin

Time	Corrn	Day	Year				
10 08 00	0003	074	1966	11 13 30	0002		
10 48 00	0004			11 13 45	0004		
10 53 00	0003			11 26 00	0005		
13 20 45	0002			11 26 15	0004		
13 48 00	0003			11 27 00	0003		
13 53 15	0005			11 29 15	0004		
14 47 00	0004			11 29 45	0003		
14 55 30	0005			11 35 45	0004		
16 30 00	0004	074	1966	11 36 15	0005		
				11 36 30	0004		
10 00 00	0004	104	1966	11 57 15	0003		
10 23 00	0005			13 23 30	0004		
10 23 15	0004			13 44 30	0003		
10 23 45	0005			13 45 30	0004		
10 54 00	0004			14 34 30	0003		
10 54 30	0003			14 36 00	0004		
10 55 30	0005			15 12 30	0003		
10 59 30	0003			15 41 45	0004		
11 00 30	0002			15 47 00	0003		
11 00 45	0004			15 47 45	0004		
11 01 15	0005			15 48 00	0003		
11 01 30	0004			16 00 00	0002	104	1966
11 03 30	0003						

PF Launch #1

H-8882

Combined Draft, Stylus and Initial Corrections

Time	Corrn	Day	Year			
10 00 00	0002	114	1966	10 00 15	0005	
10 20 45	0003			10 00 30	0004	
10 40 00	0002			10 27 30	0005	
10 42 30	0003			10 28 00	0004	
11 01 30	0002			10 46 00	0002	
11 08 15	0003			10 47 45	0003	
11 28 45	0002			10 48 15	0004	
11 43 15	0003			10 49 15	0003	
12 00 00	0002	114	1966	10 49 30	0004	
				10 56 00	0005	
09 00 00	0002	116	1966	10 56 30	0004	
09 31 00	0003			11 10 30	0002	
09 32 00	0004			11 11 45	0003	
09 40 30	0005			11 12 30	0004	
09 40 45	0004			11 12 45	0003	
09 41 00	0005			11 13 00	0004	
09 41 15	0004			11 13 45	0003	
09 46 00	0003			11 14 00	0004	
09 46 45	0004			11 19 15	0005	
09 47 00	0003			11 19 30	0004	
09 47 30	0002			12 00 00	0003	116 1966
09 51 15	0003					
09 53 15	0004					



PF Launch # 2

H-8882

Combined Draft, Stylus and Initial corrections

Time	Corr'n	Day	Year		
0900.00	0004	113	1966	11 13 45	0004
0939.45	0005			11 15 45	0003
0940.30	0006			11 20 30	0004
0958.00	0004			11 22 45	0005
10 01 15	0005			11 23 45	0006
10 01 45	0006			11 42 00	0005
10 14 45	0005			11 42 45	0004
10 15 45	0004			11 45 45	0003
10 19 00	0003			11 46 15	0004
10 30 30	0004			11 47 45	0003
10 32 45	0005			12 28 00	0004
10 33 00	0004			12 30 30	0005
10 33 15	0005			12 32 15	0006
10 34 00	0006			12 46 00	0005
10 47 30	0005			12 47 00	0004
11 06 00	0004			12 49 30	0003
11 07 30	0003			12 58 00	0004
11 08 00	0004			13 00 45	0005
11 08 15	0003			13 02 00	0006
11 08 45	0004			13 23 45	0005
11 10 30	0003			13 25 30	0004
11 12 00	0004			13 28 15	0003
				13 45 00	0004
				13 46 00	0005
11 13 00	0003			13 47 30	0006
				14 00 00	0005

113 1966

PF Launch #2

H-8882

Combined Draft, Stylus and Initial Corrections

Time	Corri	Day	Year
110000	0006	115	1966
113915	0007		
121530	0006		
122700	0007		
122730	0006		
122845	0007		
122900	0006		
122915	0007		
123145	0006		
123200	0007		
123230	0006		
123315	0007		
130000	0006	115	1966

SURVEYOR Launch # 3

H-8882

Combined Draft, Stylus and Initial Corrections

Time	Corrn	Day	Year	Time	Corrn	Day	Year
140000	0004	205	1966	112820	0004		
143520	0003			113300	0005		
143800	0002			114200	0004		
144000	0003			132220	0003		
144200	0004			132240	0004		
150000	0003	205	1966	135100	0003		
				140000	0002	206	1966
090000	0003	206	1966				
092500	0004			090000	0004	207	1966
094000	0005			091940	0003		
095140	0004			092100	0004		
095320	0005			092320	0003		
095820	0004			092520	0002		
095940	0005			092600	0003		
102740	0004			092620	0004		
102800	0005			100020	0003		
104020	0004			100220	0004		
105720	0005			103800	0003		
110600	0004			104040	0004		
110620	0003			104640	0005		
110700	0005			105220	0004		
112400	0004			105520	0005		
112540	0005			111520	0004		

SU - Launch #3

H-8882

Combined Draft, Stylus and Initial Corrections

Time	Corrn	Day	Year		
11 16 40	0003			15 40 00	0005
11 17 00	0004			15 42 40	0006
11 17 20	0003			15 46 40	0005
11 20 00	0004			16 00 00	0004 207 1966
11 26 20	0005				
11 54 20	0004				✓
11 54 40	0005				
11 55 40	0004				
13 35 00	0002				
13 38 00	0003				
13 38 20	0002				
13 42 20	0003				
13 43 20	0004				
13 47 40	0003				
13 48 00	0004				
13 55 40	0003				
13 57 20	0002				
14 00 00	0003				
14 02 20	0004				
14 09 00	0003				
14 13 20	0004				
15 24 40	0005				
15 39 00	0004				



VOLUME	VESSEL	DAY LETTERS	VOLUME	VESSEL	DAY LETTERS
	<u>5-3-65</u>				
1					
2					
✓3	✓ ML#2	d 3/15			
✓4	✓ ML#1	a 4/20 b 4/23			
5					
6					
7					
8					
9					
	<u>10-5-65</u>		H8882		
1					
2					
✓3	✓ ML#1	a 3/15 b 4/14			
✓4	✓ ML#1	b 4/14 c 4/24 d 4/25 e 4/27			
✓5	✓ ML#2	a 4/23 b 4/25			
6					
7					
8					
9					
	<u>10-3-66</u>				
✓10	✓ PATH.	D 3/28			
✓11	✓ PATH	B 3/28 E 3/29 F 4/6 G 4/8			
12					
13					
14					

# HYDRO I PARAMETER CARDS

Computes G.P.'s from Electronic Controlled Baseline

H 8 8802  
 Field No. H-10-5-6  
 Date

Parameter Card I	Deg. Min. Seconds										PROC. Coded
	1	2	3	4	5	6	7	8	9	0	
Master id.											
Hydro Name											
Seave R2											
Hydro Name											
Latitude	21	06	58								RPD
Longitude	156	57	50								REB
Latitude											
Longitude											
Azimuth R1 to R2	270										RAD
Baseline Distance in Meters											SMP
Velocity Code											IVL
Conversion factor for electronic distance to meters.											CNV
H-identification Number											JN
Location of survey with respect to electronic baseline											AAA
Velocity Boundary											VLE
IF Shoran calibration correction is applied by equation (use Shoran card) punch 1 in column 80											YR

Shoran Card Format (when calibration correction is applied by a line K x + C)  
 (flag 5, 11, 17, or 23 if resp. constant is negative)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	

Computed RDL Punched KK Checked KK Date 6/1/66

STANDARD II AND III PARAMETER PDS

8887  
 Field No. 10-5-65  
 Date 6-7-66

PAPAMETER CARD II

Semi major axis of the earth	6.378,206.4	RDA	6	3	7	8	2	0	6	4	0	7
X Constant - Distance from central meridian to origin of plotter SP 5	8374.6 meters	XON	8	3	7	4	6	0	0	0	0	4
Y Constant - Distance from equator to origin of plotter SP 2/1	2324/139.1 meters	YON	2	3	2	4	1	3	9	1	0	7
Central Meridian of Projection	1576.53	CMR	5	6	4	7	8	0	0	0	0	6
Plotter Scale/Survey Scale	1:10,000	SCA	1	0	4	9	8	6	8	8	0	1
North/south axis of sheet - to correspond to (Y axis - 1) of plotter	0 - feet	NYX										0
Feet/Fathom indicator	1 - fathom	FCF										1
H Identification No.		JN										2
		YR										2

FOF - 1

PARAMETER CARD III

Lowest Lat. Intersection	2101	YST	7	5	6	6	0	0	0	0	0	5
Lowest Long. Intersection	1564930	XST	11	12	13	14	15	16	17	18	19	20
Difference between Grid		DXI	5	6	4	5	7	0	0	0	0	6
Interval (Long)		XSN	21	22	23	24	25	26	27	28	29	30
Interval (Lat)		YSN	3	0	0	0	0	0	0	0	0	2

Computed OK  
 Funched SP  
 Checkdd SP  
 Date 6/7/66

TIDE NOTE FOR HYDROGRAPHIC SHEET

September 15, 1967

~~Nautical Chart Division~~

Pacific Marine Center

Plane of reference approved ~~in~~  
~~in~~ volumes of sounding records for

HYDROGRAPHIC SHEET 8882

Locality: Kamalo Harbor, Molokai Island, Hawaii

Chief of Party: L.F. Woodcock 1965  
G.L. Short } 1966  
V.R. Soberalski }

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

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

March 12, 1969

Nautical Chart Division: ---PMC Pacific Marine Center

Plane of reference approved in-  
volumes of sounding records for

HYDROGRAPHIC SHEET 8919

Locality: Molokai Island, Hawaii

Chief of Party: R. L. Newsom, 1967

Plane of reference is mean lower low water

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

Kamalo, Molokai Island, Hawaii

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

1.7 feet

Remarks

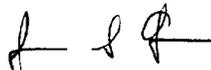
Day 306 needed for H-888Z

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

APPROVAL SHEET

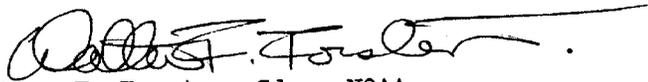
The smooth sheet has been inspected, is complete, and meets the requirements of the General Instructions for automated surveys and the Hydrographic Manual. (Note: All exceptions are listed in the Verifier's Report)

Examined and approved,



James S. Green  
Supervisory Cartographic Technician

Approved and forwarded,



Walter F. Forster, Cdr., NOAA  
Chief, Processing Division  
Pacific Marine Center

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 4130 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 GRAND MCNALLY ATLAS H U.S. LIGHT LIST K										
	A	B	C	D	E	F	G	H	K		
KALAELOA HARBOR	✓										1
KALOHI CHANNEL	✓										2
KAMALO	✓										3
KAMALO HARBOR	✓										4
KAWELA	✓										5
MOLOKAI	✓										6
UALAPUE			✓								7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25

Approved by  
 Chas. E. Harrington  
 Staff Geographer  
 3 July 1974

**HYDROGRAPHIC SURVEY STATISTICS**  
**HYDROGRAPHIC SURVEY NO. H-8882**

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET & PNO		1	BOAT SHEETS		2	
DESCRIPTIVE REPORT		1	OVERLAYS		3 <del>0</del>	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES			1			
CAHIERS	1					
VOLUMES	8					
BOXES			1			
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		1365		
POSITIONS REVISED		97		
DEPTH SOUNDINGS REVISED		153		
DEPTH SOUNDINGS ERRONEOUSLY SPACED				
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		24		
JUNCTIONS		8		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		14		
SPECIAL ADJUSTMENTS				
ALL OTHER WORK		503		
<b>TOTALS</b>		<b>549</b>		
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <i>A.E. Eichelberger</i> V.L. Davis & A.E. Eichelberger	4/4/72		12/10/73	
REVIEW BY	BEGINNING DATE		ENDING DATE	

**VERIFIER'S REPORT**  
**HYDROGRAPHIC SURVEY, H 8882**

**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.

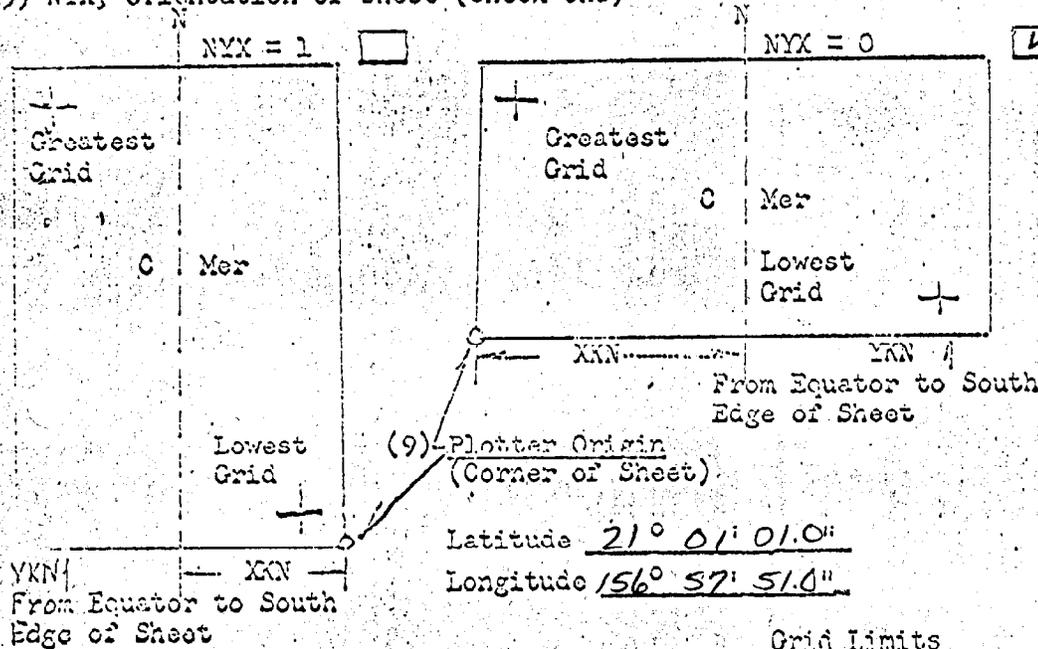
Part I - DESCRIPTIVE REPORT	CL	R	Part III - JUNCTIONS (Continued)	CL	R
<p><b>Note:</b> The verifier should first read the Descriptive Report for general information and problems.</p> <p>1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None</p>	X		<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 <b>SUPERSEDED</b>.</p>		X
<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>	X		<p><b>Part IV - VOLUMES</b></p> <p>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>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 (b) line turns (c) position values of beginning and ending of lines (d) bar check or velocity correctors (e) time recording (f) notes or markings on fathograms (g) was reduction of soundings accurately done? (h) was scanning accurate? (i) were peaks at uneven intervals missed? (j) were stamps completed? (k) references to adjacent features</p>	X	
<p>3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None</p>	X				X
<p><b>Part II - SHORELINE AND SIGNALS</b></p> <p>4. Source of shoreline signals Remarks Required: -- List all surveys a. Give earliest and latest dates of photographs b. Field inspection date c. Field Edit date d. Reviewed-Unreviewed</p>		X			
<p>5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.</p>	X				
<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>	X				
<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>	X		<p><b>Part V - PROTRACTING</b></p> <p>13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None</p>	NA	
<p><b>Part III - JUNCTIONS</b> <b>Note:</b> 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</p>	X		<p>14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None</p>	NA	
<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>	X		<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>		X

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.	NA		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.	X	
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.	NA		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	X	
Part VI - SOUNDINGS			Part IX - BOAT SHEET		
18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	NA		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	X	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.	X		29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.	X	
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	X		Part X - GENERAL		
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	X		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	X	
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.	NA		31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	X	
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	X	
23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected.		X			
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	X		33. The bottom characteristics are adequately shown. Remarks Required: -- None	X	
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.		X	Part XI - NOTES TO THE REVIEWER		
			34. Unresolved discrepancies and questionable soundings.		X
			35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.		
			36. Supplemental information.		X
Verified by <i>A. E. Eichelberger</i> A. E. Eichelberger, Cartographic Technician			Date 12/10/73		

PARAMETERS FOR DIGITAL CONVERSION  
POLYCONIC PROJECTION

Revised 10/1/67

- (1) Project No. OPR-419 (4) Requested by Mabley  
 (2) H No. H-8882 (5) Ship or Office SURVEYOR  
 (3) Field No. PF-10-5-65 (6) Date Required \_\_\_\_\_  
 (7) Visual  Ft. (0) or Fathoms (1)  (8) Electronic  (fill out form 113)  
 (10) XKN (SP 5) Distance from CMER to East Edge (NYX = 1)  
 or West Edge (NYX = 0). 8,374.6 Meters  
 (11) YKN (SP 241) Distance from Equator to South Edge  
 of Sheet. 2,324,139.1 Meters  
 (12) Central Meridian 156° 53' 00"  
 (13) Survey Scale 1:10,000  
 (14) Size of Sheet (Check one) 36x60  42x60   
 (15) NYX, Orientation of sheet (Check one)



- |                         |                      |  |
|-------------------------|----------------------|--|
| (16) Greatest Latitude  | <u>21° 05' 30 "</u>  | (Projection Line Interval Page 4 Hydro Manual) |
| (17) Lowest Latitude    | <u>21° 01' 00 "</u>  | (19) <u>00 30 "</u>                            |
| (18) Difference         | <u>04' 30 "</u>      | (20) <u>9 YSN</u>                              |
| (21) Greatest Longitude | <u>156° 57' 30 "</u> |  |
| (22) Lowest Longitude   | <u>156° 49' 30 "</u> | (24) <u>00 30 "</u>                            |
| (23) Difference         | <u>08' 00 "</u>      | (25) <u>16 XSN</u>                             |

## VERIFIER'S REPORT

PF-10-5-65

H-8882

This sheet was constructed and plotted at Pacific Marine Center, Seattle, Washington. Information relating to this will be noted under the heading by the number and letter as on Verifier's Report C&GS Form 946a.

This survey was accomplished by three ships; PATHFINDER, SURVEYOR, and MCARTHUR, during three field seasons. The basic Descriptive Report is the PATHFINDER's 1965 report with the other two reports following in order by year.

### PART II SHORELINE AND SIGNALS

4. Advanced Manuscripts used to transfer the shoreline to the Smooth Sheet, they are as follows:

T-11960 (1:10,000)

- a. Date of Photography September 1961 - February 1962
- b. Field Inspection Date September 1962
- c. Field Edit Date 1967 Field Season
- d. Review Date January 1971

T-11961 (compiled 1:5,000, reduced 1:10,000)

- a. Date of Photography September 1961 - February 1962
- b. Field Inspection Date May 1962
- c. Field Edit Date Unknown
- d. Review Date January 1971

T-11962 and T-11963 (compiled 1:5,000, reduced 1:10,000)

- a. Date of Photography October 1960 - September 1961
- b. Field Inspection Date May 1962
- c. Field Edit Date Unknown
- d. Review Date January 1971

### PART III JUNCTIONS

10. This survey junctions on the East with H-8835, 1965 (1:10,000); the Southeast with H-9130, 1961-1962 (1:40,000); the South with H-8834, 1965 (1:20,000); the West with H-8919, 1967 (1:10,000); and to the North by H-8881, 1966 (1:5,000)

Junctions were made with contemporary surveys H-8881, H-8919, and H-9130 but only H-9130 was complete. Curves which were not in agreement within the junction area were left in pencil.

Junctions were not made with H-8834 and H-8835 since copies of completed smooth sheets were not available at PMC.

PART VII CURVES

23. The penciled depth curves were inspected by A.E. Eichelberger, Cartographic Technician.

25. The low-water line could not be completed due to lack of sounding information in fowl areas.

PART XI NOTES TO THE REVIEWER

34. No manuscript has been compiled for the area South of  $21^{\circ}02'30''$ , therefore the reef in this area is incomplete.

36. The Smooth Sheet was compiled and depth curves drawn by Karol Hoops, Cartographic Technician.

Respectfully submitted,

*A.E. Eichelberger*

A.E. Eichelberger  
Cartographic Technician

900 1380 1340 1300 1260 1220 1180 1140 1100 1070 1040 1010 970 930 890 850 810 770 730 690 650 610 570 530 490 450 410 370 330 290 250 210 170 130 90  
M S  
156° 40' 21° 20'

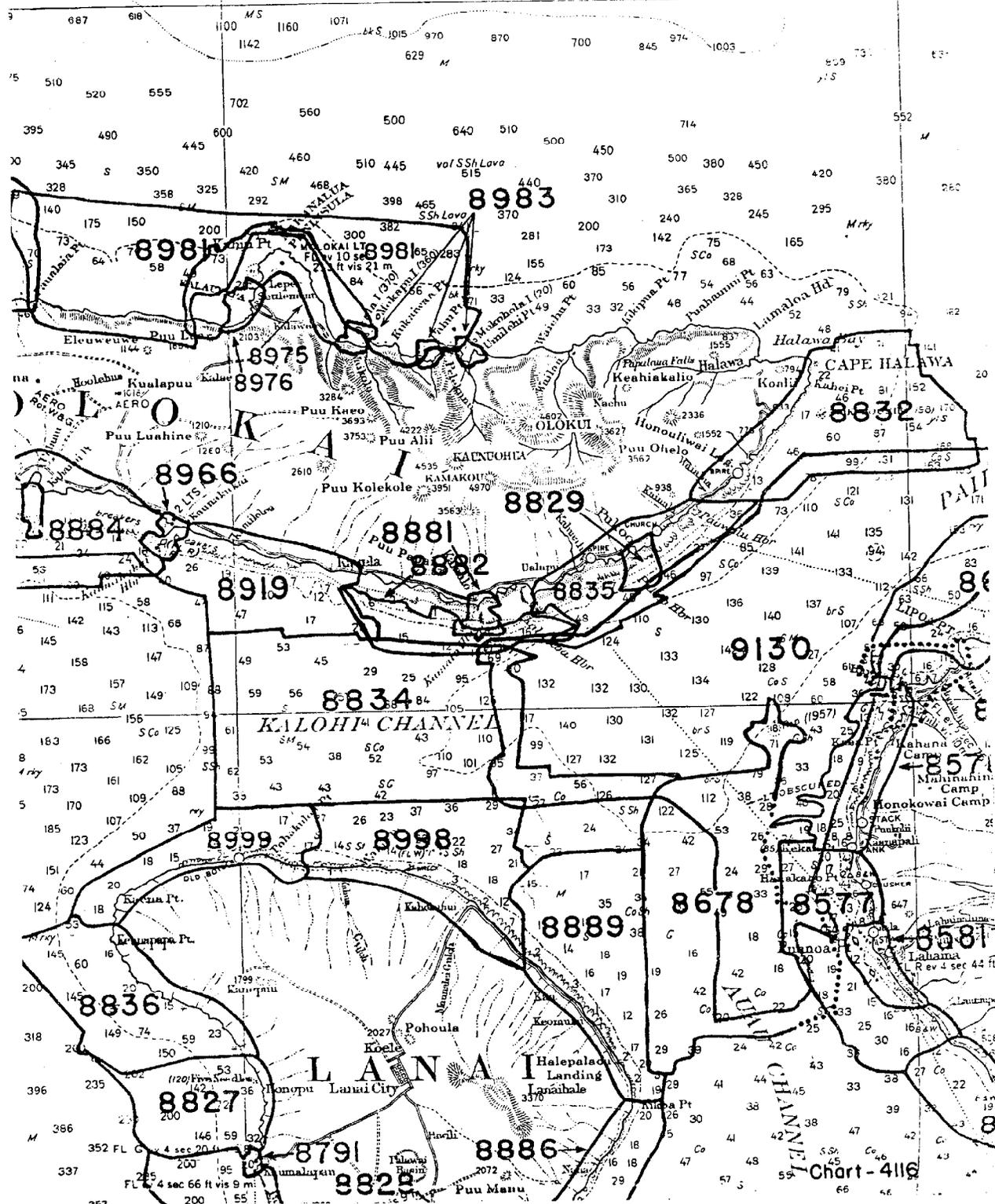


Chart - 4116

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8882

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	4/2/74	E. FREY	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. <i>Critical corrections only (at proof stage of chart) Revised one sdg.</i>
4180	4/12/74	C.S. Forbes	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. <i>Exam For NM only - no corrections before</i>
4001	9/25/74	T. Alexander	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. <i>Examined for critical corr's only (thru chrt 4102) No corr.</i>
4130	10/11/74	E Frey	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. <i>Critical corr's only - Revised numerous sdgs &amp; depth curves</i>
4130	3/28/75	M.D. KANIS	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. <i>Re-examined for reef AREA ONLY</i>
4116	5-30-75	J.G. Borawski	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. <i>Revised Reefs Thru-out Thru Chrt. 4130. Added 2 Soundings - Several Misc. Corrections</i>
4102	5/10/75	Naitok	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. <i>Added 1 sndg thru 4116</i>
4179	9/12/75	HAUSHAN	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. <i>No Corr at scale thru chart 4102</i>
4121	9/28/77	C.S. Forbes	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. <i>Added 1 sdg. Consider application Final No corrections.</i>
4102	10/31/77	C.S. Forbes	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. <i>Consider application as Final. No additional corrections.</i>
4179	12/14/77	C.S. Forbes	Full appl. after verification. Consider application as final. No additional corrections
4116	12-27-77	M. Suga	Full after Verification - Examined thru chart 4130 in conjunction with verified survey - consider Final Appl.
19351	9/23/81	R.D. House	Fully appl'd after verification, considered final Application
19007	3-28-83	Simmers	Consid. fully app'd thru 19010 #12. No Corr.
19347	6/13/83	Labonne	Apply hydro through chart 19347 outside USCOMM-DC 8558-P63 Fully appl'd after signed to 20. Category I area. Appl'd directly to the common area. Consider this application final as a Category I Survey.