

9808

Diag. Cht. No 4115

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT
(HYDROGRAPHIC)

Type of Survey ... Hydrographic
Field No. FA-10-2-79
Office No. H-9808

LOCALITY

State Hawaii
General Locality ... Island of Hawaii
Locality Vicinity of Kauna Point

1979

CHIEF OF PARTY

B. I. Williams

LIBRARY & ARCHIVES

DATE October 22, 1980

9808

Area 6

CHT
19320
19004
19010

HYDROGRAPHIC TITLE SHEET

H-9808

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.

FA-10-2-79

State Hawaii

General locality Island of Hawaii

Locality Vicinity of Kauna Point

Scale 1:10,000 † Date of survey 26 Feb - 5 Apr 1979

Instructions dated 21 Nov 78 Project No. OPR-T126-FA-79

Vessel NOAA Ship FAIRWEATHER (2020), Launches 2023, 2024, 2025

Chief of party CDR B.I. Williams, NOAA

Surveyed by LT A. Yanaway, LTJG M. Finke, LTJG L. Roberts, ENS J. Quinlan

Soundings taken by echo sounder, hand lead, poly Echo Sounder, Ross & EDO Fathometers

Graphic record scaled by Ross Digitizers and Ship's Personnel

Graphic record checked by Ship's Personnel

Position verified XXXXXXXX by Matthew G. Sanders Automated plot by PMC Xynetics Plotter

Sounding verified XXXXXXXX by Matthew G. Sanders

Verification by XXXXXXXX

* Soundings in fathoms ^{and} tenths ^{of} feet at MLW MLLW

REMARKS: Time used is 0 (GMT)

"Misc. data filed with field records"

* Soundings in fathoms and tenths on main body of survey, and in feet on the inset.

† Inset meets 1:10,000 scale accuracy specifications; plotted at 1:5,000 for clarity.

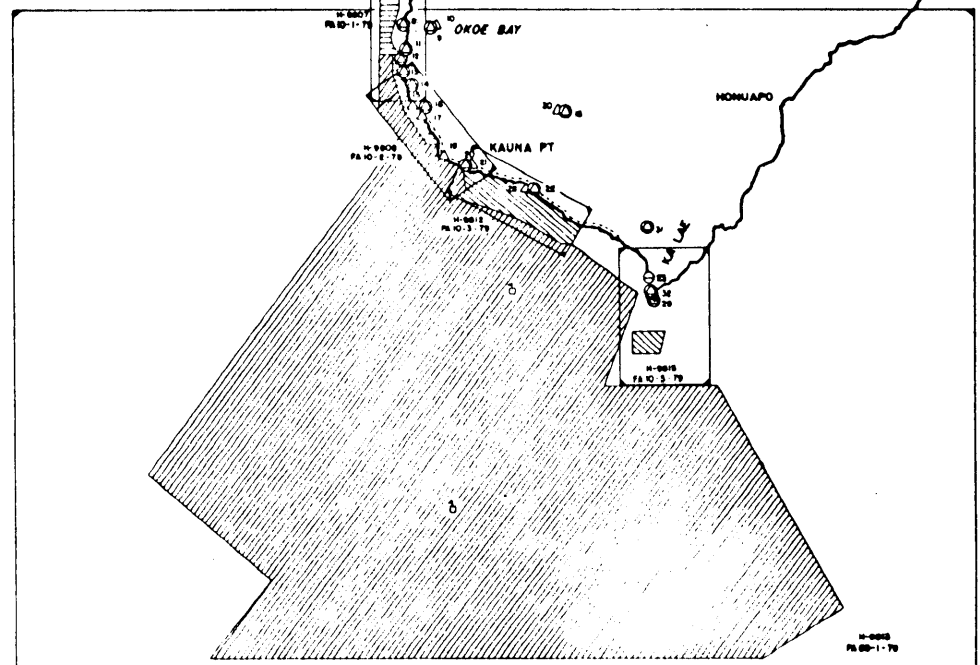
Appl to Standards 2-5-82

156 00 00 156 40 00 155 20 00



PROGRESS SKETCH OPR-TI26-FA-79 S.W. COAST HAWAII ISLAND, HAWAII NOAA SHIP FAIRWEATHER (S-220) CDR BRUCE I. WILLIAMS, CMDG 1979

- ⊙ STA. RECOVERED
- △ STA. ESTABLISHED
- δ NANSEN CAST
- ⊖ TIDE GAGE
- FIELD EDIT



155 20 00
156 00 00
156 40 00

STATIONS RECOVERED AND ESTABLISHED

FEBRUARY

- 1 KEOPUKA, 1948
- 2 KEAWEKAHEKA, 1891 (MINI-RANGER)
- 3 PALEMANO, 1942 (MINI-RANGER)
- 4 PALEMANO 2, 1972
- 5 HOOKENA, 1972
- 6 PALIANIHI, 1913
- 7 KAPUKAWAA, 1948
- 8 HANAMALO 2, 1890
- 9 PUU NAHAHA 2, 1948
- 10 PUU NAHAHA 2 1948 RM-3, 1979 (RAYDIST)
- 11 OHEPUUPUU, 1948
- 12 NIUOU, 1948
- 13 CAIRN, 1948
- 14 HANAKEAMOE, 1948-1949
- 15 UKA, 1979 (MINI-RANGER)
- 16 KAMOI, 1948-1949
- 17 MAN, 1979 (MINI-RANGER)
- 18 PUU O KAMAOA, 1948
- 19 KAUNA PT. LIGHT, 1949 (MINI-RANGER)
- 20 NA PUU A PELE, 1949
- 21 NA PUU A PELE 1949 RM-3, 1979 (RAYDIST)
- 22 PUU KI, 1949 (MINI-RANGER)
- 23 KA LAE 2, 1948 (RAYDIST)

MARCH

- 24 NAPOOPOO LT., 1928-1948
- 25 KEEI NORTH BASE, 1948 (MINI-RANGER)
- 26 LAE LOA, 1884-1948 (MINI-RANGER)
- 27 LAE MAMO, 1974
- 28 PO, 1979 (MINI-RANGER)
- 29 KA LAE, 1887
- 30 PUU O KAMAOA RM-2, 1979 (RAYDIST)

APRIL

- 31 UMI'S AHU, 1938
- 32 KA LAE LT., 1978

	FEB	MARCH	APRIL
LMN SOUNDING LINE	60	1161	220
50 NM SOUNDING LINE	16	435	84
STD CAST (NANSEN)	1	0	1
BOTTOM SAMPLE	0	3	3

DESCRIPTIVE REPORT
TO ACCOMPANY HYDROGRAPHIC SURVEY
H-9808

NOAA SHIP FAIRWEATHER S220

A. PROJECT

This project ^was conducted in accordance with Project Instructions OPR-T126-FA-79, Hawaii, Hawaiian Islands, dated 29th November 1978^B and the PMC OpOrder, *and supplemental information dated Feb 21, 1979.*

B. AREA SURVEYED

The area covered by this survey lies between latitudes 19/00/30 and 19/06/00, and longitudes 155/51/30 and 155/56/00, along the southwest coast of Hawaii. This area was surveyed between 2nd February and 5 April, 1979.

C. SOUNDING VESSELS

Soundings on this survey were acquired by launches FA-3 (EDP 2023), FA-4 (EDP 2024), FA-5 (EDP 2025), and the Fairweather (EDP 2020). Bottom samples were taken by both launch and ship.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

TRA correctors were applied to each launch depending on data taken from frequent bar checks. The Fairweather's TRA was 2.6 fathoms. Sound velocity corrections were determined by two Nansen casts, one of 3500M at the beginning of the field season and 500M at the end of the season. This method was chosen due to lack of sufficient time for a second deep cast and the knowledge that a 500M cast more than adequately defines the mixing layer. The Ross fathometers were utilized in depths up to 100 to 200 fathoms depending on the quality of the trace. The ship's EDO and UGR recorder were used to continue the soundings to the limits of the survey. Due to the depths involved the Fairweather's line spacing of 600M was chosen. This was a compromise between the 400M

spacing required on depths greater than 30 fathoms on a 1:10000 scale survey and the 800M requirement for " all other surveys " between 30 and 110 fathoms. With the exceptional slope encountered in Hawaii this spacing gave more than adequate definition to the bottom. ✓

Several difficulties presented themselves during the data acquisition and comparison phases of this survey. Ross Fineline data quality was exceptionally poor. The steep slope caused the analog recorder to mark 2 bottoms, both of which were usually indistinct due to the scattering of the signal and hence low signal returning to the fathometer. The wide beam EDO on the other hand had a generally decipherable trace except where a particularly bumpy bottom was evidenced. Here the plurality of small cone like hills increases the difficulty in determining the true bottom. Where the launches and ship junctioned equivalent depths were unusual. One other cause of difficulty was that some of the launch data was gathered while the launch was rolling which could result in large variances between the actual and observed depths. Details on the sounding equipment are located in the appendix. Further details are located in the Report on the Correction to Echo Soundings, OPR-T126-FA-79. ✓

E. HYDROGRAPHIC SHEETS

One sheet was required to plot H-9808 at a scale of 1:10000 and another for Manuka Bay at 1:5000. All plotting was accomplished with the shipboard Hydroplot system: PDP 8e computer(S/N 9534) and Complot plotter(S/N 6166-22). Final smooth plotting will be done at PMC. ✓

F. CONTROL STATIONS

See the appendix for hydrographic position numbers and their associated control stations. For details of their recovery and/or location see Horizontal Control Report, OPR-T126-FA-79. ✓

G. HYDROGRAPHIC POSITION CONTROL

See the appendix for hydrographic position numbers and their associated method of hydrographic control. ✓

Calibration or system checks were accomplished using 3 point sextant fixes with a check angle or 2 T-2 intersections. All Raydist data has beginning and ending calibrations except for JD 073/074, launch 2023, position numbers 3061-3171. It was felt, and substantiated by the Raydist strip chart, that the lanes were lost after the completion of hydrography. ✓

On 2 days difficulties were experienced with the MiniRanger transponders. These were traced to a defective cell in a battery. There was no degradation of the data caused by this. *(baseline calibration)* Transponder 704 and console 701 had no ending BLC as they underwent major repair work in midseason and were not used thereafter.

On JD 058/059, position numbers 5063-5109, launch 2025, faulty carriage returns and line spaces were being transmitted by the logger to the punch tape and TTY. These difficulties were corrected during reformatting. The problem was a loose component on a printed circuit board.

H. SHORELINE

Shoreline details were obtained from class II manuscripts T-12553, T-12554, and T-12555. All discrepancies have been noted and transferred to the field edit sheet. For details see Field Edit Report, OPR-T126-FA-79. ✓

I. CROSSLINES

The 15 miles of crosslines account for 15% of the 100 n.m. of sounding lines on the survey. Reasons for discrepancies were discussed in section D. ✓

J. JUNCTIONS

~~There are no prior surveys to junction with.~~ Contemporary surveys are H-9807, H-9812, and H-9813. Disagreements were again noted. These are attributable to those difficulties mentioned in section D. I feel that there are no problems which lie outside of those areas. ✓

K. COMPARISON WITH PRIOR SURVEYS

One prior survey exists, H-4655A. It was completed in 1926. A comparison between rocks on the prior survey and those on FA-10-2-79 proved to be inconclusive on inshore rocks but did show off shore sunken rocks in water depths of 50-100 fathoms. These are: ✓

LAT N	LONG W
19 01.15	155 51.3
19 04.65	155 54.6
19 05.00	155 54.8

* See Verifier's Report, para 7.9.2, and Q.C. Report, para 4.

Further comparisons were not attempted due to scaling errors in transferring positions between the prior survey and the FA10-2-79. There were no PSR's. ✓

L. COMPARISON WITH THE CHART

Chart 19320, Island of Hawaii, 12th. ed. June 17, 1978, is the same as the prior survey mentioned above with the identical difficulties. ✓

M. ADEQUACY OF SURVEY

This survey is complete and adequate to supercede all previous surveys and to be used for charting purposes. ✓

N. AIDS TO NAVIGATION

There are no aids to navigation on this survey. ✓

O. STATISTICS

Vessel	Total Miles	Total area	Positions
2023	24	2	3001-3137, 3145-3166, 3176-3280. Bottom Samples: 3170-3171. Rejections: 3003-3005, 3008, 3011, 3018, 3023, 3024, 3028, 3029, 3037, 3043, 3046, 3049, 3054, 3076, 3138, 3139, 3141- 3143, 3172-3175, 3179, 3190, 3213, 3214, 3236, 3245, 3260, 3261, 3267, 3270. ✓
2024	31	2	4000-4155, 4210-4252, 4929-4967. Rejections: 4004, 4030-4032, 4043-4046, 4055, 4066, 4078, 4141, 4149, 4237, 4238, 4247-4249. ✓
2025	9	.5	5001-5135 Rejections: 5100 ✓
2020	36	7	0010-0093, 0131-0149, 0163-0207, 0211-0222. Bottom Samples: 0164-0166 ✓ Duplications: 0164-0166 Rejections: 0000-0009, 0025-0027, 0065, 0066, Bottom Sample: 0223

P. MISCELLANEOUS

All hydrographic records are gathered in ~~Coordinated~~^{GMT} Universal Time. ✓
 Manuka Bay is a bay of refuge and is an insert to FA-10-2-79.
 Discrepancies between boat sheet and final field sheet ship posi-
 tions are due to gyro heading corrections on the master tapes. On JD 083,
 233408 CUT, Manuka Bay insert, peak before position #3280 is plotted.
 This is a pinnacle.

Q. RECOMMENDATIONS

Manuka Bay is a good ^{harbor} ~~bay~~ of refuge and the 1:5000 survey should be included as an inset to any large scale chart of the area. ✓

R. AUTOMATED DATA PROCESSING

PROGRAM

RK 111 R/R Real Time Plot 1/30/76 Launches and Ship
RK 211 R/R Non-real Time Plot Shipboard processing
RK 216 R/Az Non-real Time Plot 2/5/76 Shipboard processing
RK 181 R/Az Real Time Acquisition Launches and Ship
RK 201 Grid and Lattice Plot All field sheets
RK 530 Layer Correction for Velocity 5/10/76 ✓

S. REFERRAL TO REPORTS

Field Edit Report OPR-T126- FA-79
Horizontal Control Report OPR-T126-FA-79
Report On Corrections To Echo Soundings OPR-T126-FA-79
Electronic Systems Calibration Report OPR-T126-FA-79 ✓

Report prepared by:

Alan H. Yanaway

LT. Alan H. Yanaway, NOAA

APPROVAL SHEET

Field Number: FA10-2-79
Register Number: H-9808

This survey was conducted under my supervision and is complete and adequate for charting purposes.

A handwritten signature in cursive script that reads "Bruce I. Williams".

CDR B. I. Williams
Commanding Officer
NOAA SHIP FAIRWEATHER S220

VELOCITY CORRECTION TABLES

VELOCITY CORRECTION TABLES --- CONT.

TABLE# 01			TABLE# 02			TABLE# 03			TABLE# 1			TABLE# 2		
DEPTH	VEL COR	FT	DEPTH	VEL COR	FT	DEPTH	VEL COR	FT	DEPTH	VEL COR	FT	DEPTH	VEL COR	FT
3.50	.00		2.60	.00		1.10	.00		1100.00	21.00		505.00	24.00	
5.60	.10		7.00	.20		3.30	.20		1153.00	22.00		528.00	25.00	
7.60	.20		11.40	.40		5.40	.40		1203.00	23.00		548.00	26.00	
9.80	.30		15.50	.60		7.40	.60		1247.00	24.00		568.00	27.00	
11.90	.40		20.00	.80		9.80	.80		1288.00	25.00		594.00	28.00	
14.00	.50		24.10	1.00		11.90	1.00		1327.00	26.00		619.00	29.00	
16.00	.60		28.20	1.20		14.00	1.20		1366.00	27.00		645.00	30.00	
18.10	.70		31.40	1.40		16.00	1.40		1404.00	28.00		673.00	31.00	
20.10	.80		35.80	1.60		18.10	1.60		1438.00	29.00		705.00	32.00	
22.20	.90		39.70	1.80		20.00	1.80		1472.00	30.00		739.00	33.00	
26.30	1.00		43.60	2.00		24.20	2.00		1504.00	31.00		773.00	34.00	
30.50	1.20		47.30	2.20		28.40	2.20		1538.00	32.00		804.00	35.00	
34.60	1.40		51.30	2.40		32.30	2.40		1571.00	33.00		99999.90		
38.70	1.60		55.00	2.60		36.40	2.60		1606.00	34.00				
42.70	1.80		59.10	2.80		40.40	2.80		1634.00	35.00				
46.70	2.00		63.00	3.00		44.70	3.00		1664.00	36.00				
50.80	2.20		66.90	3.20		48.70	3.20		1695.00	37.00				
55.00	2.40		70.90	3.40		52.60	3.40		1726.00	38.00				
59.20	2.60		75.20	3.60		56.80	3.60		1755.00	39.00				
64.20	2.80		79.80	3.80		60.80	3.80		1784.00	40.00				
68.80	3.00		83.30	4.00		64.90	4.00		1813.00	41.00				
73.40	3.20		87.40	4.20		69.10	4.20		1840.00	42.00				
78.00	3.40		91.80	4.40		73.80	4.40		1867.00	43.00				
82.60	3.60		95.90	4.60		78.20	4.60		1893.00	44.00				
87.10	3.80		99.90	4.80		83.10	4.80		1920.00	45.00				
91.80	4.00		103.60	5.00		88.10	5.00		1946.00	46.00				
98.00	4.20		108.20	5.20		93.20	5.20		1970.00	47.00				
104.00	4.40		112.30	5.40		98.70	5.40		1997.00	48.00				
110.20	4.60		116.80	5.60		104.40	5.60		2023.00	49.00				
116.40	4.80		121.20	5.80		110.20	5.80		2049.00	50.00				
129.40	5.00		126.00	6.00		124.60	6.00		2074.00	51.00				
149.90	5.50		158.00	7.00		144.20	7.00		2100.00	52.00				
173.70	6.00		178.00	8.00		166.00	8.00		2124.00	53.00				
197.70	6.50		198.00	9.00		189.90	9.00		2146.00	54.00				
242.50	7.00		218.00	10.00		214.50	10.00		2170.00	55.00				
302.00	8.00		238.00	11.00		290.00	11.00		2194.00	56.00				
367.00	9.00		258.00	12.00		99999.90	12.00		2218.00	57.00				
432.00	10.00		279.00	13.00			13.00		2240.00	58.00				
495.00	11.00		301.00	14.00			14.00		2262.00	59.00				
559.00	12.00		320.00	15.00			15.00		2283.00	60.00				
625.00	13.00		339.00	16.00			16.00		2306.00	61.00				
690.00	14.00		359.00	17.00			17.00		2326.00	62.00				
754.00	15.00		377.00	18.00			18.00		2347.00	63.00				
814.00	16.00		395.00	19.00			19.00		2367.00	64.00				
872.00	17.00		422.00	20.00			20.00		2387.00	65.00				
929.00	18.00		449.00	21.00			21.00		2407.00	66.00				
992.00	19.00		467.50	22.00			22.00		2427.00	67.00				
1044.00	20.00		486.00	23.00			23.00		2446.00	68.00				
									2466.00	69.00				

(Cont 4th col.)

(Cont 5th col.)

001	SIGNAL LISTING		(OLD HAWAIIAN DATA)			
002	HGS					
003	HANAMALO 2, 1890					
004	101	2	19 09	33253	155 53	04810 139 0012 000000
005						
006	PUU NAHANA 2, 1948					
007	102	4	19 07	29009	155 53	28254 139 0234 000000
008	PUU NAHANA 1948 RM 3					
009	103 1 19 09 29991 155 53 27408 250 0231 330040					
010	103 1 19 09 29991 155 53 27408 250 0231 330040					
011	HGS 1890					
012	CHEPUUPUU, 1948					
013	104	1	19 08	15598	155 54	52428 139 0031 000000
014						
015	NIUOU, 1948					
016	105	4	19 07	49156	155 53	08988 139 0011 000000
017						
018	HGS 1890					
019	HANAKEAUMOE, 1948					
019	106	1	19 06	21091	155 54	34393 139 0039 000000
020						
021	UKA, 1979					
022	107	1	19 04	55020	155 54	31223 250 0008 000000
023						
024	KAHOI, 1948 1948					
025	108	1	19 04	57581	155 54	12952 139 0016 000000
026						
027	MAN, 1979					
028	109	1	19 04	34289	155 54	09129 250 0011 000000
029						
030	KAUNA PT. LIGHT, 1948					
031	110	7	19 02	13337	155 52	53784 250 0017 000000
032						
033	HGS 1890					
033	NA PUU A PELE, 1948 1948					
034	111	1	19 01	48274	155 51	21266 139 0075 000000
035						
036	NA PUU A PELE RAYDIST 2 1979					
037	112	6	19 01	48234	155 51	21081 250 0075 330040
038						
039	HTS					
039	PUU O KAHACA, 1948					
040	113	2	19 04	54833	155 45	41938 139 0612 000000
041						
042	KA LAE 2 1948					
043	114	2	18 54	56570	155 41	04290 250 0011 330040
044						
045	PO, 1979					
046	115	2	19 06	28750	155 47	52617 250 0016 000000
047						
048	PUU KI HGS 1914					
049	116	2	19 06	28041	155 47	44432 250 0044 000000
050						
051	HTS					
051	KA LAE 1897					
052	117	5	19 54	57671	155 41	04147 139 0611 000000
053						

054 UMIS AHU ~~MTS 1987~~
055 118 2 18 58 18378 155 41 22642 139 0238 000000
056 ~~MTS 1987 RM2~~
057 UMIS AHU
058 119 7 18 58 18446 155 41 22354 139 0238 000000
059
060 KA LAE LIGHT, 1978
061 120 4 18 54 54432 155 41 04553 139 0011 000000
062 ~~MTS 1987~~
063 PUU O KAMADA RM 2, ~~1979~~
064 121 5 19 04 54335 155 45 43197 250 0612 330040
065
066 KAUNA PT. LIGHT MINIRANGER OFFSET
067 122 2 19 02 14070 155 52 53274 254 0014 000000
068
069 NA PUU A PELE OFFSET
070 123 7 19 01 47142 155 51 20442 243 0065 000000

SIGNAL TAPE OPR-T126-FA-79

001	101	2	19	09	33253	155	55	74510	139	0012	000000
002	102	4	19	09	29809	155	52	28254	139	0234	000000
003	103	1	19	09	29991	155	53	27403	250	0231	330040
004	104	1	19	08	15598	155	54	52428	139	0031	000000
005	105	4	19	07	49156	155	55	08988	139	0011	000000
006	106	1	19	06	21091	155	54	14383	139	0039	000000
007	107	1	19	04	53020	155	54	51222	250	0008	000000
008	108	1	19	04	57581	155	54	12952	139	0016	000000
009	109	1	19	04	34269	155	54	09129	250	0011	000000
010	110	7	19	02	13337	155	52	53784	250	0017	000000
011	111	1	19	01	48274	155	51	21266	139	0075	000000
012	112	6	19	01	48234	155	51	21081	250	0075	330040
013	113	2	19	04	54833	155	45	41938	139	0612	000000
014	114	2	18	54	56570	155	41	04290	250	0011	330040
015	115	2	19	00	28750	155	47	52817	250	0016	000000
016	116	2	19	00	28241	155	47	44432	250	0044	000000
017	117	5	18	54	57671	155	41	04143	139	0011	000000
018	118	2	18	58	18378	155	41	22642	139	0238	000000
019	119	7	18	58	18446	155	41	22354	139	0238	000000
020	120	4	18	54	54432	155	41	04553	139	0011	000000
021	121	5	19	04	54335	155	45	43197	250	0612	330040
022	122	2	19	02	14070	155	52	83274	254	0014	000000
023	123	7	19	01	47142	155	51	20442	243	0065	000000

FIELD TIDE NOTE

Field tide reduction of soundings for OPR-T126-FA-79 was based on predicted tides from Honolulu, Hawaii, corrected to Napoopoo, Hawaii, and were interpolated by PDP-8/e computer utilizing AM-500. The operating tide station at Hilo, Hawaii, provided control for datum determination at both subordinate tide stations. All times of both predicted and recorded tides are GMT.

One Bristol Bubbler Tide Gage was installed at Ka Lae and a Fisher-Porter ADR Tide Gage was installed at Milolii. Location and period of operation of the gages were as follows:

<u>SITE</u>	<u>LOCATION</u>	<u>PERIOD</u>
Milolii	19°11.3'N 155°54.6'W	7 February-17 April 70 Days
Ka Lae	18°55'34"N 155°41'10"W	24 February- 17 April 53 Days

Milolii

Fisher Porter ADR Gage (S/N R6804A4960M4) was installed and began operation on 7 February. The staff was installed and leveled on the same day. Excellent records were obtained for 70 days with no interruptions. The marigram reads 7.0 feet greater than the staff.

Ka Lae

The Bristol Bubbler Gage (S/N 68A9334) was installed and began operations on 25 February. Excellent records were obtained with the following two exceptions:

On 5 March, at 1815 GMT, while the FAIRWEATHER was engaged in operations not requiring data from this gage, the gage ran down and was out of operation until 9 March at 2120 GMT. After this, the gage was wound upon every inspection because the clock could not be relied on to last more than five days without being rewound.

On 4 April, at 2310 GMT, the tubing parted due to heavy seas and was out of service until 7 April at 2300 GMT.

From 25 February through 4 April, the marigram read 2.3 feet greater than the staff. From 7 April until the removal of the gage, the marigram read 3.2 feet greater than the staff.

LEVELS

In a comparison of level records, the greatest observed difference at Ka Lae was a 0.013 foot rise in elevation of the staff stop. At the Milolii gage, the staff was struck by a launch which necessitated resecuring the staff. This led to the lowering of the staff by 0.01 feet. All levels between marks were within the acceptable error limits.

MISCELLANEOUS

For the tide record gaps in the Ka Lae gage record, the Milolii gage should be used as a reference for interpolation. This is in addition to the operating tide station at Hilo, Hawaii, which should also be used as a reference.


LT(jg) Mark S. Finke
Tides Officer

REGISTRY NO. 9808

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

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

CARDS CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

REGISTRY NO. _____

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:

APPROVAL SHEET

FOR

SURVEY H- 9808

- A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position print-out has been made. A new final sounding print-out has been made.
- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic Manual. Exceptions are listed in the verifier's report.

Date:

7/14/90

Signed:

[Signature]

Title:

Chief, Verification Branch

September 13, 1979

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): 161-8431 Milolii, Hawaii Island, HI

Period: February 26 - April 5, 1979

HYDROGRAPHIC SHEET: H-9808

OPR: T126

Locality: Kona-Kau Coast, Hawaii Island, Hawaii

Plane of reference (mean lower low water): 2.93 ft.

Height of Mean High Water above Plane of Reference is 1.7 ft.

REMARKS: Recommended zoning: Apply -10 minute time correction.


Chief, Datums and Information Branch

GEOGRAPHIC NAMES

H-9808

Name on Survey

A ON CHART NO. 19320
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 T-Sheet
Manuscript

AHULOA PT									X	1
AWILI PT									X	2
HAWAII	X								X	3
KAIAKEKUA									X	4
KAMOI PT	X								X	5
KAUNA PT	X								X	6
KAUPUAA PT									X	7
KEAWAIKI									X	8
KUKIHIHI PT									X	9
MANUKA BAY									X	10
NA PUU A PELE	X								X	11
HANAKEAUMOE										12
KAULANAMAUNA										13
										14
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										25

Approved:

Chris P. Harrington
Chief Geographer - C3x5

19 Feb. 1981

HYDROGRAPHIC SURVEY STATISTICS

H-9808

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		2 & 8	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS ¹ PARC, EXCESS ³		4	
DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1 - with raw printouts					
VOLUMES						
BOXES			1 - Smooth 1 - tide 1 - Sndg analysis			

T-SHEET PRINTS (List) TP-12553-55

SPECIAL REPORTS (List) 1 - contour overlay

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	PRE-VERIFICATION	VERIFICATION	TOTALS
POSITIONS ON SHEET			742
POSITIONS CHECKED		742	
POSITIONS REVISED		21	
SOUNDINGS REVISED		80	
SOUNDINGS ERRONEOUSLY SPACED		-	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		-	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	7		
VERIFICATION OF CONTROL		12	
VERIFICATION OF POSITIONS		137	
VERIFICATION OF SOUNDINGS		135	
COMPILATION OF SMOOTH SHEET		53	
APPLICATION OF TOPOGRAPHY		45	
APPLICATION OF PHOTOBATHYMETRY		-	
JUNCTIONS		35	
COMPARISON WITH PRIOR SURVEYS & CHARTS		5	
VERIFIER'S REPORT		22	
OTHER		6	
TOTALS	7	450	457

Pre-Verification by James S. Green	Beginning Date 5-21-79	Ending Date 5-21-80
Verification by Matthew G. Sanders	Beginning Date 12-4-79	Ending Date 5-23-80
Verification Check by Stanley Otsubo and James S. Green	Time (Hours) 61	Date 6-11-80
Marine Center Inspection by HIT	Time (Hours) 24	Date 8/11/80
Quality Control Inspection by R.W. Derkarian	Time (Hours) 159	Date 1/13/81
Requirements Evaluation by D.J. Hill	Time (Hours) 1	Date 9/8/81

G.K. Myers 2/6/81 13 hrs.

PACIFIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO. H-9808

FIELD NO. FA-10-2-79

Hawaii, Island of Hawaii, ^{Vicinity of} Kauna Point

SURVEYED: 26 February - 5 April 1979

SCALE: 1:10,000

PROJECT NO. OPR-T126-FA-79

SOUNDINGS: Ross Fineline Fathometer

CONTROL: Raydist, R/R; Mini-
Ranger, Azimuth
Range-

Chief of Party..... CDR B.I. Williams,
Surveyed by..... LT A. Yanaway, LTJG Mark
Finke, LTJG L. Roberts,
and ENS J. Quinlan

Automated plot by..... PMC Xynetics Plotter

Verified by..... Matthew G. Sanders
Cartographic Technician
16 June 1980

1. INTRODUCTION

This survey, H-9808 (FA-10-2-79), is a basic hydrographic survey of Kauna Point, Hawaii. The Project Instructions, dated 21 November 1978, OPR-T126-FA-79, states:

This project is a continuation of work to modernize hydrographic surveys in the Hawaiian Islands which was terminated in 1973. The new surveys will be used for maintenance of existing nautical chart coverage and for construction of new 1:10,000 and 1:100,000 scale charts. A 1:5,000 inset of Manuka Bay, plotted in feet, is included on this survey as a possible harbor of refuge. See paragraphs P and Q of the Descriptive Report for additional information and recommendations.

The Ross Fathometer was used by all launches, while the EDO Fathometer was used aboard the ship to determine the bottom configuration. ~~Rele soundings were used to determine least depths on ledges and rocks heights.~~ The Hastings Raydist, Motorola Mini-Ranger, and Theodolite used in Range-Range or Range-Azimuth modes were the primary systems used for the control of the survey. I concur with the Descriptive Report on the location of the existing and additional control.

During the verification process, no unusual problems were encountered.

2. CONTROL AND SHORELINE

See Descriptive Report, sections F and G, for an adequate description of control, section H for shoreline. The manuscripts ^{for} used topographic detail are unreviewed, Class I:

- a. T-12553: August 1963 - May 1979
- b. T-12554: August 1963 - February 1979
- c. T-12555: August 1963 - February 197~~9~~⁹

3. HYDROGRAPHY

The bottom configuration is hard bottom. ^L ledges are common, with extreme depths just off shore. Crosslines soundings agree within 6-10 fathoms in depths greater than 75 fathoms. Because of the steepness of the slope and the depths encountered, these differences are not considered excessive. Development of the bottom configuration and least depths ^{is are} adequate. All depth curves are drawn and complete, except the 0-5 fathoms which were not developed.

4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records and reports are adequate and conform to the requirements stated in the Hydrographic Manual except that:

- a. The applicable depths of the Velocity Table 1 were incorrectly scaled and the correctors at greater depths were not in accordance with Table 4-4 of the Hydrographic Manual. Velocity Table 1 was completely revised.

- b. A bubbler gauge was used at tide station KA LAE instead of an ADR gauge as directed by the Project Instructions.

5. JUNCTIONS

This survey junctions with three contemporary surveys. To the northwest it joins H-9807 (1979), 1:10,000. To the southeast it joins H-9812 (1979), 1:10,000. To the southwest it joins H-9813 (1979), 1:80,000. There were no problems in accomplishing these junctions. The junction notes were inked.

6. COMPARISON WITH PRIOR SURVEYS

H-4655a (1927), 1:250,000. There is only a prior reconnaissance survey, H-4655a, existing from this area. This survey is a trackline along the coast with only 5 soundings common to this area. Due to the scale 1:250,000, no ^{relevant} relative comparison can be made. The soundings that were compared on the southwest side of the island of Hawaii, varied in depth from 6-180 fathoms, attributed to a greatly sloping bottom, not bottom change.

There are no presurvey review items within the limits of this survey. The present survey is adequate to supersede H-4655a for the area of common coverage.

7. COMPARISON WITH THE CHART

- a. The survey was compared with chart 19320, 12th Edition,

June ¹⁷ 1978. The verifier concurs with the hydrographer's comments as stated in section L of the Descriptive Report.

(1) The soundings on Chart 19320 originate from H-4655a/1926, H-9355/1973, and miscellaneous sources. *Several inshore rocks originate with T-3443(1913) which were verified by the present survey.*

(2) The charted rocks within this survey limits are exaggerated in their offshore position because of the small scale (1:250,000) of the chart. Since these positions are obviously displaced, ^{1.8mm} individual discussion and disposition is not merited. They are all superseded by data from this survey. *See Q.C. Report, para 4.*

b. The present survey is adequate to supersede the charted hydrography.

c. Aids to Navigation. There are no fixed nor ^{Floating} ~~any other~~ aids to navigation within this survey's limits.

8. COMPLIANCE WITH PROJECT INSTRUCTIONS

This survey complies with the Project Instructions, dated November 21, 197~~8~~, and Supplement to Instructions, dated December 8, 1978, except the 400 meter ~~space~~ ^{line spacing} was not complied with. *(See HET Team report).*

9. ADDITIONAL FIELD WORK

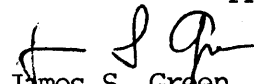
This is a very good basic Hydrographic Survey. No Additional field work is required for the area covered by this survey.

Submitted by,



Matthew G. Sanders
Cartographic Technician
June 16, 1980

Examined and approved:



James S. Green
Chief, Verification Branch



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102

August 13, 1980

OA/CPM3/JWC

TO: OA/CPM - Charles K. Townsend *CKT*
FROM: OA/CPM3 - John W. Carpenter *J.W. Carpenter*
SUBJECT: PMC Hydrographic Inspection Team Report for Survey H-9808

This survey is a basic hydrographic survey of Kauna Point, Island of Hawaii. This survey was conducted by NOAA Ship FAIRWEATHER in 1979 in accordance with Project Instructions OPR-T126-FA-79 dated November 21, 1978.

The following items were noted:

1. The offshore line spacing turned out to be 600 meters while the project instructions called for 400 meter spacing for the 1:10,000 scale survey in depths over 30 fathoms. However, there seems to be some confusion in the project instructions where Section 4.6 calls for delineation of the 110 fathom curve by 800 meter spaced lines. Thus, the line spacing was caused by confusion within the Project Instructions similar to paragraph 5 of the HIT Report for H-9812. (See paragraph D of the Descriptive Report for H-9808.) *ck*

2. The Echo Sounding Report stated that in correcting echo soundings that a criteria of 0.5% was used while the Hydrographic Manual requires the velocity/sound must be known to sufficient accuracy to ensure that no sounding will be in error as much as 0.25% of the depth. (Section 4.9.5 of the Hydrographic Manual.) *Ship should take Note!*

3. The TRA corrector utilized by launch in the Manuka Bay Inset may be in error, using a 2.4 feet instead of a normally expected 1.8 feet. Thus the soundings shown on the inset may be 0.6 foot shallower. *Why?*
See Administrative Approval comment.

4. The descriptive report notes in Section D about the difficulties with sounding equipment was noted. With the equipment being employed, the results described are a very accurate description of side echos received on narrow beam and wide beam transducers, and are to be expected in rough terrain.

5. The Descriptive Report was lacking in detail in Section F, G, I, J, K and L. *Needs improvement!*

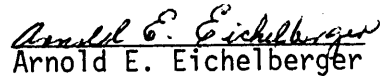


The inspection team finds H-9808 to be a basic survey adequate to supersede common areas of prior surveys and charted hydrography. Administrative approval is recommended.


John W. Carpenter


Pamela R. Chelgren


James W. Steensland


Arnold E. Eichelberger

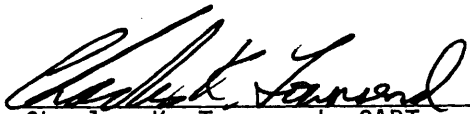
ADMINISTRATIVE APPROVAL

H-9808

The smooth sheet and reports of this survey have been examined.

In regard to Item #3 of the PMC Hydrographic Inspection Team Report for H-9808, the Manuka Bay Inset has been replotted utilizing a 1.8 foot corrector. *Additionally, several depths were corrected during Q.C.*

This survey is adequate for charting and to supersede common areas of prior surveys.



Charles K. Townsend, CAPT
Acting Director
Pacific Marine Center

9/9/90
Date



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

OA/C352:RWD

January 13, 1981

TO: Glen R. Schaefer *GRS*
Chief, Hydrographic Surveys Division

THRU: Chief, Quality Control Branch *gwd*

FROM: R. W. DerKazarian *R.W. DerKazarian*
Quality Evaluator

SUBJECT: Quality Control Report for H-9808 (1979), Hawaii, Island of
Hawaii, Vicinity of Kauna Point

A quality control inspection of H-9808 was accomplished to monitor the survey for adequacy with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, smooth plotting, shoreline transfer, decisions and actions taken by the verifier, and the cartographic presentation of data. Revisions and additions to the smooth sheet, plus helpful comments made to the verifier, are identified on a full-scale copy of the survey to be furnished the verifier. In general, the survey was found to conform to the National Ocean Survey's standards and requirements except as stated in the Verifier's Report, the HIT Report, and as follows:

1. Erroneous velocity correctors were applied to many depths due to a software problem. This was detected during quality control. The Pacific Marine Center (OA/CPM32) subsequently submitted a revised sounding plot and new sounding listing. These data were compared with the smooth sheet and it was decided that the necessary corrections to the smooth sheet could be completed at Headquarters more expeditiously than at the Marine Center.
2. Some sounding lines in portions of the area covered by the 1:5,000-scale inset were run and plotted on the 1:10,000 main sheet. In order to completely portray the hydrography in the inset area, selected soundings, including some previously excessed, were transferred from the main sheet to the inset during quality control.

Although not clearly required by the Hydrographic Manual, it is recommended that all detail be omitted from the main portion of a survey sheet when that area is covered by a larger scale inset. A change to the Hydrographic Manual to clarify this ambiguity is now being considered.



H-9808

3. The projection lines are noticeably light and probably will be difficult to reproduce photographically.

4. The following supplements the Descriptive Report, paragraph K, and the Verifier's Report, paragraph 7.a.2:

The sunken offshore rocks addressed very possibly originate with the Hawaiian Exploration of 1902 (Bp-9672) and are considered to be representative of a generally foul area close to shore. These charted sunken rock symbols are considered doubtful with respect to their existence as individual features at the exact positions displayed. They should be deleted from the chart.

5. A 243-foot elevation, charted in the vicinity of latitude 19°02'20"N, longitude 155°51'40"W, originates with T-3443 (1913) and should be retained as charted.

cc:
OA/C351



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

JAN 20 1982

OA/C351:DJH

TO: OA/CPM - Charles K. Townsend

FROM: ~~F/OA/CS~~ - Roger F. Lanier

SUBJECT: H-9808 (1979), OPR-T126, Hawaii, Island of Hawaii, Vicinity of Kauna Point, Report of Compliance with Project Instructions

The smooth sheet and Descriptive Report for the subject survey have been examined. In addition to the Quality Control Report, dated January 13, 1981 (copy attached), and the Hydrographic Survey Inspection Team Report, dated August 13, 1980, the following is submitted:

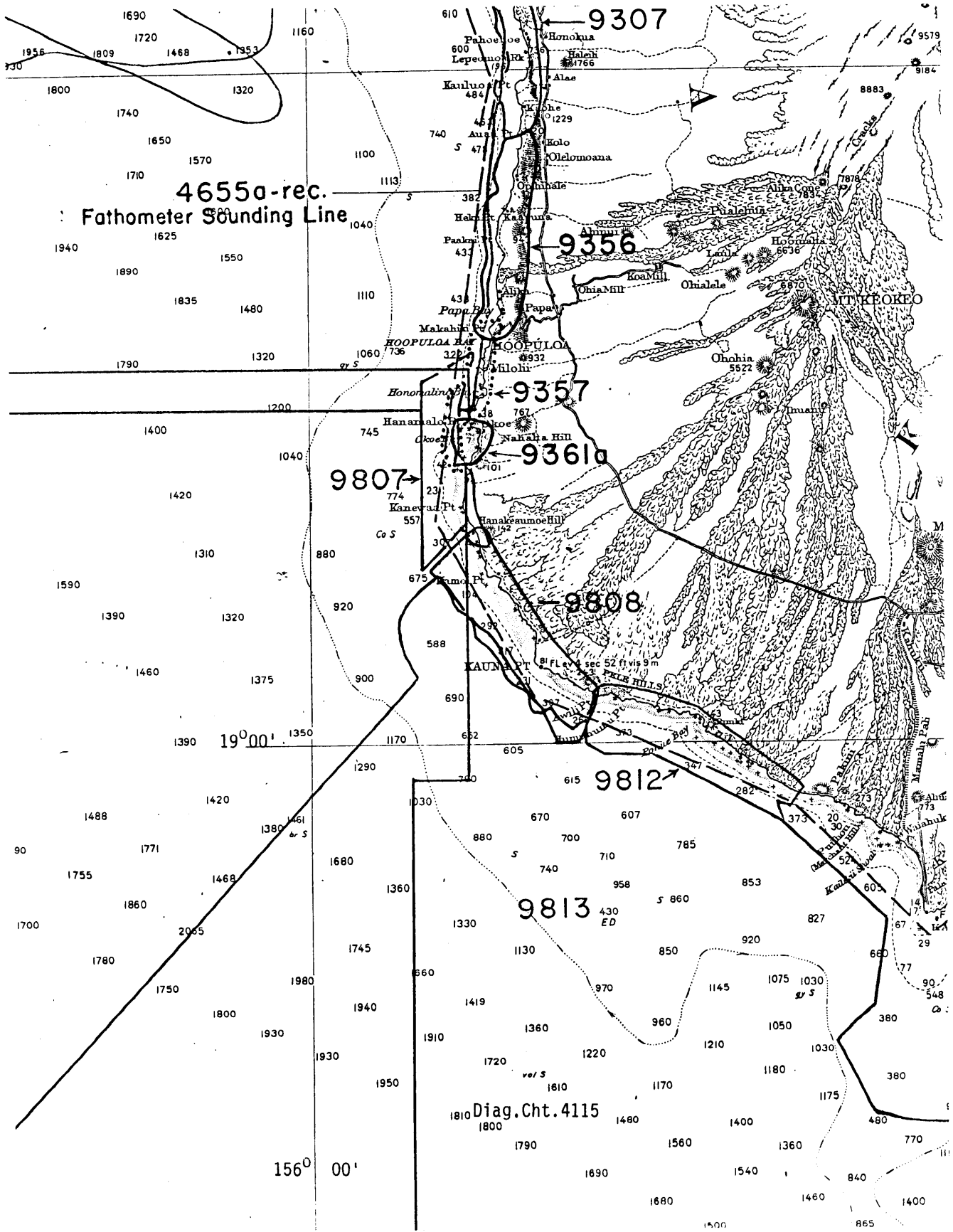
The hydrographer's deviation from line spacing requirements as mentioned in the HIT Report is not considered serious. The 600-meter spacing where the project instructions called for 400-meter spacing provides more than adequate definition of the bottom in depths greater than 30 fathoms. The hydrographer's discussion of exceptional slope and excessive depth is considered a valid explanation of the hydrographer's deviation from the project instructions.

Except as noted, the survey is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-T126-FA-79, dated November 21, 1978.

Attachment

cc:
OA/C352 w/o att.





4655a-rec.
Fathometer Sounding Line

9307

9356

9357

9361a

9807

9808

9812

9813

1810 Diag. Cht. 4115

1690

1720

1468

1320

1740

1650

1570

1710

1625

1550

1890

1835

1480

1320

1790

1400

1420

1310

1590

1390

1320

1460

1375

1390

1488

1771

1755

1860

1468

1700

1780

1750

1800

1930

1930

1950

1800

1940

1980

1940

1930

1950

1800

1790

1480

1560

1400

1360

1400

1540

1680

1500

1460

1400

156° 00'

19° 00'

156° 00'

19° 00'

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9808

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
19320	3/9/82	R. S. House	Full Part Before After Verification Review Inspection Signed Via Drawing No. 15
19004	3/9/82	R. S. House	Full Part Before After Verification Review Inspection Signed Via Drawing No. 33 (app'd through chrt 19320) Dwg #15
19010	9/28/84	^{10'c} B. Fernandes	Full Part Before After Verification Review Inspection Signed Via Drawing No. 15
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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