10123

Diagram No. 4116-2

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. RA-20-1-84

Office No. H-10123

LOCALITY

State Hawaii

General Locality West Coast of Oahu

Locality Kahe Point and Vicinity

1984

CHIEF OF PARTY
CDR J.P.Vandermuelen

LIBRARY & ARCHIVES

DATE March 7, 1985

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

Area 6
Chts
19362 ✓
19357 ✓ 80,000
19340 ✓ 250,000
19380 ✓ 247,482 TO SIGN OFF SEE "RECORD OF APPLICATION"
19004 ✓ 600,000
19013 ✓ 675,000
19007 ✓ 1:650,000
540 ✓ 3,121,170
530 ✓ 4,860,700
50 ✓ 10,000,000

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

H-10123

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.

RA-20-1-84

State HAWAII

General locality West Coast of Oahu

Locality Kahe Point and Vicinity

Scale 1:20,000 Date of survey February 29 - April 25, 1984

Instructions dated January 9, 1984 Project No. OPR-T126-RA-84

Vessel 2120, 2123, 2124

Chief of party Cdr. J. P. Vandermeulen, NOAA

Surveyed by LT S.R. Iwamoto; LT T.D. Rulon; ENS J. L. Judson; ENS K.W. Barton; ENS C.C. Wilson; ENS J.S. Griffin and ENS M.H. Pickett

Soundings taken by echo sounder, hand lead, ~~pole~~ DSF 6000

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Verified by ~~Protracted by~~ T. O. Jones Automated plot by PMC Xynetics Plotter

Evaluated by ~~Verification by~~ C. R. Davies

Soundings in fathoms ~~feet~~ at ~~MKW~~ MLLW

REMARKS: Marginal notes in black by Evaluator. Separates are filed with the hydrographic data.

AWOIS/SURF 1/24/89 SSI

SC 4-15-97

KWW 8/29/91

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1978-665-010-1174

PROGRESS SKETCH

OPR-T126-RA-84

HYDROGRAPHIC SURVEY

HAWAII, HAWIIAN ISLANDS

FEB. 28 - MAR. 31, 1984

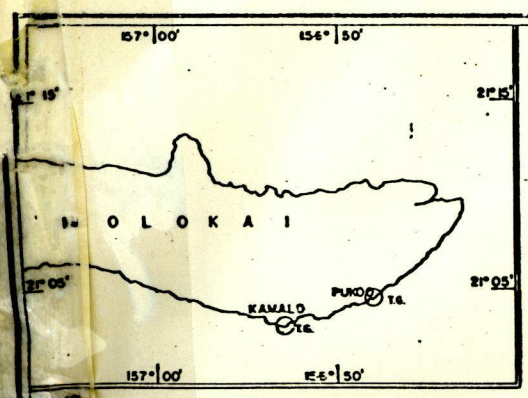
NOAA SHIP RAINIER

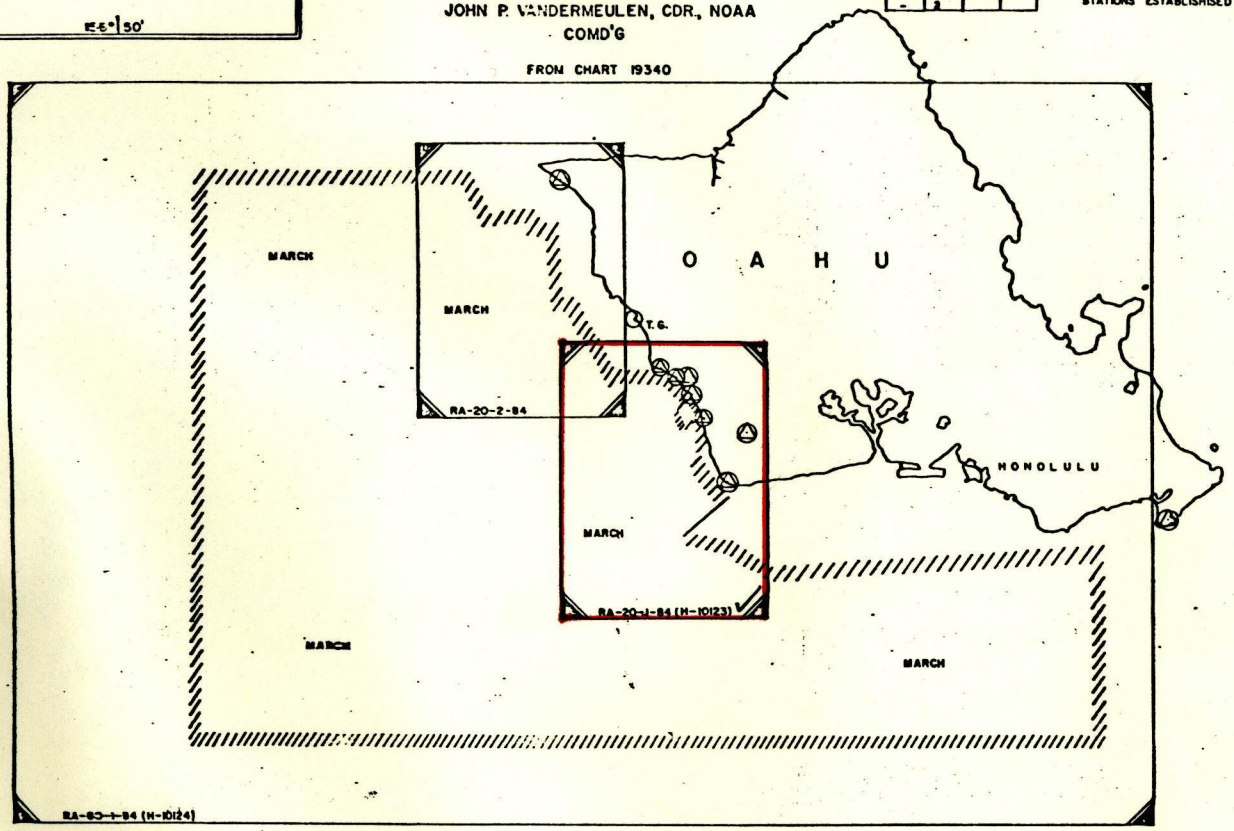
JOHN P. VANDERMEULEN, CDR., NOAA

COMD'G

FROM CHART 19340

	FEB.	MAR	APR	MAY
SQ N.M. SOUNDING		726.28		
L.N.M. SOUNDING LINE		1302.4		
SQ N.M. SIDE SCAN SONAR		0.85		
L.N.M. SIDE SCAN SONAR		20.4		
L.N.M. MISCELLANEOUS DISTANCE		400.7		
BOTTOM SAMPLES (GRAB)		3		
WATER SAMPLES ANALYZED (SALINITY)		1		
CONTROL STATIONS (ELECTRONIC)	3	6		
NANSEN CAST (δ)	-	-		
SOUND VELOCITY, TEMPERATURE, DEPTH CAST	-	1		
TIDE GAGE (○)	1	2		
STATIONS ESTABLISHISED BY TRAVERSE	-	3		





A. PROJECT ✓

This basic survey was accomplished in accordance with Project Instructions OPR-T126-RA-84, Hawaii, Hawaiian Islands, dated January 9, 1984, Change No. 1, dated February 16, 1984 and Change No. 2, dated April 16, 1984. The inclusive dates of this survey are 29 Feb. to 25 Apr. 1984.

A small sub-area of the survey was sounded at very close line spacing and sounding interval to generate data for an engineering study being conducted by R.J. Brown and Associates of Houston, Texas. This engineering study was part of the development of an Ocean Thermal Energy Conversion (OTEC) plant off Kahe Point, Oahu.

See Eval. Report Section I

Data density was determined by the needs of the engineering study and far exceeded basic survey requirements. It was, therefore, decided prior to the beginning of the survey and with the concurrence of PMC that the OTEC site data would be regarded as supplemental to, rather than part of the basic survey.

Accordingly, the data gathered specifically for the OTEC study were not processed beyond the requirements of that study and are submitted with this survey in that state. Two large scale plots of the OTEC data are provided to depict the location and nature of the data.

B. AREA SURVEYED ✓

This survey was conducted on the west side of the island of Oahu, Hawaii, between Barbers Point to the south and Maili Point to the north and from the shoreline seaward to the 300 fathom curve. The area from Kahe Point south to Barbers Point from the 10 fathom curve into shore will be surveyed at a 1:10,000 scale at a later date.

The inclusive dates of this survey were from 29 February 1984 to 19 April 1984 (JD 60-110). Included in this area and during these dates is the development survey performed by the NOAA Ship RAINIER to support the Offshore Thermal Energy Conversion Project (OTEC).

C. SOUNDING VESSEL ✓

Soundings in the OTEC development area were conducted by the NOAA Ship RAINIER (fix #'s 0001-1296). Soundings and side scan data for the above project were collected by vessel RA-3 (2123). Conventional hydrographic data in all other areas of this survey was obtained by vessels RA-3 (2123) and RA-4 (2124). Bottom samples were obtained by RAINIER (2120). No unusual sounding vessel configurations or problems occurred during hydrographic data collection.

concur

During the OTEC development the RAINIER towed seismic equipment supplied and operated by Northern Technical Services of Kirkland, Washington under contract to R.J. Brown and Associates. This included a 'uniboom' system for high resolution surficial sediment mapping and a small 40 cubic inch air gun for deeper bottom penetration. A standard seismic cable was towed up to 300 feet astern. No unusual problems occurred in the interfacing of the above systems and the RAINIER's standard hydrographic equipment.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS ✓

Survey vessels were equipped with Raytheon DSF-6000N dual beam echo sounders and leadlines. See Table I, SOUNDING EQUIPMENT, for a list of equipment used by each vessel and inclusive dates.

Weather conditions during this survey were variable, winds varied from calm to 30 knots and seas from flat to 5 feet. Corrections for heave were applied during the scanning of the graphic records when required, as per section 4.9.8.2 of the Hydrographic Manual.

Depths on this survey ranged from 0 to 384 fathoms.

TABLE I

SOUNDING EQUIPMENT

VESSEL	DATES	MODEL	SERIAL NUMBER
2120	JD 60-61	DSF-6000N	A117N
2123	JD 66-96	DSF-6000N	A119N
2124	JD 66	DSF-6000N	A123N
	JD 67-92	DSF-6000N	A115N

On JD 67 the high frequency transmitter of the DSF-6000N echo sounder (S/N A123) in vessel 2124 failed and a clear trace could not be obtained. The unit was replaced by DSF-6000N S/N A115N prior to survey operations for that day. No data had to be rejected as a result of this problem.

On JD 80 the low frequency transmitter of the DSF-6000N echo sounder (S/N A119N) in vessel 2123 failed. The transmitter was replaced prior to survey operations that day. No data had to be rejected as a result of this problem.

The Andist value for all launches was 0.0 meters and all launch data was plotted on the final field sheet using this

value. For vessel 2120 the Andist values are ~~6.6~~ 4.4 meters (midships DSF-6000N transducers) and 34.2 meters (aft DSF-6000N transducers). The Andist value to be applied to each sounding is included in the ABSTRACT OF POSITIONS, attached as separates following the text.

vessel 2120 was not used.

All bar check lines and leadlines were checked for accuracy in Seattle, Washington in January 1984. All errors were negligable and no bar check line or leadline correctors apply for this survey.

Velocity corrections were obtained by averaging the data from two SV/D casts. See TABLE II Velocity Casts.

TABLE II
VELOCITY CASTS

CAST NUMBER	DATE	LATITUDE	LONGITUDE
1	01 MARCH (061)	21-20-30N	158-10-00W
2	16 APRIL (107)	21-25-30N	158-19-18W

The Plessy 9040 SV/D profiling system, serial number 5647, was calibrated at the Northwest Regional Calibration Center (NRCC), Seattle in December 1983. Velocity values were taken directly from the digital display unit. Surface comparisons were made in accordance with instructions from N/MOP dated 1 April 1983. In accordance with these instructions, depth was taken from the line readout as the SV/D depth error exceeded 3 meters. A laboratory thermometer was used to measure temperature and the salinity content of the surface comparison was determined by use of a Beckman model RS-7B salinometer (S/N 59265) calibrated by NRCC in February 1984 . The surface comparisons agreed with the SV/D to within 3 M/S for the two casts. See Velocity Corrections Table attached as separates following text, and Corrections to Echo Soundings Report, Project OPR-T126-RA-84 for applicable correctors. The velocity correctors apply to both beams of the DSF-6000N.

Bar checks at a depth of 2 fathoms were performed at least once daily in accordance with the Provisional Operating and Processing Instructions for the Raytheon DSF-6000N Echo Sounder. The bar checks were used to confirm proper system function and to compute TRA correctors. The TRA for the wide and narrow beams were withen 0.1 fathoms and were averaged together to obtain a single TRA value. The bar check data when combined with the velocity correction indicated a 0.2 fathom TRA for vessels 2123 and 2124. The 0.2 fathom TRA differs from the historic value of 0.3

fathoms when using the Ross echo sounder. This difference is due to an apparent instrument error of 0.1 fathoms.

The TRA of 2.4 fathoms for vessel 2120 is based on the average draft of this vessel during the survey.

All launch soundings on the final field sheet were plotted using a 0.3 fathom TRA and a preliminary velocity corrections table is included in the separates following the text.

Settlement and squat correctors were not applied as they were less than 0.1 fathom for this survey.

The DSF-6000N echo sounders aboard vessels 2123 and 2124 were set to digitize on the narrow beam in shallow water to a depth of 60 fathoms at the edge of a steep shelf and on the wide beam in greater depths. There were no discrepancies between the junctions of the wide beam and narrow beam data as the two traces were in close agreeement at this point. concur

On the 1:7200 scale development performed by vessel 2120 the narrow beam of the DSF-6000N echo sounder was used to the maximum extent possible at the request of R.J. Brown. This is not in accordance with the provisional instructions for the DSF-6000N Echo Sounder. As these data were not further processed no statement will be made regarding the wide and narrow beam junctions. See EvAL. Report Section III

TC/TI tapes were made in accordance with PMC OPORDER, Appendix Q "Hydrographic Data Requirements for the 1983 Field Season", dated 24 April 1983. Printouts of the TC/TI tapes and velocity tape are included in the separates following the text.

For further details on corrections to echo soundings for this survey, see Corrections to Echo Soundings Report, Project OPR-T126-RA-84.

E. HYDROGRAPHIC SHEETS ✓

One field sheet designated RA-20-1-84 was prepared on the RAINIER using the PDP/8e Hydroplot system which produces modified transverse Mercator projections. The same method was used to prepare a 1:7200 development sheet covering the ship hydrography in the OTEC site and a 1:10000 development sheet covering the side scan sonar work in the OTEC site. A list of parameters used to define these field sheets is provided in the separates following the text.

All data and accompanying field records will be sent to Pacific Marine Center for verification.

F. CONTROL STATIONS ✓

The following Third Order Horizontal Control stations were used in this survey. For more information about recovery, method of location and description of stations refer to the Horizontal Control Report, OPR-T126-RA-84.

STATION NAME	SIGNAL NUMBER	GEOGRAPHIC POSITION
NANAKULI USN LAB III N STA, 1984	101	21/24/03.766 N 158/10/18.087 W
NANAKULI USN LAB III MID STA, 1969	102	21/23/33.491 N 158/09/26.154 W
KAHE, 1875	103	21/21/17.800 N 158/07/50.217 W
NANAKULI, 1964	104	21/23/31.391 N 158/08/42.588 W
NAVAIR, 1969	109	21/18/09.048 N 158/04/18.471 W
BARBERS POINT LIGHTHOUSE, (NEW) 1933 (Ecc)	204	21/17/58.275 N 158/06/32.121 W
PALAILAI, 1873	206	21/20/38.011 N 158/05/36.362 W
SAND ISLAND ARTILLERY FIRE CONT TR, 1963	220	21/18/16.765 N NOT used for 157/52/36.375 W H-10123
DIAMOND HEAD LIGHTHOUSE, 1925	222	21/15/31.970 N 157/48/44.250 W

G. HYDROGRAPHIC POSITION CONTROL ✓

Range/Range and Range/Azimuth were the methods used for hydrographic position control. Motorola Mini-Ranger III and a Wild Theodolite (S/N 73226) were the instruments used. The tables below summarize the location of all Mini-Ranger mobile and shore equipment.

TABLE I
MINI-RANGER MOBILE EQUIPMENT

VESSEL	CONSOLE	R/T S/N	APPLICABLE DATES
2120	715	B1108	2/29-3/20/84
2123	720	2710	3/06-4/01/84
2124	B0269	B1388	3/07-4/05/84

TABLE II
MINI-RANGER SHORE EQUIPMENT

CODE	TRANSPONDER S/N	STATION #
A	1645	101
B	4951	102,104,220
E	911721	204
F	911711	103
0	C1789	206
1	C1883	222
2	B1106	103,104,109

CALIBRATIONS AND PERFORMANCE

Mini-Ranger calibrations and system checks were performed in accordance with PMC OPORDER Appendices M and S. Mini-Ranger performance was good throughout the survey. concur

Initial Mini-Ranger baseline calibrations for this project were conducted at Lake Union, Seattle, Washington on February 2 and 3, 1984. Ending calibrations were performed on vessels 2124 and 2126 on April 26, 1984 in Honolulu Harbor, Hawaii. Failure of the R/T in vessels 2123 ~~and 2125~~ after the completion of hydrography made ending calibrations impossible. Only initial correctors were used to plot the smooth field sheet. The initial calibrations also determine the minimum signal strength cutoff values for each system. Daily systems checks were performed to confirm baseline correctors. An Abstract of Electronic Correctors is included in the separates following the text. For more informatiom regarding calibrations and systems checks, refer to the Electronic Control Report, OPR-T126-RA-84.

H. SHORELINE ✓

The shoreline was transferred from enlargements of 1:24,000 scale U.S.G.S. quadrangle maps and is for orientation only.

Sounding operations were conducted as near to shore as possible. Numerous rocks, ledges and islets previously shown on larger scale prior hydrographic surveys and topographic maps were not specifically investigated when they existed inshore from safe sounding areas. All features seaward of the inshore limits of the present survey were specifically investigated. Photographs are included to illustrate the general shoreline features in this survey area.

I. CROSSLINES ✓

A total of 15.2 nautical miles of crosslines were run during the survey, representing 8.0% of the mainscheme mileage. Agreement of soundings at crossings was excellent, generally within 1 fathom and not exceeding 2 fathoms in areas of steep bottom gradients. concur

J. JUNCTIONS ✓

This survey junctions with two contemporary surveys

SURVEY	SCALE	YEAR	LOCATION
H-10124	1:80,000	1984	south & west
H-10128	1:20,000	1984	north

All sounding comparisons were within 2 fathoms and contour lines continued in a smooth line with no abrupt changes. concur

K. COMPARISON WITH PRIOR SURVEYS ✓

This survey was compared to the following prior surveys:

SURVEY	SCALE	YEAR
H-3294	1:20,000	1911
H-3293	1:20,000	1911
H-4540	1:10,000	1926
H-4548	1:40,000	1926
H-4383	1:5,000	1924
H-4382	1:5,000	1924

See EVAL. Report Section VI

All sounding comparisons were good except as stated below.

H-3293 Scale 1:20,000 Year 1911

a) 13 ft. sounding at 21 19'51"N, 158 07'49"W. A 19.8 ft. (3.3 fm.) sounding was found in this survey. It is recommended that this sounding be investigated during the 1:5,000 survey of Barbers Point area. concur See EVAL Report Section VI

b) 19 ft. sounding at 21 21'00"N, 158 08'02"W. A 7.2 ft. (1.2 fm.) sounding was obtained in this survey. It is recommended that the new 1.1 fathom sounding be used for charting purposes. concur

c) 31 ft. sounding at 21 23'36"N, 158 09'45"W. A 19.8 ft. (3.3/6 fm.) was obtained in this survey. It is recommended that the new 3.3/6 fathom sounding be used for charting purposes. concur

L. COMPARISON WITH CHART

This survey was compared with a 1:20,000 enlargement of Chart 19357, 17th edition, dated 15 October 1983. Soundings compared well (within 1-2 fathoms).

Discussion of three items on the chart in the vicinity of Kahe Point follows:

'OUTFALL PA'- (Charted at-21 21.52'N, 158 08.00W) This outfall was located during operations. It has a least depth of 1.9 fathoms in an area of 4-5 fathoms. A notice was sent to the U.S. Coast Guard and should be considered a danger to navigation. A copy of this radio message is contained in the separates following the text. Survey position- 21 21.~~39~~23'N, 158 08.~~1~~09W. (See position number 357~~1~~2).

See EVAL Report Section VII

'LIGHTED PILE'- (Charted at-21 21.52'N, 158 08.10W) The pile, associated with the outfall above, was reported by Mr. Harold Butler of Hawaii Electric Company (HECO) to have fallen over during a hurricane. Blueprints supplied by HECO show the pile lying on the bottom 75 feet offshore of the present outfall. HECO advises that there are no plans to re-establish this light. Attempts were made to obtain a sounding over the pile but the current caused by the falling water coming from the outfall was to strong. It is recommended that the pile be removed from the chart. The blueprints are included in the survey data package.

Do not concur
See EVAL Report Section ~~VII~~

'OBSTRUCTION'- (Charted at-21 21.38N, 158 08.10'W) The charted obstruction is located near the turbulence associated with the power plant outfall discussed above. It is most likely that the 'obstruction' is, in fact, the outfall.

concur

M. ADEQUACY OF SURVEY ✓

This survey is complete and sufficient to supersede all prior surveys for charting purposes.

DO NOT concur
See EVAL Report Section VII

N. AIDS TO NAVIGATION ✓

No new Aids to Navigation were found that were not contained in the Light List.

See Section III + VII of EVAL. Report.

Changes concerning landmarks are discussed in the Descriptive Report for survey H-10124, OPR-T126-RA-84.

O. STATISTICS ✓

Launch	Linear Nautical Miles of Hydro	Square Nautical Miles of Hydro	Number of Positions
2120	~~108.4~~		~~1296~~ 4
2123	178.4		~~760~~ 719
2124	99.8		~~359~~ 444
TOTALS	~~386.6~~ 278.2	21.71	~~2415~~ 1167

Bottom Samples: ~~54~~

Tide Stations: 1

Velocity Casts: 2

P. MISCELLANEOUS ✓

A steep shelf break exists between 20-30 fathoms in the area of Kahe Point. This was fully developed during the side scan sonar survey and was of particular interest to the OTEC engineering study. Concur

No anomalous currents or tidal situations were observed or reported during this survey. concur

Q. RECOMMENDATIONS ✓

This survey is complete and adequate for charting purposes and no additional field work is recommended at this time. concur

A deep water harbor is presently under construction by the Corp of Engineers which will expand the present charted harbor at 21 19.51'N and 158 ~~+~~ 7.41'W. Completion is scheduled for June 1985. Construction plans can be found in the separates following the text. Construction of an Offshore Thermal Energy Conversion Plant is planned for 1988. Construction of both facilities may affect future charting.

Refer to section K for a prior 13 foot sounding which should be investigated on a future survey. concur See EVAL Report Section ~~VI~~.

R. AUTOMATED DATA PROCESSING ✓

Data acquisition and processing were accomplished in accordance with the Hydrographic Manual (4th Edition), Manual Automated Hydrographic Surveys, the PMC OPORDER,

Hydrographic Survey Guidelines and the Hydrographic Data Requirements for the 1983 field season.

Soundings and positions were collected by a Hydroplot system using Range/Range Hyperbolic Hydroplot program RK 112 and Range-Azimuth Hydroplot program RK 116. The daily master and corrector tapes are included as part of this survey. The following is a list of all computer programs and version dates used for data acquisition and processing.

NUMBER	DESCRIPTION	VERSION
RK 112	Hyperbolic, R/R Hydroplot	10/12/83
RK 116	Range-Azimuth Hydroplot	10/12/83
RK 201	Grid, Signal, and Lattice Plot	4/18/75
RK 211	Range-Range Non-Real Time Plot	2/13/84
RK 212	Visual Station Table Load	4/01/74
RK 216	Range-Azimuth Non-Real Time Plot	2/24/84
RK 300	Utility Computations	10/21/80
RK 330	Reformat and Data Check	5/04/76
PM 360	Electronic Corrector Abstract	2/02/76
RK 407	Geodetic Inverse/Direct Computation	9/25/78
AM 500	Predicted Tide Generator	11/10/72
RK 530	Layer Corrections for Velocity	5/10/76
RK 561	H/R Geodetic Calibration	12/01/82
AM 602	Elinore--Line Oriented Editor	12/08/82
RK 606	Tape Duplicator	8/22/74
AM 607	Self-Starting Binary Loader	8/10/80
RK 610	Binary Tape Duplicator	12/01/82
RK 612	Line Printer List	3/22/78
RK 900	Plot Test Tape Generator for AM 902	5/07/76
PM 901	Core Check	3/01/72
AM 902	Real Time Checkout	11/10/72
DA 903	Diagnostic--Instruction Timer	2/27/76
RK 905	Hydroplot Controller Checkout	3/18/81
RK 935	Hydroplot Hardware Tests	3/15/82
RK 950	Hardware Tests (Documentation Only)	6/02/75

S. References to other Reports ✓

The following reports contain information related to this survey.

Echo Sounding Report	OPR-T126-RA-84
Electronic Control Report	OPR-T126-RA-84
Horizontal Control Report	OPR-T126-RA-84
Coast Pilot Report	OPR-T126-RA-84
Descriptive Report	H-10124 (RA-80-1-84)

Respectfully Submitted,

Kenneth W. Barton

Kenneth W. Barton
Ensign, NOAA

NMO | dDR
16 APR | 04573.0 MHz
84
0021Z

ØØ21z nmo nmo de wtef

rttuzyuw ruhptefØØ78 1Ø72332-uuuu--ruhpsuu.
znr uuuuu
r 162332z apr 84
fm noaas rainier
to ccgdfourteen honolulu hi
info noaamop seattle wa
acct cm-vcaa
bt
unclas
ra-pmc-Ø29
notice to mariners
1. an uncharted wreck has been found along the west coast of oahu, at latitude 21deg. 24min. 58.79sec. north longitude 158deg. 11min. 54.36sec. west with a least depth of 6.2 fathoms at predicted mllw. the wreck is a minesweeper, approximately 150 ft long and is 3ØØ meters south of a charted fish haven. this information was obtained during rainier survey ra-2Ø-2-84 and affects charts 19340, 19357,19361.
2. the offshore end of the kahe power plant outfall is at latitude 21deg. 21min. 23.45sec north, longitude 158deg. o8min. Ø6.97sec west, with a least depth of 1.9 fathoms at predicted-mllw. the surrounding depths are 4-5 fathoms.
this information was obtained during rainier survey ra-2Ø-1-84, h1Ø123 and affects charts 19340,19357.
bt
#ØØ78

nnnnn

APPROVAL SHEET

DESRCIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY

H-10123

RA-20-1-84

In producing this sheet, standard procedures were observed in accordance with the Hydrographic Manual, PMC OPORDER, Hydrographic Survey Guidelines, and the Instruction Manual for Automated Hydrographic Surveys. The data was examined daily during the execution of the survey.

The boatsheet and the accompanying records have been examined by me, are considered complete and adequate for charting purposes, and are approved.

John P. Vandermeulen, CDR, NOAA
Commanding Officer
NOAA Ship RAINIER

MASTER STATION LIST
OPR-T126-RA-84
HAWAII,HAWAIIAN ISLANDS

FINAL VERSION

```
101 4  21 24 03766 158 10 18087  250 0010 000000
/NANAKULI USN LAB 111 N STA 1984          RAINIER

102 4  21 23 33491 158 09 26154  250 0010 000000
/NANAKULI USN LAB III MID STA 1969    NGS LISTING

103 4  21 21 17800 158 07 50217  250 0085 000000
/KAHE 1875                            NGS LISTING

104 4  21 23 31391 158 08 42588  250 0112 000000
/NANAKULI 1964                        NGS LISTING

*105 2  21 18 00433 158 06 35414  250 0001 329650
/SURF 1984                                RAINIER

*106 4  21 15 57756 157 41 54728  250 0100 329650
/HANAUMA 1983                     FAIRWEATHER G.P.

*107 0  21 33 55490 158 15 15359  250 0381 329650
/RED RM1 1984                        RAINIER G.P.

 109 1  21 18 09048 158 04 18471  250 0004 000000
/NAVAIR 1969                          NGS LISTING

*110 1  21 34 13640 158 15 46717  250 0322 000000
/CLIFF 1958                           NGS LISTING

*111 4  21 24 18245 158 10 46134  250 0004 000000
/STATE SURVEY 8-7C 1970               NGS LISTING

*112 4  21 27 48634 158 12 57953  250 0070 000000
/LAHILAHI 1927                        NGS LISTING

*113 4  21 27 09290 158 11 56453  250 0005 000000
/WAIANAE HARBOR RANGE REAR LIGHT 1984     RAINIER

*114 4  21 27 06966 158 11 56594  250 0004 000000
/WAIANAE HARBOR RANGE FRONT LIGHT 1984    RAINIER

*115 4  21 27 02078 158 11 58793  250 0006 000000
/WAIANAE HARBOR BREAKWATER LIGHT 1 1984   RAINIER

*116 1  21 30 13618 158 13 56957  250 0005 000000
/BENCH MARK K 3 1969                  NGS LISTING
```

* Not used on H-10123

* 117 1 21 33 55169 158 15 15515 250 0382 000000
/RED 1958 NGS LISTING

* 118 1 21 33 44377 158 15 30800 250 0016 000000
/STATE SURVEY 8-2 1969 NGS LISTING

* 119 1 21 32 55961 158 14 34393 250 0008 000000
/STATE SURVEY 8-3 1969 NGS LISTING

* 120 5 21 18 28623 157 53 57262 250 0006 000000
/KALIHI CHANNEL GREEN LIGHT 9 1964 NGS LISTING

* 200 1 21 33 54820 158 15 02845 139 0517 000000
/KAENA POINT RADIO MAST(1550) 1969 NGS LISTING

* 201 1 21 30 39651 158 08 43434 139 1341 000000
/MT KAALA NW RADAR DOME 1965 NGS LISTING

* 202 4 21 30 38692 158 08 41754 139 1341 000000
/MT KAALA SE RADAR DOME 1965 NGS LISTING

* 203 4 21 22 41488 158 08 33497 139 0017 000000
/NANAKULI USN LAB III S STA 1969 NGS LISTING

204 7 21 17 58275 158 06 32121 139 0027 000000
/BARBERS PT LIGHTHOUSE (NEW) 1933 NGS LISTING

* 205 4 21 34 38983 158 16 55772 139 0022 000000
/KAENA POINT LIGHT 1927 NGS LISTING

206 4 21 20 38011 158 05 36362 139 0150 000000
/PALAILAI 1873 NGS LISTING

* 208 4 21 33 55524 158 14 41502 139 0477 000000
/KAENA POINT RADAR DOME(1430) 1969 NGS LISTING

* 209 1 21 21 28929 158 07 51726 139 0145 000000
/KAHE STACK RAINIER G.P.

* 211 1 21 25 24752 158 09 24197 139 0475 000000
/WEST RADAR TOWER (1555) RAINIER

* 212 4 21 25 23147 158 09 03487 139 0477 000000
/EAST RADAR TOWER (1564) RAINIER

* 213 4 21 18 36756 157 52 07425 139 0058 000000
/HONOLULU ALOHA TOWER 1925 NGS LISTING

* 218 4 21 16 50262 157 49 54275 139 0000 000000
/HONOLULU ROYAL HAWAIIAN C TWR NGS LISTING

* Not used on H-10123

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*219 4  21 20 45631 157 57 53722  139 0050 000000
 /HICKAM AFB WATER TOWER                NGS LISTING

*220 4  21 18 16765 157 52 36375  139 0028 000000
 /SAND IS ARTILLERY FIRE CONT TR        NGS LISTING

*221 4  21 20 32625 158 02 17670  139 0000 000000
 /EWA MILL STACK 1969                   NGS LISTING

 222 4  21 15 31970 157 48 44250  250 0017 000000
 /DIAMOND HEAD LIGHTHOUSE 1925          NGS LISTING

*236 4  21 19 12521 157 52 26595  139 0059 000000
 /HONOLULU HAWAIIAN PINEAPPLE TK        NGS LISTING

*238 4  21 21 49644 157 57 51242  139 0059 000000
 /PEARL HARBOR FORD IS CONT TWR         NGS LISTING

*239 1  21 17 14866 157 50 28580  139 0124 000000
 /HONOLULU ILIKAI HOTEL CUPOLA          NGS LISTING

*242 4  21 17 45495 157 50 44550  139 0096 000000
 /HONOLULU ALA MOANA BLDG OBS LT        NGS LISTING

*244 3  21 20 06720 157 55 21216  139 0040 000000
 /HONOLULU INTL APT CONT TWR BCN        NGS LISTING

*245 4  21 17 07441 157 50 27203  139 0090 000000
 /HONOLULU HILTON RAINBOW TWR LT        NGS LISTING

*246 3  21 16 05810 157 42 20585  139 0224 000000
 /BUILDING(VORTAC)                      AID TO NAV

*247 3  21 18 48622 157 53 41731  139 0006 000000
 /KALIHI CHANNEL RED LIGHT 16 1964      NGS LISTING

*248 3  21 20 10077 157 56 56797  139 0050 000000
 /HICKAM AFB CONTROL TOWER 1957         NGS LISTING

*249 4  21 18 48622 157 53 41731  139 0006 000000
 /KALIHI CHANNEL RED LIGHT 16 1964      NGS LISTING

*250 4  21 18 08642 157 53 54932  139 0006 000000
 /KAHILI CHANNEL RED LIGHT 6 1984       RAINIER G.P
```

504 KAHE STACK, 1984 21 27 28.929 158 07 51.726

505 BARBERS PT. LIGHTHOUSE, (NCWS) 1933 21 17 58.078 158 06 32.21

* Not used for H-10123

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

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

~~NONFLOATING AIDS~~ OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [X] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [ ] TO BE REVISED
- [X] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
NOAA Ship RAINIER	Hawaii	Oahu	4/5/84

The following objects HAVE [X] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-T126-RA-84		H-10124	Old Hawaiian

Charting Name	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	METHOD AND DATE OF LOCATION FIELD	CHARTS AFFECTED
Telem Ant	No longer a prominent landmark.	21 33	47.19	158 14	25.25	(Published Position Dipfile)		19357 19340
R Mast	Station is destroyed. (Kaena Point Radio Mast)	21 33	54.820	158 15	02.845		Triang. Rec. 3/15/84	19357 19340
Radio Tower	Charted as Center Radio Tower in group of four. No longer a prominent landmark.	21 26	04.3	158 09	50.8	(Published Position Dipfile)		19357 19340
* Towers	Charted as Towers 195 Ft. No longer a prominent landmark. (Barbers Point Standard Oil N.W. Tower)	21 18	48.858	158 06	59.686		Triang. Rec. 3/1/84	19357 19362
* Towers	Charted as Towers 195 Ft. No longer a prominent landmark. (Barbers Point Standard Oil S.E. Tower)	21 18	44.106	158 06	56.260		Triang. Rec. 3/1/84	19357 19340 19362
* Silos	No longer a prominent landmark.	21 18	11.20	158 06	41.06	(Published Position Dipfile)		19357 19362
* Stack	No longer a prominent landmark.	21 18	07.3	158 06	35.4	(Published Position Dipfile)		19357 19362
	See L-204(85)							

* On H-10123

NOAA FORM 76-40 (8-74)

Replaces C&GS Form 567.

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

~~NONFLOATING AIDS~~ OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [X] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

[ ] TO BE CHARTED [X] TO BE REVISED [ ] TO BE DELETED	REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
	NOAA Ship RAINIER	Hawaii	Oahu	4/5/84

The following objects HAVE [X] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-T126-RA-84		H-10124	Old Hawaiian

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	LATITUDE // D.M. Meters	POSITION LONGITUDE ° ′	LONGITUDE // D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
Tower *	Western of two radar towers. Flashing red light. Near Nanakuli. Chart as Radio Towers. (See Photo)	21 25	24.752 761.248	158 09	24.197 696.874	(Published Position Diprile)	F-L-3-6 4/5/84	19357
Tower *	Eastern of two radar towers. Flashing red light. Near Nanakuli. Chart as Radio Towers. (See Photo)	21 25	23.148 711.917	158 09	03.487 100.426	(Published Position Diprile)	F-L-3-6 4/5/84	19357 19340
* Stack *	Tallest stack at Kahe power plant. Quick flashing strobe. On Kahe Point. (See Photo)	21 21	28.929 889.682	158 07	51.726 1490.381	(Published Position Diprile)	F-L-3-6 4/5/84	19357
* Tower	Most northerly of three dayglow orange towers in Nanakuli. (See Photo)	21 24	03.765 115.793	158 10	18.085 520.920	(Published Position Diprile)	F-L-3-6 4/5/84	19357
Tower *	Honolulu International Airport Control Tower.	21 19	26.464 813.874	157 55	~~47.755~~ 1376.299	(Published Position Diprile)	F-L-3-6 4/5/84	19357
Radome	Should be charted as largest of two Radomes (Kaena Point Radar Dome). (See Photo)	21 33	55.524 1707.641	158 14	41.502 1194.179	(Published Position Diprile)	Triang. Rec. 3/15/84	19357 19340
	See L-204(85)							

RLH

* ON H-10123

FIELD TIDE NOTE

RA-20-1-84
H-10123

Field tide reduction of soundings for survey H-10123 was based on predicted tides from Honolulu, Hawaii (161-2340). Corrections were obtained from Preliminary Tidal Zoning OPR-T126-RA-84. The predicted tides were derived using program AM500.

The reference station at Honolulu was leveled on March 3, 1984. Three permanent benchmarks (including the primary mark) were connected to the ETG reading mark. Levels were run at the end of survey operations on April 26, 1984. Initial and final levels compared very well.

A subordinate station at Waianae, Pokai Bay, Oahu, Hawaii (161-2482) provided data for this survey. A Fisher/Porter ADR tide gage was installed on the south face of pier A at the Waianae Boat Harbor on February 28, 1984, 21 27'8.9"N,158 11'58.8"W. The historical site for this station was on Kaneilio Point, at the southern end of Pokai Bay. The location was changed to allow the installation of an ADR gage rather than a bubbler. The gage operated well throughout the time of hydrography.

Two historic benchmarks were recovered near the historic site. Three new benchmarks were established between the historic site and the new location of the gage. Initial levels were run to these five marks on March 1, 1984. Final levels were run on April 25, 1984. The gage was removed following the final levels on April 25. Comparison of the initial and final levels indicated no significant movement of the staff during the survey period.

DATE: 8/14/84

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Marine Center: Pacific

OPR: T126

Hydrographic Sheet: H-10123

Locality: West Coast Oahu Hawaii

Time Period: March 6 - April 19, 1984

Tide Station Used: 161-2340 Honolulu, HI
161-2482 Waianae, HI

Plane of Reference (Mean Lower Low Water): 161-2340 = 3.69 ft.
161-2482 = 24.45ft.

Height of Mean High Water Above Plane of Reference: 161-2340 = 1.5 ft.
161-2482 = 1.5 ft.

Remarks: Recommended Zoning:

1) North of latitude 21° 18.0' Zone direct on 161-2482.
2) South of latitude 21° 18.0' Zone direct on 161-2340.

James R. Hubbard
Chief, Tidal Datums Section

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10123

Name on Survey
Hawaii, West Coast of Oahu,
Kahe Point and Vicinity

	A ON CHART NO. 1957 17th Ed.	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	
Kahe Point										1
Barbers Point										2
										3
										4
										5
										6
										7
										8
										9
										10
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										23
										24
										25

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: H-10123

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	9
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	1

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDIAN FILES						
ENVELOPES						
VOLUMES	1					
CAHIERS	1					
BOXES						

SHORELINE DATA

~~SHORELINE MAPS(List):~~ USGS Quads - EWA, Hawaii, Waianae, Hawaii

PHOTOBATHYMETRIC MAPS(List):

NOTES TO THE HYDROGRAPHER(List):

SPECIAL REPORTS(List):

NAUTICAL CHARTS(List): Enlargements - 19357

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS VERIFICATION	AMOUNTS EVALUATION	AMOUNTS TOTALS
POSITIONS ON SHEET			1176
POSITIONS REVISED	598		
SOUNDINGS REVISED	47		
CONTROL STATIONS REVISED			
	TIME-HOURS VERIFICATION	TIME-HOURS EVALUATION	TIME-HOURS TOTALS
PRE-PROCESSING EXAMINATION	1	1	2
VERIFICATION OF CONTROL	2		2
VERIFICATION OF POSITIONS	52		52
VERIFICATION OF SOUNDINGS	44.5		44.5
VERIFICATION OF JUNCTIONS	4		4
APPLICATION OF PHOTOBATHYMETRY	N/A		
SHORELINE APPLICATION/VERIFICATION	4		4
COMPILATION OF SMOOTH SHEET	51	7	58
COMPARISON WITH PRIOR SURVEYS AND CHARTS		19	19
EVALUATION OF SIDESCAN SONAR RECORDS	0		
EVALUATION OF WIRE DRAGS AND SWEEPS	0		
EVALUATION REPORT		110	
OTHER	4	8	
Digitization			
TOTALS	162.5	96.0	208.5

Pre-processing Examination by J.L. Stringham, J.S. Green	*Beginning Date* 6/20/84	*Ending Date* 6/20/84
Verification of Field Data by T.O. Jones	~~Time(Hours)~~ Begin Date 8/3/84	*Ending Date* 12/24/84
Verification Check by J.L. Stringham, B.Olmstead, J.S. Green	*Time(Hours)* 17	*Ending Date* 2/4/85
Evaluation and Analysis by C.R. Davies	~~XXXXXXXX~~ Begin 1/15/85	*Ending Date* 2/4/85
Inspection by O.H.11	*Time(Hours)* 2	*Ending Date* 2-7-85

PACIFIC MARINE CENTER

EVALUATION REPORT

REGISTRY NO: H-10123 FIELD NO: RA-20-1-84

Hawaii, West Coast of Oahu, Kahe Point and Vicinity

SURVEYED: February 29 - April 25, 1984

SCALE: 1:20,000 PROJECT NO: OPR-T126-RA-84

SOUNDINGS: Raytheon DSF 6000N CONTROL: Motorola Mini-Ranger III
Range/Range
Range/Azimuth

Chief of Party.....CDR J. P. Vandermeulen

Surveyed by.....LT S. Iwamoto
LT T. Rulon
ENS J. Judson
ENS K. Barton
ENS C. Wilson
ENS J. Griffin
ENS M. Pickett

Automated Plot by.....PMC Xynetics Plotter

Verified by.....T. O. Jones

Evaluated by.....C. R. Davies

I. INTRODUCTION

H-10123 is a basic hydrographic survey conducted by NOAA Ship RAINIER in accordance with the following:

OPR-T126-RA-84, dated January 9, 1984
Change No. 1, dated February 16, 1984
Change No. 2, dated April 16, 1984

This survey was conducted in two parts, one being the basic hydrographic survey on the southwest side of the island of Oahu, Hawaii, between latitudes 21°24'00"N and 21°15'00"N. In the area of Kahe Point the survey operations extended from the two-fathom curve offshore to the 300-fathom curve. In the vicinity of Barbers Point the survey operations extended from the ten-fathom curve offshore to the 300-fathom curve. A future survey is planned for the inshore area adjacent to Barbers Point.

The other portion of this survey was conducted for R. J. Brown and Associates of Houston, Texas. The results of this survey consisting primarily of side-scan sonar data was forwarded to R. J. Brown on September 7, 1984. A comparison between the two sets of survey data was accomplished and no

significant features or depths were apparent on the side scan data that were not shown on the present survey.

Predicted tides based on the Honolulu, Hawaii gage (161-2340) with time and range adjustments were utilized during shipboard processing. Tide correctors used for the reduction of the final soundings are computed from approved hourly heights from one permanent gage, Honolulu, Hawaii (161-2340) and one temporary field gage, Waianae, Hawaii (161-2482). During office processing the projection parameters were changed to center the hydrography on the smooth sheet and to change the projection to polyconic.

II. CONTROL AND SHORELINE

Hydrographic control and hydrographic positioning are adequately discussed in the hydrographer's Descriptive Report, paragraphs F and G, and Horizontal and Electronic Control Reports for OPR-T126-RA-84. However, the lack of final baseline correctors for the R/T system on vessel 2123 did not compromise the quality of any positions obtained by that vessel. Daily system checks were adequate to insure the stability of the system for the duration of the survey.

The smooth sheet was plotted using published and field geodetic positions based on the Old Hawaiian Datum.

H-10123 is a basic hydrographic survey, however, photogrammetric manuscripts to assist the hydrographer in the positioning and delineation of foreshore features were not provided by headquarters. Shoreline is not shown on H-10123 in accordance with N/CG letter dated February 16, 1984, entitled "Reduction of Marine Center Hydrography Survey Processing Backlog". No conflicts were found when a comparison was made with H-10123 and the charted shoreline.

III. HYDROGRAPHY

Crossline soundings are in fair agreement. Small discrepancies can be attributed to the steep sloping nature of the bottom. Hydrography within the limits of H-10123 was adequate to determine the bottom configuration and least depths beyond the two-fathom curve. Standard depth curves could be adequately drawn and developed with the exception of the zero and one-fathom curves, where hydrography was terminated due to foul areas or surf conditions.

IV. CONDITION OF SURVEY

The hydrographic records and final reports adequately conform to the requirement of the Hydrographic Manual with the exception of items discussed in the Preprocessing Report, dated August 1, 1984 and the following;

The lighted buoys in Barbers Point Anchorage Area Bravo were not completely identified as they are listed in the Light List and on chart 19357. All floating aids to navigation within the project area shall be located and described in accordance, 4.2.2.3 Project Instructions and 4.5.13.2 Hydrographic Manual.

V. JUNCTIONS

H-10123 is bordered by two contemporary surveys to the west and north.
H-10124 (1984) 1:80,000
H-10128 (1984) 1:20,000

Soundings and depth curves and junctional notes are inked in agreement. There are no contemporary surveys to the south and inshore of hydrography adjacent to Barbers Point. The survey depths in these areas are in harmony with charted depths.

VI. COMPARISON WITH PRIOR SURVEYS

H-3293 (1911) 1:20,000
H-3294 (1911) 1:20,000

The prior surveys compare well with H-10123. Differences are small, ±1 to ±5 fathoms inshore of the 100-fathom curve. Offshore of the 100-fathom curve, the difference is greater with H-10123 being shoaler from 5 to 15 fathoms. These differences are attributed to more accurate data acquisition techniques. The following sounding was brought forward from H-3293 (1911).

Sounding (FA)	Latitude	Longitude
2.2	21°19'51"N	158°07'49"W

The present survey supersedes H-3293 and H-3294 within the area of common coverage.

H-4382 (1924) 1:5,000
H-4383 (1924) 1:5,000

These prior surveys compare very well with H-10123. Differences are small, ±1 to 2 fathoms, attributable to the different surveying methods. The many rocks located on the priors are not positioned on this survey but are generally located in areas labeled as foul on the present survey.

Two soundings have been transferred to H-10123 from H-4383.

Soundings (fm)	Latitude	Longitude
2.8	21°21'33"N	158°08'12"W
1.8	21°22'52"N	158°09'06"W

The present survey is adequate to supersede H-4382 and H-4383 offshore from the two-fathom depth curve. Between the two-fathom depth curve and the high water line these two 1:5,000 prior surveys should be retained as the charting source.

H-4540 (1926) 1:10,000
H-4548 (1926) 1:40,000

The prior surveys compare well with H-10123. Differences are small ±1 to 5 fathoms throughout the area of common coverage. Differences are attributed to more accurate data acquisition techniques.

The present survey supersedes H-4540 and H-4548 within the area of common coverage.

VII. COMPARISON WITH CHART

19357 17th Ed. October 15, 1983
19362 10th Ed. November 6, 1982

a) Hydrography - Most charted information originates with prior surveys discussed previously. The following features originate with miscellaneous sources not readily ascertainable:

A "submerged buoy" (7 1/2 fms rep) at latitude 21°19'00"N, longitude 158°08'00"W was not investigated by the hydrographer. It is recommended that the features be retained as charted.

The lighted pile charted at latitude 21°21'33"N, longitude 158°08'07"W and adjacent outfall charted as PA originate with a miscellaneous source. The outfall has been located on H-10123 at latitude 21°21'23.5"N, longitude 158°08'07"W and charts should be revised to show this position. The pile, although not located during this survey, was determined to no longer exist as charted. According to a representative of the Hawaii Electric Company the pile has fallen over and lies flat on the bottom. It is recommended that the pile be charted as a submerged obstruction in proximity to the seaward end of the outfall at its revised position. Company blueprints accompanying the survey data provide additional information in support of this recommendation.

There was one danger to navigation identified by the hydrographer during survey operations. This information has been forwarded to the 14th USCG District.

Geographic names appearing on the smooth sheet originate from the chart.

H-10123 is adequate to supersede the charted information within the limits of hydrography except where noted in this report.

b) Controlling Depths - There are no controlling depths within the limits of the present survey.

c) Aids to Navigation

	Latitude	Longitude
Barbers Point Light (Light List 3829)	21°17'58.08"N	158°06'32.21"W
Anchorage Area Bravo Light Buoy C (Light List 3829)	21°16'23.51"N	158°05'17.06"W
Anchorage Area Bravo Light Buoy F (Light List 3830)	21°16'24.86"N	158°05'33.64"W

Anchorage Area Bravo Light Buoy G (Light List 3831)
21°16'19.13"N 158°05'34.96"W

Anchorage Area Bravo Light Buoy J (Light List 3832)
21°16'17.28"N 158°05'19.85"W

FORACS III Buoy 21°22'24.09"N 158°08'48.13"W

The above aids to navigation fall within the limits of this survey.

Although the hydrographer did not specifically identify or discuss these aids by their Light List names, identification of the aids in the survey data was accomplished by comparing the survey positions to the Light List and the chart. The above aids adequately serve their intended purposes.

VIII. COMPLIANCE WITH INSTRUCTIONS

H-10123 adequately complies with the project instructions in section 1 except where noted in section 4 of this report.

IX. ADDITIONAL FIELD WORK

This is a good basic survey and no substantial additional work is required. However, an investigation of the charted submerged buoy discussed in section VII should be considered on a low priority basis.

Respectfully submitted,

Charles R. Davies

Charles R. Davies
Cartographer
February 6, 1985

This survey has been examined by me and it meets the Charting and Geodetic Services survey standards and requirements for use in nautical charting except as noted in the Evaluation Report. The survey is recommended for approval.

Dennis Hill

Dennis Hill
Chief, Hydrographic Section

ATTACHMENT TO DESCRIPTIVE REPORT FOR H-10123

I have reviewed the smooth sheet, accompanying data, and reports of this hydrographic survey. Except as noted in the Evaluation Report, the hydrographic survey meets or exceeds Charting and Geodetic Services (C&GS) standards, complies with instructions, and is accurately and completely represented by the smooth sheet and digital data file for use in nautical charting.

David W. Yeager 2/14/85
Chief, Nautical Chart Branch (Date)

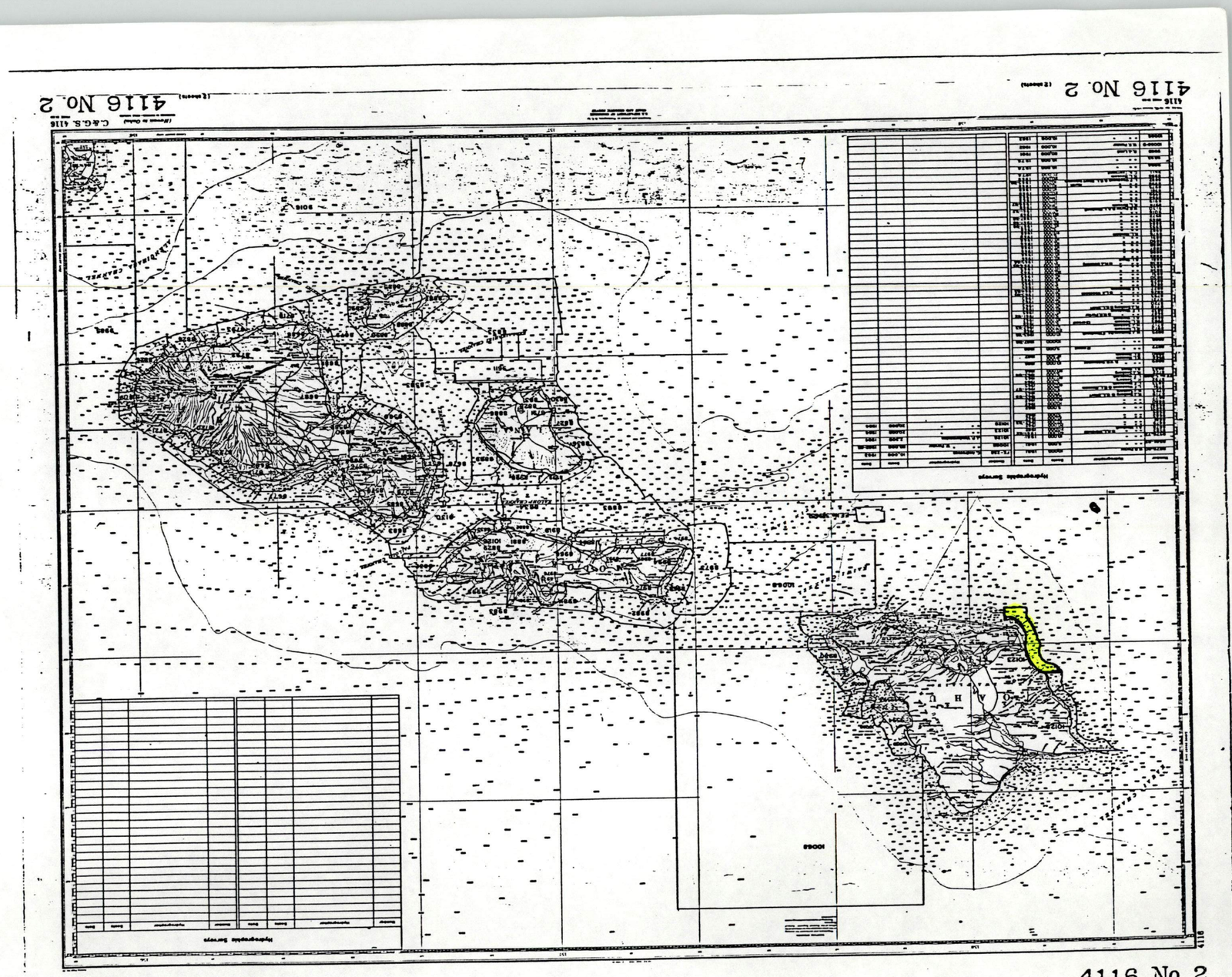
CLEARANCE:

SIGNATURE AND DATE:

N/MOP2:LWMordock Larry W. Mordock 2/14/85

After review of the smooth sheet and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards with only the exceptions as noted above. The above recommendations are forwarded with my concurrence.

Robt L. Sandvik 2-14-85
Director, Pacific Marine Center (Date)



4116 No. 2 (2 sheets)

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10123

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
19340	9/5/84	N.J. Bonavoglia	~~Full~~ ~~Part Before~~ P35T After Marine Center Approval Signed Via
			Drawing No. ~~Full~~ P35T application made prior to survey being appd to larger scale 19357. Re-examine for accuracy & content after appl. to 19357
19357	3/29/89	RA Shipley	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. application of sndgs
19357	3/28/89	RA Shipley	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. application of sndgs
19340	4/25/89	RA Shipley	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. full application of sndgs thru 19357
19007	5/10/89	RA SHIPLEY	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. EXAM. - NO CORR APPLIED
540	5/11/89	RASHIPLEY	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. EXAM - NO CORR APPLIED
19380	3-22-90	ARKENAU	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 14, FULL APPLICATION of soundings THRU 19340
19013	8/16/90	Chas B. Dominguez	Full ~~Part Before~~ After Marine Center Approval Signed Via Full application
			Drawing No. of sndgs from SS thru 19004.
19004	7/18/90	ARAMOCAN	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. full application of Sndg from SS thru 19340
530	9/26/90	Chas B. Dominguez	Full Part Before After Marine Center Approval Signed Via
			Examined Drawing No. No Soundings and Corrections applied
50	10/3/90	Chas B. Dominguez	Examined, No Soundings and corrections applied. STANDARDS CK'D 3-13-85 Clay

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.