

9913

9913

Diagram No. 4115-2

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-5-4-80
Office No..... H-9913

LOCALITY

State Hawaii
General Locality .. SE Coast of Hawaii
Locality Punaluu Harbor

1980

CHIEF OF PARTY
CAPT W.L. Mobley

LIBRARY & ARCHIVES

DATE July 7, 1983

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

Area 5
CHIS

19322 }
19320 } TO SIGN OFF SEE
19004-12 } "RECORD OF APPLICATION TO CHARTS"

HYDROGRAPHIC TITLE SHEET

H-9913

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-5-4-80

State HAWAII

General locality ~~ISLAND OF HAWAII~~ SE Coast of Hawaii

Locality PUNALUU HARBOR

Scale 1:5,000 Date of survey Oct. 6 - Nov. 21, 1980

Aug. 4, 1980; Chg. No. 1, Aug. 8, 1980; Chg. No. 2,
Instructions dated Aug. 15, 1980; Chg. No. 3, Sept. 9, 1980 Project No. OPR-T126-RA/FA-80

Vessel NOAA Ship RAINIER's Launches 2123, 2128

Chief of party CAPT W. L. Mobley

Surveyed by LCDR A. Anderson, LT T. Clark, ENS J. Gordon, ENS R. Fleischman, USN,
ENS F. Ohlinger Raytheon DE-719B

Soundings taken by echo sounder, hand lead, pole Ross Model 5000 Fathometers

Graphic record scaled by NOAA Ship RAINIER Personnel

Graphic record checked by NOAA Ship RAINIER Personnel

Verified
Examined by T. O. Jones Automated plot by PMC Xynetics Plotter

Evaluated
Reviewed by K. M. Scott

Soundings in fathoms and tenths 1 feet at MLW MLLW DE-719 soundings collected in feet and
converted to fathoms and tenths

REMARKS: This survey is complete and adequate to supersede prior surveys.

Time Meridian 000° GMT

ANAS/SWAF 2/28/86 ARA

STANDARDS CK'D 4-2-86
C. W. J.

A. PROJECT

This hydrographic survey was conducted in accordance with Project Instructions OPR-T126-RA-80, Hawaii, Hawaiian Islands, dated August 4, 1980 and with the following amendments; Amendment number 1 to instructions dated August 8, 1980, amendment number 2 to instructions dated August 15, 1980, ^{and} amendment number 3 to instructions dated September 9, 1980, and ~~amendment number 4 to instructions dated November 28, 1980.~~

B. AREA SURVEYED

The area surveyed in H-9913 ⁽¹⁹⁸⁰⁾ ~~(RA 5480)~~ was bounded on the north and west by shoreline. On the east it was bounded by latitude 155° 29' 45". The southern limit of the survey is 19° 07' 30". The survey was conducted from October ~~8~~, 1980 (JD ²⁷⁹₂₈₀) to November 21, 1980 (JD 326).

C. SOUNDING VESSELS

The RAINIER's survey launch RA-3 (2123, hull 1007) and an Avon inflatable boat (2128) were used to conduct the hydrographic survey.

The Avon boat was equipped with a MiniRanger transponder on a pole attached to the stern and a portable Raytheon 719B sounding system. The transducer was placed inside the boat by drilling a hole in the wooden deck plates and resting the transducer on the rubber hull. Water was added to submerge the transducer allowing for a continuous sounding medium. This configuration was necessitated by the rough weather and the shallow inshore work areas not accessible to the launches. The MiniRanger and R/T unit were placed on the shore end of the system instead of in the boat because of the danger of broaching in the waves and the potential loss of expensive equipment. No equipment was damaged using this method although the boat did take on considerable amounts of water at times.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Echo soundings obtained on this survey were taken by survey launch (RA-3) using the Ross fineline fathometer system, which includes the following components; Ross model 400 transceiver, Ross model 5000 analog recorder, Ross model 6000 digitizer and a 100 kHz transducer. An Avon inflatable boat using Raytheon portable fathometers, model DE-719B, serial numbers ~~5833 and 6168~~ was used in areas inaccessible to the survey launches. Table 1 summarizes the serial numbers of the components used in each vessel.

Table 1
Echo Sounder Component Serial Numbers

<u>Component</u>	<u>RA-3</u> <u>(2123)</u>	<u>Avon</u> <u>(2128)</u>
Transceiver	1041	6168 , ⁹²⁷⁰ 5833
Analog Recorder	1070	6168, ⁹²⁷⁰ 5833
Digitizer	1080	----

Corrections To Echo Soundings

The following corrections to echo soundings are discussed: Sound velocity corrections, launch draft corrections, settlement and squat corrections, and instrument corrections for blanking, phase and initial drift errors. Sea and swell corrections were applied only to vessel 2128 because those soundings were collected in feet. Soundings taken from RA-3 were not corrected because of an irregular bottom and the swells on the day this vessel was used resulted in a trace that fell within the ± 2 fathom sounding correction limit specified by table 4-4 of hydro manual.

Sound Velocity Corrections

Sound velocity corrections for echo soundings were derived from data obtained from 1 Martek TDC and 1 Nansen cast performed in the survey area during this project. The details of these casts are presented in table II.

Table II
Nansen & Martek Cast Data

<u>Cast-Type</u>	<u>Date</u>	<u>Location</u>	<u>Velocity Table No.</u>
Nansen	Sept 20, 1980	Lat 19 ⁰ 14' 48" Long 154 ⁰ 43' 36"	1 & 2
Martek	Nov 4, 1980	Lat 19 ⁰ 09' 42" Long 155 ⁰ 22' 42"	Not Used

The samples collected from the Nansen casts were analyzed for salinity using standard laboratory procedures (see H.O. 607). The salinometer used for these analyses was a Industrial Instruments model RS-7B, serial number 2829B, which was last calibrated in April 1980, by Northwest Regional Calibration Center, Bellevue, Washington. The Martek serial number 358 was also calibrated there in February 1980.

The Nansen cast was used to compute the sound velocity correction for all surveys in this project. It was compared to the Martek cast to check it's accuracy and the stability of the water column. Only one sound velocity correction table was used for both the launch work and Avon work. The difference in draft of the two vessels created an insignificant difference in velocity corrections allowing the one table. For detailed information and raw data used for determining the velocity correctors used for this sheet, see Corrections to Echo Soundings Report for OPR-T126-RA-80. A copy of the velocity corrector tape listing used (table 2) is included in the attached separates.

Launch Draft Corrections

Due to rough water conditions encountered during this survey bar checks were not feasible. Historically 0.3 fathoms has been used as the launch TRA correction. There has been no change in the launch that would cause a change in draft.

All field sheets were plotted using a launch TRA correction of 0.3 fathoms. ✓

The TRA correction for the Avon rubber boat with the Raytheon portable fathometer was determined during survey H-9918 (RA-20-7-80) which was completed during this same project. A portion of that survey contained the only water sheltered enough to make a meaningful TRA determination. This was done over a period of two days using a leadline comparison. The same sounding configuration was used during all days in which the Avon collected sounding data. That TRA correction was computed to be +.5 feet and was used to correct all soundings collected using this configuration. A copy of the graph used to determine this TRA is included in the attachments to this report. All original comparison data is in the sounding volume submitted with H-9918. ✓

See
Ver/Eval
Report
Section 4

When using the Raytheon portable system, the tide correction mark was set on one foot which caused a one foot deflection in the bottom profile. This was done so the initial could be set at zero and not be obscured by the tide correction mark. A -1.0 foot tide correction was therefore applied to all soundings. ✓

Launch Settlement and Squat Corrections

Settlement and squat characteristics of RA-3 was measured prior to OPR-T126-RA-80 in Lake Washington, Seattle, Washington on April 11, 1980 (JD 102). These corrections are not considered necessary for this project in accordance with PMC OORDER 3-03.06x1 page 3-31 "Settlement and squat errors are commonly ignored when operating in areas of irregular bottom at various speeds, as this error is usually insignificant if the sounding unit is fathoms." Also all hydro was run a slightly above idle causing no significant change in draft. ✓

Sounding Instrument Corrections

During survey operations the "blanking" was normally set at the minimum of the scale at which the fathometer was recording i.e. if the fathometer is on 50 - 100 fathoms, the blanking was set at 50 fathoms. Analog depths were substituted for missed digital soundings during on-line or end of day field record scanning. ✓

The initial trace on the analog recorder was continuously monitored and adjusted to prevent errors due to a drifting initial. ✓

To prevent belt length error or stylus/paper misalignment on the analog recorders, RAINIER personnel performed "phase calibrations" of the fathometers each day in accordance with the calibration procedures contained in the PMC OORDER. ✓

Manual Sounding Corrections

Where manual soundings needed to be taken, hand-held leadlines were used. These leadlines were compared with a steel measuring tape prior to OPR-T126-RA-80 and were found to be accurate. Special care was taken to prevent application of sound velocity corrections to leadline soundings. ✓

E. HYDROGRAPHIC SHEETS

The hydrographic sheet is made up of only one smooth field computer sheet. It was constructed based on a modified transverse mercator projection using the ship's PDP-8/e complot system. No discernable distortion was detected. Rough sounding and position plots were made daily and a semi-smooth sounding plot was maintained as the data was corrected for position and depth errors on the tapes. TRA correctors, predicted tide corrections and sound velocity corrections were applied to all data on the smooth field sheet. All data and reports will be forwarded to the Pacific Marine Center for verification. A list of parameters used to define the projection is included in the attachments to this report.

F. CONTROL STATIONS

Horizontal control for this survey was provided by the recovery of three existing stations. The stations are on the old Hawaiian datum.

Station LUU	-	No. 110
Station PUNALUU	-	No. 111 off smooth sheet
Station PUN	-	No. 114

Recovery notes for these stations were included with the Horizontal Control Report for OPR-T126-RA-80.

G. HYDROGRAPHIC POSITION CONTROL

Electronic range-azimuth methods were used exclusively for hydrographic position control. A Motorola MiniRanger III system was employed.

Description of MiniRanger Shore Stations

There were ^{new triangulation} no shore stations established and three ^{existing} stations were recovered for hydrographic operations. Data on the use of these stations is as follows:

RA-5-4-80 (H-9913)

<u>Station #</u>	<u>Name</u>	<u>M/R Code</u>	<u>Transponder #</u>	<u>Dates</u>
110	LUU	E	824281	280, 326
114	PUN	B	775	280

The MiniRanger transponders were positioned over Third Order Class I geodetic control stations. They were two to four feet above the stations. Power for the shore station was provided by two 12 volt auto batteries in series to provide 24 volts DC.

MiniRanger Shore Station Performance

There were no transponder failures during this survey. MiniRanger operation during collection of data was good. For the rubber boat work the normal console transponder configuration was switched, the transponder was carried in the rubber boat and the console was placed on shore.

MiniRanger Mobile Station Performance

The rubber boat console number was 715 and R/T unit 713302. The console for the launch was 720 and the R/T unit number was 720. There were no MiniRanger malfunctions in consoles, R/T, or transponders. Signal strengths were generally well above cutoff values. In the areas where signal strength did drop and rates became erratic work was halted until readjustment of the MiniRanger or its transfer to another station eliminated the problem.

Description of Baseline Calibration

There were two baseline calibrations during the survey. Both of the calibrations were performed at Hilo Airport, Hilo, Hawaii. The beginning calibration for a period determined low signal strength cutoff values for each MiniRanger console, R/T unit and transponder combination. The beginning calibration also determined correctors for plotting field data. The beginning calibration correctors were used to smooth plot the data. The beginning and ending calibrations were in close agreement. A copy of the final baseline correctors is included in the attachments to this report.

Description of Daily Calibrations

Visual sextant fixes were used to system check MiniRanger accuracy on the launch. No visual systems checks were made on the rubber boat's work because of the rough weather and limited room in the boat. However the close proximity of the work area to the shoreline allowed a rough check on MiniRanger accuracy. The signals for visual fixes were positioned over Third Order Class I stations. One system check was performed on the only day of launch hydrography. A subsequent systems check of that code on the next survey performed verified its stability and baseline corrector.

H. SHORELINE

Shoreline for this survey was transferred from Class III shoreline manuscript TP-~~00~~488. All corrections noted during field edit have been transferred to the field sheet and to the smooth field sheet. The shoreline taken from the manuscript was found to accurately depict the shoreline for this survey. Except in Ninole Cove where the shoreline has been altered by a storm.

L. COMPARISON WITH CHART

Survey RA-5-4-80 was compared to the Fifth edition of chart C-19322 dated July 25, 1977. The scale of this chart is 1:2,500. Of thirteen soundings compared nine (70%) agreed within 0.5 fathoms, two (15%) agreed between 0.5 and two fathoms, two (15%) agreed by more than two fathoms. Again the problem lies in the fact that the charted soundings were taken from a 1:2,500 projection and scaled to a 1:5,000 projection, the positions were not exactly the same and the survey methods used were different.

The chart depiction of the shoreline on Punaluu Beach is very inaccurate. It is recommended that the shoreline from TP-000488 be used for charting purposes. *concur*

What appears to be a pile symbol is charted at 19° 08' 02.5" north and 155° 30' 26.2" west in the surf zone. It is not on the prior survey and it does not exist now. *See Ver/Eval Report Sect. 7*

The scale of the Punaluu section of chart 19322 is much too large taking into account the size and type of vessels using this area. This inset is important because the area around the boat ramp offers some protection and it is an entry point for local fisherman. It is recommended that the new inset be at a scale of 1:7,500.

M. ADEQUACY OF SURVEY

Because of the rough weather encountered during this survey and the survey scale difference with the prior, the near shore areas of this survey were not developed as well as the prior. It is recommended therefore that this survey be used to supplement the soundings from H-4959 and to supersede any soundings that were found to be shoaler on H-9913. *See Ver/Eval Report Section 6 See Qc.*

N. AIDS TO NAVIGATION

There were no aids to navigation within the survey area. ✓

O. STATISTICS

<u>Launch</u>	<u>Linear N.M.</u>	<u>Positions</u>	<u>Bottom Samples</u>
RA-3	10.2	222	0
Avon	0.5	78	12*

*Bottom Samples were collected by divers deployed from the Avon rubber boat.

P. MISCELLANEOUS

For this survey it was not possible to run shoreline or delineate the zero fathom curve. This was because of steep bottom contours inshore and heavy surf encountered throughout the project. Attempts were made to get as close as possible to shore on any given day, but this depended upon weather conditions for that particular day. ✓

An Avon rubber inflatable boat was used to survey inside Punaluu Harbor, as this area was too rough and shallow for Type I survey launches. Detached positions using a leadline were taken on October 6, 1980 (JD 280/281). On November 21, 1980 (JD 326) the Avon was used with a Raytheon portable fathometer to complete work both inside and outside Punaluu Harbor.

Fix numbers 3000 to 3108 were rejected because the MiniRanger console was matched with the wrong R/T unit on RA-3. This problem was corrected and the console and R/T units were correctly matched for the rest of the project.

Punaluu as a harbor of refuge is limited. The channel into the bay is along the right side of the bay. This channel is narrow and at places shallow. Inside the bay it shoals to no deeper than two fathoms. Also, in rough weather, waves will probably break over the shoals at the entrance and continue into the harbor.

Q. RECOMMENDATIONS

It is recommended that this survey be used to verify the accuracy of prior survey H-4959. The weather conditions at the time of hydrography coupled with increased line spacing specifications of this smaller scale contemporary survey make superceding the prior counter-productive.

See
Ver/Eval
Report
Section 6

When new charts are produced the shoreline should be taken from the shoreline manuscript. The shoreline of Punaluu Harbor of the chart is very inaccurate.

concur

R. AUTOMATED DATA PROCESSING

Data acquisition and processing were accomplished per instructions in the Hydrographic Manual (4th edition), Manual Automated Hydrographic Surveys and the PMC OPORDER.

Soundings and positions were taken by a Hydroplot system using range azimuth program FA181. There are daily master tapes and corresponding corrector tapes which include the TRA for the vessel, baseline correctors for the M/R consoles and R/T units and all depth corrections. Velocity tapes were generated from Nansen Cast data. The following is a list of all computer programs and version dates used for data acquisition or processing:

<u>PDP 8/e Programs</u>	<u>Version Date</u>
FA 181 RANGE AZIMUTH LOGGER	2/23/78
RK 201 GRID, SIGNAL & LATTICE PLOT	4/18/75
RK 212 VISUAL STATION TABLE LOAD	4/01/74
RK 216 RANGE AZIMUTH NON-REAL TIME PLOT	2/05/76
RK 300 UTILITY COMPUTATIONS	2/05/76
RK 330 REFORMAT & DATA CHECK	5/04/76
PM 360 ELECTRONIC CORRECTOR ABSTRACT	2/02/76
AM 500 PREDICTED TIDE GENERATOR	11/10/72
RK 530 LAYER CORRECTIONS FOR VELOCITY	5/10/76
RK 561 GEODETIC H/R CALIBRATION	2/19/75
AM 602 ELINORE-LINE ORIENTED EDITOR	5/20/75
AM 603 TAPE CONSOLIDATOR	10/10/72

8/22/74

The HP 97 and HP9815 calculators were used to compute geographic positions of electronic control stations and visual signals for calibration.

S. REFERRAL TO REPORTS

The following reports contain information related to this survey:

Horizontal Control Report, OPR-T126-RA-80
Electronic Control Report, OPR-T126-RA-80
Field Edit Report, OPR-T126-RA-80
Corrections to Echo Soundings Report, OPR-T126-RA-80
Coast Pilot Report, OPR-T126-RA-80
Field Tide Note, OPR-T126-RA-80 (Attached)

Respectfully Submitted,

Alan D. Anderson
Fr Russell A. Fleischman
Ensign, USN

Approved and Forwarded,

Wayne L. Mobley
Wayne L. Mobley
Captain, NOAA
Commanding

APPROVAL SHEET
DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY

H-9913

RA-5-4-80

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

The boatsheet and accompanying records have been examined and are complete and adequate for charting purposes and are approved.

Wayne L. Mobley
Wayne L. Mobley
Captain NOAA

MASTER STATION LIST
 OPR-T126-RA-80
 HAWAIIAN ISLANDS, HAWAII

FINAL VERSION

101	1	19	16	55404	155	07	27806	250	0000	329649	
/KAENA PT. RM 3 RED RAYDIST STATION										RA-79	
102	1	19	31	09221	154	48	47412	250	0000	329649	
/FIX 1986-1980 GREEN RAYDIST STATION										RA-80	
103	1	19	27	12889	154	51	03305	250	0000	000000	
/LAKA 1980										RA-80	
104	1	19	24	06000	154	55	18553	250	0000	000000	
/KEE 1980										RA-80	
105	1	19	20	56109	154	58	54856	250	0000	000000	
/HAKUMA 1914										G-16241	
106	1	19	19	54935	155	01	10910	250	0000	000000	
/KUPAPAU 1914										G-16241	
107	1	19	18	09600	155	05	22586	250	0000	000000	
/LAEAPUKI 1914										G-16241	
108	3	19	16	55404	155	07	27806	250	0000	000000	
/KAENA PT 1977 RM 3 M/R										RA-79	
109	1	18	54	56570	155	41	04290	250	0000	329649	
/KA LAE 2 1948-1949 GREEN RAYDIST PG.27 G-09279											
110	1	19	07	36455	155	30	48106	250	0000	000000	* ✓
/LUU 1930 ²⁹										PG.67 G-446	
111	1	19	09	10376	155	30	49687	250	0000	000000	* ✓
/PUNALUU 1949										G-09279	
112	1	19	08	52349	155	28	07649	250	0000	000000	
/KAMEHAME NEW HTS 1949										G-09279	
113	1	19	12	24452	155	26	00452	250	0000	000000	
/PUU ULAULA HTS 1914										G-09279	
114	1	19	08	26595	155	29	21880	250	0000	000000	* ✓
/PUN 1930 ²⁹										PG.67 G-446	
115	1	19	08	53389	155	27	44321	250	0000	000000	
/ALFA 1980										RA-80	
116	1	19	09	19447	155	26	56863	250	0000	000000	
/BRAVO 1980										RA-80	

* STATIONS USED FOR THIS SURVEY

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	LTJG DAVID KRUTH
POSITIONS DETERMINED AND/OR VERIFIED	LTJG DAVID KRUTH
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'	
(Consult Photogrammetric Instructions No. 64)	
OFFICE I. OFFICE IDENTIFIED AND LOCATED OBJECTS Enter the number and date (including month, day, and year) of the photograph used to identify and locate the subject. EXAMPLE: 75E(C)6042 8-12-75	FIELD (Cont'd) B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982
FIELD I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection P - Photogrammetric Vis - Visually 5 - Field identified 6 - Theodolite 7 - Planetable 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	II. TRIANGULATION STATION RECOVERED When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75 III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75 **PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

TO BE CHARTED
 TO BE REVISED
 TO BE DELETED

REPORTING UNIT
(Field Party, Ship or Office)
Ship RAINIER

STATE
HAWAII

NONFLOATING AIDS

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

LOCALITY
Hawaii Island
Southeast Coast

DATE

Oct. 1980

ORIGINATING ACTIVITY

- HYDROGRAPHIC PARTY
 - GEODETIC PARTY
 - PHOTO FIELD PARTY
 - COMPILATION ACTIVITY
 - FINAL REVIEWER
 - QUALITY CONTROL & REVIEW GRP.
 - COAST PILOT BRANCH
- (See reverse for responsible personnel)

The following objects HAVE BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.

OPR PROJECT NO. OPR-T126-RA-80

JOB NUMBER

H-9913

DATUM

Old Hawaiian

POSITION

LATITUDE // D.M. Meters
LONGITUDE // D.P. Meters

METHOD AND DATE OF LOCATION
(See instructions on reverse side)

FIELD

CHARTS
AFFECTED

DESCRIPTION
(Record reason for deletion of landmark or aid to navigation.
Show triangulation station names, where applicable, in parentheses.)

None.

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	LTJG DAVID KRUTH
POSITIONS DETERMINED AND/OR VERIFIED	LTJG DAVID KRUTH
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'	
(Consult Photogrammetric Instructions No. 64.)	
OFFICE I. OFFICE IDENTIFIED AND LOCATED OBJECTS Enter the number and date (including month, day, and year) of the photograph used to identify and locate the subject. EXAMPLE: 75E(C)6042 8-12-75	FIELD (Cont'd) B. Photogrammetric field positions* require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982
FIELD I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection P - Photogrammetric Vis - Visually 5 - Field Identified 6 - Theodolite 7 - Planetable 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	II. TRIANGULATION STATION RECOVERED When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75 III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	
**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.	

FILE NO.

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

TO BE CHARTED
 TO BE REVISED
 TO BE DELETED

REPORTING UNIT
(If field party, ship or office)
Photogrammetric Branch
PMC - Seattle, WA

STATE

Hawaii

LOCALITY

Hawaii, Southeast Coast

DATE

July 1981

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

LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY

- HYDROGRAPHIC PARTY
 - GEODETIC PARTY
 - PHOTO FIELD PARTY
 - COMPILATION ACTIVITY
 - FINAL REVIEWER
 - QUALITY CONTROL & REVIEW GRP.
 - COAST PILOT BRANCH
- (See reverse for responsible personnel)

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

DATUM

SURVEY NUMBER
TP-00488

JOB NUMBER
CM-7713

POSITION

Old Hawaiian

METHOD AND DATE OF LOCATION
(See instructions on reverse side)

OFFICE

FIELD

CHARTS
AFFECTED

19322

DESCRIPTION
(Record reason for deletion of landmark or aid to navigation.
Show triangulation station names, where applicable, in parentheses)

LATITUDE LONGITUDE
D.M. Meters D.P. Meters

19 08 11.90 155 30 36.10
366 1055

CHARTING
NAME

STEEPLE

See L-245(86)

1016

VELOCITY CORRECTOR LISTING
OPR-T126-RA-80

LAUNCHES ONLY
TABLE NO. 2

000010	0	0000	0002	001	000000	000000
000030	0	0001				
000050	0	0002				
000060	0	0003				
000080	0	0004				
000100	0	0005				
000115	0	0006				
000130	0	0007				
000150	0	0008				
000170	0	0009				
000180	0	0010				
000300	0	0015				
000390	0	0020				
000480	0	0025				
000570	0	0030				
000680	0	0035				
000790	0	0040				
000900	0	0045				
001030	0	0050				
001400	0	0060				
001760	0	0070				
002260	0	0080				
999999	0	0085				

TC/TI TAPE LISTING
RA-5-4-80(H-9913)

VESSEL - 2128(AVON)
FATHOMETER: FAYTHEON 719B

220200	0	0000	0000	280	212800	000000
032350	0	0001	0002	326	000000	000000
041700	0	0000	0000	326	000000	000000

VESSEL: 2123
FATHOMETER: 1070

190524	0	0003	0002	280	212300	000000
001200	0	0000	0000	281	000000	000000

FIELD TIDE NOTE
OPR-T126-RA-80

Field tide reduction of soundings for OPR-T126-RA-80 was based on predicted tides from Honolulu, Hawaii, corrected to Honuapo, Hawaii. These predicted tides were interpolated by PDP 8/e computer utilizing AM 500. Due to the small range of tide at Honuapo (mean range 1.7 feet, diurnal range 2.5 feet), tide correctors were applied to soundings only on the smooth copies of field sheets. All times of predicted tides are GMT.

Metercraft bubbler tide gages were installed at two locations in the project area. Their location and time of operation are as follows:

<u>SITE</u>	<u>LOCATION</u>	<u>PERIOD</u>
Honuapo (161-8578)	19°05.3'N 155°33.2'W	6 Sep - 25 Nov
Pohoiki (161-8062)	19°27.6'N 154°50.6'W	6 Sep - 25 Nov

Honuapo

A 0-10 feet scale Metercraft gage (S/N 7601-7536-31) was installed and began operation 7 September. The staff was installed and leveled on 7 September also. The time meridian was 000° for this gage. The gage performed well through the project except that the clock/paper drive stopped at 0300 Z November 21; it was restarted 1927 Z November 21, resulting in a two-thirds of a day loss of data. The gage ran out of nitrogen on November 24 about 0900 Z and was leveled on November 21. The gage was removed November 25. There were no unusual tides during the period of operation of this gage. Zero on the marigram equals 16.31 feet on the tide staff.

Pohoiki

A 0-10 feet scale Metercraft gage (S/N 7601-7536-29) was installed and began operation 6 September. The staff was installed on 6 September and the leveling done on 5-6 September. The time meridian was 000° for this gage. There were several minor problems during September. The pen was marking intermittently between September 8, 1600 Z and September 10, 2307 Z. Some scattered hourly heights were recovered during this period. On September 25, beginning about 0400 Z, there is a strange pressure build-up which released at 0610 Z. Comparison of staff and gage difference before and after this period are consistent, suggesting a one-time problem. The hourly heights 04-06 Z were interpolated. Finally, the paper slipped off its sprockets September 28 at 1100 Z and was not fixed until October 1 0200 Z, a loss of 2½ days of data. The remainder of the time the gage performed well. It was leveled November 19 and removed November 25. There were no unusual tides during the period of operation of this gage. Zero on the marigram equals 3.51 feet on the tide staff.

Levels

In addition to Honuapo and Pohoiki gages, the Hilo control station (161-7760) was leveled September 5 and November 25.

All levels between marks were within acceptable limits. The levels for both tide stations indicate no significant staff movements. The following tables show bench mark elevations above staff zero for installation and removal.

<u>Honuapo (161-8578)</u>		<u>BM Elevations (ft)</u>	
<u>BM#</u>	<u>9/6/80</u>	<u>11/21/80</u>	<u>Difference</u>
3	24.160	24.170	+ 0.010
D	21.873	21.877	+ 0.004
E	21.273	21.286	+ 0.013
F	24.957	24.980	+ 0.023
G	22.018	22.034	+ 0.016

<u>Pohoiki (161-8062)</u>		<u>BM Elevations (ft)</u>	
<u>BM#</u>	<u>9/6/80</u>	<u>11/19/80</u>	<u>Difference</u>
A	10.522	10.525	+ 0.003
B	13.038	13.041	+ 0.003
C	12.139	12.136	+ 0.003
D	14.265	14.268	+ 0.003
E	13.570	13.570	+ 0.000

Recommended Zoning

The differences in times and heights of tides for the various tide stations were small, and correctors obtained from predicted tides at Honolulu, adjusted for Honuapo, were judged adequate for the 1:5,000 and 1:20,000 smooth field sheets. However, for maximum accuracy tide correctors could be applied as follows:

<u>Sheet</u>	<u>Tide Station</u>	
HH (RA-5-4-80)	Honuapo	H-9913
JJ (RA-20-4-80)	Honuapo	H-9914
KK (RA-20-5-80)	Honuapo	H-9916
LL (RA-20-6-80)	Pohoiki	H-9917
MM (RA-20-7-80)	Pohoiki	H-9918

The correctors are not considered necessary for the 1:40,000 and 1:80,000 offshore sheets as the depths on these sheets are all sufficient to make the tide corrector insignificant.

Miscellaneous

A comparison of actual and predicted tide heights at Honuapo was performed. There was reasonable agreement between them.

U.S. DEPARTMENT OF COMMERCE
October 8, 1980 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): 161-8578 Honuapo, HI

Period: October 2 - November 21, 1980

HYDROGRAPHIC SHEET: H-9913

OPR: T-126

Locality: Southeast Coast of Hawaii

Plane of reference (mean lower low water): 0.6 ft.

Height of Mean High Water above Plane of Reference is 2.0 ft.

REMARKS: Zone Direct

for Donald Carrier
Chief, Datums and Information Branch

GEOGRAPHIC NAMES

H-9973

Name on Survey

A ON CHART NO. 10322
B ON PREVIOUS SURVEY NO. 4959
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
TP-400488

Name on Survey	A	B	C	D	E	F	G	H	TP-400488
HAWAII /									1
KAIHEHE HEIAU								X	2
KANEELELE HEIAU								X	3
KAPUKINI /								X	4
KOLOA BEACH /								X	5
NINOLE /								X	6
NINOLE COVE /			X						7
NINOLE SPRINGS								X	8
PUNALUU /	X	X							9
PUNALUU HARBOR /		X						X	10
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20
									21
									22
									23
									24
									25

Approved:

Charles E. Harrington
Chief Geographer - N/C62x5

4 MAY 1983

APPROVAL SHEET
FOR
SURVEY H-9913

- A. This hydrographic survey has been verified, evaluated and inspected. It meets the requirements of the Hydrographic Manual except as noted in the Verification/Evaluation Report. The automated data file has been updated to reflect the data presented on the smoothsheet.

Date: 6/22/82

Signed: *J. L. Green*
Title: Chief, Verification Branch

- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic Manual. Exceptions are listed in the Verification/Evaluation Report.

Date: June 22, 1982

Signed: *H. C. Austin*
Title: Chief, Marine Surveys Division

HYDROGRAPHIC SURVEY STATISTICS

H-9913

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		4	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS		3	
DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES			1 Sm			
CAHIERS	X		1 Row			
VOLUMES	2					
BOXES						

T-SHEET PRINTS (List) TP-00488

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	TOTALS
POSITIONS ON SHEET			282
POSITIONS CHECKED		282	
POSITIONS REVISED		-0-	
SOUNDINGS REVISED		29	
SOUNDINGS ERRONEOUSLY SPACED		-0-	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		-0-	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	4	*(VER)/(EVAL)	4
VERIFICATION OF CONTROL		06/00	6
VERIFICATION OF POSITIONS		17/00	17
VERIFICATION OF SOUNDINGS		81/00	81
COMPILATION OF SMOOTH SHEET		13/01	14
APPLICATION OF TOPOGRAPHY		03/00	3
APPLICATION OF PHOTOBATHYMETRY		00/00	0
JUNCTIONS		08/01	9
COMPARISON WITH PRIOR SURVEYS & CHARTS		00/06	6
VERIFIER'S REPORT		00/15	15
OTHER		00/03	3
TOTALS	4	128/26	158
Pre-Verification by James S. Green	Beginning Date 5/20/81	Ending Date 5/20/81	
Verification by T. O. Jones	Beginning Date 8/27/81	Ending Date 5/17/82	
Evaluation by K. M. Scott	Time (Hours) 21	Date 5/27/82	
Verification Check by James L. Stringham, James S. Green	Time (Hours)	Date 6/22/82	
Marine Center Inspection by James Green	Time (Hours) 122	Date 1/15/83	
Quality Control Inspection by Lisa Quolan	Time (Hours)	Date	
Requirements Evaluation by			

Ameyers 8 hours 4/21/83

* Time in this column is for Verification (VER) and Evaluation (EVAL)

REGISTRY NO. H-9913

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:

PACIFIC MARINE CENTER
VERIFICATION/EVALUATION REPORT

REGISTRY NO. H-9913

FIELD NO. RA-5-4-80

Hawaii, Island of Hawaii, Punaluu Harbor

SURVEYED: October 6, 1980 - November 21, 1980

SCALE: 1:5000

PROJECT NO: OPR-T126-RA-80

SOUNDINGS: Ross Finline Model 5000
Raytheon 719 *Echo Sounders*
Hand Lead, Divers

CONTROL: Mini-Ranger -
Range/Azimuth

Chief of Party.....CAPT W. L. Mobley

Surveyed by.....LCDR A. Anderson
LT T. Clark
ENS J. Gordon
ENS R. Fleischman, USN
ENS F. Ohlinger

Automated plot by.....PMC Xynetics Plotter

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

Evaluated by.....K. M. Scott

1. INTRODUCTION

Note: This survey has been processed utilizing a procedure developed to work in conjunction with the Verification Branch realignment, which established an evaluation process. The survey data was first verified and a smooth sheet compiled by a verifier. Then, an evaluator reviewed the work of the verifier, made the necessary comparisons with prior surveys and charts and wrote the Verification/Evaluation Report.

H-9913 is a basic hydrographic survey conducted by NOAA Ship RAINIER's launch RA-3 and the Avon inflatable boat. Project Instructions were dated August 4, 1980 and supplemented by Change 1 dated August 8, 1980; Change 2 dated August 15, 1980; and Change 3 dated September 9, 1980

Punaluu Harbor is included on Chart 19322 as an inset at the scale of 1:2500. This survey was accomplished to update that inset.

See GC

2. CONTROL AND SHORELINE

Horizontal control comprised of existing stations is discussed in Section F of the Descriptive Report. The positions were computed on the Old Hawaiian Datum.

Position control is adequately described in Section G with the exception that station heights were not considered. The signal list submitted with the smooth position printout includes those heights. The positions were not affected.

Shoreline was transferred from Class I unreviewed manuscript TP-00488, March 1977 - October 1980. The highwater line, most reefs, islets and rocks agree with hydrography.

3. HYDROGRAPHY

Crossline soundings incorporated within this survey are in good agreement. Differences range between .2 and .5 fathoms. These are attributed to the irregular bottom and rough seas.

The bottom configuration, determination of least depths and development of the standard depth curves outside the breaker limits are ^{now} adequate. *See Q.C.* The zero curve was not developed due to breakers and rocks. Bottom samples were taken during survey operations by divers. They adequately portray the bottom composition and support the other hydrographic data.

4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records, and reports are adequate and conform to the requirements of the Hydrographic Manual of July 4, 1976, with the following exception:

On Julian Day 326 positions 1051 through 1090, a TRA of .5 foot was added to the raw soundings before they were logged. Thus the TRA was applied for the second time during verification. This deficiency caused soundings to be .1 fm deeper. This was not corrected during evaluation because the error is insignificant due ^{to} the rough seas.

5. JUNCTIONS

H-9913 joins H-9857 (1:20,000) 1979 along the seaward boundary. All soundings are in good agreement. The penciled curves may now be completed to conform with those shown on this survey and the note inked. *← COMPLETED at PMC*

6. COMPARISON WITH PRIOR SURVEYS

H-4959 (1929) 1:2500

This prior survey encompasses the total area of H-9913. The prior soundings, in general, are deeper. Differences of one to two fathoms are apparent.

Submerged rocks and reef symbols addressed by the ship (See Section K) agree with T-sheet submerged reefs. These are plotted on the smooth sheet and should be charted accordingly.

Additional shoal soundings, a rock awash, and a submerged rock that appear on the prior are listed below:

<u>H-4959</u>	<u>Latitude</u>	<u>Longitude</u>	<u>H-9913</u>
✓ 2 fm Rk	19°08'02.0"N	155°30'25.0"W	1.9 fm added Rk from H-4959
2 4/6 fm Rk	19°08'09.75"N	155°30'19.2"W	3 fm added 2 ^{1/2} Rk from H-4959
X	19°08'12.8"N	155°30'18.5"W	X - change elevation from (2) to (3)
1 fm	19°08'17.4"N	155°30'21.7"W	1.4 fm carried 1 fm from H-4959
1/2 fm Rk	19°08'13.0"N	155°30'10.0"W	Rk 0.8 fm - also carried 0.5 Rk from H-4959
4/6 fm	19°08'12.5"N	155°30'10.0"W	Near 0.8 fm ↑
+	19°08'14.4"N	155°30'07.1"W	1.1 Rk <i>concur</i>
2 4/6 fm Rk	19°08'12.6"N	155°30'09.2"W	2.2 fm added Rk from H-4959

The current soundings confirm the prior survey sounding's existence even though an offset is present which ^{is due} may be due to a datum shift and the change in data acquisition methods. Charting should be from H-9913 *with features brought forward from H-4959.*

Many shoal soundings *are* not considered disproven by the present survey. *This* 3 fathom sounding at latitude 19°08'12"N and longitude 155°30'11"W has been transferred to this smooth sheet. *see QC*

There are no presurvey review items within the limits of this survey.

H-9913 is adequate to supersede hydrography within the common area. *see QC*

7. COMPARISON WITH CHART 19322 (5th Ed., June 25, 1977)

a. Hydrography - The charted information originates from H-4959 and has been discussed in Section 6. An obstruction symbol at latitude 19°08'02.5"N and longitude 155°30'26.2"W was not part of the prior survey and was not found during this survey. The source of this symbol should be examined and the symbol deleted if not confirmed. *concur*

H-9913 is adequate to supersede all charted hydrography within the common area.

Punaluu Harbor is of limited value as a harbor of refuge. The size and type of vessels using this harbor do not justify a need for a chart inset at 1:2500 as currently charted. A recompilation of this inset at the scale 1:5000 using H-9913 would adequately meet the needs of the user. *concur*

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

c. Aids to Navigation - There are no aids to navigation in the survey area. There is, however, one landmark, a steeple, at latitude 19°08'11.9"N and longitude 155°30'36.1"W which has been transferred to the smooth sheet from the T-sheet. An updated form 76-40 is appended.

Two picnic shelters were also recommended as landmarks.

DW
HKS2421

8. COMPLIANCE WITH PROJECT INSTRUCTIONS

H-9913 (~~RA-5-4-80~~)⁽¹⁹⁸⁰⁾ adequately complies with Project Instructions OPR-T126-RA/FA-80, Hawaii, Hawaiian Islands.

9. ADDITIONAL FIELD WORK

This is a good basic survey. No additional field work is required.

Respectfully submitted,

Karol M. Scott

Karol M. Scott
Cartographer
May 18, 1982

Examined and approved,

J. S. Green

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

JUN 23 1982

TO: C3 - C. William Hayes

FROM: CPM - Charles K. Townsend

SUBJECT: Administrative Approval, H-9913, Punaluu Harbor, ~~Island of~~ *SE Coast*
Hawaii, Hawaii

The smooth sheet and reports of this survey have been examined and the survey is adequate for charting and to supersede common areas of prior surveys.

The shelters at approximately 19°08'12"N, 155°30'30"W were recommended for charting by the RAINIER to aid navigation in the area.

The Pacific Marine Center concurs that a chart inset should replace Chart 19322 in this area.



10TH ANNIVERSARY 1970-1980
National Oceanic and Atmospheric Administration

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

N/CG242:LQ

April 17, 1985

TO: Roy K. Matsushige *RKM*
Chief, Hydrographic Surveys Branch

THRU: Chief, Standards Section *JM*

FROM: Lisa Quinlan *Lisa Quinlan*
Quality Evaluator

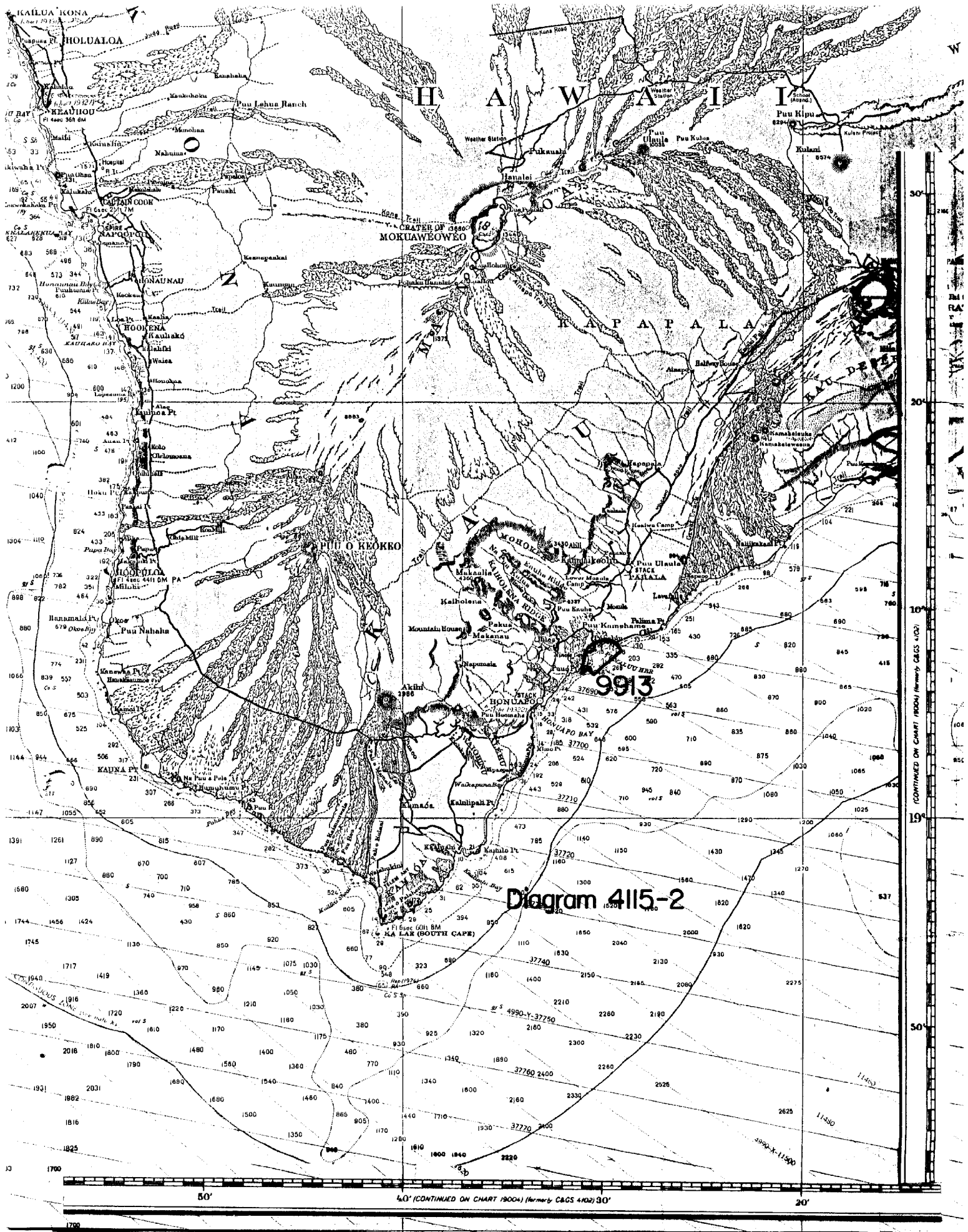
SUBJECT: Quality Control Report for Survey H-9913 (1980), Hawaii, SE Coast of
Hawaii, Punaluu Harbor

A quality control inspection of survey H-9913 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 made 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 $\frac{1}{2}$ -scale copy of the survey to be furnished the verifier. In general, the survey was found to conform to National Ocean Service standards and requirements except as stated in the Verifier's Report and the HIT Report.

1. It is noted that the scale of the present survey is smaller than the scale of chart 19322. Also, survey depths are in fathoms while charted depths are in feet. Although this is not standard practice, the survey was done in accordance with the project instructions. These instructions were based on future charting plans as modified by recommendations of the hydrographer.
2. Several additional soundings, rocks, and reefs, were carried forward from H-4959 (1929) during quality control in order to complete an adequate portrayal of the bottom configuration in the area of the present survey.

cc:
N/CG241





HAWAII

Diagram 4115-2

30°
20°
10°
19°
50'

CONTINUED ON CHART 18004 (formerly C&GS 402) 90'

50' 40' (CONTINUED ON CHART 18004) (formerly C&GS 402) 90' 20'



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

N/CG24x1:DEW

FEB 20 1986

TO: N/MOA - Wesley V. Hull
N/MOP - Robert L. Sandquist
FROM: N/CG2 - *J. Austin Yeager*
SUBJECT: Reports of Compliance for Hydrographic Surveys

I have decided that a special "Report of Compliance" is no longer required for those remaining hydrographic surveys processed under the Verification/Quality Control system in place prior to October 1982. You will no longer receive these reports. Statements made in the Verifier's Reports, modified as necessary by the Quality Control Reports, will suffice with regard to compliance with project instructions.

After their examination of the Descriptive Reports for Automated Wreck and Obstruction Information System (AWOIS) file revisions, Operations Section (N/CG241) personnel will insert a copy of this memorandum into each Descriptive Report to provide appropriate authority for the missing compliance report. In accordance with past practice, we will forward a copy of the Quality Control Report to you for your information.

cc:
N/CG22 - Nortrup



