FE229

(Plot filed in tube H-9097)

Diagram 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 Examination

Field No. RA-40-1-80

Office No. FE-229

LOCALITY

State Hawaii

General Locality Island of Hawaii

Locality Loihi Seamount

1980

CHIEF OF PARTY
CAPT W.L. Mobley

LIBRARY & ARCHIVES

DATE November 2, 1981

☆U.S. GOV. PRINTING OFFICE: 1980—668-537

FE229
(Plot filed in tube H-9097)

AREA-6
CHARTS
530
540
19004
19007
19010
19320

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

FE-229

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-40-1-80

State HAWAII

General locality ISLAND OF HAWAII

Locality LOIHI SEAMOUNT

Scale 1:40,000 Date of survey 15 - 16 October, 1980

Instructions dated 3 October, 1980 Project No. S-T101-RA-81

Vessel NOAA Ship RAINIER S221 Vessel Number 2120

Chief of party WAYNE L. MOBLEY, ~~CATP~~ CAPT., NOAA

Surveyed by LCDR A. ANDERSON, LT R. MORRIS, ENS F. OHLINGER, ENS R. FLEISCHMAN, SST R. HASTINGS, ST M. RILEY, AST P. TURNER

Soundings taken by echo sounder, ~~hand lead, pole~~ EDO WESTERN

Graphic record scaled by RAINIER Survey Department

Graphic record checked by RAINIER Survey Department

Verified
~~Protracted~~ by PATRICIA M. NILAND Automated plot by XYNETICS PLOTTER (PMC)

Soundings
Verification by ROBERT N. MIHAILOV

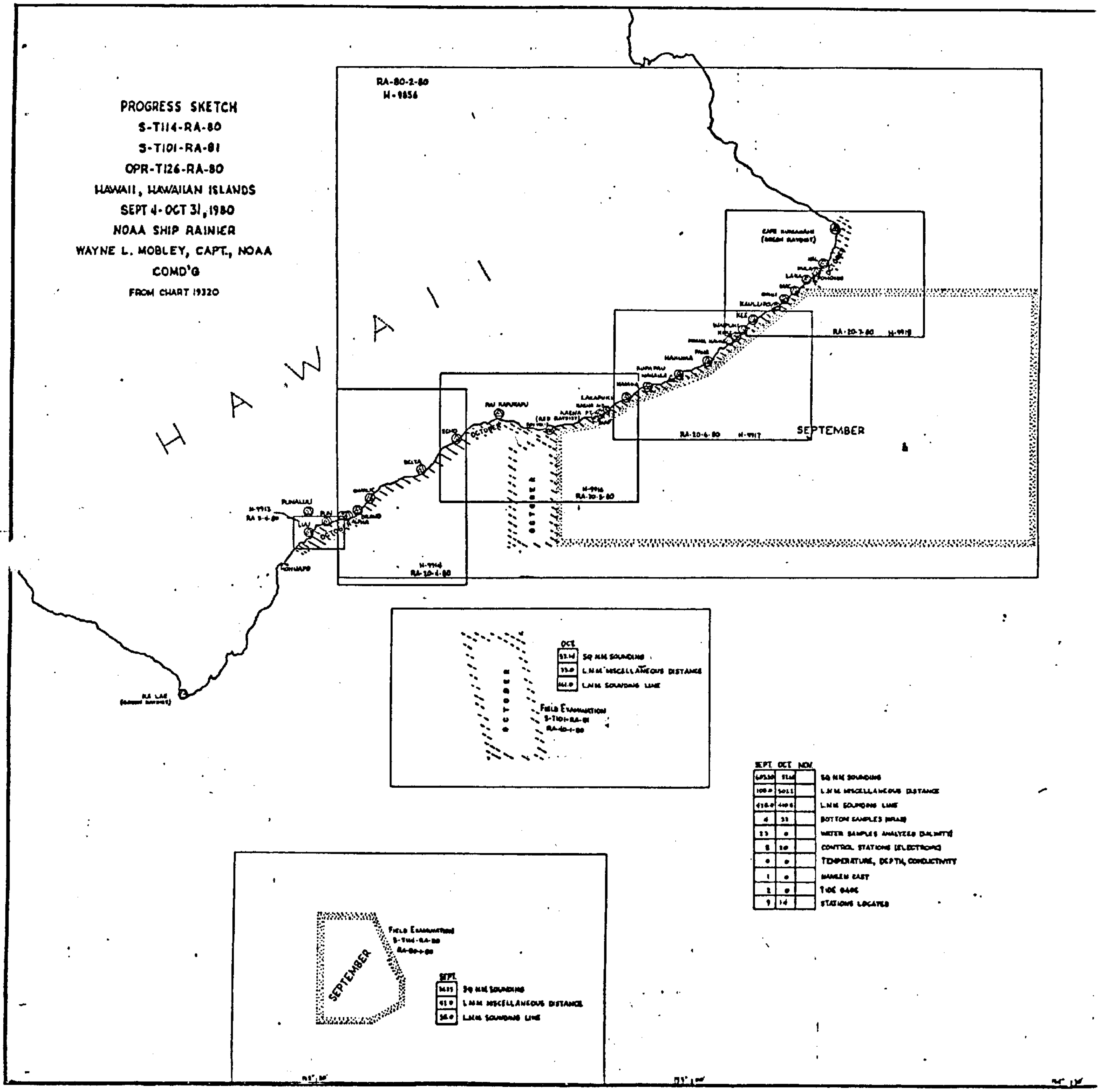
Soundings in fathoms ~~feet~~ ~~fx~~ ~~MLW~~ ~~MLLW~~ MLLW NO TIDE CORRECTORS APPLIED

REMARKS: All times are GMT.

STANDARDS CHECKED
11-24-82 C. Loy

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

☆ U. S. GOVERNMENT PRINTING OFFICE: 1976—665-661/1222 REGION NO. 6


PROGRESS SKETCH
S-T114-RA-80
S-T101-RA-81
OPR-T126-RA-80
HAWAII, HAWAIIAN ISLANDS
SEPT 4 - OCT 31, 1980
NOAA SHIP RAINIER
WAYNE L. MOBLEY, CAPT., NOAA
COMD'G
FROM CHART 19320
HAWAII
RA-80-2-80
SEPTEMBER
OCTOBER
SEPT. OCT. NOV.
SQ NM SOUNDING
L.N.M. MISCELLANEOUS DISTANCE
L.N.M. SOUNDING LINE
CONTROL STATIONS (ELECTRONIC)
TEMPERATURE, DEPTH, CONDUCTIVITY
STATIONS LOCATED
FIELD EXAMINATION
OCT.
SEPT.

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY
(Field No. RA-40-1-80)

A. PROJECT

This survey is a Field Examination of Loihi ~~Volcano~~ SEAMOUNT, Hawaii, performed in accordance with Project S-T101-RA-81 Instructions dated 3 October 1980. There are no changes, supplemental instructions, or amendments.

B. AREA SURVEYED

Survey limits are bounded on the north by Latitude 19°00'N, and on the south by Latitude 18°50'N. The western limit extends from 155°17.3'W Longitude on the southern limit to Longitude 155°19.3'W on the northern limit. The eastern limit of the survey parallels the western limit at a distance of 0°05.5' of Longitude. The center of the survey area is located southeasterly of the island of Hawaii, a distance of 21 miles due east of Ka Lae (South Point). This area is common with part of H-9858, 1:80,000, 1979.

C. SOUNDING VESSEL

All sounding data was collected by the NOAA Ship RAINIER S221, identified as Vesno. 2120. This survey incorporated a grid pattern of parallel lines running at 090°T-270°T intersected by parallel lines running at 170°T-350°T, parallel to the survey limit boundary.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Echo soundings for this survey were obtained through the use of the ship's "Edo Western" sounding system comprising the following components: Edo transceiver model 248, serial number 202; Edo digitrack model 261-C digitizer, serial number 204; Raytheon programmer A12 universal graphic recorder 196B, serial number 75.

All soundings were collected using the ship's aft-skeg transducer located on the ship's centerline at a distance of 33.5 meters aft of the raydist antenna.

On-line scanning by RAINIER survey department personnel monitored, compared, and corrected the data collected by the digital and analog outputs. The task of keeping both of these systems on track was substantial and all soundings were scanned again during processing. The severe incline of the slopes investigated resulted in an analog trace occasionally somewhat diffuse due to the confused echo signals received from the deep side echoes. In the working depths between 1700 fathoms and 500 fathoms a significant discrepancy of overlapping depths could be caused by a normally insignificant positioning factor.

Corrections to soundings for this project include a TRA adjustment for draft and instrument error. Direct lead line vertical cast comparisons provided this information. Consistent with past field seasons, this year's TRA correction for the RAINIER is 2.6 fathoms.

Significant corrections were applied for the velocity of sound through water. These corrections were derived from data collected from Nansen casts and Martek CTD observations in accordance with the Hydrographic Manual, Fourth Edition, Section 4.9.5. One Nansen cast was effected on 20 September at Latitude 19°14'48"N and Longitude 154°43'36"W. One Martek cast was effected on 4 November at Latitude 19°09'42"N and Longitude 155°22'42"W. For a more detailed discussion of this topic and a look at the raw data recorded to compute velocity, refer to the Corrections To Echo Soundings Report, OPR-T126-RA-80, Hawaii, Hawaiian Islands.

E. HYDROGRAPHIC SHEETS

The Hydrographic Field Sheet RA-40-1-80 was plotted aboard by RAINIER Survey Department personnel using a digital PDP 8/e Complot system. The geodetic and control grids utilize a modified transverse mercator projection with a central meridian of 155°20'00"W Longitude and a control latitude 2046000 meters north of the equator at a scale of 1:40,000. The list of projection parameters are included in the attachments. Field records were sent to Pacific Marine Center, Seattle, Washington.

F. CONTROL STATIONS

Only two electronic positioning control stations were used for this survey. The left pattern was established at KA LAE 2 1948-1949, station code 109, located at 18°54'56.570"N Latitude and 155°41'04.290"W Longitude. The right pattern was established at KAENA PT. 1977-1979 RM 3, station code 108, located at 19°16'55.404"N Latitude and 155°07'27.806"W Longitude.

In addition to these electronic stations, RAINIER personnel utilized four visual stations for beginning calibration of the raydist system by sextant fixes. These stations were LUU 1930 (110), PUNALUU 1949 (111), KAMEHAME NEW HTS 1949 (112), and PUN 1930 (114).

Ending calibration was after dark and employed range-range mini-ranger positioning from the following control stations: LUU 1930 (110); and KAENA PT 1977-1979 (101) RM 3.

G. HYDROGRAPHIC POSITION CONTROL

This survey utilized Teledyne-Hastings Raydist equipment for range-range control. The following equipment was employed aboard ship: Hastings-Raydist Transmitter model TA-96, serial number 36; Hastings-Raydist DR-S System Navigator model 2A-67B, serial number 108; Hazlow Navigation Interface, serial number 35; and Gould Brush 220 Strip Chart Recorders, serial numbers 2599 and 11462. Data was collected by the ship's Hydroplot Controller, serial number 04, and Digital Equipment Corporation model PDP 8/e computer, serial number 1086, using standard program RK 111, version 1/30/76. Other shipboard equipment includes a Teledyne-Hastings Raydist Power Supply model SA-201A, serial number 108; and an Antenna Coupler model QB52C, serial number 167.

Shore installation at KA LAE 2 employed a Hastings-Raydist model AA-60A Transmitter, serial number 233, transmitting a continuous wave of 3296.950 MHz, and a propane fueled Teledyne Thermal Generator.

Shore installation at KAENA PT employed a Hastings-Raydist model AA-60A Transmitter, serial number 232, transmitting a continuous wave of 3296.030 MHz, and a propane fueled Teledyne Thermal Generator.

As mentioned in the previous section of this report, the hydrographic position control was calibrated visually with three sextant angles in the morning and by electronic range-range mini-ranger control after dark at completion of the survey. The equipment utilized for the ending calibration is as follows for the Motorola Mini-Ranger III System: at KAENA PT 1977-1979 RM 3, station code 101, code C consisted of Transponder serial number 776, containing 16 code detector serial number 713249, and RF Unit serial number 1572. At station LUU, station code 110, code B consisted of Transponder serial number 775, containing 16 code detector serial number 713245, and RF Unit serial number 1645. Aboard ship is an R/T Unit serial number 713302, containing video processor card serial number 713382, and RF Unit serial number 2710. Range Console is serial number 715.

The above mentioned mini-ranger control was system-checked by standard base-line calibration procedures at both the beginning and end of the project season. The initial corrector values obtained at the first base line calibration were applied to the mini-ranger rates prior to computing the lane correctors at the completion of this survey project. Final corrector values for the mini-ranger, obtained again by standard base line calibration procedures, were found to differ only slightly from those correctors used for raydist lane calibration. The ending raydist lane count calibration was not recomputed using updated and insignificantly different mini-ranger corrector values.

Baseline corrector values for the mini-ranger system are included in the attachments to this report. Complete details of the mini-ranger system corrections can be found in the Electronic Control Report, OPR-T126-RA-80, Hawaii, Hawaiian Islands.

H. SHORELINE Not applicable.

I. CROSSLINES

This investigation utilized a grid pattern of eleven 1600-meter spaced lines bearing 090°T-270°T intersected by nine 1000-meter spaced lines bearing 170°T-350°T. One additional line bearing 090°T-270°T was run over the summit of this ~~volcano~~ SEAMOUNT. Thus there are 108 sounding line intersections. All are in exceptional agreement of depth.

J. JUNCTIONS

This field investigation survey is intended to complement survey H-9858, field sheet RA-80-1A-79, performed last year by the RAINIER. No specific junctioning requirements were outlined in the project instructions. See Section K for comparison discussion.

See V.R.
See 5.6

K. COMPARISON WITH PRIOR SURVEYS

Comparison with last year's survey on H-9858, field sheet RA-80-1A-79, was accomplished by plotting this year's data at a scale of 1:80,000 and

overlaying it atop a photographic reproduction of the prior survey. Direct comparisons of depth were scarce, as this year's work consisted of "splits" of last year's sounding lines. Fifty-two comparisons were observed however and 73% of these were found to differ by less than one percent of the depth. Comparison of contour lines proved more elucidating. Depth contours in 100 fm. increments to a maximum depth of 1000 fathoms revealed a maximum discrepancy of 5 mm. at the scale of projection. This occurred along the 900 fathom curve. The 600 fathom curves bear no resemblance on the north slope.

See VR See 6

The most beneficial comparison will be achieved only through the plotting and contouring of both sets of data on the same sheet, preferrably at a scale of 1:40,000.

See VR See 6

L. COMPARISON WITH THE CHARTS

Below is a table of affected charts, the least depth shown in the area of this survey, and the corresponding position of the depth tabulated. Also in the table are the least depths and their positions taken from the RAINIER surveys of 1979 and of 1980.

See VR See 7

Document	Depth (fm)	Latitude	Longitude
Chart No. 540	583	19°36'N	154°37'W
19004	517	18°55'N	155°16'W
19007	517	18°55'N	155°16'W
19010	517	18°54'N	155°16'W
19320	537 20	18°56'N	155°16'W
1979 Survey	~~519~~	18°55'N	155°16'W
1980 Survey	527	18°55'N	155°16.0'W

If the source of the 517 fathom depth can be considered reliable, it is recommended that this depth be charted as the least depth over the Loihi Volcano.

M. ADEQUACY OF SURVEY

This survey is complete in its purpose to further develop the sounding line pattern over Loihi ~~Volcano~~ Seamount, and adequate to ~~compliment and supersede all prior surveys~~ supplement H-9858 in the common area.

N. AIDS TO NAVIGATION

There exist no aids to navigation within the bounds of this survey.

O. STATISTICS

This survey incorporated the use of only one vessel, the ship RAINIER (2120), and was completed in twenty-two and one-half continuous hours. There were 220 positions representing nearly 1300 soundings. Sounding lines covered 162.0 linear nautical miles within an area of 53.14 square nautical miles. Other than the hydrography, no other oceanographic operations were effected within the survey boundary.

P. MISCELLANEOUS

This data was collected using a wide beam transducer (approximately 35^{o}) which can inject substantial depth inaccuracies on steeply sloping bottoms. This working area was characterized by steeply sloping bottoms and as such the usefulness of the data for bathymetric mapping could be questioned.

Q. RECOMMENDATIONS

Survey data kept separate

It is recommended that this year's data be plotted together with last year's data at a scale of 1:40,000 and subsequently reviewed and contoured together. This year's survey is deemed complete and accurate for charting.

If in the future, further sounding lines are run over this active volcano, it is suggested that two lines be run as identically as possible over previous sounding lines to facilitate comparisons.

R. AUTOMATED DATA PROCESSING

Data acquisition was accomplished in accordance with the Hydrographic Manual, Fourth edition, using the ship's Hydroplot system and program RK 111, Range-Range Realtime Plot, version 1/30/76. Data was processed also in accordance with the Manual using the following computer programs:

AM 602 ELINORE-LINE ORIENTED EDITOR
RK 330 REFORMAT AND DATA CHECK
RK 211 RANGE-RANGE NON-REALTIME PLOT
RK 201 GRID, LATTICE AND SIGNAL PLOT
RK 530 LAYER CORRECTIONS FOR VELOCITY
RK 561 GEODETIC H/R CALIBRATIONS

S. REFERRAL TO REPORTS

Supplemental reports pertinent to this survey are submitted with this report. These reports cover OPR-T126-RA-80 and have been previously referred to in this report. They are:

Horizontal Control Report, OPR-T126-RA-80, Hawaii, Hawaiian Island
Electronic Control Report, OPR-T126-RA-80, Hawaii, Hawaiian Island
Corrections to Echo Soundings Report, OPR-T126-RA-80, Hawaii, Hawaiian Isl.

Respectfully submitted,

Maynard H. Riley

Maynard H. Riley
Survey Technician
NOAA Ship RAINIER S221

P. MISCELLANEOUS (Cont.)

The ship's heading digitizer was not functioning from fix 1000 to fix 1053. This data was corrrected on the final data tape but not before the smooth field sheet was plotted with all headings at 000 degrees. This generated a plotting error of two times the Andist corrector (33.5 m) on the lines with a real heading of 180 degrees.

Alan D. Anderson

APPROVAL SHEET

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY

RA-40-1-80

In producing this sheet, standard procedures were observed in accordance with the Hydrographic Manual, PMC OPORDER, 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
Commanding Officer

MASTER STATION LIST

S-T101-RA-81

FIELD EXAMINATION, LOIHI ~~VOLCANO~~ SEAMOUNT, HAWAII

FINAL VERSION

101 1 19 17 03070 155 07 27320 250 0000 000000 NOT USED
/KAENA PT. M/R

108 3 19 16 55404 155 07 27806 250 0000 329649
/KAENA PT 1977 RM 3 RED RAYDIST STATION (RIGHT)

109 1 18 54 56570 155 41 04290 250 0000 329649
/KA LAE 2 1948-1949 GREEN RAYDIST STATION (LEFT)

110 1 19 07 36455 155 30 48106 250 0000 000000 NOT USED
/LUU 1930

111 1 19 09 10376 155 30 49687 250 0000 000000 NOT USED
/PUNALUU 1949

112 1 19 08 52349 155 28 07649 250 0000 000000 NOT USED
/KAMEHAME NEW HTS 1949

113 1 19 12 24452 155 26 00452 250 0000 000000 NOT USED
/PUU ULAULA HTS 1914

114 1 19 08 26595 155 29 21880 250 0000 000000 NOT USED
/PUN 1930.

115 1 18 58 23300 155 36 15919 250 0003 000000 NOT USED
/KAMILO 1898-1949

ASCII SIGNAL TAPE LISTING

S-T101-RA-81

FIELD EXAMINATION, LOIHI ~~VOLCANO~~ SEAMOUNT, HAWAII

FINAL VERSION

108	3	19	16	55404	155	07	27806	250	0000	329649
109	1	18	54	56570	155	41	04290	250	0000	329649
110	1	19	07	36455	155	30	48106	250	0000	000000
111	1	19	09	10376	155	30	49687	250	0000	000000
112	1	19	08	52349	155	28	07649	250	0000	000000
113	1	19	12	24452	155	26	00452	250	0000	000000
114	1	19	08	26595	155	29	21880	250	0000	000000
115	1	18	58	23300	155	36	15919	250	0003	000000

VELOCITY CORRECTOR LISTING

S-T101-FA-8C

LOHI ~~VOLCANO~~ SEAMOUNT, HAWAII

TABLE NO. 1 (SCALE-FATHOMS)

```
000790 0 0040 0001 001 212000 000000
000910 0 0045
001030 0 0050
001400 0 0060
001830 0 0070
002050 0 0080
002760 0 0090
003750 0 0100
004400 0 0110
005000 0 0120
005600 0 0130
006250 0 0140
006850 0 0150
007750 0 0160
008050 0 0170
008700 0 0180
009360 0 0190
009850 0 0200
010450 0 0210
010950 0 0220
011500 0 0230
011950 0 0240
012400 0 0250
012850 0 0260
013250 0 0270
013650 0 0280
014050 0 0290
014400 0 0300
014750 0 0310
015100 0 0320
015450 0 0330
015700 0 0340
016300 0 0350
016420 0 0360
016740 0 0370
017050 0 0380
017350 0 0390
017620 0 0400
017800 0 0410
018130 0 0420
018480 0 0430
018650 0 0440
019000 0 0450
019170 0 0460
019500 0 0470
019750 0 0480
020000 0 0490
```

TABLE NO. 1 (CONTINUED)

020250	0	0500
020750	0	0520
021000	0	0530
021250	0	0540
021500	0	0550
021700	0	0560
022000	0	0570
022250	0	0580
022500	0	0590
022700	0	0600
022820	0	0610
023150	0	0620
023380	0	0630
023550	0	0640
023800	0	0650
024000	0	0660
024250	0	0670
024450	0	0680
024650	0	0690
024850	0	0700
025000	0	0710
025200	0	0720
025500	0	0730
025650	0	0740
025800	0	0750
025950	0	0760
026200	0	0770
026550	0	0780
026650	0	0790
026750	0	0800
026900	0	0810
027100	0	0820
027220	0	0830
027450	0	0840
027650	0	0850
027800	0	0860
028000	0	0870
028150	0	0880
028350	0	0890
028450	0	0900
028650	0	0910
028850	0	0920
029000	0	0930
029150	0	0940
029350	0	0950
029500	0	0960
029650	0	0970
029850	0	0980
030000	0	0990
030150	0	1000
030300	0	1010
030450	0	1020
030600	0	1030
030750	0	1040
030900	0	1050
031050	0	1060
999999	0	1070

TRA (TC/TI) TAPE: VESSEL 2120 SURVEY RA-40-1-80 FATHOMETER S/N UGR 75 YR 80 PAGE 1 OF 1

From TIME	TRA CORR.	DAY	VEL. TBL.	TRA corr. is the algebraic sum of these columns: INITIAL	SCALE-PHASE	DRAFT	F. ARC	S./ SQUAT	COMMENTS
194249	2.6	289	1	0.0	0.0	2.6	N/A	N/A	HYDRO BEGINS
004326	2.6	290	1	0.0	0.0	2.6	N/A	N/A	
190000	2.6	290	1	0.0	0.0	2.6	N/A	N/A	HYDRO ENDS

FIELD TIDE NOTE

S-T101-RA-81

FIELD EXAMINATION, LOIHI ~~VOLCANO~~ SEAMOUNT, HAWAII

Tidal observations for OPR-T126-RA-80 maintained concurrently with this project suggest that water level variations at the Loihi ~~Volcano~~ Seamount site are negligible enough to not warrant any corrections to the sounding data.

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

S-T101-RA-81
RA-40-1-80

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO.	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	
LOIHI ~~VOLCANO~~ SEAMOUNT										1
										2
										3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
					Approved:					20
										21
					Chas. E. Harrington					22
					Chief Geographer					23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

☆ U.S. G.P.O. 1972-769-565/516 REG.#6

APPROVAL SHEET

FOR

SURVEY FE-229

m

A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position print-out has been made. A new final sounding print-out has been made.

B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic Manual. Exceptions are listed in the verifier's report.

Date: July 21, 1981

James S. Green

Chief, Verification Branch

NOAA FORM 77-27 (5-77) | U. S. DEPARTMENT OF COMMERCE NOAA | HYDROGRAPHIC SURVEY NUMBER FE-229

HYDROGRAPHIC SURVEY STATISTICS

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS & PRELIMINARY OVERLAYS	6
DESCRIPTIVE REPORT	1	SMOOTH OVERLAYS: POS, ARC, EXCESS	2

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS						
VOLUMES						
BOXES			1 - Smooth Plot & Cahier Patho.			

T-SHEET PRINTS (List) N/A

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			
POSITIONS CHECKED		222	
POSITIONS REVISED		0	
SOUNDINGS REVISED		44	
SOUNDINGS ERRONEOUSLY SPACED		0	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED			
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	5		
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS		8	
VERIFICATION OF SOUNDINGS		40	
COMPILATION OF SMOOTH SHEET		25	
APPLICATION OF TOPOGRAPHY			
APPLICATION OF PHOTOBATHYMETRY			
JUNCTIONS		24	
COMPARISON WITH PRIOR SURVEYS & CHARTS		1	
VERIFIER'S REPORT		16	
OTHER			
TOTALS	5	114	119

Pre-Verification by James S. Green Matthew G. Sanders	*Beginning Date* 12-31-80	*Ending Date* 12-31-80
Verification by Patricia M. Niland, Robert N. Mihailov	*Beginning Date* 2-3-81	*Ending Date* 5-29-81
Verification Check by Stanley H. Otsubo and James S. Green	*Time (Hours)* 20	*Date* 6-4-81
Marine Center Inspection by HIT	*Time (Hours)* 11	*Date* 7-22-81
Quality Control Inspection by LISA QUINLAN	*Time (Hours)* 10	*Date* 11-19-81
Requirements Evaluation by [illegible] J. Perry	*Time (Hours)* 6	*Date* 10/27/82

G Myers 2hrs 5/21/82

REGISTRY NO. FE-229

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
VERIFIER'S REPORT

REGISTRY NO. FE-229 FIELD NO. RA-40-1-80

Hawaii, Island of Hawaii, Loihi Seamount

SURVEYED: 15,16 October, 1980

SCALE: 1:40,000 PROJECT NO: S-T101-RA-81

SOUNDINGS: EDO Western CONTROL: Teledyne-Hastings Raydist R/R

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

Surveyed by.....LCDR A. Anderson. LT R. Morris, ENS F. Ohlinger, ENS R. Fleischman

Automated plot by.....Xynetics Plotter (PMC)

Verified by.....Patricia M. Niland
Robert N. Mihailov
Matthew G. Sanders
Cartographic Technicians

1. INTRODUCTION

This survey FE-229 (RA-40-1-80), is a Field Examination of Loihi Seamount, Hawaii, conducted according to Project Instructions S-T101-RA-81 dated October 3, 1980.

The Loihi (submarine) SEAMOUNT is of particular scientific interest because it has been determined to be seismically active. This project was ~~is~~ requested by the NOS Chief Scientist to provide a detailed profile of the Loihi Seamount. Survey data will additionally be used to complement survey H-9858 (1979).

During the verification process, no unusual problems were encountered.

2. CONTROL AND SHORELINE

See Descriptive Report, section F and G and the Horizontal Control Report, OPR-T126-RA-80, dated April 1, 1981 for an adequate description of control.

Shoreline:

Not applicable.

3. HYDROGRAPHY

The crosslines are in good agreement. The development of the bottom configuration and the determination of least depth are adequate for this survey. Standard depth curves have been completed within the limits of the Field Examination.

4. CONDITION OF SURVEY

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

5. ~~JUNCTIONS~~

~~This survey junctions with contemporary survey, H-9858 (1979), 1:80,000. There were problems in accomplishing the junction caused by the steep slopes in the area. All depth curves are drawn and the junction has been completed. The junction notes are inked.~~ See Para 6 below

6. COMPARISON WITH ~~PRIOR~~ SUPPLEMENTAL SURVEYS

H-9858, 1:80,000, 1979

covers the common area of this field examination

H-9858 ~~is also the only prior survey~~ of this area. It agrees well with this field examination, the least depth in the area (520 fathoms at 18°55'08.12"W, 155°16'02.33"W) being found on H-9858. This sounding has been added to FE-229. The depth curves have been drawn on this survey considering the data from H-9858. FE-229 is an adequate supplement to H-9858.

7. COMPARISON WITH THE CHART

This survey was compared with 19320, 12th Edition, June 17, 1978. There is one sounding on the chart, the source is unknown. This 537 fathom sounding was confirmed by FE-229 but is not as shoal as the 520 fathoms found on H-9858.

There are no pre-survey review items for this area. During verification, no hazards to navigation were found.

This survey, as supplemented by H-9858, is adequate to supersede the charted hydrography.

A charted sounding of 517 fathoms appears on charts 19004, 19007 and 19010. The source fo this sounding is unknown. The largest scale chart of this area, 19320, shows a minimum depth of 537 fathoms. The source of this 517 fathom sounding should be confirmed and, if valid, retained as the minimum depth in the area. If the 517 fathom sounding can not be confirmed, the 520 fathoms found on H-9858 should be ~~checked.~~ charted.

There are neither fixed nor any other aids to navigation within this survey's limits. ✓

8. COMPLIANCE WITH PROJECT INSTRUCTION

This survey complies with the Project Instructions dated October ~~30~~ 3, 1980, OPR-S-T101-RA-81.

9. ADDITIONAL FIELD WORK

This is a very good Field Examination. No additional field work is required for the area covered by this survey. ✓

Submitted by,

Matthew G. Sanders
Cartographic Technician
June, 1981

Examined and Approved:

James S. Green
Chief, Verification Branch

ADMINISTRATIVE APPROVAL
FE-229

The report of this survey has been examined and the survey is an adequate field examination.

Charles K. Townsend
Director
Pacific Marine Center

7/22/81
Date

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

July 23, 1981 OA/CPM3/JWC

TO: OA/CPM - Charles K. Townsend

FROM: OA/CPM3 - John W. Carpenter

SUBJECT: PMC Hydrographic Inspection Team Report for Survey FE-229

This survey is a field examination survey of Loihi Seamount, Island of Hawaii, Hawaii. This survey was conducted by NOAA Ship RAINIER in 1980 in accordance with Project Instructions S-T101-RA-81 dated October 3, 1980.

The inspection team finds FE-229 to be an adequate field examination. Administrative approval is recommended.

Larry W. Mordock

James M. Wintermyre

James W. Steensland

James L. Stringham

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

C352:LQ

November 17, 1981

TO: Glen R. Schaefer
Chief, Hydrographic Surveys Division

THRU: Chief, Quality Control Branch

FROM: Lisa Quinlan
Quality Evaluator

SUBJECT: Quality Control Report for FE-229 (1980), Hawaii, Island of Hawaii, Loihi Seamount

A quality control inspection of FE-229 was accomplished to monitor the survey for adequacy with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, sounding line crossings, smooth plotting, 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 one-half scale copy of the survey to be furnished the verifier. In general, the survey was found to conform to the National Ocean Survey's standards and requirements except as stated in the Verifier's Report.

cc:
C351

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

NOV 5 1982

C351:SJV

TO: CPM - Charles K. Townsend

FROM: C3 - C. William Hayes C. William Hayes

SUBJECT: FE-229 (1980), Hawaii, Island of Hawaii, Loihi Seamount, Report of Compliance with Project Instructions

The smooth sheet and Descriptive Report for the subject survey have been examined. This survey, except as noted in the Quality Control Report, dated November 17, 1981 (copy attached), and the Hydrographic Survey Inspection Team Report, dated July 23, 1981, is complete and adequate for the purposes intended and is in compliance with Project Instructions S-T101-RA-81, dated October 3, 1981.

Attachment

cc:
C352 w/o att.


MOUNTAIN VIEW
GLENWOOD
MOKUAWEOWEO
KAPAPALA
HAWAII NATIONAL PARK
Kilauea Iki Crater
KILAUEA CRATER
KAU DESERT
Puu Kahaualea
Puu Kamoamoa
Kamokuna
Ka Lae Apuki
TERRITORIAL SEA
PUU O KEOKEO
MOHOKEA
KAHOLENA RIDGE
PAHALA
Kaiholena
Mountain House
Makanau
Pakua
Punaluu
HONUAPO
HONUAPO BAY
Kaalualu Bay
KAMAOA
KA LAE (SOUTH CAPE)
Akihi
9857
9858
9853
FE229
Diag. No. 4115-2
19° 20' 00
19° 00' 00
155°
40' (CONTINUED ON CHART 19006) (formerly C&GS 4102) 30
20'
10'
4990-X-11400
4990-X-11500
4990-X-11600
4990-Y-37750
4990-Y-37800

FORM C&GS-8352
(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. AE-229

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
19320	12-2-82	Lori A. Simmons 1st	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 16 Fully Appd
19004	1-11-83	Lori A. Simmons	Full ~~Part~~ ~~Before~~ After Verification Review Inspection Signed Via
			Drawing No. 34 fully app'd thru chd. 19320 #16.
19007	3-23-83	Lori A. Simmons	Full ~~Part~~ ~~Before~~ After Verification Review Inspection Signed Via
			Drawing No. 13 Fully app'd thru ~~19004 #34~~ 19010 #15
19010	4-1-83	Lori A. Simmons	Full ~~Part~~ ~~Before~~ After Verification Review Inspection Signed Via
			Drawing No. 15 Fully app'd thru 19004 #34
540	6/20/83	Robert M. Sager Lichman	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 17 fully appl'd thru ~~19010 #15~~ 19007 #13
530	7-17-83	M. Sager	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 32 Applied thru Chart 540 Drwg #17
50	8-26-83	L. A. Simmons	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 2 ~~App'd thru 19320 #16. Interpolated to metric depth curves~~ EXAM. NO CORR.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975.

USCOMM-DC 8558-P63