9346

Diag. Cht. No. 4115.

FORM C&GS-504

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. RA-10-9-72 Office No. H-9346

LOCALITY

State HAWAII

General locality Kona Coast, Hawaii Island

Locality Kealakekua Bay Point to Loa Point

19 72

CHIEF OF PARTY

G.E. HARADEN

LIBRARY & ARCHIVES

DATE 5-28-74

Charts
4140 #5
4123 #3
4115 #13
4001 Examined NO CORR's 9/25/74 TWA
4006 Examined - no corrections 2/6/80

9346

FORM C&GS-537 (5-66)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO. H-9346

FIELD NO. RA-10-9-72

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State HAWAII

General locality Kona Coast, Hawaii Island

Locality Keikiwaha Nenue Point to Loa Point

Scale 1:10,000 Date of survey 25 - 26 October 1972

Instructions dated 15 June 1972 Project No. OPR-419-RA-72

Vessel NOAA Ship RAINIER, Launches RA-4 and RA-6

Chief of party Capt. G. E. Haraden

Surveyed by LTJG Schiro, LTJG Black, LTJG Hollinshead, LTJG McCabe, ENS Hendershot, ENS McCaslin

Soundings taken by echo sounder, ~~hand lead, pole~~ Ross Model 5000 (SN: 1040)(RA6) Raytheon DE-723 (RA4)

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Protracted by _____ Automated plot by PMC - Gerber Digital ~~COMPLOT BP-3~~ Plotter

Soundings penciled by _____

Soundings in fathoms ~~feet~~ at MLW ~~MKLW~~ SHOULD BE MEAN LOWER LOW WATER J.T.C.

REMARKS: The Modified Transverse Mercator Projection, soundings and position numbers on the boat-sheet were plotted by the RAINIER's PDP 8/e computer and COMPLOT plotter.

USCOMM-DC 37009-P66

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SURVEY

RA-10-9-72

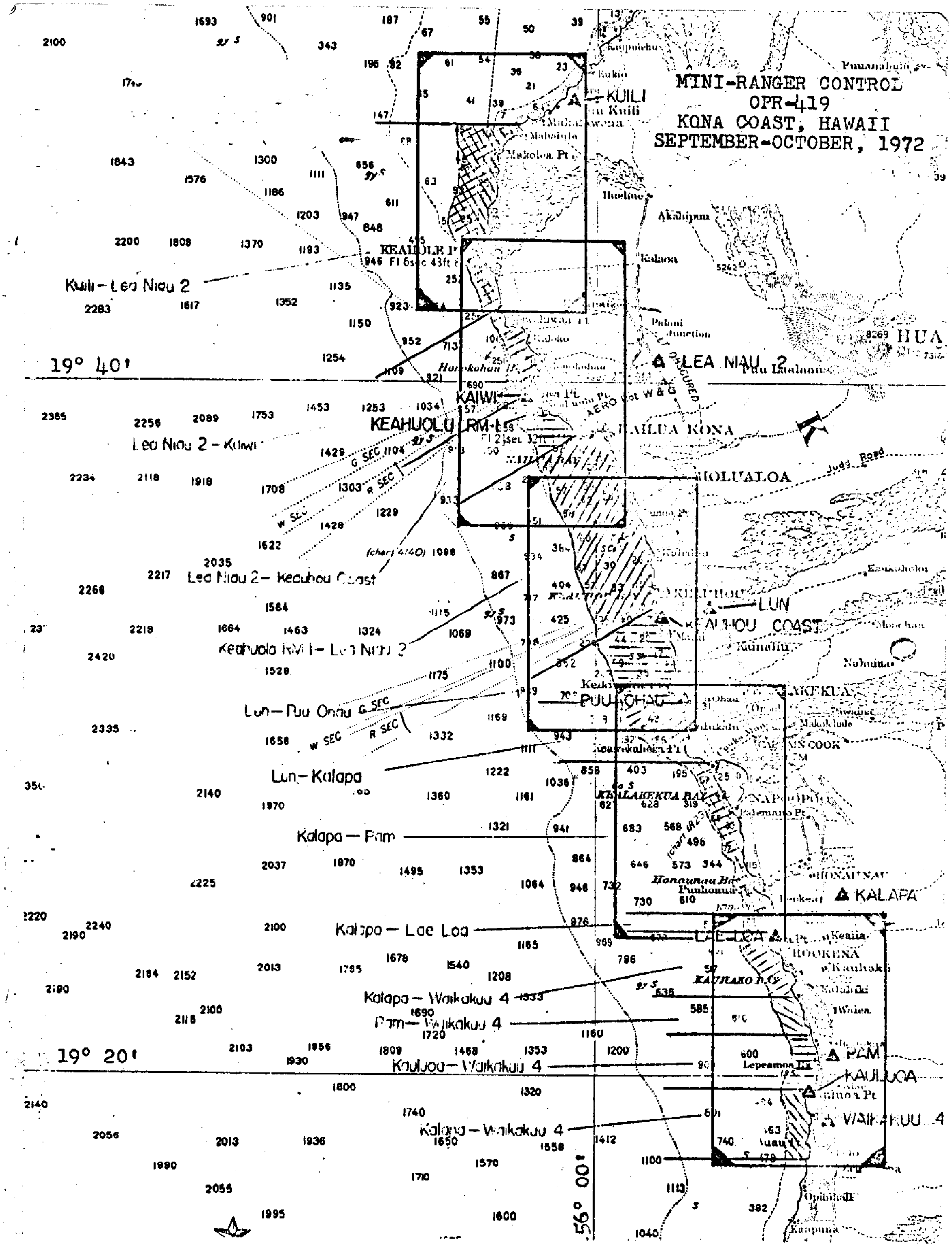
H-9346

Scale 1:10,000

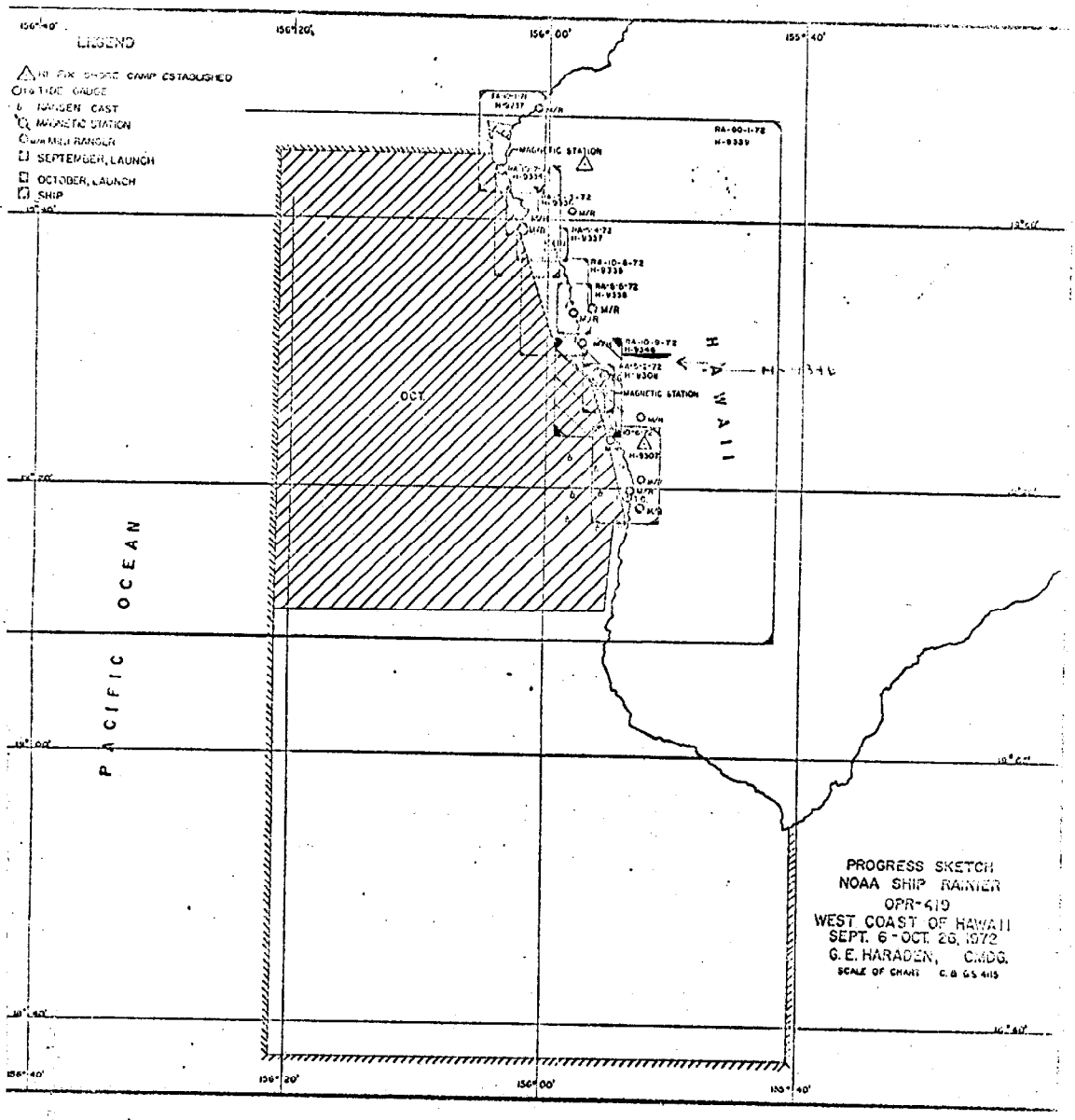
1972

NOAA Ship RAINIER

CAPT G. E. HARADEN
Commanding


MINI-RANGER CONTROL
OPR-419
KONA COAST, HAWAII
SEPTEMBER-OCTOBER, 1972
KUILI
LEA NIAU 2
KAIWI
KEAHUOLU RM-1
LUN
KEAUHOU COAST
PUU OHAU
KALAPA
LAE LOA
PAM
KAULUOA
WAIKAKUU 4
Kuili – Lea Niau 2
Lea Niau 2 – Kaiwi
Lea Niau 2 – Keauhou Coast
Keahuolu RM 1 – Lea Niau 2
Lun – Puu Ohau
Lun – Kalapa
Kalapa – Pam
Kalapa – Lae Loa
Kalapa – Waikakuu 4
Pam – Waikakuu 4
Kauluoa – Waikakuu 4
Kalapa – Waikakuu 4
19° 40'
19° 20'
56° 00'
KAILUA KONA
HOLUALOA
KEALAKEKUA BAY
Honaunau Bay
HOOKENA
Judd Road

INDEX TO SURVEY SHEETS



A. PROJECT

The survey was conducted in accordance with PROJECT INSTRUCTIONS OPR-419-RA-72 dated 15 June 1972 and Change Number 1 dated 11 September 1972.

B. AREA SURVEYED

This 4.75 square mile survey is along the Kona Coast, Island of Hawaii, Hawaii, from Loa Point on the south to ~~Kalkiwaha~~ Keei Point on the north. The survey is bounded on the north by latitude 19° 31' 00" N, on the south by latitude 19° 24' 30" N and extends from the shoreline out to the 110 fathom depth curve.

The survey began on 25 October 1972 and was completed on 26 October 1972. This survey junctioned with prior survey H-4798, scale 1:20,000, year 1928. Junctions were also made with the following contemporary surveys:

H-9307	RA-10-6-72	1:10,000	1972
H-9335	RA-10-8-72	1:10,000	1972

C. SOUNDING VESSEL

Soundings were obtained by Uniflite Launch RA-6 (#2126) and Bertram Launch RA-4 (#2124). All bottom samples were obtained by RA-4. Soundings along main scheme lines are shown in black ink. Crosslines are shown in red ink. All bottom samples are denoted on the boat-sheet by green circles. Soundings on the boat-sheet were plotted by the Complot Plotter in combination with Digital Equipment Corporation PDP 8/e computer.

D. SOUNDING EQUIPMENT

Launch RA-4 obtained approximately 26% of the soundings using a Raytheon DE-723 Fathometer (S.N. 834) in depths from 0 to 115 fathoms. Bar checks, down to 7 fathoms, were taken twice daily, and the results abstracted. The initial value was scanned continuously during the survey and maintained at zero. Fine arc and AF checks were made routinely. A 0.3 fathom draft correction was used for RA-4. All fathometer corrections were compiled on the Transducer Correction/ Table Indicator (TC/TI) tape.

Launch RA-6 used a Ross Model 5000 fathometer (S.N. 1040) in depths from 0 to 110 fathoms. Bar checks, down to 7 fathoms, were taken twice daily and the results abstracted. The initial value was scanned continuously during the survey and maintained at zero. No abstract of initial correction was compiled since any observed difference in the initial value appeared only on the analog record and not on the digitized record.

During check scanning of fathograms, initial values were considered prior to reading analog values and comparing them with digitized hydrolog soundings. Any discrepancy between the digitized value and the fathogram was resolved by correcting the digitized value to agree with the analog value. This correction is justifiable in that the digitized value is a product of an instantaneous record and the fathogram presents a continuous record. A 0.4 fathom draft correction was used for RA-6. All fathometer corrections were compiled on the Transducer Correction/Table Indicator (TC/TI) tape.

Velocity corrections were computed from bar checks and water temperature and salinity observations obtained from a Nansen Cast taken on 13 October 1972 at latitude 19° 17.6' N and longitude 155° 56.1' W. The resulting velocity correction table was entered on tape and referenced in the TC/TI tape.

There were no apparent equipment faults which would affect accuracy of the soundings. Consult the Sounding Correction Report, OPR-419, NOAA Ship RAINIER, 1972 for further discussion of sounding corrections.

E. SMOOTH SHEET

The smooth sheet will be plotted by the Pacific Marine Center Electronic Data Processing Division.

The boat-sheet was produced aboard the RAINIER using the Digital Equipment Corporation PDP 8/e computer on the COMPLOT Plotter. A Modified Transverse Mercator Projection with the central meridian located at 156° 00' 00" W, and the control latitude at 2,050,000 meters north of Latitude Zero was used. The projection was verified in the field. Fixes from electronic control and soundings were plotted via the COMPLOT Plotter on a paper boat-sheet using the PDP 8/e Hydroplot system.

F. CONTROL

This survey was controlled by Motorola Mini-Ranger (a range-range system). Mini-Ranger transponders were mounted on tripods and placed over triangulation stations. At no time did intersection angles become less than 20° or more than 160°. Almost all hydrography was accomplished with arc intersections greater than 30° and less than 150°.

The northern portion of the sheet extending to just south of Keawekaheka Point was controlled by the Lun-Kalapa pair of transponders, and the remainder of the sheet was controlled by the Kalada-Pam pair. No Mini-Ranger problems were encountered on this sheet. For more details, see Mini-Ranger Report, OPR-419, NOAA Ship RAINIER, November 1972.

G. SHORELINE

Shoreline details were traced directly from manuscripts T-12545, T-12546, T-12547, T-12548 and T-11796. Field edit of these manuscripts was completed except that section between Napoopoo and the southern limit of the sheet.

H. CROSSLINES

There were 18.8 miles of crosslines which amounted to 43.3% of the main scheme mileage run. Approximately 95% of the crosslines are in excellent agreement with main scheme lines differing by one fathom or less. Of the remaining crossline soundings, about 4% agree within 2 fathoms and of the remaining 1% none disagree by greater than 4 fathoms. In general, crosslines appear to agree very well considering steepness of the bottom contour and the rapidity with which it changes.

I. JUNCTIONS

The survey is joined on the north by contemporary survey sheet H-9335 (RA-10-8-72) and on the south by H-9307 (RA-10-6-72). It is possible that due to steep bottom gradients, side lobes of the transducer's acoustic beam are indicating shallower depths than actually exist. (See Ross Laboratories, Inc. report to PMC, dated 12/13/71.) Countour lines drawn through junctioning soundings show that both surveys are in excellent agreement, and this is further verified by a small number of crossline soundings which do overlap and are in 100% agreement with the adjoining survey. On the south, 90% of the soundings agree within 0 to 1 fathom, and the remaining 10% agree well within 2 fathoms.

J. COMPARISON WITH PRIOR SURVEYS

Soundings from Sheet H-4798, scale 1:20,000, agree within two fathoms on 50% of the 1972 soundings. About 25% of the soundings agree within 5 fathoms, 10% differed within 10 fathoms. The remaining 15% differed considerably. Soundings on the northern part of the sheet, north of 19° 29' 00" were in much better agreement than on the southern part, and there were no significant differences between the 1972 and 1928 surveys. On the southern part of the sheet, many of the 1972 soundings were shoaler, expecially in the offshore areas deeper than 70 fathoms. Of particular note were:

Ø	λ	1928 Sounding	1972 Sounding
19° 27'	155° 56'	98 fathoms	75 fathoms
19° 25' 50"	155° 55' 35"	95 fathoms	82 fathoms
19° 25' 15"	155° 55' 30"	137 fathoms	164 fathoms
19° 26' 55"	155° 55' 45"	59 fathoms	51 fathoms

(No Notice) Reviewed under Comparison with chart

Due to superior methods of positioning and sounding, it is recommended that the 1972 Hydrography take precedence over H-4798.

K. COMPARISON WITH THE CHART

19327

All available soundings were selected from the largest scale chart published. C&GS Chart 4140 (4th Edition, 25 Oct. 1969, 1:80,000) was used for comparison from latitude 19° 29' 30" N to the northern boundary of the survey at latitude 19° 31' 00". Approximately 60% of the soundings in this area agreed within a range of less than 2 fathoms with the new survey, 30% agree within 5 fathoms, and of the remaining 20%, about half agree within 10 fathoms. Of particular note is a 97 fathom sounding on C&GS 4140 at 19° 30' 30" N and 155° 59' 05" W which appears by this survey to be about 75 fathoms.

NO NM

C&GS Chart 4123 (2nd Edition, 12 June 1967, Revised 21 Feb. 1970, scale 1:10,000) was used to compare soundings between latitudes 19° 25' 00" N and 19° 29' 30" from the shoreline to the 110 fathom depth curve. As the chart was at the same scale as the survey, a very thorough comparison could be made, and it was found that 60% of the soundings on the chart agreed with the survey within 2 fathoms, 35% within 5 fathoms, and the remaining 5% by a greater amount. Areas of particular discrepancy were: the area bounded by latitudes 19° 29' 00" N and 19° 29' 30" N, and longitudes 155° 57' 00" W and 155° 57' 30" W; a 90 fathom sounding located on the chart at latitude 19° 28' 54" N and longitude 155° 56' 58" W, which appears by this survey to be 75 fathoms; a 72 fathom sounding located on the chart at latitude 19° 27' 35" N and longitude 155° 56' 13" W, which appears by this survey to be 58 fathoms; the area bounded by latitudes 19° 26' 00" N and 19° 26' 30" N and longitudes 155° 55' 30" W and 155° 56' 00" W; a 70 fathom sounding located on the chart at latitude 19° 25' 12" N and longitude 155° 55' 20" W which appears by this survey to be 60 fathoms.

NO NM Mags corr

The last half mile on the boat-sheet from 19° 24' 30" N to 19° 25' 00" N could not be compared to any present chart since the largest scale chart available, C&GS 4115, scale 1:250,000, had no soundings on it which could be plotted in this area.

L. ADEQUACY OF SURVEY

The survey for hydrographic purposes is complete except the field edit south of Napoopoo was not completed.

M. AIDS TO NAVIGATION

A comparison was made with the latest light list of the Island of Hawaii, and the one lighted navigational aid, Napoopoo Light on Cook Point, is as charted on C&GS Charts 4140, 4123 and 4115. The only other landmark aid to navigation, Napoopoo Kahikolu Church Spire, latitude 19° 28' 21" N, longitude 155° 55' 06" W, is also as charted on C&GS Chart 4123. There were no floating aids to navigation on this boat-sheet.

N. STATISTICS

VESSEL	MILES HYDRO	NO. POSITIONS
RA-4	18.7	141
RA-6	43.6	399
TOTAL	62.3	540

The sheet contains 4.75 square miles. Eight bottom samples were obtained (see Appendix for log sheet).

O. DATA PROCESSING

Launch RA-6 was equipped with a NOS Hydrolog system while RA-4 employed the standard method of data collection with a manual data logger being used on-time in place of sounding volume. The data collected by RA-4 was later converted to Hydroplot/Hydrolog master tape format using program AM 331. The data from RA-6 was recorded in master tape format using the on-line Hydrolog system controlled by program AM 170.

Corrector tapes were prepared using the standard Hydroplot/Hydrolog format for all peaks, deeps, sounding and control changes.

All soundings were plotted with draft and predicted tide corrections. Hourly heights obtained from the Napoopoo tide gage will be furnished PMC Processing by the ship. Reduction to MLW, copies of the marigrams, and verified copies of hourly heights will be furnished by the Tides Division, Rockville.

Separate master tapes and corrector tapes were prepared for each day. Standard formats, as specified in the INSTRUCTION MANUAL, Automated Hydrographic Surveys, were used for the TC/TI and Velocity Correction tapes. NOTE: TRA corrector values and velocity table numbers shown on the Hydroplot/Hydrolog tapes are to be ignored for processing at PMC. The correct data is listed on the TC/TI tape.

P. MISCELLANEOUS

There were no special developments or points of interest on the boat-sheet. The bottom contour was steep but consistent along this section of coastline and there were no offshore rocks or areas of shoaling. No unusual submarine features were noted.

Q. REFERENCES TO REPORTS

1. Oceanography and Sounding Correction Report, OPR-419, NOAA Ship RAINIER, 1972
2. Mini-Ranger Report, OPR-419, NOAA Ship RAINIER, 1972
3. Ross Laboratories Inc. Report to PMC dated 13 Dec. 1971

Respectfully submitted,

Richard Schiro

Richard Schiro
LT jg, NOAA

TIDE NOTE
H-9346
(RA-10-9-72)

It is recommended that the tide station at Napoopoo, Hawaii Island, Hawaii, at latitude 19° 28.6' N, longitude 155° 55.3' W, be used to control the soundings on this survey. The gage operated on time meridian 150° W. Hourly heights will be furnished to PMC Processing Division by the ship. Reductions to MLW and copies of the marigrams will be furnished by Tides Division, Rockville.

Predicted tides for boat-sheet control were obtained from the Tide Tables 1972, West Coat of North and South America, using the Napoopoo (on Honolulu) subordinate station. The tides were machine generated and applied directly to the data when plotted by the computer.

GEOGRAPHIC NAMES

Survey No. H-9346, 1972

Name on Survey	On Chart No. 4123 or 4440 (A)	On previous survey No. (B)	On U.S. quadrangle Maps (C)	From local information 1966 Hawaii investigation (D)	On local Maps (E)	P.O. Guide or Map (F)	Rand McNally Atlas (G)	U.S. Light List (H)	K	
COOK POINT	✓		✓							1
HAWAII	✓		✓							2
HONAUNAU	✓		✓							3
HONAUNAU BAY	✓		✓							4
KAAWALOA COVE	✓									5
KAHOLAE POINT				✓						6
KEALAKEKUA BAY	✓		✓							7
KEAWEKAHEKA BAY	✓		✓							8
KEAWEKAHEKA POINT	✓		✓							9
KEOMO POINT	✓		✓							10
MOINUI POINT	✓		✓							11
MOKUAKAE BAY	✓		✓							12
MOKUPUPU ROCK				✓						13
NAPOOPOO	✓		✓							14
NAUHA POINT				✓						15
NENUE POINT	✓		✓							16
PACIFIC OCEAN	✓		✓							17
PALEMANO POINT	✓		✓							18
PEHEHONI POINT	✓		✓							19
PUUHONUA POINT	✓		✓							20
LOA POINT	✓		✓							21
KEEI	✓		✓							22
KIPU ROCK	✓		✓							23
										24
										25
										26
										27

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

SEPARATES FOLLOWING THE TEXT

1. Tide Note
2. Abstract of Corrections to Echo Soundings
3. Electronic Control Abstract
4. Signal Tape Listing
5. Index to Survey Sheets
6. Sketch of Mini-Ranger Station Locations
7. C&GS Form 733-M, Bottom Sediment Data
8. Parameter Tape Listings
9. Abstract of Position Numbers
10. Abstract of Position Number Vs, Mini-Ranger Station Pairs
11. EDAT Form 1
12. Approval Sheet

VELOCITY CORRECTION TAPE
RA-10-6-72
RA-10-7-72
RA-10-8-72
RA-10-9-72
FA-10-1-71
LAUNCH 2126
TABLE 0007

000015 0 0000 0007 000 000000 000000
000035 0 0001
000054 0 0002
000077 0 0003
000097 0 0004
000117 0 0005
000145 0 0006
000185 0 0008
000225 0 0010
000265 0 0012
000305 0 0014
000350 0 0016
000390 0 0018
000425 0 0020
000465 0 0022
000505 0 0024
000550 0 0026
000595 0 0028
000640 0 0030
000685 0 0032
000730 0 0034
000775 0 0036
000820 0 0038
000870 0 0040
000925 0 0042
000985 0 0044
001035 0 0046
001210 0 0050
001360 0 0055
001590 0 0060
001830 0 0065
002250 0 0070

VELOCITY CORRECTION TAPE
RA-10-6-72
RA-10-8-72
RA-10-9-72
LAUNCH 2124
TABLE NO. 0008

000015 0 0000 0008 000 000000 000000
000035 0 0001
000054 0 0002
000077 0 0003
000097 0 0004
000117 0 0005
000145 0 0006
000185 0 0008
000225 0 0010
000265 0 0012
000305 0 0014
000350 0 0016
000390 0 0018
000425 0 0020
000465 0 0022
000505 0 0024
000550 0 0026
000595 0 0028
000640 0 0030
000685 0 0032
000730 0 0034
000775 0 0036
000820 0 0038
000870 0 0040
000925 0 0042
000985 0 0044
001035 0 0046
001210 0 0050
001380 0 0055
001590 0 0060
001830 0 0065
002250 0 0070

TC/TI TAPE
RA-10-9-72
PATH: ROSS 1040
LAUNCH 2126

085429 0 0004 0007 299 000000 000000
083730 0 0004 0007 300 000000 000000

TC/TI TAPE
PATH0: RATHEON 834
RA-10-9-72
LAUNCH 2124

090830 0 0002 0008 299 000000 000000
105853 0 0003
111140 0 0002
115800 0 0003
115805 0 0002
130149 0 0003
130219 0 0002
134106 0 0003
134125 0 0002
085500 0 0002 0008 300 000000 000000
113230 0 0003
113243 0 0002
115045 0 0003
115126 0 0002
115205 0 0003
115223 0 0002

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2124 SHEET : RA-10-9-72

TIME	DAY	PATTERN 1	PATTERN 2
090830	299	+00000	+00008
170000		+00000	+00008
160200	299	+00008	+00003
170000		+00008	+00003
085500	300	-00008	-00001
091000		-00008	-00001
093545	300	+00005	+00000
140000		+00005	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2126 SHEET : RA-10-9-72

TIME	DAY	PATTERN 1	PATTERN 2
085429	299	-00017	-00006
102742		-00017	-00006
111625	299	-00006	-00006
160747		-00006	-00006
083730	300	-00004	-00005
123626		-00004	-00005

SIGNAL TAPE LISTING
RA-10-9-72

119	19 30 5253	155 57 2084	PUU OHAU 1928
120	19 29 2575	155 57 0916	KEOPUKA 1948
121	19 29 1460	155 57 0377	KEAWEKAHEKA 1891
122	19 28 5588	155 56 2159	NAPOOPOO LIGHT 1928-1948
123	19 29 0335	155 56 1008	MANUSCRIPT T-11796
124	19 28 2118	155 55 0580	NAPOOPOO KAHIKOLA CHURCH SPIRE 1913
125	19 27 4315	155 55 4827	PALEMANO 2 1968

PARAMETER TAPE LISTING

RA-10-9-72
(SKEW: 118,22,60)

STATION ELEVATIONS
LUN = 396.9 METERS
KALAPA = 387.2 METERS
PAM = 333.8 METERS

LUN-KALAPA

FEST=71000
CLAT=2050000
CMER=156/00/00
GRID=30
PLSCL=10000
PLAT=19/24/36
PLON=155/52/42
S1LAT=19/33/26.856
S1LON=155/56/21.648
S2LAT=19/25/18.035
S2LON=155/52/46.902
Q=1498.34995
VESNO=2126
YR=72

KALAPA-PAM

FEST=71000
CLAT=2050000
CMER=156/00/00
GRID=30
PLSCL=10000
PLAT=19/24/36
PLON=155/52/42
S1LAT=19/25/18.035
S1LON=155/52/46.902
S2LAT=19/20/35.230
S2LON=155/52/33.168
Q=1498.34995
VESNO=2126
YR=72

PARAMETER TAPE LISTING

RA-10-9-72 CONTINUED

LUN-PAM

FEST=71000
CLAT=2050000
CMER=156/00/00
GRID=30
PLSCL=10000
PLAT=19/24/36
PLON=155/52/42
S1LAT=19/33/26.856
S1LON=155/56/21.648
S2LAT=19/20/35.230
S2LON=155/52/33.168
Q=1498.34995
VESNO=2126
YR=72

ABSTRACT OF POSITIONS

LAUNCH	JULIAN DAY	POSITIONS
RA-4	299	4000-4096
	300	4097-4137
RA-6	299	6000-6228
	300	6229-6390

The following positions were not used: 6084-6085
6134-6135

	TIME		POSITION		POSITION		
J.D	FROM	TO	P1	P2	FROM	TO	LAUNCH
299	085523	102740	LUN	KALAPA	6001	6066	RA#6
"	111625	160745	KALAPA	PAM	6067	6228	"
299	090830	153400	LUN	KALAPA	4000	4094	RA#4
"	160700	161300	KALAPA	PAM	4095	4096	"
300	085502	085445	LUN	KALAPA	4097	4100	RA#4
"	093545	121815	KALAPA	PAM	4101	4137	"
300	083730	123625	KALAPA	PAM	6224	6395	RA#6

APPROVAL SHEET

RA-10-9-72
H-9346
Kona Coast, Hawaii, 1972

In producing this sheet, hydrographic procedures were observed and the data was examined daily during the execution of the survey.

The data on the boat-sheet and the accompanying records have been examined by me and are considered complete and adequate, and are hereby approved.

G. E. HARADEN
CAPT, NOAA

VERIFIER'S REPORT

H-9346 OPR-419 RA-1Ø-9-72

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

PART II SHORELINE AND SIGNALS

4. The shoreline was transferred in ink from Advanced Manuscripts T-12545, T-12546, T-12547 and T-12548. Date of photography: August, 1963. Date of field edit: September and October, 1972.

7. Ship's report or boatsheet did not furnish any signal descriptions.

PART III JUNCTIONS

8. H-9346, 1972 joins H-9335, 1972, scale 1:1Ø,ØØØ to the North, H-9339, 1972, scale 1:8Ø,ØØØ to the West, H-93Ø7, 1972, scale 1:1Ø,ØØØ to the South and two 1:5,ØØØ sheets to the West, H-93Ø8, 1972, in Kealakekua Bay and H-9362, 1973, in Honaunau Bay. Junctions were not accomplished because of the differing processing phase. All curves in junction areas were left in pencil.

PART VI SOUNDINGS

19. Position lines 41Ø1 to 41Ø4 and 6115 to 6119 at approximate Latitude 19° 28' 5Ø" North and Longitude 155° 56' 4Ø" West are in poor agreement because of weak arc intersections from control stations Kalapa and Pam. Both lines were retained and the shoalest soundings on each line is shown.

PART VII CURVES

23. The depth curves were inspected by Mr. Arnold E. Eichelberger, Cartographic Technician.

24. The zero curve is not shown on this survey because of distance of lines off shore.

25. Hydrographic line spacing is very wide on H-9346, 1972, making it very difficult to delineate the depth curves accurately. Many curves are short and dashed.

28. Slope corrections for Mini-Ranger distance reading were not applied to the boatsheet plot.

PART XI NOTES TO THE REVIEWER

35. Ship's boatsheet, RA-1Ø-9-72, H-9346, 1972, reveals several lime colored soundings. During verification of H-9346, 1972, the lime colored soundings were traced to Prior Survey Review items, dated 11/5/69. The prior survey soundings were transferred to C&GS Chart 4123, 3rd edition, March 1Ø, 1973, scale 1:1Ø,ØØØ. Manuscripts T-12547 and T-12548 were overlayed on Chart 4123 and revealed considerable disagreement in topographic details, especially the highwater line. Because of the poor agreement between H-9346, 1972, and Chart 4123, 3rd edition, comparison of the prior survey items was not attempted. Item (J) of the ship's report contains no mention of the prior survey review items located on the boatsheet. Several investigations of the prior survey items were carried out by Launch Number 4 on Day 3ØØ, position numbers 41Ø1 thru 4116. However, investigation lines are not dense enough in these areas to verify if soundings or rocks should be removed from the chart. Detached positions information on the questionable rocks does not exist in the raw data and/or volumes.

Napoopoo Light 1928-1948 was used as the reference station on H-9346, 1972. The Napoopoo Light geographic position on advanced manuscript T-12546 is not in agreement with H-9346, 1972 plot.

Respectfully submitted,

James L. Stringham
Cartographic Technician

Addendum To PART XI NOTES TO THE REVIEWER

Palemano 2, 1968 triangulation station geographic position on advanced manuscript T-12547 is not in agreement with H-9346, 1972 plot. H-9346, 1972 used Latitude 19° 27' 43.146" north and Longitude 155° 55' 48.273" west Old Hawaiian Datum. Palemano 2, 1968 (125) was used to calibrate Mini-Ranger control system.

PART II SHORELINE AND SIGNALS

Advanced Manuscript T-11796, scale 1:5,ØØØ was used for a small section of shoreline in Kealakekua Bay. Date of photography: September, 1963 and March, 1969. Date of field edit: September, 1972.

Signals ØØ1 thru ØØ6 are pseudo signals used to make corrections in Mini-Ranger positions and sounding lines along shore. In the PDP 8 Hydroplot system, every sounding has a position. The PMC computer/plotter system is a straight line from position to position.

NOAA FORM 77-27
(9-72)
(PRESC. BY HYDROGRAPHIC MANUAL 20-2, 6-94, 7-13)

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

HYDROGRAPHIC SURVEY STATISTICS

HYDROGRAPHIC SURVEY NO. H-9346, 1972

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET & PNO	1	BOAT SHEETS	1
DESCRIPTIVE REPORT	1	OVERLAYS	4

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
Envelopes			1			
Cahiers	1					
VOLUMES						
Printout, Raw Bundle						

T-SHEET PRINTS *(List)*

SPECIAL REPORTS *(List)*

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				
POSITIONS CHECKED		520		
POSITIONS REVISED		386		
DEPTH SOUNDINGS REVISED				
DEPTH SOUNDINGS ERRONEOUSLY SPACED				
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
Verification of Control		9		
Verification of Positions		17		
Verification of Soundings		27		
Smooth Sheet Compilation		50		
ALL OTHER WORK				
TOTALS		103		

PRE-VERIFICATION BY	BEGINNING DATE	ENDING DATE
VERIFICATION BY James W. Stringham	BEGINNING DATE 12 February 1974	ENDING DATE 10 May 1974
REVIEW BY	BEGINNING DATE	ENDING DATE

FORM C&GS-946A
(REV. 11-65)
(PRES. BY HYDROGRAPHIC MANUAL, 6-94)

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

VERIFIER'S REPORT

HYDROGRAPHIC SURVEY, H 9346

INSTRUCTIONS - This form serves to identify items of a check list in verification together with items which are separately reported to the Reviewer. The form is not to be forwarded to the Reviewer. A report, which is prepared for the Reviewer, should identify items by number and letter and will be filed in the Descriptive Report until the survey is reviewed.

CL - Check List Items: should be checked as having been completed during the verification processes.

R - Report Item: This column refers to those items reported to the reviewer and is used to indicate the items discussed.

Part I - DESCRIPTIVE REPORT	CL	R
Note: The verifier should first read the Descriptive Report for general information and problems.		
1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None	X	
2. Soundings originating with the survey and mentioned in the Descriptive Report have been verified and checked in soft black pencil, including latitude and longitude, together with position identification. Remarks Required: -- None	X	
3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None	X	
Part II - SHORELINE AND SIGNALS		
4. Source of shoreline signals Remarks Required: -- List all surveys		X
a. Give earliest and latest dates of photographs		
b. Field inspection date		
c. Field Edit date		
d. Reviewed-Unreviewed		
5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.	X	
6. The plotting of all triangulation stations, topographic stations and hydrographic signals has been checked and noted in processing stamp No. 42 on the smooth sheet. Remarks Required: -- None	X	
7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still unidentified.		X
Part III - JUNCTIONS		
Note: Make a cursory comparison preliminary to inking soundings in area of overlap.		
8. All junctions of contemporary or overlapping sheets were transferred in colored ink and overlapping curves were made identical. Remarks Required: -- None		X
9. The notation in slanted lettering "JOINS H---- (19)" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None	X	

Part III - JUNCTIONS (Continued)	CL	R
10. Junctions with contemporary surveys were satisfactory except as follows: Remarks Required: -- Consider conditions after adjustments have been made; note adjustments made. Make special notes of **Butt** junctions and areas which are **SUPERSEDED.**	X	
Part IV - VOLUMES		
11. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken and exceptions noted in the volumes. Remarks Required: -- None	X	
12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following:		
(a) rocks		
(b) line turns		
(c) position values of beginning and ending of lines	X	
(d) bar check or velocity correctors		
(e) time recording		
(f) notes or markings on fathograms		
(g) was reduction of soundings accurately done?		
(h) was scanning accurate?		
(i) were peaks at uneven intervals missed?		
(j) were stamps completed?		
(k) references to adjacent features		
Part V - PROTRACTING		
13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None	A U T O M	
14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None		
15. All detached positions locating critical soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None	A T E D	

3-20-80

a 107 fm sounding falling on the present survey in the vicinity of lat. 19° 28.93', long 155° 57.13' was deleted from the smooth sheet to effect the junction between H-9346 and H-9816 (1979). The printout was not readily available and was therefore not annotated. During future work with the present survey and records, the printout should be appropriately annotated to assure placement of the referenced sounding into the excess data bank.

K. W. W.

200 m. spacing off Points such as Kaholae and Puuhonua is surely too great. However considering the chart & the fact nothing but comments should be done about it. RHC

Part V - PROTRACTING (Continued)	CL	R
16. The protracting was satisfactory except as follows: Remarks Required: -- Refers to protracting in general except for specific faults repeated often, or faults in control information, which required considerable replotting or adjustments.	AUT	
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.	OM	
Part VI - SOUNDINGS		
18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	ATED	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.		X
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	X	
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	X	
22. The smooth plotting of soundings was satisfactory except as follows: Remarks Required: -- Refer to legibility, errors in spacing, and errors in numbers - but not to errors in scanning.	X	
Part VII - CURVES *Init. AEE* 23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected.		X
24. The low-water line and delineation of shoal areas have been properly shown in accordance with the following: a. From T-Sheet in dotted black lines b. From soundings in orange c. Approximate position of sketched curve is dashed orange d. Approximate position of shoal area not sounded in black dashed Remarks Required: -- None	X X	 X X
25. Depth curves were satisfactory except as follows: (This statement should not refer to the manner in which the curves were drawn). Remarks Required: -- Indicate areas where curves could not be drawn completely because of lack of soundings. For some inshore areas a general statement is sufficient.		X

Part VIII - AIDS TO NAVIGATION	CL	R
26. All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. Remarks Required: -- Conflicts of any nature listed.	X	
27. All floating aids listed in the Descriptive Report should be verified and checked in soft black pencil, including latitude and longitude and position identification. Remarks Required: -- None	X	
Part IX - BOATSHEET		
28. The boat sheet was constantly compared with the smooth sheet with reference to notes, position of sounding lines and supplemental information. Remarks Required: -- None		X
29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.		
Part X - GENERAL		
30. All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None	X	
31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	X	
32. Degree, minute values and symbols have been checked; also electronic distance arcs have been properly identified and checked on the smooth sheet. Remarks Required: -- None	X	
33. The bottom characteristics are adequately shown. Remarks Required: -- None	X	
Part XI - NOTES TO THE REVIEWER		
34. Unresolved discrepancies and questionable soundings.		X
35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.	X	
36. Supplemental information.	X	

Verified by James L. Stringham
James L. Stringham

Date 10 May 1974

FORM C&GS-9404 (11-65)

USCOMM-DC 36272-P65

POLYCONIC PROJECTION This projection was requested by the SAIC

(1) Project No. 414 (4) Requested by PROCESSING

(2) H No. 9346 (5) Ship or Office

(3) Field No. RA 10-9-72 (6) Date Required 1/3/74

(7) Visual ☐ Ft.(0) or Fathoms (1) ☐ (8) Electronic ☒ (fill out form #3)

(10) XKN (SP 5) Distance from CMER to East Edge (NYX = 1) or West Edge (NYX = 0). (Origin) 0749 4085.20 Meters

(11) YKN (SP 241) Distance from Equator to South Edge of Sheet. (Origin) 2,199,895.296 Meters

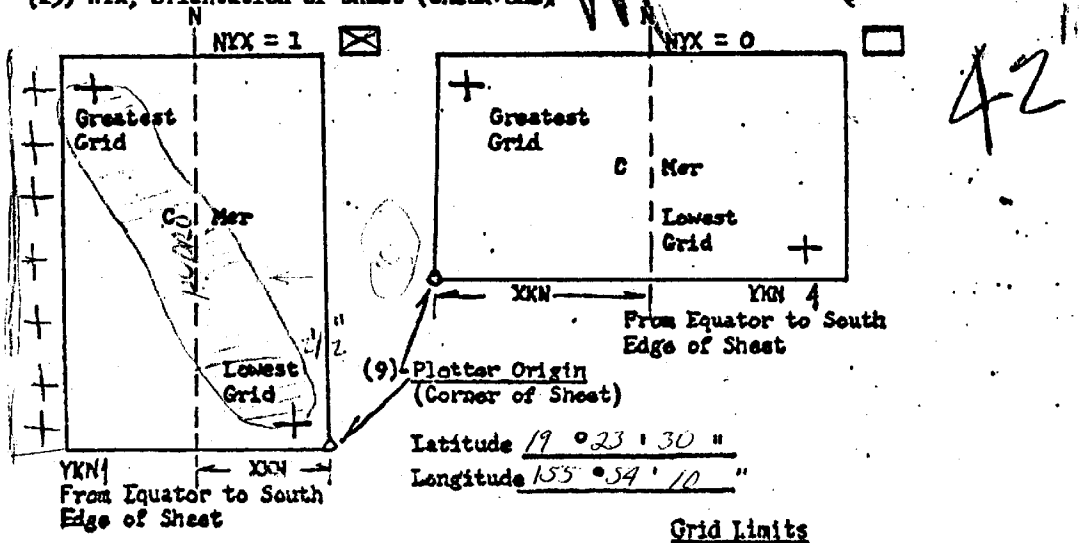
(12) Central Meridian 155 °56 '30 "

(13) Survey Scale 1:10,000

(14) Size of Sheet (Check one) 30x60 ☒ 42x60 ☐

PLOT ON 42"
PLOT SSS W/ +500 GBC Y

(15) NYX, Orientation of sheet (Check one)



42

(9) Plotter Origin (Corner of Sheet)

Latitude 19 °23 '30 "

Longitude 155 °54 '10 "

Grid Limits

(16) Greatest Latitude 19 °31 '00 "

(17) Lowest Latitude 19 °24 '00 "

(18) Difference 7 '00 "

(21) Greatest Longitude 155 °59 '30 "

(22) Lowest Longitude 155 °54 '30 "

(23) Difference 4 '30 " (5'00)

(Projection Line Interval Page 4 Hydro Manual)

(19) 0 '30

(20) 19 YS

(24) 0 '30

(25) 10 Y YS

PLOT +2" - PLOT W/ 500 + Y. GBC DIGSAT ON USS (CHECK SOUNDING APPROX 2" TOWARD WEST EDGE AS SSS WILL HAVE NEW GRID.

H 9346

Field No. RA-10-4-73

Date 1-19-73

~~HYDRO II AND III PARAMETER~~ DS

PARAMETER CARD II

			1	2	3	4	5	6	7	8	9	10
Semi major axis of the earth	6,378,206.4	RDA	6	3	7	8	2	0	6	4	0	7
			11	12	13	14	15	16	17	18	19	20
X Constant- Distance from central meridian to origin of plotter SP 5	4085.0749 meters	XKN	4	0	8	5	0	7	4	9	0	4
			21	22	23	24	25	26	27	28	29	30
Y Constant - Distance from equator to origin of plotter SP 2/1	2144895.296 meters	YKN	2	1	4	4	8	9	5	3	0	7
			31	32	33	34	35	36	37	38	39	40
Central Meridian of Projection	155°56'3000	CMR	5	6	1	3	9	0	0	0	0	6
			41	42	43	44	45	46	47	48	49	50
Plotter Scale/Survey Scale	20,98.6876 1: 10,000	SCA	1	0	4	9	8	6	8	8	0	1
												51
North/south axis of sheet - to correspond to (Y axis - 0) (X axis - 1) of plotter		NYX										1
												52
Feet/Fathom indicator	0 - feet 1 - fathom	FCF										1
								53	54	55	56	57
H Identification No.		JH						0	9	3	4	6
											58	59
		YH									7	3

FCF - 1

PARAMETER CARD III

			1	2	3	4	5	6	7	8	9	10
Lowest Lat. Intersection	19°24'0000	YST	6	9	8	4	0	0	0	0	0	5
			11	12	13	14	15	16	17	18	19	20
Lowest Long. Intersection	155°54'3000	XST	5	6	1	2	7	0	0	0	0	6
			21	22	23	24	25	26	27	28	29	30
Difference between Grid	3000	DXY	3	0	0	0	0	0	0	0	0	2
											37	38
Interval (Long)		XSN									0	9
											55	56
Interval (Lat)		YSN									1	4

Computed

Punched

Checked

Date

FORM #3

3

COMPUTER PARAMETERS FOR ELECTRONICALLY CONTROLLED SURVEYS

(RANGE - RANGE)

(1) Project No. 419 (2) H. No. 9316 (3) Field No. RA 10-972

(4) Type of Control: ___ SHORAN, ___ RAYDIST, ___ HI-FIX, ___ RADAR
MIN' RANGER
Frequency (for conversion of RAYDIST or HI-FIX lanes to meters) 1498.3999

(5) RANGE ONE (R1) LUN
Station Name SLAVE 1
Latitude 19° 33' 26.856"
Longitude 155° 56' 21.698"

(6) RANGE TWO (R2) KALAPA
Station Name SLAVE 2
Latitude 19° 25' 18.035"
Longitude 155° 52' 46.902"

(7) Azimuth from R1 to R2 ° ' "

(8) Baseline Length in Meters _____ M.

(9) Location of survey with respect to Electronic Baseline: CHECK ONE
(To determine: imagine an observer standing at R1 and looking directly at R2 --- if the survey area is to the observer's LEFT then A is negative; if the survey area is to the observer's RIGHT then A is positive.)

_____ -A (minus) XX +A (plus)

(10) If SHORAN corrections are applied by the equation, K(X) + C = D, where X is SHORAN distance and D is true distance, enter the Constant Coefficients of the equations here:

K(R1) _____, C(R1) _____, K(R2) _____, C(R2) _____.

(11) Number of Velocity Tables to be used:

___None, ___ One, ___ More than one.

(12) _____ This form is submitted only as an aid in preparing a boat sheet projection.

_____ This form applies to all data on this survey.

_____ This form applies to part of the data on this survey -

Time and Date limitations: From _____ To _____

Position Number Limitations: From _____ To _____

This is Form #3 Sheet # _____ of _____ Sheets for this survey.

(13) Other Remarks: DAY 298 6001 - 6066 Launch 6
299 4000 - 4099 Launch 4
300 4097 - 4102 Launch 4

Tahis Inn

2 of 2

H G 9346
Field No. ______
Date ______

HYDRO I PARAMETER CARDS

Computes G.P.'s from Electronic Controlled Baseline

Parameter Card I

		Deg.	Min.	Seconds	Prog. Codes	Card columns
Hydro Name LUN	Lat.	19	33	26.856	RPD	7 0 4 0 6 8 5 6 0 5
	Long	155	56	21.648	RPD	3 6 1 3 8 1 6 5 0 6
Hydro Name KALAPA	Lat.	19	25	18.035		Not Used
	Long	155	52	46.902		Not Used
Azimuth R1 to R2		337	22	15.461	RAD	1 2 1 4 5 3 5 5 0 7
						Not Used
Baseline Distance in Meters					SMP	7 6 2 8 2 6 2 1 0 5
Velocity Code: 0 - No Vel.; 1 - 1 Vel. Table; 2 - 2 Vel.-(E - W); 3 - 2 Vel.-(N - S)					IVL	—
Conversion factor for electronic distance to meters. (mini ranger) Stat. mi =; Naut. mi =; or					CNT	1 0 0 0 0 0 0 0 0 3
H-Identification Number					JH	0 9 3 4 6
Location of survey with respect to electronic baseline: - < A = 1; + < A = 0					AAA	0
Velocity Boundary: IVL = 2 Long = 0 " "; IVL = 3 Lat =					VLB	
					YR	0 7 2
If Shoran calibration correction is applied by equation (use Shoran card) punch 1 in column 80						

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

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

COMPUTER PARAMETERS FOR ELECTRONICALLY CONTROLLED SURVEYS

(RANGE - RANGE)

(1) Project No. 419 (2) H. No. 9346 (3) Field No. RA 10-9-72

(4) Type of Control: ___ SHORAN, ___ RAYDIST, ___ HI-FIX, ___ RADAR
MINIRANGER
Frequency (for conversion of RAYDIST or HI-FIX lanes to meters) 1998.3999

(5) RANGE ONE (R1) KALAPA
Station Name SLAVE 1
Latitude 19° 25' 18.035"
Longitude 155° 52' 46.902"

(6) RANGE TWO (R2) PAAI
Station Name SLAVE 2
Latitude 19° 20' 35.230"
Longitude 155° 52' 33.168"

(7) Azimuth from R1 to R2 ° ' "

(8) Baseline Length in Meters _____ M.

(9) Location of survey with respect to Electronic Baseline: CHECK ONE
(To determine: imagine an observer standing at R1 and looking directly at R2 --- if the survey area is to the observer's LEFT then A is negative; if the survey area is to the observer's RIGHT then A is positive.)

_____ -A (minus) XX +A (plus)

(10) If SHORAN corrections are applied by the equation, K(X) + C = D, where X is SHORAN distance and D is true distance, enter the Constant Coefficients of the equations here:

K(R1) _____, C(R1) _____, K(R2) _____, C(R2) _____.

(11) Number of Velocity Tables to be used:

___None, ___ One, ___ More than one.

(12) _____ This form is submitted only as an aid in preparing a boat sheet projection.

_____ This form applies to all data on this survey.

_____ This form applies to part of the data on this survey -

Time and Date limitations: From _____ To _____

Position Number Limitations: From _____ To _____

This is Form #3 Sheet # _____ of _____ Sheets for this survey.

(13) Other Remarks: DAY 298 6067 - 6228 RAH 6
294 4045 - 4096 RAH 4
300 4101 - 4131 RAH 4
300 6124 - 6575 RAH 6

1 of 2

H.S. 9346
Field No. ____
Date ____

HYDRO I PARAMETER CARDS

Computes G.P.'s from Electronic Controlled Baseline

Parameter Card I

		Deg. Min. Seconds	Prog. Codes	1	2	3	4	5	6	7	8	9	10
[illegible] Hydro Name KALA PA	Lat.	19 25 18035	RPD	6	9	9	1	8	0	3	5	0	5
	Long	155 52 46902	RED	5	6	1	1	6	6	9	0	0	6
Slave [illegible] Hydro Name PAM	Lat.	19 20 35230		Not Used									
	Long	155 52 33168		Not Used									
Azimuth R1 to R2		357 21 37914	RAD	1	2	8	6	4	9	7	9	0	7
				Not Used									
Baseline Distance in Meters			SNP	8	7	0	4	7	7	4	7	0	4
Velocity Code 0 – No Vel. 1 – 1 Vel. Table 2 – 2 Vel.–(E – W) 3 – 2 Vel.–(N – S)			IVL										—
Conversion factor for electronic distance to meters. mini Range Stat. mi = Naut. mi = ___ or			CNT	1	0	0	0	0	0	0	0	0	3
H-Identification Number			JH						0	9	3	4	6
Location of survey with respect to [illegible] baseline – <A = 1, + <A = 0			AAA										0
Velocity Boundary IVL = 2 Long = ° ' " ; IVL = 3 Lat =			VLE										
			YR								0	7	2
If Shoran calibration correction is applied by equation (use Shoran card) punch 1 in column 80													

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

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

SIGNAL PLOTTER CARDS

H-NO.		LATITUDE	LONGITUDE	X	Y	X
09346	119	72 19305253	155572084	05845	14285	119
09346	120	72 19292575	155570916	05488	11484	120
09346	121	72 19291460	155570377	05323	11124	121
09346	122	72 19285588	155562159	04031	10520	122
09346	123	72 19290335	155561008	03679	10761	123
09346	124	72 19282118	155550580	01711	09400	124
09346	125	72 19274315	155554827	03011	08172	125
09346	001	72 19303000	155570000	05207	13558	001
09346	002	72 19283000	155580000	07044	09686	002
09346	003	72 19260000	155550000	01533	04842	003
09346	004	72 19240000	155543000	00613	00970	004
09346	005	72 19253000	155543000	00614	03876	005
09346	006	72 19250000	155553000	02451	02905	006

000013

Category III
Priority 3

3/6/74

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center

Hourly heights are approved for Form 362

Tide Station Used (NOAA Form 77-12): Napoopoo, Hawaii Island

Period: 12 September - 28 October 1972

HYDROGRAPHIC SHEET: H-9346

OPR: 419

Locality: West Coast of Hawaii

Plane of reference (mean lower low water): 3.0 feet

Height of Mean High Water above Plane of Reference is 1.6 feet

Remarks: Zone direct.

C. A. Harrison
Chief, Tides Branch

4-4-74
Verification Copy

RAINIER
RA-10-9-72
H-9346
TIME MERIDIAN - 150 WEST
NAPOOPOO TIDE GAGE
YEAR - 1972
CORRECTIONS IN FATHOMS
MLLW CORRECTION - 3.0 FEET
TIME SHIFT - ZERO
RANGE RATIO - 01.00

081100 00 1004 0000 299 0 070000 000000
094200 00 1003
110900 00 1002
160000 00 1001
200000 00 1002
071000 00 1005 0000 300 0 040000 000000
085900 00 1004
103600 00 1003
120000 00 1002
180000 00 1001

FORM C&GS-733M
(5)

RA-10-9-72

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

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

VESSEL	PROJ. NO.	YEAR		CHECKED BY	DATE CHECKED
RA-4	419	72	RA-10-9-72	MM	25 Oct 72

SERIAL NO.	DATE	SAMPLE POSITION LATITUDE N	SAMPLE POSITION LONGITUDE W	DEPTH (Fathoms)	WEIGHT OF SAMPLER	APPROX. PENETRATION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, dented cutter, stat. no., type of bottom relief i.e., slope, plain, disposition, etc.)	OBS. INIT.
4080	25 Oct 72	19° 30.1'	155° 57.4'	25					Sh. P. $. bk. & wh. s.		
4081	"	19° 30.6'	155° 57.7'	24					Sh. P. (PLANT)		
4082	"	19° 29.5'	155° 57.3'	16					Co.		
4095	"	19° 29.2'	155° 57.2'						Co. Sh.		
4096	"	19° 28.3'	155° 56.5'						Co		
117	26 OCT.	19° 27.77'	155° 55.99'	9.5					NO SAMPLE HARD BOTTOM		
118	"	19° 27.37'	155° 55.59'	12.5					Co.		
119	"	19° 26.80'	155° 55.56'	13.2					NO SAMPLE HARD BOTTOM		

APPROVAL SHEET

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

Occasionally a survey will contain a new system or procedure, or there may be something of special interest to the reviewer from an overall viewpoint. In these instances I shall comment as appropriate on the approval sheet, such as in this case.

Although this is not the first Mini-Ranger controlled survey submitted, it is the first in which a slope correction for the Mini-Ranger station elevations is reflected in the processed data. Because of the high station elevations and the short ranges often encountered with the Mini-Ranger system, the effect of control station height is significant at times. Ship personnel have applied this correction by a Hydrolog/Hydroplot program which is reflected in corrected ranges on the master G.P. printout. The magnitude of these corrections can be determined from the unaccounted for differences in range between the raw data printout and the smooth master G.P. printout. As noted by the verifier, this correction was not included on the boatsheet.

Examined and approved,

James S. Green
Supervisory Cartographic Technician

Approved and forwarded,

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

This project was accomplished under project instructions OPR-419-RA-72, West Coast of Hawaii Island, Hawaii dated June 15, 1972. Line spacing was covered in Paragraph 13 where reference is made to Sections 5-26, 5-27, 5-28 of the Hydrographic Manual. It appears that accomplished offshore hydrography of 2ØØ meters is insufficient to properly delineate the coastal areas. Further field work may be necessary to reduce all line spacing to at least 1ØØ meters.

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

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9346 (Category I)

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
4123	7/8/74	S. Mastof	Full Part Before After Verification Review Inspection Signed Via Drawing No. Examined for Notice to Mariners None Found.
4140	7/8/74	S. Mastof	Full Part Before After Verification Review Inspection Signed Via Drawing No. Examined for Notice to Mariners None found
4115	7/8/74	S. Mastof	Full Part Before After Verification Review Inspection Signed Via Drawing No. Examined for Notice to Mariners None found before
4001	9/25/74	T. Alexander	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via Drawing No. Examined for critical corrections only. No corrections. (thru chf 4123). Full ~~Part Before~~re After Verification ~~Review Inspection~~ Signed Via
4000	9/10/75	KANIS	Drawing No. EXAMINED - NO APP. AT THIS SCALE
4179	9/29 75	HAUSMAN	~~Full~~ Part ~~Before~~ After Verification ~~Review Inspection Signed~~ Via Drawing No. Exam No Corr thru 4115
4115	1/28/77	KANIS	~~Full~~ Part ~~Before~~ After Verification ~~Review Inspection Signed~~ Via Drawing No. EXAMINED for critical corr only - no corr
4140	2/18/77	M.V. Friese	Full ~~Part Before~~ After Verification ~~Review Inspection Signed~~ Via Drawing No. Added ledge, coral head and bottom characteristic
4115	2/7/78	M. J. Friese	Full ~~Part Before~~ After Verification ~~Review Inspection Signed~~ Via Drawing No. #14 Final application of Class I hydro throughout common area in conjunction with chtd Sdgs.
19332/4123	11/1/79	KANIS	Full ~~Part~~ Before After Verification Review Inspection Signed Via Drawing No. Final App of Cat I Survey [redacted]
540/4000	2/6/80	M. Seger	[redacted] Applied to Drwg #16 thru 19320 - no corrections Final appl of cat I survey
19004/4102	3/28/80	Stentoft	Fully applied thru Chart 4115
19010	5-2-91	K.R. Foster	Adequately applied - Cat I Dwg 17.
19007	5-7-91	K.R. Foster	Adequately applied - Cat I Dwg 15.

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