

4654  
4654

See also Desc. Report 4631  
This Report refers also to 4631

4654

Form 504  
DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

State: Terr. of Hawaii

11-5613

DESCRIPTIVE REPORT.

Hydrographic Sheet No. 13 4654

LOCALITY:

Niihau Island

South Niihau

(Inshore hydrography)

*(For offshore hydrog. see desc. rep. for H. 4631)*

1925

CHIEF OF PARTY:

Clem L. Garner

T

June 27, 1927.

*J.H.*

(11)

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in  
16 volumes of sounding records for

HYDROGRAPHIC SHEET 4654

Locality: HAWAIIAN ISLANDS, Nihoa Island.

Chief of Party: G. L. Garner, 1926  
Plane of reference is

2.2 ft. on tide staff at M L L W  
Honopapa  
2.0 ft. ----- do ----- Waimoa.

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

*G. L. Garner*

Chief, Division of Tides and Currents.

DESCRIPTIVE REPORT  
TO ACCOMPANY

HYDROGRAPHIC SHEETS NO'S 13 and 12,  
south Niihau, and north Niihau, respectively,  
close inshore hydrography.

Surveyed by the Str. DISCOVERER, C. L. Garner, Comdg.

Commanding Officer's Instructions, dated Nov. 23, 1925

This report covers the inshore hydrography of Niihau Island,  
and is supplementary to the report of this general area submitted  
by Jack Senior, H. & G. Engineer.

CURRENTS AND TIDE RIPS: While sounding in the area between Lehua and  
north Niihau, it was observed that the current  
often set westerly, but usually was easterly in the channel and westerly  
along both shores

Strong tide rips existed in a small area off the southeast end  
of Niihau Island. It lay between  $\odot$  Sop and  $\odot$  Sin, and extended from the  
bluffline to about 300 meters offshore. ✓

INSHORE DANGERS, North Niihau Sheet ( 12 ): A string of reefs awash at  
high tide skirts the shore about 120 meters off,  
between  $\odot$  Blok and  $\odot$  Bet. ✓

A submerged shelf of rock covered by about two feet of water makes  
off 150 meters from the headland around  $\Delta$  Black. It extends from  $\odot$  Cop  
to 400 meters northeast of  $\Delta$  Black. *Sheet #4631*

A submerged coral reef about 20 feet long lies 520 meters offshore,  
540 meters from  $\odot$  Pan,  $280^\circ$  from  $\odot$  Pan. There is seven feet of water on  
it, and it breaks in moderate weather. A reef with about one foot of  
water lies inshore from this rock, 300 meters,  $275^\circ$  from  $\odot$  Pan. *Sheet #4631*

A sharp pointed rock rises to within one foot of the surface 50  
offshore southwest from Lehua Island. Approximately 30 fathoms surrounds  
this rock. *Sheet #4631*

A conspicuous rock lies in the channel between the north point of  
Niihau and Lehua. It is 350 meters NNW of the point and 450 meters NNW  
of  $\odot$  House, and is five feet high. Two reefs awash lie 250 meters north  
of this conspicuous rock and break in moderate weather. A submerged  
shelf extends due west from this rock for a distance of about 400 meters.  
Near the rock the depth is about 4 feet and gradually drops to about 3  
fathoms at its western end. The area south of this rock is extremely  
foul. *Sheet #4631*

Several reefs awash at low tide lie 220 meters NE of the large *Sheet #4631*  
rock. Reefs awash lie 28 meters and 580 meters east of the large rock.

A submerged rock lies 250 meters north of the shore and 410 meters  
northeast of  $\odot$  Bog. There is about 3 feet of water on it. *Sheet #4631*

Breakers and foul ground extend 300 meters east of the eastern

point of Niihau, due east of  $\odot$  Stern. A submerged rock with about one foot of water lies at the outer extremity.

Breakers extend south from  $\odot$  Del at a distance of 480 meters. There is about  $1\frac{1}{2}$  fathoms over this submerged reef.

Breakers fringe the point at the entrance of Kii Harbor. They extend to 230 meters south of  $\odot$  Sag. There is about 3 feet of water on the submerged rock south of  $\odot$  Sag.

A submerged reef running approximately north and south and having about  $1\frac{1}{2}$  fathoms of water over it lies 750 meters east of  $\odot$  Wit. It breaks in moderate weather. Another reef with about  $2\frac{1}{2}$  fathoms of water lies 250 meters east of and parallel to the first reef. It breaks in heavy weather.

#### INSHORE DANGERS South Sheet (#13)

A submerged coral head with a least depth of five feet on it rises from a surrounding depth of eight fathoms on the NW shore of Niihau, 1440 meters, W by S of  $\triangle$  Black. ✓

Two submerged coral heads about 50 feet apart with a least depth of 2 feet on the outer, and 11 feet on the inner, rise from a surrounding depth of 5 fathoms on the NW shore, 1480 meters, NE of  $\triangle$  Cloth. ✓

A rock, marked by  $\triangle$  Rock, is situated off the west central coast,  $\frac{1}{4}$  mile offshore. It is visible for about six miles to ships sailing along the shore. A circle of rocks awash at high tide extends inshore from this rock for about 200 meters. A rock awash at low tide lies 190 meters north of the rock. Shoal water which usually breaks lies between these rocks. ✓

A rock awash lies 320 meters west of the shoreline and  $\frac{1}{2}$  mile S x W of  $\triangle$  Rock. ✓

At the launch landing of Nonopapa a line of reefs with a depth of about 1 foot extends south from 2 meters off the end of the dock for a distance of 110 meters. ✓

A rocky reef extends 100 meters from shore, 270 meters south of Derrick. ✓

A submerged rock lies 100 meters offshore  $\frac{3}{8}$  mile NE of  $\odot$  Wall. ✓

A submerged reef makes off from the point upon which  $\odot$  Staff is located. It is awash in several places at low tide and extends a 100 meters from shore. ✓

A submerged reef with 1 foot of water on it lies 120 meters offshore, 150 meters W x N of  $\odot$  Shed. ✓

A rock awash at low tide lies 150 meters offshore west of  $\odot$  Wich. ✓

A rock awash lies 150 meters offshore in approximately Lat  $21^{\circ}-52'-20''$ , Long  $159^{\circ}-08'-35''$  ✓

#### SURVEY METHODS

A 20 fathom, 10# hand lead was used for all soundings up to depths of from 10 to 15 fathoms, depending upon the roughness of the sea. The tossing of the launch in rough weather made throwing of the hand lead difficult in depths from 8 to 15 fathoms, and hence was often abandoned in favor of up and down soundings.

In depths over 20 fathoms vertical casts were taken with a hand sounding machine. The machine was rigged to feed the sounding wire to a registering sheave on a davit over the stern. A 15# lead was

used.

Fixes were taken at every vertical cast because of the strong irregular cross-currants which existed, especially in the channel between Lehua and north Niihau, and which would make plotting by time and course unreliable.

In depths of from 4 to 18 fathoms precaution was taken to see that the soundings were secured at even time intervals between fixes. In shoaler depths the soundings were taken as fast as the lead could be thrown and hauled in.

Respectfully submitted.

L. S. Hubbard  
L.S. Hubbard, Jr. H. & C. Engineer

Approved April 29 1927.

F. G. Engle

U.S. Geol. Chief of Party

for Clem. F. Garner U.S. Geol. Chief of Party

## Statistics Sheet NO.13 South Niihau Id.

Date, 1926	Letter	Volume	Positions	Soundings	Statute Miles	Vessels
June 18	A	1	54	153	14.4	DISCOVERER
25	B	1	52	146	13.	"
26	C	1	114	216	23.	"
30	D	1-2	84	156	19.5	"
July 2	E	2	145	448	30.	"
3	F	2-3	90	320	15.3	"
8	G	3	60	123	13.2	"
10	H	3	40	88	12.6	"
12	J	3-4	128	274	29.4	"
"	a	1	151	579	23.3	port motor sailer
13	K	4	129	279	27.	DISCOVERER
"	b	1-2	175	519	23.3	port motor sailer
14	L	4-5	126	322	29.9	DISCOVERER
"	c	2	157	449	22.4	port motor sailer
15	M	5	63	159	20.1	DISCOVERER
"	d	2	153	467	18.0	port motor sailer
16	e	2-3	56	160	6.3	" " "
21	N	5	50	112	10.4	DISCOVERER
"	f	3	167	338	18.4	port motor sailer
22	P	5-6	143	309	31.7	DISCOVERER
"	g	3	163	415	15.	port motor sailer
23	Q	6	61	157	13.5	DISCOVERER
"	h	4	128	175	12.6	port motor sailer
24	R	6	58	158	13.1	DISCOVERER
Aug 10	j	4	96	395	14.2	port motor sailer
11	k	4-5	146	541	14.6	" " "
12	l	5	111	277	9.5	" " "
13	S	6-7	120	251	31.0	DISCOVERER
14	T	7	78	173	21.3	"
16	m	5-6	123	412	12.9	port motor sailer
Sept 2	V	7-8	154	416	35.5	DISCOVERER
9	W	8	45	134	11.6	"
10	X	8-9	197	551	36.5	"
14	(a)	1	88	470	12.7	stbd. motor sailer
15	n	6	119	423	14.	port motor sailer

Totals ----- 3824 -----10565 668.2

Soundings in fathoms  
Tide gauge located at Nonopapa, Niihau Id.  
Plane of reference, MLLW. 0.00 feet  
Lowest tide observed -0.3 feet  
Highest tide observed 1.21 feet

Section of Field Records.  
Report on Hydrograph Sheet No. 4654.  
Hawaiian Islands.

South End of Ni'ihau.

Surveyed in 1926.

Instructions dated November 23, 1925.

(Discovery)

Chief of Party, C. W. Garner.

Surveyed by C. W. Garner & L. S. Hubbard.

Protracted by L. S. Hubbard & J. B. Reed.

Soundings plotted by J. B. Reed.

Verified and Inked by J. V. Torrey.

1. The records conform to the requirements of the General Instructions.
2. The plan and character of development conform to the requirements of the General Instructions.
3. The plan and extent of development satisfy the specific instructions.
4. The sounding line crossings are adequate. Sounding line crossings appear only at the junction of the ship off shore tube soundings and the in-shore launch hand lead soundings: soundings at these junctions coincide closely.
5. The information is sufficient for drawing the usual depth curves.
6. The usual field plotting was done by the field party and is satisfactory.
7. The junction with sheets H-4630 and H-4631

is satisfactory.

8. There are no indications of dangers outside of those shown and which are well developed. No further surveying is required.
9. The character and scope of the surveying is satisfactory and the field drafting excellent.
10. The paper used for this sheet is of poor quality and further use of paper of this character should be discontinued.
11. Revised by J. D. Torrey.

On this work the ground has been well covered, the shoal development is sufficient and the junctions with the adjoining sheets are adequate.

On the inshore hydrography, no time was recorded for the soundings taken between positions. In the plotting of the sheet, it was necessary to assume these soundings were taken at uniform intervals, but it is improbable that this even interval could be maintained in places where the depth varied. R. L. Johnston

Inspected by J. M. Smook and R. L. Johnston

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.

HYDROGRAPHIC TITLE SHEET

4654

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. 13

REGISTER NO. 4654

State Hawaiian Islands

General locality Niihau Island

Locality South end- Niihau

Scale 1:20,000 Date of survey June 18-Sept 15, 1926

Vessel Ship DISCOVERER

Chief of Party Clem L. Garner

Surveyed by Clem L. Garner and L.S. Hubbard

L.S. Hubbard

Protracted by Thos. B. Reed

Soundings penciled by Thos. B. Reed

Soundings in fathoms -feet

Plane of reference Mean Lower Low Water

Subdivision of wire dragged areas by

Inked by J. D. Torrey

Verified by J. D. Torrey

Instructions dated November 23, 1925

Remarks: Records accompanying sheet: 2 des. reports, 2 boat sheets, 16 sounding volumes, 71 Marigrams previously forwarded.

Location of tide Gauges: Nonopapa, Niihau plane of reference 2.3 ft.

Wiamea, Kauia, " " " 2.2 ft.

applied to dent 4181 Aug, 27, 1940 J.K.S.