

CONFIDENTIAL  
7758

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Diag. Cht. No. 9400

Form 504

R

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC  
Field No. ARN-2449 Office No. H-7758

LOCALITY

State Alaska  
General locality Arctic North Coast  
Locality Foggy Island Bay

194 9

CHIEF OF PARTY

R.A.Earle

LIBRARY & ARCHIVES

DATE 27 FEB. 1950

B-1870-1 (1)

DECLASSIFIED BY NOAA  
PURSUANT TO DOC SYSTEMATIC REVIEW  
GUIDELINES AS DESCRIBED IN SECTION  
3.3(a), EXECUTIVE ORDER 12356.

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DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

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

REGISTER No. H-7758

Field No. ARN 2449

State Alaska

General locality Arctic North Coast

Locality Foggy Island Bay

Scale 1:20,000 Date of survey July - August - Sept. 1949

Instructions dated 15 February 1949

Vessel Arctic Field Party

Chief of party R. A. Earle

Surveyed by D. E. Fisher and E. W. Richards

Soundings taken by ~~fathometers~~, graphic recorder, ~~hand level, etc~~

Fathograms scaled by Billy Patkotak and Harry Lantzy

Fathograms checked by Billy Patkotak and Harry Lantzy

Protracted by E. W. Richards

Soundings penciled by E. W. Richards

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

REMARKS:  
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DESCRIPTIVE REPORT TO ACCOMPANY  
HYDROGRAPHIC SURVEY H-7758  
FIELD NUMBER ARN-2449  
FOGGY ISLAND BAY, ALASKA  
PROJECT CS-320  
SCALE: 1, 20,000  
1949

R. A. Earle	Chief of Party
Don A. Jones	In Charge of Sub-Party
E. W. Richards	In Charge, Field Work

A: PROJECT Authority for this survey is contained in the supplemental instructions for Project CS-320, issued by the Director and dated 15 February 1949.

B: SURVEY LIMITS AND DATES Foggy Island Bay, which lies between Foggy Island and Tigvariak Island (Lat.  $70^{\circ}15'N$ ; and Long.  $147^{\circ}30'W$ ), is the area covered by this survey. The bay was sounded from the six-foot curve out to a junction with sheet ARN 4249 (H-7761), which is approximately on a line between Brower Point and the North end of Tigvariak Island.

Hydrography was commenced on 31 July 1949 and completed on 9 September 1949.

C: VESSELS AND EQUIPMENT The survey was conducted from a USC&GS converted rearming boat, based at Tigvariak Island. This boat, Launch No. 14, was equipped with a 808J recording fathometer (No. 119S) throughout the season.

D: TIDE AND CURRENT STATIONS The Washington Office provided the tidal datum for the Tigvariak Island gage, which operated throughout the 1949 hydrographic season. The recorded tides at the Tigvariak tide station were used to reduce all soundings on this sheet.

No current observations were recorded in Foggy Island Bay, however, it was noted that the ice generally moved from east to west. The larger ice cakes tended to ground northeast of Brower Point as indicated by the uneven bottom due to ice gouging.

E: SMOOTH SHEET The projection was made and the control plotted by personnel of the Seattle Processing Office. Positions were plotted and soundings penciled by E. W. Richards. No large discrepancies were noted between the smooth sheet and the boat sheet, other than those accountable to distortion of the boat sheet.

F: CONTROL STATIONS All triangulation and topographic control was established by the North Arctic Field Party in the spring of 1949, R.A. Earle in charge. The Chief of Party at this time was H.A. Paton. This control is on the Flaxman Island datum.

Hydrographic signals were located by sextant angles taken at the stations.

G: SHORELINE AND TOPOGRAPHY The shoreline for the boat sheet was taken from a compilation of uncontrolled nine-lens air photographs prepared by the Washington Office. Notes for topographic features should be obtained from the 1949 Photogrammetric Report and field notes made on the nine-lens air-photos for this area. The shoreline for the smooth sheet should be taken from the photogrammetric topographic compilations when they are completed. *Shoreline applied to smooth sheet from air-photo compilations T-9347-49-50 of 1949, before review.*

Due to the small range of tide, it was physically impossible to define the low water line with the sounding launch. For the same reason - 2 it was impractical to develop less than the six-foot curve.

H: SOUNDINGS All soundings were obtained with an 808J recording fathometer, operating on the foot scale. Soundings were scaled and recorded to the nearest 0.5 foot and reduced for tide, index and velocity to 0.2 foot. See: "Fathometer Correction Report", Arctic North Party, Project CS 320, 1949. *Filed with A-7760*

I: CONTROL OF HYDROGRAPHY Visual fixes were used throughout this survey on signals built over triangulation and hydrographic stations. Difficulty was experienced in plotting the boat sheet due to the large sheet distortion and the distance from the signals which required the use of extension arms on steel protractors in rough seas. See Note in Sounding Volume VI of Survey ARN 2449.

J: ADEQUACY OF SURVEY From an economic viewpoint, no additional hydrography is recommended. Foggy Island Bay, little, if any, value for navigation purposes. It affords no protection except for shallow draft boats on the west side of Tigvariak Island.

No continuous channel was found south of Tigvariak Island. If such a channel does exist, it would be subject to frequent change due to silting of the Saviovik River.

Depth curves can be drawn with sufficient accuracy, and further development on this survey is not recommended.

K: CROSSLINES Approximately 8% of the soundings are crosslines. The maximum difference at any crossing is one foot, which is consistent with the differences that might be encountered due to scaling, accuracy of corrections applied, and the conditions of the sea.



*Arctic Explorer (USG.S. Professional Paper 109)*

L: COMPARISON WITH PRIOR SURVEYS The only previous survey of this area was made by Leffingwell in 1912, which was not detailed enough in hydrographic respects to make a close comparison.

*(Arctic Coast Chart #11)*

M: COMPARISON WITH CHARTS The only existing charts of this area are USC&GS 9400 and it is too small a scale to justify a comparison. *Comp. made with Arctic Coast Chart #11.*

N: DANGERS AND SHOALS One significant shoal was discovered east of Foggy Island. A least depth of 3<sup>1</sup>/<sub>2</sub> feet was found at latitude 70° 15.8' N., longitude 147° 40.5' W. No effort was made to develop this shoal completely due to the lack of time. *Shoal is not important. Least depth of 3<sup>1</sup>/<sub>2</sub> feet adequate on shoal where changes from ice gouging probably occur.*

Mid-channel between Tigvariak Island and Lien Point, there is a shoal with a least depth of one foot, in Latitude 70° 14.2' N, Longitude 147° 13.7' W. A shoal, reported to bare at low water, is also in this vicinity. See Volume II, p. 62. This passage is not recommended; except to those having local knowledge.

O: COAST PILOT INFORMATION The only recommended anchorage on this survey is behind Lien Point. Small craft may find protection here from northeasterly weather. Unfortunately, this area is one of the last parts of Foggy Island Bay to clear of ice. See: Special Report, "Coast Pilot Notes, 1949".

P: AIDS TO NAVIGATION No aids to navigation exist in the area covered by this survey, other than the signals built for visual control of hydrography.

Q: LANDMARKS Landmarks appearing on this survey are:

<u>Charting Name</u>	<u>Description</u>	<u>Signal Name</u>	
TOWER	(35 feet square wooden tower on 30 feet bluff)	Tig	1949 ✓
TOWER	(30 feet square wooden tower)	TURNPIKE	1949 ✓
MOUND	(Prominent mound with 20 feet weed tripod on top)	SHAV 2	1949 ✓
MOUND	(Prominent mound with 20 feet tripod on top)	Sake	1949 ✓

See: Landmarks for charts, form 567, previously submitted on 24 October, 1949.

R: GEOGRAPHIC NAMES See special report "Geographic Names Report, 1949" and the Geographic Name List (attached). Where practical, geographic names have been penciled on the smooth sheet.

S: TABULATION OF APPLICABLE DATA

1. Triangulation records	Forwarded to Washington Office			
2. Tidal data, Tigvariak Island	"	"	"	"
3. Fathometer Corrections	"	"	"	"
4. Coast Pilot Notes	"	"	"	"
5. Landmarks for Charts	"	"	"	"
6. Geographic Names Report	"	"	"	"

T: ATTACHMENTS

1. List of Signals
2. Statistics for this survey
3. Tidal Note
4. Fathometer Corrections
5. Geographic Name List
6. Approval Sheet

*E. W. Richards*

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E. W. Richards  
 Ens. USC&GS  
 In Charge, Field Work


H-7758

Field Survey ARN-2449


APPROVAL SHEET

The smooth sheet and field records of this survey are approved as transmitted to the Washington Office. The field work and processing of the survey was inspected daily and supervised personally by the Officer in Charge of Sub-Party.

The survey is considered adequate for the area covered.

  
Don A. Jones  
Lieut. USC&G Survey  
Officer-in-Charge, Sub-Party

Approved and Forwarded.

  
R. A. Earle  
Lt. Comdr. USC&G Survey  
Chief, Arctic Field Party



H-7758

Field Survey ARN 2449

List of Signals

<u>Hydro Name</u>	<u>Source</u>
Base	WEST BASE - 1949
Bot	Vol. 1, ARN 2449
Brow	BROWER - 1949
Cel	Vol. 1, ARN 2449
Del	DELTA - 1949
East	EASTBASE - 1949
Fing	Fing - 1949
Fog	FOGGY - 1949
Har (Tide Station)	Vol. 1, ARN 2449
Pat	PATKO - 1949
Pike	TURNPIKE - 1949
Pod	Pod - 1949
Rosh	ROSHILIK - 1949
Sako	Sako - 1949
Shav	SHAV 2 - 1949
Spit	Spit - 1949
Tig	Tig - 1949
Var	VARIAK - 1949
Wes	Wes - 1949
Wan	Wan - 1949

Statistics

for

Hydrographic Survey No. H-7758 (Field Number ARN 2449)

Date      Day Letter      Vol.      No. Pos.      St. Mi. Sdgs.      H. L. Sdgs.  
1949

Launch No. 14

31 July	a	1	8	2.9	
5 Aug.	b	1	173	51.0	
7 Aug.	c	1 & 2	125	36.3	
9 Aug.	d	2	100	31.3	
10 Aug.	e	2	87	26.0	
11 Aug.	f	2 & 3	186	49.7	
12 Aug.	g	3 & 4	149	40.9	
13 Aug.	h	4	174	48.1	
14 Aug.	j	4 & 5	138	42.0	
15 Aug.	k	5	75	24.3	
16 Aug.	l	5	70	21.4	
17 Aug.	m	5	71	23.7	
18 Aug.	n	6	31	16.7	
28 Aug.	p	6	11	3.2	
4 Sept.	q	6	14	3.7	
		Totals	1412	421.2	

Area: - 44.9 sq. Sta. Mi.

H-7758

Field Survey ARN 2449

GEOGRAPHIC NAME LIST

- ✓ Tigvariak Island
- Lion Point
- Reliance Point
- ✓ Foggy Island Bay
- ✓ Foggy Island
- ✓ Point Brower
- Kalegosilik River
- Saviovik River

Alaska

See Special Report, Geographic Names,  
Arctic Coast, Alaska, 1948 and Report,  
Geographic Names, Arctic Coast, Alaska,  
1949.



H-7758

TIDAL NOTE

The soundings on this survey were reduced to mean lower low water (MLLW), using tides as recorded from observation on the tide staff at Tigvariak Island at Latitude  $70^{\circ} 13.1'$  N; Longitude  $147^{\circ} 10.4'$  W.

The height of mean lower low water above the zero foot mark of the staff was 2.5 feet.

H-7758

Field Survey ARN-2449

Fathometer Corrections

Launch No. 14

Fathometer 119S

Fathometer Depth

Correction

0 - 14.3  
14.4- 90.0

-0.2  
-0.4

See: Special Report, "Fathometer Corrections, Arctic north Party,  
Project CS-320, Basic Surveys, Arctic Coast of Alaska, McClure  
Islands, 1949."

RHC

Form 712  
DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY  
Rev. June 1937

## TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

31 March 1950

Division of Charts: R. H. Carstens

Plane of reference approved in  
6 volumes of sounding records for

HYDROGRAPHIC SHEET 7758

Locality Foggy Island Bay, Arctic Coast, Alaska

Chief of Party: R. A. Earle in 1949  
Plane of reference is mean lower low water, reading  
2.5 ft. on tide staff at Tigvariak Island  
5.6 ft. below B. M. 1 (1949)

Height of mean high water above plane of reference is 0.70 foot.

Condition of records satisfactory except as noted below:

*E. C. McKay*  
*Section*  
Chief, ~~Division of Tides and Currents.~~



GEOGRAPHIC NAMES

Survey No. H-7758

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
<u>Alaska</u>											1
<u>Arctic Coast</u>											2
											3
<u>Beaufort Sea</u>											4
<u>Tigvariak Island</u>											5
<u>Foggy Island Bay</u>											6
<u>Foggy Island</u>											7
<u>Point Brower</u>											8
											9
Following names are approved, if features are shown:											10
											11
<u>Lion Point</u>											12
<u>Reliance Point</u>											13
<u>Kalegosilik River</u>											14
<u>Saviorik River</u>											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

(for title)

(=Arctic Ocean E. of Pt Barrow) use B

(location of tide staff)

Following names are approved, if features are shown:

Names underlined in red are approved  
3-28-50. L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7758 .....

Records accompanying survey:

Boat sheets <sup>1</sup>.....; sounding vols. <sup>6</sup>.....; wire drag vols. ....; bomb vols. ....; graphic recorder rolls <sup>9</sup> envel. ....; special reports, etc. ....

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

Number of positions on sheet	.....	1412
Number of positions checked	.....	74
Number of positions revised	.....	6
Number of soundings revised (refers to depth only)	.....	36
Number of soundings erroneously spaced	.....	152
Number of signals erroneously plotted or transferred	.....	0
Topographic details <i>taking shorelines</i>	Time	<del>0</del> 6
Junctions	Time	0
Verification of soundings from graphic record	Time	4 hrs
Verification by <i>A. B. Mackowitz</i> .....	Total time	96 hrs
	Date	JUNE 2, 1950
Reviewed by <i>Lu Jeschke</i> .....	Time	18 hrs
	Date	1/31/50

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7758

FIELD NO. ARN-2449

Alaska, Arctic North Coast, Foggy Island Bay  
Surveyed in July - September, 1949      Scale 1:20,000  
Project No. CS-320

Soundings:

Control:

808 Fathometer

Sextant fixes on shore signals

Chief of Party - R. A. Earle  
Surveyed by - D. E. Fisher and E. W. Richards  
Protracted by - E. W. Richards  
Soundings plotted by - E. W. Richards  
Verified and inked by - A. B. Markowitz  
Reviewed by - I. M. Zeskind, 31 October 1950  
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with air-photographic surveys T-9347, T-9349 and T-9350 of 1949 before review.

The source of the control is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in adequate agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated, except in inshore areas where the low-water line was not developed because of the low range of tide (0.7 ft.).

The bottom is fairly smooth, except for several shoals and for irregularities which were caused by the gouging of grounded ice.



4. Junctions with Contemporary Surveys

The junctions with H-7756 (1949) on the east and with H-7761 (1949) on the north will be considered in the reviews of those surveys. No other surveys adjoin the present survey.

5. Comparison with Prior Surveys

No prior surveys of this area have been made by this Bureau.

6. Comparison with Arctic Coast Chart 11 (Latest print date 4/7/50)

A. Hydrography

The charted hydrography originates with the present survey before verification. Minor corrections to soundings amounting to 1 ft. have been made on the smooth sheet during verification and review.

B. Aids to Navigation

No aids to navigation are charted in the area of this survey.

7. Condition of Survey

- a. The field plotting was accurately done.
- b. The sounding records and Descriptive Report are complete and comprehensive.
- c. Development of extensive inshore shoal areas was impracticable because of the small range of tide and the draft of the sounding vessels.

8. Compliance with the Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work Recommended

This is a basic survey and no additional field work is recommended. Inasmuch as supplemental instructions of 1950 for Arctic Coast surveys modifies the requirements of inshore hydrography to permit the use of notes covering depths in inshore shoal areas, no additional work to cover the deficiency mentioned in paragraph 7c is recommended.

Examined and approved:

*H. R. Edmonston*  
H. R. Edmonston  
Chief, Nautical Chart Branch

*R. W. Knox*  
R. W. Knox  
Chief, Division of Charts

*L. S. Hubbard*  
L. S. Hubbard  
Chief, Section of Hydrography

*W. M. Scaife*  
W. M. Scaife  
Chief, Division of Coastal Surveys



(Before Verification) Applied to Arctic Coast Cht. #11 MMR March 1950  
" " " " Cht. 9403 HWB 3/1950