

7657

RESTRICTED

Diag'd. on Diag. Ch. No. 9400

Form 504

U. S. COAST AND GEODETIC SURVEY  
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. ARN-2148 Office No. H-7657

LOCALITY

State ALASKA

General locality ARCTIC COAST

Locality EAST OF BARTER ISLAND

1948 Add wk  
1952

CHIEF OF PARTY

H.A.PATON

LIBRARY & ARCHIVES

DATE FEB. 10, 1949

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

7657

FEB 10 1949

Form 537  
(Ed. June 1946)

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.

H-7657

REGISTER No. ARN-2148

*see H-7658  
for Add. WK. 1952*

Field No. H-7657

State Alaska

General locality Artic Coast ~~Barter Island~~

Locality East of Barter I. ~~Arctic Coast of Alaska~~

Scale 1:20,000 Date of survey July, Aug. Sept. 1948

*Add WK  
1952*

Instructions dated 4 February 1948.

Vessel Arctic Shore Party

Chief of party Hubert A. Paton

Surveyed by Don. A. Jones and Lewis V. Evans

Soundings taken by ~~fathometer~~, graphic recorder, ~~hand lead, sound~~

Fathograms scaled by G.A.O., C.H.A., M.J.

Fathograms checked by Vella Altree

Protracted by Leo W. Eason, II

Soundings penciled by Clarence E. Pedersen

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

REMARKS:  
.....  
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DESCRIPTIVE REPORT  
TO ACCOMPANY  
HYDROGRAPHIC SURVEY H-7657  
Field Number ARN 2148

BARTER ISLAND, ALASKA

PROJECT CS 320  
1948

SCALE OF SURVEY: 1-20,000  
Chief of Party: Hubert A. Paton  
In Charge of Sub-party: Horace G. Conerly  
Field Work by: Don A. Jones and Lewis V. Evans.

A. PROJECT:

Authority for this survey is contained in supplemental instructions for Project CS 320 issued by the Director and dated 4 February 1948.

B. SURVEY LIMITS AND DATES:

This survey extended from Longitude  $143^{\circ}08'$ , about 3 miles east of Martin Point, westward to a junction with survey H-7656 (ARN 1148). North of Bernard Spit this westward limit and junction with H-7656 was along Longitude  $143^{\circ}34.5'$ . To the south of Bernard Spit the westward limit and junction with H-7656 is at Longitude  $143^{\circ}31'$  except that all of Akvakniakuk Lagoon south of Latitude  $70^{\circ}07'$  was completed on this survey. Inside Akvakniakuk Lagoon and in the vicinity of the delta at the mouth of the Jago River, the survey was completed into as shoal water as conditions of tide and draft of survey vessel would permit. The northern limit of this survey, at approximate Latitude  $70^{\circ}11.0'$  was determined by the existence of the ice pressure ridge, an impenetrable mass of grounded ice.

Sounding was commenced on 16 July 1948 and continued intermittently through 4 September 1948.

C. VESSELS AND EQUIPMENT:

The survey was executed by personnel of the Arctic Shore Party operating from Coast and Geodetic Survey Base Camp at Barter Island. Chartered Eskimo launches (engine and house installations by Arctic Party personnel) were used for the survey. All soundings were obtained with 808J recording fathometers numbers 119S and 121S.

D. TIDE AND CURRENT STATIONS:

Tidal data for the reduction of soundings was obtained from the Washington Office, and ~~was~~ based on recorded tides at Portable Automatic Tide Gage and at Tide Staff established during the hydrographic season vicinity of Barter Island. See Tidal Note attached.

No Current Stations were occupied because of the close proximity of the ice pressure ridge to shore, and because of the presence of ice floes inside the pressure ridge throughout the entire 1948 open water season.

E. SMOOTH SHEET:

The smooth sheet will be constructed and the reduced soundings plotted by personnel in the Seattle Processing Office. See Processing Office Notes to be attached to this report.

F. CONTROL:

Second and third order triangulation stations were used to control the hydrography on this survey except as noted in the following paragraph. The triangulation was executed by H.A.Paton in 1948. The datum is based on Astronomic Station BARTER ASTRO, 1948.

Hydrographic stations were used to supplement the triangulation and the following unmarked stations were located by transit cuts from triangulation stations. An abstract of the angles may be found in Sounding Volume I, H-7657 page 2.

ABE	GAL	ADO
BIN	BUM	

The remainder of the hydrographic stations were located by sextant cuts and the data for location may be found in Control Volume (Vol. 2, H-7656) accompanying Hydrographic Survey H-7656 (AFN 1148).

G. SHORELINE AND TOPOGRAPHY:

The shoreline used on the boat sheets for this survey was taken from preliminary compilations of nine-lens and AAF tri-metrogon aerial photographs. The adjustments of this shoreline to the control stations plotted on the boat sheets was made previous to the completion of the field inspection of the aerial photographs, and is not in agreement with the field inspection in all cases.

The smooth sheet shoreline is to be added upon the completion of the final topographic compilations from aerial photographs.

*Shoreline added from T-8627 & T-8628 (1949)*

*Revised shoreline on 8627 & 28 and 11039 is ready.*

*7/15/54*

H. SOUNDINGS:

All soundings were obtained by 808J recording fathometers operating on the foot scale. The soundings were scaled and recorded to the nearest one-half foot and were corrected for tide, index, scale, and velocity to the nearest 0.2 foot in accordance with standard practice. See Report on Velocity Corrections, Project CS 320, 1948, Barter Island, Alaska.

I. CONTROL OF HYDROGRAPHY:

Soundings were controlled by sextant fixes on shore objects. No offshore dead reckoning lines were accomplished because of the ice pressure ridge. Three boat sheets were used on this survey: ARN 2148A on scale 1-20,000 was used by Launch No. 10; ARN 2148B same scale by Launch No. 9; and ARN 4148 on scale 1-40,000 was used by Launch No. 10 for the area north of Latitude 70°10.0'. The 1-40,000 scale boat sheet was started for the offshore hydrography, but ice conditions prohibited extension of the survey and all sounding was included on H-7657. The unsatisfactory spacing of sounding lines, the breaks and changes of course were entirely due to ice conditions.

J. ADEQUACY OF SURVEY:

This survey is considered adequate for the area covered particularly considering the possible use of hydrographic information on this coast of Alaska. The development on this survey of the low water line in the extensive shoal areas off river entrances was considered impractical in as much as native navigators could not be expected to attempt beach landings in these extremely shoal areas. There is little or no canoe or pulling-boat traffic in these rivers. The deeper channels that might be cut through the deltas during periods of ice break-up and high river discharge are continually changing. Silting due to tidal action and low river discharge during the latter part of the open water season is believed to obliterate these cut channels.

The ice pressure<sup>ridge</sup> failed to move appreciably during the open water season. Several unsuccessful attempts were made to follow open water leads through the ridge. Ice-bergs and floes of various size moved back and forth in the area between the pressure ridge and the barrier sand reefs. Occasionally portions of these floes would find their way into the lagoons. Under such conditions the execution of hydrography was limited. Sounding lines were run as nearly on the desired spacing as ice conditions would permit. No hydrography could be carried north of the southern limit of the main solid mass of the pressure ridge, which at the end of the season was about Latitude 70°11.0'. Many large bergs were grounded south of this Latitude.

No additional development is believed to be necessary.

### K. CROSSLINES:

No definite system of crosslines was run on this survey, although approximately 8 percent of the lines run across the regular system of sounding lines. See Processing Office Notes on crosslines.

### L. COMPARISON WITH PRIOR SURVEYS:

No prior detailed surveys of this area have been accomplished. No comparisons could be made.

### M. COMPARISON WITH CHART 9400:

The only chart of the area, U.S.C&GS No. 9400 is a small scale sailing chart and does not show the area in sufficient detail to make comparison.

### N. DANGERS AND SHOALS:

Bernard Spit, the sand reef beginning about one mile northeast of Barter Island, is the westerly reef of a low barrier reef extending east and west almost continuously across the area of this survey. The elevation of the reef is generally less than 5 feet above HW. There are no extensive shoals extending seaward from the reef. There is a break in the reef of about 2 miles of open water, beginning at a point,  $2\frac{1}{2}$  miles east of Manning Point, at Latitude  $70^{\circ}08'$  and Longitude  $143^{\circ}52.2'$ . Also, a second break in the reef of about  $\frac{1}{2}$  mile of open water at Latitude  $70^{\circ}08.1'$  and Longitude  $143^{\circ}12.4'$ ,  $1\frac{1}{2}$  miles northeast of Martin Point. These openings contain shoals dangerous to small boats and the approaches to the openings from seaward are shoal in the immediate vicinity of the terminations of the barrier reefs.

Akvakniakvik Lagoon, the lagoon separating the barrier sand reefs from the mainland, is in general free of shoals or dangers to boats of shallow draft except the following:

1. A sand shoal surrounded by deeper water extends northwest  $\frac{1}{4}$  mile from a point on the mainland, south side of the lagoon, at Latitude  $70^{\circ}05.3'$  and Longitude  $143^{\circ}33.8'$ . This shoal bares at low water and may generally be detected by breakers at other stages of the tide.
2. A shoal area exists off the entrance of a small river in the extreme southwest part of the lagoon at Latitude  $70^{\circ}04.8'$  and Longitude  $143^{\circ}40.0'$ .

3. A shoal extends northeast  $\frac{1}{2}$  mile from a bare sand spit on the south side of the lagoon at Latitude  $70^{\circ}05.6'$  and Longitude  $143^{\circ}23.4'$ .

4. Extensive shoals cover the entire lagoon area in the vicinity of the entrance of the Jago River at Latitude  $70^{\circ}07'$  and Longitude  $143^{\circ}14'$ . For a distance of about one mile radius to the west, north and northeast from Martin Point this area is bare during extreme low tides.

No rock or driftwood obstructions were observed in the area covered by this survey.

0. COAST PILOT INFORMATION:

*Noted 2/25/49  
jam*

The coast line from Barter Island to 3 miles east of Martin Point varies somewhat in character and appearance. The mainland is in general low flat tundra with 5 to 10 foot bluffs along the lagoon. Small streams discharging into the lagoon have cut weathered (matured) valleys into the tundra plane. Jago River is a broad shallow river which empties into the lagoon in the vicinity of Martin Point. Its flood plane through the tundra is outlined by cut banks and bluffs. Offshore there is a barrier sand reef extending almost continuously in an east and west direction across the area of this survey. The reef is separated from the mainland by Akvakniakvik Lagoon.

MANNING POINT is a high prominent bluff inside Akvakniakvik Lagoon,  $1\frac{1}{2}$  miles east of Barter Island. The most prominent part of the point (the northerly one mile) appears to be an island, but this high bluff is connected to the mainland by a low narrow sand spit.

MARTIN POINT is a low point of irregular relief projecting out from the mainland on the west side of the mouth of the Jago River. It consists of dune-like mounds of earth and tundra with elevations up to about 30 feet. It is entirely surrounded by shoal delta of the Jago River.

BERNARD SPIT is the low sand spit or barrier reef beginning about one mile northeast of Barter Island and extending for 4 miles in a south-east direction. This spit is less than 5 feet elevation and is covered by scattered driftwood. The spit was cut through during a storm in August 1948 at a point 2 miles northeast of Manning Point. This opening was about 100 meters wide and was bare for the entire width of the opening during extreme low waters.

An easterly barrier reef (no name) begins at a point 2 miles northwest of Martin Point and extends in a northeast direction for  $1\frac{1}{2}$  miles where it changes direction to the southeast and continues beyond the limits of this survey. There is one break in this reef that is within the area of the survey. It is an opening of about  $\frac{1}{2}$  mile located  $1\frac{1}{2}$  miles northeast of Martin Point.

Small boats drawing 3 feet or less may proceed within a few yards of the beach along the seaward side of the barrier sand reefs. The lagoon side of the reefs is shoaler, but small boats may proceed safely within a relative short distance of the HWL.)

Akvakniakvik Lagoon may be entered safely by small boats drawing up to 4 feet through the break in the barrier reef  $2\frac{1}{2}$  miles northeast of Manning Point. The passage should be made with extreme caution and should be made close to the west side of the opening. Good anchorage in 10 feet of water in soft sand and mud bottom may be found inside the lagoon. Boats are cautioned to remain west of the entrance while in the lagoon to avoid the shoal delta area surrounding Martin Point.

Small boats drawing 4 feet may enter the lagoon through the opening in the barrier reef  $1\frac{1}{2}$  miles northeast of Martin Point. Entrance should be made close to the right or left sides to avoid the shoals in the middle of the entrance. Good anchorage in 6 feet of water with soft sand and mud bottom may be found immediately inside the entrance and close to the barrier reefs.

**P. AIDS TO NAVIGATION:**

There are no aids to navigation in the area covered by this survey.

**Q. LANDMARKS FOR CHARTS:**

See special report.

*Chart Letter 940 (1948)*

**R. GEOGRAPHIC NAMES:**

See special report.

*Special Report # 118 (1948)*

**S. TABULATION OF APPLICABLE DATA:**

1. Triangulation records forwarded to Washington July to December 1948.
2. Tidal Data, Barter Island, forwarded to Washington October 1948.
3. Report on Velocity Corrections forwarded to Washington December 1948
4. Coast Pilot Notes forwarded to Washington November 1948. *✓ Jam*
5. Landmarks for Charts forwarded to Washington November 1948.
6. Report on Geographic Names to be submitted.



T. ATTACHMENTS:

1. Abstract of Velocity Corrections.
2. Tidal Data Sheet.
3. List of Signals.
4. Statistics for this survey.
5. Approval Sheet.
6. Report on Smooth Plotting to be inserted by Seattle Processing Office.

STATISTICS FOR HYDROGRAPHIC SURVEY H-7657  
(Field Number ARN 2148)

Launch No.	Date 1948	Volume Number	Day Letter	Number Pos.	Stat.Mile Sounding
10	16 July	1	a blue	57	11.3
10	21 "	1	b "	159	37.7
10	23 "	2	c "	56	8.4
10	26 "	2	d "	174	35.9
10	27 "	3	e "	123	23.9
10	28 "	3 & 4	f "	205	47.1
10	30 "	4 & 5	g "	177	38.5
10	31 "	5	h "	160	32.9
10	3 Aug.	5 & 6	j "	185	35.7
10	4 "	6	k "	98	18.7
10	16 "	7	l "	128	28.3
10	21 "	7 & 8	m "	148	33.3
9	26 July	1	a green	175	26.1
9	27 "	1	b "	101	19.8
9	2 Aug.	2	c "	55	12.1
9	3 "	2	d "	113	23.7
9	4 "	2	e "	34	6.9
10	23 Aug.	9	aa blue	136	41.8
10	24 "	9	bb "	37	11.5
10	4 Sept.	9	cc "	28	8.7

Total                      2349                      502.3

Total Area                48.9 sq. stat. mile.

H-7657

TIDAL NOTE

The soundings on this survey were reduced to mean lower low water. The soundings inside the lagoon were reduced using tides as recorded by portable automatic tide gage at Barter Island, Latitude 70 08.17' and Longitude 143 35.48'. All soundings off-shore from the barrier sand reefs were reduced using tides as observed at the tide staff, Barter Island, Latitude 70 08.20' and Longitude 143 35.83'.

The height of mean lower low water above the 0 foot mark of the staffs varied throughout the season because of the damage sustained by the staff supports on account of ice.

H-7656

APPROVAL SHEET

The boat sheet and field records of this survey are approved as transmitted to the Seattle Processing Office for smooth plotting. The work of this survey was inspected daily and suitable suggestions made to the hydrographers.

*Horace G. Conerly*  
Horace G. Conerly,  
Lt. Comdr., C&GS,  
In-charge Of Subparty.

Approved and forwarded:

*Hubert A. Paton*  
Hubert A. Paton,  
Comdr., C&GS.  
Chief of Arctic Project.

ENCLOSURE 1

STATISTICS

26 HYDROGRAPHIC SURVEY H-7657, H-7658  
FIELD NO. ARE-4152

<u>LAUNCH NO.</u>	<u>DATE</u>	<u>VOL. NO.</u>	<u>DAY LETTER</u>	<u>POSITIONS</u>	<u>STAT. MILES</u>
1	6/14/52	1	a (green)	4	
1	8/29/52	1	b (green)	8	5.9
1	8/30/52	1	c (green)	34	17.1
			TOTALS	<u>46</u>	<u>23.0</u>

Total area 1.5 Sq. Stat. Miles

26  
1.8  
8

ENCLOSURE 2

TIDAL NOTE

HYDROGRAPHIC SURVEY H-7657, H-7658  
FIELD NO. ARE-1152

The soundings of this survey were reduced to mean lower low water on the portable automatic tide gage at Barter Island, Alaska.

Lat.  $70^{\circ} 08.2N$

Long.  $143^{\circ} 35.5W$

Mean lower low water on the Barter Island staff read 2.9 feet.

28  
19  
8

20  
16

LIST OF SIGNALS

HYDROGRAPHIC SURVEY H-7657, H-7658  
FIELD NO. ARE-4152

SIGNAL

SOURCE

Ant	H-7656
ASTRO	BARTER ASTRO, 1948
Don	H-7658 (original)
LST	Hydro (Volume 1)
NORTH	BARTER NORTH BASE, 1948
VENUS	VENUS, 1948
WEST	BARTER RADIO MAST WEST SHACK, 1952

26  
15  
- 11

ENCLOSURE 4

APPROVAL SHEET

HYDROGRAPHIC SURVEY H-7657, H-7658  
FIELD NO. ARE-4152

The boat sheet and field records of this survey  
are approved as transmitted to the Washington Office  
for smooth plotting. The work was done by the Officer  
in Charge of the EAST UNIT.

  
Max G. Ricketts  
Commander, USC&GS  
Chief, Arctic Field Party



H-7657 - (ARN-2148)

ARCTIC COAST OF ALASKA - BARTER ISLAND

PROCESSING OFFICE NOTES

Smooth Sheet

The projection is hand made on "Whatman" paper. Triangulation was by the hydrographic party in the current season. Datum is Barter Astro 1948.

Shoreline

The only shoreline available is that on the boat sheet which is from preliminary sources. No shoreline is shown on the smooth sheet. *Shoreline added in Wash. Cf. from T-8627 & T-8628 (1948).*

Irregular bottom

East of Meridian  $143^{\circ}18'$ , note the irregularities in the depths within half a mile of the shore. The fathograms are clear and well defined. The profiles are jagged and broken as in rocky bottom. It is presumed to be caused by the gouging of grounded ice in sand or mud bottom.

Crossings

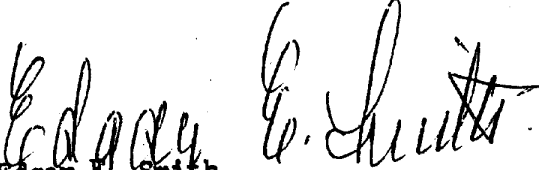
The crossings are good.

Fathograms

These were read and rescanned by the field party. Critical or doubtful soundings have been re-examined by the plotter.

31 January 1949.

Respectfully submitted,

  
Edgar E. Smith,  
Cartographic Engineer,  
Seattle Processing Office.

H-7657 - (ARN-2148)

GEOGRAPHIC NAMES LIST

BARTER ISLAND

<sup>M</sup>BANNING POINT

MARTIN POINT

AKVAKNIAKVIK LAGOON

JAGO RIVER

BERNARD HARBOR

BERNARD SPIT

BEAUFORT SEA

List of Signals

ARN 2148 H - 7657

FRIGID 1948  
 Ref (R.M. No.1 FRIGID 1948)  
KAKTO 1948  
 Barter Radio Mast, West shack 1948  
 Barter Flagpole 1948  
 Barter Radio Mast, Tallest 1948  
 Mast 1948  
 BARTER ASTRO 1948  
 BARTER ASTRO AZIMUTH 1948  
CHRISTMAS 1948  
 New 1948  
 Ice 1948  
BARTER NORTH BASE 1948  
 Nod 1948  
LANTERN 1948  
RSS 1948  
 STRIKE 1948  
 NCMEN 1948  
MARTIN 1948  
Robin 1948  
Pound 1948

Hydrographic stations

Bin	Vol 1	pg. 68			
Ado	Vol 1	pg 68			
Gal	Vol 1	pg 68			
Abe	Vol 1	Pg 68	(Also Vol. on	"Hydro Fix Data"	p.4)
Bum	Vol 1	" 69			
Fog	Vol 9	" 5			
Ban	" 10	" 49			
Leo	"Hydro Fix Data"	Vol. pg. 3	(vol. 8	of H-7656	
Box	" "	" "	" "	" "	5
Axe	" "	" "	" "	" "	5
Ant	" "	" "	" "	" "	6
Hag	" "	" "	" "	" "	6
Ace	" "	" "	" "	" "	6
Bah	" "	" "	" "	" "	7
Guy	" "	" "	" "	" "	7
Eon	" "	" "	" "	" "	7
Owl	" "	" "	" "	" "	8
Hut	" "	" "	" "	" "	8

List of Signals

ARN 2148

H-7657

Rex  
Fat  
Cop  
Her  
Don  
Few

Scaled from ARN 2248  
Cuts in Hydro Fix Data volume. (vol. 8 of H-7656)

Quo  
Gam  
Ego  
Doc  
Hit

"Hydro Fix Data" volume, pgs. 9&10  
Vol. 8 of H-7656

TIDE NOTE FOR HYDROGRAPHIC SHEET

February 21, 1949

~~Division of Hydrography and Topography~~

Division of Charts: R. H. Carstens

Plane of reference approved in  
11 volumes of sounding records for

HYDROGRAPHIC SHEET 7657

Locality-Barter Island, Arctic Coast

Chief of Party: H. A. Paton in 1948  
Plane of reference is mean lower low water, reading  
3.0 ft. on tide staff at Barter Island (Bernard Harbor)  
53.3 ft. below B. M. 1 (BARTER ASTRO 1948)

Height of mean high water above plane of reference is  
0.50 feet.

Condition of records satisfactory except as noted below:

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

# GEOGRAPHIC NAMES

Survey No.H-7657

Name on Survey	Sources										
	A	B	C	D	E	F	G	H	K		
<u>Alaska</u>											1
<u>Arctic Coast</u>											2
<u>Beaufort Sea</u>									USGB		3
<u>Barter Island</u>									"		4
<u>Akvakniakvik Lagoon</u>											5
<u>Manning Point</u>											6
<u>Bernard Spit</u>											7
<u>Bernard Harbor</u>											8
<u>Martin Point</u>									USGB		9
<u>Jago River</u>											10
											11
											12
											13
											14
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											25
											26
											27

Names are based on Special Report No. 118 (1948). Those underlined in red are approved. 3/8/49 L H

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7657...

Records accompanying survey:

Boat sheets .3...; sounding vols. .11...; wire drag vols. ....;  
 bomb vols. ....; graphic recorder rolls 9.enval.  
 special reports, etc. ....  
 .....

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

Number of positions on sheet		2349.
Number of positions checked		..155.
Number of positions revised		...20.
Number of soundings revised (refers to depth only)		...183.
Number of soundings erroneously spaced		...234.
Number of signals erroneously plotted or transferred		.....1.
Topographic details	Time	....19.
Junctions	Time	....9.
Verification of soundings from graphic record	Time	....12.

Verification by... *William Klein* ... Total time .270.. Date .9-28-49

Reviewed by... *J. Jeske* ... Time .16... Date 11-16-49



DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7657

FIELD NO. ARN-2148

Alaska, Arctic Coast, East of Barter Island  
Surveyed in July - September, 1948      Scale 1:10,000  
Project No. CS-320

Soundings:

Control:

808 Fathometers

Sextant fixes on shore signals

Chief of Party - H. A. Paton  
Surveyed by - D. A. Jones, L. W. Evans; H. C. Conerly  
Protracted by - L. W. Eason, II  
Soundings plotted by - C. E. Pedersen  
Verified and inked by - W. Klein  
Reviewed by - I. M. Zeskind, November 15, 1949  
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with air photographic surveys T-8627 (1949) and T-8628 (1949).

The source of the control is adequately described in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in adequate agreement.

3. Bottom Configuration and Depth Curves

The surveyed area is divided by long narrow barrier islands which lie in a predominantly east and west direction. The area south of the barrier islands is made up of a lagoon and a river delta. The area north of these islands is marked by an irregular bottom inshore from 30-ft. depths and a smooth bottom beyond these depths. The bottom irregularities as mentioned in the Descriptive Report, are caused by gouging of grounded ice.

The usual depth curves were adequately delineated, except in inshore areas where the low-water line was not developed because of the low range of tide. Off the barrier island between triangulation stations ICE and NOD, delineation of portions of the 12-ft. curve is also incomplete.

4. Junctions with Contemporary Surveys

An adequate junction was effected with H-7656 (1948) on the west. No contemporary survey on the east is registered at the present time. On the north the present survey extends to the limit of the 1948 ice ridge.

5. Comparison with Prior Surveys

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

6. Comparison with Arctic Chart No. 7 (Print date 5/16/49)

a. Hydrography

This preliminary chart was compiled from 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 the Survey

a. The field plotting was accurately done.

b. The sounding records and Descriptive Report are complete and comprehensive.

c. The extensive shoal areas off the entrance to the Jago River were not surveyed, as mentioned in the Descriptive Report, because of the impracticability of beach landings. The possible channels through this delta area are considered to change during each season of the year.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions, except as noted in paragraph 3.

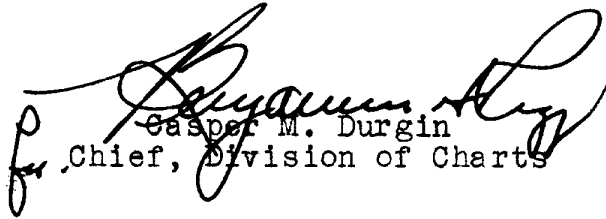
9. Additional Field Work

This is a basic survey and no additional field work is recommended. The deficiency noted in paragraph 3 is mentioned only as a matter of record.

Examined and approved:



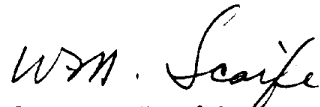
H. R. Edmonston  
Chief, Nautical Chart Branch



Casper M. Durgin  
for Chief, Division of Charts



K. G. Crosby  
Chief, Section of Hydrography



W. M. Scaife  
Chief, Division of Coastal Surveys

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coast and Geodetic Survey~~

9 December 1952

Division of Charts: R. H. Carstens

Plane of reference approved in 1  
volumes of sounding records for

*Insert in H-7657*

HYDROGRAPHIC SHEET

7657-58 Add. Wk.

*1952*

Locality North Arctic Coast, Alaska

Chief of Party: M. G. Ricketts in 1952

Plane of reference is mean lower low water, reading

2.9 ft. on tide staff at Barter Island

54.5 ft. below B. M. 1 (1948)

Height of mean high water above plane of reference is 0.6 foot.

Condition of records satisfactory except as noted below:

*E. C. McKay*

Section of Tides

Chief, Division of Tides and Currents.

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7657 & 7658 Add. Wk. 1952

Records accompanying survey:

Boat sheets ...<sup>1</sup>.; sounding vols. ...<sup>1</sup>.; wire drag vols. ....;  
 bomb vols. ....; graphic recorder rolls <sup>1</sup> Env. ....;  
 special reports, etc. <sup>1</sup> Descriptive Report; .....  
 .....

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

Number of positions on sheet	.....	46
Number of positions checked	.....	
Number of positions revised	.....	
Number of soundings revised (refers to depth only)	.....	
Number of soundings erroneously spaced	.....	
Number of signals erroneously plotted or transferred	.....	
Topographic details	Time	.....
Junctions	Time	.....
Verification of soundings from graphic record	Time	...1 hr.

Smooth-plotted and verified in Wash. Office

Verification by *[Signature]* ..... Total time 15 Date 3-27-53  
 Reviewed by *[Signature]* ..... Time 3 Date 3-30-53

DESCRIPTIVE REPORT TO ACCOMPANY  
ADDITIONS TO HYDROGRAPHIC SURVEY H-7657, H-7658  
(ORIGINAL FIELD NO. ARN-2248)  
(NEW FIELD NO. ARE-4152)  
PROJECT CS-320 - 1952  
SCALE 1:20,000 (ORIGINAL), 1:40,000 (NEW)

*Duplicate Copy of  
this Desc. Rpt.  
filed with H-7658*

CHIEF OF PARTY - - - - - MAX G. RICKETTS  
IN CHARGE OF SUB-PARTY - - - - - GLENN W. MOORE  
FIELD WORK BY - - - - - GLENN W. MOORE

A: PROJECT

Authority for this survey is contained in Supplemental Instructions for Project CS-320 dated 4 February 1948 to and including 15 February 1952.

B: SURVEY LIMITS AND DATES

The survey is of some of the water north of the 1948 hydrography north of Barter Island. On the 14th of June the center of the flying bridge of abandoned LST was determined by hydrographic methods. Hydrography was accomplished on 29 and 30 August.

C: VESSELS AND EQUIPMENT

Launch No. 1 was used to extend this survey with 808 graphic depth recorder No. SG 135, using an outboard fish. The turning radius of Launch No. 1 is about 15 meters.

D: TIDE AND CURRENT STATIONS

Portable automatic tide gage No. T-297 was operating at Barter Island during the hydrography and the soundings were reduced to mean lower low water on this gage. Tidal data for the reduction of soundings were obtained from the Washington Office. No currents were observed.

E: SMOOTH SHEET

In accordance with the Director's letter 839-bdh dated 2 October 1952 the field work has been processed and forwarded to the Washington Office for smooth plotting.

F: CONTROL STATIONS

All control is based upon the 1948 triangulation of Hubert A. Paton and is on the Barter Island 1948 Datum.

G: SHORELINE AND TOPOGRAPHY

No shoreline is shown upon the boat sheet. Shoreline compilation Project CS-370 covers the area.

H: SOUNDINGS

Soundings were taken with an 808 Depth Recorder using 800 fathom per second reeds. In accordance with the Director's letter 21/MEK dated 21 June 1951; subject Fathometer Corrections, Alaska, no corrections were applied for velocity. *Fath. corrections were applied.*

I: CONTROL OF HYDROGRAPHY

The hydrography is controlled by visual 3-point fixes.

J: ADEQUACY OF SURVEY

This survey adds to the 1948 work.

K: CROSSLINES

Crossings with the 1948 work are in good agreement.

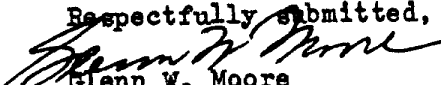
L: COMPARISON WITH PRIOR SURVEYS

The survey is in good agreement with the 1948 work.

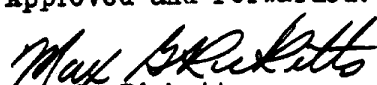
Z: TABULATION OF APPLICABLE DATA

1. Hydrographic Surveys H-7658 and H-7657 and pertinent data submitted in 1948.
2. Attached to this report:
  - (a) Statistics
  - (b) Tidal Note
  - (c) List of Signals
  - (d) Approval Sheet

Respectfully submitted,

  
Glenn W. Moore  
Lt. Comdr., USC&GS

Approved and Forwarded:

  
Max G. Ricketts  
Commander, USC&GS  
Chief, Arctic Field Party

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7657 Add. Wk. & H-7658 Add. Wk. FIELD NO. -----

Alaska, Arctic Coast, Vicinity of Barter Island

Project No. CS-320

Surveyed - June - August, 1952

Scale 1:20,000

Soundings:

808 Fathometer

Control:

Sextant fixes on shore signals

Chief of Party - M. G. Ricketts

Surveyed by - G. Moore

Protracted by - I. M. Zeskind

Soundings plotted by - I. M. Zeskind

Verified and inked by - I. M. Zeskind

Reviewed by - I. M. Zeskind, 30 March 1952

Inspected by - R. H. Carstens

1. Scope

This additional work was done to cover the unsurveyed area in the vicinity of lat.  $70^{\circ} 09' N$ , long.  $143^{\circ} 47' W$ , on H-7658 (1948) and to provide a crossline in the vicinity of lat.  $70^{\circ} 11' N$ , long.  $143^{\circ} 30' W$ , on H-7657 (1948).

2. Results

The survey adequately covers the unsurveyed area on H-7658. Depths on this additional work are in agreement with depths on the 1948 work.

3. Comparison with C.P. dated 3-27-53 of Arctic Coast Chart No. 7

The additional work was applied to the chart prior to verification and review. Minor revisions of 1-2 ft. were made during the verification and review of the additional work.

I. M. Zeskind





