

7979

RESTRICTED
SECURITY INFORMATION
CONFIDENTIAL

Diag. Cht. No. 9400

CS-320

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. ARE - 2152 Office No. H-7979

LOCALITY

State ALASKA

General locality ARCTIC COAST

Locality TAPKAURAK LAGOON

19~~7~~ 52

CHIEF OF PARTY

M. G. Ricketts

LIBRARY & ARCHIVES

DATE

B-1870-1 (1)

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

621621

RESTRICTED
SECURITY INFORMATION

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-7979

Field No. ARE-2152

State ALASKA

General locality NORTH ARCTIC COAST

Locality TAPKAURAK AND ~~CRUCIALIK~~ LAGOONS (GRIFFIN POINT)

Scale 1:20,000 Date of survey 1 Aug. to 29 Aug. 1952

Instructions dated 1 February 1952

Vessel ARCTIC EAST PARTY

Chief of party MAX G. RICKETTS

Surveyed by H.L.R.

Soundings taken by fathometer, ~~graphic recorder, hand lead, wire~~ Fathometer

Fathograms scaled by J.F.B.

Fathograms checked by D.V.H.

Protracted by C.W.M.

Soundings penciled by C.W.M.

Soundings in ~~fathoms~~ feet at ~~MLLW~~ MLLW and are based on a velocity of sound of 800 fm/sec

REMARKS: _____

ARE

PROGRESS SKETCH

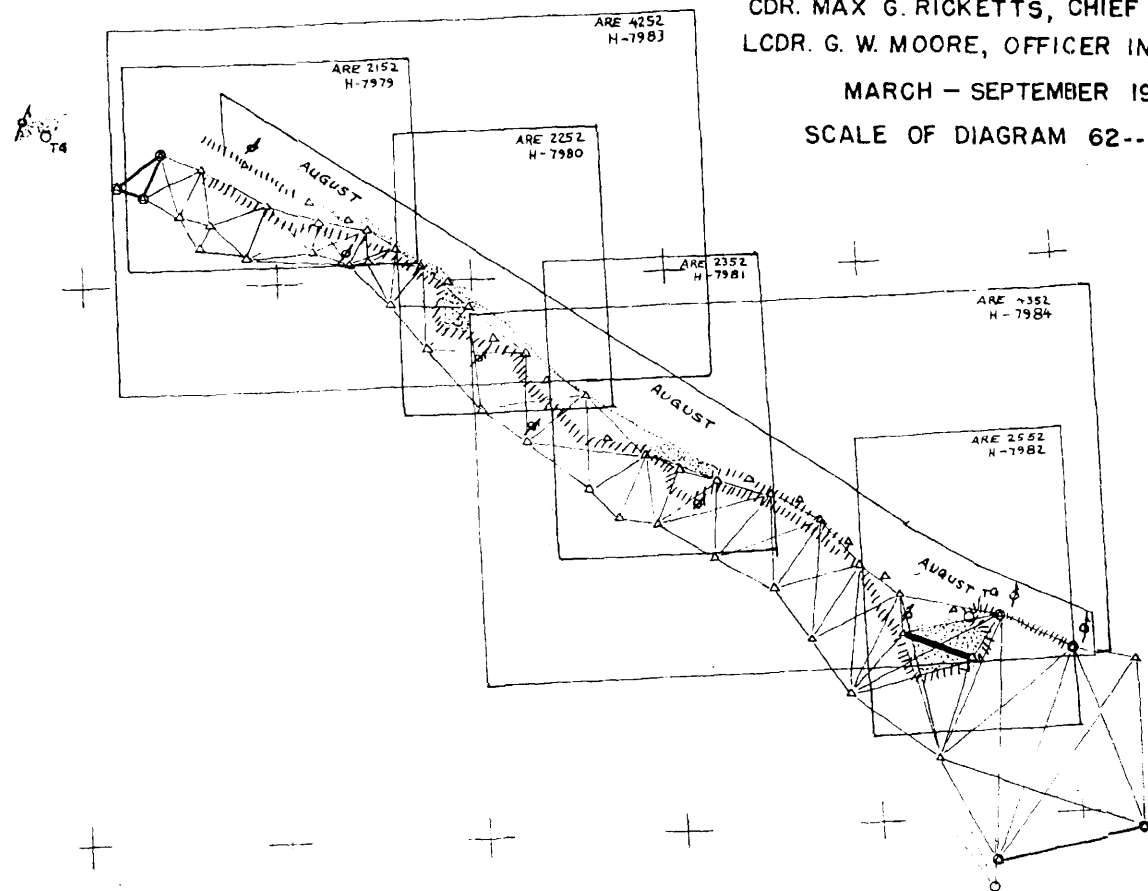
PROJECT CS-320

COMBINED OPERATIONS, ARCTIC COAST
BARTER ISLAND, ALASKA

CDR. MAX G. RICKETTS, CHIEF OF PARTY
LCDR. G. W. MOORE, OFFICER IN CHARGE

MARCH - SEPTEMBER 1952

SCALE OF DIAGRAM 62--63



70° 30'

70° 00'

69° 30'

145° 00'

144° 00'

143° 00'

142° 00'

141° 00'

70° 00'

69° 30'

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-7979 (FIELD NO. ARE-2152)
NORTH ARCTIC COAST OF ALASKA
TAPKAURAK AND ORUKTALIK LAGOONS ✓
PROJECT CS-320 SCALE 1:20,000

CHIEF OF PARTY MAX G. RICKETTS
OFFICER IN CHARGE, EAST UNIT GLENN W. MOORE
HYDROGRAPHER H.L. RUNGE

A: PROJECT

The authority for this survey is contained in Supplemental Instructions for Project CS-320 dated 1 February 1952.

B: SURVEY LIMITS AND DATES

This survey covers the area on the North Arctic Coast inside TAPKAURAK and ORUKTALIK LAGOONS, about eight miles east of Barter Island. There are no prior surveys in this area. Contemporary Survey H-7983 adjoins this survey to the north on the outside coast.

Hydrography was started on the 1st of August 1952 and completed on the 29th of August 1952.

C: VESSELS AND EQUIPMENT

Launch Number 13, a converted 35-foot Navy Rearming Boat equipped with an 808J type portable depth recorder numbered 121-S with outboard fish, was used to execute this survey.

The turning radius of Launch No. 13 is about 7 meters. Hydrography was accomplished at speeds varying from 1000 to 1900 RPMs. The speed at 1900 RPMs was approximately $7\frac{1}{2}$ knots.

The launch based at Humphrey Bay Camp during this survey.

D: TIDE AND CURRENT STATIONS

Tidal reducers for this sheet were taken from the data obtained at the portable automatic tide gage on Barter Island - Latitude $70^{\circ} 08.2'N$, Longitude $143^{\circ} 35.3'W$. Time and range factors were not applied to the tidal data in reducing the soundings.

There were no current stations observed on this sheet.

E: SMOOTH SHEET

The projection was made by the Washington Office and was originally intended to be used as a boat sheet. It was not needed during the field season and after being checked it was felt to be adequate for use as a smooth sheet.

The control was plotted and checked by personnel of the Arctic Party.

F: CONTROL STATIONS

Basic control for this survey was established in the 1948 Triangulation by H.A. Paton and the 1952 Triangulation by M.G. Ricketts. Both surveys are on the 1948 Barter Astro Datum and of second-order accuracy.

Hydrographic stations Log, Tit and Raf were located by sextant angles taken at the stations.

G: SHORELINE AND TOPOGRAPHY

Part of the east end of Tapkaurak Spit was located by estimated distances by the hydrographer.

Positions ³⁷3Ac - ⁴²37c were done by LCM "RED" on H-7983 (ARE-4252) and plotted on this sheet in order to locate the shoreline; however, the record books were forwarded to Washington and the smooth plotter was not able to plot the estimated distances.

Not used
In substantial agreement with the provisional shoreline

The sand spit from triangulation station POUND to signal Tap was controlled by aerial photographs. This was done by the photogrammetrist who walked the beach and identified the stations and signals on the photographs and measured distances to the MHWL on both the lagoon and sea sides from each station.

The aerial photographs are being compiled by the Portland Photogrammetric Office and were not available when the sheet was plotted.

see review for source of shoreline

H: SOUNDINGS

Soundings were obtained by an 808J type recording fathometer equipped with calibrated velocity reeds of 800 fathoms per second. Refer to "Special Report, Fathometer Corrections, 1952".

filed with H-7983

I: CONTROL

Control of hydrography was entirely by sextant fixes many of which were very weak especially in the ~~west~~^{east} end of the survey. Considerable time was spent by the smooth plotter trying to adjust and fit these weak fixes.

J: ADEQUACY OF SURVEY

This survey is considered adequate except for the development of ORUKTALIK ENTRANCE where the depth curves cannot be adequately drawn.

development is considered adequate for the area.

K: CROSSLINES

About one percent crosslines were run and satisfactory crossings were made.

L: COMPARISON WITH PRIOR SURVEYS

There are no previous surveys in this area.

M: COMPARISON WITH CHARTS

There are no charts of any value of this area.

N: DANGERS AND SHOALS

These lagoons are very shallow and the only entrance is ORUKTALIK ENTRANCE where five feet can be carried. The average depth is about 7' and the only shoal is in Latitude $70^{\circ} 04.8'$, Longitude $142^{\circ} 59.6'$ where a small sand bar runs NE SW with a least depth of one foot.

O: COAST PILOT

Refer to Coast Pilot Report, Arctic Party, 1952.

P: AIDS TO NAVIGATION

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

Q: LANDMARKS FOR CHARTS

There are no landmarks for charts in this area.

R: GEOGRAPHIC NAMES

Geographic Names were penciled on this sheet where the relief could be identified.

Refer to report, Landmarks for Charts, 1952, previously submitted.

S: TABULATION OF APPLICABLE DATA

The following applicable reports have been forwarded under separate cover:

1. Fathometer Report, 1952 *filed with H-7983*
2. Coast Pilot Notes, 1952
3. Geographic Names Report, 1952
4. List of Geographic Positions, 1952

T: ATTACHMENTS

1. List of Signals
2. Statistics
3. Tidal Note
4. Approval Sheet
5. Progress Sketch Showing Sheet Layout

Respectfully submitted,

Curtis W. Mooney

Curtis W. Mooney
Ensign, USC&GS

APPROVED & FORWARDED:

Max G. Ricketts

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

ATTACHMENT 1

LIST OF SIGNALS

HYDROGRAPHIC SURVEY H-7979
FIELD NO. ARE-2152

<u>SIGNAL</u>	<u>SOURCE</u>
AMBER	AMBER 1952
Are	1952 Triangulation
Cab	" "
CORWIN	CORWIN 1952
GRAVES	GRAVES 1952
GRIF	GRIF 1952
GRIFFIN	GRIFFIN 1952
Log	Volume 1, H-7979
POKOK	POKOK 1952
POUND	POUND 1948
Raf	Volume 1, H-7979
SPIT	SPIT 1952
Tap	1952 Triangulation
Tit	Volume 1, H-7979

ATTACHMENT 2

STATISTICS

HYDROGRAPHIC SURVEY H-7979
FIELD NO. ARE-2152

<u>LAUNCH NO.</u>	<u>DATE</u> 1952	<u>VOL.</u> NO.	<u>DAY</u> LTR.	<u>NO. OF</u> POSITIONS	<u>STAT.</u> MILES SDG.	<u>HAND</u> LEAD
13	1 Aug.	I	a	97	21.3	0
13	2 Aug.	I	b	111	27.6	0
13	6 Aug.	I & II	c	119	24.1	0
13	7 Aug.	II	d	39	5.4	1
13	8 Aug.	II	e	102	25.9	0
13	12 Aug.	II	f	13	2.0	0
13	14 Aug.	II	g	5	Shoreline Data	0
13	29 Aug.	II	h	20	3.1	0
TOTALS				506	109.4	1

TOTALS FOR THIS SHEET

Number of Positions 506
Statue Miles of Sounding Line 109.4
Number of Hand Lead Soundings 1
Square Statute Miles of Sounding 6.0

ATTACHMENT 3

TIDAL NOTE

HYDROGRAPHIC SURVEY H-7979
FIELD NO. ARE-2152

Tidal data for this survey was taken from the portable automatic tide gage located at Barter Island, Latitude $70^{\circ} 08.2'N$ and Longitude $143^{\circ} 35.3'W$.

Mean Lower Low Water on the Barter Gage was 2.9' above the zero of the tide staff.

Time and height corrections were found negligible in this area and were not applied.

ATTACHMENT 4

APPROVAL SHEET

HYDROGRAPHIC SURVEY H-7979
FIELD NO. ARE-2152

The sheet and records have been examined and are approved.

Attention is again called to the shoreline information available in the records of Sheet H-7983 (ARE-4252), Positions 37c - 42c. These records have been transmitted to the Washington Office.

*Not used.
In substantial
agreement with
the provisional
shoreline.*

The channel into the lagoon at Oruktalik Entrance is quite narrow and although development of the area is not complete it is believed that the survey shows the best channel in sufficient detail. Reference to the photographs and shoreline compilation will further show the restricted nature of this entrance.

*Development
is considered
adequate.*

The survey is considered adequate for the area.

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

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

28 January 1953

Division of Charts: R. H. Carstens

Plane of reference approved in 2
volumes of sounding records for

HYDROGRAPHIC SHEET 7979

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.

GEOGRAPHIC NAMES

Survey No. H-7979

Name on Survey	On Chart	On previous survey	On U. S. quadrangle	From local	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List	
	No.	No.	Maps	information					
A	B	C	D	E	F	G	H	K	
<u>ALASKA</u>									1
<u>ARCTIC OCEAN</u>									2
<u>GRIFFIN POINT</u>		✓							3
<u>ORUKTALIK ENTRANCE</u>		✓							4
<u>ORUKTALIK LAGOON</u>		✓							5
<u>POKOK</u>									6
<u>POKOK LAGOON</u>									7
<u>TAPKAURAK ENTRANCE</u>		✓							8
<u>TAPKAURAK LAGOON</u>		✓							9
<u>TAPKAURAK POINT</u>		✓							10
<u>TAPKAURAK SPIT</u>		✓							11
									12
									13
									14
									15
									16
									17
									18
									19
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									25
									26
									27

GEOGRAPHIC NAMES UNDERLINED

IN RED ARE APPROVED.

1-30-53

H. M. Quincy

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7979...

Records accompanying survey:

Boat sheets ...1.; sounding vols. ...2...; wire drag vols.;
bomb vols.; graphic recorder rolls .3 F.V.;
special reports, etc. 1. Descriptive Report; 1. Smooth Sheet;.....
.....

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

Number of positions on sheet	.....	400
Number of positions checked	.....	20
Number of positions revised	.....	0
Number of soundings revised (refers to depth only)	.....	5
Number of soundings erroneously spaced	.....	0
Number of signals erroneously plotted or transferred	.....	0
Topographic details	Time	35
Junctions H-7983	Time	2hr
Verification of soundings from graphic record	Time	8

Verification by *J. J. Kelleher*... Total time .100. Date *14 Oct 53*

Reviewed by *R. E. Elkins*..... Time12. Date *6 Nov 1953*

Stirni - 6 hrs.

DIVISION OF CHARTS
REVIEW SECTION - NAUTICAL CHART BRANCH
REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7979

FIELD NO. ARE-2152

Alaska, Arctic Coast, Tapkaurak Lagoon

Project No. CS-320

Surveyed - August 1952

Scale 1:20,000

Soundings:

Control:

808 Fathometer

Sextant fixes on
shore signals

Chief of Party - Max G. Ricketts
Surveyed by - H.L. Runge
Protracted by - C.W. Mooney
Soundings plotted by - C.W. Mooney
Verified and inked by - J.T. Gallahan
Reviewed by - R.E. Elkins 11-6-53
Inspected by - R.H. Carstens

1. Shoreline and Control

The origin of the signals is given in the Descriptive Report. The shoreline is from the uncompleted photogrammetric compilation T-11039 (1947-52) and Arctic Coast Chart 22. Shoreline of standard accuracy has not yet been compiled for the entire area of this survey. The dashed shoreline is a provisional compilation on Arctic Coast Chart 22, originating principally with RS-370 (1947) and air photographs of 1950, adjusted to control stations.

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated except for the low-water curve. In accordance with Project Instructions, curves in shoal, flat areas were not completely developed.

The bottom is generally smooth except for irregularities at the lagoon entrance.

4. Junctions with Contemporary Surveys

An adequate junction was effected with H-7983 (1952) at Oruktalik Entrance. The present survey extends north-westward to 2-ft. depths in the shoal, flat area off Martin Point, and extends to shoal depths near the shoreline on all other sides.

5. Comparison with Prior Surveys

There are no prior surveys in the area by this Bureau.

6. Comparison with Arctic Coast Chart 22 (Print date 5-25-53)A. Hydrography

The charted depths are from the present survey before verification. Attention is directed to the 3-ft. shoal in lat. $70^{\circ}03.92'$, long. $142^{\circ}55.45'$ which was added to the smooth sheet during verification, where 5- and 6-ft. depths are now charted. Except as noted, no important changes to charted soundings were made on the smooth sheet during verification and review.

B. Aids to Navigation

There are no aids to navigation charted within the area of this survey.

7. Condition of Survey

- a. The sounding records are complete; The Descriptive Report covers all matters of importance pertaining to this survey, except that no list of corrections applied to the soundings is included.
- b. The smooth plotting was well done, except that the 3-ft. soundings mentioned in paragraph 6-A were not penciled on the smooth sheet.

8. Compliance with Project Instructions

This survey adequately complies with the Project Instructions.

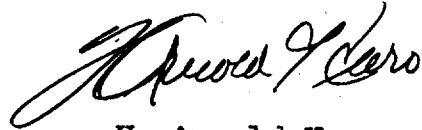
9. Additional Field Work

This is a good basic survey and no additional field work is required. As a matter of record, it is noted that an extensive undeveloped shoal-flat area extends 5 miles westward of the present survey.

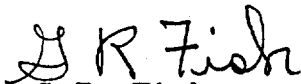
Examined and approved



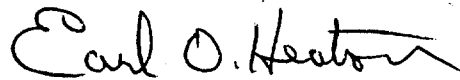
H.R. Edmonston
Chief, Nautical Chart Branch



H. Arnold Karo
Chief, Division of Charts



G.R. Fish
Chief, Section of Hydrography



Earl O. Heaton
Chief, Division of Coastal Surveys

