

7983

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Diag. Cht. No. 9400

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

C5-320

Type of Survey HYDROGRAPHIC
Field No. ARE-4252 Office No. H-7983

LOCALITY

State ALASKA
General locality ARCTIC COAST
Locality VICINITY OF HUMPHREY BAY

194 52

CHIEF OF PARTY

MAX. G. BICKETTS

LIBRARY & ARCHIVES

DATE

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

B-1870-1 (1)

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

3862

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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-7983

Field No. ARE-4252

State Alaska

General locality ~~North~~ Arctic Coast

Locality Vicinity of Humphrey Bay

Scale 1:40,000 Date of survey 29 July to 2 Sept. 1952

Instructions dated 1 February 1952

Vessel Arctic East Party

Chief of party Max G. Ricketts

Surveyed by D.G.R. H.L.R. F.X.P. C.W.M.

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

Fathograms scaled by R.J.W. J.F.B. J.L.F.

Fathograms checked by C.W.S. D.V.H. J.N.H.

Protracted by C.W.M.

Soundings penciled by C.W.M.

Soundings in ~~fathoms~~ feet at ~~MLW~~ ^{MLLW} ~~MLLW~~ and are based on a velocity of sound of 800 fms. per sec.

REMARKS: _____

202

PROGRESS SKETCH

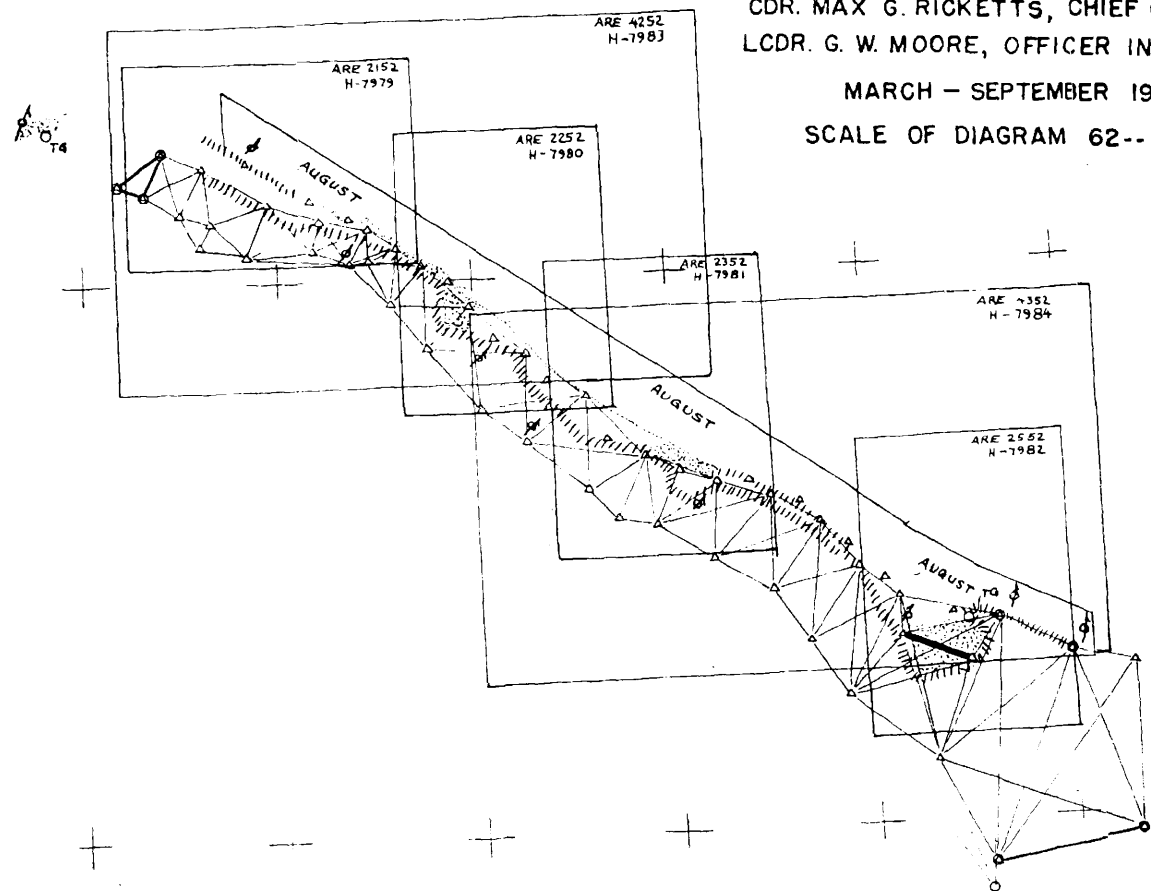
PROJECT CS-320

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



DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-7983 (FIELD NO. ARE-4252)
~~NORTH~~ NORTH ARCTIC COAST OF ALASKA
VICINITY OF HUMPHREY BAY

PROJECT CS-320 SCALE 1:40,000

Max G. Ricketts Chief, Arctic Field Party
Glenn W. Moore Officer in Charge, East Unit
D.G. Rushford, H.L. Runge, F.X. Popper, C.W. MooneyHydrographers

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 about 12 miles east of Barter Island between TAPKAURAK ENTRANCE to Jago Lagoon and NUVAGAPAK ENTRANCE to Nuvagapak Lagoon. There are no prior surveys in this area. Contemporary survey H-7657⁽¹⁹⁴⁸⁻⁴⁹⁾~~(ARE-4152)~~ adjoins this survey on the west and survey H-7984⁽¹⁹⁵²⁾~~(ARE-4352)~~ adjoins it on the east. Survey H-7979⁽¹⁹⁵²⁾~~(ARE-2152)~~ and H-7980⁽¹⁹⁵²⁾~~(ARE-2252)~~ adjoin this survey on the south.

Hydrography was started on the 29th of July 1952 and completed on the 2nd of September 1952.

C: VESSELS AND EQUIPMENT

Two, converted, 35-foot, Navy, rearming boats and one converted, 50-foot, Havy LCM were used to execute this survey. They were: Launch No. 2, Launch No. 13 and LCM "RED". Each launch was equipped with an 808J fathometer; Launch No. 2 used fathometers No's. 101-S and 119-S, Launch No. 13 used fathometer No. 121-S, and LCM "RED" used fathometer No's. 125-S and 119-S.

The turning radius of the rearming boats was 7 to 8 meters and standard speed was 7.5 knots at 2000 rpm.

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° 08.2'N, Longitude 143° 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 hand at the Seattle Processing Office. The control was plotted and checked by personnel of the Arctic Party.

F: CONTROL STATIONS

triangulation and topographic 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, ^{Chow} ~~Pop~~, Tit and Ra~~t~~ were located by sextant angles taken at the stations.

G: SHORELINE AND TOPOGRAPHY

The shoreline east of Longitude $142^{\circ} 34'$ was located by sextant fixes taken by the hydrographer while walking the beach. This information was plotted on H-7980 (ARE-2252) ⁽¹⁹⁵²⁾ and is not shown on this sheet. *See rev. addendum*

The shoreline west of Longitude $142^{\circ} 34'$ was located partially by sextant fixes taken on the beach and by estimated distances by the hydrographer while running beach lines. This information is plotted on H-7979 (ARE-2152) ⁽¹⁹⁵²⁾ and is not shown on this sheet. " "

The aerial photographs are being compiled by the Portland Photogrammetric Office and were not available when this sheet was plotted; however, the photos were taken in 1947 and since that time the configuration of much of the shoreline has changed. These changes were especially noted on the spit between signals Pound and Griffin, also between Live and Beaufort. It was because of these discrepancies that the hydrographer located the MHW line by sextant fixes on the beach and estimated distances while running beach lines.

The above changes are now shown on T-11039, T-11040, T-11041 (1947-52)

H: SOUNDINGS

Soundings were obtained by 808J type recording fathometers, equipped with calibrated velocity reeds of 800 fathom per second. Refer to "Special Report, Fathometer Corrections, 1952". *Filed with H-7983.*

I: CONTROL

Control of hydrography was entirely by sextant fixes.

J: ADEQUACY OF SURVEY

This survey is considered adequate.

An area of about 1.6 square nautical miles at Latitude $70^{\circ} 09'$, Longitude $143^{\circ} 07'$ could not be surveyed because of the ice that remained in this area; however, there is no indication of any shoal in this area.

See review

K: CROSSLINES

About 10 percent crosslines were run and satisfactory crosslines were made. Much of the bottom was fairly rough, especially around the 30-foot curve and certain crossings there varied as much as two feet; however, any minor horizontal displacement would have caused this discrepancy. *Crossings are in good agreement. Rescanning of the fathograms during preliminary verification eliminated the discrepancies.*

L: COMPARISON WITH PRIOR SURVEYS

There are no previous surveys of this area.

M: COMPARISON WITH CHARTS

The existing chart in this area, USC&GS Chart No. 9403, is on too small a scale for an adequate comparison.

N: DANGERS AND SHOALS

There were no important shoals or dangers to navigation found on this sheet.

On 29 August (k day, Volume No. 6) while running a dead reckoning line offshore in Latitude $70^{\circ} 12'$, Longitude $142^{\circ} 52'$ the depth rose from 119 feet to 94 feet at the outer end of the line, but no further investigations were made in this area.

O: COAST PILOT

Refer to Coast Pilot Report, Arctic Party, 1952.

P: AIDS TO NAVIGATION

Refer to Form 567, Aids to Navigation, Arctic Party, 1952 previously submitted.

Q: LANDMARKS FOR CHARTS

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

Live - log and sod house Latitude $69^{\circ} 59' 679$ meters
Longitude $142^{\circ} 33' 44.2$ meters

R: GEOGRAPHIC NAMES

Geographic Names were penciled on the two (twenty-thousand) sheets covering this area, H-7979 (ARE-2152) and H-7980 (ARE-2252). It was not felt necessary to repeat these on this sheet.

Refer to "Geographic Names Report" Arctic Field Party, 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. Landmarks for Charts, 1952
3. Aids to Navigation, 1952 } *Combined*
4. Coast Pilot Notes, 1952
5. Geographic Names Report, 1952
6. 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

LIST OF SIGNALS

HYDROGRAPHIC SURVEY H-7983
FIELD NO. ARE-4252
ARCTIC FIELD PARTY - EAST UNIT
PROJECT CS-320

<u>SIGNAL</u>	<u>SOURCE</u>
AMBER	AMBER 1952
ANGNUN	ANGNUN 1952
Are	1952 Triangulation
BEAUFORT	BEAUFORT 1952
Bob	1952 Triangulation
BOOT	BOOT 1952
Cab	1952 Triangulation
Chow	Vol. II, H-7983
CORWIN	CORWIN 1952
Cow	1952 Triangulation
Dog	" "
Ego	" "
Fat	" "
Gad	" "
GRAVES	GRAVES 1952
GRIFF	GRIFF 1952
GRIFFIN	GRIFFIN 1952
HEALTH	HEALTH 1952
HUMPHREY	HUMPHREY 1952
LIVE	LIVE 1952
Log	Vol. I, H-7979
MARTIN	MARTIN 1952-1948
Maw	1952 Triangulation
NEWICE	NEWICE 1952
Nix	1952 Triangulation
Obo	" "
Ohm	" "
Pap	" "
Pep	" "
POKOK	POKOK 1952
POUND	POUND 1948
Quo	1952 Triangulation
Raf	Vol. I, H-7979
Rat	1952 Triangulation
ROBIN	ROBIN 1948
Sec	1952 Triangulation
SPIT	SPIT 1952
Tap	1952 Triangulation
Tit	Vol. I, H-7979
Toe	1952 Triangulation
TUBU	TUBU 1952
WALK	WALK 1952
Yes	1952 Triangulation

HYDROGRAPHIC SURVEY H-7983
FIELD NO. ARE-4252
ARCTIC FIELD PARTY * EAST UNIT
PROJECT CS-320

LAUNCH NO.	DATE 1952	VOL. NO.	DAY LTR	NO. OF POSITIONS	STATUTE MILES SDG.	HAND LEAD
2	7/29	I	a	91	36.7	2
2	7/30	I	b	65	21.0	0
2	8/1	I	c	38	14.6	0
2	8/2	I	d	27	10.8	0
2	8/7	I	e	16	6.7	0
2	8/12	I	f	21	7.8	0
2	8/23	III	g	20	7.8	0
2	8/26	III	h	73	45.0	0
2	8/27	III	j	122	66.1	0
2	8/29	V	k	90	36.0	2
2	9/2	V	l	38	19.1	0
TOTALS LAUNCH NO. 2				601	270.6	4
13	7/29	II	a	79	28.0	1
13	7/30	II	b	105	38.5	1
13	8/1 *		c	11	-	-
13	8/17	II	d	63	23.0	1
13	8/21	IV	e	28	13.8	0
13	8/22	IV	f	63	29.9	1
13	8/23	IV	g	43	25.2	0
13	8/26	IV	h	76	45.1	0
13	8/27	VI	j	81	45.5	0
13	8/29	VI	k	66	33.9	0
13	9/2	VI	l	69	37.3	0
TOTALS LAUNCH NO. 13				684	320.2	4
LCM "RED"	8/2	VII	b	27	14.7	0
LCM "RED"	8/7	VII	c	41	18.4	0
LCM "RED"	8/11	VII	d	55	21.9	0
LCM "RED"	8/30	VII	e	24	9.2	0
TOTALS LCM "RED"				147	64.2	0

* Bottom Sample

TOTALS FOR THE SHEET

Number of Positions 1432
 Statute Miles of Sounding Line 655.0
 Number of Hand Lead Soundings 8
 Square Statute Miles of Sounding 130.2

ENCLOSURE 3

TIDAL NOTE

HYDROGRAPHIC SURVEY H-7983
FIELD NO. ARE-4252
ARCTIC FIELD PARTY - EAST UNIT
PROJECT CS-320

Tidal data for this survey was taken from the portable automatic tide gage located on 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.

ENCLOSURE 4

APPROVAL SHEET

HYDROGRAPHIC SURVEY H-7983
FIELD NO. ARE-4252
ARCTIC FIELD PARTY - EAST UNIT
PROJECT CS-320

The sheet and records have been examined and are approved. The survey is considered adequate for the area.

Max G. Ricketts

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

22 December 1952

Division of Charts: R. H. Carstens

Plane of reference approved in 7
volumes of sounding records for

HYDROGRAPHIC SHEET 7983

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-7983

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
<u>Alaska</u>											1
<u>Arctic Coast</u>											2
<u>Humphrey Point</u>											3
<u>Beaufort Sea</u>									NGM		4
											5
											6
<u>Batter Island</u>				(tide station)					SMX		7
											8
Oruktalik Entrance ✓											9
Humphrey Bay ✓											10
Angnun Entrance ✓											11
Angnun Point ✓											12
Names of shore features											
will be fully shown on											
H-7979 and H-7980											
											13
Names underlined in red approved 12-19-52 L. Hecky											14
Nuvagapak Entrance ✓											15
Jago Spit											16
Tapkaurak Entrance											17
Tapkaurak Point											18
Tapkaurak Lagoon											19
Tapkaurak Spit											20
Martin Point											21
Oruktalik Lagoon											22
Griffin Point											23
Pokok Lagoon											24
Angnun Lagoon											25
Nuvagapak Lagoon											26
Nuvagapak Point											27

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7983

Records accompanying survey:

Boat sheets ...3...; sounding vols. ...7...; wire drag vols.; bomb vols.; graphic recorder rolls .8 Env; 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			1432
Number of positions checked			12
Number of positions revised			3
Number of soundings revised (refers to depth only)			160
Number of soundings erroneously spaced			✓
Number of signals erroneously plotted or transferred			✓
Topographic details - CBS	Time		16
Junctions	Time		10
Verification of soundings from graphic record	Time		12
Preliminary Verification by - R.E. Elkins 40 hrs.			4-1-53
Verification by - J.T. Gallahan 115 hrs.	Total time	155 hrs.	Date 11-30-53
Reviewed by - R.E. Elkins	Time	20 hrs.	Date 5-20-53
Review Addendum by R.E. Elkins		20 hrs.	12-28-53

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7983

FIELD NO. ARE - 4252

Alaska, Arctic Coast, Tapkaurak Lagoon to Nuvagapak Lagoon

Project No. CS-320

Surveyed July to Sept. 1952

Scale 1:40,000

Soundings:

Control:

808 Fathometers

Sextant fixes on shore signals
Dead reckoning

Chief of party - Max G. Ricketts

Surveyed by - D. G. Rushford, H.L. Runge, F.X. Popper, C.W. Mooney

Protracted by - C.W. Mooney

Soundings plotted by - C.W. Mooney

Preliminary verification by - R.E. Elkins

Verified and inked by - *J.T. Callahan*

Reviewed by - R.E. Elkins, 20 May 1953

Inspected by R.H. Carstens

1. Shoreline and Signals

The origin of the signals and penciled shoreline is given in the Descriptive Report. Inking of the shoreline is deferred, pending the completion of the air-photographic compilations in this area and final inking of the smooth sheet.

*see review
addendum.*

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Bottom Configuration and Depth Curves

This survey consists of complete development of a 3-mile wide area along the coast and dead reckoning lines extending 8 miles offshore. The bottom is characterized by shoal ridges closely paralleling the beach and ice gouging to 36-ft. depths one mile offshore. The bottom is moderately smooth in the deeper offshore area.

*see review
addendum*

The depth curves are adequately delineated except for the low-water line which is practically identical with the shoreline along the seaward side of the barrier islands.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7984 (1952) on the east, and with H-7980 (1952) and H-7979 (1952) at lagoon entrances. The junction with H-7657 (1948-52) is incomplete because of ice that remained in that area during the survey period. Charted soundings on the northeast, from an unidentified source, differ by 2 to 6 fms. with present depths.

5. Comparison with Prior Surveys

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

6. Comparison with Arctic Coast Chart 22 (Temporary Proof
May 18, 1953.)
Arctic Coast Chart 23 (Temporary Proof
May 18, 1953.)

A. Hydrography

The charted soundings are from the present survey after preliminary verification. No differences with smooth sheet depths are noted. *see review
addendum*

B. Aids to Navigation

There are no charted aids within the limits of this survey.

7. Condition of Survey

- a. The sounding records are complete; the Descriptive Report covers all matters of importance.
- b. The smooth plotting was well done.
- c. The undeveloped area in lat. $70^{\circ}09'$, long. $143^{\circ}07'$, mentioned in the Descriptive Report could not be surveyed because of ice conditions. The area is one mile offshore where the bottom slopes from 30 to 50 ft. depths.
- d. Differences between hand-lead soundings and fathometer soundings based on a calibration of 800 fms. per second at simultaneous comparisons were in general no greater than 1 ft. in 40 ft. depths and are considered of minor importance in this area.

- e. The preliminary verification of this survey was confined to the verification and inking of soundings in the irregular bottom area extending one mile offshore to 36 ft. depths. Several crosslines in the deeper offshore area have also been verified and inked. Completion of the verification and inking is deferred until some future date, at which time the shoreline will be completed, junctional soundings will be transferred and the inspection of the depth curves will be made.

Completed
see
review
addendum

8. Compliance with Project Instructions

This survey adequately complies with the Project Instructions except for the undeveloped area mentioned in paragraph 4 and 7c.

9. Additional Field Work

This is a good basic survey. An area of about 1½ square nautical miles mentioned above in paragraph 7c was left unsurveyed in 1952.



H.R. Edmonston

Chief, Nautical Chart Branch

Examined and Approved



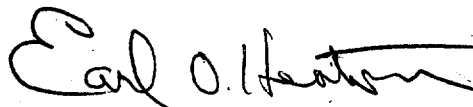
H. Arnold Karo

Chief, Division of Charts



G.R. Fish

Chief, Section of Hydrography



Earl O Heaton

Chief, Division of Coastal Surveys

ADDENDUM TO REVIEW

H-7983 (1952)

Verified and inked by - J.T. Gallahan
Review Addendum by - R.E. Elkins 12-10-53
Inspected by - R.H. Carstens

The verification of this survey has been completed. Soundings and depth curves have been inked, junctional soundings have been transferred, and the shoreline has been added.

Shoreline

The shoreline is from unreviewed photogrammetric manuscripts T-11041, T-11040, T-11039 (uncompleted) of 1947-52. Shoreline of standard accuracy has not yet been compiled for the entire area of T-11039. The dashed shoreline on the smooth sheet, is a provisional compilation on Arctic Coast Chart 22 (print date 5-25-53), originating principally with the uncontrolled photogrammetric compilation RS-370 (1947) and photographs of 1950, adjusted to control stations.

Bottom Configuration

The bottom, in the area extending from the 60-ft. curve to the outer limits of the dead reckoning loops in 130-ft. depths, is extremely broken with 2-to8-ft. irregularities appearing on the fathograms.

Comparison with Arctic Coast Chart 22 (print date 5-25-53)
Arctic Coast Chart 23 (print date 5-25-53)

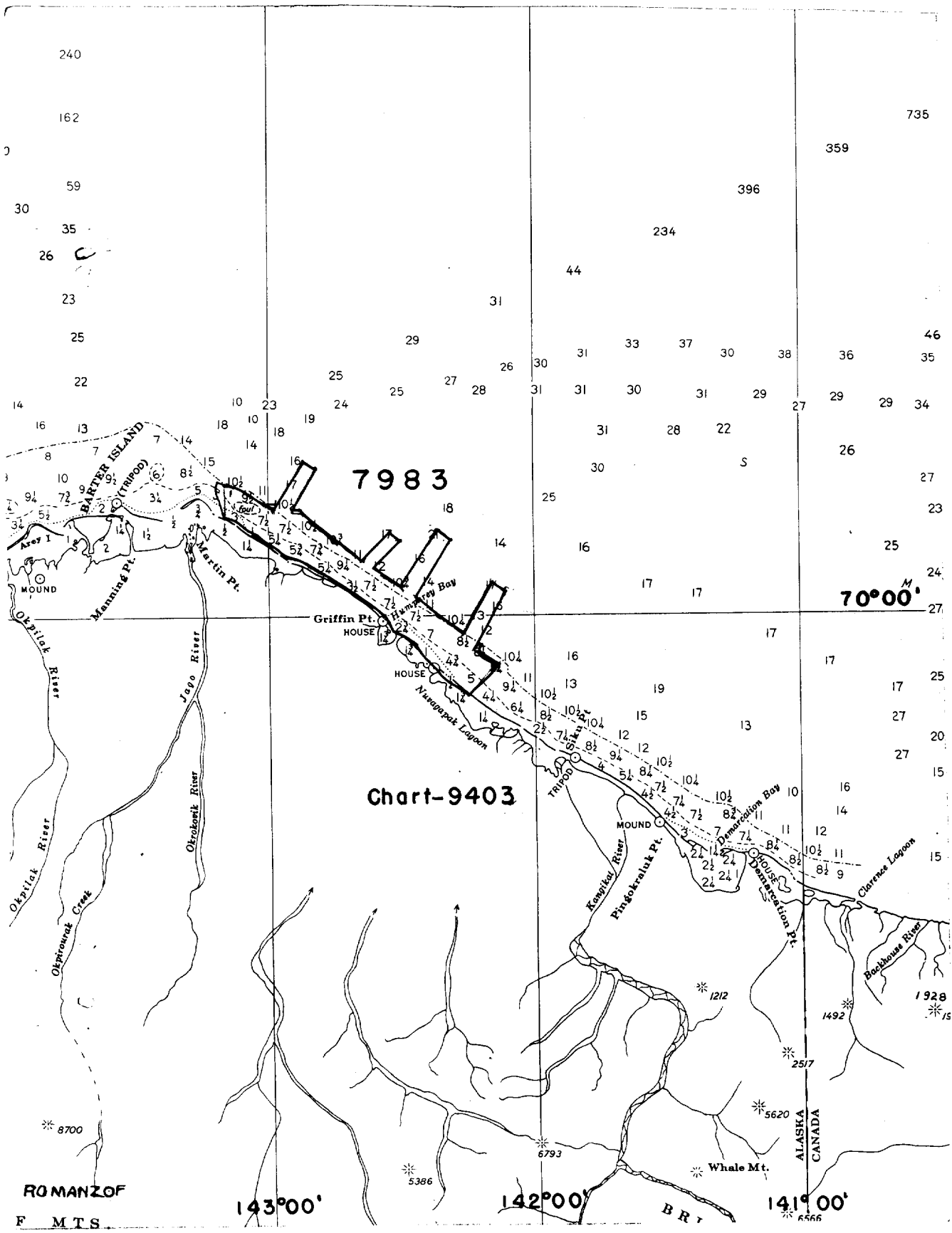
A. Hydrography

The charted soundings are from the present survey before complete verification. No important changes to charted soundings were made on the smooth sheet during verification; however, several soundings were revised as much as 5 ft. and some soundings at odd intervals have been added from the fathograms, especially on the dead reckoning loops.

Approved by



H. A. Karo
Chief, Division of Charts



7983

Chart-9403

ROMANZOF
F. MTS.

143°00'

142°00'

141°00'

70°00'

B. R. I.

ALASKA
CANADA

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7983

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
4-10-53	9403	<i>[Signature]</i>	Before ^{preliminary} After <input checked="" type="checkbox"/> Verification and Review
5/6/53	No 23	Chas R. Wittmann	Before ^{After Preliminary} After <input checked="" type="checkbox"/> Verification and Review
May 53	No 22	L.V.E.	Before ^{Preliminary} After <input checked="" type="checkbox"/> Verification and Review
2/24/54	Arctic 23		Before ^{Preliminary} After <input checked="" type="checkbox"/> Verification and Review
10-15-54	9476	Goodman	Before After Verification and Review
	9477		
Apr 55	9403	A. MacEwen	Before After Verification and Review ^{These charts 9476 and chart 9477}
			Before After Verification and Review
			Before After Verification and Review
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			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.