

7984

RESTRICTED  
SECURITY INFORMATION

CONFIDENTIAL

Diag. Cht. No. 9400

25-320

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

## DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. ARE-4352 Office No. H-7984

### LOCALITY

State ALASKA

General locality ARCTIC COAST

Locality NUVAGAPAK POINT TO DEMARCATION  
POINT.

194 52

CHIEF OF PARTY

M. G. Ricketts

LIBRARY & ARCHIVES

DATE JANUARY 27, 1953

B-1870-1 (1)

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



FEB 2 1953

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.

REGISTER No. H-7984

Field No. ARE-4352

State ALASKA

General locality NORTH ARCTIC COAST

Locality DEMARCATION NUAYAGPAK POINT TO DEMARCATION POINT

Scale 1:40,000 Date of survey July, August, Sept. 1952

Instructions dated 1 February 1952

Vessel Arctic Field Party

Chief of party Max G. Ricketts

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

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

Fathograms scaled by J.L.F., R.J.W., J.F.B, C.W.M., R.A.M., J.W.C.

Fathograms checked by J.N.H., F.X.P., L.W.E., C.W.S., D.U.H., R.A.M.

Protracted by L.W. Eason II

Soundings penciled by L.W. Eason II

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

REMARKS:

70°30'

70°00'

69°30'

145°00'

144°00'

143°00'

142°00'

141°00'

# PROGRESS SKETCH

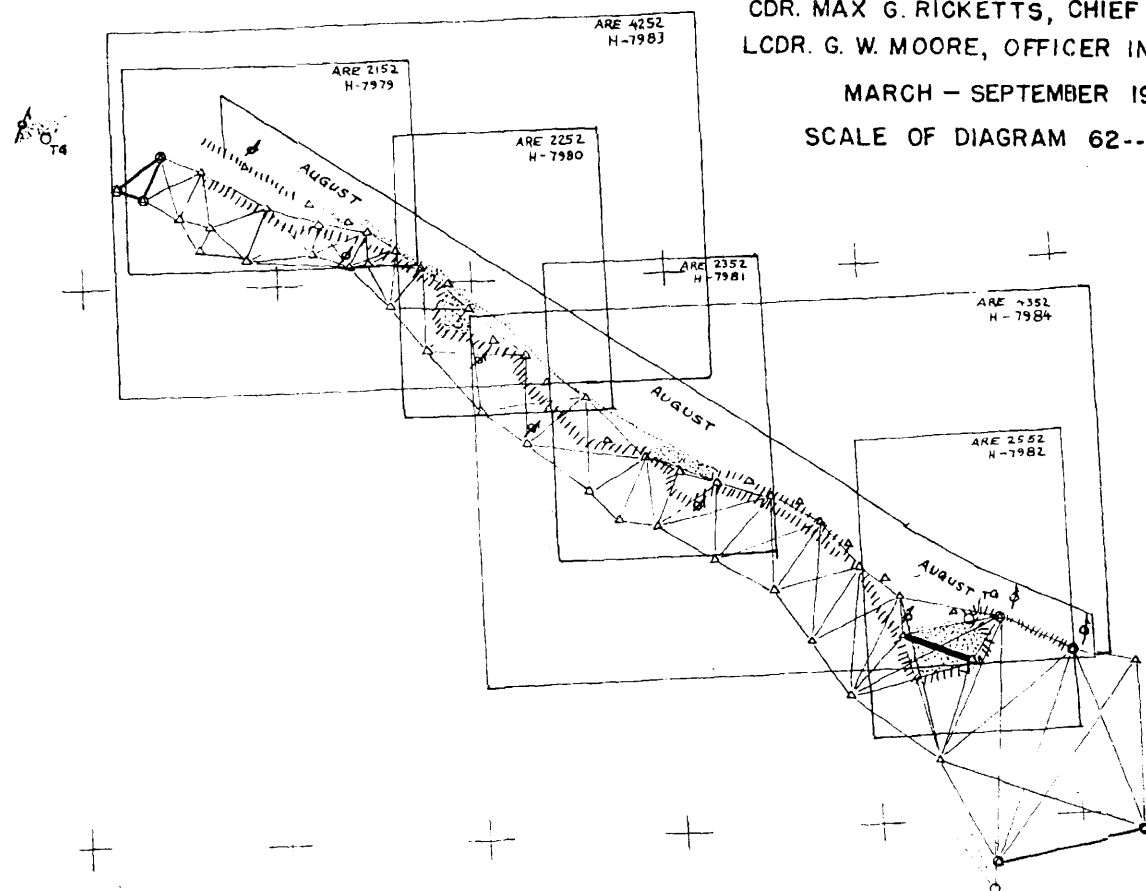
PROJECT CS-320

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°00'

69°30'

DESCRIPTIVE REPORT TO ACCOMPANY  
HYDROGRAPHIC SURVEY H-7984 (FIELD NO. ARE-4352)

~~NORTH~~ ARCTIC COAST OF ALASKA

~~DEMARCATION~~ NUWAGAPAK POINT TO DEMARCATION POINT  
PROJECT GS-320 - 1952  
SCALE 1:40,000

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

A: PROJECT

The authority for this survey is contained in Supplemental Instructions dated 1 February 1952.

B: SURVEY LIMITS AND DATES

This survey covers the area about 3 to 4 miles offshore between Angnun Point and the Canadian Boundary. Though there are no prior surveys in the area, contemporary Survey H-7983<sup>(1952)</sup> (ARE-4252) joins the survey on the West. Survey H-7981<sup>(1952)</sup> (ARE-2352) and H-7982<sup>(1952)</sup> (ARE-2552) are adjacent to the survey on the South.

Hydrography was started on 24 July and completed on 2 September.

C: VESSELS AND EQUIPMENT

Launches No. 1, 2, and 13 (converted 35-foot rearming boats) and LCM "RED" (50-foot converted landing craft) were used in this survey. 808J Fathometers using 800 fm/sec reeds were used in all the vessels.

D: TIDE AND CURRENT STATIONS

Tidal reducers for this sheet were obtained from the portable automatic gage at Demarcation Bay. This tide station is plotted on the Demarcation Bay Sheet (H-7982) and transferred to this Smooth Sheet.

There were no current observations in this area.

E: SMOOTH SHEET

This hand-made projection was made at the Seattle Processing Office. The remainder of the Smooth Sheet work was done by personnel of the Arctic Field Party.



F: CONTROL STATIONS

The 1952 triangulation by Max G. Ricketts constitutes the basic control for this survey on the BARTER ASTRO 1948 datum.

*Topographic stations were located by triangulation methods.*

There are no hydrographically located signals on the sheet.

G: SHORELINE AND TOPOGRAPHY

The shoreline is to be obtained from the shoreline compilation of nine-lens aerial photographs now being processed by the Portland Photogrammetric Office.

T-11041  
T-11042  
T-11043  
T-11044  
T-11045

} Photos 1947  
Fld. Insp. 1952

H: SOUNDINGS

808J Fathometers using 800 fms/sec reeds were used to obtain the soundings. (Refer to Special Report, Fathometer Corrections, 1952)

*filed with H-7983*

I: CONTROL

The hydrography was controlled entirely by visual methods.

J: ADEQUACY OF SURVEY

The survey is considered adequate for this area. There are three holidays in the spacing of lines off Demarcation Bay, in depths of around 40 feet however, there are no indications of shoals in these areas.

K: CROSSLINES

The fathograms were rescanned by the smooth plotter on all line crossings on this sheet. All crossings are satisfactory. The percentage of crosslines run is about 6%.

*see Review*

*didn't see 2 ft differences caused by short angles over of fath 125*

L: COMPARISON WITH PRIOR SURVEYS

This is the first known survey of the area.

M: COMPARISON WITH CHARTS

No adequate comparison could be made with existing charts of this along-shore area.

*see Review*

N: DANGERS AND SHOALS

There are no dangers to navigation in the area other than the ice packs and floes which are always prevalent on this section of the coast. No important shoals were found.

O: COAST PILOT

Reference is made to Coast Pilot Report, Arctic Party, 1952.

P: AIDS TO NAVIGATION

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

Q: LANDMARKS FOR CHARTS

Refer to Special Report, Landmarks for Charts, 1952 which has been previously submitted.

The following landmarks appear on the Smooth Sheet:

1. RALUK, 1952 (mound)
2. GORD, 1952 (house)

R: GEOGRAPHIC NAMES

The authority for names placed on the Smooth Sheet is the Geographic Names Report, Arctic Field Party, 1952. The following are penciled on the Smooth Sheet:

- ALASKA
- CANADA
- BEAUFORT SEA
- ANGNUN POINT
- SIKU POINT
- SIKU LAGOON
- ICY REEF
- DEMARCATION BAY
- DEMARCATION POINT

Complete name coverage is included on adjacent sheets of larger scale.

S: TABULATION OF APPLICABLE DATA

1. Attached to this report:
  - (a) Statistics
  - (b) Tidal Note
  - (c) List of Signals
  - (d) Progress Sketch showing sheet layout
  - (e) Approval Sheet



S: TABULATION OF APPLICABLE DATA (CONT'D.)

2. Special Reports submitted under separate cover:

- (a) List of Geographic Positions, 1952
- (b) Coast Pilot Notes, 1952
- (c) Landmarks and Aids to Navigation, 1952
- (d) Geographic Names Report, 1952
- (e) Fathometer Report (*Filed with H-7983*)

Respectfully submitted,

*Leo W. Eason, II*

Leo W. Eason II  
Carto. Engr., USC&GS

APPROVED & FORWARDED:

*Max G. Ricketts*

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

## ATTACHMENT 1

STATISTICS

HYDROGRAPHIC SURVEY H-7984

FIELD NO. ARE-4352

Launch No.	Date	Vol.No.	Day Letter	No.of Pos.	Stat.Miles Sounding	Bottom Samples	Hand Lead
LCM "RED"	7/24	1	a	14	2.3	0	0
"	7/29	1	c	16	8.1	0	0
"	7/30	1	d	55	22.9	0	0
"	8/1	1	e	10	3.4	0	0
"	8/2	1	f	25	6.6	0	0
"	8/11	1	g	12	4.8	0	0
"	8/12	1	h	26	10.4	0	0
"	8/14	1&2	j	82	32.4	2	2
"	8/16	2	k	121	36.8	7	7
"	8/17	2	l	131	44.2	1	1
"	8/21	3	m	79	35.1	2	2
"	8/27	3	n	128	72.2	0	0
"	8/28	4	p	105	51.8	0	0
"	8/29	4	q	146	84.0	0	0
"	8/30	5	r	109	60.0	0	0
"	8/31	5	s	96	30.5	0	0
"	9/2	5	t	59	24.6	0	0
TOTALS LCM "RED"				1214	530.1	12	12
Launch No. 2	8/30	6	a	101	52.0	13	0
"	8/31	6	b	81	41.2	2	0
TOTALS LAUNCH NO. 2				282	93.2	15	0
Launch No. 13	8/30	7	a	75	44.0	0	0
"	8/31	7	b	49	29.3	0	0
"	9/1	7	c	40	13.7	0	0
TOTALS LAUNCH NO. 13				164	87.0	0	0
Launch No. 1	8/17	8	a	34	15.8	0	0
"	8/21	8	b	129	54.4	0	3
"	8/22	8	c	16	5.5	0	12
"	8/27	8	d	9	19.9	9	9
TOTALS LAUNCH NO. 1				188	95.6	9	24

TOTALS FOR THE SHEET

Number of Positions ..... 1848  
 Stat. Miles of Sndg. Line ..... 805.9  
 No. of H.L. Sndgs. .... 36  
 No. of Bottom Samples ..... 36  
 Square Stat. Miles of Sounding ..... 169



ATTACHMENT 2

TIDAL NOTE

HYDROGRAPHIC SURVEY H-7984  
FIELD NO. ARE-4352

Tidal data for this survey was taken from the portable automatic tide gage located at Demarcation Bay, Latitude  $69^{\circ} 40'19''$  N and Longitude  $143^{\circ} 35'13''$  W.

MLLW on the Demarcation gage was 1.7 ft. above the zero of the tide staff.

ATTACHMENT 3

*Eel* -69°42' - 176.5  
141 27 - 39.0

*For* 69 40 - 1058.7  
141 07 - 445.6

LIST OF SIGNALS

HYDROGRAPHIC SURVEY H-7984  
FIELD NO. ARE-4352

*Gum* - 69 40 - 110.2  
141 05 - 376.1

<u>SIGNAL</u>	<u>SOURCE</u>
Aha	1952 Triangulation
ANGNUN	ANGNUN 1952
BEAUFORT	BEAUFORT 1952
Bum	1952 Triangulation
Cut	" "
DELTA	DELTA 1952
Dot	1952 Triangulation
DSEB	DSEB 1952
EASY	EASY 1952
- Eel - <i>Topo</i>	1952 Triangulation
EGASAK	EGASAK 1952
- For - <i>Topo</i>	1952 Triangulation
FROZEN	FROZEN 1952
GORD	GORD 1952
GORDON	GORDON 1952
- Gum - <i>Topo</i>	1952 Triangulation
HARD	HARD 1952
HER	See Hydro Vol. 1 p. 4
His	1952 Triangulation
HOME	HOME
Irk	1952 Triangulation
JUG	JUG 1952
MESS	MESS 1952
MONEY	MONEY 1952
OAK	OAK 1952
Paw	1952 Triangulation
Quo	1952 Triangulation
RALUK	RALUK 1952
REEF	REEF 1952
Ran	1952 Triangulation
Sec	" "
SET	See Hydro Vol. 1 p. 4
SIKU	SIKU 1952
SIME	SIME 1952
SWEDE	SWEDE 1952
Tarm	1952 Triangulation
TRI	TRI 1952
TUBU	TUBU 1952
Urn	1952 Triangulation
War	" "
WEED	WEED 1952
WOLF	WOLF 1952
Yak	1952 Triangulation
Zoo	" "



ATTACHMENT 5

APPROVAL SHEET

HYDROGRAPHIC SURVEY H-7984  
FIELD NO. ARE-4352

The sheet and records have been examined and are approved.

Data for the location of Signals HER and SET, will be found in Vol. No. 1 on page 4.

Spacing of lines off Demarcation Bay is wide in three instances, depths are around 40 feet with no indication of shoals in the area. Time did not permit further field work during the 1952 Season and there will be no launches operated from Barter Island during 1953, hence the present work will be final for the area at this time.

The survey is considered adequate for the area covered by this sheet.



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

RHC

## TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coast and Geodetic Survey~~

11 February 1953

Division of Charts: R. H. Carstens

Plane of reference approved in 8  
volumes of sounding records for

HYDROGRAPHIC SHEET 7984

Locality North Arctic Coast, Alaska

Chief of Party: M. G. Ricketts in 1952

Plane of reference is mean lower low water, reading

1.7 ft. on tide staff at Demarcation Bay

6.0 ft. below B. M. 1 (1952)

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 as follows:

Demarcation Bay = 0.7 foot

Barter Island = 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-7984

GEOGRAPHIC NAMES		Survey No. H-7984															
Name on Survey	On Chart No.										On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List
	A	B	C	D	E	F	G	H	K								
<u>Alaska</u>																	1
<u>Canada</u>		✓															2
<u>Beaufort Sea</u>		✓															3
<u>Angnun Point</u>		✓															4
<u>Siku Point</u>		✓															5
<u>Siku Lagoon</u>		✓															6
<u>Icy Reef</u>		✓															7
<u>Demarcation Point</u>		✓															8
<u>Demarcation Bay</u>		✓															9
<u>Nuvagapak Entrance</u>		✓															10
<u>Nuvagapak Lagoon</u>		✓															11
<u>Nuvagapak Point</u>		✓															12
<u>Egaksrak Entrance</u>		✓															13
<u>Egaksrak Lagoon</u>		✓															14
<u>Siku Entrance</u>		✓															15
<u>Pingokraluk Lagoon</u>		✓															16
																	17
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																	23
																	24
																	25
																	26
																	27

M 234

Names underlined in red are approved.

2-9-53. L. Heck

# Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7984...

## Records accompanying survey:

Boat sheets 3....; sounding vols. ....<sup>8</sup>...; wire drag vols. ....;  
bomb vols. ....; graphic recorder rolls 19 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		1848	.....
Number of positions checked		199	20.....
Number of positions revised		0	H.....
Number of soundings revised (refers to depth only)		0	300.....
Number of soundings erroneously spaced		0	.....
Number of signals erroneously plotted or transferred		0	.....
Topographic details	Time	3 hr	.....
Junctions	Time	3 hr	.....
Verification of soundings from graphic record	Time	3 hr	.....
Preliminary Verification .....	R. E. Elkins	42	8-31-53
Verification by .....	P. E. Harrison	32	9-5-56
Reviewed by .....	R. E. Elkins	14	8-31-53
Review Addendum by .....	G. R. Johnson	34	8-27-63
	D. W. Jones, Sr.	10	8-26-64

ADDENDUM TO REVIEW  
H-7984 (1952)

Verified and inked by-----P. E. Harrison  
Review addendum by-----G. R. Johnson 8-27-63  
D. W. Jones, Sr. 8-26-64  
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 originates with reviewed photogrammetric surveys T-11041, T-11042, T-11043, T-11044, and T-11045 of 1947-54. The dashed shoreline shown at Nuvagapak Entrance in the vicinity of lat.  $69^{\circ}54.5'$ , long.  $142^{\circ}18.0'$  and Demarcation Bay in the vicinity of lat.  $69^{\circ}41.5'$ , long.  $141^{\circ}23'$  originates with hydrographic surveys H-7980 (1952) and H-7982 (1952) and has been transferred to the photogrammetric surveys.

Comparison with Chart 9477 (Latest print date 4-16-56)  
Chart 9478 (Latest print date 4-16-56)

The charted hydrography originates with the present survey after preliminary verification and review. A comparison between the charted and present depths reveals only minor differences of 1 ft.

The description of the landmark "House" shown on chart 9478 dated 4-16-56 at Gordon in lat.  $69^{\circ}40.09'$  long.  $141^{\circ}10.76'$ , is in disagreement with the description shown on the present survey. The chart describes "House" as the northeasterly of three, whereas the present survey describes "House" as the northwesterly one of three. An examination of the records reveals no other source than the present survey for the description of the landmarks.

Condition of Survey

The completion of verification of the present survey reveals that the smooth-plotting was well done.

Approved:



Lorne G. Taylor  
Chief, Nautical Chart Division

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7984

FIELD NO. ARE-4352

Alaska, Arctic Coast, Nuvagapak Point to Demarcation  
Point

Project No. CS-320

Surveyed - July to September 1952      Scale 1:40,000

Soundings:

808 Fathometer

Control:

Sextant fixes on shore signals  
Dead reckoning

Chief of Party - Max G. Ricketts

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

Protracted by - L. W. Eason II

Soundings plotted by - L. W. Eason II

Preliminary verification by - R. E. Elkins

Reviewed by - R. E. Elkins, 31 August 1953

Inspected by - R. H. Carstens

1. Shoreline and Signals

The origin of the signals is given in the Descriptive Report. The application of shoreline from the air photographic compilations is deferred until final verification of the smooth sheet. see review  
addendum

2. Sounding Line Crossings

Depths at crossings are in good agreement. Crossing discrepancies caused by an erroneous stylus arm length of fathometer 125, were resolved on the smooth sheet by applying corrections amounting to as much as 2.0 ft. to A-scale soundings.

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 areas were not completely developed.

The bottom is smooth except for minor irregularities along the barrier islands in the northwest part of the survey. The bottom in 60- to 100-ft. depths is extremely broken with 2- to 8-ft. irregularities appearing on the fathograms.



#### 4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7983 (1952) on the northwest and with H-7982 (1952) at the entrance to Demarcation Bay. The present survey extends to the project limits on the southeast. Reconnaissance track line soundings to the northeast on chart 9403\* (printed 6-1-53) appear to be 3- to 6-fathoms less than present survey depths at the outer ends of the dead reckoning loops.

#### 5. Comparison with Prior Surveys

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

#### 6. Comparison with Arctic Coast Chart 236 (Print date 5-25-53) Arctic Coast Chart 24 (Print date 5-25-53)

##### A. Hydrography

The charted hydrography is from the present survey before preliminary verification. Only minor revisions were made to the soundings inked on the smooth sheet.

See  
review  
addendum

The 35-ft. sounding charted in 40-ft. depths in lat.  $69^{\circ}42.6'$ , long.  $141^{\circ}19.5'$  from the present survey originates with a stray on the fathogram and has been deleted from the smooth sheet.

##### B. Aids to Navigation

There are no charted aids within the area of the present survey.

#### 7. Condition of Survey

a. The sounding records are complete, except that insufficient leadline comparisons were taken to check the operation of the fathometers. An error in the length of the stylus arm of fathometer 125 was detected during preliminary verification which necessitated corrections of as much as 4% in depths of 55 ft. on the A-phase. These have been applied in the Washington Office.

The Descriptive Report covers the important items of this survey, except that no summary of corrections applied to the soundings is included. The Fathometer Report does not show the corrections applied or how the reducers were determined. No mention is made of discrepancies remaining between soundings of the various fathometers after corrections were applied. Fathometer problems could be resolved more easily in the Washington office if a tabulation were included in the Fathometer Report correlating fathometers with the days on which they were used on the various surveys during the season.

b. The smooth plotting was well done.


c. The preliminary verification of this survey was confined to critical soundings, unnatural bottom configuration and crossing discrepancies. Soundings in the irregular bottom area near the barrier islands, as well as several lines covering the general area have been verified and inked. Completion of the verification and inking is deferred until some future date, at which time the shoreline will be added, junctional soundings will be transferred and the inspection of the depth curves will be made.

8. Compliance with Project Instructions

This survey complies with the Project Instructions except that fathometer instrumental errors were not determined for the greater part of the range of depths surveyed. As mentioned in the Descriptive Report, several areas in 40-ft. depths off Demarcation Point were not fully developed before termination of the field season.

9. Additional Field Work

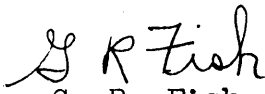
This survey is considered basic for the area covered. As a matter of record it is noted that in several areas off Demarcation Bay in Depths of 40 ft. and greater, the spacing of sounding lines is excessive. However, the bottom is smooth and no shoals are indicated by the adjacent hydrography.

  
H. R. Edmonston

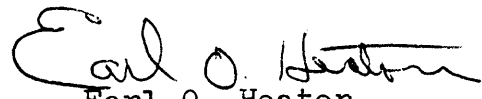
Chief, Nautical Chart Branch



H. Arnold Karo  
Chief, Division of Charts

  
G. R. Fish

Chief, Section of Hydrography

  
Earl O. Heaton

Chief, Division of Coastal Surveys

BEAUFORT SEA

Chart 9400

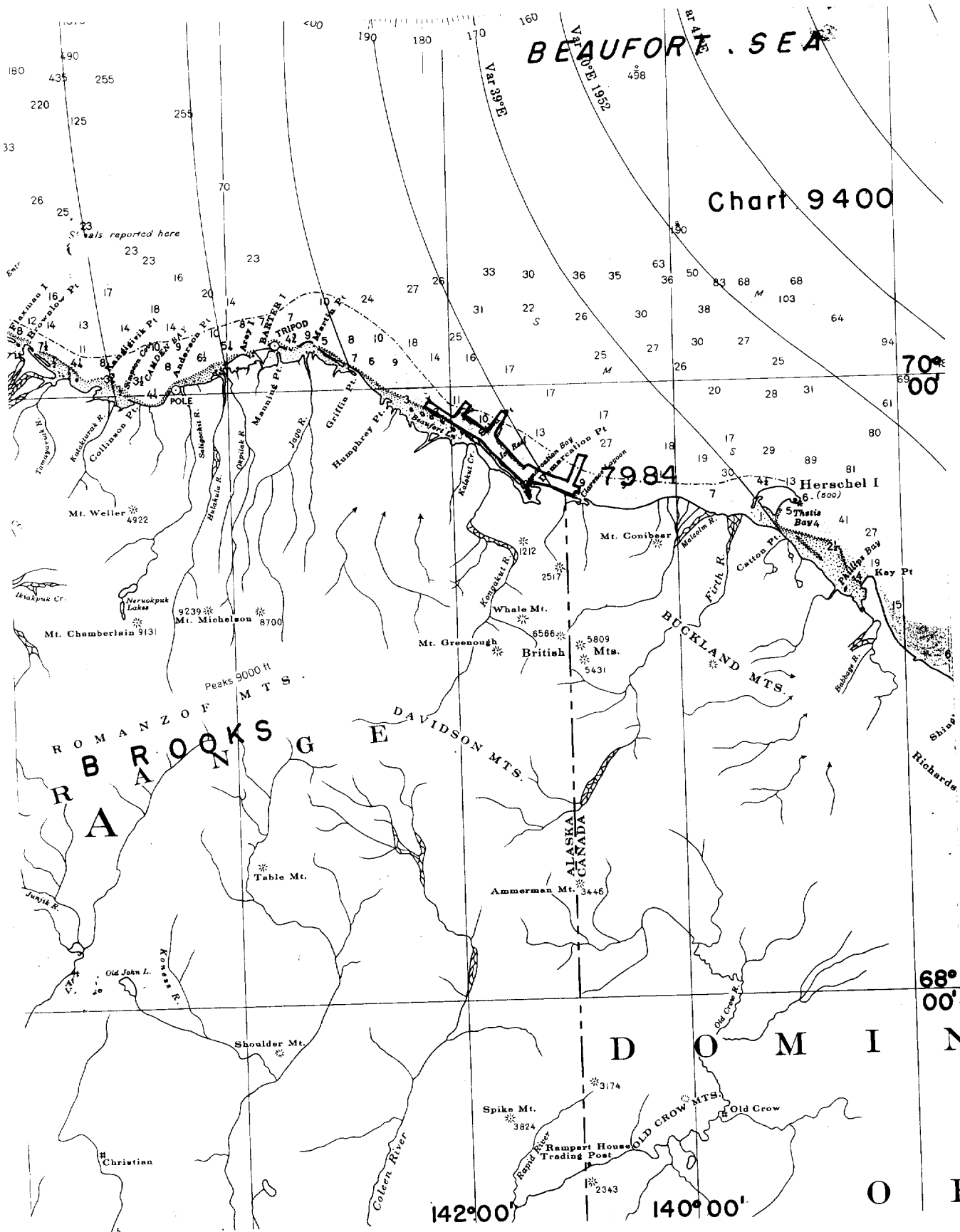
70° 00'

68° 00'

142° 00'

140° 00'

O I



## NAUTICAL CHARTS BRANCH

SURVEY NO. H-7984

## Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
4-2-53	9403	P. J. Andrews	Before <del>After</del> Verification and Review
5-4-53	No 23	C.R. Wittmann	Before <del>After</del> Verification and Review
5/4/53	Arctic Ch # 24	H.W. Burgoyne	Before <del>After</del> Verification and Review
20 Jan 53	Arctic Ch 24	James H. Bell	<del>Before</del> <sup>Preliminary</sup> After Verification and Review
2/26/54	Arctic 23	Bill - JTW	<del>Before</del> <sup>Prelim.</sup> After Verification and Review
11-1-54	9477 9478	Goodrich	<del>Before</del> <sup>Prelim.</sup> After <sub>A</sub> Verification and Review
Apr '55	9403	H.E. MacEwen	<del>Before</del> After Verification and Review <sup>Thru chrt 9477 and chrt 9478</sup>
			Before After Verification and Review
			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.