

7918

Diag. Cht. No. 9400

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ARE-2351 Office No. H-7918

LOCALITY

State Alaska

General locality North Arctic Coast

Locality Oliktok Point to Colville River

194 51

CHIEF OF PARTY

Max G. Ricketts

LIBRARY & ARCHIVES

DATE Januray 2, 1952

B-1870-1 (1)

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

7918

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-7918

Field No. ARE-2351

State Alaska

General locality North Arctic Coast

Locality Oliktok Point to Colville River

Scale 1:20,000 Date of survey 23 July - 9 August 1951

Instructions dated 4 February 1951

Vessel Arctic Field Party, East Unit

Chief of party Max G. Ricketts

Surveyed by M. T. Paulson, and H. D. Hygren

Soundings taken by fathometer, ~~graphic recorder, hand lead, wire~~ 1195, 1268, 1258

Fathograms scaled by J. Tarbill and M. J. Gray

Fathograms checked by L. Erick and E. T. Blomstrom

Protracted by G. D. Scott

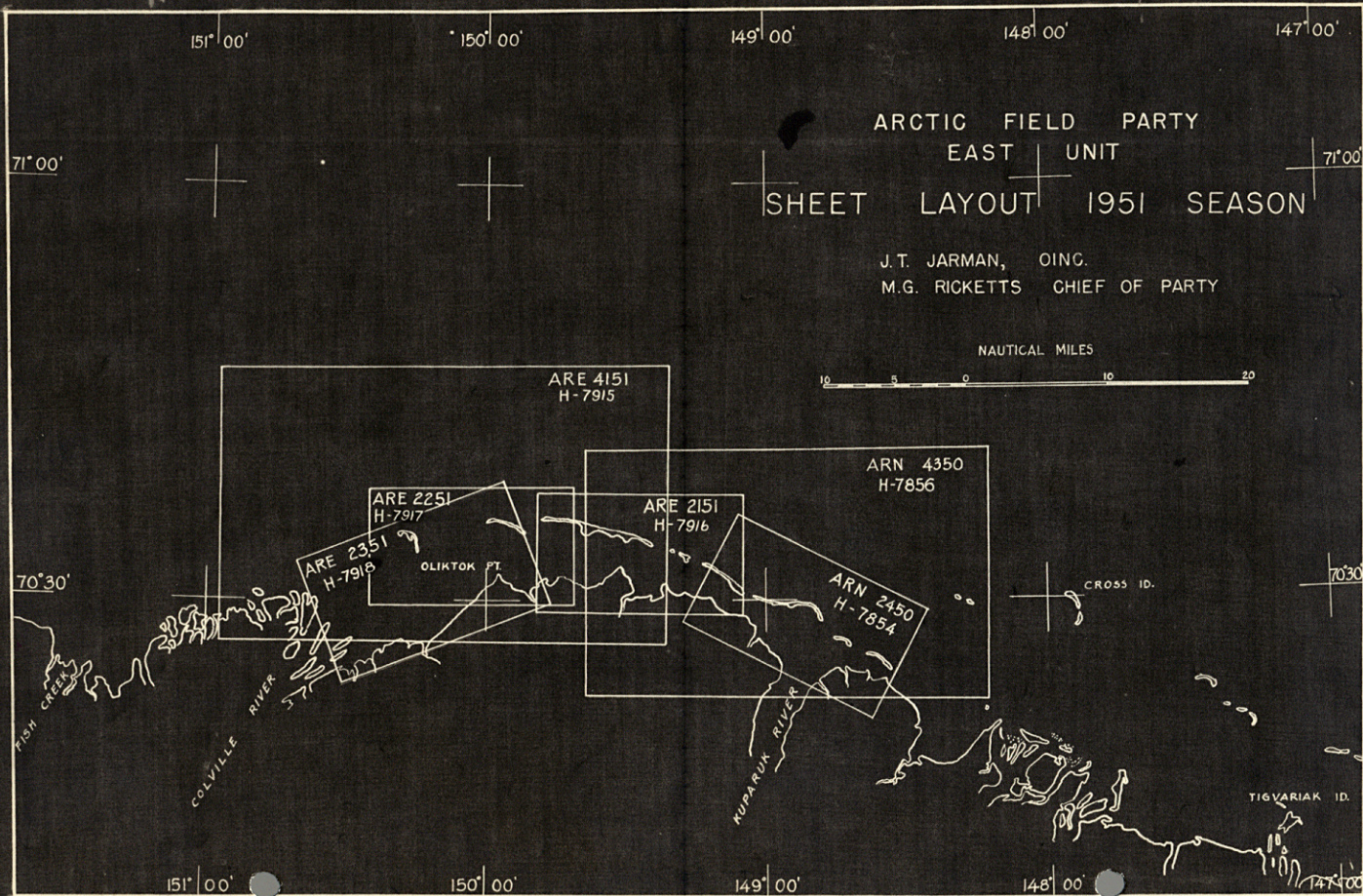
Soundings penciled by G. D. Scott

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

REMARKS:

282

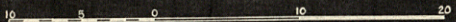
Reduce from this (15 3/4")
to this (10 1/2")



ARCTIC FIELD PARTY
EAST UNIT
SHEET LAYOUT 1951 SEASON

J.T. JARMAN, OINC.
M.G. RICKETTS CHIEF OF PARTY

NAUTICAL MILES



Leave approx. 1/4" space outside border,
this side for binding purposes.

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY H-7918

FIELD NO. ARE-2351

OLIKTOK POINT TO COLVILLE RIVER

ALASKA

PROJECT CS-320

1951

SCALE 1:20,000

Max G. Ricketts - - - - - Chief, Arctic Field Party
J. T. Jarman - - - - - Officer in Charge, East Unit
M.T. Paulson and H.D. Nygren - - - Officers in Charge, Field Work

A. PROJECT

Authority for this survey is contained in Supplemental Instructions for Project CS-320, Basic Surveys, Arctic Coast, dated 4 February 1951.

B. SURVEY LIMITS AND DATES

This survey covers the inshore area between Oliktok Point and the Colville River. The easterly limit is a line between Thetis Island and a point one mile southwest of Oliktok Point on the mainland. The northern limit west of Thetis Island is at latitude $70^{\circ} 33.5'N$. West of longitude $150^{\circ} 17'W$ this line runs south to latitude $70^{\circ} 32.5'N$ at longitude $150^{\circ} 26'W$. This is the western limit of the sheet. To the south, the survey was carried inshore to the four foot curve wherever possible.

This survey joins H-7917 to the east.
(1951)

Field work was accomplished between 23 July and 9 August 1951. After 9 August the hydrographic parties shifted operations to the Beechey Point Area.

C. VESSELS AND EQUIPMENT

This survey was made with converted rearming launches 14 and 15. Launch 14 was equipped with shoran set No. 933, and launch 15 with set No. 572. Corrections to distances obtained with this equipment are tabulated and described in "Special Report on Shoran Operations, Arctic East Party, 1951".

Both launches were equipped with outboard fish units. Magnesian compasses were installed in both boats.

D. TIDE AND CURRENT STATIONS

Tide reducers were obtained from records of the Oliktok Point tide gages. Gage number one was located at Longitude $149^{\circ} 52.0'W$ and latitude $70^{\circ} 30.8'N$. Gage number two was approximately 0.1 mile south of this site. See "Special Report, Tide Stations Oliktok Point, Arctic East Party, 1951".

No current stations were observed in this area.

E. SMOOTH SHEET

The Seattle Processing Office constructed the projection by hand and plotted the control stations from computed Geographic Positions. The protracting of positions and pencilling of soundings was accomplished by the Arctic Field Party personnel.

F. CONTROL STATIONS

All control was based on the 1951 Second Order triangulation of M. G. Ricketts, Chief of Party. This was on the datum of Flaxman Island 1912. With one exception all hydrographic signals and shoran stations were located by Third Order triangulation or traverse, or were Second Order main scheme stations. Non-recoverable stations were submitted as topographic stations. Station SID was located by theodolite traverse, but was not computed. It is recorded in Vol. 1 as a hydrographic station.

G. SHORELINE AND TOPOGRAPHY

Mainland shoreline was not available for the smooth sheet.

Shoreline is now shown on T-9774 (1947), T-9780 (1947) & T-9773 (1947-51)

Shoreline for Thetis Island* was traced from a ^{planetable} topographic sheet^v submitted with the photogrammetric field records.
(1951)

** this shoreline is now shown on T-9773 (1947-51).*

H. SOUNDINGS

The planetable sheet is filed in Div. of Photogrammetry and will be destroyed after completion of the project surveys.

All soundings were taken with type 808J portable fathometers or with handleads. Soundings were recorded on the foot scale, and all time was controlled by the fathogram. Fathometers were equipped with 800 fathom per second reeds, and no velocity corrections were computed or applied to recorded values.

Launch No. 14 was equipped with fathometer 119S, and Launch No. 15 with fathometers 125S and 126S. See "Special Report, Fathometer Corrections, Arctic East Party, 1951".

filed with bathograms 4-7918.

I. CONTROL OF HYDROGRAPHY

Hydrography was controlled by shoran fixes or sextant fixes on shore objects. Occasionally it was necessary to use a combination of shoran and visual control. Shoran fixes in the western part of the area are weak because of the slender intersection of distance arcs.

J. ADEQUACY OF SURVEY

This survey is complete and adequate.

K. CROSSLINES

Crosslines are adequate and check satisfactorily.

L. COMPARISON WITH PRIOR SURVEYS

There were no previous surveys of this area.

M. COMPARISON WITH CHART

The existing charts of the area are on too small a scale for adequate comparison. *See review*

N. DANGERS AND SHOALS

The extensive shoals off the various mouths of the Colville River are the only dangers in this area. They are delineated by the survey.

O. COAST PILOT INFORMATION

See "Coast Pilot Report, Arctic East Party, 1951".

During the 1951 season the launches were based at Oliktok Point while working on this survey.

Weather during July and early August was clear and warm, with occasional fog or squalls of short duration. Brisk NE winds would cause a hard chop to form in the shallow water of this region.

P. AIDS TO NAVIGATION

See "Form 567, Aids to Navigation, Arctic East Party, 1951".

Chart letter 791 (1951)

Q. LANDMARKS FOR CHARTS

See "Form 567, Landmarks, Arctic East Party, 1951".

Chart letter 791 (1951)

The following landmarks fall within the limits of ^{H-7917 (1951)} ~~this survey~~:

GABLE - - - - Oliktok Point

MOUND - - - - Station MOUND 1951

R. GEOGRAPHIC NAMES

See Geographic Names Report, Arctic Field Party, 1951.

S. TABULATION OF APPLICABLE DATA

The following records are to be submitted under separate cover:

1. List of Geographic Positions 1951.
2. Tidal Report, 1951.
3. Fathometer Correction Report, 1951. *filed with fathograms H-7910.*
4. Coast Pilot Notes, 1951.
5. Geographic Names Report, 1951.
6. Shore Correction Report, 1951.
7. Landmarks for Charts, 1951. } *chart letter 791 (1951)*
8. Aids to Navigation, 1951. }

T. ATTACHMENTS

The following data are attached to this report:

1. List of Signals.
2. Statistics.
3. Tidal Note.
4. Fathometer Corrections.
5. Geographic Names List.
6. Approval Sheet.

Respectfully submitted:

Harley D. Nygren

Harley D. Nygren
Lieutenant (jg), USC&GS

Approved and forwarded:

Max G. Ricketts
Max G. Ricketts

Commander, USC&GS
Chief, Arctic Field Party

ENCLOSURE 1

LIST OF SIGNALS

SHORAN STATIONS

<u>NAME</u>	<u>SOURCE</u>
HBT	1951 Shoran Report
OLE	1951 Shoran Report

HYDROGRAPHIC SIGNALS

ARCH	1951 Triangulation
BUO	1951 " BUCKLE 1951
FIE	1951 " Topographic Station
KIK	1951 " IPKIK 1951
NUM	1951 " Topographic station
POT	1951 " " "
RIO	1951 " ORION 1951
SID	Volume 1
TAP	1951 Triangulation, Topographic station
TEA	1951 " " "
TIS	1951 " THEFTIS ID. 1951
WEST	1951 " OLIK TOK WEST BASE 1951

ENCLOSURE 2

STATISTICS

for

SURVEY H-7918 (ARE-2351)

<u>LAUNCH NUMBER</u>	<u>DATE 1951</u>	<u>VOL. NO.</u>	<u>DAY LETTER</u>	<u>NUMBER OF POSITIONS</u>	<u>STATUTE MILES SOUNDING LINES</u>
14	23 July	1	a (green)	74	21.3
15	23 July	2	a (blue)	50	20.4
15	24 July	2	b (blue)	180	65.8
15	31 July	2	c (blue)	31	8.8
15	5 Aug.	3	d (blue)	98	26.2
15	6 Aug.	3	e (blue)	173	45.0
		4	e (blue)	22	6.6
14	6 Aug.	6	b (green)	89	23.8
14	7 Aug.	6	c (green)	136	34.6
		7	c (green)	9	2.3
15	7 Aug.	4	f (blue)	11	2.6
15	8 Aug.	4	g (blue)	206	59.5
15	9 Aug.	4	h (blue)	26	4.9
		5	h (blue)	184	42.4
14	8 Aug.	7	d (green)	175	42.2
14	9 Aug.	8	e (green)	183	38.5
			TOTAL	1647	444.9

Total square statute miles 48.2

ENCLOSURE 3

TIDAL NOTE

H-7918 (ARE 2351)

TIDE GAGE LOCATION

Oliktok Point - - - latitude $70^{\circ} 30.75' N$
longitude $149^{\circ} 52.04' W$

PLANE OF REFERENCE

<u>Station</u>	<u>Mean lower low water on the staff</u>
Oliktok Point (No. 1)	2.4 feet
Oliktok Point (No. 2)	2.5 feet

Refer to "Tide Reducers Report, Project CS-320, 1951", submitted under separate cover.

ENCLOSURE 4

FATHOMETER CORRECTIONS 1951

SHEET H-7918 (ARE-2351)

LAUNCH 14

FATHOMETER 119S

Correction to Bar Check line - 0.2
 "B" Scale or phase correction - +0.5

BAR CHECK CORRECTIONS

<u>Date</u>	<u>Fath.No.</u>	<u>Bar Check Correction</u>	<u>Date</u>	<u>Fath.No.</u>	<u>Bar Check Correction</u>
23 July	119S	0.0	8 Aug.	119S	0.0
6 Aug.	119S	-0.2	9 Aug.	119S	0.0
7 Aug.	119S	-0.2			

LAUNCH 15

FATHOMETERS 125S, 126S

Correction to Bar Check line - 0.0
 "B" Scale or phase correction 125S - - - - - - - - - - - - - - - - -0.3
 126S - - - - - - - - - - - - - - - - +0.8

<u>Date</u>	<u>Fath.No.</u>	<u>Bar Check Correction</u>	<u>Date</u>	<u>Fath.No.</u>	<u>Bar Check Correction</u>
23 July	126S	0.0	8 Aug.	125S	+0.47
24 July	126S	-0.02	9 Aug.	125S	+0.45
31 July	126S	-0.33			
6 Aug.	126S	-0.1			
	125S	-1.0			
7 Aug.	125S	-1.0			

ENCLOSURE 5

GEOGRAPHIC NAME LIST

SURVEY NO. H-7918 (FIELD NO. ARE-2351)

ALASKA

ARCTIC COAST

BEAUFORT SEA

COLVILLE RIVER

OLIKTOK POINT

SPY ISLAND

THETIS ISLAND

THETIS MOUND

APPROVAL SHEET

Reg.No. H-7916

Recommend that some additional inshore work be done at the mouth of the Colville River to prove existence of the 4 foot entrance channel indicated by the sounding loop (Lat. $70^{\circ} 29'$ to $30'$, Long. $150^{\circ} 18'$ to $20'$). Such work will require moderate southwesterly wind to increase the tide range while still maintaining relatively calm sea conditions.

The sheet and records have been examined and are approved. The survey is complete and adequate with the exception of the additional work recommended above.



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

839

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~XX~~

10 January 1952

Division of Charts: R. H. Carstens

Plane of reference approved in 8
volumes of sounding records for

HYDROGRAPHIC SHEET 7918

Locality Arctic Coast, Alaska

Chief of Party: M. G. Ricketts in 1951

Plane of reference is mean lower low water, reading
2.4 ft. on tide staff ~~xx~~ (No. 1) at Oliktok Point
8.6 ft. below B. M. OLIK LEFFINGWELL (1911-1951)

2.5 ft. on tide staff (No. 2) at Oliktok Point
8.6 ft. below B.M. OLIK LEFFINGWELL (1911-1951)

4.8 ft. on tide staff at Pitt Point
19.0 ft. below B.M. CAMP (1951)

Height of mean high water above plane of reference is as follows:
Oliktok Point = 0.70 foot
Pitt Point = 0.40 foot

Condition of records satisfactory except as noted below:

E. C. McKay
Section

Chief, Division of Tides and Currents.

GEOGRAPHIC NAMES

Survey No. H-7918

Name on Survey												
	A	B	C	D	E	F	G	H	K			
<u>Alaska</u>												1
<u>Arctic Coast</u>												2
<u>Beaufort Sea</u>											BGN	3
<u>Olktok Point</u>												4
<u>Spy Island</u>												5
<u>Thetis Island</u>												6
<u>Thetis Mound</u>												7
<u>Colville River</u>												8
<u>Harrison Bay</u>											BGN	9
											BGN	10
												11
												12
												13
												14
												15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25
												26
												27

} for title

(location of tide gage)

Names underlined in
red are approved
5-15-53 L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. *H-7918*

Records accompanying survey:

Boat sheets *2*; sounding vols. *8*; wire drag vols.;
 bomb vols.; graphic recorder rolls *8 Env*;
 special reports, etc. *1 Smooth Sheet; 1 Descriptive; 1 Env; Fathometer Corrections;*

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

Number of positions on sheet		<i>1647</i>	
Number of positions checked		<i>12</i>	<i>115</i>
Number of positions revised		<i>3</i>	<i>6</i>
Number of soundings revised (refers to depth only)		<i>355</i>	<i>70</i>
Number of soundings erroneously spaced		<i>—</i>	<i>105</i>
Number of signals erroneously plotted or transferred		<i>—</i>	<i>—</i>
Topographic details	Time	<i>—</i>	<i>—</i>
Junctions	Time	<i>4 hr</i>	<i>—</i>
Verification of soundings from graphic record	Time	<i>8 hr</i>	<i>10 hr</i>
<i>Preliminary Verification -- R.E. Elkins 24 hrs</i>			<i>5-6-53</i>
<i>Verification by C.L. Tyser (in Norfolk) 100 hrs</i>	Total time	<i>134 hrs</i>	Date <i>12-29-53</i>
<i>Completion of Verification -- R.E. Elkins 10 hrs</i>			Date <i>11-4-54</i>
Reviewed by <i>R.E. Elkins</i>	Time	<i>8 hrs</i>	Date <i>5-7-53</i>
<i>Addendum to Review R.E. Elkins</i>		<i>3 hrs</i>	<i>11-4-54</i>

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7918

FIELD NO. ARE-2351

Alaska, North Arctic Coast, Oliktok Pt. to Colville River

Project No. CS-320

Surveyed in July and August 1951

Scale 1:20,000

Soundings:

808 Fathometer

Control:

Shoran
Sextant fixes on shore signals

Chief of Party - M. G. Ricketts
Surveyed by - M. T. Paulson and H. D. Nygren
Protracted by - G. D. Scott
Soundings plotted by - G. D. Scott
Preliminary verification by - R. E. Elkins
Verified and inked by - *C.L. Tysor*
Reviewed by - R. E. Elkins, 7 May 1953
Inspected by - R. H. Carstens

1. Shoreline and Signals

The origin of the signals and shoreline 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. In the southeast section of the survey, minor crossing discrepancies of 1 and 2 feet were resolved by rescanning the fathograms of "a" and "b" days of launch 15.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated except for the low-water curve. In accordance with the Project Instructions, curves in shoal flat areas less than 6 ft. in depth were not completely developed. Sounding lines were carried

inshore to depths of 2 to 4 ft., 2 miles off the Colville River delta shoreline and to similar depths 200 meters off the shoreline on the southeast.

The bottom is smooth except for a few minor irregularities.

4. Junctions with Contemporary Surveys

An adequate junction was effected with H-7917 (1951) on the north. Project surveys on the northwest have not been registered in office. *see Review Addendum*

5. Comparison with Prior Surveys

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

6. Comparison with Arctic Coast Chart 17 (Print date 4/21/52)
Arctic Coast Chart 18 (Print date 4/21/52)

A. Hydrography

The charted hydrography is from the present survey before preliminary verification. Because of minor revisions, the soundings now inked on the smooth sheet supersede the charted depths. *See Review Addendum*

B. Aids to Navigation

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

7. Condition of Survey

- a. The sounding records are complete; the Descriptive Report covers all matters of importance except that no summary of bar check corrections applied to the soundings was included. The fathometer report for the 1951 season failed to include a list of corrections for the leadlines used.
- 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. 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.

9. Additional Field Work

This is a good basic survey. In the Descriptive Report, the hydrographer recommends additional development of the entrance channel into Colville River in the vicinity of lat. 70° 30.5', long. 150° 19'.



H. R. Edmonston
Chief, Nautical Chart Branch



G. R. Fish
Chief, Section of Hydrography

Examined and approved:



H. Arnold Karo
Chief, Division of Charts



Earl O. Heaton
Chief, Division of Coastal Surveys

Addendum to Review

H-7918 (1951)

Verified and inked by - C. L. Tysor in Norfolk Office
Review addendum by - R. E. Elkins 11-4-54
Inspected by - R. H. Carstens

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

Shoreline

The shoreline is from reviewed photogrammetric surveys T-9773, T-9774, T-9780 (1947-51).

Junctions with Contemporary Surveys

Adequate junctions were effected with H-7917 (1951) on the northeast, and with H-8058 (1953) on the northwest.

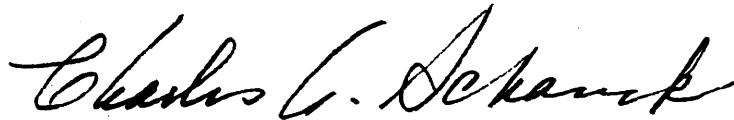
Comparison with Arctic Coast Chart 17 (print date 4-21-52)
Arctic Coast Chart 18 (print date 4-21-52)

The hydrography is from the present survey before verification. Because of minor revisions, the soundings now inked on the smooth sheet differ by one foot in some instances with charted soundings.

Condition of Survey

Completion of the verification reveals that the smooth plotting was well done.

Approved:



Acting Chief, Chart Division

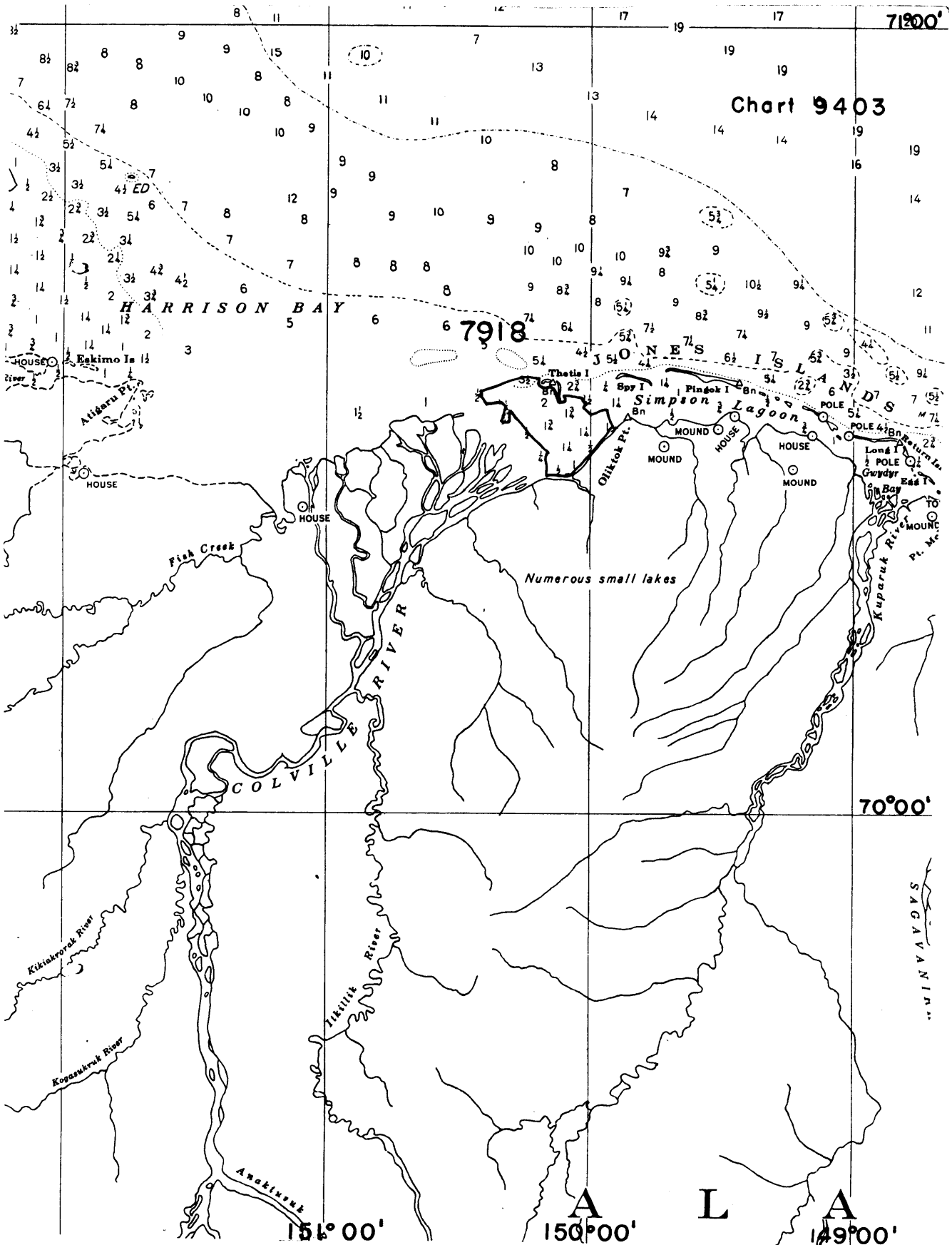


Chart 9403

7918

71°00'

70°00'

151°00'

150°00'

L

149°00'

