

7854

12
17

[REDACTED]

SECURITY INFORMATION

[REDACTED]

Diag. Cht. No. 9400

320

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. ARN - 2450 Office No. H-7854

LOCALITY

State ALASKA

General locality ARCTIC COAST

Locality RETURN ISLANDS

194 50-51

CHIEF OF PARTY

R. A. Earle & M. G. Ricketts

LIBRARY & ARCHIVES

DATE FEBRUARY 19, 1951 & FEBRUARY 4, 1952

B-1870-1 (1)

7854

[REDACTED]

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

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-7854

Field No. ARN-2450

State Alaska

General locality Arctic Coast

Locality Return Islands

Scale 1:20,000 Date of survey 18 - 27 August, 1950

Instructions dated 8 March 1950

Vessel North Arctic Party

Chief of party R. A. Earle

Surveyed by D. E. Fisher, H. D. Nygren

Soundings taken by fathometer, graphic recorder, ~~hand lead, wire~~ 125s, 126s

Fathograms scaled by J. T. Shanahan, R. D. Davis

Fathograms checked by M. J. Gray, C. E. Horne

Protracted by L. W. Eason

Soundings penciled by H. D. Nygren

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW and are true depths

REMARKS:

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-7854
FIELD NUMBER ARN-2450
RETURN ISLANDS, ALASKA
PROJECT CS-320
1950

SCALE: _ _ _ 1:20,000

R. A. EARLE - - - - - OINC, ARCTIC PARTY
J. T. JARMAN - - - - - -IN CHARGE, SUB-PARTY
D. E. FISHER - - - - - -IN CHARGE, FIELD WORK
H. D. NYGREN - - - - - -IN CHARGE, FIELD WORK

A: PROJECT

Authority for this survey is contained in Supplemental Instructions for Project CS-320 dated 8 March 1950. ✓

B: SURVEY LIMITS AND DATES

This survey covers the inshore area north of Long Island from longitude $148^{\circ} 48'$ West to Longitude $148^{\circ} 58'$ West, and extends northward to latitude $70^{\circ} 31'$ North. It joins H-7857⁽¹⁹⁵⁰⁾ and H-7761 on the east, and H-7856⁽¹⁹⁵⁰⁻⁵¹⁾ on the north. Since the sheet is incomplete, the area to the westward will receive additional attention during the 1951 season. (Completed in 1951)

The survey was executed between 18 August 1950 and 27 August 1950. Field work was discontinued on 27 August 1950 when the hydrographic party shifted operations to the Camden Bay area.

C: VESSELS AND EQUIPMENT

The survey was made with converted rearming launches numbered 14 and 15 using portable, 808 type, recording fathometers, numbered 126s and 119s respectively, equipped with fresh water reeds and outboard fish. Launch No. 15 was equipped with shoran set No. 933, and launch No. 14 with shoran set No. 572. Corrections to distances obtained with both of these sets are tabulated and described in "Special Report on Shoran Operations, Arctic North Unit, 1950". ✓

D: TIDE AND CURRENT STATIONS

Tide reducers were obtained from records of the Cross Island 1950 tide gage. The gage was located in an ice free bight on Cross Island, latitude $70^{\circ} 29.3$ N., and Longitude $147^{\circ} 56.4$ W. The 1950 gage location is different from that used for the 1949 gage; however, the 1949 bench marks were tied-in, and additional marks established.

No current stations were observed on this sheet.

E: SMOOTH SHEET

The Seattle Processing Office constructed the smooth sheet projections and plotted the control stations. Shoran control stations were plotted from geographic positions, which are tabulated in the special report on "Shoran Operations, Arctic North Coast, 1950". The protracting of launch positions, and the pencilling of soundings was accomplished by Arctic Field Party personnel.

Attention is directed to the conflict between shoreline and hydrography on this sheet which is discussed under the heading "Shoreline and Topography."

F: CONTROL STATIONS

The basic control was established in 1949 by triangulation. Shoran station JIM was located by traverse from triangulation station DEER 1949, and shoran station MIL is STUMP 2, REFERENCE MARK NO. 1, 1949.

G: SHORELINE AND TOPOGRAPHY

The shoreline for the smooth sheet was traced from a shoreline manuscript compiled from nine-lens photographs at the Portland Photogrammetric Office, Portland, Oregon. Sounding lines are in conflict with the shoreline along the north side of Long Island west from station LONG 2 1949. This shoreline was left in pencil on the smooth sheet. Since the 1949 field inspection ended at station LONG 2 1949, the shoreline west from this station is subject to revision when the field inspection is extended westward in 1951. Attention is directed to the fact that the shoreline of the barrier islands is subject to seasonal changes. *In case the shoreline is not revised as a result of additional field inspection, the hydrographic records contain sufficient notes, as to distances offshore, etc. to assist in sketching the shoreline on the sheet.

The low water line was not delineated due to the low range of tides. *The hydrography was adjusted to the photo-compiled shoreline. The 1950 shoran positioning is subject to question because of attenuation factors outlined in the 1951 Shoran Report.

H: SOUNDINGS

All soundings were taken with 808 type portable fathometers. The soundings were recorded on the foot scale and the time was controlled by the fathogram. Fathometer corrections are derived and tabulated in "Special Report on Fathometer Corrections, Arctic North Party, 1950". (filed with H-7857) Soundings are reduced to true depths by velocity corrections derived from temperature & salinity observations.

I: CONTROL OF HYDROGRAPHY

All hydrography was controlled by shoran fixes. The time between fixes occasionally did not check because it was sometimes necessary to maneuver around floating ice cakes while on a sounding line.

J: ADEQUACY OF SURVEY

The survey is unfinished but adequate in the area covered. It is expected that work will be resumed on the sheet in 1951. (completed in 1951)

K: CROSSLINES

Crosslines are adequate and check satisfactorily.

L: COMPARISON WITH PRIOR SURVEYS

There are no previous surveys in this area.

M: COMPARISON WITH CHART

The existing chart of this area, USC&GS chart 9400, is too small

a scale for adequate comparison. *See Review*

N: DANGERS AND SHOALS

There are no indicated dangers or shoals in the completed area of the survey.

O: COAST PILOT

See: "Coast Pilot Report, Arctic North Party, 1945 and 1950".

P: AIDS TO NAVIGATION

There are no aids to navigation in the area covered by this survey.
see 1951 Descriptive Report for Aids.

Q: LANDMARKS FOR CHARTS

There are no landmarks for charts in the area covered by this sheet.
see 1951 Descriptive Report for Landmarks

R: GEOGRAPHIC NAMES *SLA*

See: "Special Report on Geographic Names, Arctic North Party, 1949".

No additional information was obtained during the 1950 field season.

S: TABULATION OF APPLICABLE DATA

The following listed data and reports have been transmitted to the Washington Office under separate cover:

1. List of Geographic Positions, 1949
2. Tidal Data Report, 1950
3. Fathometer Corrections, 1950 *filed with H-7857*
4. Coast Pilot Notes, 1949, and 1950
5. Shoran Operation Report, 1950

T: ATTACHMENTS

The following listed data are attached to this report:

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

U: REMARKS

Two boat sheets comprise this survey. All hydrography executed by Launch 14 is on a 1:40,000 scale boat sheet. The sounding line spacing and the sounding interval were selected so that the smooth plot could be on a 1:20,000 scale. It was necessary to follow the foregoing procedure because work began on the sheet before the 1:20,000 scale boat sheet was prepared. Launch 15 accomplished 1 days hydrography on the 1:20,000 scale boat sheet. The limits of the complete survey have been transferred to the 1:20,000

scale boat sheet in order to study junctions with other sheets.

Harley D. Nygren
Harley D. Nygren
Ensign, USC&G Survey

Approved and forwarded:

R. A. Earle
R. A. Earle,
Commander, USC&G Survey
OinC, Arctic Field Party

LIST OF SIGNALS

SHORAN STATIONS LOCATIONS

	<u>N. LATITUDE</u>	<u>W. LONGITUDE</u>	<u>REMARKS</u>
MIL	70° 24 1839.6 m	148° 34' 582.9 m	On Stump I
JIM	70 29 465.5 m	148 20' 426.5 m	On DEER I.

The above signals were located by traverse from triangulation stations.

See: "Report on Shoran Operations, Arctic North Unit, 1950".

STATISTICS FOR HYDROGRAPHIC SURVEY H-7854

FIELD NO. ARN-2450

<u>LAUNCH NO.</u>	<u>DATE-1950</u>	<u>VOLUME NO.</u>	<u>DAY LTR.</u>	<u>NO. POS.</u>	<u>STAT. MILES</u>
14	18 Aug.	1	a(green)	109	31.2
14	19 Aug.	1	b(green)	148	42.3
15	27 A ug.	2	a(blue)	43	11.7

TOTALS:

300

85.2

AREA: 11.0 SQ. STAT. MILES

TIDAL NOTE

H-7854

Tide gage location:

Cross Island,	Latitude	70° 29.3'	North
	Longitude	147 56.4'	West

Plane of Reference:

Mean lower low water (MLLW) which is 3.8 feet above the zero of the staff at the Cross Island Tide Gage.

Refer to Tide Data Report, 1950 which will be submitted under separate cover.

VELOCITY CORRECTIONS
SHEET ARN-2450
H-7854

Launch No. 14
Fath. No. 126
Velocity Curve No. 2
8/18 thru 8/19

<u>Depth appli-</u> <u>cable Feet</u>	<u>Velocity</u> <u>Corr. Feet</u>	<u>Bar-Check</u> <u>Corr. Feet</u>	<u>Combined</u> <u>Corr. Feet</u>
0 to 20	0.0	-0.1	-0.1
20 to 49	-0.2	-0.1	-0.3
49 to 67	-0.4	-0.1	-0.5

"B" and "C" scale correction same as "A" scale (0.0)

Launch No. 15
Fath. No. 119
8/27
Velocity Curve No. 2

<u>Depth Appli-</u> <u>cable Feet</u>	<u>Velocity</u> <u>Corr. Feet</u>	<u>Bar-Check</u> <u>Corr. Feet</u>	<u>Combined</u> <u>Corr. Feet</u>
0 to 20	0.0	-0.5	-0.5
20 to 49	-0.2	-0.5	-0.7
49 to 67	-0.4	-0.5	-0.9

"B" and "C" scale corrections same as "A" scale (0.0)

H*7854
FIELD SURVEY ARN-2450
GEOGRAPHIC NAME
LIST

Alaska

Beaufort Sea

Gwydyr Bay

Return Islands

Long Island

Egg Island

Stump Island

Pt. Storkersen

Fawn Creek


Kuparuk River

APPROVAL SHEET

H-7854

During the 1950 season, field records received periodic inspections, and the field work was supervised personally by the undersigned officer. As officer in charge of processing records, the smooth sheet and the field records of the survey have been inspected, and they are approved for transmission to the Washington Office.


The survey is considered adequate for the area covered, but it is recommended that the sheet be completed in 1951.


J. T. JARMAN
Lieut. Comdr. USC&G Survey
OinC, ARCTIC NORTH UNIT

It was not possible for the Chief of Party to make frequent inspections of all widely separated units engaged on hydrographic surveys, such inspections during the field season being assigned to the officer in charge of field work in each base camp.

The sheet and records have been examined and are approved. Additional work is recommended to complete the sheet.

The Additional Work was completed in 1951.


R. A. EARLE
Commander, USC&G Survey
OinC, Arctic Field Party

RHG

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

20 March 1951

Division of Charts: R. H. Carstens

Plane of reference approved in 2
volumes of sounding records for

HYDROGRAPHIC SHEET 7854

Locality North Arctic Coast, Alaska

Chief of Party: R. A. Earle in 1950
Plane of reference is mean lower low water, reading
3.8 ft. on tide staff at Cross Island
5.8 ft. below B. M. 1 (1949)

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

Condition of records satisfactory except as noted below:

E. C. McKay
Section

Chief, ~~Division of Tides and Currents.~~

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-7854

Field No. ARN-2450

State Alaska

General locality North Arctic Coast

Locality Return Islands

Scale 1:20,000 Date of survey 7 Aug. to 29 Aug. 1951

Instructions dated 6 ~~February~~ February 1951

Vessel Arctic East Party

Chief of party Max G. Ricketts

Surveyed by R.M. Sylar, M.T. Paulson, H.D. Nygren

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

Fathograms scaled by P.J.M., M.J.G., J.E.T.

Fathograms checked by J.J.C., E.T.B., L.E.

Protracted by L.W. Eason

Soundings penciled by L.W. Eason

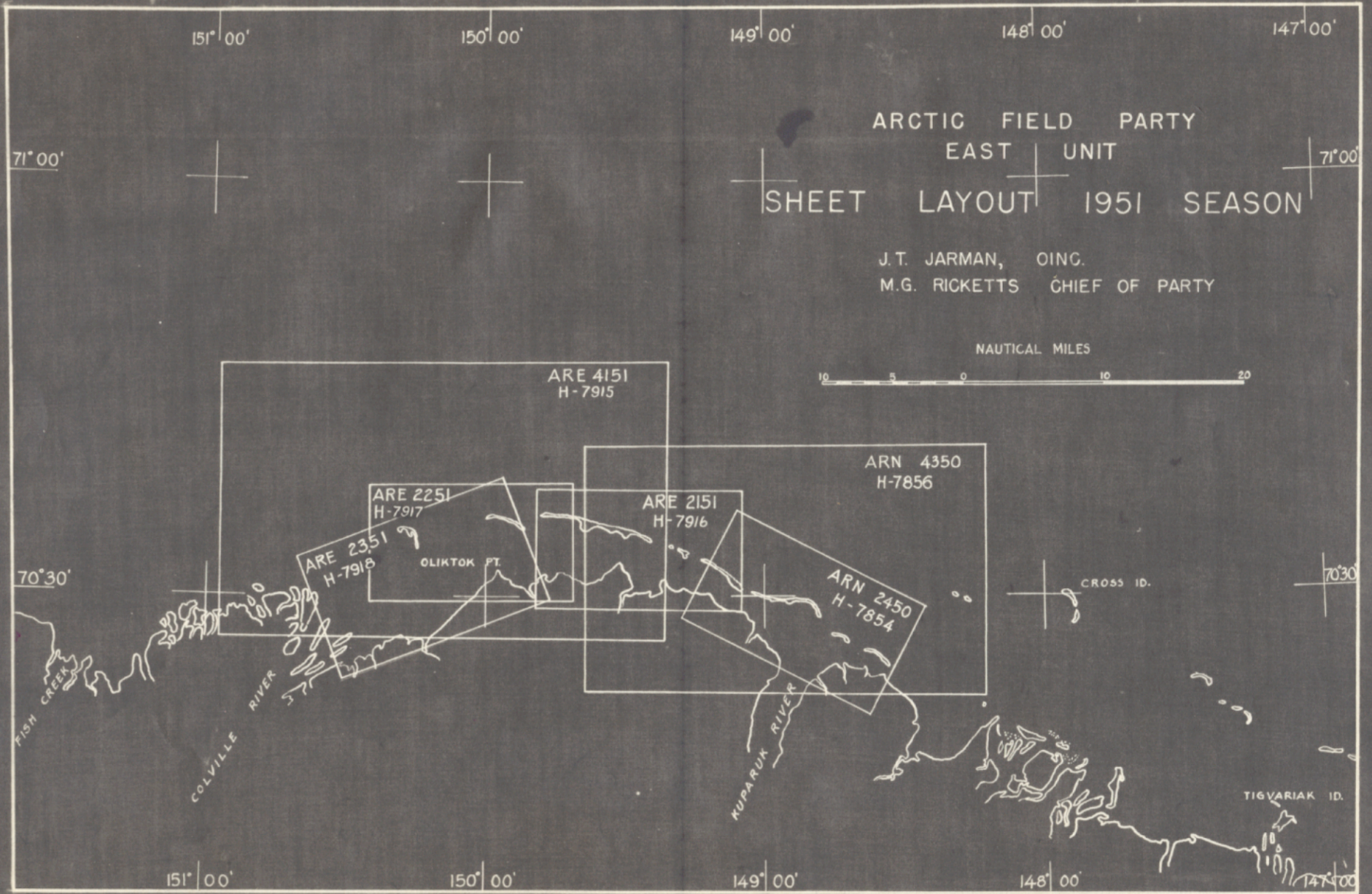
Soundings in ~~fathoms~~ feet at ~~MLW~~ ^{MLLW} ~~MLLW~~ and are true depths.

REMARKS: A portion of this sheet was surveyed and plotted in 1950.

This cover sheet and report refers to the 1951 survey only.

The 1950 Descriptive Report follows the 1951 Report

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



ARCTIC FIELD PARTY
EAST UNIT
SHEET LAYOUT 1951 SEASON

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

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

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-7854
FIELD NO. ARN-2450
RETURN ISLANDS - ALASKA
PROJECT CS-320
1951
SCALE 1:20,000

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

A: PROJECT Authority for this project is contained in Supplemental Instructions for Project CS-320, Basic Surveys, Arctic Coast, dated 6 February 1951.

B: SURVEY LIMITS AND DATES This survey includes the inshore area from the Kuparuk River to Beechey Point and extends northward two to three miles north of the Barrier Islands. It is bounded by latitudes $70^{\circ} 25' 11''$ and $70^{\circ} 32' 6''$ and longitudes $148^{\circ} 40'$ and $149^{\circ} 10'$. The eastern limits of the sheet was surveyed in the 1950 field season.

Sheet H-7854 joins sheets H-7857 on the east, H-7856 on the north and H-7916 on the west. (1950) (1950-51)
(1951)

The 1951 field work was accomplished during the period 7 August to 29 August 1951.

Additional development was made in the area south of the west end of Egg Island. This was partially surveyed in 1950 on Sheet H-7857, ARN-2350.
(1950)

C: LAUNCHES AND EQUIPMENT This survey was accomplished with converted rearming launches #13, #14, and #15, using the portable 808J type fathometers Nos. 119S, 121S, and 125S. The fathometer fishes were installed on the starboard (outboard) side of the launches. The launches are 36 feet in length with a 3 foot draft.

Launches No. 14 and No. 15 were equipped with shoran sets 933 and 572. Refer to Special Report - Shoran Corrections, Arctic East Party 1951.

The turning radius of launch No. 13 has been determined to be 7 to 8 meters. It takes the launch 6 seconds to make a 90° turn and 11 seconds to make a 180° turn at a speed of 7.5 knots (1900 rpm).

D: TIDE AND CURRENT STATIONS Tide reducers were obtained from the Oliktok Point 1951 portable tide station, (Latitude 70° 30' 75" N., longitude 149° 52' 04" W). Refer to Special Report "Tide Reducers" OS-320, 1951.

No current stations were observed.

E: SMOOTH SHEET The Seattle Processing Office constructed the smooth sheet projection and plotted the control stations. The positions were protracted and the soundings entered on the smooth sheet by the Arctic Party personnel.

F: CONTROL STATIONS The basic control was established by the 1949 and 1951 triangulation survey. In addition to the triangulation stations, the following stations were located by sextant fixes:

Red	Jac	Ax
-----	-----	----

The following shoran stations located by traverse were used:

Hen, 1951	Ded, 1951	Puk, 1951
-----------	-----------	-----------

G: SHORELINE AND TOPOGRAPHY Shoreline was not available at the time of the smooth sheet plotting. The manuscripts are being compiled from nine-lens photographs by the Portland Photogrammetric Office. *See Review*

Shoal areas were sketched on the boat sheet by the hydrographer and described in section "N" of this report.

H: SOUNDINGS Soundings were obtained by the 808J type recording fathometers, equipped with a calibrated velocity reed of 800 fathoms per second. Refer to "Special Report, Fathometer Corrections, 1951". Bottom samples were obtained by handlead. *Soundings are reduced to true depths by velocity corrections derived from temperature and salinity observations. - Filed with H-7918*

I: CONTROL OF HYDROGRAPHY Control of the hydrography was principally by sextant fixes. A limited number of lines were controlled by shoran fixes. For shoran corrections, refer to "Special Report, Shoran Corrections, 1951".

J: ADEQUACY OF SURVEY The survey is adequate.

K: CROSSLINES The survey is verified by about 8% crosslines, and all crossings checked satisfactorily.

L: COMPARISON WITH PRIOR SURVEYS There are no previous surveys in this area. The eastern portion of the sheet, outside of Long Island, was surveyed in 1950. The ^{junction} comparison with Sheet H-7857 (ARN 2350) ₍₁₉₅₀₎ is satisfactory. The depth curves were transferred in dashed lines to show correlation on this sheet.

M: COMPARISON WITH CHART USC&GS Chart No. 9400 is on too small a scale for adequate comparison. Preliminary charts 9403, Arctic 12 have been compiled from Arctic Surveys. *See Review*

N: DANGERS AND SHOALS

1. Latitude 70° 28!9, longitude 149° ⁰⁰ 31!4. A sandbar and shoal at this location is about 900 meters long in a northwest - southeast direction. A portion of the bar is exposed at the south end at mean tide level. The shoal area was outlined by the hydrographer on the boat sheet and shown by dashed yellow line on the smooth sheet.
2. Latitude 70° 27!4, longitude 148° 48!5. This shoal extends about 1100 meters west of the southeasterly tip of Long Island. The shoal area was outlined on the boat sheet by the 3-ft. curve by the hydrographer.
3. A shoal ridge is located along the offshore (north) side of Cottle Island parallel to the coast. It is 200 to 300 meters offshore and with least depths of 5 to 8 feet.
4. Latitude 70° 27!2, longitude 148° 45!2. A shoal area with breakers is located in this area. A least depth of 2 feet was determined in the 1950 ^{H-7857} survey, however breakers were consistently noted during the 1951 survey and are so shown on the smooth sheet.
5. A 3 foot shoal surveyed in 1950 at latitude 70° 28!6, longitude 148° 48!4, was outlined by the hydrographer in 1951. The breakers were noted on the boat sheet and transferred to the smooth sheet. ^{H-7857}
6. Controlling depths of 3 feet to ⁵ ~~4~~ feet exist in the channel between Cottle and Long Islands and are labeled on the smooth sheet. _{plotted}

O: COAST PILOT NOTES Refer to "Coast Pilot Report, Arctic East Party 1951".

P: AIDS TO NAVIGATION Refer to "Report, Nonfloating Aids to Navigation 1951".

The only applicable Aid to Navigation is the Long Island Day Bn.

Q: LANDMARKS FOR CHARTS Refer to "Report - Landmarks for Charts 1951" submitted 2 November 1951.

Q: LANDMARKS FOR CHARTS (CONT'D.)

The following landmarks are noted on the sheet:

Native Pole, Cottle Island
Native Pole, W end of Long Island
Native Pole, SE end of Long Island
House at Beechey Point (west gable)
Mound, south of Pt. Storkersen

R: GEOGRAPHIC NAMES Refer to "Special Report - Geographic Names 1951". See also attachment 6, this report for names added to the sheet in 1951.

S: SILTED AREAS None applicable.

T: BY-PRODUCT INFORMATION Considerable ice gouging is prevalent along the north shore of the Barrier Islands. It is probable that this gouging changes the character of the bottom yearly near the beach.

U: TABULATION OF APPLICABLE DATA

The following applicable data has been forwarded under separate cover:

1. List of Geographic Positions 1951
2. Tide Station Report, 1951
3. Fathometer Correction Report, 1951 (*filed with H-7918*)
4. Coast Pilot Notes, 1951
5. Geographic Names Report, 1951
6. Landmarks for Charts, 1951
7. Aids to Navigation, 1951
8. *Shoran Corrections, 1951*

V: ENCLOSURES

The following data are attached to this report:

1. List of Signals
2. Statistics
3. Tidal Note *Bar Check*
4. Fathometer *Bar Check* Corrections
5. Velocity Corrections
6. Geographic Names
7. Approval Sheet

Marvin T. Paulson
Marvin T. Paulson
Lt. Comdr., USC&GS

Approved and Forwarded:

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

ENCLOSURE 1LIST OF SIGNALS
(Additional Signals used in 1951)

<u>HYDRO NAME</u>	<u>STATION NAME</u>	<u>SOURCE</u>
Ax	AX	Hydro - Vol. 4
Bea	LONG ISLAND DAY BN	1951 Traverse Station, G.P. List and Form 567
Cot	COTTLE, 1951	1951 Triangulation
Ded	DED, 1951 (Shoran)	1951 Traverse Station, G.P. List
Egg	EGG 2, 1949	1949 Triangulation
Hen	HEN, 1951 (Shoran)	1951 Traverse Station, G.P. List
Hip	HIP, 1951	1951 Triangulation
Hoon	HOON, 1951	1951 Triangulation
Hut	HUT, 1951	1951 Triangulation
Jac	JAC	Hydro - Vol. 4 & 5
Long	LONG 2, 1949	1949 Triangulation
Puk	PUK, 1951	1951 Traverse Station, G.P. List
Qui	QUICK, 1951	1951 Triangulation
Red	RED	Hydro - Vol. 5
Ric	RIC, 1951	1951 Triangulation
Ruk	PARUK, 1951	1951 Triangulation
Slim	SLIM, 1951	1951 Triangulation
Son	SON, 1949	Topo - 1949 G.P. List
Store	STORE, 1951	1951 Triangulation
Stump	STUMP 2, 1949	1949 Triangulation
Wis	TWIST, 1951	1951 Triangulation

Enclosure 2

STATISTICS1951SHEET H-7854 (ARN-2450)

<u>Date</u>	<u>Launch</u>	<u>Day Letter</u>	<u>Vol.</u>	<u>No. Positions</u>	<u>Stat. Miles Sounding Lines</u>
8/2	13	a (red)	3	58	14.6
8/8	13	b (red)	3	81	13.8
8/9	13	c (red)	3	164	46.4
	13	c (red)	4	148	39.4
8/24	13	d (red)	4	154	39.6
	13	d (red)	5	10	2.3
8/25	13	e (red)	5	127	32.9
8/26	13	f (red)	5	158	38.3
	13	f (red)	6	37	10.2
8/16	15	b (blue)	7	19	4.9
8/17	15	c (blue)	7	13	3.5
8/19	15	d (blue)	7	23	5.8
8/21	15	e (blue)	7	20	4.9
8/24	15	f (blue)	7	116	28.0
8/25	15	g (blue)	7	3	0.8
8/26	15	h (blue)	7	9	2.3
8/28	15	j (blue)	7	6	1.5
8/29	15	k (blue)	7	10	2.5
8/30	15	l (blue)	7	18	4.4
8/11	14	c (green)	8	164	16.4
8/12	14	d (green)	8	22	4.3
8/16	14	e (green)	8	44	9.5
8/17	14	f (green)	9	29	7.3
8/19	14	g (green)	9	27	7.1
8/21	14	h (green)	9	31	9.1
8/24	14	j (green)	9	42	11.3
8/29	14	k (green)	10	10	3.5
TOTAL				1543	364.6

SQUARE STATUTE MILES 28.5

Enclosure 3

TIDAL NOTE

H-7854

Tide gage location:

Oliktok Point

Latitude 70° 30.75' N.
Longitude 149° 52.04' W.

Plane of reference:

Station

Mean lower low water on the staff

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

^{bar check}
FATHOMETER CORRECTIONS 1951

SHEET H-7854 (ARN-2450)

Launch 13

Fathometers 121S, 126S

Correction to bar check lines 0.1 foot
"B" scale or phase corrections 121S + 0.8 foot
126S + 0.8 foot

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>
8 Aug.	126S	-0.05	25 Aug.	121S	-0.1
9 Aug.	126S	-0.12	26 Aug.	121S	-0.1
24 Aug.	121S	0.0			

Launch 14

Fathometer 119S

Correction to bar check lines 0.2 foot
"B" scale or phase correction +0.5 foot

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>
11 Aug.	119S	-0.5	19 Aug. *	119S	-0.13
16 Aug.	119S	0.0	24 Aug.	119S	+0.1
17 Aug.	119S	0.0			

* Launch 15 bar used to obtain this bar check.

Launch 15

Fathometers 125S, 126S

Correction to bar check line 0.0 foot
"B" scale or phase correction 125S -0.3 foot
126S +0.8 foot

FATHOMETER CORRECTIONS 1951 (Continued)

SHEET H-7854 (ARN-2450)

Launch 15

Fathometers 125S, 126S

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>
16 Aug.	125S	+0.08	24 Aug.	125S	+0.5
17 Aug.	125S	+0.5	25 Aug.	125S	+0.1
19 Aug.	125S	+0.13	26 Aug.	125S	+0.2
21 Aug.	125S	+0.07	30 Aug.	125S	+0.13

Enclosure 5

VELOCITY CORRECTIONS 1951

SUMMARY

SHEET H-7854 (ARN-2450)

<u>CORRECTION</u>		<u>DEPTH</u>
Feet		Feet
0.0	to	19.5
-0.2		36.0
-0.4		50.0
-0.6		62.0
-0.8		74.0
-1.0		86.5

ENCLOSURE 6

GEOGRAPHIC NAMES (SUPPLEMENT)
SHEET H-7854 (ARN-2450)

The following names have been added to the sheet in 1951:

Beechey Point

Sagonowyak River

Cottle Island

Refer to Geographic Names Report, Point Barrow to Cross I, 1951

APPROVAL SHEET

REG. NO. H-7854

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

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~DIVISION OF HYDROGRAPHY AND TOPOGRAPHY~~

10 March 1952

Division of Charts: R. H. Carstens

Plane of reference approved in 8
volumes of sounding records for

HYDROGRAPHIC SHEET 7854 Add. Wk.

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)

Height of mean high water above plane of reference is 0.7 foot.

Condition of records satisfactory except as noted below:

E.C. McKay
Section

Chief, ~~Division of Tides and Currents.~~

GEOGRAPHIC NAMES

Survey No. H-7854

Name on Survey	Source of Name										No.	
	A	B	C	D	E	F	G	H	K			
<u>Alaska</u>				(for title)							1	
<u>Arctic Coast</u>				" "							2	
											3	
<u>Beaufort Sea</u>									USCB		4	
<u>Gwydir Bay</u>		✓									5	
<u>Return Islands</u>		✓							USCB		6	
<u>Long Island</u>		✓									7	
<u>Egg Island</u>		✓									8	
<u>Stump Island</u>		✓									9	
<u>Point Stor Kersen</u>		✓									10	
<u>Fawn Creek</u>									USCB		11	
<u>Kuparuk River</u>		✓							"		12	
Beechy Point		✓									13	
<u>Cottle Island</u>		✓									14	
											15	
				Names underlined in red are approved.								16
											17	
											18	
<u>Cross Island</u>				(location of tide gage)							19	
											20	
											21	
											22	
											23	
											24	
											25	
											26	
											27	

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7854...

Records accompanying survey:

Boat sheets ~~40~~¹⁰; sounding vols. ~~40~~¹⁰; wire drag vols. 0...;
bomb vols. 0...; graphic recorder rolls ~~10~~¹⁰ env...;
special reports, etc. 1 Smooth Sheet; 2 Descriptive Reports.....
.....

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

Number of positions on sheet		1843
Number of positions checked		30 35
Number of positions revised		22
Number of soundings revised (refers to depth only)		360
Number of soundings erroneously spaced		2
Number of signals erroneously plotted or transferred		—
Topographic details	Time	8 8
Junctions	Time	24
Verification of soundings from graphic record	Time	4 20
Preliminary Verification by R. E. Elkins	60 hrs	5-25-53
Verification by W. E. Roig	Total time 10.3 hrs	Date 5-26-58
Reviewed by R. E. Elkins	Time 20 hr	Date 5-28-53

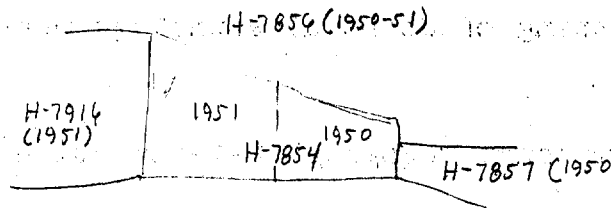
VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H- H-7854

The verifier should deal with the present hydrographic survey only, as the reviewer considers its relation to previous surveys and published charts. He should be thoroughly familiar with Chapters 3, 7 and 9 of the Hydrographic Manual.

1. The descriptive report was consulted and appropriate notes were made in soft pencil regarding action taken. ✓
2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude. ✓
3. All reference to survey sheets mentioned in the descriptive report include the registry number and year. ✓
4. Geographic names of hydrographic features if on sheet are in slanting lettering and of topographic features in vertical lettering. ✓
5. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken. *Partly* ✓
6. All positions verified instrumentally were check marked in the sounding records. ✓
7. All critical soundings are clear and legible and are a little larger than the adjacent soundings. ✓
8. The ^{plastic} metal protractor has been checked within the last three months. ✓
9. The protracting and plotting of all bad crossings were verified. *No - Depth differences are caused by fathometers not positioning -*
10. All detached positions locating critical soundings, rocks or buoys were verified. *None*
11. The boat sheet was compared with the smooth sheet. ✓

12. The spacing of soundings as recorded in the records was closely followed. ✓
13. The bottom characteristics were shown on outstanding shoals. ✓
14. The reduction and plotting of doubtful soundings were checked. ✓
15. The transfer of contemporary topographic information was carefully examined. *Topography to be completed at time Final Verification* ✓
16. All junctions were transferred and overlapping curves made identical. *Sdaps to be transferred at time of final Verification* ✓
17. The notation "JOINS H- (19--)" was added in ink for all contemporary adjoining or overlapping sheets now registered. Those not verified are shown in pencil. *all in pencil ink* ✓
18. The depth curves have been inspected before inking. ✓
19. All triangulation stations and transfer of topographic and hydrographic signals were checked. ✓
20. Heights of rocks were checked against range of tide. *None* ✓
21. Rocks transferred from topographic surveys have a dotted curve where shown thereon. Rocks located accurately by hydrographer are encircled by dotted red curve. *None* ✓
22. Unnecessary pencil notes have been removed. ✓
23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet. *None* ✓
24. The low water line and delineation of shoal areas have been properly shown. ✓
25. Degree and minutes values and symbols have been checked. ✓
26. Questionable soundings have been checked on the fathograms. ✓

The Junctional Problem



- ① Junctional edge of H-7854 & H-7857 were in agreement
- ② The 1951 ^{fathometer} soundings of H-7854 had been corrected for difference with the leadline readings which created a one ft. ^{sec.} discrepancy with H-7854 1950 & 1951 readings from fathometer 1265. The conflict was resolved by applying to H-7854 1950 & 51 readings from fathometer 1265, a correction (-1.0 ft.) equivalent to the difference between 1951 fathometer and leadline readings. This correction was extended from the junction inshore to 36 ft depths. Little or no adjustment was necessary to 1950 & 1951 soundings from fathometers 1195 & 1255.
- ③ Although the soundings of H-7916 are based on a velocity of sound of 800 fm./per sec. and are uncorrected for difference between fathometer & leadline readings, junctional soundings are in good agreement with soundings of H-7854.

R.E.E.

- 27. Source of shoreline and signals (when not given in report).
The shoreline will be completed from T-9344, T-9375, T-9782 at time of final verification. See back side. ✓
- 28. All notes on sheet are in accordance with figure 171 in the Hydrographic Manual. ✓
- 29. All aids located, with those on contemporary topographic sheets, have been shown on survey. ✓
- 30. Depth curves were satisfactory except as follows:
Depth curves were adjusted at all junctions. The 6-ft curve did not include 6 1/2 ft depths. ✓
- 31. Sounding line crossings were satisfactory except as follows:
Numerous crossing discrepancies were resolved by applying and arbitrary 1 ft correction in 20 to 40 ft depths.
- 32. Junctions with contemporary surveys were satisfactory except as follows:
an arbitrary 1-ft correction was applied to both the 1950 & 1951 work in 30-to 40-ft. depths to harmonize junctions. see back of page 2.
- 33. Condition of sounding records was satisfactory except as follows: ✓
- 34. The protracting was satisfactory except as follows: ✓
- 35. The field plotting of soundings was satisfactory except as follows: ✓
- 36. Notes to reviewer: *Some discrepancies at crossings follow bathograms.*

Preliminary Verification by	R. E. Elkins	5-25-53
Final " "	W. E. Reig	5-26-58
Verified by	<i>R. E. Elkins</i>	Date

Position colors

Blue

Launch 15

Green

Launch 14

Red

Launch 13

1950 a - 1195 fathometer a & b - 1265 fathometer
b to b 1255 fathometer c to k 1195 fathometer a 1215 fathometer
b & c 1265 fathometer
d to f 1215 fathometer

Topo Sheets

T-9775 & T-9782 (1947-51)

Photos 1947

field inspection 1951

T-9344 (1947-49)

Photos 1947

field inspection 1949

The 1951 field inspection data falling within

T-9344 and mentioned in T-9773 to 75 Compilation

Report will not be shown on T-9344

according to Mrs Stevens, Reviewer Dir of Ptgy.

The 1951 field inspection data when compared with H-7854 adds nothing to the

hydro-topo relation

Elpin 5-28-53

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7854

FIELD NO. ARN-2450

Alaska, Arctic Coast, Return Islands

Project No. CS-320

Surveyed in August 1950 and August 1951 Scale 1:20,000

Soundings:

Control:

808 Fathometer

Sextant fixes on shore signals
Shoran

Chief of Party - R. A. Earle, Max G. Ricketts
Surveyed by - D. E. Fisher, H. D. Nygren, R. M. Sylar, M. T.
Paulson

Protracted by - L. W. Eason

Soundings plotted by - H. D. Nygren, L. W. Eason

Preliminary verification - R. E. Elkins

Verified and inked by -

Reviewed by - R. E. Elkins, 28 May 1953

Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline inked on the smooth sheet originates with T-9344 (1947-49). The application of shoreline from T-9775 (1947-51) and T-9782 (1947-51) is deferred until final verification of the smooth sheet.

The origin of the signals is given in the Descriptive Report.

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 the Project Instructions, curves in shoal flat areas were not completely developed. Sounding lines were carried inshore to depths of 2 to 4 feet.

The bottom is smooth except for a few minor irregularities particularly along the outer coast of Cottle Island and in the inlet.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7857 (1950) on the east, H-7856 (1950-51) on the north and H-7916 (1951) on the west.

5. Comparison with Prior Surveys

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

6. Comparison with Arctic Coast Chart 12, (Print date 4/21/52)
Arctic Coast Chart 17, (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. Additional soundings are available in Gwydyr Bay in the uncharted area to the east of long. $148^{\circ} 46'$. A small island is shown east of Cottle Island on the present survey. The island shown in lat. $70^{\circ} 26.5'$, long. $148^{\circ} 45.8'$ on Arctic Coast Chart 17, falls in 9-ft. depths on the contemporary survey H-7857 (1950) and should be disregarded.

B. Aids to Navigation

The charted aids are from the present survey information.

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. Soundings in the irregular bottom areas, on shoals, 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

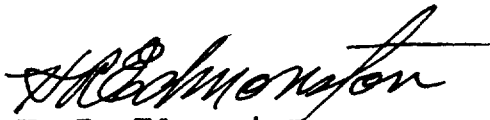
shoreline will be completed, junctional soundings will be transferred and the inspection of the depth curves will be made.

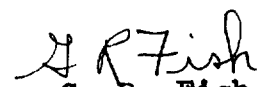
8. Compliance with Project Instructions

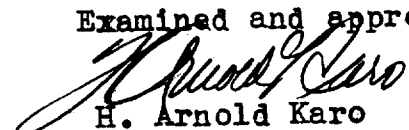
This survey complies with the Project Instructions.


9. Additional Field Work

This is a good basic survey and no additional field work is recommended.


H. R. Edmonston
Chief, Nautical Chart Branch

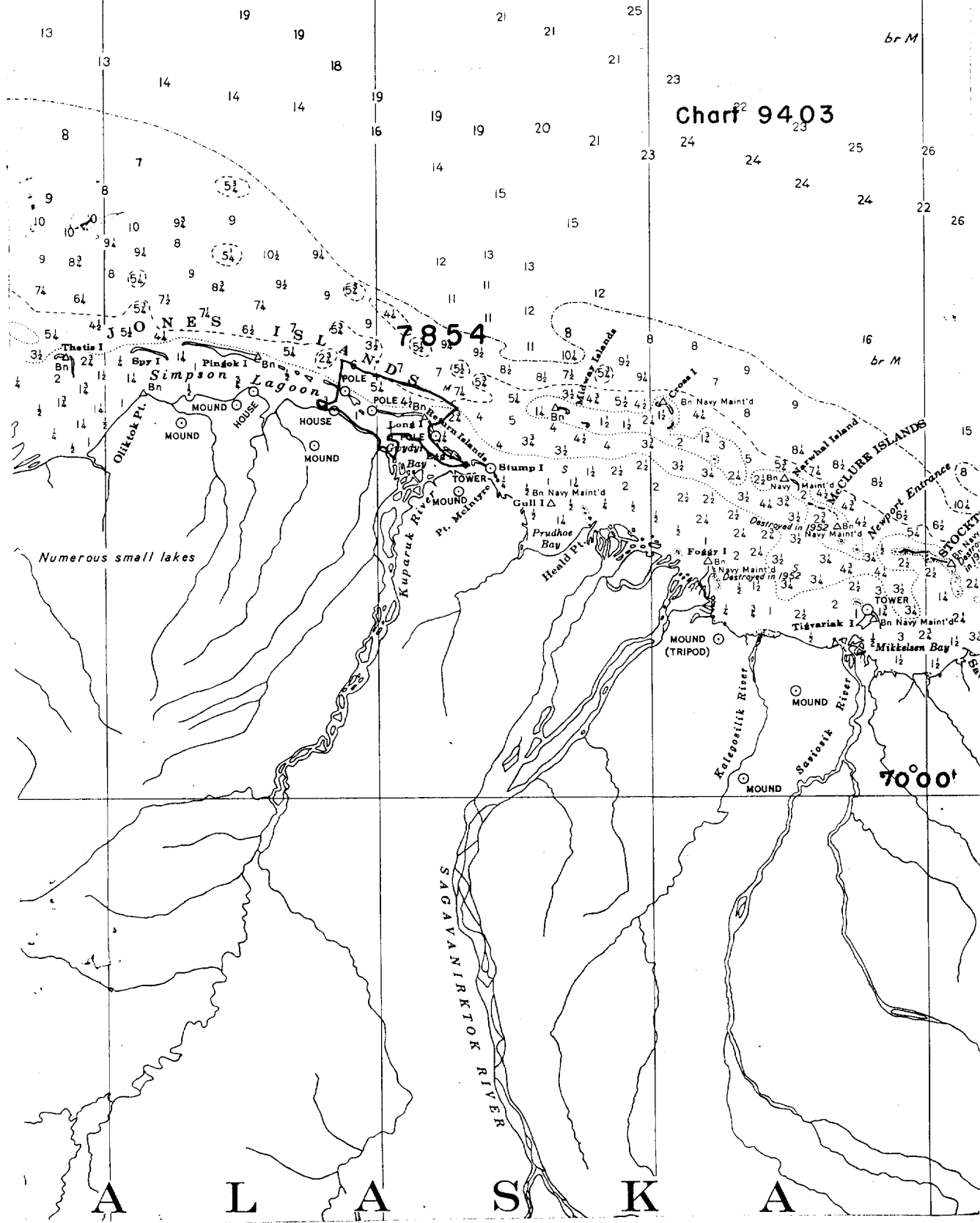

G. R. Fish
Chief, Section of Hydrography

Examined and approved:

H. Arnold Karo
Chief, Division of Charts


Earl O. Heaton
Chief, Division of Coastal Surveys

2 150°00' 19 17 149°00' 20 148°00' 29 71°00'

Chart 9403



ALASKA

