

8559



DECLASSIFIED
AUTHORITY *OPR Oceanav
SER 1357/N3D*
DATE *12-16-75* BY *BB/gh*

Diag. Cht. No. 9302.

Form 504	
U. S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY	
DESCRIPTIVE REPORT	
Type of Survey	HYDROGRAPHIC
Field No.	SU-160-2-60
Office No.	H-8559
LOCALITY	
State	Alaska
General locality	Bering Sea
Locality	Bering Strait
19 60	
CHIEF OF PARTY	
John C. Mathisson	
LIBRARY & ARCHIVES	
DATE	JUL 7 1961

USCOMM-DC 5087

8559



**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-8559

Field No. SU-160-2-60

State Alaska

General locality Bering Strait

Locality Vicinity Diomed Island

Scale Replotted at 1:100,000
1:160,000 Parts A & B Date of survey 16 July - 26 Aug. 1960

Instructions dated 11 May 1960, amended 9 June 1960

Vessel Ship SURVEYOR

Chief of party John C. Mathisson, CAPT., C&GS; CDR H. J. Seaborg;
LCDR L. S. Baker; LCDR H. P. Demuth; LCDR J. B. Watkins

Surveyed by LTJG R.W. Franklin, R.M. Buffington, P.W. Ward;

ENS C.G. Elliott, R.F. Dudley, R.L. Sandquist, J.M. Doherty, L. Wilkerson

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

Fathograms scaled by Ship's personnel

Fathograms checked by Ship's personnel

Protracted by Ship's Officers, corrected by R.W. Franklin, R.L. Swanson

Soundings penciled by - -

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW

REMARKS: _____

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-8559 (SU-160-2-60)
ST. LAWRENCE ISLAND TO BERING STRAIT, ALASKA

SCALE: 1:160,000 — ^{180,000} H-8559 A & B
USC&GSS SURVEYOR

16 July - 26 Aug. 1960
John C. Mathisson, Cmdg.

#####

A. PROJECT:

This survey is part of Project CS-415. Paragraph 17 of the Original Instructions, dated 11 May 1960 was revised in Amended Instructions dated 9 June 1960. Supplemental Instructions were issued on 3 June and 24 June 1960. Registry Numbers were issued on 21 November 1960. All Instructions were addressed to the Commanding Officer, USC&GSS SURVEYOR.

B. SURVEY LIMITS AND DATES:

*H-8559A - East-West limits From Long. 169°00' to Long. 170°11'.
North-South - From Lat. 65°02' Long. 169°00' to Lat. 64°34' Long. 170°09'.
and From Lat. 65°28' Long. 169°00' to Lat. 65°00' Long. 170°11'.*

This survey is in the Bering Strait (vicinity Diomed Islands).

The survey began on 16 July and was completed on 26 August 1960.

It joins H-7850, 1:40,000 scale, 1950 and H-7849, 1:20,000 scale, 1950.

C. VESSELS AND EQUIPMENT:

All hydrography was done by the Ship SURVEYOR. A launch was used around Little Diomed Island, but due to lack of control, the work was rejected.

The ship's average speed was 14 knots at 120 RPM. The turning radius at 120 RPM, 15 degree rudder angle, was 682.8 meters.

The ship (blue capital day letters) was equipped with various fathometers. Due to failures, all were used. The instruments used were as follows: Edo (255C-30), Edo (255C-26), Edo (255c-23), Edo UQN-1D (35) and ~~Edo UQN-1D (40)~~. Bottom samples were obtained by a wire and snapper with the ship's hydrographic winch #401.

D. TIDES AND CURRENT STATIONS:

A portable tide gage was located at Tin City (Lat. 65° 33.5', Long. 167° 58.5') and Niyrakpak Lagoon Entrance (Lat. 63° 37', Long. 171° 23'). The total survey was divided into three tide zones. This sheet was in Zones 1 and 2.

D. TIDES AND CURRENT STATIONS: Contin.

Corrections to the Tide Gages are as follows:

Tin City	Zone	Time Correction	Height Ratio
	1	0	0
	2	+1 hour	0
Niyrakpak Lagoon	1	-2 hours	1.3
	2	-1 hour	1.3

Four current stations were observed with Roberts Current Buoys in the area. All had meters at 30 feet, 90 feet, and 150 feet. They were located as follows:

<u>Buoy</u>	<u>Latitude</u>	<u>Longitude</u>
D	64° 57.8'N.	169° 44.0'W.
E	65° 19.5'	168° 50.0'
F	65° 41.7'	168° 39.0'
G	65° 39.8'	168° 23.9'

A Price Current Meter and Current Pole were used at Lat. 65° 41.1'N., Long. 168° 36.0' W.

E. SMOOTH SHEET:

The layout of the smooth sheet was followed as prescribed in the Instructions. The sheet was hand ruled with Raydist arcs every ⁴⁰⁰ lanes. There were no transfers of topographic detail. ²⁰⁰ *plotted by Scriber Digital Plotter*

A smooth boat sheet was used with the idea that all positions would be plotted on the smooth sheet while the work was being done. A vinylite sheet was layed over the smooth sheet and the positions pricked through to the smooth sheet, leaving only the soundings to be plotted at the end of the season.

Due to failures in the operation of the Raydist, many positions were in error and had to be changed. It was felt that it would be more profitable to correct the sheets rather than start new ones.

All the inked positions were removed from the sheet. The corrected positions were plotted and the erroneous prick holes filled with a white crayon. The new positions were then inked, but no soundings plotted. The sheets were worked on by three or four men due to transfers, etc. As a result, the sheets are not the best quality of work, but are in good condition compared to the original work.

It seems that in this case, where so little was known about the operation of Raydist, that a smooth-boat sheet was not successful.

F. CONTROL STATIONS:

A limited amount of third order triangulation was accomplished in order to locate the Raydist shore stations. SAV-OONGA 1951, JCE; KULIAK 1951, JCE; were used to establish subordinate control points from which the red raydist station was located. The subordinate control points were marked by a hub. These were RAY-SAVO and CHULAR. The green and purple stations were located by the same method. CLARENCE ASTRONOMICAL 1900, L.F.P., and TELLER NORTHWEST BASE 1943, A.N.S., were used to locate the green station. BOXER 1951, JCE; MINCE 1950, JCE, and NERO 1950, JCM were used to locate the purple station.

R1 - RAY-SAVO or the ^{green} ~~red~~ station and controlling station was located at Lat. $63^{\circ} 41' 44.871''$ N., and Long. $170^{\circ} 29' 07.961''$ W.

R2 - RAY-CLAR or the ^{red} ~~green~~ station was located at Lat. $65^{\circ} 16' 39.569''$ N., and Long. $166^{\circ} 50' 34.393''$ W.

RAY-BOX or the purple station was located at Lat. $63^{\circ} 20' 25.640''$ N., and Long. $171^{\circ} 34' 49.894''$ W.

The red and green stations were used only on SU-160-2-60.

All stations were equipped with a 6' x 6' x 6' equipment hut and a 100 foot Tabbet Tower. This was considered to be the most efficient.

Visual fix calibration of raydist was accomplished on 1/5000 calibration sheets which are submitted under separate cover.

G. SHORELINE AND TOPOGRAPHY:

There is none on this sheet.

H. SOUNDINGS:

All soundings taken were measured using either the Edo Model 255C or Model UQN-1D. Soundings taken on the project were measured in feet and tenths.

The operation of the UQN-1D recorders on the 600 foot scale was most satisfactory. The Model 255C units operating on the foot scale required extensive and frequent attention by an electronics technician to keep them in operation. The SURVEYOR is equipped with two Model 255C and two Model UQN-1D units mounted in the chart room and for the entire season, one of the 255C units was being overhauled or repaired. By constant attention to this problem, and having several spare units ready for rapid exchange, one Model 255C was available for hydrography the majority of the time.

The standard corrections were applied.

The soundings were as expected with no unusual bottom conditions noted.

4
30
WS 0

I. CONTROL OF HYDROGRAPHY:

Raydist was the major method used for horizontal control. Due to the failure of one or both of the Raydist stations, control was lost a great deal. As many as 30 lanes were lost on one station alone. This caused a few of the positions to be off as much as a mile with many more in error to a lesser degree. Calibration buoys were anchored to help regain control easily. Visual fixes were used for relocating the ship off of these buoys. The original raydist readings were later corrected for buoy adjustment and scope and depression. The largest errors were found when the brush recordings were scanned.

see Verifier's Report

Visual hydrography was used to a very limited extent due to the lack of objects. The stations used for visual hydrography are as follows: KING, 1944, A.N.S.; FAIRWAY ROCK, 1944, A.N.S.; and LITTLE DIOMEDE 1944, A.N.S.

J. ADEQUACY OF SURVEY:

This survey is considered adequate and complete. Junctions with the other surveys are good. - see Verifier's Report -

K. CROSSLINES:

About 9.8% of the lines run were crosslines. The soundings have not been put on so no comparison of the depths can be made.

L. COMPARISONS WITH PRIOR SURVEYS:

The present survey was compared with H-7850, 1:40,000 scale, 1950 and what junction there was seemed adequate. Due to the type of job and location, junctions were given very little consideration.

M. COMPARISON WITH CHART:

The largest scale chart of the area is HO Chart 5819 printed January 1960 on a scale of 1:315,350. Various points were compared and found to differ greatly.

N. DANGERS AND SHOALS:

One development was made, the center of which is at latitude 65° 18' N, and Long. 169° 14' W. The new soundings should be used.

O. COAST PILOT INFORMATION:

A Coast Pilot report has been submitted.

P. AIDS TO NAVIGATION:

No aids to navigation in the area.

Q. LANDMARKS FOR CHARTS:

There are no landmarks in the area.

R. GEOGRAPHIC NAMES:

A geographic names study was not made in the area.

S. SILTED AREAS:

There were no silted areas detected.

T. BY-PRODUCT INFORMATION:

Magnetic observations were made at the following locations:

1. Triangulation Station CHULAR 1960, St. Lawrence Is.
2. Topographic Station NERO, St. Lawrence Island.
3. Astronomical Station CLARENCE ASTRO 1940-1944, Cape Spencer, Alaska.

U - Y MISCELLANEOUS:

- ✓ Report on Raydist Corrections - under separate cover.
- Fathometer Report - under separate cover.
- Visual Calibration Sheets - under separate cover.

Z. TABULATION OF APPLICABLE DATA:

1. Report, Tide Station and Level Records - Installation and removal of Tin City portable tide gage mailed 20 Sept. 1960.
2. Observation of Horizontal Directions - appended.
3. Report, Current Station - mailed 21 Nov. 1960.
4. Tide Station, Tin City, Marigrams - mailed 17 Aug. 1960.
5. Coast Pilot Report - mailed 18 Oct. 1960.
6. Chart Corrections - mailed 20 Oct. 1960.
7. Magnetic Observations - mailed 1 Nov. 1960
8. Bathythermograph Report - mailed 9 Nov. 1960.
9. Oceanographic Report - mailed 18 Nov. 1960.
- ✓ 10. Special Raydist Report - attached.

Respectfully submitted,

J. B. Watkins, Jr.
J. B. Watkins, Jr.
LCDR C&GS, Ship SURVEYOR
Act. Field Works Officer

Approved and Forwarded:

Wilbur R. Porter
Wilbur R. Porter
CAPT., C&GS
Cmdg., Ship SURVEYOR

STATISTICS
HYDROGRAPHIC SURVEY
H-8559 (SU-160-2-60)

Ship SURVEYOR (blue - capital letters)

1960

<u>Volume No.</u>	<u>Day Letter</u>	<u>Date</u>	<u>No. of Positions</u>	<u>Nautical Miles Sounding</u>
	A	16 July	71	72.0
	B	17 July	24	25.2
	C	18 July	73	80.0
	D	22 July	111	102.7
	E	25 July	50	57.2
	F	26 July	125	138.2
	G	27 July	210	236.9
	H	28 July	275	238.0
	J	29 July	256	227.5
	K	30 July	73	71.7
	L	31 July	82	71.9
	M	4 Aug	266	342.7
	N	5 Aug	240	249.0
	P	6 Aug	91	109.5
	Q	7 Aug	83	97.4
	R	8 Aug	183	209.0
	S	13 Aug	111	127.2
	T	14 Aug	240	271.0
	U	15 Aug	96	80.0
	V	17 Aug	172	188.0
	W	18 Aug	307	286.4
	X	19 Aug	257	271.7
	Y	20 Aug	248	277.4
	Z	21 Aug	251	268.2
	AA	22 Aug	125	138.5
	BA	26 Aug	165	158.9
Total			4185	4389.7

PROCESSING OFFICE NOTES - H-8559

SMOOTH SHEET

The projection was ~~machine ruled in the Washington Office.~~ ^{plotted by Gerber Digital Plotter in Seattle.} The triangulation plotted, the control arcs drawn, and the positions plotted ~~by ship personnel.~~ ^{were plotted by Gerber Digital Plotter.}

CROSSLINES

In general the crossings are satisfactory. There are a few places however where they are questionable. Soundings on "U" day are very jagged on the fathogram and difficult to scan with accuracy. Soundings on "W" day in the vicinity of Lat. 65° 18' N., Long. 168° 44' W. appear to be about five fathoms too deep. The fathogram has been checked and appears to be all right.

JUNCTIONS

The junction with H-8558 has been compared and found in good agreement.

COMPARISON WITH CHART

This survey has been compared with H. O. Chart 5819, scale 1/315,350, 2nd Ed. January 4, 1960. A great many of the soundings are not in agreement with this survey. Almost all of the charted soundings that are shown as single sounding with depth curves, twenty fathoms or less, are in error about ten fathoms.

If the comparison with H-8558 and H-8559 is indicative, it appears that H. O. Chart 5819 needs a complete revision of soundings.

Respectfully submitted,

William M. Martin

WILLIAM M. MARTIN
SUPERVISORY CARTOGRAPHER

APPROVED & FORWARDED:

M. E. Wennermark
M. E. WENNERMARK, CAPT., C&GS
SEATTLE DISTRICT OFFICER

ZONE DESCRIPTIONS FOR TIDE AND VELOCITY CORRECTIONS.

Tide Zone 1, Velocity Zone 1

Ray Savo (green) arcs greater than 4927 define this zone.

Tide Zone 1, Velocity Zone 2

Ray Savo (green) arcs greater than 3500 define this zone.

Tide Zone 2, Velocity Zone 2

Ray Clar (red) arcs less than 3695 define this zone.

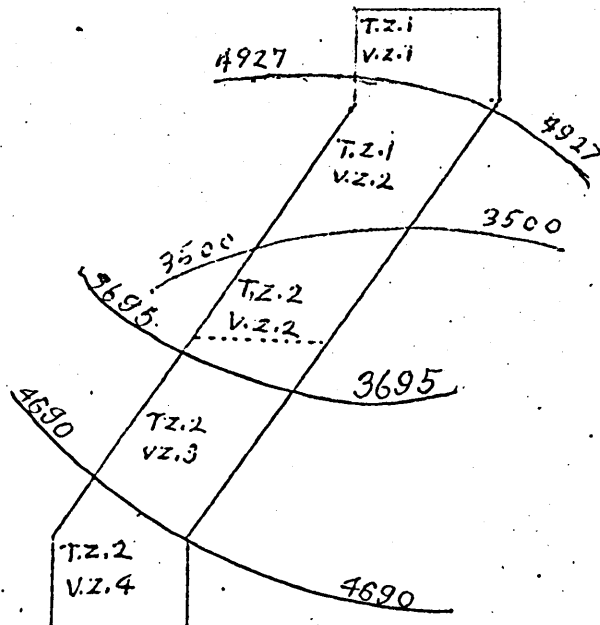
Tide Zone 2, Velocity Zone 3

Ray Clar (red) arcs between 4690 and 3695 define this zone.

Tide Zone 3, Velocity Zone 4

Ray Clar (red) arcs greater than 4690 define this zone.

sketch showing zones.
(approximate)



ABSTRACT OF VELOCITY CORRECTIONS

Table 1
Velocity Zone I

From	Depth To (incl.)	Correction (ft.)
40	70	+0.4
71	116	+0.2
117	144	0.0
145	172	-0.2
173	191 210	-0.4

Table 2
Velocity Zone II

40	88	0.0
89	120	-0.2
121	146	-0.4
147	169	-0.6
170	193	-0.8
193	250	-1.0

Table 3
Velocity Zone III

40	62	-0.4
63	85	-0.6
86	107	-0.8
108	130	-1.0
131	152	-1.2
153	174	-1.4
175	196	-1.6

Table 4
Velocity Zone IV

50	78	+0.2
79	99	0.0
100	120	-0.2
121	140	-0.4
141	161	-0.6
162	182	-0.8
183	202	-1.0

8

GEOGRAPHIC NAMES
Survey No. H-8559

Name on Survey	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">On Chart No. 9302</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">On previous survey No.</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">On U. S. quadrangle Maps</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">From local information</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">On local Maps</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">P. O. Guide or Map</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Rand McNally Atlas</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">U. S. Light List</div> </div>										
	A	B	C	D	E	F	G	H	K		
Bering Sea (Title)	✓										1
Bering Strait (Title)	-										2
Diomede Islands	✓										3
Big Diomede I.	✓										4
Little Diomede I.	✓										5
Fairway Rock	-										6
											7
											8
											9
											10
											11
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											26
											27

George M. Bau
Geographic names
27 July 1961

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. ..8559..

Records accompanying survey: Smooth sheets ..1...;
 boat sheets ..1...; sounding vols. ..18...; wire drag vols.;
 Descriptive Reports ..1...; graphic recorder envelopes 18...;
 special reports, etc. 2-Calibration Sheet; 25-Raydist Tapes
 & 1 Cahier-Temperature & Salinity Data, Curves, Computations...
 and 14 Abstracts of Corrections.

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

Number of positions on sheet
Number of positions checked
Number of positions revised
Number of soundings revised (refers to depth only)
Number of soundings erroneously spaced
Number of signals erroneously plotted or transferred
Topographic details	Time
Junctions	Time
Verification of soundings from graphic record	Time
Special adjustments	Time

Verification by Total time Date

Reviewed by Time Date

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H-8559 A

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. *None named in title only*
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. ✓
6. All positions verified instrumentally were check marked in the sounding records. *sounding Records automated - all positions checked against the penciled smooth sheet.*
7. All critical soundings are clear and legible and are a little larger than the adjacent soundings. ✓
8. The metal protractor has been checked within the last three months. *Electronic control*
9. The protracting and plotting of all bad crossings were verified. *crossings adequate*
10. All detached positions locating critical soundings, rocks or buoys were verified. ✓
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.
Bottom characteristics shown - No Bottom Samples taken on the only feature of this survey
14. The reduction and plotting of doubtful soundings were checked. ✓
15. The transfer of contemporary topographic information was carefully examined. *NONE*
16. All junctions were transferred and overlapping curves made identical. *See item 36*
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. *see item 36*
18. The depth curves have been inspected before inking. ✓
19. All triangulation stations and transfer of topographic and hydrographic signals were checked. *NONE*
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. *NINE*
25. Degree and minutes values and symbols have been checked. ✓
26. Questionable soundings have been checked on the fathograms. ✓

27. Source of shoreline and signals (when not given in report).
NONE
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.
NONE
30. Depth curves were satisfactory ~~except as follows:~~
✓
31. Sounding line crossings were satisfactory ~~except as follows:~~
✓
32. Junctions with contemporary surveys were satisfactory except as follows:
see item 36
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:

Verified by

Date

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. _____

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION		AMOUNT		RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET				BOAT SHEETS			
DESCRIPTIVE REPORT				OVERLAYS			
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS	
ENVELOPES							
CAHIERS							
VOLUMES							
BOXES							
T-SHEET PRINTS (<i>List</i>)							
SPECIAL REPORTS (<i>List</i>)							

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				
POSITIONS CHECKED		<i>All</i>		
POSITIONS REVISED		<i>21</i>		
DEPTH SOUNDINGS REVISED		<i>All</i>		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		<i>186</i>		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		<i>None</i>		
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		<i>None</i>		
JUNCTIONS				
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		<i>24</i>		
SPECIAL ADJUSTMENTS		<i>125</i>		
ALL OTHER WORK		<i>594</i>		
TOTALS		<i>743</i>		
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <i>Dennis J. Rosenberg</i>	BEGINNING DATE <i>6-18-69</i>		ENDING DATE <i>11-19-70</i>	
REVIEW BY	BEGINNING DATE		ENDING DATE	

VERIFIER'S REPORT
HYDROGRAPHIC SURVEY, H-8559A

INSTRUCTIONS - This form serves to identify items of a check list in verification together with items which are separately reported to the Reviewer. The form is not to be forwarded to the Reviewer. A report, which is prepared for the Reviewer, should identify items by number and letter and will be filed in the Descriptive Report until the survey is reviewed.

CL - Check List Items: should be checked as having been completed during the verification processes.

R - Report Item: This column refers to those items reported to the reviewer and is used to indicate the items discussed.

Part I - DESCRIPTIVE REPORT	CL	R	Part III - JUNCTIONS (Continued)	CL	R
<p>Note: The verifier should first read the Descriptive Report for general information and problems.</p> <p>1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None</p>	✓		<p>10. Junctions with contemporary surveys were satisfactory except as follows: Remarks Required: -- Consider conditions after adjustments have been made; note adjustments made. Make special notes of Butt junctions and areas which are SUPERSEDED.</p>		✓ see Part II #8
<p>2. Soundings originating with the survey and mentioned in the Descriptive Report have been verified and checked in soft black pencil, including latitude and longitude, together with position identification. Remarks Required: -- None</p>	✓		<p>Part IV - VOLUMES 11. 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 and exceptions noted in the volumes. Remarks Required: -- None</p>	✓	
<p>3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None</p>	✓		<p>12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following:</p>		
<p>Part II - SHORELINE AND SIGNALS 4. Source of shoreline signals Remarks Required: -- List all surveys</p> <p>a. Give earliest and latest dates of photographs b. Field inspection date c. Field Edit date d. Reviewed-Unreviewed</p>	None		<p>(a) rocks (b) line turns (c) position values of beginning and ending of lines (d) bar check or velocity correctors (e) time recording (f) notes or markings on fathograms (g) was reduction of soundings accurately done? (h) was scanning accurate? (i) were peaks at uneven intervals missed? (j) were stamps completed? (k) references to adjacent features</p>	None ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	yes, auto noted
<p>5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.</p>	None				
<p>The plotting of all triangulation stations, topographic stations and hydrographic signals has been checked and noted in processing stamp No. 42 on the smooth sheet. Remarks Required: -- None</p>	None				
<p>7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still unidentified.</p>	None		<p>Part V - PROTRACTING 13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None</p>	✓	
<p>Part III - JUNCTIONS Note: Make a cursory comparison preliminary to inking soundings in area of overlap.</p> <p>8. All junctions of contemporary or overlapping sheets were transferred in colored ink and overlapping curves were made identical. Remarks Required: -- None</p>	Junction with H-8558A will be covered when H-8559A is verified		<p>14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None</p>	✓	
<p>9. The notation in slanted lettering "JOINS H----(19)" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None</p>	✓		<p>15. All detached positions locating critical soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None</p>	✓	

Part V - PROTRACTING (Continued)	CL	R	Part VIII - AIDS TO NAVIGATION	CL	R
16. The protracting was satisfactory except as follows: Remarks Required: -- Refers to protracting in general except for specific faults repeated often, or faults in control information, which required considerable replotting or adjustments.	✓		26. All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. Remarks Required: -- Conflicts of any nature listed.	None	
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.	Electronic control		27. All floating aids listed in the Descriptive Report should be verified and checked in soft black pencil, including latitude and longitude and position identification. Remarks Required: -- None	None	
Part VI - SOUNDINGS 18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	✓		Part IX - BOATSHEET 28. The boat sheet was constantly compared with the smooth sheet with reference to notes, position of sounding lines and supplemental information. Remarks Required: -- None	✓	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.	✓		29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.	None	
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	✓		Part X - GENERAL 30. All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None	✓	
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	✓		31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	✓	
22. The smooth plotting of soundings was satisfactory except as follows: Remarks Required: -- Refer to legibility, errors in spacing, and errors in numbers - but not to errors in scanning.	✓		32. Degree, minute values and symbols have been checked; also electronic distance arcs have been properly identified and checked on the smooth sheet. Remarks Required: -- None	✓	
Part VII - CURVES 23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected.	✓	M. Carstens	33. The bottom characteristics are adequately shown. Remarks Required: -- None	✓	
24. The low-water line and delineation of shoal areas have been properly shown in accordance with the following: a. From T-Sheet in dotted black lines b. From soundings in orange c. Approximate position of sketched curve is dashed orange d. Approximate position of shoal area not sounded in black dashed Remarks Required: -- None	None		Part XI - NOTES TO THE REVIEWER 34. Unresolved discrepancies and questionable soundings.		✓
25. Depth curves were satisfactory except as follows: (This statement should not refer to the manner in which the curves were drawn). Remarks Required: -- Indicate areas where curves could not be drawn completely because of lack of soundings. For some inshore areas a general statement is sufficient.	✓		35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.	None	
36. Supplemental information.					✓
Verified by <i>Dennis J. Romesburg</i>			Date <i>11-19-70</i>		

VERIFIER'S REPORT
HYDROGRAPHIC SURVEY, H - 8559B

INSTRUCTIONS - This form serves to identify items of a check list in verification together with items which are separately reported to the Reviewer. The form is not to be forwarded to the Reviewer. A report, which is prepared for the Reviewer, should identify items by number and letter and will be filed in the Descriptive Report until the survey is reviewed.

CL - Check List Items: should be checked as having been completed during the verification processes.

R - Report Item: This column refers to those items reported to the reviewer and is used to indicate the items discussed.

Part I - DESCRIPTIVE REPORT	CL	R	Part III - JUNCTIONS (Continued)	CL	R
<p>Note: The verifier should first read the Descriptive Report for general information and problems.</p> <p>1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None</p>	✓		<p>10. Junctions with contemporary surveys were satisfactory except as follows: Remarks Required: -- Consider conditions after adjustments have been made; note adjustments made. Make special notes of Butt junctions and areas which are SUPERSEDED.</p>		
<p>2. Soundings originating with the survey and mentioned in the Descriptive Report have been verified and checked in soft black pencil, including latitude and longitude, together with position identification. Remarks Required: -- None</p>	✓		<p>Part IV - VOLUMES 11. 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 and exceptions noted in the volumes. Remarks Required: -- None</p>	✓	
<p>3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None</p>	✓		<p>12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following:</p>		
<p>Part II - SHORELINE AND SIGNALS 4. Source of shoreline signals Remarks Required: -- List all surveys</p> <p>a. Give earliest and latest dates of photographs</p> <p>b. Field inspection date</p> <p>c. Field Edit date</p> <p>d. Reviewed-Unreviewed</p>	None		<p>(a) rocks</p> <p>(b) line turns</p> <p>(c) position values of beginning and ending of lines</p> <p>(d) bar check or velocity correctors</p> <p>(e) time recording</p> <p>(f) notes or markings on fathograms</p> <p>(g) was reduction of soundings accurately done?</p> <p>(h) was scanning accurate?</p> <p>(i) were peaks at uneven intervals missed?</p> <p>(j) were stamps completed?</p> <p>(k) references to adjacent features</p>	None	
<p>5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.</p>	✓			✓	Automatic
<p>The plotting of all triangulation stations, topographic stations and hydrographic signals has been checked and noted in processing stamp No. 42 on the smooth sheet. Remarks Required: -- None</p>	✓			✓	No
<p>7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still unidentified.</p>	None		<p>Part V - PROTRACTING 13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None</p>	✓	
<p>Part III - JUNCTIONS Note: Make a cursory comparison preliminary to inking soundings in area of overlap.</p> <p>8. All junctions of contemporary or overlapping sheets were transferred in colored ink and overlapping curves were made identical. Remarks Required: -- None</p>	✓		<p>14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None</p>	✓	
<p>9. The notation in slanted lettering "JOINS H--- (19)" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None</p>	✓		<p>15. All detached positions locating critical soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None</p>	✓	

Part V - PROTRACTING (Continued)	CL	R	Part VIII - AIDS TO NAVIGATION	CL	R
16. The protracting was satisfactory except as follows: Remarks Required: -- Refers to protracting in general except for specific faults repeated often, or faults in control information, which required considerable replotting or adjustments.	✓		26. All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. Remarks Required: -- Conflicts of any nature listed.	None	
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.	Electronic Control		27. All floating aids listed in the Descriptive Report should be verified and checked in soft black pencil, including latitude and longitude and position identification. Remarks Required: -- None	None	
Part VI - SOUNDINGS 18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	✓		Part IX - BOAT SHEET 28. The boat sheet was constantly compared with the smooth sheet with reference to notes, position of sounding lines and supplemental information. Remarks Required: -- None	✓	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.	✓		29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.	None	
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None			Part X - GENERAL 30. All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None	✓	
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	✓		31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	✓	
22. The smooth plotting of soundings was satisfactory except as follows: Remarks Required: -- Refer to legibility, errors in spacing, and errors in numbers - but not to errors in scanning.	✓		32. Degree, minute values and symbols have been checked; also electronic distance arcs have been properly identified and checked on the smooth sheet. Remarks Required: -- None	✓	
Part VII - CURVES 23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected. <i>DE Westbrook</i>	✓	✓	24. The low-water line and delineation of shoal areas have been properly shown in accordance with the following: a. From T-Sheet in dotted black lines b. From soundings in orange c. Approximate position of sketched curve is dashed orange d. Approximate position of shoal area not sounded in black dashed Remarks Required: -- None	None	
25. Depth curves were satisfactory except as follows: (This statement should not refer to the manner in which the curves were drawn). Remarks Required: -- Indicate areas where curves could not be drawn completely because of lack of soundings. For some inshore areas a general statement is sufficient.	✓		Part XI - NOTES TO THE REVIEWER 34. Unresolved discrepancies and questionable soundings.	✓	
35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.			36. Supplemental information.	None	
Verified by <i>J. H. Cosgrove</i>			Date <i>10/16/70</i>		

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-8559B

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION		AMOUNT		RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET				BOAT SHEETS			
DESCRIPTIVE REPORT				OVERLAYS <i>1 Pos'n No. Overlay</i> <i>2 Excess Sdg</i>			
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS	
ENVELOPES							
CAHIERS							
VOLUMES							
BOXES							
T-SHEET PRINTS (<i>List</i>)							
SPECIAL REPORTS (<i>List</i>)							

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				
POSITIONS CHECKED		<i>All</i>		
POSITIONS REVISED		<i>290</i>		
DEPTH SOUNDINGS REVISED		<i>All</i>		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		<i>—</i>		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		<i>—</i>		
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		<i>1</i>		
JUNCTIONS		<i>2</i>		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		<i>2</i>		
SPECIAL ADJUSTMENTS		<i>8</i>		
ALL OTHER WORK	<i>730</i>	<i>730</i>		
TOTALS	<i>743</i>	<i>743</i>		
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <i>J. Hoogrove</i>	BEGINNING DATE <i>6/16/68</i>		ENDING DATE <i>10/15/70</i>	
REVIEW BY	BEGINNING DATE		ENDING DATE	

34 & 36

Because of the erratic operation and constant attention required to keep the fathometers operative, and because of the failure of the Raydist control as well as a lack of experience and knowledge of Raydist, sounding accuracy on this 1960 survey was doubtful. A comparison between the 1960 survey and larger scale surveys run in 1968-69 disclosed sounding discrepancies. With the improved control and sounding operations of the subsequent surveys it was decided that arbitrary corrections should be applied to bring the prior survey into substantial agreement with the subsequent surveys. A positive 4-ft correction was applied to all soundings on the 1960 work and in certain instances additional corrections, either negative or positive were applied to bring about agreement. Soundings which received additional corrections are indicated on the preliminary printouts.

CROSS REFERENCING OF POSITION NUMBERS

H-8559A

<u>ORIGINAL RECORDS</u> (Sounding Volumes)			<u>AUTOMATED RECORDS</u>		
<u>DAY</u>	<u>DATE</u>	<u>POSITIONS</u>	<u>DAY</u>	<u>YEAR</u>	<u>POSITIONS</u>
A	7-16-60	1-71	198	60	—
B	7-17-60	1-24	199	60	—
C	7-18-60	1-73	200	60	119-133
D	7-22-60	1-111	204	60	187-230
E	7-25-60	1-56	207	60	245-280
F	7-26-60	1-131	208	60	316-396
G	7-27-60	1-210	209	60	433-482
					593-614
H	7-28-60	1-275	210	60	614A-668
J	7-29-60	1-257	211	60	1068-1139
K	7-30-60	1-73	212	60	1186-1219
L	7-31-60	1-82	213	60	1220-1263
M	8-4-60	1-266	217	60	—
N	8-5-60	1-241	218	60	1584-1660
					1748-1807A
P	8-6-60	1-91	219	60	1808-1874
Q	8-7-60	1-83	220	60	1928-1979A
R	8-8-60	1-184	221	60	1980-2001
					2046-2079
					2128-2163
S	8-13-60	1-111	226	60	2164-2190

ORIGINAL RECORDS
(Sounding Volumes)

AUTOMATED RECORDS

DAY	DATE	POSITIONS	DAY	YEAR	POSITIONS
					2239-2274
T	8-14-60	1-240	227	60	2275-2360
					2418-2438
					2475-2502
U	8-15-60	1-97	228	60	2538-2592
V	8-17-60	1-172	230	60	2640-2657
					2765-2771
W	8-18-60	1-307	231	60	2822-2827
					2879-2970
X	8-19-60	1-257	232	60	3123-3151
					3171-3195
					3207-3342A
Y	8-20-60	1-248	233	60	3343-3575A
Z	8-21-60	1-251	234	60	3576-3824A
AA	8-22-60	1-125	235	60	3825-3869
					3873-3949
BA	8-26-60	1-165	239	60	3950-4016
					4063-4076

The total number of positions for a certain day as recorded in the original records and the automated records may differ by a few numbers. Positions not plotted and rejected positions recorded in the original records are not reflected in the totals of the automated records. Also, any additional artificial fixes (turning positions, etc.) recorded in the automated records are not reflected in the totals of the original records.

34-36

Because of the erratic operation and constant attention required to keep the fathometers operative, and because of the failure of the Raydist control as well as a lack of experience and knowledge of Raydist, sounding accuracy on this 1960 survey was doubtful. A comparison between the 1960 survey and larger scale surveys run in 1968-69 disclosed sounding discrepancies. With the improved control and sounding operations of the subsequent surveys it was decided that arbitrary corrections should be applied to bring the prior survey into substantial agreement with the subsequent surveys. A positive 4-ft. correction was applied to all soundings on the 1960 work and in certain instances additional corrections, either negative or positive were applied to bring about agreement. Soundings which received additional corrections are indicated on the preliminary prints.

H-8559 B.

Notation Joins H-8559A Added in pencil

Depth Curves were matched for the two sheets.

25 - Eastern portion of the Survey had insufficient data for complete curves.

CROSS REFERENCING OF POSITIONS NUMBERS
H-8559 B

<u>ORIGINAL RECORDS</u> (Founding Volumes)			<u>AUTOMATED RECORDS</u>		
<u>DAY</u>	<u>DATE</u>	<u>POSITIONS</u>	<u>DAY</u>	<u>YEAR</u>	<u>POSITIONS</u>
A	7-16-60	1-71	198	60	1-64
B	7-17-60	1-24	199	60	83-88
C	7-18-60	1-73	200	60	89-118
D	7-22-60	1-111	204	60	134-186
E	7-25-60	1-56	207	60	231-244
F	7-26-60	1-131	208	60	281-315
					397-404
G	7-27-60	1-210	209	60	405-432
					483-592
H	7-28-60	1-275	210	60	669-889
J	7-29-60	1-257	211	60	890-1067
					1140-1145A
K	7-30-60	1-73	212	60	1146-1185
L	7-31-60	1-82	213	60	1264-1301
M	8-4-60	1-266	217	60	1302-1567A
N	8-5-60	1-241	218	60	1567B-1583
					1661-1747
P	8-6-60	1-91	219	60	1875-1897
Q	8-7-60	1-83	220	60	1898-1927
R	8-8-60	1-184	221	60	2002-2045
					2080-2127

ORIGINAL RECORDS (Sounding Volumes)			AUTOMATED RECORDS		
DAY	DATE	POSITIONS	DAY	YEAR	POSITIONS
S	8-13-60	1-111	226	60	2191-2238
T	8-14-60	1-240	227	60	2361-2417 2439-2474 2503-2514
V	8-15-60	1-97	228	60	2515-2537 2593-2610
V	8-17-60	1-172	230	60	2611-2639 2658-2764 2772-2781A
W	8-18-60	1-307	231	60	2782-2821 2828-2878 2971-3086A
X	8-19-60	1-257	232	60	3087-3122 3152-3170 3196-3206
Y	8-20-60	1-248	233	60	— —
Z	8-21-60	1-251	234	60	— —
AA	8-22-60	1-125	235	60	3870-3872
BA	8-26-60	1-165	239	60	4017-4062 4077-4114

The total number of positions for a certain day as recorded in the original records and the automated records may differ by a few numbers. Positions not plotted and rejected positions recorded in the original records are not reflected in the totals of the automated records. Also, any additional artificial fixes (turning positions, etc.) recorded in the automated records are not reflected in the totals of the original records.

184c



TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

August 17, 1961

Division of Charts: R. H. Carstens

Plane of reference approved in
18 volumes of sounding records for

HYDROGRAPHIC SHEET 8559

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

Locality Vicinity of Diomede Island, Alaska

Chief of Party: J. C. Mathisson (1960)
Plane of reference is mean lower low water, reading
3.4 ft. on tide staff at Tin City, Alaska
5.8 ft. below B. M. Tin City NO 1 (1960)
4.0 ft. on tide staff at Niyrakpak Lagoon, Alaska
2.2 ft. below B.M. NO 1 (1960)

Height of mean high water above plane of reference is:

1.0 ft. Tin City, Alaska
0.7 ft. Niyrakpak Lagoon, Alaska

Condition of records satisfactory except as noted below:

Burt W. Wilson
Chief, Tides & Currents Branch

~~Chief, Division of Tides and Currents~~

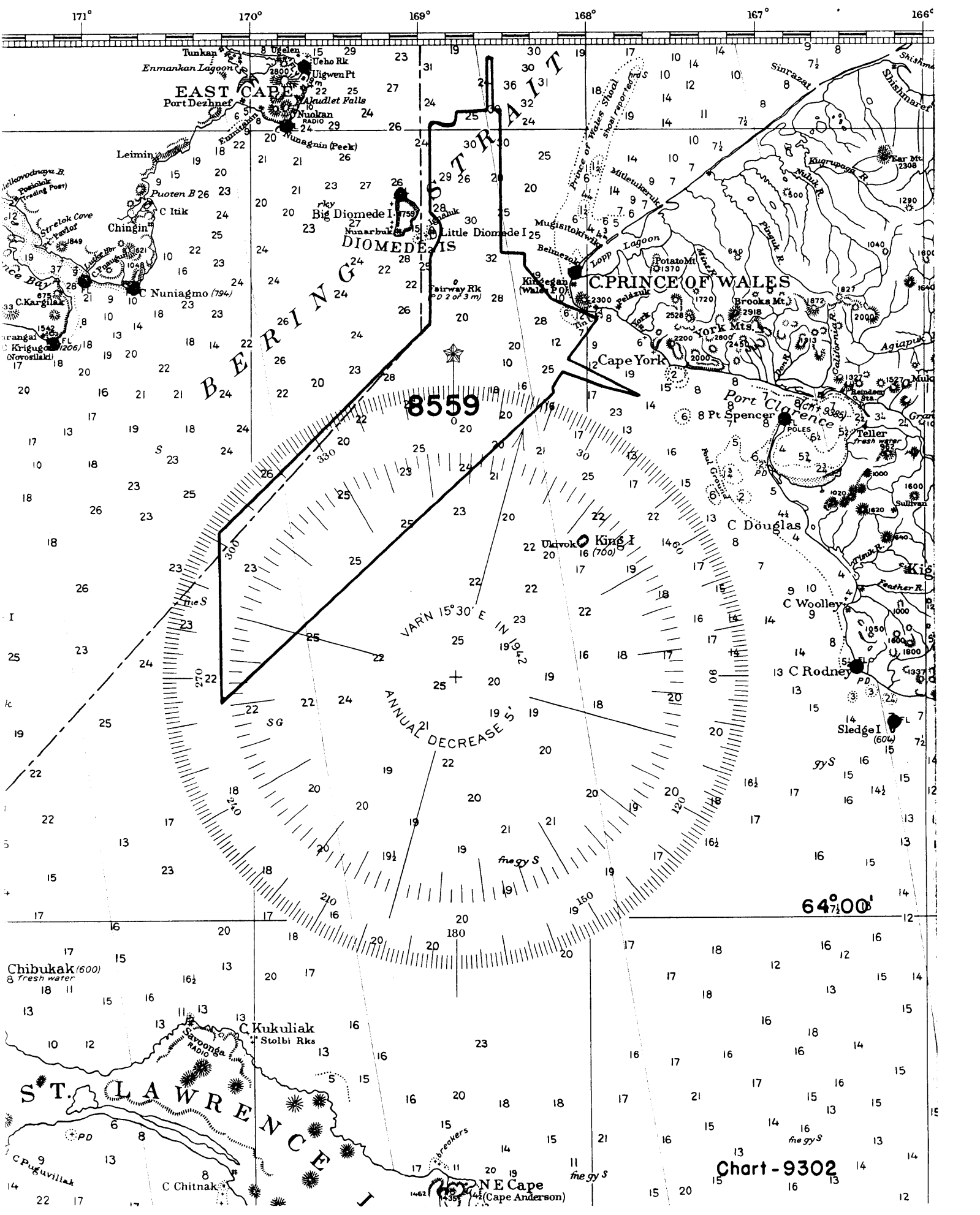


Chart-9302

