

8656



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Diag. Cht. No. 9400.

Form 504  
U. S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

**DESCRIPTIVE REPORT**

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Type of Survey *Combined Operations*

Field No. *SU-100-4-62* Office No. *H-8656*

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LOCALITY

State *Alaska*

General locality *Chukchi Sea*

Locality *Northwest of Icy Cape*  
*Northern Part*

---

1962

CHIEF OF PARTY

*W. R. Porter*

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LIBRARY & ARCHIVES

**APR 1 - 1964**

DATE \_\_\_\_\_

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

8656



USCOMM-DC 5087

*Cht 9400*  
*9402*

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-8656

Field No. SU-100-4-62

State ----- Alaska -----

General locality Chukchi Sea

Locality Northwest of Icy Cape  
From Lat. 70 35' N to 71 40' N and from Long. 164 20 to 166 40

Scale 100,000 Date of survey 18 Aug. 62 - - 14 Sept. 62

Instructions dated Original 9 May 1961 ammended 2 May 1962.

Vessel SURVEYOR

Chief of party WILBUR R. PORTER

Surveyed by Ships Personnel

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

Fathograms scaled by Ships Personnel

Fathograms checked by Ships Personnel

Protracted by LTJG J. COLLINS

Soundings penciled by LTJG J. COLLINS

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

REMARKS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC  
SURVEY H-8656 FIELD NO. SU-100-4-62

USC&GSS SURVEYOR

CAPT W. R. PORTER, COMDG.

SCALE 1:100,000

1962

A. Project

This survey is part of Project OPR-420, the original instructions dated 9 May 61 with Supplemental Instructions dated 2 May 62.

B. Area Surveyed

This survey was conducted in an area roughly, ninety nautical miles northwest of Icy Cape, Alaska. The hydrography is bounded north and south by Latitude 71 - 40 N and 70 - 35 N and east and west by Longitudes 164 - 20 W and 166 - 40 W. The survey was conducted from 18 Aug 62 to 14 Sept 62. This survey makes no junctions with prior surveys.

C. Sounding Vessel

USC&GSS SURVEYOR

D. Sounding Equipment

The fathometers used were Raytheon Model DE-723, numbers 138, 144, and 147. The depths in which used varied from 13 to 26 fathoms. For a detailed description of depth correction determination refer to Special Report "Correction to Echo Soundings".

E. Smooth Sheet

The smooth sheet projection was ruled in the Washington Office. Mylar overlays of the smooth sheet were drawn aboard the SURVEYOR and used as boat sheets.

The boat-smooth sheet method was not used, all positions being replotted by the smooth plotter. The smooth sheet distortion was too great to prick positions accurately.

F. Control

The horizontal control used for this survey was Raydist electronic positioning. Calibrations were obtained from three points fixes at the Raydist shore stations and by passing standard one-barrel buoys that had been previously positioned. For a detailed explanation see Special Report SU-20-62 "Project OPR-420, Raydist Calibrations Methods and Results". frequency 3280 Kc.

G. Shoreline

There is no shoreline on Sheet SU-100-4-62.

H. Crosslines

The percentage of crosslines run was 5.7% of the regular system. All crosslines checked within the allowable limits as specified in C&GS Publication 20-2.

I. Junctions

There are no junctions with prior surveys.

J. Comparison with Prior Surveys

There were no items on the presurvey review for Sheet SU-100-4-62. There are no contemporary surveys in this area.

K. Comparison with the Chart

Comparison was made with C&GS Chart 9402 (1st Edition May 8/50 Revised 4/11/55). All soundings on the chart within the sheet limits were compared, a list of which follows:

<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>CHARTED DEPTH</u>	<u>SMOOTH SHEET DEPTH</u>
71-28.8 N	166-25.5 W	23 fms.	24 fms.
71-39.2	166-05.8	24 fms.	24 fms.
71-27.2	165-54.0	25 fms.	23 fms.
71-36.3	165-10.7	23 fms.	22 fms.
71-31.3	164-45.0	25 fms.	23 fms.
71-01.1	165-25.1	21 fms.	22 fms.
71-03.9	164-45.2	24 fms.	23 fms.
70-46.3	164-42.0	24 fms.	18 fms.
70-39.2	164-41.8	24 fms.	24 fms.

It is recommended that the smooth sheet soundings be accepted as correct since this survey was a thorough modern hydrographic investigation. Special notice should be taken of the charted depth at Lat. 70-46.3 N, Long. 164-42.0 W of 24 fathoms. This charted sounding is positioned on a shoal found by the SURVEYOR.

A least depth of 13.7 fathoms was found at Lat. 70-57.7 N, Long. 164.46.5 W (Position 17H + 4 min.), after extensive investigation of the shoal area. The shoal extends from Lat. 70-57 N then north-westerly to Lat. 71-03, Long. 165-10 W, being roughly five miles in width. The twenty fathoms curve surrounding this shoal was drawn so as to leave 20 fathom soundings on its deep side. These soundings in all cases are 20 and some fraction of a fathom, this was done to give the twenty fathom curve a more natural delineation.

*Add fraction to 20's during verification*

L. Adequacy of Survey

This survey is complete and adequate to supersede prior surveys for charting purposes.

M. Aids to Navigation

There are no fixed or floating aids to navigation within the limits of Sheet SU-100-4-62.

N. Statistics

No. of Positions - - - - - 2557  
Miles Hydro - - - - - 2801.0  
Sq. Miles Hydro - - - - - 2109

For statistics concerning Oceanography refer to Special Report SU-22-62 "Oceanographic Observations in the Chukchi Sea".

O. Miscellaneous

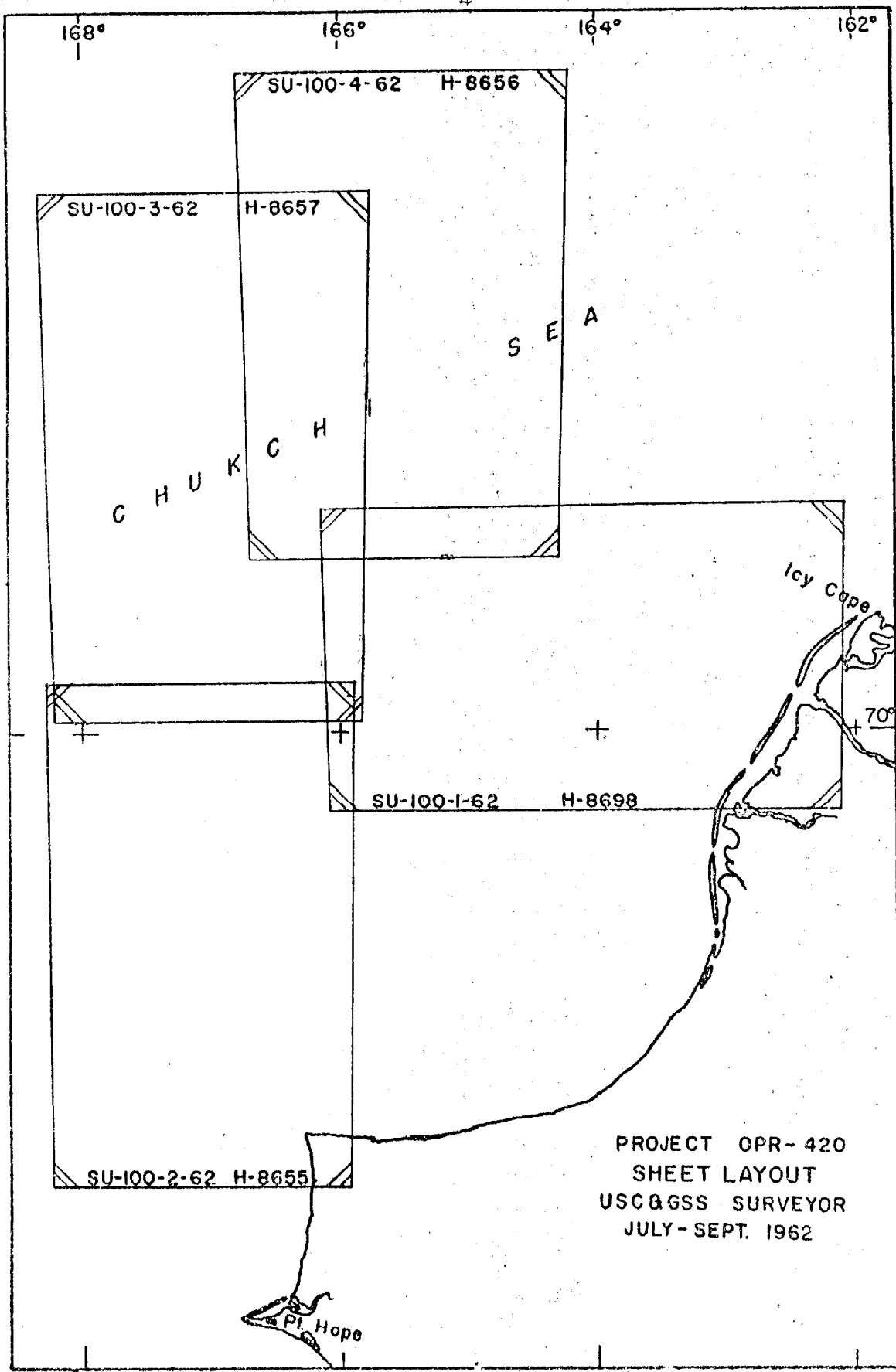
Refer to Special Report SU-24-62 "Extent and Duration of Floe Ice in the Chukchi Sea".

P. Recommendations

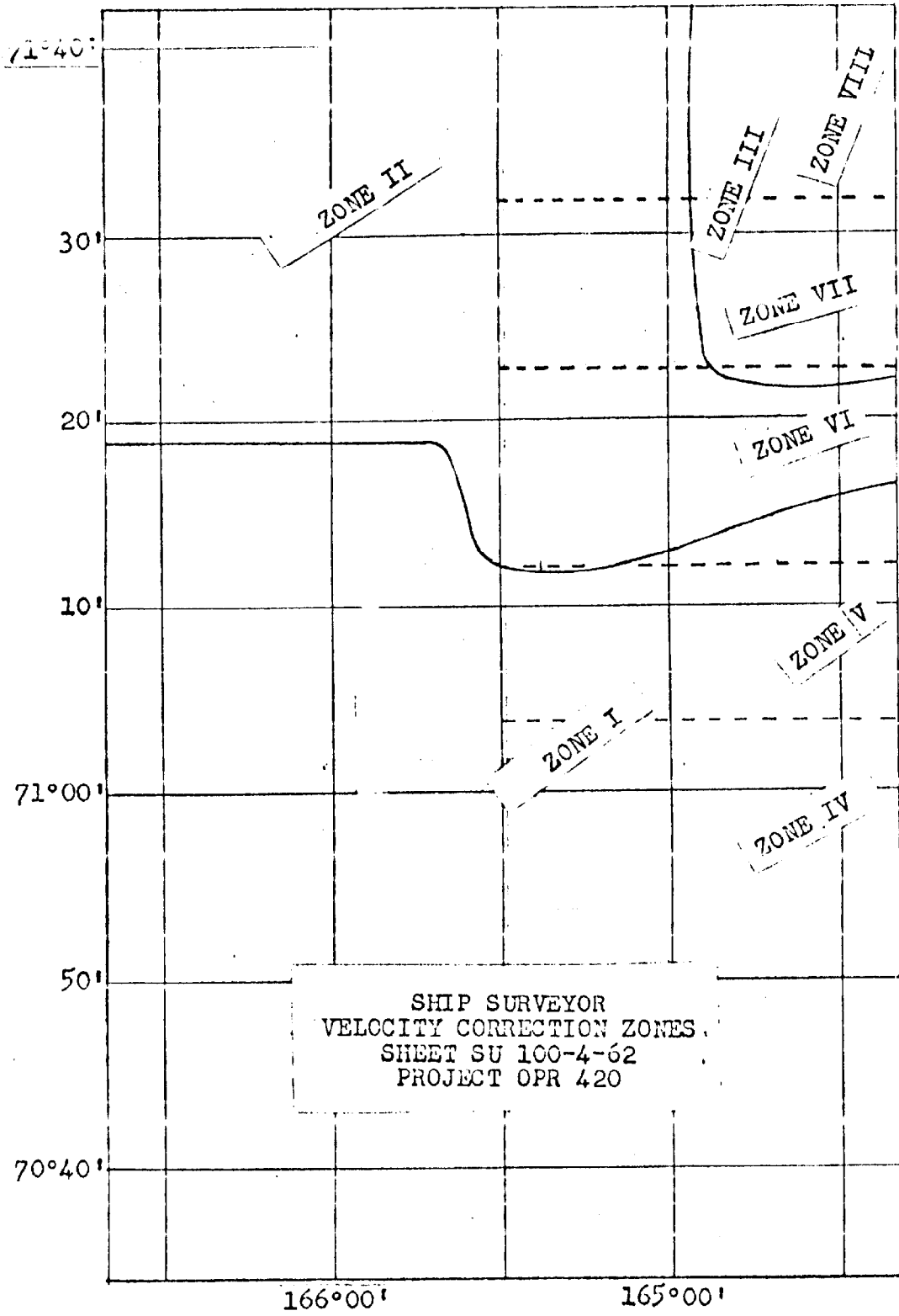
Refer to Section L of this report.

Q. Reference to Reports

<u>REF. NO.</u>	<u>TITLE</u>
SU-6-62	Corrections to Echo Soundings
SU-20-62	Project OPR-420, Raydist Calibration Methods and Results
SU-21-62	Project OPR-420, Velocity Corrections <i>Special Report No. 146</i>
SU-22-62	Oceanographic Observations in the Chulchi Sea
SU-24-62	Extent and Duration of Floe Ice in the Chukchi Sea
SU-25-62	Installation of Raydist Stations
	USC&GSS SURVEYOR Season Report Chukchi Sea 1962



PROJECT OPR-420  
SHEET LAYOUT  
USC&GSS SURVEYOR  
JULY-SEPT. 1962



VELOCITY CORRECTIONS  
SHEET SU-100-4-62

Depth	Table I Zone I	Table II Zone II	Table III Zone III
0 - 8	0	0	0
8 - 13	0	0	-0.1
13 - 18	-0.1	-0.1	-0.2
18 - 23	-0.1	-0.2	-0.3
23 - on	-0.2	-0.3	-0.4

Positions	Zone	Positions	Zone
1A - 91C	<u>II</u> \	103H+1 - 170H	<u>II</u> \
91C+1 - 103C+2	<u>I</u> ✓ \	170H+1 - 71J+1	<u>I</u> \
104C - 199C+2	<u>II</u> ✓ \	71J+2 - 82J+1	<u>II</u> \
200C - 72D+1	<u>I</u> ✓ \	82J+2 - 89J+1	<u>I</u> \
72D+2 - 96D	<u>II</u> ✓ \	89J+2 - 103J+1	<u>II</u> \
97D - 86E	<u>I</u> ✓ \	103J+2 - 112J+2	<u>I</u> \
86E+1 - 96E+2	<u>II</u> ✓ \	113J - 227J+1	<u>II</u> \
97E - 109E+2	<u>I</u> ^	227J+2 - 243J+2	<u>III</u> \
110E - 118E+1	<u>II</u> ✓ \	244J - 247J	<u>II</u> \
118E+2 - 139E+1	<u>I</u> ✓ \	247J+1 - 29K	<u>I</u> \
139E+2 - 143E	<u>II</u> ✓ \	29K+1 - 32K+1	<u>II</u> \
144E - 234E	<u>I</u> ✓ \	32K+2 - 64K+1	<u>III</u> \
234E+1 - 247E+1	<u>II</u> \	64K+2 - 103K+2	<u>II</u> \
247E+2 - 28H+2	<u>I</u> ✓ \	104K - 116K	<u>III</u> \
29H - 41H	<u>II</u> ✕	116K+1 - 154K	<u>II</u> \
41H+1 - 83H	<u>I</u> ✕	155K - 195K+1	<u>III</u> \
83H+1 - 100H	<u>II</u> ✕	195K+2 - 198K+2	<u>II</u> \
101H - 103H	<u>I</u> \	199K - 227K	<u>I</u> \



TIDE NOTE

Soundings on this survey were not corrected for tides for the following reasons. There was not enough information on the tides in the area to obtain accurate corrections. The small amount of information available indicated a small range of tide. It was felt that the tides in the area of the sheet were so small they would be masked by wind effect. The authority for not using tide reducers is given in a letter from the Director, dated 22 September 1961, reference No. 222-83-928s.

VELOCITY CORRECTIONS

SHEET SU-100-4-62

<u>POSITIONS</u>		<u>ZONE</u>	<u>POSITIONS</u>		<u>ZONE</u>
1L	24L+1	4✓	104L+2	116L	6-
24L+2	29L+1	5-	117L	125L+1	5-
29L+2	35L+2	6✓	125L+2	131L+2	6✓
36L	47L+1	7✓	132L	148L+1	7✓
47L+2	65L+2	8✓	148L+2	155L	6✓
66L	72L+1	7-	155L+1	160L	5✓
72L+2	94L+1	9✓	160L+1	END	4-
94L+2	104L+1	7✓			

Zone 4	0.0 - 28.0	0.0	Table 4
Zone 5	0.0 - 23.0	0.0	" 5
	23.1 - ON	-0.1	
Zone 6	0.0 - 15.0	0.0	" 6
	15.1 - 25.0	-0.1	
	25.1 - ON	-0.2	
Zone 7	0.0 - 13.0	0.0	" 7
	13.1 - 18.0	-0.1	
	18.1 - 26.0	-0.2	
	26.1 - ON	-0.3	
Zone 8	0.0 - 10.0	0.0	" 8
	10.1 - 16.0	-0.1	
	16.1 - 21.0	-0.2	
	21.1 - 24.0	-0.3	
	24.1 - ON	-0.4	

INDEX CORRECTIONS  
SHIP SURVEYOR - OPR-420  
1962

DATE	FROM	TO	DRAFT COR.	DEPTH COR.	SETTLEMENT & SQUAT	TOTAL INDEX CORRECTION	
7/17	Beginning	8/1	0530	0.0	-0.5	+0.2	-0.3
8/1	0531	8/1	0814	-0.1			-0.4
8/3	0311	8/6	0130	+0.1			-0.2
8/6	0131	8/6	0320	0.0			-0.3
8/6	0321	8/6	2210	+0.1			-0.2
8/6	2211	8/7	1300	0.0			-0.3
8/7	1301	8/7	1612	+0.1			-0.2
8/7	1613	8/8	0949	0.0			-0.3
8/8	1040	8/8	1200	+0.1			-0.2
8/8	1201	8/8	1721	0.0			-0.3
8/8	1722	8/8	1800	+0.1			-0.2
8/8	1801	8/17	0830	0.0			-0.3
8/17	0831	8/17	0930	-0.1			-0.4
8/17	0931	8/18	0459	0.0			-0.3
8/18	0500	8/18	1130	+0.1			-0.2
8/18	1131	8/24	0200	0.0			-0.3
8/24	0201	8/24	0400	-0.1			-0.4
8/24	0401	8/25	0415	0.0			-0.3
8/24	0416	8/25	0700	-0.1			-0.4
8/24	0701	8/27	1630	0.0			-0.3
8/27	1631	8/27	2000	-0.1			-0.4
8/27	2001	8/28	0300	0.0			-0.3
8/28	0301	8/28	0800	-0.1			-0.4
8/28	0801	8/29	1334	0.0			-0.3
9/8	0401	9/9	0200	+0.1			-0.2
9/9	0201	9/15	1400	0.0			-0.3
9/15	1401	9/15	2100	-0.1			-0.4
9/15	2101	9/16	0400	0.0			-0.3
9/16	0401	9/16	0700	-0.1			-0.4
9/16	0701	9/16	1300	0.0			-0.3
9/16	1301	9/16	1930	-0.1			-0.4
9/16	1931	9/16	2200	0.0			-0.3
9/16	2201	9/16	2400	-0.1			-0.4
9/17	0001	9/17	0200	0.0			-0.3
9/17	0201	9/17	0330	-0.1			-0.4
9/17	0331	9/17	1600	0.0	-0.5	+0.2	-0.3

(8)

ABSTRACT OF RAYDIST CORRECTIONS

SHEET SU-100-4-62

REGISTRY NUMBER H-8656

POSITION <u>FROM</u>	NOS <u>TO</u>	CORRECTIONS	
		<u>RAYICY</u>	<u>RAYBINE</u>
1A	156A	-2	-1
1B	189B	-2	-1
1C	150C	-2	-1
1D	127D	-2	-1
128D	129D	0	-3
130D	173D	0	-5
174D	178D	0	-7
	179D	0	0
	182D	-1	+4
183D	184D	-1	+17
	1E	-1	+19
2E	4E	-1	+20
	5E	-1	+19
	6E	-1	+15
7E	8E	-1	0
	9E	-1	-1
10E	14E	-1	+3
15E	16E	-1	+4
17E	283E	-1	+7
284E	290E	-1	+13
291E	303E	-1	+17
1F	100F	-1	+17
101F	186F	0	0
187F	226F	0	-1
1G	32G	+2	-2
1H	72H	+2	-2
73H	213H	+2	-3
1J	5J	+2	-3
6J	8J	+2	-6
9J	17J	+2	-10
	18J	+2	-9
21J	279J	0	+1
1K	277K	0	+1
1L	182L	+3	-8
1M	9M	+3	-4
10M	16M	+5	+8
17M	72M	+20	+7
1N	6N	+3	-4
7N	220N	+3	-6
221N	228N	+2	-5
229N	244N	+2	-4

(9)

APPROVAL SHEET

This survey was executed under the direction and supervision  
of CAPT W.R. PORTER

The completed smooth sheet and accompanying records have been  
examined by me and are approved.

  
F. J. Bryant  
CAPT, USC&GS

GEOGRAPHIC NAMES  
Survey No. H-8656

Name on Survey											
	A	B	C	D	E	F	G	H	K		
Chukchi Sea											1
											2
Lay Cape											3
											4
											5
											6
											7
											8
											9
											10
											11
											12
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											25
											26
											27

Approved  
7-14-64  
G. J. Wright

HYDROGRAPHIC SURVEY STATISTICS  
 HYDROGRAPHIC SURVEY NO. 8656

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS		1	
DESCRIPTIVE REPORT		1	OVERLAYS			
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1-Fathograms					
VOLUMES	7					
BOXES						

T-SHEET PRINTS (List)

SPECIAL REPORTS (List)

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TQTALS
POSITIONS ON SHEET				
POSITIONS CHECKED				
POSITIONS REVISED				
DEPTH SOUNDINGS REVISED				
DEPTH SOUNDINGS ERRONEOUSLY SPACED				
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS				
JUNCTIONS				
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS				
SPECIAL ADJUSTMENTS				
ALL OTHER WORK				
<b>TOTALS</b>				
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY	BEGINNING DATE		ENDING DATE	
REVIEW BY	BEGINNING DATE		ENDING DATE	

**VERIFIER'S REPORT**  
**HYDROGRAPHIC SURVEY, H-8656**

**INSTRUCTIONS** - This form serves to identify items of a checklist 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><b>Note:</b> 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 <b>Butt</b> junctions and areas which are <b>SUPERSEDED</b>.</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><b>Part IV - VOLUMES</b> 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><b>Part II - SHORELINE AND SIGNALS</b> 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>			<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>		
<p>5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.</p>					
<p>6. 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>					
<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>			<p><b>Part V - PROTRACTING</b> 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><b>Part III - JUNCTIONS</b> <b>Note:</b> 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.		
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.			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		
<b>Part VI - SOUNDINGS</b> 18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings.  Remarks Required: -- None			<b>Part IX - BOATSHEET</b> 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.		
20. The spacing of soundings as recorded in the records was closely followed;  Remarks Required: -- None			<b>Part X - GENERAL</b> 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		
<b>Part VII - CURVES</b> 23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected.  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			33. The bottom characteristics are adequately shown.  Remarks Required: -- 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.			<b>Part XI - NOTES TO THE REVIEWER</b> 34. Unresolved discrepancies and questionable soundings.  35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.		
Verified by _____			36. Supplemental information.	Date _____	

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

July 17, 1964

Nautical Chart Division: R.H. Carstens

Plane of reference approved in  
7 volumes of sounding records for

HYDROGRAPHIC SHEET 8656

Locality: Chukchi Sea, Alaska

Chief of Party: W.R. Porter

Plane of reference is mean lower low water

Tide Station Used (Form C&GS-681): Point Hope and Icy Cape

Height of Mean High Water above Plane of Reference is as follows:

Point Hope	0.5 ft.
Icy Cape	0.6 ft.

Remarks

J. M. Symons

Chief, Tides and Currents Branch

