

6704

Special

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

JAN 26 1942

Acc No. _____

Form 504
Rev. Dec. 1933

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

L. O. Colbert

DESCRIPTIVE REPORT

~~Paragraphic~~ } Sheet No. _____
Hydrographic } Field No. 5A41

State S. W. Alaska

LOCALITY

Alaska Peninsula

Entrance to Cold Bay

19K 41

CHIEF OF PARTY

L. D. Graham

6704

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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.

Field No. 5 A 4 1

REGISTER NO. **H6704**

State S.W. Alaska

General locality ~~South Side~~ Alaska Peninsula

Locality Entrance Cold Bay

Scale 1 : 5,000 Date of survey June 20- July 9, 1941

Vessel Launch #87 of DISCOVERER

Chief of Party L.D. Graham

Surveyed by Ship's Officers : J.P.L.

Protracted by P.M. Fisher

Soundings penciled by H.J. Parsons

Soundings in fathoms feet/

Plane of reference Mean Lower Low Water

Subdivision of wire dragged areas by _____

Inked by R.H. Carstens

Verified by R.H. Carstens

Instructions dated April 26, _____, 1941

Remarks: Smooth sheet, reduction and plotting by the

Seattle Processing Office.

DESCRIPTIVE REPORT

TO ACCOMPANY

FIELD SHEET NO. 5A41

PROJECT HT 219

ENTRANCE TO COLD BAY

ALASKA PENINSULA

U. S. C. & G. S. S. DISCOVERER

L. D. GRAHAM, COMMANDING

NOTES FOR DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SHEET NO. 5A41
ENTRANCE TO COLD BAY, ALASKA

1. AUTHORITY:

The work was performed in accordance with the Director's Supplemental Instructions dated April 26, 1941.

2. LIMITS:

This sheet is a new hydrographic survey between latitudes 55-04'-45" and 55-08'-00" and between longitudes 162-30'-30" and 162-32'-45", covering the narrow deepwater entrance to Cold Bay. The previous survey of this area formed a part of the hydrographic sheet Register No. 4314 of 1923 and 1924.

3. SURVEY METHODS:

All positions were determined by three point fixes with sextants on objects ashore located either by triangulation or topography.

The scale of the sheet is 1 to 5000. The sounding was done with the portable Submarine Signal Depth Recorder, Model 808-AS-1. The in-shore area from 12 feet including the 6 foot curve was done with the hand lead. Hand lead soundings were used on "l"- "m"- "n" days. The work was done with the view that the one fathom curve could be drawn with confidence.

The spacing of the lines was generally 50 meters and soundings every ten seconds were read from the chart roll of the fathometer. Any shoal soundings between the ten seconds interval were recorded. It is hoped that soundings recorded at the above interval are ample. The soundings shown on the boat sheet are in feet. Several lines in the channel were recorded in fathoms and feet so as to limit the amount of scale shifting on the fathometer, but in general the area was surveyed with the "feet" scale of the fathometer.

Smooth
sheet
in fathoms.

From the stand point of depth curves in the immediate channel it would have been desirable to run the lines in a pronounced northeast-southwest direction. However, from a feasible standpoint and one of economy the lines were run at a very slight northeast angle. The current in the deep water section is very strong and it was highly desirable to run with or against the current. Also with the fathometer recording in feet a constant change of scales would be involved causing the fathometer reader much confusion in reading the soundings. It is believed that the closeness of the spacing of the lines enables one to draw the various depth curves with confidence and with the desired accuracy. In spite of the feasible and economical system of lines used the strong currents proved very annoying at times. The shore line is very foul with rocks and reefs and to protect the transceiver "fish" from damage the lines were run parallel to the shore rather than normal and involve the risk of damage to equipment.

The recording fathometer operated very satisfactory and the results obtained were very gratifying.

A very heavy kelp patch exists just west of the narrow deep water channel. The kelp in this patch is very thick and was impossible for the launch. Several attempts were made to enter the patch and obtain at least detached soundings but it proved rather impossible. This area has the appearance of a large grass mat afloat and is so dense that it stopped the launch. Although a powerful launch was used it proved to lack the necessary power to enter the kelp. Soundings and lines were run in the kelp patch wherever possible and no definite system of lines could be used.

The bar check for the fathometer was made at two fathoms twice or three times daily. The fathometer was set to be correct at two fathoms and the necessary fathometer corrections should be applied to greater depths. A table of fathometer corrections are included in this report. The speed of the fathometer was kept constant with a tachometer and checked frequently with a stop watch. The soundings recorded are soundings obtained in the field at the exact instant of the bell of the sounding clock. Later the chart roll was scanned and studied and corrections made to the erroneous recorded soundings. In areas of kelp, at times, the determination of the exact depth depends to a large extent upon the interpretation of the chart roll.

Two ^{sets of} ~~records~~ ^{books} were used on this sheet. One for the soundings and hydrographic data and the second one for the positions. Much time was saved by this procedure.

4. DISCREPANCIES:

The survey of this area was made in 1923 and 1924. A comparison of the previous survey with this sheet shows very close agreement with one outstanding exception. *Attention is called to a ~~50~~ ^{24 to 29 ft.} foot sounding at the western edge of the narrow deep water channel in latitude 55-06.72' - longitude 162-32.01'. An additional ~~30~~ ^{on H-4314 (1923-24)} foot sounding was found 50 meters north-north-west of the above sounding. At the immediate edge of the channel ~~20 feet and 24 feet soundings~~ ^{24 and 29 feet} in vicinity of latitude 55-06.74' - longitude 162-31.98'. ~~Thirty~~ ^{24 and 29} meters east of this sounding the channel is 60 feet deep. This area is sparsely covered with a few streamers of kelp and can be seen only at certain stages of the current and is evidently a sharp projection or point of the large kelp formation to the westward.

* see note by Processing Office

5. DANGERS:

The chief danger is the position of the soundings as mentioned above. The soundings were covered with kelp and the results as mentioned and recorded are the interpretation of the chart roll. About an hour was spent in "feeling" about this area. According to the chart roll the shoal spots are very sharp and soundings with the hand lead were deeper than those recorded by the fathometer. It is rather difficult to exactly plant the lead on the top of a sharp pinnacle. A wire drag survey is to be made of the channel and it is hoped additional information will be available. Buoy 150m. north satisfactorily marks channel. Drag does not cover this shoal but shows channel clear.

6. CHANNELS:

With aids to navigation 60 feet could be taken through the channel to Cold Bay. Dragged to 42 Ft. on H-6705 (1941) W.D.

7. NOTES:

The lines were run as close to shore as possible with due regard to

to existing circumstances and safety. ✓

A gasoline drum painted yellow was anchored in lat. 55-06.96', long. 162-32.15' for the convenience of the ship DISCOVERER and the buoy is not to be charted since it is only of a temporary nature. ✓ *Not plotted*

Currents are strong in the channel, being estimated at 4 to 5 knots at times. At certain periods tide rips are noted north of latitude 55-07'-30" and ^{between} longitude 162-30' and 162-32'. ✓

8. CONTROL:

The triangulation of this area was executed in 1923. ✓

The topographic signals were located by a party of the ship DISCOVERER during the current season on topographic Sheet "A" to station "ZIP" and signals beyond "ZIP" were located on the reverse side of topographic Sheet "A". ✓

Signal "ZIP" ¹⁹⁴¹ was located by observing angles at stations "LAW" ¹⁹²³ and "ZIP" and observing on "BLUFF" and "SALT". Angles of the triangles at "BLUFF" and "SALT" were concluded. A satisfactory position and check for position of "ZIP" obtained from the two triangles involved. Computations turned over to Div. of Geodesy. ✓

Signal "STEEP" was located by computing a three point fix. Four positions with a second order direction theodolite were taken at "ZIP" to "PLAT"-"BLUFF"-"SALT"-"ZIP". The final position of "STEEP" was checked by topography from station "ZIP". *STEEP unmarked.* Computations attached to D.R. for T-6860 (1941) ✓

Soundings on the boat sheet were reduced by using predicted tides. Tide reducers for smooth sheet will be obtained from tide records at Lenard Harbor Gage. No correction for velocity (fathometer corrections) were made on the boat sheet. ✓

H6704

9. STATISTICS:

The statistics for this sheet are as follows:

Date	Day Ltd.	LAUNCH NO. 87		No of Pos.	Sound Line	
		No of Soundings	808-As-1 Sub. Sig.		Stat. Mi.	H.L. Fath.
6-20-41	a	1575		149		22.6
6-23-41	b	1562		168		26.6
6-24-41	c	1459		158		23.2
6-25-41	d	1206		144		20.3
6-26-41	e	1737		198		27.5
6-27-41	f	1629		198		26.9
6-28-41	g	766		80		10.2
7-1-41	h	1220		137		17.3
7-2-41	j	1738		225		28.7
7-5-41	k	653		84		10.4
7-6-41	l	443		119	6.8	
7-7-41	m	645		168	12.2	
7-8-41	n	387		115	7.5	
7-9-41	p	1736		246		28.9
Total for sheet - launch		16756		2187	26.5	240.6

The square statute miles of area on the launch work for this sheet is 4.6.

Approved and forwarded.

L.D. Graham
L.D. Graham, Lieut. Comdr. USC&GS
Commanding Ship DISCOVERER.

Respectfully submitted,

Joseph P. Lushene, Jr.
Joseph P. Lushene,
Jr. H.&G. Engr.

H6704

FATHOMETER CORRECTIONS
FIELD SHEET NO. 5A41

June 1, 1941 to July 15, 1941

<u>Depth</u>	<u>Correction in feet</u>
2 fathoms 0 feet to 3 fathoms 0 feet	0
3 fathoms 1 feet to 12 fathoms 5 feet	-1
13 fathoms 0 feet to 22 fathoms 2 feet	-2
22 fathoms 3 feet to 30 fathoms 0 feet	-3
30 fathoms 1 feet to 39 fathoms 4 feet	-4
39 fathoms 5 feet to 47 fathoms 2 feet	-5

NOTES BY PROCESSING OFFICE

SHEET 5A41

Of the fifteen (15) volumes accompanying this sheet the last four (4) contained positions only. Soundings for these positions were put in other volumes. Cross references have been made between them.

The plotter of the sheet used a stamp
Shoaler sounding..... fms.
Pos..... to note that a shoaler sounding which fell on the sounding indicated had been plotted.

DISCREPANCIES (See paragraph 4 original notes by DISCOVERER.) Attention is called to a shoal sounding of $3\frac{2}{3}$ fathoms at Lat. 55-06.74' Long. 162-31.98'. It appears that this sounding, which does not appear on the boat sheet, was obtained from rescanning the fathograms and that report by the DISCOVERER was written from the boat sheet.

Tide rips and strong currents were noted extending for $\frac{3}{4}$ miles north of Kelp Point.

CROSSINGS: Differences at crossings were never more than two to four feet. It appears that these differences are noted more where there was hand leading done in conjunction with shoal fathometer soundings. Soundings with the hand lead were deeper than those with the fathogram, as was also noted in notes by the DISCOVERER.

COMPARISON WITH PREVIOUS SURVEYS: The smooth sheet has been compared with previous work in this area and is found to be in good agreement, with the exception of the shoal soundings mentioned above. With the use of the portable depth recorder and closer

development of the area, it is to be expected that a more complete and accurate delineation of the depth curves is possible.

WIRE DRAG : The deep water channel as shown on this sheet was wire dragged according to instructions. A complete report and boat sheet for the wire drag has been made and is being forwarded to Washington on same date as this hydrographic report and sheet. H-6705 (1941)

GEOGRAPHIC NAMES:

No new geographic names are recommended for this sheet.

Jan. 17, 1942

Philip C. Doran
Philip C. Doran,
Officer in Charge,
Seattle Processing Office.

TIDAL DATA

TO ACCOMPANY

FIELD SHEET NO. 441- ENTRANCE TO COLD BAY, ALASKA

PORTABLE TIDE GAUGE #355

LENARD, HARBOR, ALASKA

Latitude 55 07.05' N.

Longitude 162 22.60 W.

June 7th to July 12th, 1941

M. L. L. W. on Staff 4.08*

Highest tide on Staff..... 12.8 (From graph. by
Processing office) ✓

Lowest Tide on Staff..... 2.0

*Obtained by working back from Tidal Bench Marks using leveling of June 14, 1941. Regarding the leveling when gauge was removed on July 12th, 1941, it is recommended that it not be used. Although a difference of .02 ft. was found from the previous leveling the weather conditions were such that the difference of .02 ft. is attributed to weather rather than actual settlement of Staff. Intermediate recoverable turning points show that a difference of .004 to .007 ^{ft} should be expected.

Surveys Section (Chart Division)

H6704
HYDROGRAPHIC SURVEY NO.

Records accompanying survey:

Boat sheets 977.; sounding vols. (15); wire drag vols.;
bomb vols.; graphic recorder rolls (9)...;
special reports, etc.
.....

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

Number of positions on sheet	2187
Number of positions checked	..55
Number of positions revised	...8
Number of soundings recorded	16756
Number of soundings revised (refers to depth only)	...22
Number of soundings erroneously spaced	...38
Number of signals erroneously plotted or transferred	...0
Topographic details	Time 14.46
Junctions	Time 12..
Verification of soundings from graphic record	Time

Verification by *R.H. Cart...* Total time 115.4 hrs Date *April 1, 1942*

Review by *J.A. McCormick* Time 15 hrs. Date *4/9/42*.

Remarks

Decisions

1		SS0625 U.S.G.B
2		" "
3		" "
4	Also location of tide staff.	SS0620
5		
6		
7	For title	U.S.G.B.
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
M 234		

GEOGRAPHIC NAMES
 Survey No. **H6704**

Name on Survey	Source										
	A	B	C	D	E	F	G	H	K		
<u>Cold Bay</u>											1
<u>Kaslukan Point</u>											2
<u>Kelp Point</u>											3
<u>Lenard Harbor</u>											4
											5
											6
<u>Alaska Peninsula</u>											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

Names determined in field approved
 by L. Heck on 5/6/42

80

MEMORANDUM IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
~~PHOTOSTAT OF~~

No. H H6704
~~No. T~~

received January 28, 1942
registered January 30, 1942
verified
reviewed
approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
✓ 25		<i>[Handwritten Initial]</i>	
26	Pg 2		
30			
40			
62			
63			
82			
✓ 83	Pg 2	<i>[Handwritten Initial]</i>	
88			
90			

RETURN TO

82	R. W. Knox
----	------------

DIVISION OF CHARTS

SURVEYS SECTION

REVIEW OF HYDROGRAPHIC SURVEY

REGISTER NO. 6704

Field No. 5A41

S. W. Alaska; Alaska Peninsula; Entrance to Cold Bay
Surveyed in June - July 1941; Scale 1:5,000
Instructions dated April 26, 1941 (DISCOVERER)

Soundings:

808 Recorder

Hand Lead

Control:

Sextant Fixes on Shore Signals

Chief of Party - L. D. Graham

Surveyed by - Officers of Ship DISCOVERER

Protracted by - P. M. Fisher

Soundings plotted by - H. J. Parsons

Verified and inked by - R. H. Carstens

Reviewed by - J. A. McCormick, April 9, 1942

Inspected by - H. R. Edmonston

1. Shoreline and Signals

Shoreline and topographic signals are from T-4080 (1924) and T-6860 (1941).

2. Sounding Line Crossings

Satisfactory.

3. Depth Curves

Satisfactory.

4. Adjoining Surveys

Satisfactory junctions were effected with H-6702 (1941) on the north and west and with H-6703 (1941) on the south. Satisfactory agreement also was obtained with H-4314 (1923-24) on the northeast, west and southeast in the areas not covered by 1941 work.

5. Previous Surveys

H-4314 (1923-24), 1:20,000

In accordance with project instructions, the narrow deep water entrance to Cold Bay was developed on a scale of 1:5,000 with a general spacing of 50 meters between sounding lines. Depths of 3 to 5 fathoms found in Lat. 55°06.7',

Long. 162°32.0' (Descriptive Report, page 2) do not materially alter the danger limit established by depths of 4 to 5 fathoms on the widely spaced lines of H-4314. Elsewhere in the area, depths on the two surveys are in good agreement. Bottom characteristics were carried forward from H-4314 because of the total absence of such information on the present survey. With indicated additions, the present survey supersedes H-4314 in the common area.

6. Wire Drag Surveys

Project instructions called for dragging the channel to an effective depth of 42 feet. This was accomplished with only minor conflicts of 1 to 2 feet between effective depths and soundings at the edges of the strips. Soundings obtained by the drag party varied only 1 to 2 feet from those obtained in the regular hydrographic development.

7. Comparison with Chart 8703 (New Print of Nov. 10, 1941)

Depths charted in this area are from H-4314 (1923-24). The light on Kaslokan Point and the can buoy on the west side of the channel were located on the present survey and reported to the office by Chart Letter 595 of 1941.

8. Compliance with Project Instructions

Satisfactory.

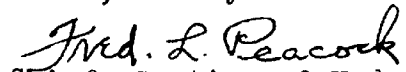
9. Additional Field Work Recommended

None.


10. Superseded Surveys


H-4314 in part.


Chief, Surveys Section


Chief, Section of Hydrography

Examined and approved:


Chief, Division of Charts


Chief, Division of Coastal Surveys

RAC
HAC

TIDE NOTE FOR HYDROGRAPHIC SHEET

February 6, 1942.

~~Division of Hydrography and Topography.~~

✓ Division of Charts: Attention: Mr. H. R. Edmonston.

Plane of reference approved in
15 volumes of sounding records for

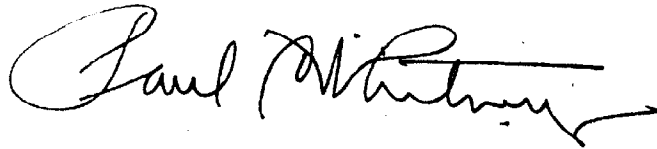
HYDROGRAPHIC SHEET 6704

Locality Entrance to Cold Bay, Alaskan Peninsula, Southwest Alaska.

Chief of Party: L. D. Graham in 1941
Plane of reference is mean lower low water reading
4.1 ft. on tide staff at Lenard Harbor
10.6 ft. below B. M. 1

Height of mean high water above plane of reference is 6.4 feet.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.

Applied to Cht. 8703 Apr. 21, 1942
" " " 8802 July 28, 1942

K.P.
J.H.S.