

6592

Original

Form 504
Rev. April 1935

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

~~Tenacious~~ } Sheet No. **1140**
Hydrographic }

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

JAN 7 1941

Acc. No.

State *SW. Alaska*

LOCALITY

King Cove, Alaska Peninsula

1940

CHIEF OF PARTY

L. D. Graham

6592

or

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. 1140

H6592

REGISTER NO. H-6592

State SW Alaska

General locality Alaska Peninsula

Locality King Cove

1:5,000

Scale 1:10,000 Date of survey May & June, 1940

Vessel DISCOVERER

Chief of Party L. D. Graham

Surveyed by J. T. Jarman

Protracted by W. Weidlich

Soundings penciled by W. Weidlich

Soundings in fathoms ~~F55%~~

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by

Inked by J. A. McCormick

Verified by do

Instructions dated March 18, 1938 - April 16, 1939

Remarks: Project H-219

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SHEET
FIELD NO. 1140

1. Date of Instructions:

Project HT-219. March 18, 1938, April 6, 1939. ✓

2. Survey Methods:

Control for this Sheet is furnished by triangulation off the line HUFF--STAGG. The above scheme is the same as that of 1925 with the exception of station CAN 1940, the introduction of which materially reduces the sigma R's of the original scheme. Additional control is furnished by signals from topographic sheet (Field) No. A-1940. ^{T-6764} ✓

The standard survey methods of the service were used throughout this survey with soundings being obtained by both the hand lead and wire methods. ✓
The survey extends from inshore areas, King Cove Bay out to the 20 fathom curve.

This survey was begun with an inexperienced crew. The Coxswain had had some experience, but was not proficient at picking and following ranges. ✓
The recorder had some experience with wire sounding, but little or no experience with hand lead sounding. Neither leadsman had ever sounded before.

During the course of this survey, the launch engineer was unable to set the launch carburetor so that it's engine would perform efficiently at all speeds. When the carburetor was set for idling, the engine would not accelerate properly. If the carburetor was set for high speeds, the engine would not idle properly. Eventually, a happy medium was struck but the resulting speed was too fast for wire soundings on a scale of 1:10,000; that is, the spacing between soundings exceeded $\frac{1}{2}$ the distance of the sounding line spacing. ✓

The original intention was to space the lines 50 meters inside the 10 fathom curve, and 100 meters above the 10 fathom curve. Two buckets towed from either side of the launch failed to reduce the spacing of soundings to proper limits, so the line spacing was reduced to 40 meters below 10 fathoms and 75 meters above 10 fathoms. By the above step, it is believed that the area was given the proper development even though sounding spacing is slightly excessive.

Sounding launch was one man control, the Coxswain and Engineer being combined in one office. The operator is a busy man during wire sounding operations, and at times the run between positions does not check (time) exactly on scales of 1:10,000 or larger due to lack of uniformity in operating the launch. This discrepancy will disappear after the launch operator is fully broken in. Furthermore, it is not noticeable on the smaller scales.

Lines through kelp also caused the run between positions to shorten on both hand lead and wire lines.

Thick ribbon kelp is found near the shore on either side of the outer bay, and considerable time was lost cleaning kelp out of the intake suction line of the launch. Consequently, in most cases, sounding lines were run up to and around these areas, a kelp symbol being shown for unsounded areas on the Boat Sheet.

The Recorder was able to get essential data recorded but was unable to get down all the notes necessary to make the record clear. Those notes he missed were entered at a later date.

Acoustics on this particular launch are bad, making hearing difficult. Most of the information repeated back incorrectly by the Recorder was immediately corrected by the left Angleman. However, in two instances, incorrect shoal soundings were recorded which were doubted at the time the soundings were placed on the Boat Sheet. In both cases, the Recorder failed to

get an O.K. on the doubtful soundings. Later investigation proved the recorded soundings to be in error, and determined the correct depth (see Vol. 2, page 46, ✓ position 177 b, and also investigation Vol. 5, page 69; also see first sounding before position 101 f, page 34, Vol. 4.)

The green leadsman grasped the fundamentals of hand lead and wire sounding rapidly. However, they were consistently unable to get depths greater than 7 or 8 fathoms with the hand lead. For greater depths, they required excessively long sounding intervals, and the resulting sounding could not always be trusted. Consequently, wire soundings were run into about 8 fathoms, and these depths were overlapped with hand lead soundings as far as the leadsman was able to go with accuracy. At first glance, a few of these hand lead over- ✓ laps appear to disagree with the corresponding wire soundings, but an inspection of the bottom slope on both sides of the bay shows it to be sharp and steep. It is believed that any discrepancy not due to the steep slope will iron itself out during the smooth plotting, particularly so, when correct tide reducers are available.

The small protected basin known locally as the inner harbor which lies between the outer bay and the upper lagoon was surveyed on a scale of 1:5000 since it provides the only protection for small boats in a S. E. storm. Maneuvering room in the inner harbor is limited, and it was impossible to keep the boat sheet plotted up to date. Therefore, the sounding lines were run blind and plotted later. Some gaps appeared, due partly to the above method, and partly due to the inability of the leadsman to go from shoal to deep water. An attempt was made to fill these ✓ gaps with detached positions (see "k" day). All sounding in area was at or near slack water. However, current caused some lines to bend slightly as they were run. It should be noted that the current is not the same strength and direction in this area, but eddies and swirls. The above work has been carefully replotted

on tracing paper as a check on it's accuracy. This tracing is attached to the ✓
Boat Sheet for the guidance of the smooth plotter.

Tide gauge was the standard automatic type maintained on the cannery ✓
dock at King Cove.

Frequently, Fixes were used in which the line of sight went overland
to some one object in the Fix. Office Cartographer should not assume that these ✓
Fixes are incorrect, because in every instance the objects so sighted upon are
elevated, and can be seen over the land areas.

3. Discrepancies:

The 3 ~~1/2~~ fathom sounding (~~Boat Sheet reduction~~) in Latitude $55^{\circ} 02.43'$,
Longitude $162^{\circ} 19.88'$ was not investigated other than a system of close develop-
ment. This bottom is rocky, and it is believed that it is merely an extension of ✓
the shoal area extending to the S. E. from Morgan Point. Most of the above area ^{Rev.,} _{par. 7.}
is covered with kelp.

The 19 ~~fathoms~~ and 20 fathoms spots in the vicinity of Latitude $55^{\circ} 02'$,
Longitude $162^{\circ} 20.0'$, which are surrounded by ^{slightly} deeper water appear to be lumps ✓
rather than rocks. No kelp is visible, and the bottom is sandy. The area is
covered by a system of 50 meter lines but was not felt over for least depth.

4. Dangers:

A vessel rounding Morgan Point should stay clear of the shoal area
extending to the S. E. from Morgan Point Light. This spit has a 3 ~~1/2~~ fathom ✓
spot (Latitude $55^{\circ} 02.43'$, Longitude $162^{\circ} 19.88'$) on it's tip, and the entire
area is spotted by patches of kelp.

A vessel approaching the King Cove dock should keep outside (offshore)
the shoal area extending to the eastward from triangulation station HIT. The
tip of this spit (Latitude $55^{\circ} 03.4'$, Longitude $162^{\circ} 19.33^7'$) has a $3\frac{1}{2}$ fathom ✓
depth with gradually decreasing depths shoreward. Bottom is rocky and area

is marked by patches of kelp. ✓

A line of single piling and in some cases dolphin mark inshore shoal areas on either side of the outer bay near it's head. Several of the above were used as hydrographic signals as signals BAD, DOL, ^{+ one} etc. A vessel coming ✓ alongside the King Cove dock should keep outside (off shore) the area marked by these piling.

5. Channels and Anchorages:

The channel from the outer bay into the inner harbor has a controlling depth of ^{3 ft.} ~~4~~' M.L.L.W. Once inside the inner harbor, the depths vary from 1 to 7 fathoms with mud bottom in the deeper areas, and sand or gravel which overlays a hard substratum in the shoaler areas. There is a maximum ebb current ✓ of about 4 knots thru the harbor with flood current being somewhat less strong. Current eddies and swirls thru the harbor causing small boats to swing at anchor. The holding ground is poor, probably due to the motion given the anchored vessels by the current, and swinging room is limited.

Apparently little or no channel exists from the inner harbor to the upper lagoon. Soundings on the boat sheet in this channel have been reduced from the predicted tides. From observation, it appears that the plane of M.L.L.W. in this part of the lagoon is about 2 feet higher than the corresponding plane in the outside bay, and that there is considerable lag in the time of high and low water, slack water occurring from $1\frac{1}{2}$ to 2 hours after each high and low ✓ water. Since no tide staff was maintained in the upper lagoon, the above observations are only approximate. The controlling depth from the inner harbor to the upper lagoon is ⁰ roughly ~~1 $\frac{1}{2}$~~ ' (based on an estimate and not on ^{Smooth} Boat Sheet soundings reduced from ^{observed} ~~predicted~~ tides). Vessels drawing as much as 5 feet have been taken into the upper lagoon at high water slack, by employees of the King Cove cannery.

Holding ground in the outer bay is excellent. The deeper water ✓

(17 to 20 fms.) at the upper end of the bay has mud bottom mixed somewhat with volcanic ash. The ridge which extends entirely across the bay with depths of 11 and 12 fathoms (just south of parallel $55^{\circ} 03'$) has a sand bottom which overlays a harder substratum.

6. Comparison with Previous Surveys:

There is a good agreement between the 1925 survey and the present work. The charted 8 fathom spot in Latitude $55^{\circ} 02.3'$, Longitude $162^{\circ} 19'$ and the charted 14 fm. spot in Latitude $55^{\circ} 01.9'$, Longitude $162^{\circ} 19.1'$ were not found. Considerable time was spent in developing and feeling over the areas immediately surrounding each of the above soundings. Their history is not known but it is believed ^{Rev. 1} _{par. 5} that they are tube soundings which are in error. (see results of investigation Vol. 5, page 30 and Vol. 5, page 40 respectively.)

The upper lagoon was not sounded. However, depths appear not to have changed except that considerable filling has taken place around it's edges. Present depths in the channel between the inner harbor and the upper lagoon are slightly shoaler than those of the 1925 survey (1'), ~~provided the tide reducers from the predicted tides can be trusted.~~ (However, ~~a rough estimate based on~~ observation gives a controlling depth of 11^0 in this channel at M.L.L.W.)

7. Wire-Drag Groundings:

None. ✓

8. Geographic Names:

No new geographic names are suggested. The natives of King Cove refer to the body of water north of their village as "The Lagoon," and have not applied a definite name to it.

The creek midway the east side of the outer bay is known locally as "Ram Creek." Supposedly, the name comes from the hydraulic ram which the P. A. F. cannery maintains on the creek in connection with their water supply.

9. Remarks:

Current out of the lagoon at ebb tide sweeps easterly across the face of the cannery dock, and must be considered by a mariner in docking a ship. Vessels should make a starboard landing on an ebb tide and a port landing on a flood tide. Direction of the wind must also be considered particularly when from the south. In the latter case, it is difficult to get away from the dock unless a bower anchor has been dropped.

At one time, the P. A. F. cannery at King Cove used the upper lagoon as a storage reservoir for piling. This practice has been discontinued. At present, the southern part of the inner harbor is used by the cannery for the storage of its piling, rafts, scows, etc. This equipment and piling rafts have been sketched on the boat sheet.

10. Coast Pilot Information:

Coast Pilot information contained in the current issue of "Alaska Coast Pilot" is adequate. However, the section referring to a permanent mooring buoy (Alaska Coast Pilot, Part II, Page 287, lines 4 through 8) should be deleted. This mooring buoy has sunk, and it is now necessary for vessels to drop a bower anchor when going alongside with a southerly wind.

H0592

10. Statistics:

<u>Date</u>	<u>Day Letter</u>	<u>No. Positions</u>		<u>No. Soundings</u>		<u>Miles of Sounding</u>	
		<u>Wire</u>	<u>H.L.</u>	<u>Wire</u>	<u>H.L.</u>	<u>Wire</u>	<u>H.L.</u>
5-14-40	a (red)	185		491		20.2	
15	b	185		489		17.3	
16	c	233		591		21.5	
17	d	22		57		1.9	
19	e	41	39	104	181	3.9	3.1
21	f	61	110	151	373	4.9	9.3
22	g		41		144		2.4
23	h		106		466		7.9
24	j	164	32	335	95	12.0	2.5
27	k		18		18		0.0 (detached pos.)
30	l		45		96		2.3
30	a (blue)		50		206		1.4 (skiff hydro)
6-1-40	m (red)		19		39		1.2

Total No. Positions	1352
" " Soundings	3834
" " Miles	111.8 (statute)
Area sq. statute miles	3.5

TIDAL DATA
TO ACCOMPANY
SHEET FIELD NO. 1140

HC592

Tide Gauge

King Cove, Alaska


Latitude 55° 03.7'

Longitude 162° 19.1'


M.L.L.W. on Staff	6.18'	(1939)
Highest Tide	14.4	August 17, 1939
Lowest Tide	3.9	August 18, 1939
M.L.L.W. on Staff	6.2*	
Highest Tide	14.7	September 4, 1940
Lowest Tide	4.3	May 23, 1940

*Obtained by working back from Tidal Bench Marks, using 1940 level notes.

Respectfully submitted,


J. T. Jarman
Jr. H. & G. E.

Approved & Forwarded


L. D. Graham
H. & G. E.
Comdg. Ship DISCOVERER

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. **H6592**

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

Number of positions on sheet	..1352
Number of positions checked16
Number of positions revised1
Number of soundings recorded	.3834
Number of soundings revised12
Number of soundings erroneously spaced23
Number of signals erroneously plotted or transferred0

Date: 3/26/41

Verification by J. A. McCormick Time: 38 hr.

Review by J. A. McCormick 3/31/41 Time: 10 hr.

HYDROGRAPHIC SURVEY NO. H6592

Smooth Sheet One

Boat Sheet Two (One on tracing cloth)

Records; Sounding 6 Vols., Wire Drag Vols., Bomb Vols.

Descriptive Report Yes

Title Sheet Yes

List of Signals Yes

Landmarks for Charts (Form 567) Yes

Statistics Yes

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524) None

Special Chart for Lighthouse Service -----
(Circular Nov.30, 1933)

Hydrography: Total Days 13 ; Last Date June 1, 1940

Remarks _____

Remarks

Decisions

	Remarks	Decisions
1		550620
2		-
3		"
4		"
5		
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M 23*		

GEOGRAPHIC NAMES
 Survey No. **H6592**

Name on Survey	Source										No.
	A	B	C	D	E	F	G	H	K		
<u>King Cove</u>											1
<u>Morgan Point</u>											2
<u>Ram Creek</u>											3
<u>King Cove Lagoon</u>											4
											5
											6
											7
											8
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											10
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											27

Names in this column approved
 by L. Heck on 4/27/41

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
PHOTOSTAT OF

} No. H H6592
} ~~No. 1~~

{ received Jan. 6, 1941
{ registered Jan. 15, 1941
{ 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	✓	HSE	Pages 4 to 7.
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	T. B. Reed
----	------------

R.C.C.
H.C.C.

TIDE NOTE FOR HYDROGRAPHIC SHEET

February 6, 1941

Division of Hydrography and Topography:

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

Tide Reducers are approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 6592

Locality King Cove, Alaska Peninsula

Chief of Party: L. D. Graham in 1940
Plane of reference is mean lower low water reading
6.2 ft. on tide staff at King Cove
25.0 ft. below B.M. 2

Height of mean high water above plane of reference is 6.0 feet.

Condition of records satisfactory except as noted below:

Paul Schureman
Acting Chief, Division of Tides and Currents.

DIVISION OF CHARTS

Surveys Section

REVIEW OF HYDROGRAPHIC SURVEY NO. 6592 (1940) FIELD NO. 1140

S. W. Alaska; Alaska Peninsula; King Cove
Surveyed in May - June, 1940, Scale 1:5,000, 1:10,000
Instructions dated March 18, 1938; April 16, 1939 (DISCOVERER)

Soundings:

Control:

Hand Lead and Machine

Sextant Fixes on Shore Signals

Chief of Party - L. D. Graham
Surveyed by - J. T. Jarman
Protracted by - W. Weidlich
Soundings plotted by - W. Weidlich
Verified and inked by - J. A. McCormick
Reviewed by - J. A. McCormick, March 31, 1941.
Inspected by - H. R. Edmonston

1. Shoreline and Signals

Shoreline and topographic signals are from T-6764 (1940).

2. Sounding Line Crossings

The descriptive report, pages 1 to 3, describes difficulties of operation with an inexperienced crew but states further that inshore discrepancies are probably due to steep slope. Most of the discrepancies have been "ironed out" by purely arbitrary methods in the office verification. While slope may be responsible for some of the differences, it is probable that many resulted from the crew's unfamiliarity with the lead line. The machine was used in depths as shoal as one fathom the first few days of the survey.

3. Depth Curves

Depth curves are as nearly complete as could be expected in view of the obstacles presented by kelp and piling.

4. Junctions with Contemporary Surveys

This is a special resurvey of an area previously surveyed in 1925. Overlaps with the 1925 surveys are satisfactory and further surveys are not required in this vicinity at the present time.

5. Comparison with Prior Surveys

H-3306 (1911), 1:40,000; H-3579 (1913-14), 1:180,000;
H-4490 (1925), 1:20,000; H-4492 (1925), 1:10,000;
H-4493 (1925), 1:20,000

Surveys of 1925 are in good agreement with the present survey but are not as closely developed. H-3306 and H-3579 are reconnaissance surveys agreeing fairly well with the present survey in some places but differing widely in others. The 8 and 14 fathom depths (charted) in Lat. 55° 02.3', Long. 162° 19.0' and Lat. 55° 01.9', Long. 162° 19.1' on H-3579 fall in closely developed depths of 16 and 26 fathoms, respectively, on the present survey (descriptive report, page 6). The old soundings were obtained with tubes and their positions fixed by angles on mountain peaks. Bottom is sand and mud. The 8 and 14 are considered disproved and will be removed from the charts. The present survey supersedes the older surveys in the common area.

6. Comparison with Chart 8703 (New Print of August 14, 1940)

Depths charted in this area are from previously discussed surveys. The charted position of Morgan Point Lighthouse differs slightly from the position on the survey and will be revised accordingly.

7. Condition of Survey

Drift sounding would have been desirable on the 3-fathom spot in Lat. 55° 02.43', Long. 162° 19.88'. The survey is otherwise satisfactory.

8. Compliance with Instructions for the Project

See preceding paragraph.

9. Additional Field Work Recommended

None.

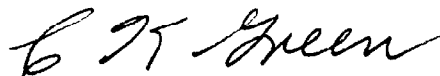
10. Superseded Surveys

H-3306 in part	H-4492 in part
H-3579 " "	H-4493 " "
H-4490 " "	

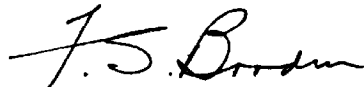
Examined and approved:



Thos. B. Reed,
Chief, Surveys Section



Chief, Section of Hydrography



Chief, Division of Charts



Chief, Division of Coastal
Surveys

Applied to Act 8703 - Cap. 1951 - J. S. S.