

83  
SHA  
3409  
1912  
P

# 3409

C. & G. SURVEY,  
LIBRARY AND ARCHIVES  
FEB 7 1915  
Acc. No.

Diag. Ch. No. 9302

Department of Commerce and Labor  
COAST AND GEODETIC SURVEY

Superintendent.

State: *Alaska*

## DESCRIPTIVE REPORT

*Hyd.* Sheet No. *3409*

LOCALITY:

*Alaska - West Coast - Bering  
Sea - Cape Newenham etc.*

1912

CHIEF OF PARTY:

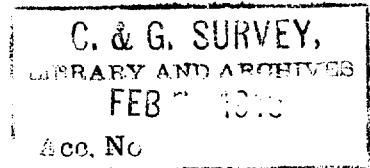
*P. S. Patton*

11-404

# 3409

# 3409A

3409



HYDROGRAPHIC SHEET \* 3409.

Approaches to Kuskokwim River, Bering Sea.

Scale, 1/60000

Surveyed, July 13 to Sept. 17, 1912.

Steamer Explorer,

R.S. Patton,

Chief of Party.

# 3409

C. & G. SURVEY,  
LIBRARY AND ARCHIVES  
FEB 11 1917  
No. No

Descriptive Report,

To accompany hydrographic sheet # A  
Approaches to Kuskokwim River,  
Alaska.

As all items of general information regarding this region have been incorporated in a special report, the scope of this present descriptive report will be limited to furnishing such technical information as may assist the draftsman in plotting and verifying the sheet.

In compliance with the instructions, the hydrography of this region was begun immediately upon the arrival of the party on the working ground, with no time lost in locating the necessary signals.

A number of points had been determined by the triangulation of the previous season, in the vicinity of Goodnews Bay, but these did not extend over a sufficient area to furnish a control for the hydrography. As the soundings progressed, therefore, fixes were obtained wherever practicable, and runs taken to the signals beyond the limits in which they had been previously determined, and thus an imperfect control was gradually established.

This preliminary control was the only one available during the season, as the topography, which had been relied upon to furnish the final position of the signals used, progressed so slowly that the signals were not properly located until just before the end of the season.

About half the work, therefore, was done without control, the ship holding one course throughout the length of the line, and the position angles not being plotted on the boat sheet. And of the remainder, about one half was done with a control so imperfect that it was always a question whether any deviation from the line was due to an actual set, or to the incorrect positions of signals used.

This fact will account for the gaps left in some parts of the sheet, and for the apparent duplication of lines in others. It will account, also, for the numerous discrepancies between the boat sheet and the smooth sheet, which render the former of little assistance in verifying the final plotting.

The final positions of the signals used were determined from a number of sources; by triangulation; by cuts taken during the triangulation of the previous season; by cuts taken with the plane table or during the progress of the transit and stadia traverse, and by cuts taken during the hydrography; directions from all these

sources were combined. It is possible that some of these final positions are slightly in error, as some of the lines run are not as straight as they should be when the ship was running on our course with no change from position to position. Certainly, however, there is no error of more than a few meters, as no positions were accepted which (if located by cuts) were not fixed by at least three intersecting lines. It is more probable that these irregularities in the sounding lines are due to two other causes: (1) some of the objects used as signals were hills with flat or gently rounding tops, which offered no sharply defined points to angle on and (2) a great deal of this work was done in misty or rainy weather, when only the faint, blurred outlines of the signals could be seen.

The positions of one or two of the signals used in the launch hydrography were not determined. This is a result of the way in which the work was done. Throughout the season, the hydrography advanced faster than the topography. The hydrographers, therefore, at times used, as signals, any undetermined natural objects which happened to be available. A list of these objects, with descriptions, was kept and turned over to the topographer to be located in the course of his traverse,

and the hydrographic parties also took sextant cuts to aid in their determination. In the case of the signals in question, however, weather conditions interfered to prevent their location — they were obscured when the topographic party was working in the vicinity where it would have been possible to locate them, and the season finally ended without their positions having been determined.

In the record books will be found notes relative to any details of the work which are not clear.

Gaps at present existing in the survey will be filled in in the course of subsequent work.

The report is accompanied by a table giving the statistics of work accomplished.

Respectfully submitted,

R. S. Patton,

Chief of Party.

# 3409

## STATISTICS OF HYDROGRAPHIC SHEET A

C. & G. SURVEY,  
LIBRARY AND ARCHIVES  
FEB 19 1912

Survey of approaches to Kuskokwim River, Bering Sea.

Alaska.

Boat	Day	Soundings	Angles	Miles
Ship	A	791	174	45.6
	B	532	223	69.1
	C	452	96	31.8
	D	510	134	36.8
	E	1019	216	74.4
	F	945	254	82.8
	G	681	229	84.8
	H	79	22	7.4
	J	1197	256	90.3
	K	549	252	77.7
	L	314	84	19.8
	M	381	95	27.6
	N	329	190	71.9
	O	200	123	44.5
	total	7979	2348	764.5
Launch	a	622	218	32.0
	b	895	190	33.0
	c	830	153	26.5
	d	702	143	18.0
	e	83	16	2.0
	f	1031	244	31.0
	g	832	310	43.0
	h	1082	344	61.0
		total	6077	1616
-----				
TOTAL		14056	3964	1011.0

Area, sq.miles (statute) 450

VEC  
Feb. 28, 1913.

HYDROGRAPHIC SHEET 3409.

Kuskokwin Bay, Alaska, by Assistant R. S. Patton,  
in 1912.

TIDES.

	Goodnews Bay ft.
Mean lower low water, or plane of reference on staff	0.4
Lowest tide observed " "	-0.8
Highest " " " "	11.4
Mean range of tide	6.2



VEC  
Feb. 28, 1913.

HYDROGRAPHIC SHEET 3409.

Cape Newenham to Goodnews Bay  
Kuskokwin Bay, Alaska, by Assistant R. S. Patton

in 1912.

TIDES.

	Goodnews Bay ft.
Mean lower low water, or plane of reference on staff	0.4
Lowest tide observed " "	-0.8
Highest " " " "	11.4
Mean range of tide	6.2

Hyd. Sheet # 3409. (Nuskokwiv Bay, Alaska)

The positions on this sheet were plotted by the "Field Party" and have been accepted as correct although checked in a large number of cases where it was thought that errors existed.

The sounding, except in a few lines, were plotted by the "Field Party" but corrections in the Tidal Dir. made it necessary to replat a large portion of the work.

The work is not particularly good for the reason that many "gaps" are left where in some cases no lines were run and in others where, through errors in signals and other causes, a line had to be broken. In the line of day signal "Fako" was used but not located therefore this line ~~is~~ is broken.

The crossings are generally good but some line, at crossings, show apparent errors which could not be reconciled; for example, take line 16 to 26 B day; This line was plotted by the Field Party, a full  $\frac{1}{2}$  minute north of protracted positions; In either case the crossings are not satisfactory.

Assistant Patton calls attention to the many gaps and states that they will be filled in in subsequent work.

John D. Torrey  
3/25/13.