

4722

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Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
E. Lester Jones, Director

U. S. COAST AND GEODETIC SURVEY
L. S. A.

State: ~~S. W. Alaska~~

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. "J" - 4722
Hydrographic }

LOCALITY

Cape St. Elias
~~Gulf of Alaska~~
Southeast of Kayak I.
~~Eastern approach to Cape St.~~
~~Elias.~~

1927

CHIEF OF PARTY

R. R. Lukens

GOVERNMENT PRINTING OFFICE

DESCRIPTIVE REPORT

to accompany

Hydrographic Sheet "J"

Eastern Approach to Cape St. Elias.

Str. SURVEYOR -- R. R. Lukens, Commanding.

1927.

This sheet, which is on a scale of 1:20,000 covers an area eastward and southward from Cape St. Elias, Gulf of Alaska.

CONTROL: The hydrography is controlled by triangulation points supplemented by natural features cut in by hydrographic methods. Several points located by previous triangulation were identified, and using these points for fixes, additional peaks and points were cut in. These cuts intersected well and the signals were used from the general direction of the cuts. If the work is carried much further to the eastward more rigid control will have to be established.

METHODS: The greater part of the work was done with the fathometer. In some cases when the fathometer was not working properly, only up-and-down casts were made. All through the work frequent up-and-down casts were made both as a check on the fathometer and for obtaining bottom specimens.

REDUCTION OF FATHOMETER SOUNDINGS: Fathometer soundings on this sheet were reduced by the tables, using the observed density and *temperature* salinity.

TIDE GAUGE: Tidal reductions were made from the Seward tide gauge. An investigation was made by comparing the observed times and heights at Seward with the predicted times and heights at Capt St. Elias, and very little difference was found.

An attempt was made to recover the old tidal bench marks on the west side of Kayak Island, near the northern end, but none of them could be found.

REPORTED 15 FATHOM SPOTS: Two 15 fathom spots have been reported in the area covered by this hydrography. No indication of either was found. This summer I talked with Capt. Newlands who reported one of these spots. He stated that there was a very high sea running at the time and that the soundings were taken by a machine. He stated that in the excitement of apparently finding such shoal water the lead was not examined for bottom specimen. It is my opinion that a lurch of the ship caused the wire to slacken and that made the operator think that he had bottom.

CHARACTER OF BOTTOM: The bottom of this area was found to be unusually smooth. There are large areas of mud with an occasionally hard and rocky patch. Branch coral was brought up on several occasions. A number of bottom specimens were saved and forwarded to the Geological Department of the University of Wisconsin, for study.

OLD WORK: Near Kayak Island, the work supplements that done by the PATTERSON in 1909. Lines were run so that they filled in the area between the widely spaced lines of the former survey. The new soundings appeared to check the old work very closely.

CURRENTS: No strong currents were noted except in the vicinity of Cape St. Elias. Off the Cape there was usually a current setting to the westward. The ship lay to one night due south of Cape Suckling and when morning came it was found that she had hardly moved.

White water from the glaciers extends as much as ten miles off shore.

ANCHORAGES: An indifferent anchorage can be had in 20 to 25 fathoms on the east side of Kayak Island, abreast Pyramid Peak. The holding ground is only fair, and offshore winds are apt to come up suddenly, even during the summer months. During the season the SURVEYOR was forced to leave this anchorage several times on short notice.

WHITE LIGHT SOUNDINGS: On a few lines on the eastern portion of the sheet, the white light method was used in depths around 150 fathoms. It was found that errors of 15 fathoms were apt to occur using this method. These soundings will indicate uneven bottom that probably does not exist.

In selecting soundings for the chart, the up-and-down casts should be used. At this time, before Dr. Dorsey's visit to the ship, we were unable to use the red light in depths over 100 fathoms. After Dr. Dorsey had put in a new relay and overhauled the instrument we could generally get good red light soundings up to 150 fathoms.

Respectfully submitted

R. R. Lukens.

R. R. Lukens,
Commanding Str. SURVEYOR.

The fathometer soundings in deep water in the southern part of the work have been omitted because the vertical casts give sufficient information. (Confer with A. L. G.)

E. G. B.

List of Statistics
to accompany

HYDROGRAPHIC SHEET "J"

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(Date-1927) (Letter) (Vol)(Positions) (Soundings) (Miles) (Vessel)

(Date-1927)	(Letter)	(Vol)	(Positions)	(Soundings)	(Miles)	(Vessel)
Jun 11	A	1	86	193	95.0	SURVEYOR
12	B	1	120	352	158.0	"
13	C	1	42	116	53.0	"
24	D	1	16	65	18.0	"
25	E	1	59	236	81.0	"
28	F	1&2	75	257	120.7	"
29	G	2	83	273	112.7	"
30	H	2	82	328	121.9	"
Jul 11	J	2	36	75	32.0	"
13	K	2	69	175	75.0	"
14	L	2&3	59	94	57.0	"

Totals - - -727 2164 924.3

(Total area - 772.0 Sq. Stat. Miles)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

List of Hydro. positions

~~LANDMARKS FOR CHARTS~~

"SURVEYOR", Seattle, Washington.

January 20, 19 28

SUPERINTENDENT, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted:

R. R. Lukens
R. R. Lukens. Chief of Party.

DESCRIPTION.	POSITION.					Method of determination.	Remarks.
	Latitude.		Longitude.		Datum.		
	'	D. M. meters.	'	D. P. meters.			
Mt. Miller	60	27	(570) 1287	142 18	(570) 348		Peak.
Black	60	16	(403) 1454	143 14	(110) 813		Peak
Cam	60	13	(623) 1235	143 53	(75) 858		"
Nob	60	13	(1294) 663	143 59	(190) 742		"
Low	60	11	(920) 937	144 02	(138) 794		Hill
Round	60	01	(320) 1537	143 49	(551) 792		Hill top
Sharp	60	01	(490) 1367	143 51	(183) 378		" "
Dome	59	54	(591) 1266	144 25	(276) 750		Rounded knoll
Rong	59	54	(880) 976	144 26	(75) 657		" "
Tip	59	52	(156) 1700	144 27	(516) 859		Peak
Yak	59	48	(936) 920	144 35	(336) 420		Summit
Kay	59	48	(1517) 340	144 35	600		"

A list of objects which are of sufficient prominence for use on the charts, together with a description of the same, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report. The selection, determination, and description of these points are of primary importance.

The description of each object should be short, but such as will identify it; for example, standpipe, water tower, church spire, tank, tall stack, red chimney, radio mast, etc. Generally, flagstaves and like objects are not sufficiently permanent to chart.

DESCRIPTION OF HYDROGRAPHIC SIGNALS

to accompany
Sheet "J"

Vicinity Cape St. Elias.

MT. MILLER: is a very prominent, high, snow covered peak that is easily identified.

BLACK: is the easterly peak of the easterly mountain mass which show as a double island in the glacier. It usually looks black and has a fairly sharp summit.

CAM: This peak has a ravine which shows as a long snow streak in the middle of the summer. The ravine is to the westward of the summit. The summit is rounded.

NOB: This point shows as a projection on the west slope of the mountain.

LOW: is a low round-topped hill. It appears to be detached from the mountain mass to the eastward.

ROUND and SHARP: are small summits just eastward from Cape Suckling Hill. They often were visible when Δ Hill was in the clouds.

DOLE: is a prominent, gently rounding summit near the middle of Kayak Island. It shows very prominently from the eastward.

ROSE, TIP, YAK and KAY: are all small summits that were cut in by sextants. The skyline of Kayak Island shows numerous small nobbs and hill tops, rising a few feet above the general elevation of the island.

Copy for Records Section.

(11)

J.F.H.

February 10, 1928.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
3 volumes of sounding records for

HYDROGRAPHIC SHEET 4722

Locality: S.W. ALASKA, CAPE ST. ELIAS.

Chief of Party: E. E. Ingers, 1927.

Plane of reference is M L L W
2.4 ft. on tide staff at Seward

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

Chief, Division of Tides and Currents.

Chief of Party R.R. Jenkins Surveyed by R.R.L.
Protected by -E.H. Kirsch Sounding plotted by S.B. Grinnell
Verified and inked by J. Fleming

- (1) Records conform to general instructions
- (2) Plan and character conform to general instructions
- (3) Fixed plotting complete and accurate.
- (4) Positions 59-B - 120-B and 10-D were corrected on the sheet
- (5) The work is excellent both from the standpoint of accuracy clarity and neatness

Remarks

The positions of the two 15 ^{fathom} soundings referred to in the descriptive report were plotted in pencil on this sheet from 'Standard' 8502

The same soundings were found on HYD. 2665 but in different positions which are also shown on HYD. 4722

The bottom throughout the entire area developed, appears to be unusually even and this condition strengthens the belief that no 15 fathom depths exist within the limits of the survey.

However, it is unfortunate that the development of the area in the proximity of the reported soundings was not as complete as in other places toward the northwest.

It should be noted that the nearest sounding to the reported (upper) 15 fathom sounding, is approximately

1000 meters. Therefore, the existence of such shallow depths in this area has not been disproved in this development.

J. Fleming April 9th 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

AND REFER TO NO. 11-DRM

WASHINGTON

August 11, 1928.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4722

Vicinity of Cape St. Elias, Southeast of Kayak Island

Instructions dated February 3, 1927

Surveyed by R. R. Lukens.

Chief of Party, R. R. Lukens.

Protracted by E. H. Kirsch.

Soundings by S. B. Grinnel.

Verified and inked by J. Fleming.

1. Specific instructions for the work were complied with except in regard to spacing of lines from the 20 fathom to the 50 fathom curve. The instructions called for not over 600 meter lines whereas about 900 meter lines were run. The bottom seemed to be very smooth and regular.
2. The junction with the work to the westward was good and development was adequate.
3. The position of the whistle buoy "2", south of Pinnacle Rock, Cape St. Elias, does not agree with that previously charted. If this buoy was planted on the 11 fathom spot shown near it on chart 8502 then the position of that sounding is also doubtful and should be investigated when the work is continued.
4. The two 15 fathom soundings previously reported seem to be in error. The development was not very close at these reported spots but owing to the uniform slope of the bottom and lack of any indication by the existing soundings, it is not thought probable that they exist at these places.
5. The records were excellent.
6. Some uncertain soundings were obtained by using the white light of the Fathometer at about 150 or 160 fathoms. However, vertical casts were taken often enough that these erroneous appearing soundings may be rejected.

7. Character and scope of surveying, good.
Field drafting, good.
8. Reviewed by W. M. Gibson, April 25, 1928.

Approved:

Chief, Section of Field Records (Charts)

Chief, Section of Field Work (H. & T.)

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4722

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. "J"

REGISTER NO. 4722

C. P. Y
JAN 26 1928
Acc. No.

State Alaska

General locality Gulf of Alaska. Cape St. Elias

Locality Southeast of Kayak I.
~~Western approach to Cape St. Elias~~

Scale 1:200,000 Date of survey June 11- July 14, 1927

Vessel SURVEYOR

Chief of Party R. R. Lukens

Surveyed by R. R. Lukens and ships officers

Protracted by E. H. Kirsch

Soundings penciled by S. B. Grinnel

Soundings in fathoms XXXX

Plane of reference MLLW 2.5 on Seward Staff

Subdivision of wire dragged areas by

Inked by J. Fleming

Verified by J. F. April 7, 1928

Instructions dated Feb. 3, 1927, 192

Remarks: