

3994

Diag. Cht. No. 8201-2

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

....., Director

State: Alaska

DESRIPTIVE REPORT

Topographic } Sheet No. 3994
Hydrographic }

LOCALITY

Frederick Sound
Brothers and Pine
Finger Island

1917

CHIEF OF PARTY

A Joachim

3994

Wire Drag Party #3
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

Wire Drag Sheet #4

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. **3994**

State **Alaska**

General locality **Frederick Sound, S.E. Alaska.**

Locality **Vicinity of "The Brothers" and "Five Fingers."**

Chief of party **A. Joachims.**

Surveyed by **Wire drag Party No. 3.**

Date of survey **August - September, 1917.**

Scale **1/20,000**

Soundings in **Feet**

Plane of reference **Mean lower low water.**

Protracted by **W.D.P.** Soundings in pencil by **W.D.P.**

Inked by **W.D.P.** Verified by **G.L.B. P. L. J.**

Records accompanying sheet (check those forwarded):

Des. report, Tide books, Marigrams, Boat sheets,

Sounding books, Wire-drag books, Photographs.

Data from other sources affecting sheet

Remarks: **Descriptive report, records and boat sheet will be forwarded at a later date.**

3994

U. S. SURVEY
L. & A.
DEC 2 1917
Ass. No.



DEPARTMENT OF COMMERCE.

U. S. COAST AND GEODETIC SURVEY.

E. Lester Jones, Superintendent.

DESCRIPTIVE REPORT OF WIRE DRAG SHEET NO. 4. 3994

FREDERICK SOUND, S. E. ALASKA.

VICINITY: BROTHERS AND FIVE FINGER ISLANDS.

SURVEYED BY WIRE DRAG PARTY NO. 3.

A. Joachims, Chief of Party.

Season of 1917.

Scale 1/20,000.

3994

(2)

The following bearings and distances locate the shoal:

To	Distance (meters)	Bearing (true)
Five Finger Light	870	351
Cape Fanshaw	5030	158
Bill Point	3800	103

A drag with an effective depth of ⁴⁴43 feet was dragged over this shoal.

(2) A pinnacle rock at a depth of ⁴²43 feet at Mean Lower Low Water, 950 meters east of the southerly end of the small island located between Round Rock and the Brothers Islands. This rock is surrounded by 25 to 30 fathoms of water. The drag work was not completed, so the least depth was not obtained.

The following bearings and distances locate the shoal:

To	Distance (meters)	Bearing (true)
Round Rock	1000	43
South end of small island south of the Brothers	870	257

(3) A rocky shoal with a depth of ⁸³81 feet at mean lower low water was found 1400 meters NNW of the northerly island of the Five Finger Group. It is surrounded by 29 to 39 fathoms of water. This shoal was not further investigated with the drag.

The following distances and bearing locate the shoal:

To	Distance (meters)	Bearing (true)
North end of north island of Five Fingers	2,000	153
South end of Sail Island	3,800	311
North end of the Brothers	10,000	265

(4) A rocky shoal with a depth of 46 feet at mean lower low water was found 700 meters north of Storm Island. It is surrounded by 30 to 40 fathoms of water. It was not further investigated with the drag.

The following distances and bearings locate the shoal:

To	Distance (meters)	Bearing (true)
Offshore rock, north end of Storm Id.	730	156
Bird Rock	2800	214
Bill Point	3200	27

Tidal Reducers.

Altho an ~~auxiliary~~ auxiliary tidal station was located at Whitney Island near Cape Fanshaw, all reducers for this work were obtained from the tide gauge at Petersburg.

See 2 Ocean

See 19 M drag

See 21 V drag

See 19 Q drag

Conclusion.

Several small splits were found upon plotting the smooth sheet. A very small one was found at position 20 B between the limits of sheet 3 and sheet 4. It is about 300 meters long and 50 meters wide, and is located about $5\frac{1}{2}$ miles west of Cape Fanshaw. Another located about $2\frac{1}{2}$ miles east (true) of Signal Bean, is about 400 meters long and 200 meters wide.

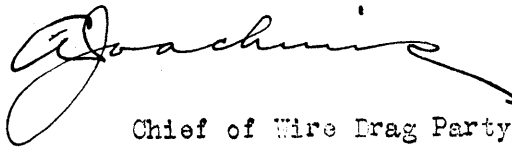
Two small splits were found about $\frac{1}{2}$ mile north of Five Finger Islands. These were known, but continued bad weather and the sudden necessity of ending the work made it impracticable to cover them.

A rather wide strip of uncovered area west of Bird Rocks and Storm Island was left unfinished for the same reason. The northern end of the survey was left in rather ragged condition.

Coast Pilot notes will be found in the season's report for this work.

STATISTICS of this sheet will be found on attached page.

Submitted by,



Chief of Wire Drag Party No. 3.

DESCRIPTIVE REPORT OF WIRE DRAG SHEET NO. 4.

Frederick Sound, S. E. Alaska

Vicinity: Five Finger and Brothers Ids.

Surveyed by Wire Drag Party No. 3.

A. Joachims, Chief of party.

Season of 1917.

Scale 1/20,000

Limits of the sheet.

This wire drag examination of Frederick Sound is bounded approximately as follows,-- on the south by a line running from a point $1\frac{1}{2}$ miles south of Cape Fanshaw westward to Round Rock, on the west by the Brothers Islands and by a line drawn north and south (true) thru the Brothers Islands, on the north by a line from a point 2 miles north of False Point Pybus to a point 2 miles north of Robert Islands, on the east by the mainland, Whitney, Robert, and Storm Islands, and Bird Rock, from Port Houghton to Cape Fanshaw.

Effective Depth Dragged.

The entire area of this wire drag survey was examined by a drag whose effective depth was 80 or more feet at mean lower low water, except a small area on the eastern side of Five Finger Islands, where an effective depth of 40 or more feet was used for inshore work.

Control of the Survey.

The control of this survey was based upon the primary triangulation scheme of Mr. E. W. Eickelberg, supplemented by a tertiary scheme. In the latter, one signal, Sail, had to be located and computed from a three point fix consisting of six direct and six reverse readings on signals Five, Twin and Pybus which were in the primary scheme. The remainder of the stations in the tertiary scheme were computed in the usual manner. Due to the sudden ending of the season's work it was impracticable to occupy all stations. The positions of the signals on the boat and smooth sheets were plotted by their observed angles. The geographic positions of all signals in the tertiary scheme have since been computed. Some of the signals were located by plane table.

Length of the Drag.

Practically all of this work was done with a long drag ranging from 10,000 to 12,400 feet in length. Independent positions were used entirely by both launches. In general, an overlap of 200 to 300 meters was made but uncertain currents often made this considerably greater.

Shoals.

(1) A rocky shoal with a least depth of ⁵³~~51~~ feet at mean lower low water was located about 800 meters south of the Five Finger Lighthouse. This shoal is estimated to be about 50 meters in diameter and is surrounded by deep water of about 27 fathoms.

The following bearings and distances locate the shoal.

STATISTICS OF WIRE DRAG SHEET NO. 4

Day	No. Miles linear	No. Angles	No. Soundings retained
A	8.1	351	
B	9.0	406	
C	5.7	317	
D	5.0	283	1
E	8.2	443	
F	8.0	431	
G	3.1	110	
H	3.2	205	
J	6.9	294	
K	8.9	467	
L	3.8	193	10
M	8.1	422	17
N	6.0	320	1
O	6.0	338	4
P	4.4	278	
Q	2.6	160	6
R	6.6	453	
S	9.2	444	
T	4.0	213	
U	2.8	154	

Area in square miles:-- 106.1

ADDRESS
U. S. COAST AND GEODETIC SURVEY
WASHINGTON, D. C.

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HYDROGRAPHY ETC., (HT)
J.M.L.

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U. S. COAST AND GEODETIC SURVEY
WASHINGTON

Place with descriptive report
of hydrographic sheet No. 3994
April 29, 1917

Drawing Section. S

Division of Hydrography and Topography: HCG

~~FIELD WORK (H)~~
Division of Charts:

Tidal reductions have been approved in
5 volumes of Wire Drag and Sounding records .

Hydrographic sheet 3994

Frederick Sound, Alaska
A. Joachims in 1917.

Plane of reference is
Mean lower low water, reading

ft.
7.5 on staff at Petersburg, Alaska
4.7 " " " Whitney Island,
Cleveland Passage, Alaska.

E. P. Shidy

Acting Chief, Section of
Tides and Currents.

Hyd. Sheet No. 3994

Wire Drag Survey

The area on this sheet is very well covered. A wire drag was used throughout, with double control and seems to have been cleverly handled. Most of the area was dragged to an effective depth of eighty feet or more. Five splits were developed by the verification.

After the sheet had been plotted and inked by the field party, the tide reducers were revised by the Div. of Tides, affecting the tide curves and effective depths. These were not erased. For depths of seventy feet or more, the curves were plotted in pencil on the sheet for every fifth foot and these new curves were used in preparing the A. and D. tracing. Effective depths from eighty to eighty four feet would appear on the A. and D. tracing as eighty feet and from eighty five to eighty nine, would be shown as eighty five etc.

The effective depths as shown in ink on the smooth sheet are within one foot of the correct effective depth.

The drag records of this work are clear and especially well kept.

R. L. Johnston

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
WASHINGTON

SECTION OF FIELD RECORDS.

Report on Wire Drag Sheet No. 3994.

Surveyed in 1917.

Chief of Party: A. Joachims.

Surveyed by: Wire Drag Party No. 3. Instructions dated Mar. 24, 1917.

Protracted and inked by: W. D. Patterson.

Verified and Area and Depth Sheet by: R. L. Johnston.

1. The depth of dragging satisfies the specific instructions. The party having been suddenly called away from the field was compelled to leave certain portions of the work incomplete.
2. The least water was not found on all shoals discovered. The 42 ft. spot, east of the small island lying between The Brothers and Round Rock, shown on the chart on the west side of the island through an error, was not dragged over to determine the shoalest water. Likewise the 83 ft. shoal N.N.W. of the Five Finger Group was also not dragged to determine the least water. The rocky shoal with a depth of 46 ft. north of Storm Island was covered by a 41 ft. drag in 1920.
3. The overlaps are sufficient.
4. The two splits north of the Five Finger Group are the most important within the limits of this sheet, particularly the one in which the 83 ft. shoal was found.* This area lies in the track of navigation and should be dragged whenever practicable to determine the least water. Also the area surrounding the 42 ft. spot mentioned in paragraph 2. This sheet cannot therefore be considered as complete.
5. Reviewed by A. L. Shalowitz, August, 1922.

* These two splits have been covered by Hawley in September 1922 and is shown on wire drag sheet 4143-b.

A. L. Shalowitz (Jan. 10, 1922)