

# 4994

Diag. Ckt. No. 8201-3

Form 504	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
G. & G. SURVEY L. & A.	
State: ALASKA	APR 5 - 1930
11-5613	Acc. No.
DESCRIPTIVE REPORT.	
Hydrographic Sheet No. 10	4994
LOCALITY:	
S. E. ALASKA	
Sumner Strait	
WRANGELL NARROWS	
DECEMBER POINT	
to	
Entrance to Beecher Pass	
1929	
CHIEF OF PARTY:	
E. W. EICKELBERG	

# 4994

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET # 10

AUTHORITY: The Hydrography on this sheet was executed under Instructions of the Director of U. S. Coast and Geodetic Survey, dated February 19th, 1929.

SCALE: 1:5,000, and soundings are in feet at Mean Lower Low Water.

LIMITS: This survey covers the area from December Point, Wrangell Narrows, to the Entrance of Beecher Pass, near Point No Thorofare.

METHODS: The approved methods of the service were used throughout. The launch "Delta" was used for practically all the work, with the exception of some development east of triangulation station 66, when the Tender # 1 was in service.

All soundings are up and down, and taken with an eight pound hand lead. When developing shoals, two or three hand leads were in use, and then only least depths found were recorded.

Ranges were steered at all times and no attention paid to compass courses.

The lines run in North-North Westerly and South-South Easterly direction, are practically channel lines, and are spaced from 15 to 40 meters apart, depending upon the nature of the bottom.

Soundings were taken at slack tides, or when current was running at its minimum.

LOW WATER LINE: The low water line established by this survey compares favorably with previous surveys with the following exception; immediately north of triangulation station HUM, and on the east shores of Woewodski Island, between station JAP and station HEL.

The low water line around Battery Islands was established by sextant fixed at low tides. No attempt was made to take any soundings between the islands. This area was visited at low tides and found to be studded with rocks, and covered by thick kelp making it impossible to survey this area at low tides.

TIDES: An automatic tide gauge was established at the beginning of the work at station GAG, east of Point Lockwood beacon. This gauge was in operation for a few days until knocked over by the heavy swells caused by steamers negotiating the narrows at the rate of 12 to 14 knots.

Tide staff was erected at station WOD (Point Lockwood Light) and tides read until the work was completed.

CHANNEL:

It is known that the channel east of Battery Island has been used by the British Steamer "Ena" on several occasions at high tides. This passage is not recommended to vessels of large draft on account of the 13 foot spot, almost in the center of the channel, and the ledge which extends from Battery Island # 2. *(Small middle islands) jfw*

DANGERS AND OBSTRUCTIONS:

Several rocks and shoals were located in this survey, and the depths of some shoals located in 1910, were reduced by a few feet.

1. The area between Point Lockwood Light and Battery Island was closely developed and least depth found in some places to be 19 feet at M.L.L.W.

Photostat # 3317 shows a depth of 16 feet at 3 feet below M.L.L.W.

2. A 17 foot sounding (sandy bottom) was obtained about 290 meters, 296° from triangulation station 65. (Position 45 "h"). This area is well developed, but in order to avoid confusion, only least depths found are plotted.

Photostat # 3317 shows a depth of 17 feet at 3 feet below M.L.L.W.

3. A shoal with a least depth found of 9 feet at M.L.L.W., lies about 190 meters, 116° from triangulation station 63. Rocky bottom. No surface kelp was seen but kelp at the bottom was felt with the lead.

Numerous soundings were taken in this vicinity but only least depths were recorded and plotted. (Position 25 "h")

Photostat # 3317 shows a depth of 8 feet at 3 feet below M.L.L.W.

4. A 16 foot sounding was obtained about 180 meters, 133° from triangulation station 63. Rocky bottom. (Position 68 "h") C

Photostat # 3317 shows a depth of 14 feet at 3 feet below M.L.L.W.

The bottom in this locality is very irregular and shallow water extends in a North-easterly direction towards position # 25 "h". *16 1/2 feet in records 73-74 e - plotted as 16*

A 15 foot sounding was obtained 225 meters, 118° from triangulation station 63, hard bottom; deeper water is shown on photostat # 3317.

5. A shoal with a least depth found of 13 and 14 feet at M.L.L.W., lies about 220 meters, 322° from triangulation station 63.

Numerous soundings were taken in this locality and only least depths found recorded and plotted. (Pos. 16 "j", & 51-52 "h")

This shoal lies practically in mid-channel between Mitkof Island and Battery Island.

Photostat # 3317 shows a depth of 16 feet at 3 feet below M.L.L.W.

6. An 11 foot sounding lies about 315 meters, 12° from triangulation station 63. This area is not developed as it lies very close to the rocky shores of Battery Island, with 13 foot soundings around it. ✓

Positions 11 and 12 "g", mark the extreme end of a ledge extending from Battery Island # 2. ✓

7. A rock of small extent which bares about 1 foot at M.L.L.W., lies about 35 meters, 260° from station BIG. (Position 17 "h") Station BIG is a large prominent boulder on the west shores of Mitkof Island, due east of Battery Island Light. ✓

*Bare 1/2' when tide is 2 1/2' below MLLW, which makes it covered by 1' at M.L.W. zero sounding plotted 100-110 ft J.W.*

8. A rock of small extent, and bare about 2-1/2 feet at M.L.L.W., lies about 225 meters, 187° from triangulation station 61. This rock is marked by some kelp and is connected with the west shores of Mitkof Island. (Position 30 "g") ✓

9. A rocky patch with a least depth found of 2 feet at M.L.L.W., lies about 140 meters, 120° from station HEL. This sounding marks the southern end of a foul area which extends in a North-easterly direction and is marked by thick kelp, which is undercut at high tides. (Position 38 "f") ✓

This area is closely developed, as it was not charted before. ✓

10. A rocky patch with a least depth found of 3 feet at M.L.L.W., lies about 160 meters, 130° from station MAR. This area is marked by thick kelp. (Position 18 "h") Photostat # 3317 shows a depth of 8 and 9 feet at 3 feet below M.L.L.W. ✓

11. A rock which bares about 3 feet at M.L.L.W., lies about 290 meters, 114° from triangulation station 62, and is surrounded by very thick kelp. (Position 52 "f") ✓

12. A shoal with a least depth found of 14 feet at M.L.L.W., lies about 210 meters, 221° from triangulation station 62. Numerous soundings were taken in this locality only least depths were recorded and plotted. ✓

*H. Neillik  
Mar. S. S. Survey*

APPROVAL SHEET


TO ACCOMPANY HYDROGRAPHIC SHEET # 10

On Sheet 3317 in the area 175 meters, 90° from triangulation station 66, there seems to be somewhat shoaler water than found this season. This difference is about one fathom deeper water, now being found. Tides have been checked and there is no accounting for the difference. The 37 foot spot on 3317, 600 meters, 358° from triangulation station 66, was searched for, but in its place a 39 foot sounding was found.

The field work on this sheet was completed before my assuming command, with the exception of some work done in searching for the 37 foot shoal mentioned above.

The sheet and records have been examined and are approved.

} discrepancy  
not vital.  
use new work  
A.Z.S.  
} This sounding  
is not critical  
and can be  
superseded  
by new work.  
A.Z.S.

  
E. W. Eickelberg,  
Chief of Party, C. & G. S.

STATISTIC

Hydrographic Sheet # 10.

Date	Letter	ST.Miles.	Soundings	Positions	Launch
May 15.1929	a red	5.6	287	48	Delta
" 16.1929	b "	10.8	578	102	"
" 17.1929	c "	10.4	687	117	"
" 18.1929	d "	4.0	387	57	"
" 20.1929	e "	8.2	771	113	"
" 22.1929	f "	8.5	713	143	"
" 23.1929	g "	5.8	403	105	"
June 6.1929	h "	2.0	194	56	"
" 7.1929	j "	2.0	300	51	"
	Total	<u>57.3</u>	<u>4320</u>	<u>792</u>	
Sept.10.1929	a green	1.6	81	21	Tender#1
	Total	<u>58.9</u>	<u>4401</u>	<u>813</u>	

April 30, 1930.

ECM  
R.R.C.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in  
volumes of sounding records for

HYDROGRAPHIC SHEET 4994

Locality: Alaska (Wrangell Narrows, Point No Thorofure)

Chief of Party: H. A. Cotton, in 1929

Plane of reference is mean lower low water, reading

3.4 ft. on tide staff at Mitkof

13.9 ft. below B. M. I

9.5 ft. on tide staff at Point Lockwood

16.2 ft. below B M I

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 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.

*Hammner*  
Chief, Division of Tides and Currents.

IN REPLY ADDRESS THE DIRECTOR  
U. S. COAST AND GEODETIC SURVEY  
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 7-DRM

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

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4994

Wrangell Narrows - December Pt. to Beecher Pass

Surveyed in 1929

Instructions dated February 19, 1929 - EXPLORER

Hand Lead Soundings

Chiefs of Party, H. A. Cotton, E. W. Eickelberg.

Surveyed by W. Weidlich, J. C. Partington.

Protracted by H. O. Fortin, W. Weidlich.

Soundings plotted by W. W.

Verified and inked by J. T. Walker.

1. The records conform to the requirements of the Hydrographic Manual.
2. The work complies generally with the specific instructions. While the instructions did not contemplate an entirely new survey in this area, the work has been justified by the location of several new shoals and the reduction in depth of one or two other shoals previously located. For a strict compliance with the intent of the instructions the following additional work should have been done:
  - a. A further development of the 29 foot sounding in lat.  $56^{\circ} 33'.9$ , long.  $132^{\circ} 57'.9$  and the 12 foot sounding in lat.  $56^{\circ} 33'.95$ , long.  $132^{\circ} 58'.05$ . To complete the development here soundings were transferred from the 1911 survey (H. 3317).
  - b. Between  $\Delta$  63 (1910) and  $\Delta$  Wod (Pt. Lockwood Rock Light) the discrepancy in the 30 foot curve between the 1911 survey and the new survey should have been investigated. The old work shows depths from 10 to 14 feet shoaler than the new work. A possible explanation for this difference is the steepness of the slope and the current. Inasmuch as the old survey shows several lines of soundings in this vicinity that are in good agreement with each other and also the fact that a 26 foot sounding (shown in green) from B.P. 21403 corroborates the old work, the line of soundings from 55 b to 58 b on the 1929 survey was omitted and the old soundings from H. 3317 retained



and are shown on the new survey in red.

- c. The charted  $1 \frac{3}{4}$  fathoms (3 feet below M.L.L.W.) shown as 13 feet about 175 meters south of  $\Delta$  63 should have been further investigated and either verified or disproved. The authority for this sounding is B.P. 21403. While there is a possibility that the sounding may be in error, the lumpy formation of the bottom necessitates its retention until such time as the spot is specially examined and disproved.
3. The development of the depth curves was generally adequate with the exception of those areas mentioned in paragraph 2, a and b. Along the inshore end of the work some of the shoaler depth curves could only be delineated in spots. In most cases these are unimportant for charting purposes, but in the vicinity of Pt. Lockwood Beacon the 6 and 12 foot curves should have been more definitely located. In the vicinity of December Pt. where the soundings do not run close inshore, the old survey H. 3316 can be used to fill in where necessary.
4. The usual field plotting was completed and was satisfactory with the exception that occasionally signals "No" and "On" were confused and some of the changes in time intervals were overlooked.
5. The junction with H. 4995 on the south is satisfactory.  
The junction with H. 4996 on the north will be taken up when that sheet is reviewed.
6. Comparison with old survey.
  - a. While the present survey is in far greater detail than the 1911 survey (H. 3317) and would normally supersede the old work, comparisons between the two surveys indicate a general stability in the bottom, making it feasible to utilize portions of the old work where the new work is incomplete. In this regard a close study has been made of the old work and the Engineers survey of 1926 (B.P. 21403) and the important soundings have been carried forward to the new survey, on which they are shown in appropriate colors.
  - b. Special mention is desired to be made of the 37 foot sounding off Pt. Lockwood (34 on H. 3317) carried forward to the new survey. This sounding was the first sounding on a line of soundings (pos. 58-1) taken just after lunch and it is possible that the leadsman had not yet gotten the "feel" of the bottom and misread the depth. Neither the old nor the new survey shows any indication of such depth and the surrounding soundings on both surveys are in fairly good agreement. However, since no special investigation has been made of the sounding and since the depth is such as not to constrict the

channel, it is thought advisable to retain the sounding, if for no other purpose than to show that the area should be investigated.

7. Additional work is desirable in the areas mentioned under paragraph 2, a, b, and c, and under paragraph 6, b. On account of the possibility of boats passing close to Pt. Lockwood Beacon when using the channel between Pt. Lockwood Rock Light and the shore, it is recommended that additional work be done in the vicinity of Pt. Lockwood Beacon between the rocky ledge and the 30 foot curve.
8. Note to Compiler:
  - a. This sheet as finally worked over comprises the basic survey of this area and should be considered as such. It represents present conditions as far as we are able to determine. Since considerable thought and study have been given to the matter of retention of soundings from the 1911 survey (H. 3317) and the Engineers survey of 1926 (B.P. 21403), the soundings that have been transferred should be used wherever necessary for delineating the characteristic features on the chart.
  - b. At the present writing there is no information in this office that the project over shoal No. 14 (see B.P. 21403) has been completed. When information to this effect is received the charts can be modified accordingly.
9. Reviewed by A. L. Shalowitz, July 3, 1930.

Approved:

A. M. Solieralski  
Chief, Section of Field Records (Charts)

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

## Section of Field Records.

Report on sheet No. 4994

Chief of Party H.A. Cotton  
E.W. Ekelberg

Protracted by H.O. Fortin  
W. Weidlich

Verified and Sailed by J. Walker

Surveyed in 1929

Surveyed by W. Weidlich  
J.C. Partington

Soundings plotted by  
W. Weidlich

### 1. Sounding Records.

The records were neatly kept. There were sufficient bottom characteristics. Few changes in speed were indicated. Some of the rocks noted were not adequately described. At 71e a note appears that the "Line begins 20 m. south from rocks." Capt. Ellis advised that this be shown as a rock awash.

### 2. Protracting.

The protracting was well done. The signals "No" and "On" were confused several times. No reason was given for some of the rejections. See 26c.

### 3. Soundings.

Some of the time intervals were not followed, especially when the change of interval occurred between positions.

The crossings were as good as could be expected in irregular and steeply sloping bottom.

#### 4. Conformity to General Instructions

No geographic names appeared on the sheet.

The shoreline was inked in when the sheet was received. A few points on the shoreline were checked with T 4510, which is on a 1:10 000 scale, and they agreed closely.

The sheet was received clean and neat.

#### 5. Overlap.

The north end of the sheet joins H 4996 which is being verified and inked by Mr. M<sup>c</sup>Ewen. No comparisons will be made until it is finished.

The south end of the sheet joins H 4995 which was plotted in fathoms. The adjacent soundings were converted to feet from the sounding records and transferred to H 4994. The soundings do not overlap but the junction seems all right.

The area of this sheet was completely surveyed in 1911 and appears on sheet H 3317. The old sheet is on a different datum of

of projection and the soundings are in feet, three feet below lower low water. It is believed that all the major discrepancies between the old and new sheet are covered in the descriptive report for #4994.

#### 6. Curves.

Most of the curves could ~~be~~ accurately drawn. At various places in the records when soundings were taken at low water, the distance was given to the low water line, generally, from the ends of lines. This helped considerably in the drawing of the low water line.

#### 7. Development of shoals.

The important shoals were well developed. The channel to the east of Battery Islets carries about  $17\frac{1}{2}$  feet of water in the shallowest place but there are several dangers, notably a 13 foot sounding in mid channel and a  $9\frac{1}{2}$  foot sounding at the southern end.

The main channel to the west of the Islets carries  $26\frac{1}{2}$  feet on the west side of Pt. Lockwood Rock Light. Deeper water might be found here with a more thorough

development. To the east of the light there is about  $27\frac{1}{2}$  feet of water, but the channel is narrow and there are 26 foot soundings on each side.

### 8. Comparison with other data.

The topo sheets were checked for dangers and the reefs around Battery Islet and along the west side of the project were transferred to the smooth sheet by the office verifier.

The sounding records were examined and all notes of dangers etc. were transferred to the smooth sheet. The notes regarding currents were omitted by order of Capt. Sobiralski.

The boat sheet was roughly checked for dangers and for notes of permanent value.

The descriptive report was read and checked. A few corrections were written in, in pencil, in the section headed "Dangers and Obstructions".

Chart 8170 was roughly compared with #4994 and no important dangers

were found to have been omitted.

Respectfully submitted

J. Walker  
June 16, 1930

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.  
4994

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. 10

REGISTER NO. 4994

State Alaska

General locality SE Alaska, Sumner Strait, Wrangell Narrows

December Pt. to Beecher Pass  
Locality ~~Wrangell Narrows, (South End)~~

Scale 1:5,000 Date of survey May-June-Sept., 1929

Vessel S.S. Explorer.

Chief of Party H.A. Cotton & E.W. Eickelberg

Surveyed by W.Weidlich, J.C. Partington

Protracted by H.O. Fortin W.Weidlich.

Soundings penciled by W.Weidlich.

Soundings in fathoms feet

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by

Inked by J.T. Walker

Verified by J.T.W.

Instructions dated February 19th., 1929

Remarks:



IN REPLY ADDRESS THE DIRECTOR  
U. S. COAST AND GEODETIC SURVEY  
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. **7-DRM**

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

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4. The usual field plotting was completed and was satisfactory with the exception that occasionally signals "No" and "On" were confused and some of the changes in time intervals were overlooked.
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The junction with H. 4996 on the north will be taken up when that sheet is reviewed.
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9. Reviewed by A. L. Shalowitz, July 3, 1930.

Approved:

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Chief, Section of Field Records (Charts)

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

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. *4994*.

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

Number of positions on sheet	<i>..813.</i>
Number of positions checked	<i>..318.</i>
Number of positions revised	<i>.....7.</i>
Number of soundings recorded	<i>..4401</i>
Number of soundings revised	<i>...62.</i>
Number of signals erroneously plotted or transferred	<i>.....0.</i>

Date: *June 14, 1930* .....

Cartographer: *J.V. Walker* .....