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Department of Commerce and Labor
COAST AND GEODETIC SURVEY

O. H. Pittman
Superintendent.

State: *Alaska*

DESCRIPTIVE REPORT.

Hydrographic *Sydney* Sheet No. **3687**

LOCALITY:

Congass Narrows
Southern Part and
Approaches

191*4*

CHIEF OF PARTY:

J. A. Danells

11-4645

3687

WIRE DRAG SURVEY 3687

Tongass Narrows and Nichols Passage

S. E. ALASKA

From Ketchikan to Cutter Rocks, Including South Channel,

and

Nichols Passage

From Tongass Narrows to 2 miles South of Walden Rocks.

Aug. 10-Sept. 21,

1914.

Scale $\frac{1}{15,000}$

John A. Daniels, Aid-Chief of Party.

Officers:

R. V. Miller, Aid: In charge of Launch Arnold, observing and plotting, in charge of triangulation.
Thos. Jamieson, Mate; Observing ^{LR} and plotting on G. L. CHEHALIS.
L. C. Dyke, D. O. In charge of E. L. VIKING.
W. H. Kearns, D. O. Observing ^{LT} on G. L.
G. C. Jones, D. O. Observing ^{LT} and assisting in triangulation.
Lindley Davis, Mate; Assistant observer and coxswain CHEHALIS.

J. A. Talbot, Jr. }
J. C. Johnson, } Recorders

DESCRIPTIVE REPORT

Hydrographic Sheet #2.3687

The area dragged as shown on this sheet extends from Ketchikan to Gutter Rocks, including a part of Nichols Passage from Revillagigedo Channel to a point approximately two nautical miles south of Walden Rocks.

The scale of this sheet is 1 : 15000, and the shore-line shown thereon has been transferred from C. & G. S. Chart #8094. All the docks shown on this sheet, in full black lines, have been located with a sextant.

The principal shoals and shoal areas that have been found and examined are described as follows:

Shoals north of Pennock Island - - - - -

Nine hundred meters, in a general Northwesterly direction, from the nearest point on Pennock Island, is a group of shoal spots of less than the charted depths. The most important of these is a shoal of 33 1/2 feet at a point 325 m. from Buoy C 1 and 1225 m. from East Clump Light (Δ Isle₂) at which point the charted depth is 8 fms.
A. 3 1/2 ft. Rk. 1080 m S.E.ly along the shoreline from E Clump Lt. and 130 m from the shore with deep water between it and shore.

Shoals in East Channel between Revillagigedo and Pennock Ids. -

Directly opposite the town of Ketchikan, in a direction 1 1/2 the general direction of the shore-line, 200 m. from the nearest point on shore is a sounding of 32 feet. Although the chart gives a less sounding at this point (4 1/2 m.) the party was unable to obtain a less sounding than 32 ft. The drag was hooked at an effective depth of respectively 44, 36, and 27 feet in dragging this area, but failed to disclose anything less than 32 feet.

2

A very important shoal of 26 feet was discovered at a distance of 170 m., Westerly, from the S.W. corner of the New England Fish Co's dock, and 460 m. , Westerly, from the S.E. corner of the Standard Oil Co's dock.

A group of soundings was obtained at a distance of 150 m. from the nearest point on shore and 550 m. Easterly, from the S.E. corner of the S. O. Co's dock. The charted depth at this point is 19 fms.

Another group directly opposite, and the same distance from the shore of Pennock Island was obtained, the principal one being a sounding of 35 ft. at a distance of 100 m. from the nearest shore-point and 660 m. Southerly, from the S.E. corner of the S. O. Co's dock.

A shoal of least depth 30 ft. was obtained at a point 225 m. West-erly, from the Red Lighted Buoy on Idaho Rock and 235 m., Westerly, from the Black Can Buoy on California Rock, the charted depth at this point being $6 \frac{3}{4}$ fathoms.

A sounding of 29 ft. was obtained just inside the 10 fm. curve, at a distance 765 m., Easterly, from the nearest point on Pennock Island. This point is charted as having a depth of 7 fm.

A group of soundings from $39 \frac{1}{2}$ ft. to 51 ft. was found 200 m. in a general Northeasterly direction from the H-S Buoy south of Pennock Island.

A depth of 44 feet was obtained 390 m., Southeasterly from the H-S Buoy south of Pennock Island. Although the sheet shows a triangular split at this point, there is nothing less than 44ft. in this split as

the drag was only momentarily lifted at this spot to clear this previously located 44ft. spot. The chart at this point gives 9 fathoms.

A number of spots of less than charted depths were obtained 150 m. North of Cutter Rocks, the most important being a sounding of 8 1/2 feet at a distance of 155 m. North of the Spindle on Cutter Rocks and 620 m. ~~North-~~^{South} ~~West-~~^{East}erly from the nearest point on Revillagigedo Island.

Shoals in Nichols Passage - - - - -

A group of soundings directly East of Walden Rocks were obtained, the most important of these being one of 28 ft. at a distance of 375 m. East of Walden Rocks and 530 m. from the nearest point on Annette Island.

A sounding of 22 1/2 ft. was obtained 530 m. Southeasterly from the nearest point on Annette Island, and 1600 m. South of Walden Rocks.
A Rk. with least depth of 40ft. on charted 12 fm spot 675 m. to be South from the most Ely point of Gravina I.

Shoals and Sheal areas in Tongass Narrows between Pennock and Gravina Islands, better known as the West^{or South} Channel - - - - -

A depth of 17 ft. was obtained 210 m. from the nearest point on Pennock Island, and 570 m. from the extreme S.W. End of Pennock Island.

A group of soundings from 26 to 30 ft. depth was obtained at a point 140 m. from shore, the most important being a depth of 26 ft. at a distance of 140 m., ~~North-~~^{South} ~~West-~~^{East}erly from the nearest point on Gravina Island, and 900 m. Southeast of East Clump Light (A Isle₂). It is 830 m. West-erly, from Buoy C 1.



The names of the rocks shown on this sheet are , beginning at Ketchikan and going down the Channel are respectively: 1. Thomas' Fish Wharf- - - -

4/

2. Ketchikan Cannery Dock. - - - - 3. New England Fish Co's Dock - - - - -

4. Standard Oil Company's Dock.

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STATISTICS

Tongass Narrows and Nichols Passage, S. E. Alaska.

Hydrographic Sheet #2

Wire Drag Party, 1914.

John A. Daniels, Chief of Party.

Date 1914	Day	Miles of drag line	Angles	Soundings
Aug. 10	A	2.25	132	5
" 11	B	3.50	150	12
" 12	C	3.75	228	14
" 13	D	8.50	360	10
" 15	E	7.00	216	2
" 17	F	2.00	120	4
" 19	G	4.00	132	1
" 25	H	1.50	108	4
" 26	J	2.75	210	5
" 27	K	0.00	00	0
" 28	L	3.50	210	5
" 29	M	4.00	150	7
" 31	N	5.00	156	4
Sept. 1	O	3.00	138	2
" 2	P	7.00	288	10
" 3	Q	2.75	222	6
" 8	R	3.50	234	8
" 21	S	1.25	120	3
		<u>65.25</u>	<u>3,174</u>	<u>102</u>

LIST OF PLANE-TABLE STATIONS.

Nichols Passage, S. E. Alaska.

WIRE DRAG PARTY. 1914.

Hyd. Sheet #2

Object	Latitude	D.M. meters.	Longitude	D.P. meters.
RAG.	55 16	1445.5 (410.0)	151 38	180.0 (876.0)

VEC
July 26, 1915.

HYDROGRAPHIC SHEET 3687.

L. P. A.

Ketchikan, Northland Dock, Tongass Narrows, Alaska,
by Asst. C. G. Quillian in 1915.

TIDES.

	Ketchikan ft.
Mean lower low water, or plane of reference on staff	1.3
Lowest tide observed " "	-2.9
Highest " " " "	21.5
Mean range of tide	13.1

VEC
Feb. 5, 1915
L. P. S.

HYDROGRAPHIC SHEET 3687.

RECEIVED
FEB - 8 1915
ASSISTANT IN CHARGE
CHART CONSTRUCTION

Tongass Narrows, Southern Part and Approaches, Alaska,
by Asst. J. A. Danells in 1914.

TIDES.

	Ketchikan ft.
Mean lower low water, or plane of reference on staff	1.3
Lowest tide observed " "	-2.9
Highest " " " "	21.5
Mean range of tide	13.1

EXAMINATION OF HYDROGRAPHIC SHEETS
by the
DIVISIONS OF FIELD WORK AND FIELD RECORDS.

Sheet No. 3687

1. + Are numbers of hydrographic sheets adjoining limits of work shown? *No. Junctions are stated*
2. Are transferred soundings of adjacent hydrographic sheets made to show that ground has been covered?
3. + Is sheet of proper size? *yes*
4. + Is sheet well laid out, no additions required? *yes*
5. Are limits of hydrography regular?
6. + Are positions of signals accentuated by light dot of black ink to assist plotting? *No*
7. + Are tidal stations plotted on sheet? *No. T.G. is stated*
8. Is area of work completely covered?
9. Are critical soundings and dangers shown distinctly?
10. + Is the control good? *yes*
11. + Are positions of signals clearly shown? *yes*
12. Are soundings well distributed?
13. Are shoals carefully and sufficiently developed?
14. Do soundings cross satisfactorily?

- 15. Is existence or non-existence of a reported shoal determined?
.....
- 16. Is least sounding over bar probably determined by check soundings or diagonal sounding lines crossing same?
.....
- 17.+ Are projection and plotting checked? *yes*
- 18. Is the scale of this sheet sufficient to show the necessary details in the navigable channels?
.....
- 19. +Is the shoreline shown? *yes*
- 20.+ Is there an accompanying list of plane table or sextant positions of signals? *not with sheet*
- 21. Has sufficient attention been given to the development of channel?
.....
- 22. Are sufficient bottom characteristics shown?
.....
- 23. Are sounding lines normal to coast?
.....
- 24. Have suspicious soundings been investigated?
.....
- 25. Are ranges or bearings given for important shoals?
.....
- 26.. Are sailing directions given?

27. Is the general hydrography in the entire area properly developed?
28. Are shallow channels for motor boats sounded?
29. Is there a note as to coloration of water in or near mouths of rivers and bays?
30. Is there any information given as to obtaining fresh water?
31. Are there proper intervals between soundings?
32. Are projecting points of land and reefs determined by sufficient lines with soundings at close intervals run at right angle to direction of points?
33. Is there sufficient data to draw depth curves?
34. Are shoal areas remote from shore properly developed by independent system of buoy signals placed in the vicinity of shoal?
35. Are soundings obtained at docks in harbor?
36. *Is there a full list of data effecting sheet given?
37. Are description of hydrographic signals and marking of same recorded?
38. Is there a list of land marks given?

- 39.+ Does descriptive report give date of instructions? *no*
-
40. Are small islets and rocks distinctly shown?
41. Is information relative to anchorage given?
- 42.* Are survey methods explained sufficiently? *yes*
43. Are geographical names given on sheet?
44. Are coast pilot notes given?
45. Is the unit of soundings given in title?
46. Are sufficient depth curves shown?
47. Are aids to navigation shown?
48. Are grass or kelp indications shown?
49. Are sailing courses shown on sheet?
50. Is descriptive note given as to visibility of shoals?
-
51. Are dangers fully described in descriptive report?
-
52. Is the character of reefs described on sheet?
-
53. Are beaches indicated where vessels in distress could be safely beached?
54. Are standard symbols used in drafting?
55. Is information relative to currents given?
56. Is there a statement as to certainty or probability of least depth over dangers given?
57. Is the existence of certain shoals doubtful?
58. Is a general description of coast given?

- 59. Is information relative to commercial importance given?
.....
- 60. Does the descriptive report cover one or a moderate number of
sheets?
- 61. Are descriptions of headlands given?
- 62. Is the nature of shoals whether coral rock or sand shown on
sheet?
- 63.+ Is the position of the tide gauge well selected? Is the tidal
data sufficient for the reduction of soundings over the area
of the sheet? *yes*
- 64.+ Have projection lines been numbered around all the edges? ...
..... *yes*
- 65.+ Has the geographic position of one of the triangulation points
on the sheet been inked near the bottom edge of the sheet?
..... *yes*
- 66. Was the speed of the sounding boat such as to allow vertical
readings of the leadline?
- 67. Were lines of soundings run along the axis of narrow channels?
.....
- 68. Have rocks or shoals seen from the sounding boat in passing
been definitely located?
- 69. Have charted shoals reefs, or rocks been investigated?
- 70.+ Have sounding records been kept in approved form? *yes*

- 71. Are Wire drag surveys required?
- 72. Is the area between the soundings taken and the shore indicated or described as being covered by reefs, etc. as the case may be?
.....

Other Remarks

.....

.....

The forgoing points marked by a cross (+) and the following additional points are to be considered for wire drag hydrographic sheets.

- 73. What additional areas, if any, in the locality covered by the sheet should be dragged? *None covered*
- 74. Number of small areas inside limits of work missed by drag (few, moderate number, numerous) *Numerous*
- 75. Are shoals discovered with drag clearly shown? *Yes*
- 76. Were shoals later covered by drag set at suitable depth? *.....*
In so far as Practicable
- 77. Are all areas missed by drag clearly shown? *Yes*
- 78. Are overlaps ample? *Yes*
- 79. Do effective depths conform to instructions under which the work was done?
- 80. If work was done before present practice as regards effective depths was adopted, should the area be re-dragged to conform to the present practice? *Not for surface navigation*
- 81. Are all shoals discovered shown on current issue of chart? *Yes*

J. Sawley

Hyp 3687

The area dragged, as shown on this sheet extends from Ketchikan to Cutter Rocks, including a part of Nichols Passage.

The entire area outlined above was practically covered by the drag, although a number of splits were left over and are indicated by the arrows on the tracing.

In verifying this work, the positions and shoreline were not checked as the entire projection will have to be shifted when the work of computing and adjusting is completed by the computing division.

A number of inaccuracies in plotting were discovered and corrected. In this connection a few might be mentioned:

Sounding V_D does not plot well. Left angle evidently wrong. In a few instances, where a change in the depth of the drag was performed within a certain period of time, this change was plotted as if the entire change was executed instantaneously.

At V_D the drag set at an effect depth of 44 feet passed a spot where a 41 ft. sounding was obtained.

Positions V_0^{15} , V_N^{26} & V_S^6 were plotted wrong. When corrected the areas affected change.

Shoals and dangers to navigation are fully described in the report of the Chief of the Party and in the letters 225, 264 & 377 of 1914 and in letter 37 of 1915.

On the whole the work was very well executed and records kept in good shape.

J. P. Shklar
3/24-1915