

6818

6818

Form 504 U. S. COAST AND GEODETIC SURVEY DEPARTMENT OF COMMERCE DESCRIPTIVE REPORT	
<i>Type of Survey</i> Hydrographic	
<i>Field No.</i> 2142	<i>Office No.</i> H-6818
LOCALITY	
<i>State</i> Washington	
<i>General locality</i> Haro Strait	
<i>Locality</i> South of San Juan Island	
<hr/> 194 2-43	
CHIEF OF PARTY	
J. H. Peters	
LIBRARY & ARCHIVES	
DATE	

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO. H6818

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. 2142

REGISTER NO. H-6818

State Washington

General locality Haro Strait

Locality South of San Juan Island

Scale 1:20,000 Date of survey Dec. 1942 - Feb., 19 43

Vessel EXPLORER

Chief of Party J. H. Peters

Surveyed by G. J. Wagner, E. B. Brown, W. D. Patterson, Wm. Weidlich
S. B. Grenell, L. S. Hubbard

Protracted by Christine Nechaj

Soundings penciled by Christine Nechaj

Soundings in fathoms ~~xxxx~~ Fathoms

Plane of reference MLW

Subdivision of wire dragged areas by _____

Inked by G. K. Emminizer

Verified by G. K. Emminizer

Instructions dated September 22, 19 39

Remarks: Smooth Sheet and Plotting by the

Seattle Processing Office.



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Protracted by Christine NechaJ

Soundings penciled by Christine NechaJ

Soundings in fathoms ~~feet~~ Fathoms

Plane of reference MLLW

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated September 22, 19 39

Remarks: Smooth Sheet and Plotting by the

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H6818

H-6818

2142

DESCRIPTIVE REPORT

Washington

Hare Strait - Cattle Point to Lime Kiln L. H.

By the EXPLORER Dec. 21, 1942 to Feb. 26, 1943,
J. H. Peters, Chief of Party.

Basic Instructions Sept. 22, 1939.

HT 241

METHODS OF SURVEY:

Standard methods were used. All fixes visual. Most of the area sounded by the EXPLORER using the Dorsey III fathometer while operating the Hughes recording fathometer. The Hughes fathogram was scanned and compared with recorded soundings. There are two days' work by Launch #2 recording soundings from the 808 fathometer, which were also checked against the graph.

CONTROL:

All control is on NE 1927 Datum. Most of the triangulation has been done as part of this project. The topo signals are all from T-6906 (1943) and T-6907⁰⁴²⁷ of the current season. Hydro signal Nit is located by angles recorded in Vol. 3.

GENERAL:

No danger to surface navigation was found. The least ^{afflyings} depths on the sheet are 12 and 13 fathoms. The bottom is very irregular in places. (See graphs). There is an unsounded area along shore northwest of Eagle Point. There is good water along the inshore edge of the sounded area, which is 300 to 800 meters off the beach.

H6818

Attention is called to the following:

LEAST DEPTHS ON BANKS

	Lat. & Long.	Position	Fathoms	Remarks
1.	48 ⁰ 28180 123 07.38	72 - 73 b	34 ✓	
2.	48 28.55 123 07.15	47 - 48 b	38 ✓	
3.	48 28.35 123 06.85	35 b	46 ✓	
4.	48 27.6 123 09.3	84 - 85 F	26 ✓	
5.	48 27.45 123 08.30	81 - 82 G	19 ✓	
6.	48 27.20 123 08.05	85 - 86 G	18 ✓	H-6819 (1742-43) Drag passed near, but did not cover.
7.	48 27.40 123 07.10	65 - 66 G	42 ✓	
8.	48 26.30 123 08.15	82 - 83 D	21 ✓	
9.	48 26.80 123 08.35	50 - 51 D	24 ✓	
10.	48 26.70 123 07.95	120 F	16 ✓	Not dragged. No graph on "F" day after Pos. #60.
11.	48 26.80 123 07.75	109 - 110 F 2 - 3 a	15 ✓	See H-6819 (1742-43) Cleared by drag at 59 ft.
12.	48 26.30 123 06.40	106 - 107 F	32 ✓	
13.	48 26.15 123 06.40	123 - 124 F	28 ✓	
14.	48 26.25 123 05.20	136 - 57 G	44 ✓	
15.	48 26.45 123 01.25	6 - 7 H	28 ✓	
16.	48 25.55 123 06.80	17 G	13 ✓	H-6819 (1742-43) Drag cleared at 55 feet.
17.	48 25.40 123 05.95	12 - 13 G	12 ✓	H-6819 (1742-43) Drag cleared at 55 feet.

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COMPARISON WITH SHEETS:

At Latitude 48° 26:9 Longitude 123° 01:5 there is a sounding of 29 fathoms. Sheet H-6746⁽¹⁹⁴³⁾ shows 34 fms. very close to this sounding. Elsewhere the agreement of these two sheets is very good.

H-6654⁽¹⁹⁴⁰⁻⁴³⁾ to south is not available for comparison. ^{Pos. 10-11 H, stray on Dorsey, disregard. HMM.}
^{Junction ok.}

At Latitude 48° 29:9 Longitude 123° 08:5 on that sheet is a sounding of 146 fms. H-4607⁽¹⁹²⁶⁾ is sparsely sounded and in broken bottom a slight displacement may show considerable differences in depth. The general agreement with the sheet is fair, but differences may run to 20 fms. ^{No-bottom 349. Disregard 196 fms. HMM.}

At Latitude 48° 26:95 Longitude 123° 08:10, Sheet H-4607 (1926) shows 14 fms. which falls between 19 and 20 on H-6818⁽¹⁹⁴³⁾, which is not well developed at that point. ^{13 fms. carried forward here from same sheet}

At Latitude 48° 26:80 Longitude 123° 07:75 is a depth of 13 fms. on the new sheet which was swept at 59 feet with the drag. H-4607 (1926) shows a least depth of 8 fms. which is charted. ^{H-6818 (1942-43)} Disregard 8, see Rev., par. 5c (2).

STATISTICS:

Statute Miles Sounding Line -----	398.2
Soundings -----	8742
Positions -----	1206
Area - Sq. Stat. Miles -----	24.2

Edgar E. Smith
E. E. Smith
Assec. Cartographic Engineer
Seattle Processing Office

Approved and Forwarded: *F. H. Hardy*
F. H. Hardy
Officer in Charge,
Seattle Processing Office.

116515

C O P Y

FIELD NOTES ON TIDE REDUCTIONS

Tide observations in conjunction with the winter season's work (1942-43) of the Ship EXPLORER were made at Richardson, Lopes Island, and Kanaka Bay, San Juan Island. A portable type tide gage was operated at Richardson from December 4, 1942 to February 27, 1943. At Kanaka Bay a tide staff was established on December 10, 1942 and was observed only while work was being done in the area in which the station was considered needed. The staff at Kanaka Bay was destroyed by storm during the period January 12 to February 3, 1943, and was not replaced.

Wire drag work done on sheet 2142 at the 8 fathom bank off Pile Point, Middle Bank, and all chip and launch work development on this same sheet will be reduced according to the staff at Kanaka Bay up to the time the staff was destroyed January 12, 1943. Work done at these places after February 12, 1943 to February 27, 1943 is to be reduced to the Richardson gage, the difference between Richardson and Kanaka Bay being so small that the results did not warrant re-establishment of the staff at Kanaka Bay. A comparison of the two stations shows a difference of time of approximately 10 minutes and little or no difference in the range.

Other work on this project not listed above as being reduced to Kanaka Bay tides are reduced to Richardson tides.

Richardson staff reading of H.L.L.W.	0.24 feet
Latitude, approximate.	45° 27'
Longitude, approximate	122° 54'

(Signed) J. H. Peters, Comdg.,
U.S.C. & G.S.S. EXPLORER

H.P.S. 11

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

C O P Y

EXPRESS ADDRESS:

Reference 36-mlh

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

April 27, 1943

To: Officer in Charge
Seattle Processing Office
1500 Westlake Avenue No.,
Seattle, Washington

From: The Director
U. S. Coast and Geodetic Survey

Subject: Tide Reducers - Project CS 241.

Reference is made to your letter of April 21, 1943, requesting verification of tide reducers from field tabulations of tide records for Richardson, Washington for 1942 and 1943.

An examination of the original tide records for Richardson shows that due to the relatively high elevation of the zero of the tide staff, the field party found it necessary to increase staff readings by two feet to accommodate them to the height scale of the marigrams. In subsequent field tabulations of hourly heights two different datums were used, accounting for the difference of two feet in the planes of reference for different dates.

Tabulated heights for December 1942, with the exception of December 11th, were referred to the zero of the marigrams which corresponds to an elevation of 2.24 feet below mean lower low water. Tabulated heights for January and February 1943 and for the single date of December 11, 1942 were referred to the zero of the tide staff which corresponds to an elevation of 0.24 feet below mean lower low water. The reducers determined by the field party have been verified from office tabulations and are returned herewith.

(Signed) J. H. Hawley
Acting Director

Enclosure

C O P Y

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H-6818

TIDAL NOTE

Strait of Juan de Fuca

Washington

Richardson, Lopez Island, Washington

Portable Automatic Gage

Latitude ----- 48° 27'

Longitude ----- 122 54

Staff Reading MLLW ----- 0.24 feet
(See copy of letter attached)

Kanaka Bay, San Juan Island, Washington

Staff

Latitude ----- 48° 29'

Longitude ----- 123 05

Staff Reading MLLW -----

Surveys Section (Chart Division)

116818

HYDROGRAPHIC SURVEY NO.

Records accompanying survey:

Boat sheets ²...; sounding vols. ...⁶.; wire drag vols.⁰;
 bomb vols. ...⁰...; graphic recorder rolls¹.....;
 special reports, etc. Cahier Hughes Fath., Tracing, A&D Sheet, Winter Season
 Fath. Reduction Folder, Winter Season Tidal Data (T.D. applies also to 6819
 6820 & 6746.)

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

Number of positions on sheet		1206	
Number of positions checked		124	
Number of positions revised		2	
Number of soundings recorded		8742	
Number of soundings revised (refers to depth only)		6	
Number of soundings erroneously spaced		none	
Number of signals erroneously plotted or transferred		none	
Topographic details	Time	2 hrs.	
Junctions	Time	8 hrs.	
Verification of soundings from graphic record	Time	32 hrs.	
Verification by <i>G. K. Emininger, Jr.</i>	Total time	176 hrs.	Date 8/9/44
Review by <i>Harold W. Murray</i>	Time	28 hrs.	Date 8/15/44

H6818

Remarks

Decisions

	Remarks	Decisions
1		U.S.G.B
2		485231 "
3		485230
4		484230
5		484230
6		484229
7		"
8		484230
9		
10		
11		
12	Location of tide staff	484229
13		
14	" " " "	484230
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		

GEOGRAPHIC NAMES
 Survey No. 16818

Name on Survey											
	A	B	C	D	E	F	G	H	K		
<u>Washington</u>											1
<u>Haro Strait</u>											2
<u>San Juan Island</u>											3
<u>False Bay</u>											4
<u>Eagle Pt.</u>											5
<u>Cattle Pt.</u>											6
<u>Salmon Bank</u>											7
<u>Middle Bank</u>											8
											9
											10
											11
<u>Richardson</u>											12
<u>Ed' 11111111</u>											13
<u>Kanaka Bay</u>											14
											15
											16
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											25
											26
											27

by L. Heck on 8/23/44

RAC
HRE

TIDE NOTE FOR HYDROGRAPHIC SHEET

July 22, 1943

~~Division of Hydrography and Topography~~

✓ Division of Charts: Attention: E. R. EDMONSTON

Plane of reference approved in
6 volumes of sounding records for


HYDROGRAPHIC SHEET 6818

Locality Haro Strait, South of San Juan Id., Washington

Chief of Party: J. H. Peters 1942, 1943
Plane of reference is mean lower low water reading
0.2 ft. on tide staff at Richardson
15.3 ft. below B. M. 1
-0.4 ft. on tide staff at Kanaka Bay
13.7 ft. below B. M. 1

Height of mean high water above plane of reference is
6.6 ft. at Richardson; 6.4 ft. at Kanaka Bay.

Condition of records satisfactory except as noted below:


A. E. Tamm, Chief, Division of Tides and Currents.

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
PHOTOSTAT OF

} No. H **H6818**
No. T

{ received July 18, 1943
registered July 19, 1943
verified
reviewed
approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25			
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30			
40			
62			
63			
82			
✓ 83	Pg 2	RS.	
88			
90			

RETURN TO

82	R.W.Knox
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DIVISION OF CHARTS

REVIEW SECTION - SURVEYS BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. 6818

Field No. 21

Washington, Haro Strait, South of San Juan Island
Surveyed December 1942 - February 1943; Scale 1:20,000
Instructions dated September 22, 1939
Project 241

Soundings:

Control:

808 Fathometer
Dorsey Fathometer

Three-point fix on shore signals

Chief of Party - J. H. Peters
Surveyed by - C. J. Wagner, E. B. Brown, W. D. Patterson,
William Weidlich, S. B. Grenell, L. S. Hubbard
Protracted by - Christine Nechaj
Soundings plotted by - Christine Nechaj
Verified and inked by - G. K. Emminizer
Reviewed by - Harold W. Murray
Inspected by - H. R. Edmonston, August 15, 1944

1. Shoreline and Signals

The shoreline and signal sources are given in the
Descriptive Report, page 1.

2. Sounding Line Crossings

Agreement of sounding line crossings is satisfactory.

The inshore line 87-94B, run from a point at Lat.
48°30.3', Long. 123°08.8' to a point at Lat. 48°29.08',
Long. 123°06.33' is characterized by numerous misses
on the Dorsey Fathometer. Such recorded depths as
have been obtained, 146 to 196 fathoms, appear to be
too deep by as much as 80 fathoms and have been re-
jected. The accompanying Hughes Recorder also "black-
ed out" at this time and probably should have been shifted
to the first phase.

3. Depth Curves and Submarine Relief

The usual depth curves may be satisfactorily drawn.
Considerable irregularity in bottom is noted through-
out portions of the area surveyed. Jumps as great as

20 fathoms between adjacent plotted soundings occur frequently. The 60-, 110-, and 150-fm. curves have been added in some areas to emphasize certain shoal depths and configurations.

4. Junctions with Adjacent Surveys

- a. The junction with H-6653 (1940-43) on the south is excellent.
- b. The junction with H-6746 (1940-43) on the east and northeast will be considered when that sheet is verified.
- c. No other contemporary surveys adjoin the present survey as of this date. The southwestern limit of the present survey coincides with the United States - Canadian boundary.

5. Comparison with Previous Surveys

- a. H- 433 (1854), 1:100,000; H-1629 (1884), 1:80,000
H-2211 (1894), 1: 40,000; H-2212 (1894), 1:40,000

The above are sparsely covered reconnaissance surveys and taken together cover the entire area of the present survey. Most of the soundings on H-433 and H-1629 have been transferred to the later 1894 work. Agreement of depths is favorable in most instances but some disagreements are noted. Difficulty in reconciling these old soundings with modern surveys has been previously mentioned in the review, par. 5b of H-6653 (1940-43). Specific mention is made of the following:

1. H-433, 96 fm. (not charted), approx. Lat. $48^{\circ}28.0'$, Long. $123^{\circ}05.4'$; 30 fm. (not charted), approx. Lat. $48^{\circ}26.56'$, Long. $123^{\circ}01.8'$

These soundings fall in depths of about 122 and 65 fathoms, respectively, on the present survey and are too shoal. In each instance the present survey shows similar depths within a third of a mile. These soundings should be disregarded.

2. H-1629, 134 fm. (not charted), Lat. $48^{\circ}28.86'$, Long. $123^{\circ}08.9'$

This sounding falls in depths of about 155 fm.

Although other soundings on the same line as the 134 agree well with the present survey, the fact that the present survey shows similar depths about 1/3 mile north and also that the 134 actually falls in a small depression of 150-159 fathoms would indicate that the 134 is questionable as to depth in the position indicated. This sounding should be disregarded.

The present survey is adequate to supersede the above surveys.

b. H-2641 (1903-04), 1:10,000

This large scale survey covers a small part of the present survey in the area east of Long. 123°01'. Agreement of depths is quite favorable. The present survey, although on a smaller scale, is adequate to supersede this survey.

c. H-4606 (1926), 1:40,000 and H-4607 (1926), 1:20,000

These surveys taken together cover most of the present survey. H-4606, however, covers a very small portion in the vicinity of Middle Bank. Agreement of depths is good. Specific differences noted are as follows:

1. A 13-fm. (charted) on H-4607 in Lat. 48°27', Long. 123°08.1' falls on a shoal area of 19 to 20 fathoms but between sounding lines spaced 170 meters apart. Shoaler depths can exist here and the 13 has therefore been carried forward.

Another sounding of 34 fm. (charted) in depths of about 46 fathoms was carried forward in Lat. 48°26.1', Long. 123°06.2'.

2. Some doubt exists about the correct disposition of the 8 fm. (charted) in Lat. 48°26.77', Long. 123°07.74' which originates with H-4607 and falls in well developed depths of 13 fathoms on the present survey. Complete data are given in the sounding records, Vol. II, pages 12 and 14 to 16, inclusive.

A note in the records, pos. 108-109f, states that this sounding was obtained while

"heaving in lead after 23-fm. sounding lead fouled on rock with 10 fathoms out and wire leading aft." A later note by the chief of party states "when the fouling of the lead with 10 fm. out was reported to me by the leadsmen, I understood him to say 15 fathoms." The 10-fm. depth reduces to 8 fm. - 5 feet and the 15 reduces to 13 fm. - 5 feet.

On the next day (g day), the hydrographer spent about one hour drifting over the spot. At the last recorded position, a note states "Put a buoy on this position (depth 13 fathoms) and felt carefully around it within a radius of 50 to 100 meters. No less water found."

On H-6819 (1942-43) W.D., this locality was cleared with an effective drag depth of about 59 feet. This clearance depth is 6 feet below the bottom of the 10-fm. spot (53 feet, reduced). Had the 10-fm. recording been correct, the drag should have grounded provided that (1), the lift was correctly determined and (2), the drag did not slip unnoticed over a rounded obstruction. This data in conjunction with the foregoing chief of party's opinion is considered as sufficient evidence for disproving the original 10-fm. sounding which is now charted as 8 fathoms.

The present survey, with the indicated sounding and bottom characteristic additions, is sufficiently adequate to supersede the above surveys.

6. Comparison with Wire Drag Surveys

H-6819 (1942-43) W.D. and H-6820 (1942-43) W.D.,
scales 1:20,000

These contemporary drag surveys have not been verified as of the date of this review. The first survey covers the two 13-fm. spots in Lat. $48^{\circ}26.9'$, Long. $123^{\circ}07.9'$ and the north side of Middle Bank. The effective drag depths of 53-59 feet do not conflict with the present survey.

The second drag sheet just touches the eastern edge of the present survey at Salmon Bank. The effective drag depths of 41 to 54 feet do not conflict with the present survey.

7. Comparison with Charts 6380 (Latest print date 6- 6-44)
6382 (Latest print date 4-20-44)

Several least depths on the more important shoals have been applied to the charts prior to verification and review of this survey. The remainder of the hydrography is principally from surveys previously considered in this review.

At the west and southwest margin of the present survey, several charted soundings originate with a Canadian chart No. 349 of 1937 (Bp. 31179). These soundings agree favorably with the present survey except as follows:

- a. The charted 17 and 21 fm. in Lat. $48^{\circ}27.3'$, Long. $123^{\circ}08.6'$ fall in depths of 32 and 55 fathoms, respectively, but within 200 to 300 meters of 19-fm. spots on the present survey. These soundings appear to be displaced in position and should be disregarded.
- b. The charted 15 fm. in Lat. $48^{\circ}26.7'$, Long. $123^{\circ}08.1'$ falls in 29 fm. on the present survey but is about 150 meters west of a 16-fm. sounding shown thereon. The 15 should be disregarded.
- c. The charted 12 fm. in Lat. $48^{\circ}25.3'$, Long. $123^{\circ}06.7'$ falls in the junction area and in depths of about 17 fm. However, H-6653 (1940-43) shows a 13-fm. depth about 140 meters northward which is adequate for charting.

8. Condition of Survey

Satisfactory.

9. Compliance with Project Instructions

Satisfactory.

10. Additional Field Work Recommended

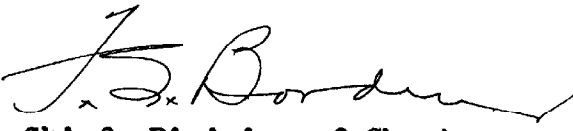
No additional field work is required.

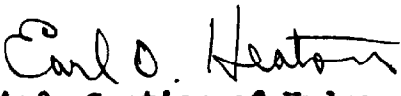
11. Superseded Surveys


H- 433 (1854)	in part
H-1629 (1884)	" "
H-2211 (1894)	" "
H-2212 (1894)	" "
H-2641 (1903-04)	" "
H-4606 (1926)	" "
H-4607 (1926)	" "

Examined and approved:


Chief, Surveys Branch


Chief, Division of Charts


Chief, Section of Hydrography


Chief, Division of
Coastal Surveys

NAUTICAL CHARTS BRANCH

SURVEY NO. H 6818

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
4/12/46	6380	<i>L. J. Stegman</i>	Before After Verification and Review <i>Completely applied.</i>
5/2/46	6382	<i>N. J. Stegman</i>	" " " " " "
4/10/47	6300	<i>H. M. E. Ewen</i>	Before After Verification and Review
5-29-79	18433	<i>Stephen Hill</i>	^{<i>Fully Applied</i>} Before After Verification and Review
1-29-80	18434	<i>Reidar SHUMAR</i>	^{<i>FULLY APPLIED</i>} Before After Verification and Review
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A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

Partially applied to	Chk.	{ 6380	6382 - (Should only considered)	Q	4/5/44
			(Before ver. & rev.)		
"	"	"	6300 (After verif. and review)	PHD.	11-28-44
"	"	"	6380 (" " ")	GR.	4/10/45
"	"	"	6382 (" " ")	GR.	4/10/45