

6748

6748

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey **Hydrographic Survey**

Field No. **1341** Office No. **H-6748**

LOCALITY

State **Washington**
General locality **Strait of Juan de Fuca**
~~Puget Sound~~
Locality **Smith Island**

1943

CHIEF OF PARTY

G. C. Mattison **C. M. Dargin**
SURVEYOR PATTON

LIBRARY & ARCHIVES

DATE **APR 29 1943**

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

H6748

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. 1341

REGISTER NO. H-6748

H6748

State Washington

General locality Strait of Juan de Fuca
Puget Sound

Locality Smith Island

Scale 1:10,000 Date of survey Nov. 15 to Dec. 19, 1941.

Vessel U.S.C. & G.S.S. SURVEYOR - M.V. PATTON

Chief of Party G. C. Mattison - C. M. Durgin

Surveyed by F. M. Gibbens, K. S. Ulan, C. M. Durgin, J. C. Bose.

Protracted by W. M. Martin

Soundings penciled by W. M. Martin

Soundings in fathoms ~~xtank~~ Fathoms

Plane of reference MLLW

Subdivision of wire dragged areas by

Inked by A. R. STIRNI

Verified by A. R. STIRNI

Instructions dated September 22, 1939.

Remarks: Supplemental instructions dated December 13, 1940.

Smooth sheet and plotting by the Seattle Processing Office.

DESCRIPTIVE REPORT

to accompany
HYDROGRAPHIC SHEET, Field No. 1341

6748

SMITH ISLAND

PUGET SOUND, WASHINGTON

Scale 1:10,000

U.S.C. & G.S.S. SURVEYOR

G. C. MATTISON, Comdg.

INSTRUCTIONS:

The authority for this Survey is contained in the Director's instructions dated September 22, 1939, Project HT-241 and supplemental instructions dated December 13, 1940.

LIMITS:

This sheet covers the immediate area around Smith Island from Latitude 48°18.5' North to 48°20.0' and from Longitude 122°48.8' West to 122°51.8'. On the East and North side it joins Ship sheet field No. 2141 and this sheet will when completed join sheet 2141 on the West side. It joins sheet H-6612 on the South side.

CONTROL:

Control for this survey was provided by triangulation established in 1929 and signals located on topo sheet field No. B-41. Arcs were drawn on the boat sheet for topo signal Lulu and triangulation stations Smith Island and Iceberg to furnish control for the area West of the Island. However due to poor visibility these signals could not be used so a floating signal was used. This signal consisted of a signal on a motor sailor which was Anchored fore and aft and positions were taken from the launch hourly during hydrography and were recorded in the sounding records.

SURVEY-METHODS:

Standard survey methods were used. The sounding lines were all controlled by three point fixes and the recording fathometer type 808 was used entirely for obtaining soundings. All fathometer soundings were corrected for temperature, salinity, etc. in accordance with instructions and a separate report on this subject has been submitted. A copy of fathometer corrections will be found in the first volume of this sheet. Initial corrections scaled from the fathograms are combined with the above corrections in the sounding volumes.

DISCREPANCIES:

No discrepancies were noted in plotting soundings on the boat sheet. Weak control necessitated rejection of sections of lines in area later completed by M.V. Patton

DANGERS:

No dangers were noted. However a large portion of the area West of the Island is covered by a kelp bed and this area has not been completed.

COMPARISONS WITH PREVIOUS SURVEYS:

Two previous surveys cover this area H-431, 1854 and H-2212, 1894. Soundings from these surveys were transferred to the boat sheet and in general the agreement was good. These old surveys were reconnaissance in nature.

ANCHORAGES:

Good protection from S.E. weather was experienced 0.9 nautical mile true North from Smith Id. Light. Strong currents were experienced. However the sand bottom proved to be good holding ground.

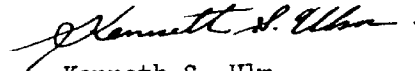
CURRENTS:

Strong currents were encountered off the Northwest and Southwest ends of the island. It was noted that the currents set NE. and S.W. on the Western side of the island.

RECOMMENDATIONS:

It is recommended that the area not covered and the splits shown in red on the boat sheet be covered at a future date.

Respectfully submitted,



Kenneth S. Ulm
H. & G. Engr.

Approved and forwarded.



G. C. MATTISON
Comdg. Ship SURVEYOR

H 6748

TABLE OF STATISTICS

to accompany

Field Sheet - No. 1341

6748

Date	Day Letter	No. Soundings	No. Positions	Statute Miles
Nov. 15	a	1135	199	28.7
Nov. 17	b	1261	236	36.2
Nov. 18	c	1057	201	25.9
Dec. 2	d	997	176	21.6
Dec. 12	e	806	142	17.7
Dec. 19	f	921	168	18.4
Total.....		6177	1122	148.5

Area = 4.4 square statute miles.

LIST OF SIGNALS
to accompany

DESCRIPTIVE REPORT FOR
HYDROGRAPHIC SHEET, Field No.1341 6748

Triangulation Stations:

Minor Island Lt. 1939
Smith New 1939
Smith Id. Lt. 1867-1939

Topographic Stations:

Ax	Fan	Kit
Bag	Gas	Liz
Con	Hen	Mar
Dal	Ivy	Pat
Eva	Jaw	OLd
		Tar

Sextant Location

Cal
Joe

ADDITIONAL NOTES

to accompany

DESCRIPTIVE REPORT

HYDROGRAPHIC SHEET H6748, (1341 Field)

At the request of the Officer in Charge, Seattle Processing Office, the PATTON worked one day on the above sheet to fill in a small gap left by the field parties from the Ship SURVEYOR.

SURVEY METHODS:

Visual fixes were used throughout. Dorsey III fathometer soundings were used entirely except for a few hand lead soundings taken from a dory. These latter were to develop the depth curves inside of three fathoms. The fathometer worked very well up to 20 fathoms. Above that there were some strays.

DISCREPANCIES:

The soundings did not agree with the 808A launch soundings on one side of the area worked on, but did on the other, thus smoothing out the depth curves. *Discrepancies probably caused by weak control.*

DANGERS:

No dangers were found. The inshore area covered has thick kelp but there were no indications of irregular bottom in the soundings taken in the kelp.


TIDES:

A staff was established at Aleck Bay and this was read during the period when soundings were taken.

STATISTICS:

Number of miles	- - - - -	12.8
Number of soundings	- - - - -	597
Number of positions	- - - - -	122

Respectfully submitted,


CASPER M. DURGIN
Commanding Officer
U.S.C. & G.S. M.V. PATTON

TIDAL DATA

to accompany

HYDROGRAPHIC SHEET, Field No. 1341

6748

SMITH ISLAND, WASHINGTON

ALECK BAY PORTABLE GAGE

MLLW.....3.54 feet

For reducing soundings on the boat sheet
predicted tides from Port Townsend were used.

Hydrographic Sheet No. 6748

SEATTLE PROCESSING OFFICE NOTES

Kelp has been shown on the smooth sheet. The usual remarks in the sounding records are "entering kelp" or "leaving kelp." The kelp has not been shown continuously between these points, though it probably should be so shown. From the report, page 1 "Dangers", and from the Smith Island Topographic Sheet "A" 41, we infer that the kelp bed is continuous and extensive to westward of the island.

The buoy appearing at Latitude $48^{\circ} 19' 05''$ Longitude $122^{\circ} 50'$ was transferred from the topographic sheet. No mention of it was observed in the sounding records.

Along the west side of the sheet there is an unfinished area half a mile wide, between H-6748 and H-6747.

The plotting curves shown on the boat sheet were not used, except for plotting positions 76e and 77e. These were plotted on the boat sheet and transferred to the smooth sheet.

After plotting the work by the SURVEYOR, two large splits remained southwest of Smith Island. The depth curves in the area between the splits seemed out of line with the curves to eastward. An additional examination was requested of the Commanding Officer, Motor Vessel PATTON.

The work of the PATTON is plotted on the smooth sheet and on an overlay boat sheet. The new work changes the curves to join fairly with the soundings to east and west. The soundings by Launch #3 on "d" day in this area were rejected. The plotting of the discrepant work is separately shown on an overlay tracing accompanying the smooth sheet.
Discrepancies probably caused by weak control

The overlay tracing also shows the positions of floating signals at different times as they swung to wind and tide during use.

For tide reducers, the party established a staff in Aleck Bay, Lopez Island, and furnished the reducers attached to this report. The leveling record, report on tide gage, and tide observation book were forwarded to Washington on March 29, 1943.

As mentioned above, there is an unfinished strip half a mile wide along the western edge of the sounded area between H-6748 and H-6747. The boat sheets were twice returned to the field for completion, but the parties did not find an opportunity to do the work. If the opportunity occurs again, we will request the return of the boat sheet from Washington.

Approved and forwarded:

F. H. Hardy
F. H. Hardy
Officer in Charge,
Seattle Processing Office.

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

8th

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12

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Tide Reducers from Aleck Bay tides.
Nov. 1, 1942

5 1/2' - 9¹⁸ to 9⁵⁵ ✓

6' - 9⁵⁶ to 10⁵⁰ ✓

6 1/2' - 10⁵¹ to 14¹⁰ ✓

6' - 14¹¹ to 14⁵⁶ ✓

5 1/2' - 14⁵⁷ to 15⁵⁵ ✓

5' - 15⁴⁶ to 17⁰⁰ ✓

9'

8'

7'

6'

5'

4'

Nov. 1 - 1942.

comp. - C. A. G.
H. S. C.

Surveys Section (Chart Division)

HC 748

HYDROGRAPHIC SURVEY NO.

Records accompanying survey:

Boat sheets ...1; sounding vols. ...5; wire drag vols. 0...;
 bomb vols. ...0.; graphic recorder rolls 2....;
 special reports, etc. ³Tracings.....

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

Number of positions on sheet	.1244
Number of positions checked	.167.
Number of positions revised	.20..
Number of soundings recorded	.7500.
Number of soundings revised (refers to depth only)	.5..
Number of soundings erroneously spaced	.24..
Number of signals erroneously plotted or transferred
Topographic details	Time
Junctions	Time ..4..
Verification of soundings from graphic record	Time .16..

Verification by...*A.A. STIRNI*... Total time .93.. Date *Feb. 9, 1944*

Review by *R.H. Carstens*... Time *12.7* Date *Feb. 11, 1944*

H6748

Remarks

Decisions

	Remarks	Decisions
1		
2		
3		483223 U.S.G.B
4		"
5		U.S.G.B
6		
7		
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11	Location of tide staff	
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GEOGRAPHIC NAMES
 Survey No. **HC748**

Name on Survey											
	A	B	C	D	E	F	G	H	K		
<u>Washington</u>											1
Major Island											2
<u>Smith Island</u>											3
<u>Minor Island</u>											4
<u>Strait of Juan de Fuca</u>											5
											6
											7
											8
											9
											10
<u>Aleck Bay</u>											11
											12
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											27

Names underlined in red approved
 by Aleck on 2/15/48

MEMORANDUM

IMMEDIATE ATTENTION

H6748

SURVEY DESCRIPTIVE REPORT PHOTOSTAT OF	}	No. H No. T	{ received May 28, 1943 registered June 1, 1943 verified reviewed approved
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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			
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26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	R. W. Knox
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RWK

Rac
RME

TIDE NOTE FOR HYDROGRAPHIC SHEET

June 3, 1943

~~Division of Hydrography and Topography:~~

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

Tide Reducers are approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 6748

Locality Smith Island, Puget Sound, Wash.

Chief of Party: G. C. Mattison in 1941
Plane of reference is mean lower low water reading
3.5 ft. on tide staff at Aleck Bay
9.2 ft. below B.M. 1

Height of mean high water above plane of reference is 6.4 feet.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.

DIVISION OF CHARTS

REVIEW SECTION - SURVEYS BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. 6748

Field No. 1341

Washington, Strait of Juan de Fuca, Smith Island
Surveyed November - December 1941; Scale 1:10,000
Instructions dated September 22, 1939
and December 13, 1940

Soundings:

Hand lead
808 Fathometer
Dorsey Fathometer

Control:

Three-point fix on shore signals
Three-point fix on buoy signals

Chief of Party - G. C. Mattison; C. M. Durgin
Surveyed by - Ship's Officers
Protracted by - W. M. Martin
Soundings plotted by - W. M. Martin
Verified and inked by - A. R. Stirni
Reviewed by - R. H. Carstens
Inspected by - H. R. Edmonston, February 14, 1944

1. Shoreline and Signals

The shoreline and topographic stations originate with T-6800 (1941). Sextant fixes locating supplementary hydrographic signals are recorded in the sounding volumes.

2. Sounding Line Crossings

Satisfactory.

3. Submarine Relief

To the east the bottom slopes steeply off Minor Island to depths of 30-40 fm. To the west depths are from 3 to 6 fm. for a considerable distance off Smith Island. A large kelp patch extends to the west of Smith Island. Charting the 20-, 30- and 40-fathom curves in this area would show the steep slope off Minor Island more advantageously than it is shown at present.

4. Junctions with Contemporary Surveys

A satisfactory junction was effected with H-6612 (1940-41) on the south. The junction with H-6747 (1941) on the east and north will be considered in the review of that survey. On the west there is a holiday 1/2 mile wide between the present survey and the limits of H-6747. Additional work filling this is recommended in item 9.

5. Comparison with Prior Surveys

- a. H-333 (1852) 1:214,240
H-431 (1854) 1: 10,000
H-433 (1854) 1:100,000
H-405 (1855) 1:211,798

Agreement with these early reconnaissance surveys is fair. The present survey is adequate to supersede them within the common area.

- b. H-2212 (1894) 1:40,000

The agreement with this earlier survey is, in general, fairly good. There are some differences of as much as 1 fathom on the steep gradients. The 4-fm. sounding, chart 6380, in Lat. 48°19.72', Long. 122°51.65' was reduced 1 fm. in error and should be disregarded. The 1/4-fm. sounding, chart 6380, in Lat. 48°18.8', Long. 122°50.4' was inked incorrectly in fathoms rather than feet and should be disregarded. The present survey is considered adequate to supersede this prior survey within the common area.

* 1/100 fathoms on
 Ch. 6382

6. Comparison with Chart 6380 (Latest print date 1-20-44)

a. Hydrography

The hydrography originates with the previously discussed surveys which need no further consideration. The dot charted in Lat. 48°19.3', Long. 122°51.6' is probably an imperfection in the kelp symbol and should be corrected.

b. Aids to Navigation

The survey positions of aids to navigation are in agreement with the charted positions.

7. Condition of Survey

Satisfactory.

8. Compliance with Instructions for the Project

Compliance with the instructions was satisfactory except with respect to the following items:

- a. Crosslines totaled only 2% instead of 6% of the sounding lines.
- b. Insufficient bottom characteristics were taken.
- c. The rock, awash at only the lowest tides, charted in Lat. $48^{\circ}19.07'$, Long. $122^{\circ}51.02'$ from T-1170 (1870) was not investigated in the field.

9. Additional Field Work Recommended

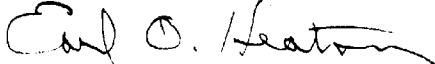
At a convenient time it would be desirable to have the following items completed:

- a. Hydrography run in the holiday on the west between the present survey and H-6747 (1941) as mentioned in the descriptive report.
- b. Split lines run in several self apparent places west of Smith Island.
- c. A selection of bottom characteristics taken.
- d. An investigation made of the rock awash at lowest tide in Lat. $48^{\circ}19.07'$, Long. $122^{\circ}51.02'$.

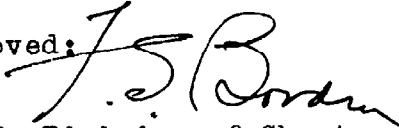
10. Superseded Surveys


H- 333 (1852)	in part
H- 431 (1854)	" "
H- 433 (1854)	" "
H- 405 (1855)	" "
H-2212 (1894)	" "


Chief, Surveys Branch


Chief, Section of Hydrography

Examined and approved:


Chief, Division of Charts


Chief, Division of
Coastal Surveys

H. 6748

Applied to Chart 6382 (Sheet completed) G.R. 5/6/44

Applied to Chart 6450. from Chr. 6380. g.H.S. 7/29/44

" " " 6300 " " 6380 P.H.D. 11-29-44

" " " 7002 " " 6300 (No Corr.) H.F.R. 3/27/45

" " " 6380 (after review) G.R. 4/9/44

Fully applied to chart 18429 B. Hamilton 12-28-77/RCS